Operating Instructions

Honeywell

Touchpoint Pro

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1. Safety and Information

WARNINGS

1. Installation must be in accordance with the recognized standards of the appropriate authority in the country concerned. Refer to local, national and company regulations.
2. All cabling must be appropriately rated and approved in accordance with local, national and company regulations. Additionally, cabling must satisfy requirements defined in the manuals of connected field devices, in particular if the field device is certified for use in a hazardous location.
3. All Touchpoint Pro equipment must be earthed using the earth terminals provided.
4. The Touchpoint Pro installation must include a means of isolating or disconnecting the input voltage supply. The isolation or disconnection device must be conveniently located close to the system and clearly labelled. For an AC mains voltage supply, the isolation or disconnection device must disconnect both the line and neutral poles, but maintain earth continuity.
5. The Touchpoint Pro input voltage supply must include overcurrent protection.
6. Do not operate the Touchpoint Pro system outside of its operating specification.
7. When installing a Touchpoint Pro 19” Rack version, it is the user’s responsibility to ensure that the Touchpoint Pro operates within the specified temperature ranges of all components, and that all cabling is appropriately rated and approved.
8. Touchpoint Pro systems may contain hazardous live terminals. Appropriate precautions should be taken during operation, installation, maintenance and servicing. Specifically, operators must have appropriate training and experience to be aware of the hazards to which they may be exposed, and of measures to minimise risk to themselves or other people.
9. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
10. Touchpoint Pro must not be operated in Oxygen enriched atmospheres, i.e. greater than 25% v/v Oxygen.

Cautions

1. The USB Device port is for Maintenance only. End users should use only the USB Host port with USB Flash drive, and backup / restore / upgrades should only be performed with the system in Maintenance mode.
2. Only suitably trained service personnel should install the Touchpoint Pro system and have access to internal parts for maintenance.
3. Touchpoint Pro power supply units, Ring Coupling Modules and Input/Output Modules have no user serviceable parts. In the unlikely event of a failure, the power supply unit or module must be replaced. Use only manufacturer supplied parts.
4. Use only soft, damp cloths or screen wipes to clean the Touchpoint Pro. Do not use solvents or abrasives as they will damage the User Interface.
5. The Touchpoint Pro wall mount enclosures are heavy (>25 kg , single person lift is not recommended). When choosing the installation site and before lifting the enclosure, consider and implement measures to reduce the risk of injury. Refer to local safety regulations.

6. Once commissioned, Touchpoint Pro is intended for continuous operation.

1. Safety and Information

1.1 How to use this manual

The intention of this manual is that it is written in standalone sections so that the user can access only the relevant information required at any time. It is strongly recommended that the index / bookmarks are used for easy navigation.

The manual is structured as follows:

Chapter	Title	Topic
1	Safety and Information	Safety, Regulatory Compliance and other important information
2	Overview	An overview of the Touchpoint Pro system and its components
3	Mechanical Installation	Instructions for mechanical installation of Touchpoint Pro units, as well as details for system integrator customers of how to assemble a system
4	Electrical Installation	Instructions for electrical installation of Touchpoint Pro units, including power supply calculation, cabling and earthing recommendations, and all wiring information
5	User Interface	A description of the Touchpoint Pro user interface, including menu structure and access permissions
6	Commissioning	Instructions for first time switch on and configuration of the Touchpoint Pro system
7	Normal Operation	Instructions for normal day-to-day operation of the Touchpoint Pro system
8	Maintenance	Recommended maintenance operations, and details of how to carry out hardware and firmware upgrades
9	Problem Solving	How to troubleshoot scenarios that may be encountered, and details of error codes and suggested steps for resolution
10	Specifications	Specifications of all the component parts of Touchpoint Pro
11	Certification	Details of the regulatory approvals of Touchpoint Pro
12	Ordering Information	Part numbers for systems, components and accessories
13	Warranty Statement	Statement of warranty
14	Appendix – Modbus Option	How to install and operate the Modbus interface option
15	Appendix - Configurable Parameter Reference Guide	Definitions, default values and available ranges of all I/O Module configurable parameters
16	Appendix - Wiring Diagrams	Wiring diagrams for common sensor configurations
17	Appendix - Abbreviations	Definitions of abbreviations used in this document
18	Appendix - User Interface Software Menu Structure	Diagrams showing the structure of the user interface software
19	Appendix - Icons	List of Touchpoint Pro icons and their meaning
20	Appendix - Events	List of Events that are logged by Touchpoint Pro and their meaning

1. Safety and Information

1.2 Safety Hazards

The following specific hazards are associated with the use of this equipment:

Danger – Ignition Hazard

The Touchpoint Pro Controller is NOT ATEX/IECEx safe, and it may only be installed in safe areas where there are no flammable atmospheres, and no oxygen concentrations >25% v/v O_2.

The Touchpoint Pro range includes a wall mounted enclosure that is certified as ATEX/IECEx Zone 2, Class I Div 2 and Class I (Zone 2) safe, but this enclosure can only be installed as a remote unit.

ATEX certified components may be used within the Touchpoint Pro, and these bear the ATEX imprint shown to the left.

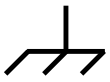
Warning – Lethal Voltage present

All power supplies must be hard wired and must include a circuit breaker (RCD / RCCB), and (close by and unobstructed) a means of manually isolating and locking out the power supply without breaking the true earth (ground) connection.

Removable plug and socket connection is not permitted under any circumstance.

Warning – Lethal Voltage present

Lethal voltage may be present in this equipment when electrical power is applied. There is a danger of death or injury from electrical shock. Isolate power before opening electrical access panels. Ensure residual current is fully discharged before touching live terminals.



Warning – Lethal Voltage present

Lethal voltage may be present both internally and externally to the system. All installations, including cabinets, racks and remote units, must be connected to true earth, and must be capable of staying earthed (grounded) when the power supply is interrupted.

The Protective Earth (Ground) symbol is shown on the left, and it always has a green background.

Do not confuse it with the chassis earth symbols shown below it.

Warning – Toxic Waste and Harmful By-products

Toxic waste and harmful by-products may accumulate within parts of the system. Suitable respiratory, eye and skin protection should be worn when servicing these items. Stringent industrial hygiene precautions should also be taken. Do not allow non-essential personnel into the work area.

The Touchpoint Pro system and/or its sensors may become contaminated by the ambient environment in which it or they are used. It is the Customer's sole responsibility to ensure that all appropriate safety precautions are taken before handling any components or transferring them to any other party.

1. Safety and Information

Warning – Eye Hazard

The Touchpoint Pro system contains sealed lead-acid batteries that may pose an eye hazard if the batteries have become damaged or pressurised. Always wear suitable eye protection when handling the UPS or batteries, or when clearing up chemical spills.

Caution – Corrosive

This equipment contains batteries containing corrosive substances that may pose a health or environmental hazard if improperly handled or carelessly disposed of.

Caution – Health and Environmental Hazards

This equipment contains a number of potentially toxic substances that may pose a health or environmental hazard if exposed to very high temperatures, VOCs or corrosives, or if improperly handled or carelessly disposed of.

Caution – Risk of Permanent Eye and body Damage

Always wear suitable eye protection and PPE when installing or removing the Touchpoint Pro system, or any of its components.

Caution – Risk of Injury and Damage

Touchpoint Pro enclosures are heavy and may become unstable when moved. Always wear PPE and ensure that mechanical means and sufficient personnel are available to assist when moving or handling these items.

Please contact your Honeywell authorised representative if you need further advice on any of the above.

1. Safety and Information

1.3 Location and Description of Warning Labels

1.3.1 Safety Warning Labels

Warning labels are mounted in specified locations on the equipment. This is to indicate conditions under which the user could be subjected to electrical hazards.

Figure 1 – International Warning Label

Figure 2 – Warning Label

Figure 3 – Protective Earth (Ground) Point

This Protective Earth (Ground) Location Point label is used inside the system and is not normally visible to the operator.

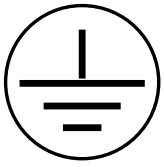


Figure 4 – Equipment Earth (Ground) Point

This Equipment Earth (Ground) Location Point label is used inside the system and is not normally visible to the operator.

1. Safety and Information

1.4 Disposal

1.4.1 Touchpoint Pro System

The Touchpoint Pro system is constructed from the following materials:

Wall Mounted Enclosure

Powder coated mild steel

Zintec

19” Rack

Powder coated mild steel

I/O Modules

Casing – Polyamide PA 6.6 V0 (UL94), grey

Contents – printed circuit boards

Power Supply Units

Casing – Back case: Aluminum; Top case (with mesh): Steel with Nickel plating

Contents – printed circuit boards

Ring Coupling Module

Casing – Polyamide PA 6.6 V0 (UL94), green

Contents – printed circuit boards

1.4.2 Packaging

Touchpoint Pro outer packaging is made from cardboard. Facilities for recycling are widely available.

Touchpoint Pro inner packaging (used inside the Wall Mounted Enclosure) is made from Stratocell®, a Low Density Polyethylene (LDPE) foam. The foam can be recycled and used as Stratocell® again where such recycling facilities exist.

1. Safety and Information

1.4.3 Batteries

Below is a listing of batteries present in the products covered by this manual:

Battery Description	Battery Type	Location	Replaceable
12 V Rechargeable Battery	Valve Regulated Lead Acid (VRLA) Sealed Battery	Battery backup unit for the Power Supply (optional)	Yes

Batteries contain various active ingredients which store electrochemical energy and can be dangerous if they contact your skin.

Removal and Disposal Information:

The symbol below means that according to local laws and regulations the battery installed within your product should be disposed of separately from household waste. When the battery reaches its end of life, take it to a collection point designated by local authorities.

1.5 Restriction of Hazardous Substances (RoHS) Directive

Touchpoint Pro is compliant with the requirements of the RoHS Directive.

1.6 Waste Electrical and Electronic Equipment (WEEE) Directive

This symbol indicates that this product and/or parts of the product may not be treated as household or municipal waste. Waste electrical products (end of life) should be recovered/ recycled where suitable specialist WEEE disposal facilities exist. For more information about recycling of this product, contact your local authority, our agent/distributor or the manufacturer.

1. Safety and Information

1.7 Information

This manual is for use with the Touchpoint Pro.

The reader of this Operating Manual should ensure that it is appropriate in all details for the exact equipment to be installed and/or operated. If in doubt, contact Honeywell Analytics for advice.

The following types of notices are used throughout this Operating Manual:

WARNINGS

Identifies a hazardous or unsafe practice which could result in severe injury or death to personnel.

Caution: Identifies a hazardous or unsafe practice which could result in minor injury to personnel, or product or property damage.

Note: Identifies useful/additional information.

Disclaimer

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2. Overview / Introduction

2.1 Touchpoint Pro

Touchpoint Pro is a control system for Honeywell Analytics' (and third party) range of sensors, which provides alarm evaluation and logically connectable relay outputs for alarm annunciation or control equipment operation.

Any system can be built from just four main building blocks:

1. A control module with colour LCD touch screen User Interface
2. Plug-in Input / Output (I/O) modules
3. A backplane power and communications highway
4. Power Supplies

These basic components can be mounted in cabinets or racks (or a combination) and the I/O modules freely mixed and matched in any combination. From small-scale systems to large fully integrated gas, fire and shutdown systems, Touchpoint Pro has the flexibility to meet all your gas and fire safety system control requirements.

The heart of Touchpoint Pro is the Controller, which includes the User Interface. The User Interface features a full colour liquid crystal display (LCD) with touch screen, and provides engineers with an intuitive solution to system set-up and deployment.

Touchpoint Pro System Key Components

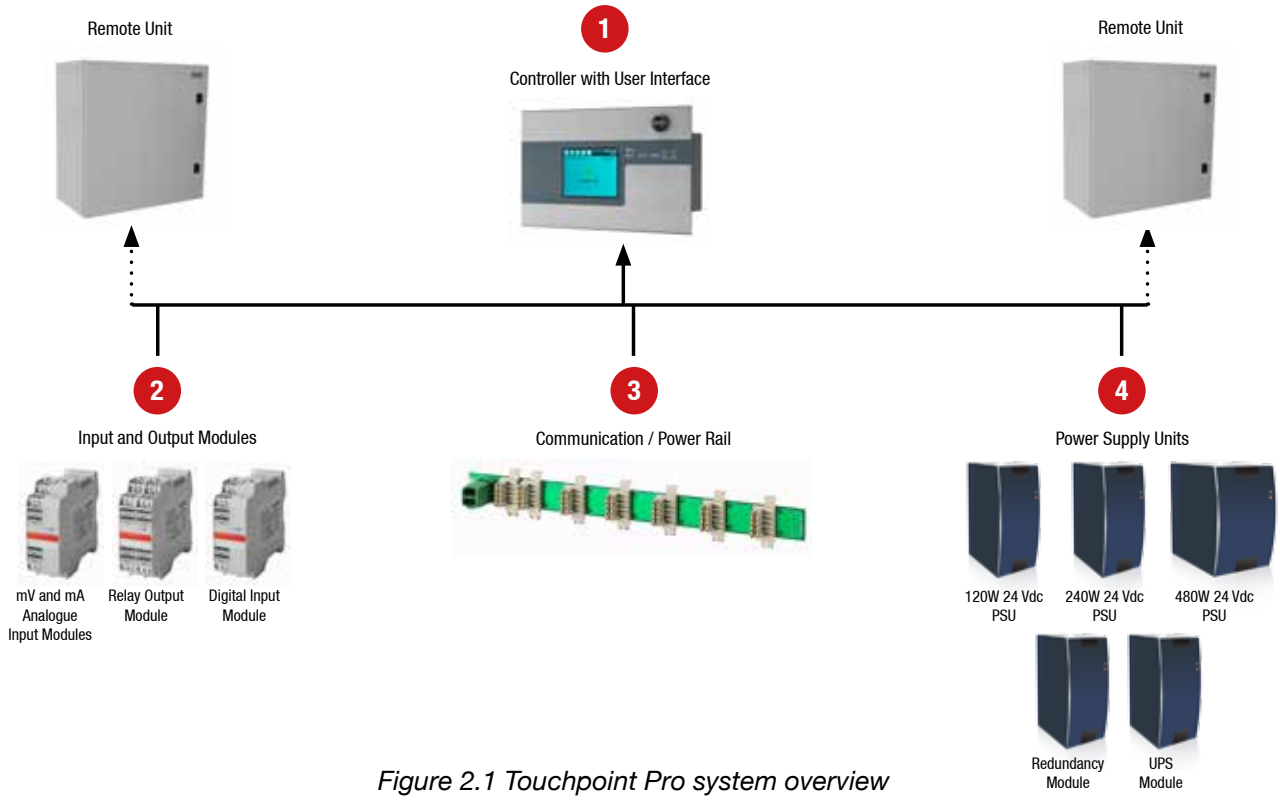


Figure 2.1 Touchpoint Pro system overview

2. Overview / Introduction

2.2 Touchpoint Pro Controller

Each Touchpoint Pro system has one Controller, which forms the heart of the system. It contains the Control Module and the User Interface, and handles the communication for the system.

The Touchpoint Pro Controller can be housed in any of the standard Touchpoint Pro Enclosures or in a 19” rack, where I/O modules, power supplies and the Communication / Power Rail can be included. The Controller can also be supplied as a front panel for mounting into a custom system.

Within the Controller, the Control Module contains two major components – the Control Centre Board and the Communication Board. The Control Centre Board (CCB) deals with all functions related to system operation, as well as the LED indicators and buttons on the front panel, and the master system state relays. An optional redundant CCB is available. The Communication Board (COB) handles the rest of the user interfaces – touchscreen, bus output and other external interfaces such as the USB and Ethernet ports. The Communication Board is completely independent from the Safety Function of the system.

2.3 Remote Touchpoint Pro unit

Each Touchpoint Pro system can contain multiple Remote Touchpoint Pro units. The Remote units contain only I/O modules and the Communication / Power Rail, plus power supplies if desired.

Remote units can be located up to 1 km (cable length) from the Touchpoint Pro Controller, with a maximum round trip of 3 km (cable length) for the complete system. The only connection required between the Controller and Remote units is the network cable.

The Remote Touchpoint Pro unit can be housed in any of the standard Touchpoint Pro Enclosures, a 19” rack, or a suitable third party enclosure.

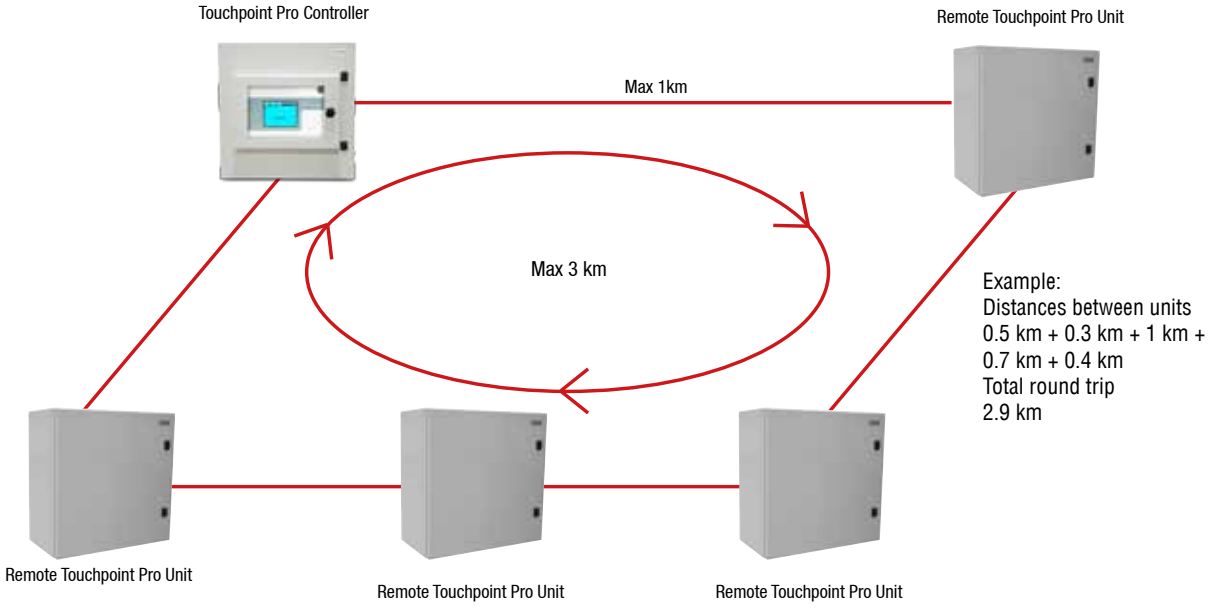


Fig 2.2 Max allowed cable distances

2. Overview / Introduction

2.4 System Topology

Touchpoint Pro can be implemented using a centralised or distributed cabling architecture. With a centralised architecture, all field devices are cabled back to a central point (so-called “home run”). In a distributed architecture, field devices are clustered with short cable runs to a control unit (in this case the Touchpoint Pro Remote unit) and a minimal amount of cabling is required back to the central point (in this case only the Ring Network cable). The only restrictions on a distributed architecture are the maximum round trip distance of 3 km and the maximum distance between two Touchpoint Pro units (Controller or Remote) of 1 km.

2.5 Communication / Power Rail and Ring Network

The Touchpoint Pro Communication / Power Rail directly provides power and network connection to the I/O modules, minimising the wiring required. There is a single connection for the 24 Vdc supply, which is then distributed to the I/O modules. The network cables connect to the Ring Coupling Module, which handles the communication between the modules and the Control Centre Board. The Communication / Power Rail is available in three lengths suitable for 5, 7, 9 or 10 I/O modules. The choice of length may be restricted by the size of the selected power supply option.

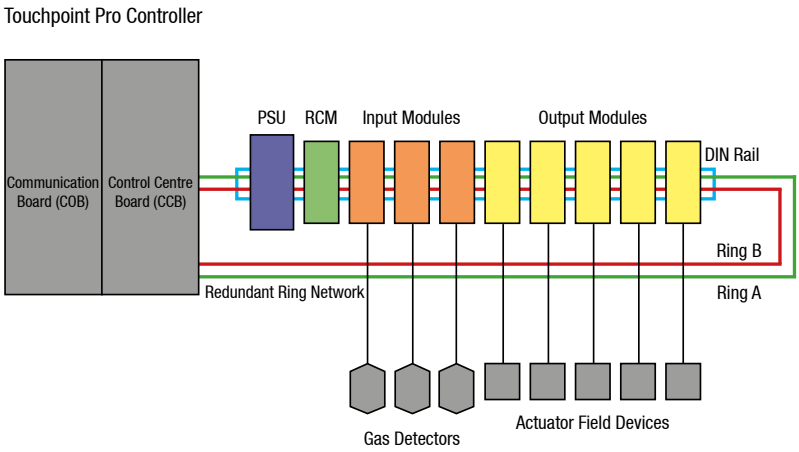


Fig 2.3 Touchpoint Pro Controller

The Ring Network is the communication link between all I/O modules in a Touchpoint Pro system and the Control Centre Board. The Ring Network is the only connection required between a Touchpoint Pro Controller (containing the Control Module and User Interface) and Remote Touchpoint Pro units.

The Ring Network is implemented for redundancy as two loops transmitting in opposite directions (Ring A and Ring B). The network is self-healing since each module only communicates with the one next to it. If a module fails, the modules after it continue to transmit data in the direction away from the failed module, while the ones before it transmit in the other direction. Thus the Touchpoint Pro system can immediately detect and locate a failed module, without affecting the availability of the rest of the system. For a single Touchpoint Pro Controller, the Ring Network runs between the Communication / Power Rail and the Control Module. For a system with a Touchpoint Pro Controller and Remote units, the network runs additionally over data cable between all the units in a system.

Note: The Touchpoint Pro Ring Network does not accommodate spurs.

2. Overview / Introduction

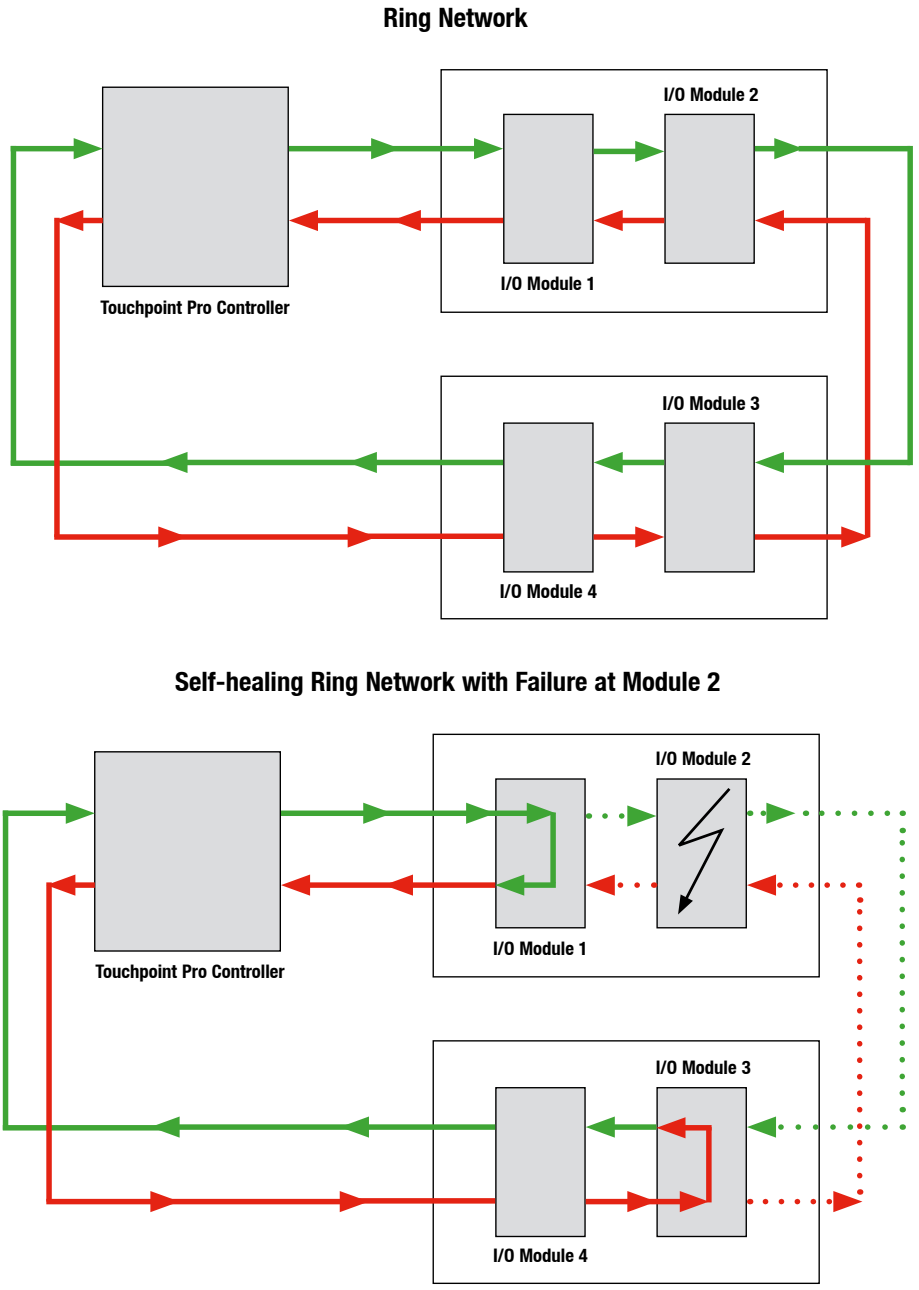


Fig 2.4 Ring Network

2.6 Input / Output (I/O) modules

Various types of I/O modules are available, each containing four channels. A single Touchpoint Pro system can contain up to 64 input channels (16 input modules) and 128 output channels (32 output modules).

2. Overview / Introduction

2.6.1 Available Modules

Analogue Input Module 4–20 mA (AIM mA)	4-channel Analogue Input Module for 2 or 3 wire 4-20mA detector signals
Analogue Input Module mV Bridge (AIM mV)	4-channel Analogue Input Module for mV-Bridge signals; powers up to 4 catalytic flammable gas detectors
Digital Input Module (DIM)	4-channel Digital Input Module for switched input devices such as manually operated push buttons. Can also be used for remote alarm acknowledge, reset and output inhibit
Relay Output Module (ROM)	4-channel Relay Output Module incorporating 4 SPCO relays; suitable to activate field mounted annunciators

Note: Communication/Power Rails may be included in the system without any I/O Modules, however there is a limit of 5 such Communication/Power Rails within the full 3 km loop of the system.

2.7 System Interaction

The User Interface consists of:

- Interface software with three ways to access:
  - Touchscreen for normal system operation, maintenance and configuration
  - Web Server for remote access to view normal system operation
  - PC Configuration Software (optional) for convenient system configuration
- Accept and reset buttons on the front panel of the Touchpoint Pro Controller
- Power, Alarm, Fault and Inhibit LEDs on the front panel of the Touchpoint Pro Controller
- Buzzer on the Touchpoint Pro Controller

Further System Interfaces consist of:

- Two master relays, System Failure and System Fault
- Connections for SD Card and USB memory device
- 10/100 Mbps Ethernet connection
- Optional digital bus interface

2. Overview / Introduction

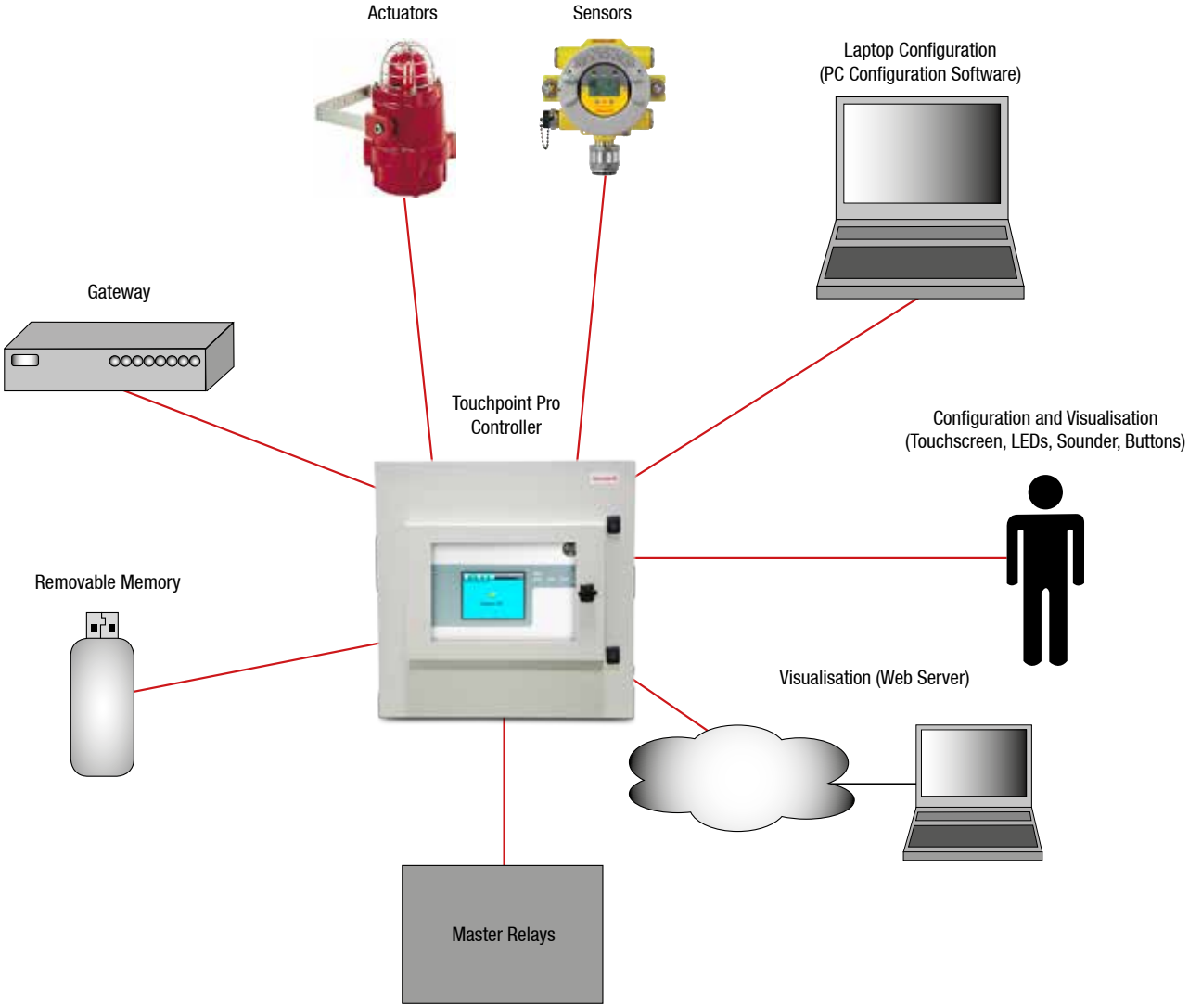


Fig 2.5 Touchpoint Pro Interfaces

2.8 Sensor Catalogue

For convenient sensor configuration, the Touchpoint Pro Controller is loaded with a sensor catalogue, which contains a complete listing of all Honeywell Analytics' gas sensors, each with a full default configuration setting. A user can choose to configure input channel settings from the sensor catalogue, resulting in a three step configuration process – select channel ID, program channel tags and select sensor and gas. The rest of the configuration will be loaded automatically. The full configuration can be viewed afterwards, and individual parameters changed if desired.

2. Overview / Introduction

2.9 Power Supply Options

2.9.1 Touchpoint Pro Power Supplies

The Touchpoint Pro System can be equipped with power supplies of different capacity. The power supplies are mounted to the DIN-Rail and are available in the following ratings:

120 W (5 A at 24 Vdc)

240 W (10 A at 24 Vdc)

480 W (20 A at 24 Vdc)

The power supplies have status outputs which can be connected to dedicated inputs on the Touchpoint Pro Controller to give a signal if there is a failure of an individual power supply unit.

2.9.2 Touchpoint Pro Power Redundancy Module (RDN)

The Redundancy Module controls two input DC power supplies, maximum 20 A each. If one supply fails, the Redundancy Module will switch over to the other supply, maintaining the DC output. Alarm relays are provided which will open if one of the input supplies fails.

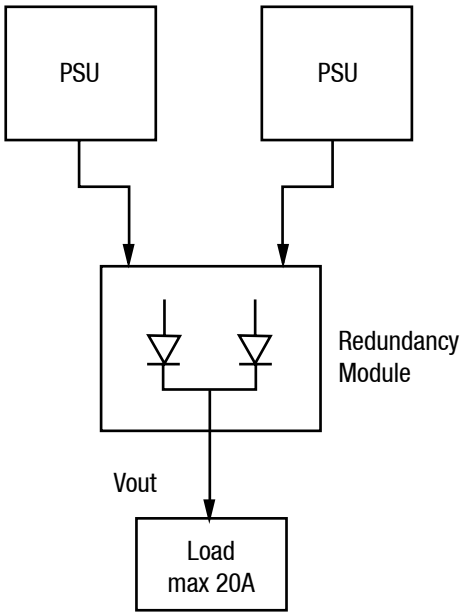


Figure 2.6 Power redundancy configuration

2. Overview / Introduction

2.9.3 Touchpoint Pro UPS Module with Backup Battery

The UPS Module can be used in combination with the separate Touchpoint Pro Battery Box to protect against failure of the AC supply, as shown below:

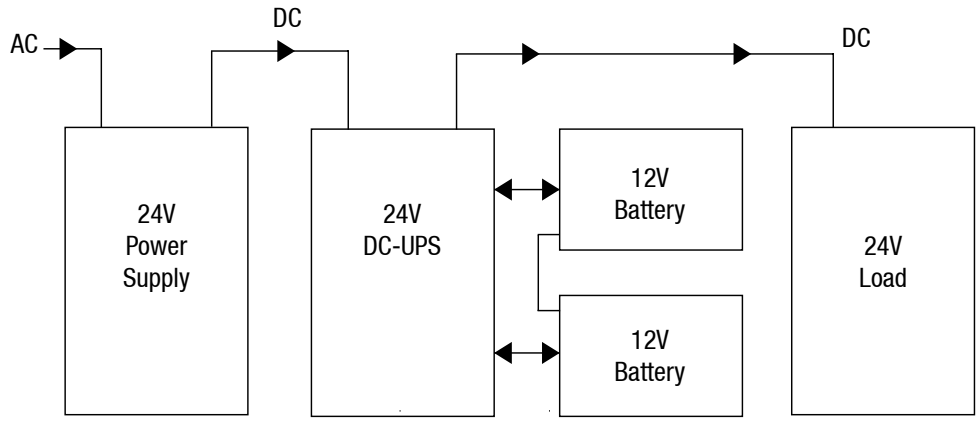


Figure 2.7 UPS and Battery Backup configuration

The Battery Box contains a pair of 12 V sealed lead acid batteries, with either 12 Ah or 27 Ah capacity.

Note: The UPS Module requires an input supply voltage of 26 - 32 Vdc.

3. Mechanical Installation

3.1 Siting considerations

There is a range of wall floor and rack mounted enclosures available for Touchpoint Pro. When choosing a location for the Touchpoint Pro (Controller or Remote type), consider the following:

- Touchpoint Pro is specified for operation in ambient temperatures from -40°C to +65°C (I/O Modules) or -20°C to +55°C (Touchpoint Pro Controller). Operation of the unit outside of this temperature range invalidates the warranty and certification.
- The Touchpoint Pro wall mounted enclosure has an ingress protection rating of IP65 when installed correctly, but it should still be protected against excessive moisture and dust.
- The Touchpoint Pro enclosures should be protected from direct sunlight where exposure could cause the unit temperature to rise beyond the specified operating limits.
- Ensure that there is sufficient clearance to mount the wall mounted enclosure, and open the door. A clearance of 100 mm all round plus space for cable entries is required. The door hinge is on the left side. Beware of proximity to entries, exits and sloping ceilings. Beware of siting in vehicle movement areas.
- For a Touchpoint Pro Controller, ensure that the screen can be viewed easily and touch screen can be reached. A touch screen height of approximately 1.5 m is recommended for comfort.
- The Touchpoint Pro wall mounted enclosure should be installed only on a vertical surface avoiding sloping surfaces. Only use the mounting fixtures supplied with the apparatus, and follow installation instructions.
- The mounting surface should be flat, and strong enough to bear the weight of the Touchpoint Pro system. Solid brick type construction is recommended. Drywall / plasterboard, dry lined or timber framed type construction is not considered to be a suitable structural material. Take account of the contents and external cabling in addition to the weight of the wall mounted enclosure itself (check maximum enclosure weights detailed below).
- If more than one enclosure is to be used, ensure that there is sufficient clearance between the enclosures for cable glands, mounting, cooling, door opening etc.
- It is the installer's responsibility to ensure that the unit temperature does not rise beyond the specified operating limits.
- Touchpoint Pro conforms to the requirements of European and other standards for EMC and RFI. It should not be installed in close proximity to the antennae of high power radio, radar and satellite communication equipment, or in the vicinity of high voltage switching gear or overhead power lines.
- All signal cables should be protected from stray or induced current, especially if you are re-using existing cables with a new Touchpoint Pro installation.

3.2 Wall Mounted Enclosures

There are a range of wall mounted enclosures available for Touchpoint Pro - small, medium and large mild steel versions.

Caution: The Touchpoint Pro enclosure is heavy (refer to table of typical weights, single person lift is not recommended). Before lifting the enclosure, consider and implement control measures to reduce the risk of injury. Refer to local safety regulations.

Caution: The Touchpoint Pro wall mounting brackets must always be installed in a vertical orientation as shown.

3. Mechanical Installation

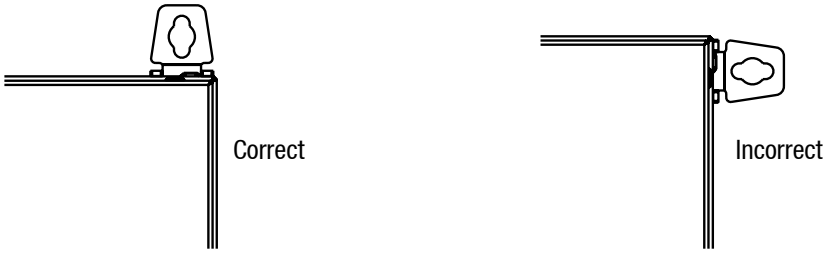


Figure 3.1 Touchpoint Pro wall mounting brackets orientation

Fixing bolts should be of minimum diameter 8 mm, to a depth of minimum 50 mm.

Caution: It is the installer's responsibility to select the appropriate fixings taking into account the structure of the mounting surface and the weight of the enclosure.

The typical weights of the wall mounted enclosures are shown in the table below. Please be aware that the weight may vary depending on the options selected.

Description	Approximate Weight in kg
600 x 600 x 300 WM steel enclosure Local	37
600 x 600 x 300 WM steel enclosure Remote	37
800 x 600 x 300 WM steel enclosure Local	46
800 x 600 x 300 WM steel enclosure Remote	46
1200 x 800 x 300 WM steel enclosure	81

3. Mechanical Installation

3.2.1 Small Wall Mounted Enclosure – Mild Steel

The dimensions of the small wall mounted unit (Controller or Remote) are shown below (all dimensions in mm):

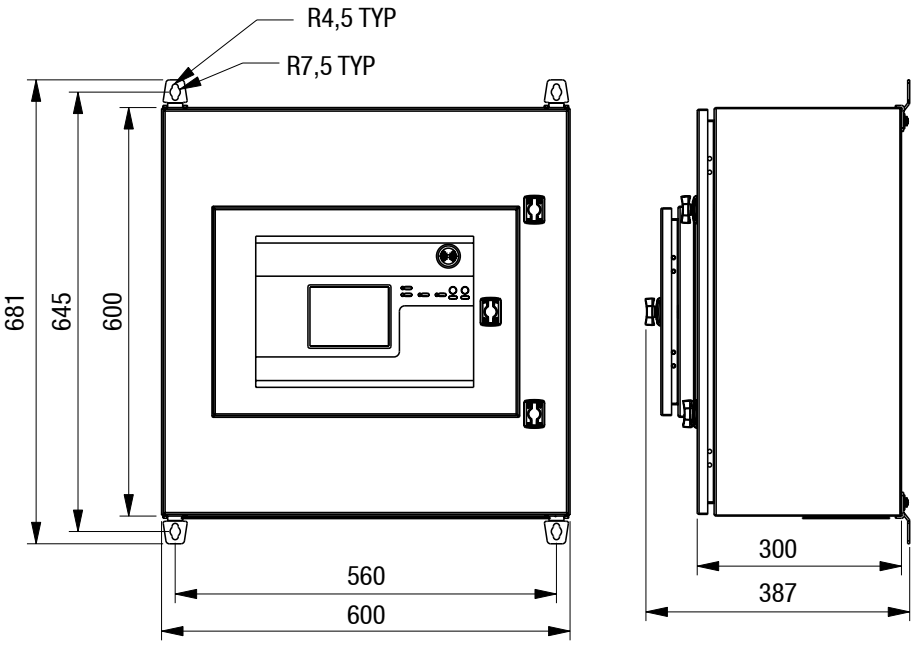


Figure 3.2 Touchpoint Pro Small Wall Mounted Enclosure - Mild Steel

3.2.2 Medium Wall Mounted Enclosure – Mild Steel

The dimensions of the medium wall mounted unit (Controller or Remote) are shown below (all dimensions in mm):

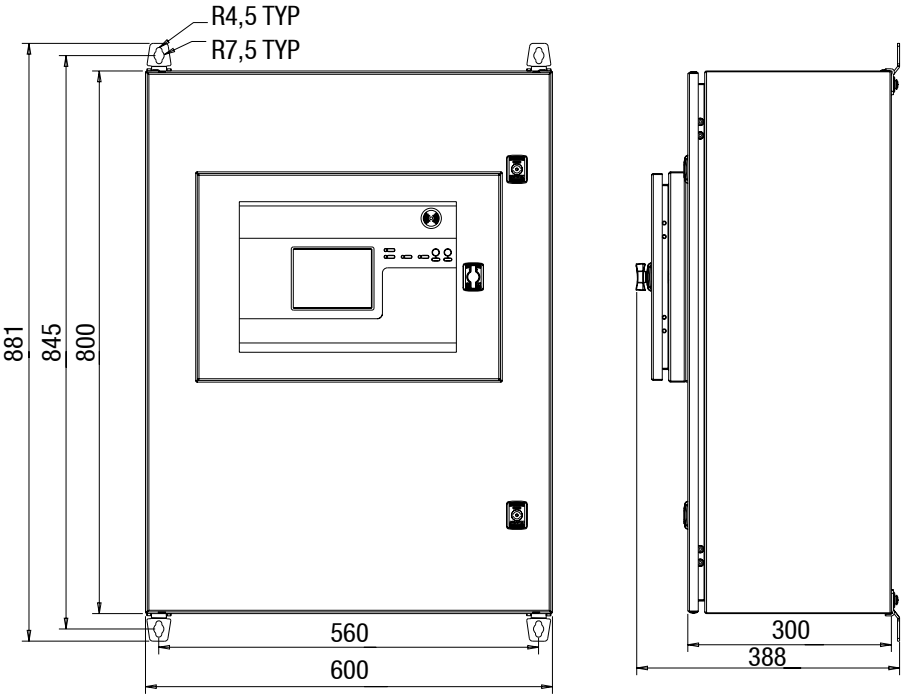


Figure 3.3 Touchpoint Pro Medium Wall Mounted Enclosure - Mild Steel

3. Mechanical Installation

3.2.3 Large Wall Mounted Enclosure - Mild Steel

The dimensions of the large wall mounted unit (Controller or Remote) are shown below (all dimensions in mm):

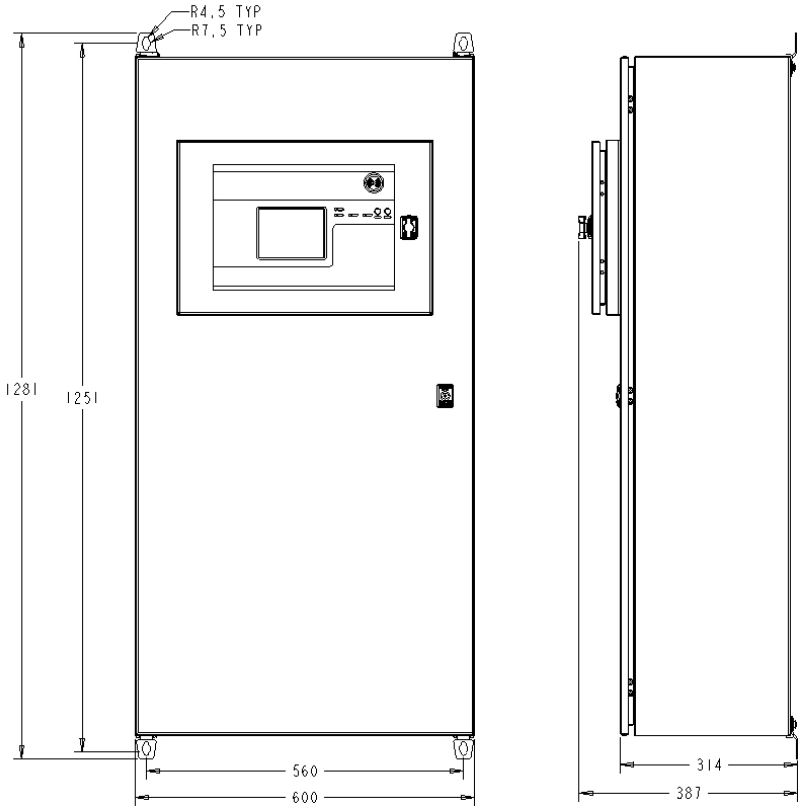


Figure 3.4 Touchpoint Pro Large Wall Mounted Enclosure - Mild Steel

3. Mechanical Installation

3.3 Hazardous Area Enclosure

Caution: The Touchpoint Pro enclosure is heavy (refer to table of typical weights, single person lift is not recommended). Before lifting the enclosure, consider and implement control measures to reduce the risk of injury. Refer to local safety regulations.

The Touchpoint Pro range includes a wall mounted enclosure which is certified for use in hazardous areas/ locations (ATEX/IECEx Zone 2, Class I Div 2, and Class I (Zone 2)). This enclosure can only be used as a remote unit, no controller option is available.

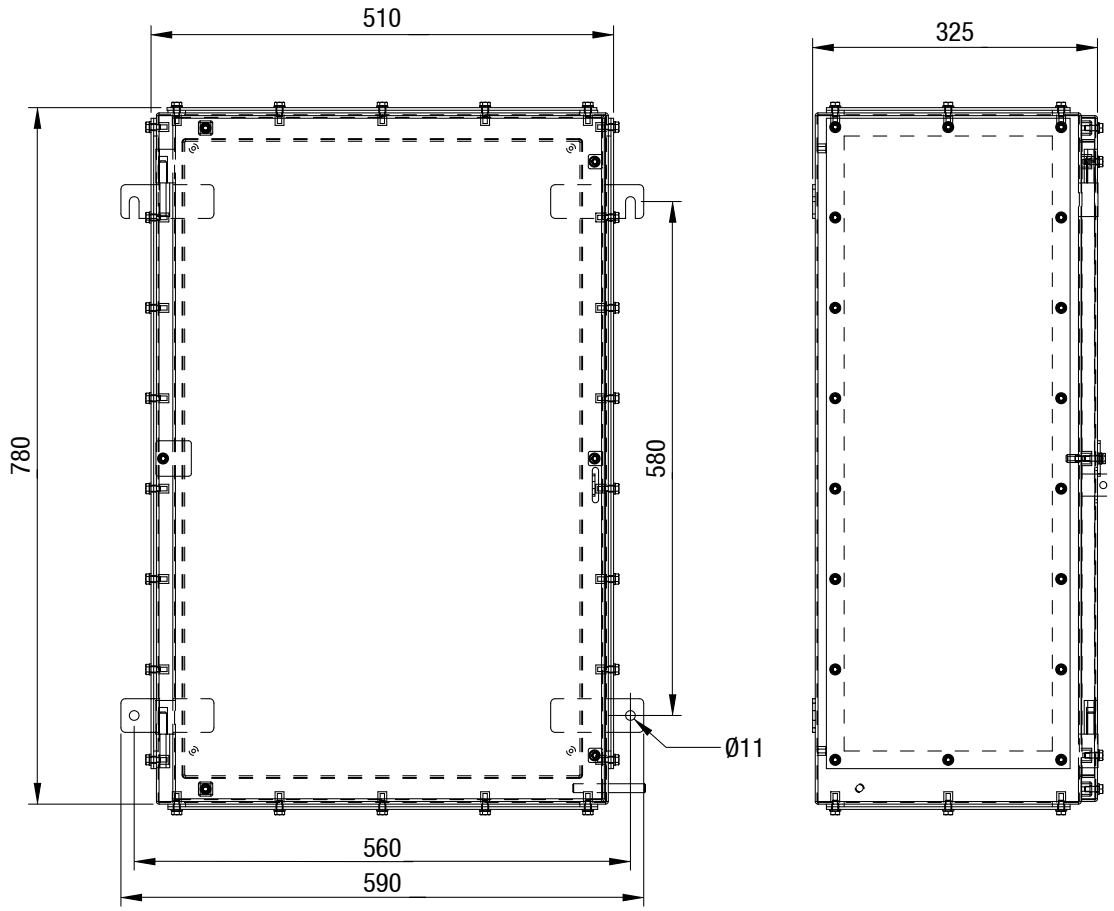


Figure 3.5 Touchpoint Pro Hazardous Area Enclosure

Fixing bolts should be of minimum diameter 8 mm, to a depth of minimum 50 mm.

Caution: It is the installer's responsibility to select the appropriate fixings taking into account the structure of the mounting surface and the weight of the enclosure.

The typical weight of the hazardous area enclosure is shown in the table below. Please be aware that the weight may vary depending on the options selected.

Description	Approximate Weight in kg
Hazardous Area Enclosure	42

3. Mechanical Installation

3.4 Floor Standing Enclosures

Caution: The Touchpoint Pro enclosure is heavy (refer to table of typical weights). Before lifting the enclosure, consider and implement control measures to reduce the risk of injury. Refer to local safety regulations.

Caution: To prevent the floor standing enclosure toppling over, it must be mechanically secured in place, either bolted through the plinth to the floor, or bolted to a suitable wall structure.

Caution: Do not block any vents if fitted

The typical weights of the floor standing enclosures are shown in the table below. Please be aware that the weight may vary depending on the options selected.

Description	Approximate Weight in kg
FS cabinet 2000 x 800 x 600 Front Access No ventilation	201
FS cabinet 2000 x 800 x 600 Front Access Natural ventilation	201
FS cabinet 2000 x 800 x 600 Front Access Forced ventilation	201
FS cabinet 2000 x 800 x 600 Rear Access No ventilation	201
FS cabinet 2000 x 800 x 600 Rear Access Natural ventilation	201
FS cabinet 2000 x 800 x 600 Rear Access Forced ventilation	201

3. Mechanical Installation

3.4.1 Floor Standing Cabinet - Front Access

The front access floor standing cabinet is available in options with no ventilation, natural ventilation or forced ventilation. The dimensions are shown below (all dimensions in mm):

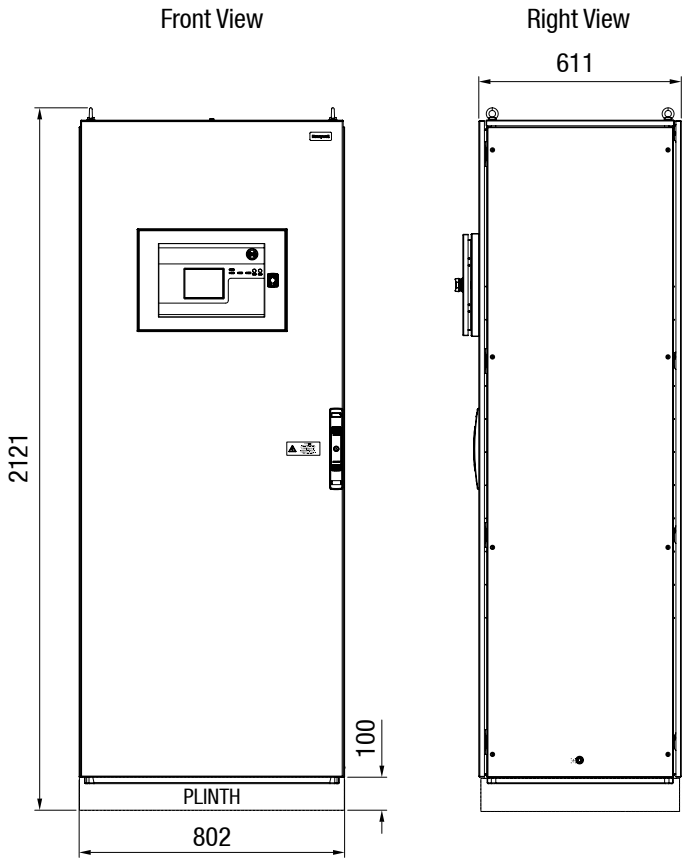


Figure 3.6 Front Access No Ventilation

3. Mechanical Installation

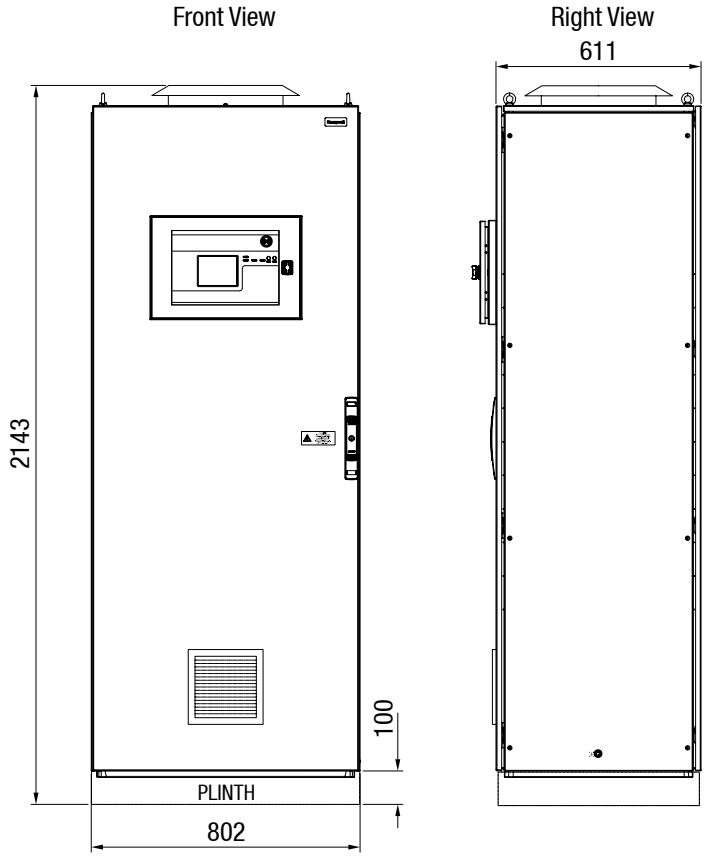


Figure 3.7 Front Access Natural Ventilation

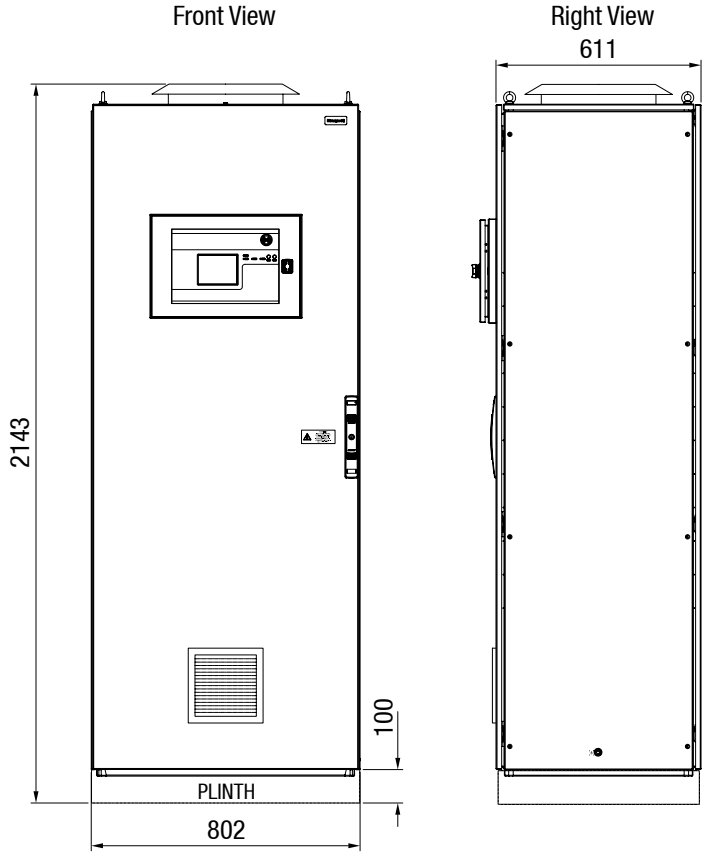


Figure 3.8 Front Access Forced Ventilation

3. Mechanical Installation

3.4.2 Floor Standing Cabinet - Rear Access

The rear access floor standing cabinet is available in options with no ventilation, natural ventilation or forced ventilation. The dimensions are shown below (all dimensions in mm):

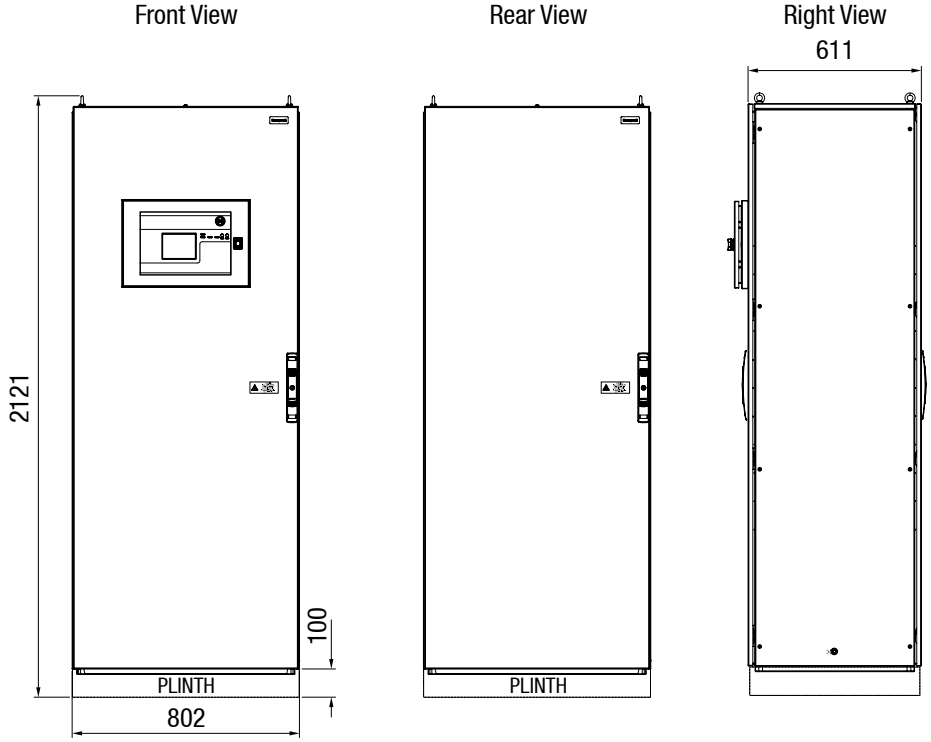


Figure 3.9 Rear Access No Ventilation

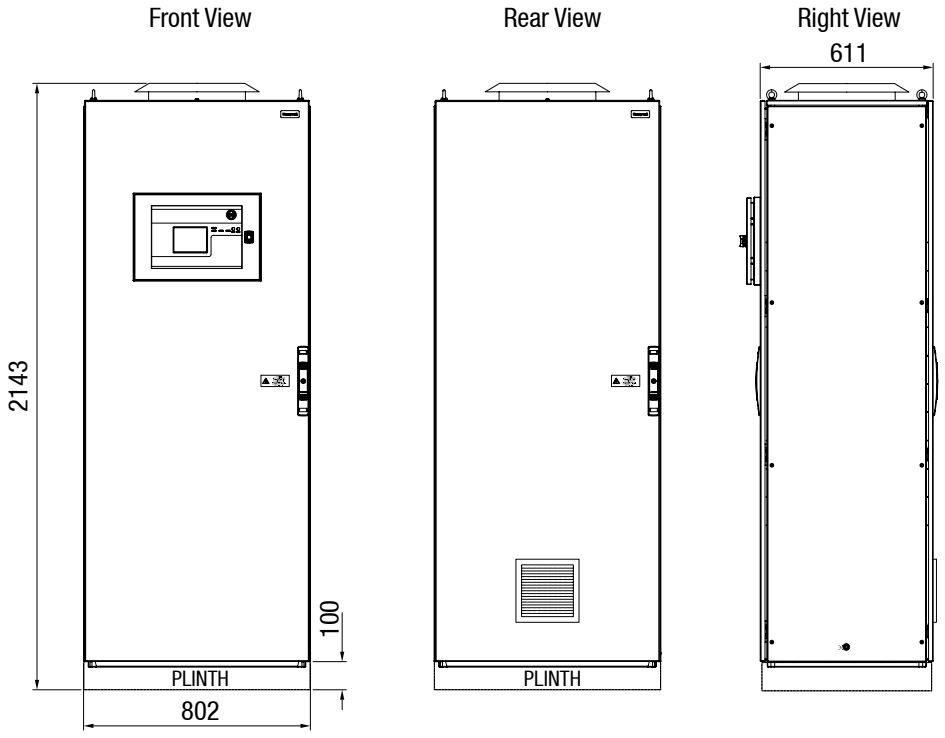


Figure 3.10 Rear Access Natural Ventilation

3. Mechanical Installation

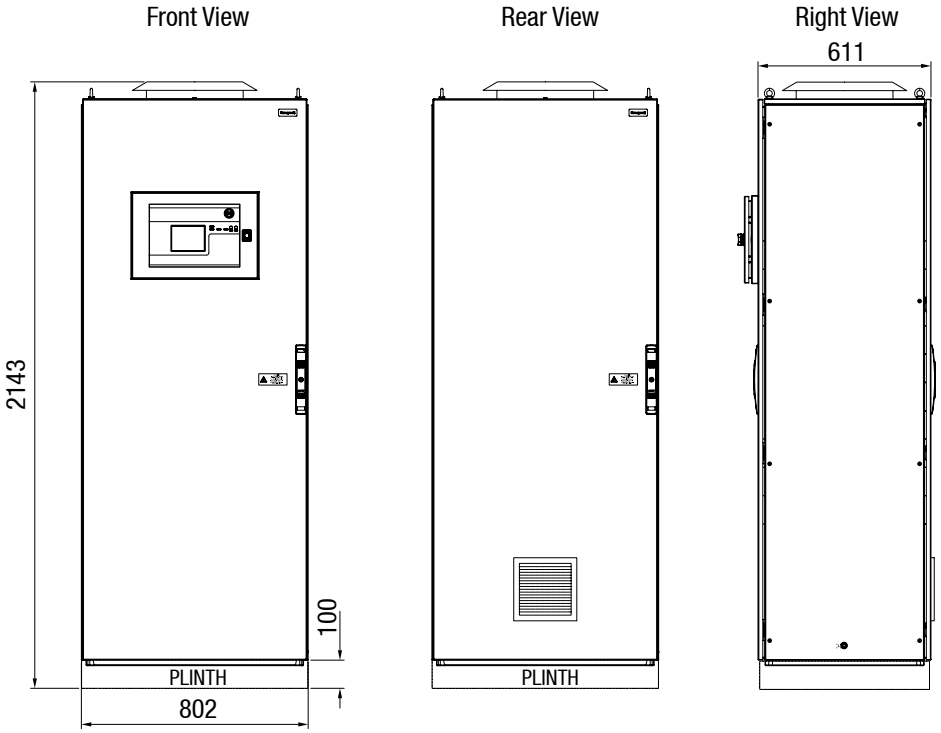


Figure 3.11 Rear Access Forced Ventilation

3. Mechanical Installation

3.5 19” Rack mounted unit

This module is designed to fit into an industry standard 19” rack, with a height of 5U. The dimensions of the 19” rack mounted unit (Controller or Remote version) are shown below (all dimensions in mm):

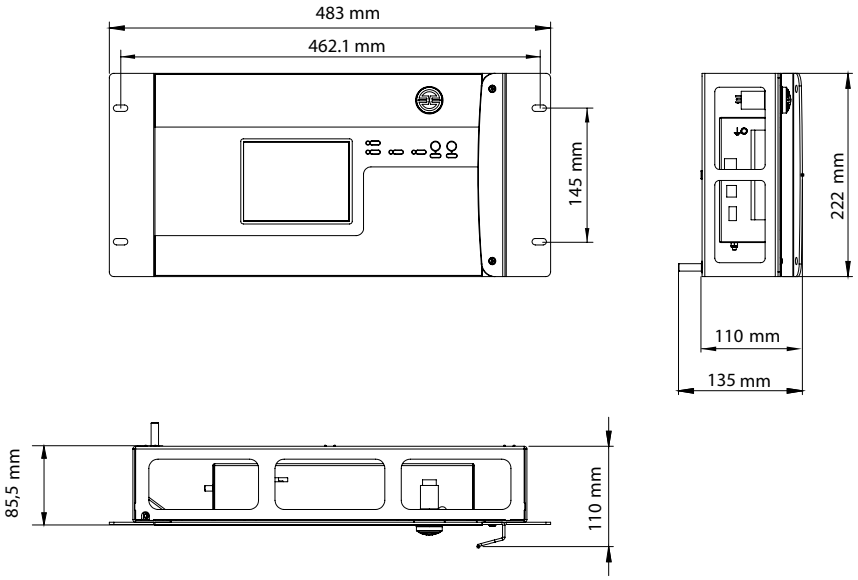


Figure 3.12 19” Rack dimensions

The weight of the unit is 10 kg.

3.6 Panel Mount Controller

This module is designed to be fitted into a custom panel. It has a height of 5U. The dimensions of the unit are given below (all dimensions in mm):

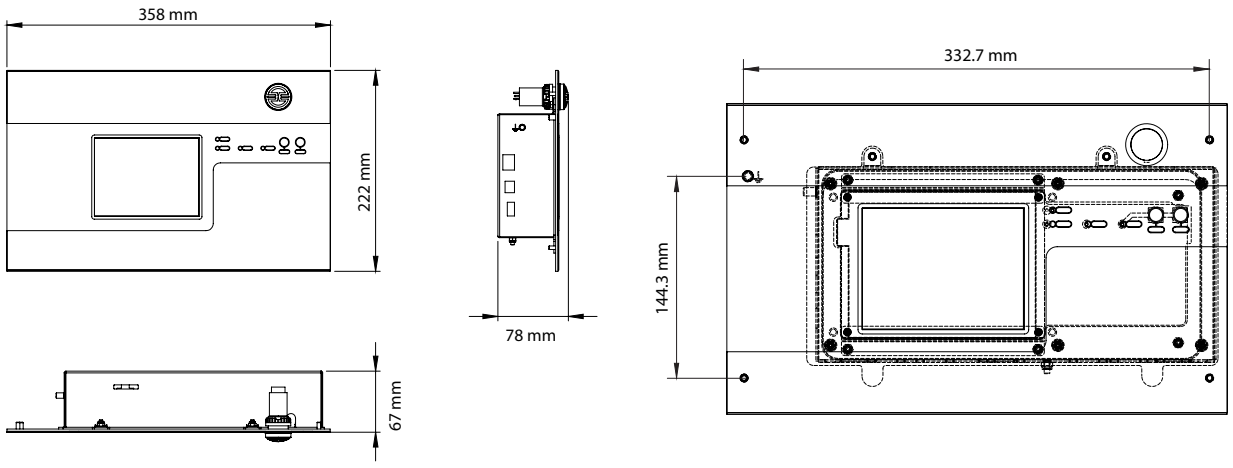


Figure 3.13 Panel mount controller dimensions

3. Mechanical Installation

The weight of the unit is 1 kg.

The dimensions of the required cut out for the panel are 368 mm (W) x 232 mm (H).

A bezel mounting kit is supplied to enable the panel to be neatly mounted in an enclosure.

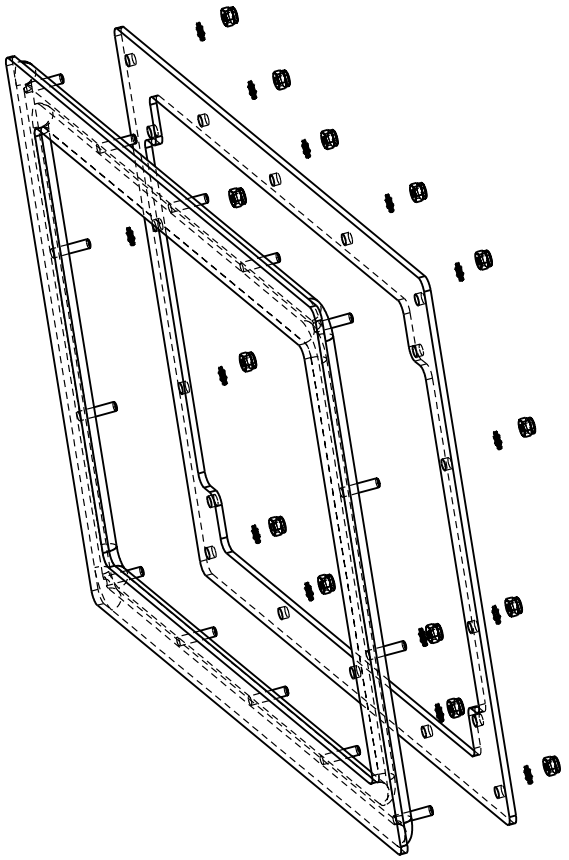


Figure 3.14 Bezel Mounting Kit

3. Mechanical Installation

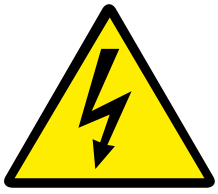
3.7 Touchpoint Pro Battery Box

Note: the following safety symbols are used on or within the Touchpoint Pro Battery Box:

Keep away from Children

No naked Flames

Warning



Warning Electric Shock

Read Instructions

Wear Eye Protection

3.7.1 Siting considerations

When choosing a location for the Touchpoint Pro Battery Box, consider the following:

- The Touchpoint Pro Battery Box is specified for operation in ambient temperatures from -20°C to +45°C. Operation of the unit outside of this temperature range invalidates the warranty and certification.
- The Touchpoint Pro Battery Box must be installed in a Pollution Degree 2 environment as defined by IEC 61010-1 (CSA-C22.2 No 61010, ANSI/ISA 61010-1(82.02.01)), i.e. an environment such as an office or control room.
- The Touchpoint Pro Battery Box is designed for permanent connection to the Touchpoint Pro System UPS for continuous operation. The maximum cable length between the Touchpoint Pro Battery Box and the Touchpoint Pro System UPS is 5 m. Wire size must be 4 mm^2.
- The Touchpoint Pro Battery Box should be installed only on a vertical surface avoiding sloping surfaces. Only use the mounting brackets supplied with the apparatus, and follow installation instructions.
- The mounting surface should be flat, and strong enough to bear the weight of the Touchpoint Pro system. Drywall / plasterboard, dry lined or timber framed type construction is not considered to be a suitable structural material, unless strengthened with additional supports or braces and/or special fixings. Take account of the contents and external cabling in addition to the weight of the unit itself.
- The Touchpoint Pro Battery Box should have a clearance of 200 mm to either side, and there should be no heat sources below or adjacent to the unit.
- Ensure access to disconnecting device (switch inside the enclosure)

3.7.2 Installation and Assembly

Due to regulations on shipping batteries, which are classified as hazardous goods, it is not possible to ship the Touchpoint Pro Battery Box as a complete assembly. It is necessary to fit the batteries into the enclosure, and fit the connecting cables supplied. For safety reasons, it is recommended that the 17 Kg batteries are installed after mounting the housing on the wall.

Caution: The batteries within the Touchpoint Pro Battery Box have a limited storage life. Please ensure that the Battery Box is connected and charged within 3 months of delivery.

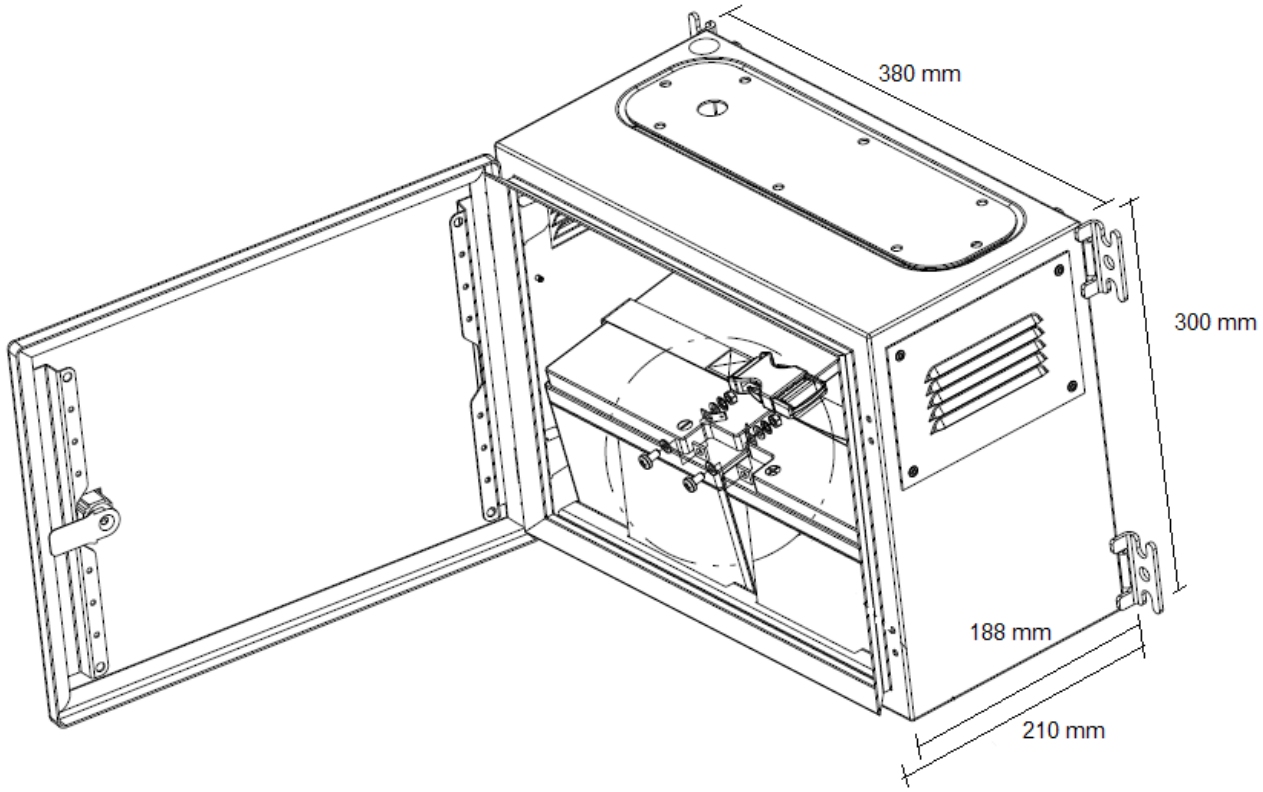
3.7.2.1 Mounting the Touchpoint Pro Battery Box to a wall

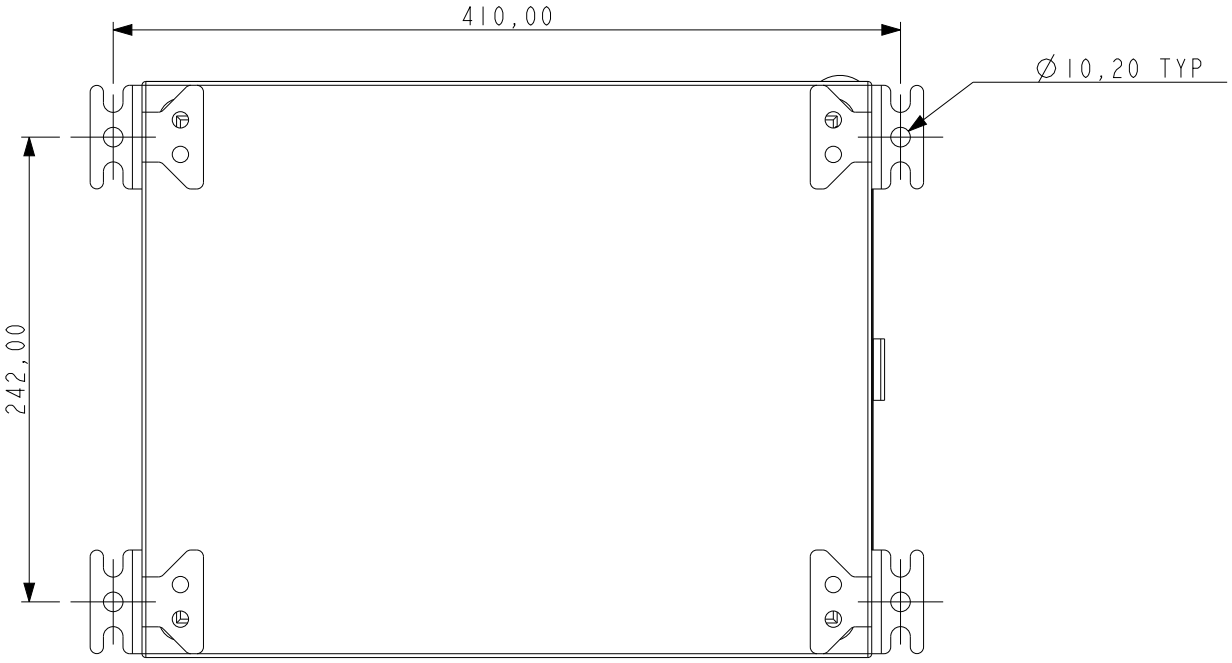
Caution: The assembled Touchpoint Pro Battery Box is heavy (>25 kg or >15 kg, single person lift is not recommended). Before lifting the enclosure, consider and implement control measures to reduce the risk of injury. Refer to local safety regulations.

3. Mechanical Installation

Caution: Do not block the vents

The dimensions of the Touchpoint Pro Battery Box and mounting points are shown below.





3. Mechanical Installation

1. Insert mounting brackets into mounting points. Tighten the M6 bolts to a torque of 6 Nm.
2. Select a suitable mounting position, taking into account the siting considerations above.
3. Mark and drill four holes corresponding to the mounting hole positions.
4. Secure the Battery Box enclosure in place. The mounting holes are 10 mm in diameter. Fixing bolts should be minimum diameter 8 mm, to a depth of minimum 50 mm.

Caution: It is the installer's responsibility to select the appropriate fixings taking into account the structure of the mounting surface and the weight of the enclosure.

3.7.3 Touchpoint Pro Battery Box Assembly

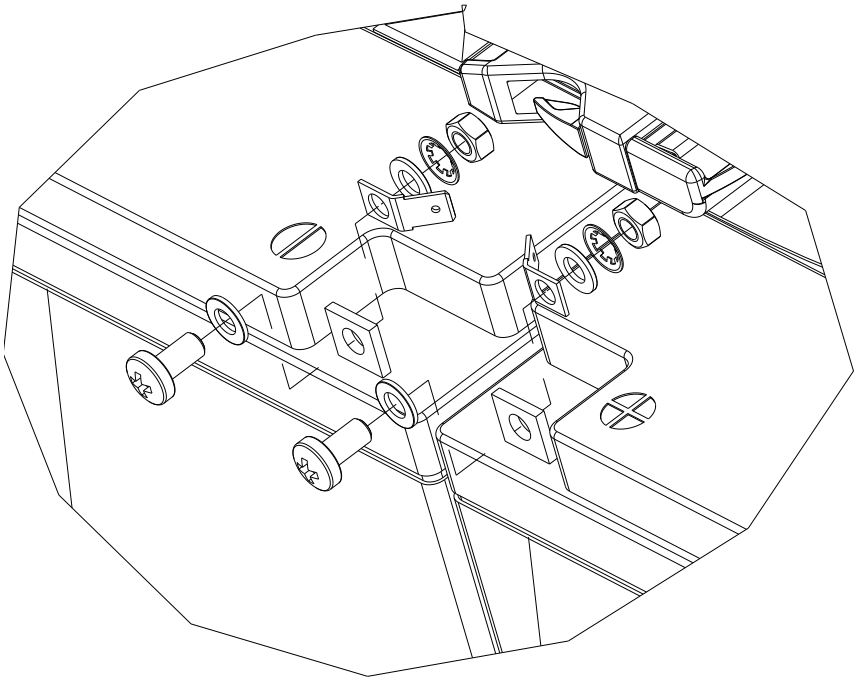
Identify all required parts as follows:

- Two batteries - 12 Ah size (small) or 27 Ah size (large)
- Connecting cable and fuse assembly
- Kit of lugs, nuts, bolts and washers (used with large batteries only)

WARNING

When handling the batteries, take great care not to connect the terminals together, e.g. by a tool such as a screwdriver.

1. For the large batteries only, fit a lug (supplied) to each battery terminal using the fixings supplied. The correct sequence for the fixings is – bolt, flat washer, battery terminal, lug, flat washer, spring washer, nut, as shown below:



2. Ensure that the securing strap supplied is open and clear of the battery seating surface

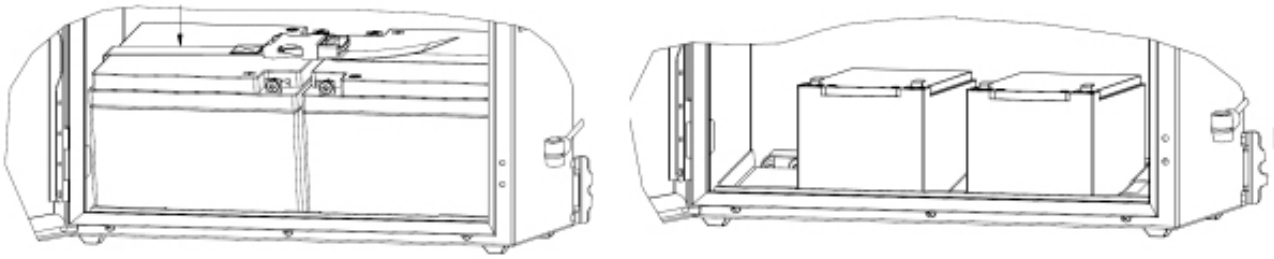
3. Mechanical Installation

3. Insert the first battery and slide to the right.

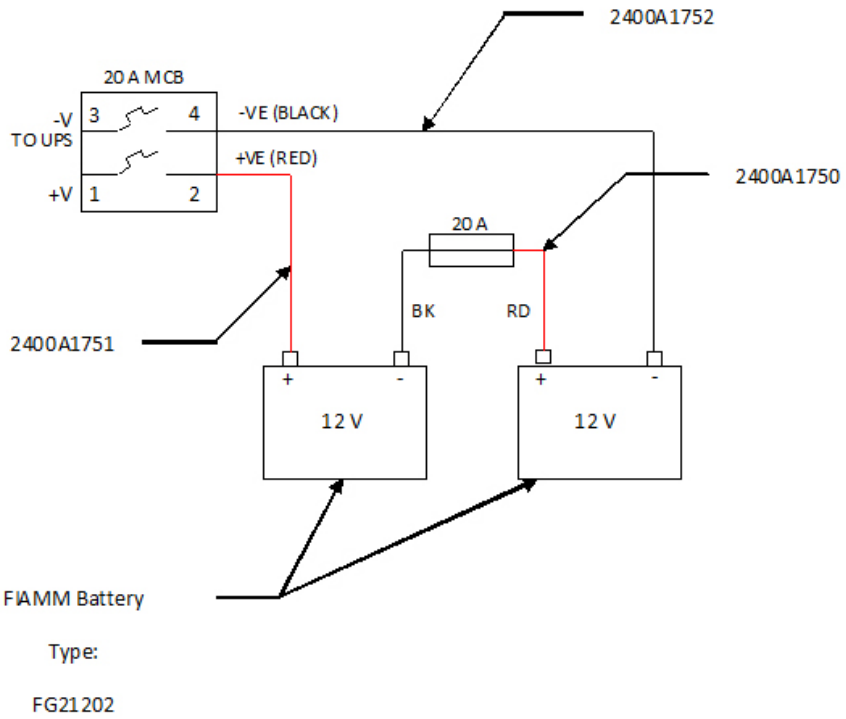
Note: The battery mounting plate is offset. Fit the right hand battery first to avoid the second battery being restricted by the enclosure.

4. Insert the second battery.

Note: Ensure that the batteries are orientated as shown in the diagram, large batteries with the terminals at the centre of the enclosure, small batteries with the terminals at the front of the enclosure.



5. Place the securing strap around the batteries, connect the buckle and pull it tight.
6. Connect the Red wire from the box terminal to the positive terminal of the left hand battery.
7. Connect the Black wire from the box terminal to the negative terminal of the right hand battery.
8. Connect the cable and fuse assembly between the remaining two battery terminals, red to positive, black to negative.



9. Identify the required cable entry points. Unscrew and remove the cable gland plate.

3. Mechanical Installation

10. Drill out the hole required for the cable entry.

Caution: Support the cable gland plate to avoid distortion.

11. Fit and lock cable glands to the cable entries. The cable glands should be appropriate to the application and capable of maintaining the IP20 rating. The cable glands must provide anchorage and stress relief for the incoming cables .
12. Re-fit the cable gland plate .
13. Feed the cable through the glands.
14. Terminate the cable in accordance with Chapter 4 Electrical Installation.
15. On completion of installation, close and lock the enclosure door.

WARNING

Unauthorised modification of the Touchpoint Pro system or components is not allowed, as this will invalidate the legal certifications and may render the system dangerous or inoperable.

3.8 Cooling and Ventilation

The following items may be supplied with your purchase. They are an integral part of the cooling and ventilation system, and they contribute to the IP rating, and should therefore not be removed. Attempting to remove them may cause irreparable damage to the housings or components.

These items should be checked for cleanliness, dust and function as part of your normal maintenance cycle. Faulty items must be replaced with an exact match item to maintain system integrity.

	Description	Part Number
	Roof Exhaust Unit	TPPR-V-1996
	Door Inlet Vent and Replaceable Filter	TPPR-V-1997
	Door Inlet Fan and Replaceable Filter 24V DC Filter Fan	TPPR-V-1999

4. Electrical Installation

WARNING

Installation must be in accordance with the recognized standards of the appropriate authority in the country concerned. Refer to local, national and company regulations.

4.1 Power Consumption

The power consumption of your system was calculated when it was ordered. Please refer to the Technical Build Sheet supplied, or the rating plate for the power consumption.

4.2 Power Supply

WARNING

All power supplies must be hard wired and must include a circuit breaker (RCD / RCCB), and (close by and unobstructed) a means of manually isolating and locking out the power supply without breaking the true earth (ground) connection.
Removable plug and socket connection is not permitted under any circumstance.

4.2.1 Mains Voltage Supply

All Touchpoint Pro power supplies require a voltage supply input with the following specification:

AC Supply	Voltage Range	85 – 264 Vac (single phase)
	Frequency	50 – 60 Hz ±6%

Note: Touchpoint Pro power supplies will accept a DC input in the range 88 – 187 Vdc. For further information please contact Honeywell Analytics

The mains supply requires an overcurrent protection rated in accordance with the rating plate on the specific system. The supply must be a fixed installation, i.e. not plug and socket. The supply must be able to be isolated by means of a switch or circuit breaker, which must be suitably located, easily reached and clearly marked as the Touchpoint Pro disconnect device. The wiring used between the isolator and Touchpoint Pro must be appropriately rated and approved.

4. Electrical Installation

4.2.2 Customer DC Voltage Supply

Caution: Any 24 Vdc supply must conform to the Input Supply Voltage specification given in Chapter 10, and must not be located inside the Touchpoint Pro wall mounted enclosure.

The voltage supply requires an overcurrent protection rated in accordance with the rating plate on the specific system.

The supply must be able to be isolated by means of a switch or circuit breaker, which must be suitably located, easily reached and clearly marked as the Touchpoint Pro disconnect device.

The wiring used between the isolator and Touchpoint Pro must be appropriately rated and approved.

Ensure that the power supply is able to maintain sufficient voltage level for the connected field devices.

4.2.3 Power Supply Information

Touchpoint Pro power supplies can be adjusted to output between 24 Vdc and 28 Vdc (default 24 Vdc).

Touchpoint Pro power supplies include a DC OK relay, which is closed when the output voltage reaches the adjusted output voltage level, and opens when the output voltage dips more than 10% below the adjusted output voltage level.

The DC OK Relay has a maximum rating of 60 Vdc 0.3 A, 30 Vdc 1 A or 30 Vac 0.5 A resistive load and a minimum permissible load of 1 mA at 5 Vdc.

Note: If the UPS Module with battery backup option is being used, ensure that the power supply is adjusted to at least 26 Vdc to ensure sufficient charging of the battery.

Note: If the Power Redundancy Module is being used, ensure that both power supplies are set to the same output voltage.

4.3 Cabling Requirements

WARNING

All cabling must be appropriately rated and approved in accordance with local, national and company regulations. Additionally, cabling must satisfy requirements defined in the manuals of connected field devices, in particular if the field device is certified for use in a hazardous location.

All cabling should meet local, national and site regulations, and be suitable for the operating environment. Cable should be appropriately rated and approved. Bootlace ferrules must be used on all terminations.

4. Electrical Installation

4.3.1 Ring Network

The external ring network cabling should be shielded twisted pair cable. The terminals will accept a maximum wire size of 1.5 mm^2.

4.3.2 Field devices

Field device cabling should be appropriate to the area classification, and in accordance with the device manufacturer's recommendations. Refer to local and national regulations where appropriate, and the field device manual. All sensor field cables must be screened in order to ensure correct operation of the system and to meet European Standards for RFI and EMC.

Ensure that the maximum loop resistance is not exceeded, as specified by the device manufacturer

Take account of voltage drops due to line resistance to ensure that the correct voltage level is present at the field device, as specified by the device manufacturer.

The I/O modules will accept wire sizes to a maximum of 2.5 mm^2.

4.3.3 AC Mains Voltage supply

Use approved supply wiring rated in accordance with the rating plate on the specific system, in accordance with local and national regulations. The Touchpoint Pro power supplies will accept wire sizes in the range 0.5 - 6 mm^2 (solid wire), 0.5 - 4 mm^2 (stranded wire) or 20 - 10 AWG.

4.3.4 Bus interfaces

Please refer to the appropriate appendix.

4.3.5 Ethernet

Ethernet cable must be CAT5e or CAT6 Ethernet cable terminated to TIA/EIA-568B standard. The cable should have shielded RJ45 plugs with the shield of the cable connected to the metal body (shield) of the connector plug. The cable length should not exceed 100 m. The Ethernet cable should be fitted through a gland.

4.3.6 Touchpoint Pro Battery Box

The cable between the Touchpoint Pro System UPS and the Touchpoint Pro Battery Box must be 4 mm^2, UL/CSA approved wiring material, tri-rated (105 °C). The maximum cable length between the Battery Box and the UPS is 5 m. Bootlace ferrules must be used on all terminations.

4. Electrical Installation

4.4 Cabling Requirements – Additional information for assembly by system integrators

4.4.1 24 Vdc Power - Controller

For the 24 Vdc power cabling the following power cabling specification is required:

- 2-wire cable
- Diameter appropriate to the current load (TB1 on the Control Module will accept a maximum wire size of 1.5 mm². The power connector to the DIN rail will accept a maximum wire size of 6 mm²)
- Shielded

4.4.2 Internal network connections

Please refer to the Ring Network cable recommendations given above.

4.5 Ring Network Distance Restrictions

The total round trip distance of the Touchpoint Pro network must not exceed 3 km (1.86 miles). The distance between individual Touchpoint Pro units (e.g. between a Controller and a Remote Unit) must not exceed 1 km (0.62 miles).

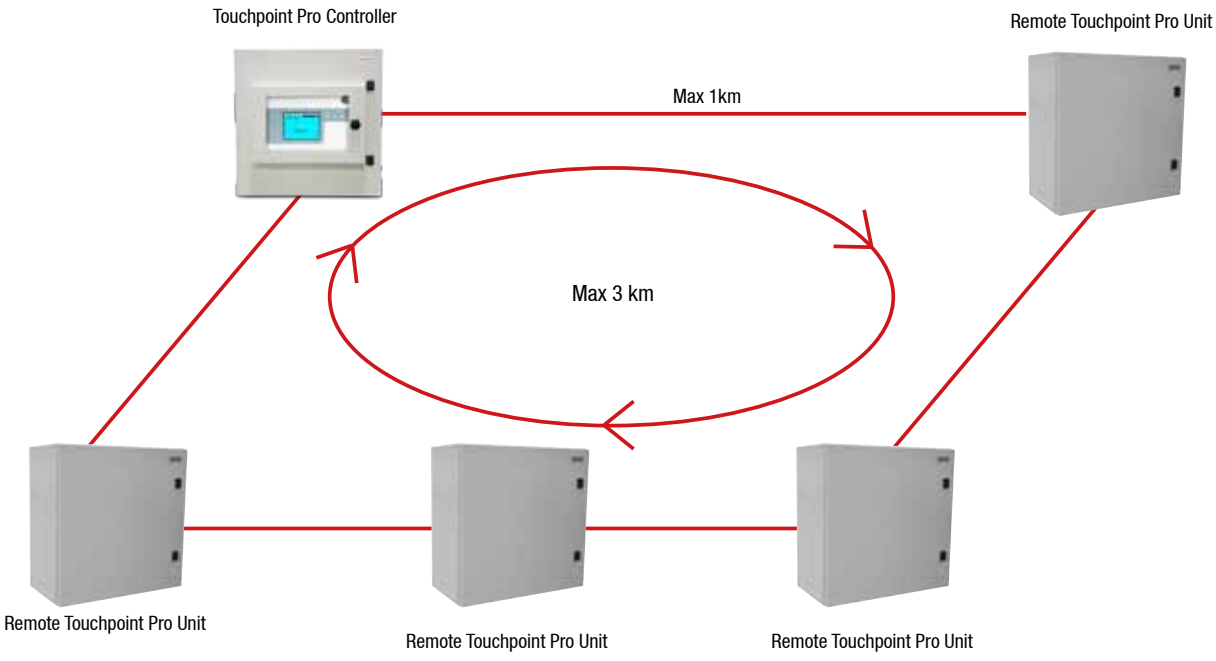


Figure 4.1 Max allowed cable distances

4. Electrical Installation

4.6 Earthing

Note: Earthing is known as Grounding in some countries.

WARNING

All Touchpoint Pro equipment must be earthed using the earth terminals provided.

Earth loops must be avoided.

Touchpoint Pro must be connected to protective earth. Connect protective earth (usually mains earth) to the earth stud marked with the primary earth symbol . Do not remove any factory fitted earth connections.

Location of primary earth connection point:

- Standard enclosure – lower left corner
- Rack mount unit – reverse side, lower left corner

The screen of the Ring Network cable and the screens of field device cables should be connected to earth at the controller, preferably to a clean instrument earth.

The Wall mount enclosures contain a pre-fitted screen bar for earthing the field cables.A suitable termination is provided for the ring cables and earth terminals for all others.

It is recommended that an earth screen bar be installed in the Touchpoint Pro enclosure / rack to connect the field and network cable screens.

If armoured or steel wire braided cable is used for field devices, and earthed in the field, it is recommended that isolating cable glands are used at Touchpoint Pro to avoid earth loops.

The diagrams below show some examples of good earthing and screening practice:

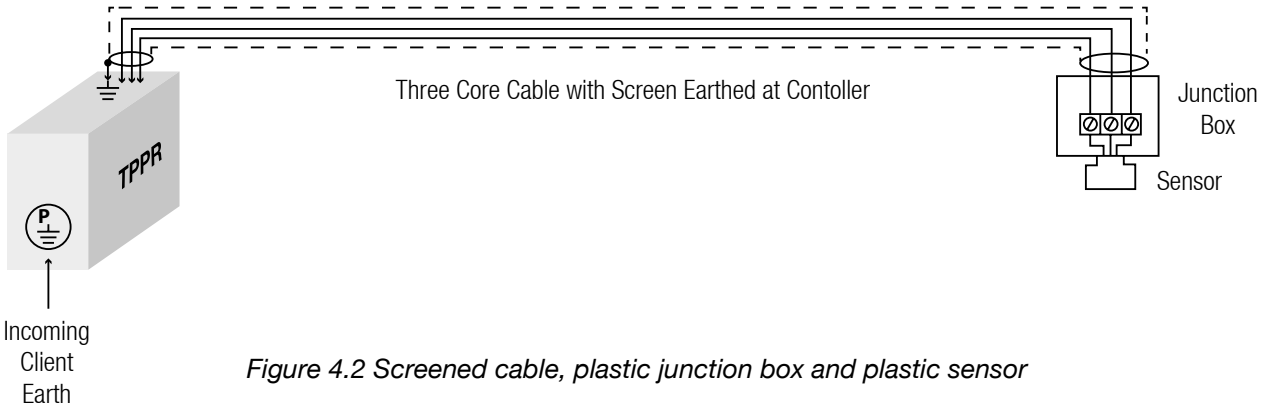


Figure 4.2 Screened cable, plastic junction box and plastic sensor

4. Electrical Installation

- Instrument Earth is preferred to connect the cable screen
- Risk is that screen is connected at both ends = earth loops

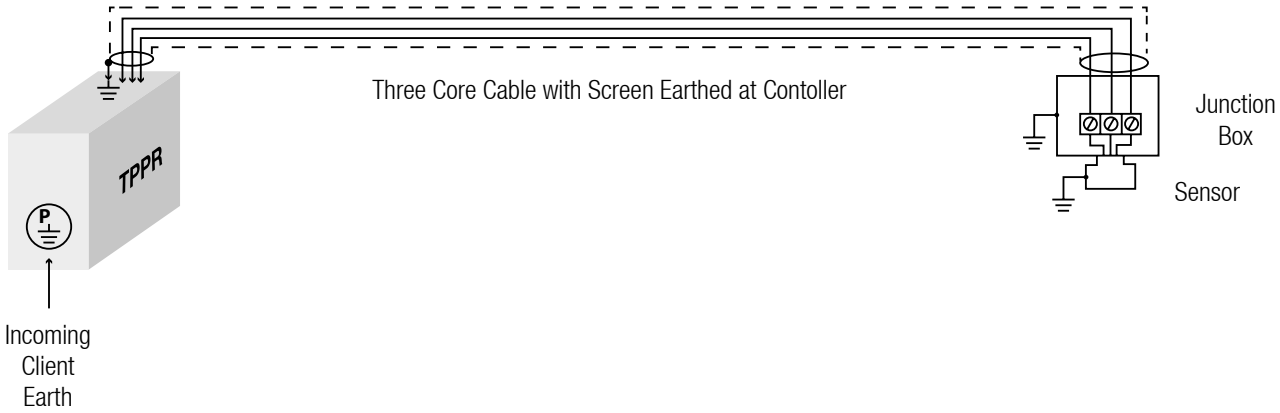


Figure 4.3 Screened cable, metal junction box and/or sensor

- Instrument Earth is preferred to connect the cable screen
- Care must be taken to isolate the screen at the junction box, e.g. terminate it in a spare terminal
- The metal sensor / junction box must be connected to Protective Earth
- Risk is that screen is connected at both ends = earth loops

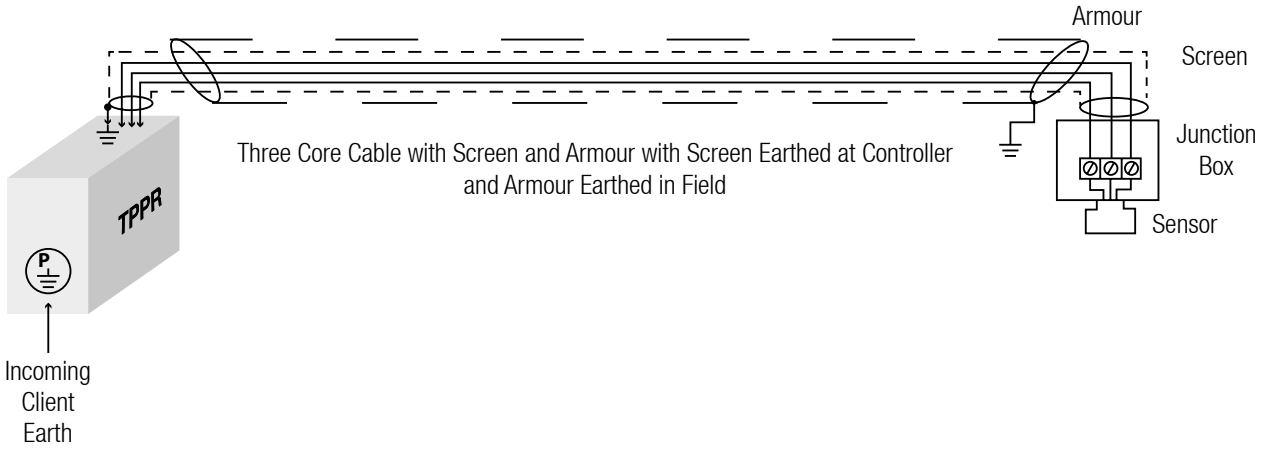


Figure 4.4 Screened cable with armour (wire or braid) with plastic junction box and plastic sensor

- The armour must be connected to Protective Earth and the screen should be connected to Instrument Earth
- The armour would typically be connected through a metal cable gland, therefore an isolating gland should be used at the Touchpoint Pro to avoid the armour being connected at both ends

4. Electrical Installation

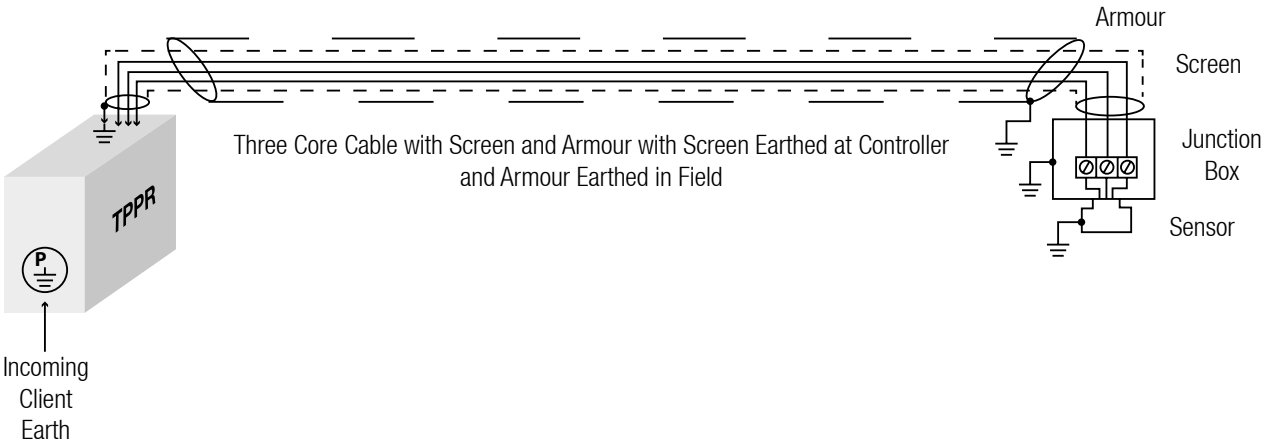


Figure 4.5 Screened cable with armour (wire or braid) with metal junction box and/or sensor

- The armour must be connected to Protective Earth and the screen should be connected to Instrument Earth
- The metal sensor/junction box must be connected to Protective Earth
- The armour would typically be connected through a metal cable gland to a metal JB or controller enclosure, therefore isolating glands must be used at the Touchpoint Pro to avoid the armour being connected at both ends

4.7 EMC / RFI Considerations

For installations in Europe, all electrical equipment connected to the system should comply with the EMC Directive 2004/108/EC. For non-European installations, electrical equipment connected to the system should comply with applicable national or international EMC standards.

All external and field cables connected to the Touchpoint Pro system must be screened in order to ensure correct operation of the system and to meet European Standards for RFI and EMC. The cable screen should be properly terminated to earth at one end only (the Touchpoint Pro side) to avoid earth loops.

All screens should be terminated at the instrument earth bar provided in the enclosure.

External cabling associated with the Touchpoint Pro system should be isolated from other equipment cabling, in particular any high voltage or high current cabling.

4. Electrical Installation

4.8 Electrical Connections

4.8.1 Touchpoint Pro Power Supplies

Caution - TPPR power supplies are supplied already wired. Do not modify any factory fitted cabling

4.8.1.1 120 W DC 24 V Power Supply Unit

Note: The power supply units are equipped with spring-clamp terminals.

Figure 4.6 120 W PSU

Label	Purpose
N	AC Supply Neutral
L	AC Supply Line
⏚	Earth

Label	Purpose
+	DC Output +V
+	DC Output +V
-	DC Output -V
-	DC Output -V
DC OK	Relay Contact
DC OK	Relay Contact

4. Electrical Installation

4.8.1.2 240 W DC 24 V Power Supply Unit

Note: The power supply units are equipped with spring-clamp terminals.

Figure 4.7 240 W PSU

Label	Purpose
N	AC Supply Neutral
L	AC Supply Line
⏚	Earth

Label	Purpose
+	DC Output +V
+	DC Output +V
-	DC Output -V
-	DC Output -V
DC OK	Relay Contact
DC OK	Relay Contact

4. Electrical Installation

4.8.1.3 480 W DC 24 V Power Supply Unit

Note: The power supply units are equipped with spring-clamp terminals.

Figure 4.8 480 W PSU

Label	Purpose
N	AC Supply Neutral
L	AC Supply Line
⏚	Earth

Label	Purpose
+	DC Output +V
+	DC Output +V
-	DC Output -V
-	DC Output -V
DC OK	Relay Contact
DC OK	Relay Contact

4. Electrical Installation

4.8.2 Power Redundancy Module

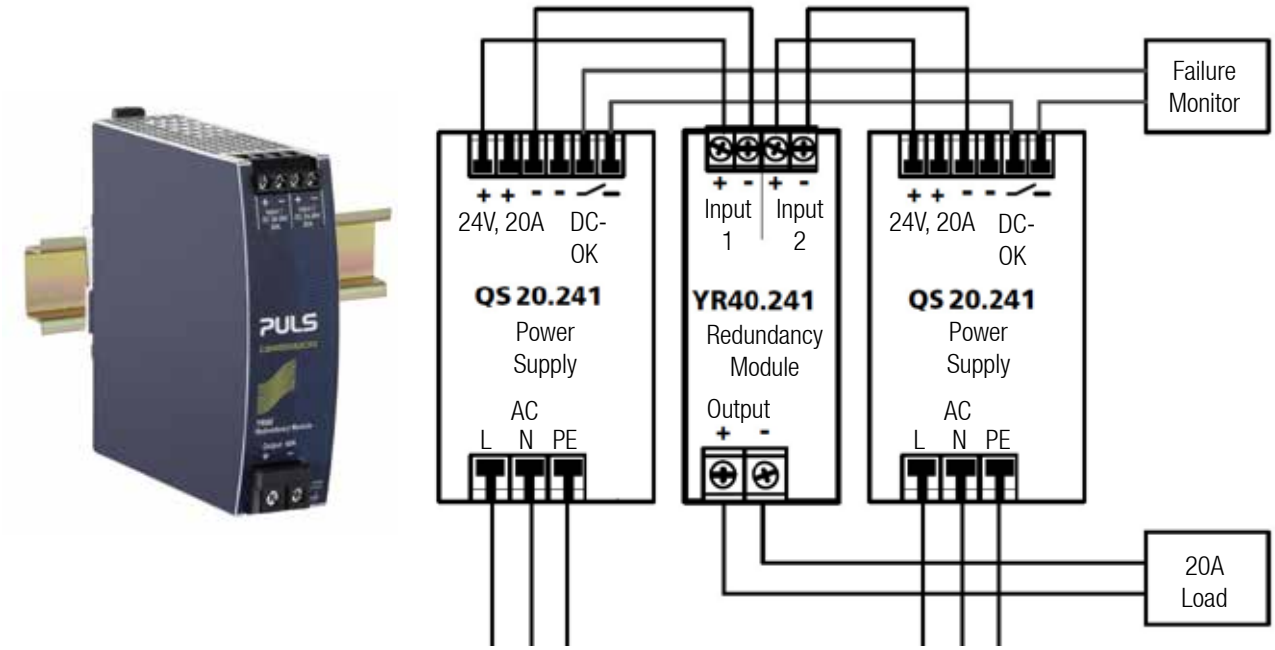


Figure 4.9 Power Redundancy Module

Label	Purpose
Input 1 +	DC Supply 1 +V
Input 1 -	DC Supply 1 -V
Input 2 +	DC Supply 2 +V
Input 2 -	DC Supply 2 -V
Output +	DC Output +V
Output -	DC Output -V

4. Electrical Installation

4.8.3 DC-UPS and Battery Box

The DC-UPS connections are as follows:

Terminal Identification	Label	Purpose
Input DC 24 V	+	DC Supply +V
	-	DC Supply -V
	-	DC Supply -V (spare)
Output DC 24 V 20 A	+	+V Supply to Touchpoint Pro system
	-	-V Supply to Touchpoint Pro system
Battery	+	Battery +
	-	Battery -

The UPS is equipped with status relays as follows:

Terminal Identification	Label	Purpose
1	Ready	Contact is closed when both batteries are charged, all OK
2		
3	Buffering	Contact is closed when UPS has switched to battery power
4		
5	Replace Battery	Contact is closed when a battery quality fault is detected
6		
7	Inhibit	DO NOT USE
8		

4. Electrical Installation

The UPS is shipped with the following default settings. Before making connections, confirm that the settings are as follows:

1. Buffer time limiter switch is set to “infinity” position

2. Buffer voltage switch is set to 24V

3. Battery size switch (on the side of the UPS) is set to >10 Ah

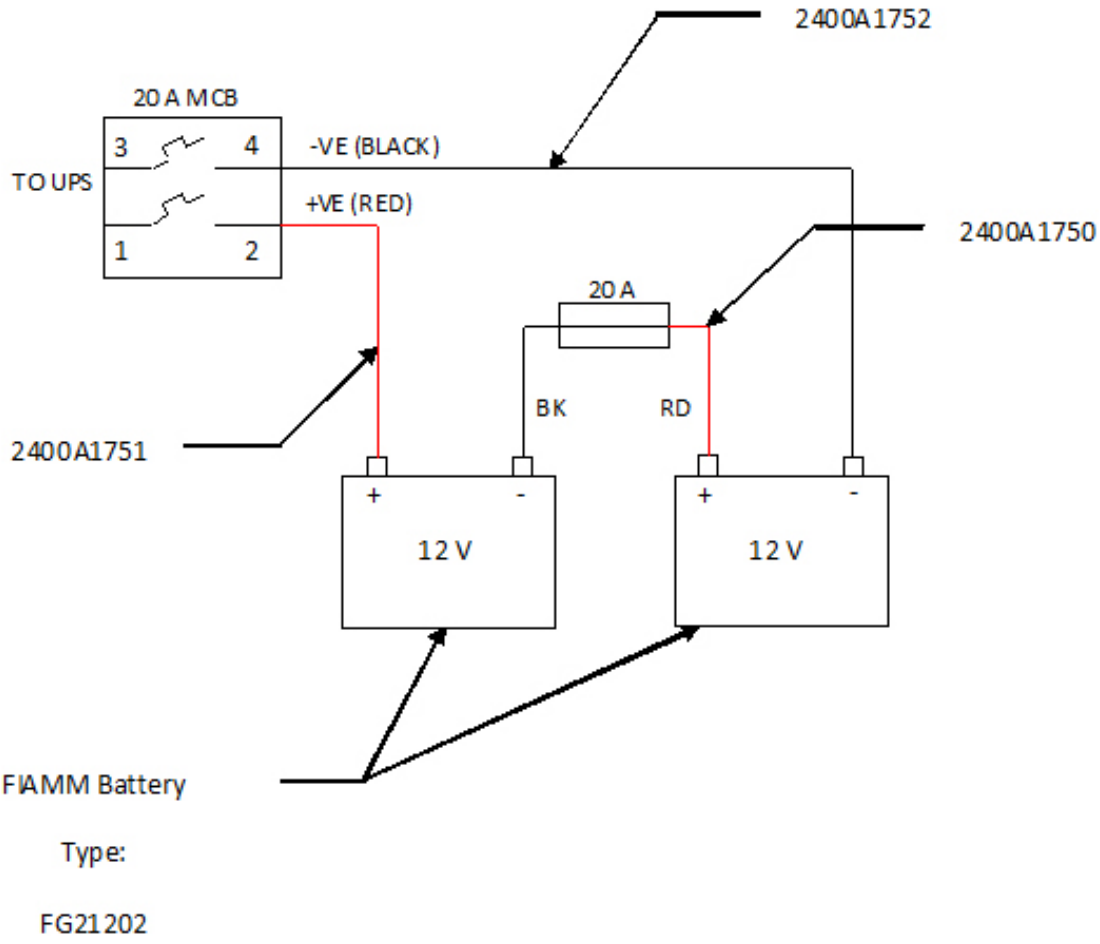
Note: If the UPS Module with battery backup option is being used, ensure that the power supply output voltage is adjusted to at least 26 Vdc to ensure sufficient charging of the battery. To adjust the voltage, locate the potentiometer labelled 24-28 Vdc on the front of the power supply, and adjust it using a cross headed screwdriver.

WARNING

When handling the batteries, take great care not to connect the terminals together, e.g. by a tool such as a screwdriver.

Note: The maximum cable length between the Touchpoint Pro Battery Box and the Touchpoint Pro System UPS is 5 m. Wire size must be 4 mm².

1. Confirm that the batteries are connected as shown below:



4. Electrical Installation

2. Before making connections, ensure that the isolator switch is in the OFF (down) position

3. Connect the incoming cable from the UPS as follows:

UPS	Battery Box	
Terminal Identification	Terminal Identification	Purpose
Battery +	1	DC Voltage +
Battery -	3	DC Voltage -

Note: The isolator is designed to be located in the centre of the DIN rail, do not move it from this location.

4. Connect the Touchpoint Pro Battery box to protective earth. An earth stud (M8) is provided for this purpose. Refer to local or national codes of practice for equipotential bonding. Honeywell Analytics recommends a minimum wire size of 6 mm^2 (10 AWG).

4.8.4 Analogue Input Module 4-20 mA

Note: The Analogue Input Module mA operates in current sink mode only.

Note: Channel wiring is from left to right for terminals on the top and bottom of the module. It is not possible to move a plug from top to bottom of a module after wiring.
Please ensure correct wiring by system verification tests. See Commissioning, First Time Switch On, and Maintenance, Testing the Touchpoint Pro System

The Analogue Input Module mA (AIM mA) accepts 4-20 mA current source signals from field devices (the module operates in current sink mode only).

The module can supply 18-32 Vdc (24 Vdc nominal) to the field devices at a maximum current of 1 A per channel, with the additional limitation that the total current drawn from the module must not exceed 2 A at 65 °C ambient or 4 A at 55 °C ambient.

Terminal Identification	Label	Channel	Field device
1	+V	Input 1	+24 Vdc
2	SIG		4 - 20 mA signal
3	-V		0 Vdc
4	+V	Input 2	+24 Vdc
5	SIG		4 - 20 mA signal
6	-V		0 Vdc
7	+V	Input 3	+24 Vdc
8	SIG		4 - 20 mA signal
9	-V		0 Vdc
10	+V	Input 4	+24 Vdc
11	SIG		4 - 20 mA signal
12	-V		0 V dc

4. Electrical Installation

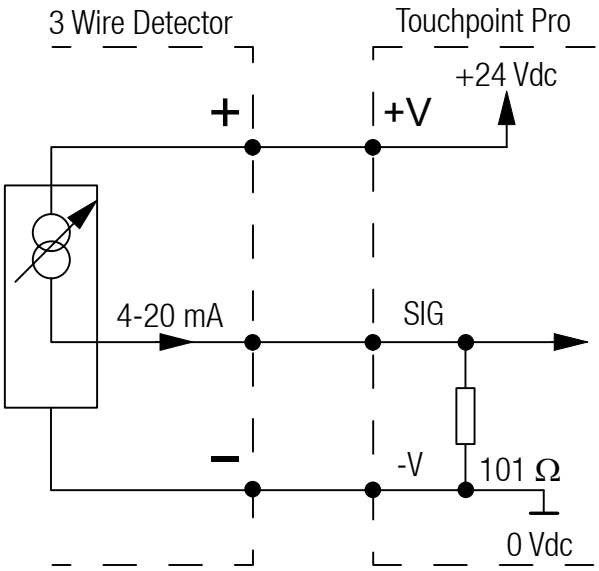


Figure 4.10 Three wire device

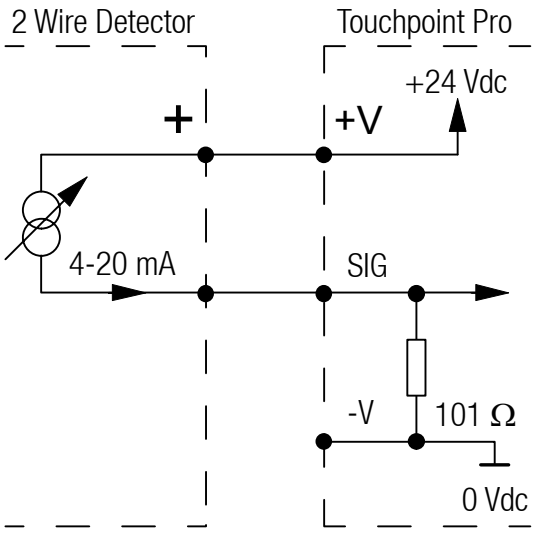


Figure 4.11 Two wire loop powered device

4. Electrical Installation

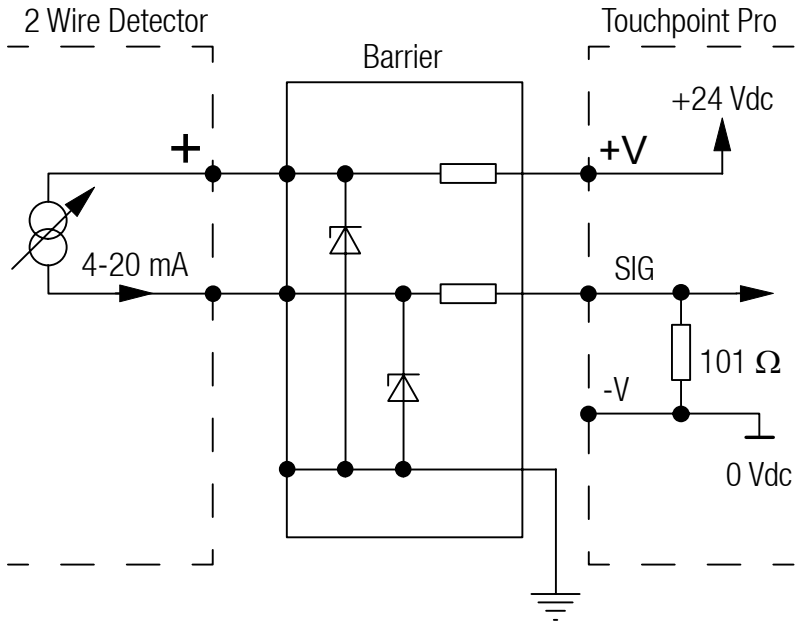


Figure 4.12 Two wire device with a barrier

Note: For intrinsically safe (I.S.) field devices, please refer to the device manufacturer's instructions for details of suitable approved I.S. barriers and interconnections.

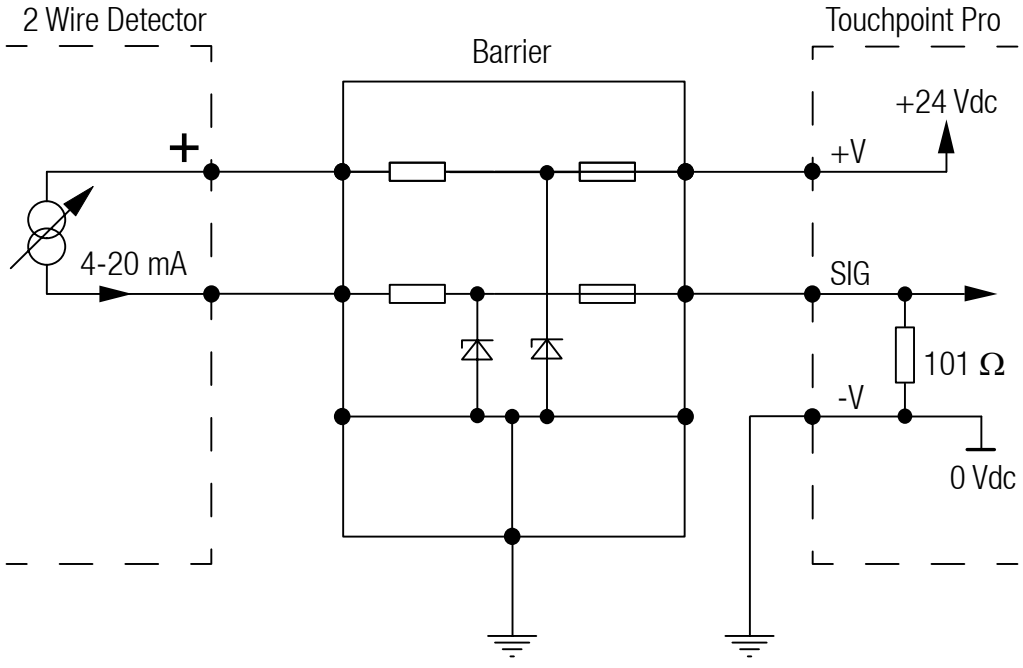


Figure 4.13 Two wire device with a barrier

4. Electrical Installation

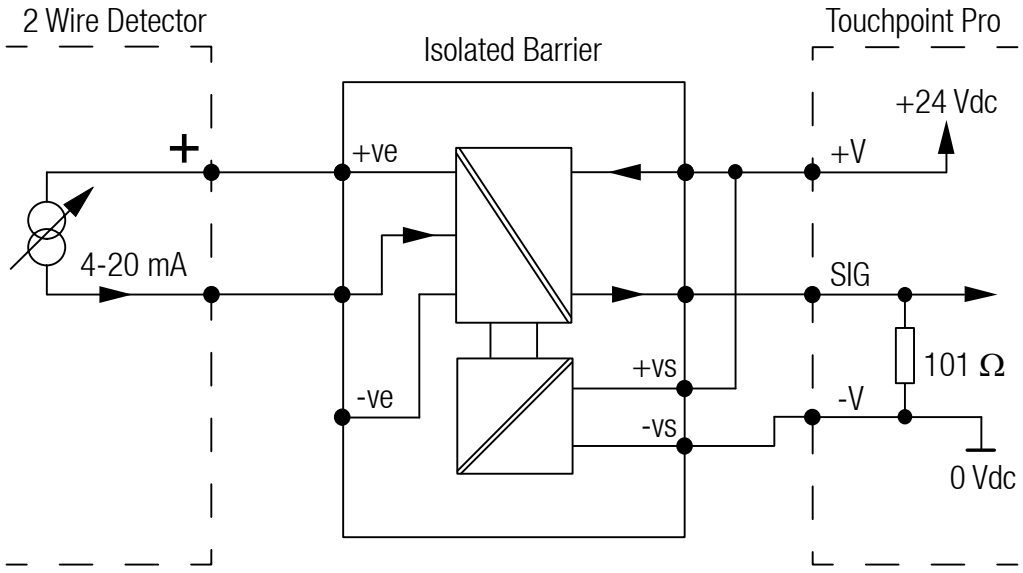


Figure 4.14 Two wire device with a isolated barrier

4.8.5 Analogue Input Module mV Bridge

Note: Channel wiring is from left to right for terminals on the top and bottom of the module. It is not possible to move a plug from top to bottom of a module after wiring.
Please ensure correct wiring by system verification tests. See Commissioning, First Time Switch On, and Maintenance, Testing the Touchpoint Pro System

Terminal Identification	Label	Channel	Field device
1	S	Input 1	Sensitive (+)
2	01		Signal
3	NS		Non-sensitive (-)
4	S	Input 2	Sensitive (+)
5	01		Signal
6	NS		Non-sensitive (-)
7	S	Input 3	Sensitive (+)
8	01		Signal
9	NS		Non-sensitive (-)
10	S	Input 4	Sensitive (+)
11	01		Signal
12	NS		Non-sensitive (-)

4. Electrical Installation

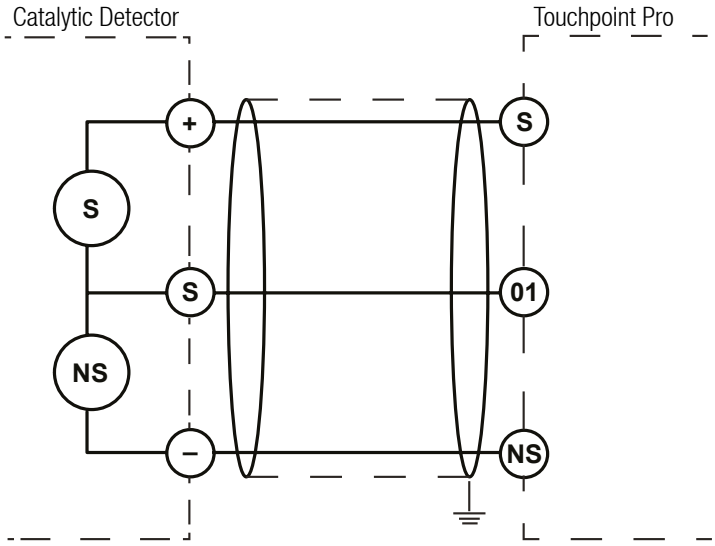


Figure 4.15 Catalytic detector

4.8.6 Digital Input Module

Note: Channel wiring is from left to right for terminals on the top and bottom of the module. It is not possible to move a plug from top to bottom of a module after wiring.
Please ensure correct wiring by system verification tests. See Commissioning, First Time Switch On, and Maintenance, Testing the Touchpoint Pro System.

DIMs have two modes of operation. A DIM channel may be configured to generate an alarm, fault or warning signal when activated.

Alternatively, a DIM channel may be configured to provide remote control of a selected group of one or more input / output channels. The DIM may be used to remotely reset, inhibit, or acknowledge the selected channels. When used for inhibit, repeated activation toggles the inhibit state of the selected channels.

Terminal Identification	Label	Channel
1	+	Input 1
2		
3	-	
4	+	Input 2
5		
6	-	
7	+	Input 3
8		
9	-	
10	+	Input 4
11		
12	-	

4. Electrical Installation

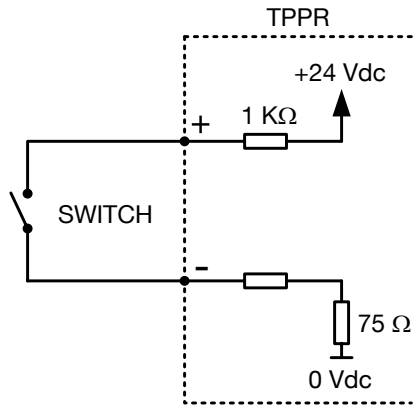


Figure 4.16 Unsupervised configuration

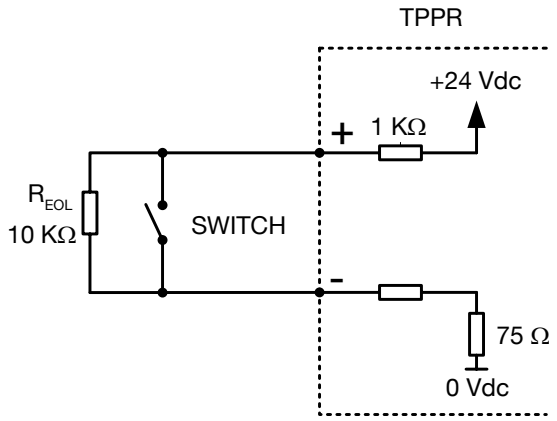


Figure 4.17 Supervised for open circuit configuration

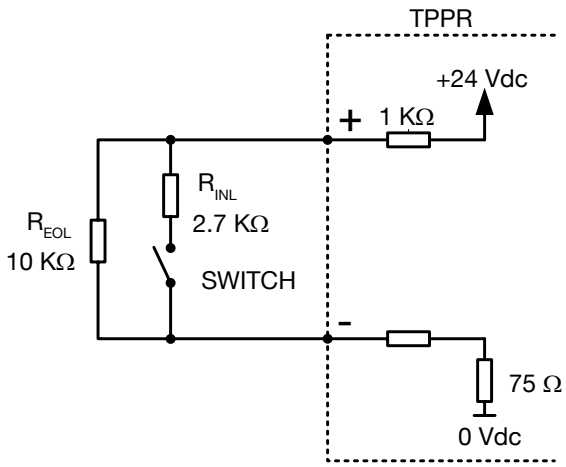


Figure 4.18 Supervised for open and short circuit configuration

4.8.7 Relay Output Module

Note: Channel wiring is from left to right for terminals on the top and bottom of the module. It is not possible to move a plug from top to bottom of a module after wiring.
Please ensure correct wiring by system verification tests. See Commissioning, First Time Switch On, and Maintenance, Testing the Touchpoint Pro System

The Relay Output Module (ROM) provides relay outputs to switch field devices such as sounders, beacons and actuators. In addition, an auxiliary voltage supply is available to provide power to such devices.

The relay contacts have a recommended range of application ≥ 12 Vdc, 10 mA. The maximum contact current rating is 5 A per channel, with the additional limitation that the maximum contact current rating for the module is 8 A. An overcurrent protection device should be fitted to prevent higher current flowing through the relay contacts.

4. Electrical Installation

The auxiliary voltage supply can provide 18-32 Vdc (24 Vdc nominal) to the field devices at a maximum current of 1.5 A per channel, with the additional limitation that the total current drawn from the module must not exceed 1.5 A. The supply is short circuit protected – if a short circuit is detected the supply to all four channels will be disconnected to prevent damage to the module. If the cause of the short circuit is removed, the auxiliary voltage supply will be restored automatically.

Terminal Identification	Label	Channel
1	NO	Relay 1
2	NC	
3	C	
4	NO	Relay 2
5	NC	
6	C	
7	NO	Relay 3
8	NC	
9	C	
10	NO	Relay 4
11	NC	
12	C	
13		V Aux 1
14	+V	
15	-V	
16		V Aux 2
17	+V	
18	-V	
19		V Aux 3
20	+V	
21	-V	
22		V Aux 4
23	+V	
24	-V	

Note: Relay contacts are shown in the shelf state (not powered)

4. Electrical Installation

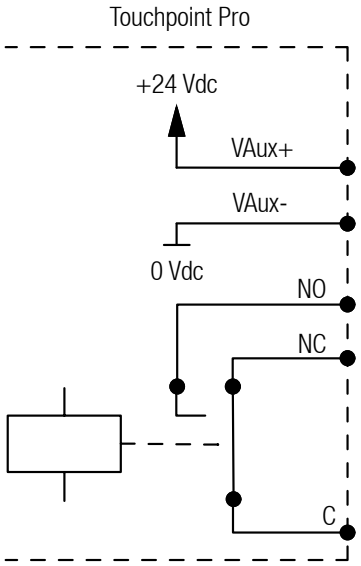


Figure 4.19 ROM connection

4.8.8 Ring Coupling Module

Terminal Identification	Label	Channel
1	+	Ring A In
2	Drain	
3	-	
4	+	Ring B Out
5	Drain	
6	-	
7	+	Ring B in
8	Drain	
9	-	
10	+	Ring A Out
11	Drain	
12	-	

The ring cable must have the drain wire terminated at the Ring Coupling Module and Control Module drain terminals. The ring screen must be connected to the instrument bar at the Ring A Out and Ring B In side of the cable with the clamps provided.

4. Electrical Installation

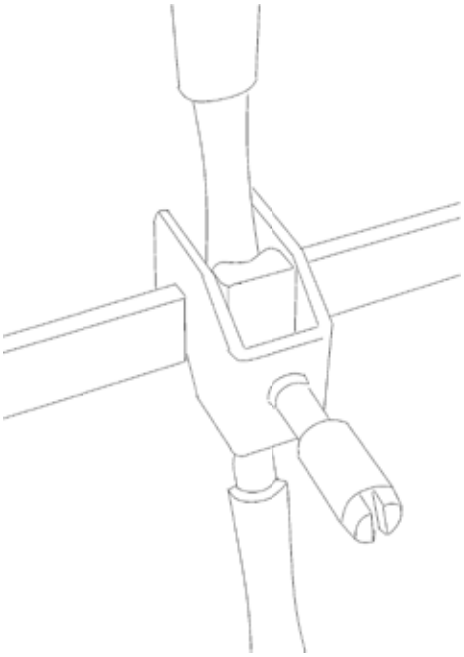


Figure 4.20 Ring screen clamp

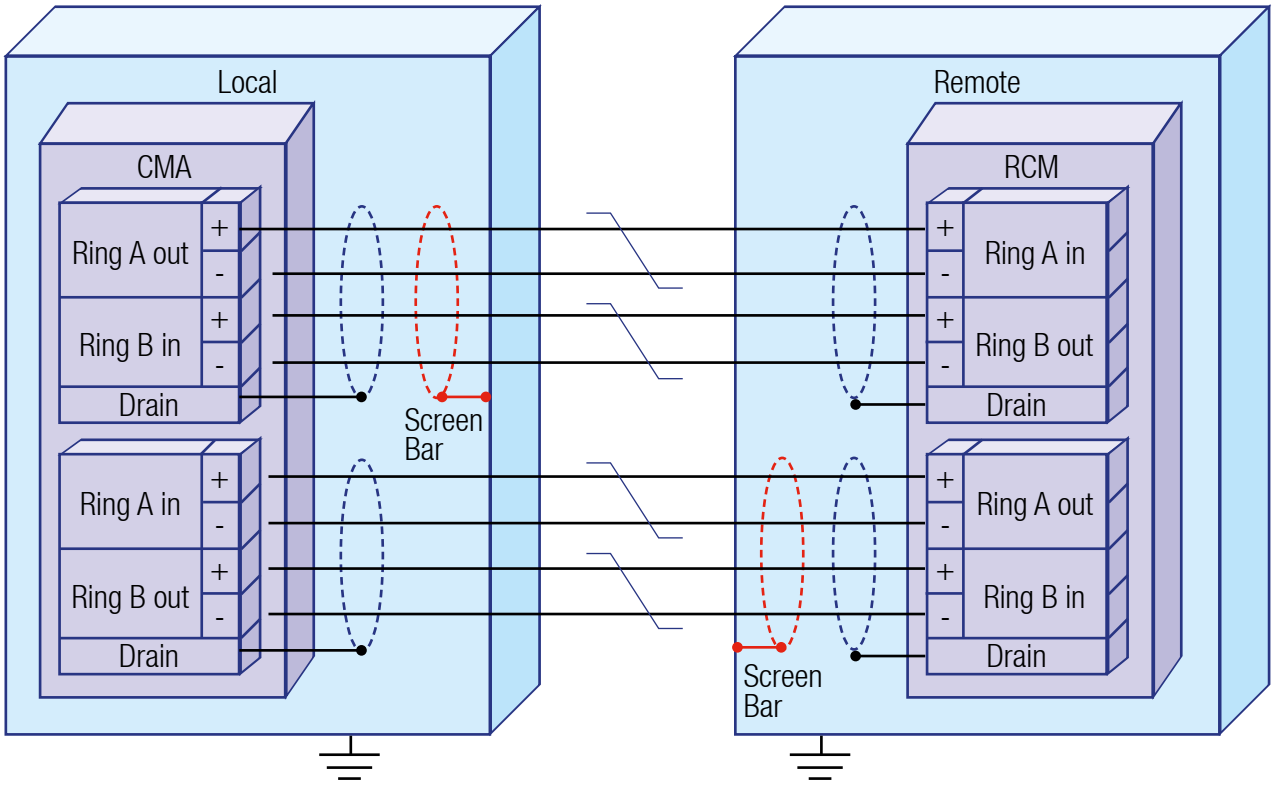


Figure 4.21 Ring Network connections and screen earthing

4. Electrical Installation

4.8.9 System State Relays

The System State Relay connections are found at TB4 and TB5 on the Control Module. They are rated at 30 Vdc 3 A or 250 Vac 3 A.

Caution: If the System State Relays are being used to switch AC voltages, an overcurrent protection device must be included

Caution: Isolate all incoming supplies before making connections to the System State Relays

Note: It may be necessary to remove the Control Module Cover to make connections to the Control Module. Do not remove any factory fitted earth cabling

Terminal	System Failure Relay	System Fault Relay
	TB4	TB5
1	SIS_Fail_COM	SIS_Fault_COM
2	SIS_Fail_NO	SIS_Fault_NO
3	Screen_TB4	Screen_TB5

4.8.10 Power Supply Unit Status Inputs

The Power Supply Units Status Input connections can be found at TB8 and TB9 on the Control Module. The PSU Status Inputs are Digital Input channels available for PSU monitoring. Alternatively, they can be configured to be used as Global Acknowledge, Global Reset or Global Inhibit.

Note: It may be necessary to remove the Control Module Cover to make connections to the Control Module. Do not remove any factory fitted earth cabling.

Terminal	System Failure Relay	System Fault Relay
	TB8	TB9
1	PSU1_Stat 1	PSU3_Stat 1
2	PSU1_Stat 2	PSU3_Stat 2
3	PSU2_Stat 1	PSU4_Stat 1
4	PSU2_Stat 2	PSU4_Stat 2
5	Screen_TB8	Screen_TB9

4. Electrical Installation

The PSU Status Inputs are supplied with the following configuration.

PSU Status Input	Function
1	PSU – DC OK
2	UPS – BAT RDY
3	UPS – BAT RPL
4	Temperature Sensor (Forced Ventilation Only)

If the UPS or the forced ventilation options are not being used, those inputs can be configured by the user to act as Global Acknowledge, Global Reset or Global Inhibit.

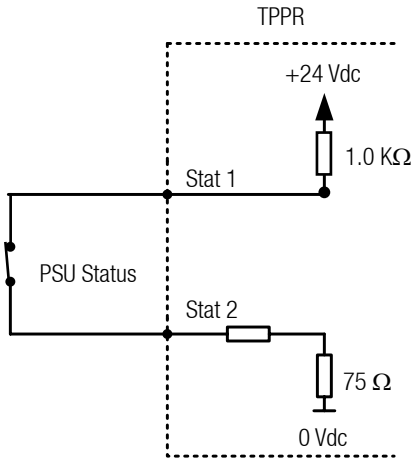


Figure 4.21 PSU Status Input

5. User Interface

5.1 General

System interfaces consist of:

- Interface software with three ways to access
  - Touchscreen for normal system operation, maintenance and configuration
  - Licensed Web Server for remote access to view normal system operation
  - Licensed PC Configuration Software (optional) for convenient system configuration
- Accept and reset buttons on the front panel of the Touchpoint Pro Controller
- Power, Alarm, Fault and Inhibit LEDs on the front panel of the Touchpoint Pro Controller
- Buzzer on the Touchpoint Pro Controller

Further Interfaces consist of:

- Two master relays, System Failure and System Fault
- Connections for SD Card and USB memory device
- 10/100 Mbps Ethernet connection
- Optional digital bus interface

The interface software has two distinct modes of operation – Configuration Mode and Visualisation Mode,

Within each mode, access to certain functions is restricted by the use of password protected access levels. There are four hierarchical access levels - View is available to all users while Operator, Maintenance Engineer and Administrator are password protected. Each user can be assigned one access level.

Access to certain functions is also restricted via the Web Server for safety reasons.

5.2 Access Levels

The table below details the access levels for the User Interface. The highest level of password protected access is Administrator, then Maintenance Engineer, then Operator. Broadly speaking, the Administrator can commission modules and configure channels, the Maintenance Engineer can edit channel configuration and do calibration, and the Operator can interact with the system during normal day-to-day operation such as acknowledging and resetting events. The table also shows which functions are not available via the Web Server for safety reasons (for example, Calibration).

Touchpoint Pro is supplied with a default Administrator level account. For security reasons this will be attached to the system touchscreen. When the system is configured, at least one new Administrator account should be created. The default Administrator should then log out and then log back in as the new Administrator, and should then delete the default Administrator account to prevent unauthorized access. The Administrator can create other users with Administrator level access or lower and the Maintenance

5. User Interface

Engineer can create users with Engineer level access or lower.

Caution: Forgotten or deleted passwords cannot be recovered. It is therefore advisable to have two Administrators so that one can replace the passwords of any other users.

Note: Only Administrators can end another user's active session, even if it has timed out.

Note: The user login times out after 20 minutes of inactivity.

Screen Name	Web	Administrator	Maintenance Engineer	Operator	View
System Status					
Active Events		Y	Y	Y	Y
Inputs		Y	Y	Y	Y
Outputs		Y	Y	Y	Y
Input Detail		Y	Y	Y	Y
Trend		Y	Y	Y	Y
Trend Configuration					
Security		Y	Y	Y	Y
Calibration	No	Y	Y	N	N
Span Adjust	No	Y	Y	N	N
Zero Adjust	No	Y	Y	N	N
Extras		Y	Y	Y	Y
Event History		Y	Y	Y	Y
SD Card		Y	Y	Y	Y
Help		Y	Y	Y	Y
Service Contact		Y	Y	Y	Y
About		Y	Y	Y	Y
Report		Y	Y	Y	Y
Diagnostics	No	Y	Y	N	N
Screen Name	**Web**	**Administrator**	**Maintenance Engineer**	**Operator**	**View**
Global Settings	No	Y	Y	N	N
Service Contact Settings	No	Y	Y	N	N
TCP/IP Settings	No	Y	Y	N	N
Modbus Settings	No	Y	Y	N	N
Panel Configuration	No	Y	Y	N	N
Regional Settings	No	Y	Y	N	N
Software Update	No	Y	Y	N	N
Sensor Catalogue Update	No	Y	Y	N	N

5. User Interface

System Configuration	No	Y	Y	N	N
Channel Name Settings	No	Y	Y	N	N
View Channel Configuration	No	Y	Y	N	N
CCB Management	No	Y	N	N	N
CCB Configuration	No	Y	N	N	N
User Management	No	Y	Y	N	N
System Setup	No	Y	Y	N	N
Channel Pop-Up	No	Y	N	N	N
Channel Source Data	No	Y	N	N	N
Commission Channel	No	Y	N	N	N
Decommission Channel Pop-Up	No	Y	N	N	N
Module Pop-Up	No	Y	N	N	N
Commission Module	No	Y	N	N	N
Replace Module	No	Y	N	N	N
Replace Module Pop-Up	No	Y	N	N	N
Remove Module Pop-Up	No	Y	N	N	N
Network Scan Pop-Up	No	Y	N	N	N
Field Device Selection	No	Y	N	N	N
Sensor Settings	No	Y	N	N	N
Range Settings	No	Y	N	N	N
Display Settings	No	Y	N	N	N
Suppression Settings	No	Y	N	N	N
Threshold Alarm 1 Settings	No	Y	Y	N	N
Threshold Alarm 2 Settings	No	Y	Y	N	N
Threshold Alarm 3 Settings	No	Y	Y	N	N
Threshold Alarm Hysteresis	No	Y	Y	N	N
STEL Alarm Settings	No	Y	Y	N	N
Screen Name	**Web**	**Administrator**	**Maintenance Engineer**	**Operator**	**View**
LTEL Alarm Settings	No	Y	Y	N	N
Rate Alarm Settings 1	No	Y	Y	N	N
Rate Alarm Settings 2	No	Y	Y	N	N
Rate Alarm Settings 2	No	Y	Y	N	N
Inhibit Delay Settings	No	Y	Y	N	N
Signal Range Fault Settings	No	Y	Y	N	N

5. User Interface

Gas Range Fault Settings	No	Y	Y	N	N
Calibration Reminder Settings	No	Y	Y	N	N
Calibration Signal Settings	No	Y	Y	N	N
Calibration Span Gas Settings	No	Y	Y	N	N
Inhibit Signalling Settings	No	Y	Y	N	N
Fault Signalling Settings 1	No	Y	Y	N	N
Custom Fault X Detail Settings	No	Y	Y	N	N
Fault Signalling Settings 2	No	Y	Y	N	N
Digital Input Settings	No	Y	Y	N	N
Alarm Settings	No	Y	Y	N	N
Remote Interaction Settings	No	Y	Y	N	N
Remote Group Interaction Settings	No	Y	Y	N	N
Relay Output Settings	No	Y	Y	N	N
Relay Output Settings	No	Y	Y	N	N
Relay Timing Settings	No	Y	Y	N	N
Input Channel Pre-Selection	No	Y	Y	N	N
Cause & Effect Matrix	No	Y	Y	N	N
System Interaction					
SysInteract. Acknowledge		Y	Y	Y	N
SysInteract. Reset		Y	Y	Y	N
SysInteract. Inhibit		Y	Y	N	N
SysInteract. Clear Inhibit		Y	Y	N	N
SysInteract. Force Output	No	Y	Y	Y	N
SysInteract. Clear Force Output	No	Y	Y	N	N

5.3 User Interface Software

The User Interface Software is accessible in three different ways - by local touchscreen at the Touchpoint Pro Controller, by Web Server, and by the optional PC Configuration Software. A detailed menu structure of the software is given in the Appendix - User Interface Software Menu Structure.

Touchpoint Pro does not need a user licence but, for security reasons, the optional PC Config and Web Server software do.

Please contact your local Honeywell supplier or distributor to obtain a 12-month user licence. They will need your Company details, a valid e-mail address, and the serial number of the Touchpoint Pro system. In return, they will e-mail you the licence token and details on how an authorised Honeywell Engineer can

5. User Interface

install it in the system, and details on how to activate the licence on a maximum of five PCs.
You will be notified shortly before the expiry of your licence, and you will have a short licence extension in which to renew the licence token, if you want to.

Please note that expired licences do not stop Touchpoint Pro from working. They will merely stop you operating it remotely, and you will have to operate it from the touchscreen instead.

Please save your licence token carefully in case of a PC or system malfunction. While replacement licences can be reissued or transferred to other PCs within the licence period, lost tokens cannot be replaced and you will have to purchase a new 12-month one.

When renewing/transferring your licence, you must use (or supply) the same e-mail address that you used for the original licence. Failing to do so will automatically bill you for a completely new licence.

5.4 Local Interface (Touchscreen)

The touchscreen is a resistive type, which can be activated using a finger or a stylus. All interactions are single tap.

Caution: Do not use sharp objects as damage could be caused to the screen

5.5 Web Server

The Web Server is an external interface that provides web clients with data from the Touchpoint Pro System. This facility allows remote access to Touchpoint Pro to view live status, and analyse event history. It is also possible to acknowledge, inhibit and reset I/O channels. Calibration and configuration are not available over the Web Server.

The Web Server supports 5 concurrent web clients, however it does not restrict further users from connecting. System performance may be degraded in this case.

Note: The Web Server is compatible with Internet Explorer version 8 . Please refer to Chapter 6, Commissioning for the necessary settings. The following browsers are also supported:

- *Internet explorer 6.0 to 8.0*
- *Chrome up to V38*
- *Safari*
- *Chrome up to V38 on Android devices*

5. User Interface

5.6 PC Configuration Software

The optional PC Configuration Software is optimised for the larger screen of a PC, instead of the local touchscreen. The menu and navigation are as detailed in the section “Menu Structure” however multiple screens are combined, reducing the overall commissioning time.

Note: the PC Configuration Software is compatible with Windows 7. Please refer to Chapter 6, Commissioning for the necessary settings.

5.7 SD Card

The SD card is used to store the event history of the system. Touchpoint Pro logs all events and all changes to input readings. A notification will be given when the SD card is 80% full. If the card is not replaced, a further notification will be given when it is full, and when data is being overwritten.

Note: A list of the events that are logged is given in Appendix 7 - Events

Caution: The SD Card must remain inserted during normal system operation. When the card is full it should be replaced immediately

5.8 Interfaces

The Control Module has several communication interfaces:

- 10/100 Mbps Ethernet port for connection to a local network, to enable the Web Server function and optional PC Configuration Software
- Connections for the optional dual RS485 Modbus RTU interface
- A USB port for connection to a USB flash drive, which can be used to save reports, backup and restore configuration, and update software, firmware and the sensor catalogue

Note: The USB Device port is not EMC safe, and is to be used for maintenance mode only. The USB Host port can take a USB flash drive, which can be left in place provided that it does not foul the cables or cabinet door.

5. User Interface

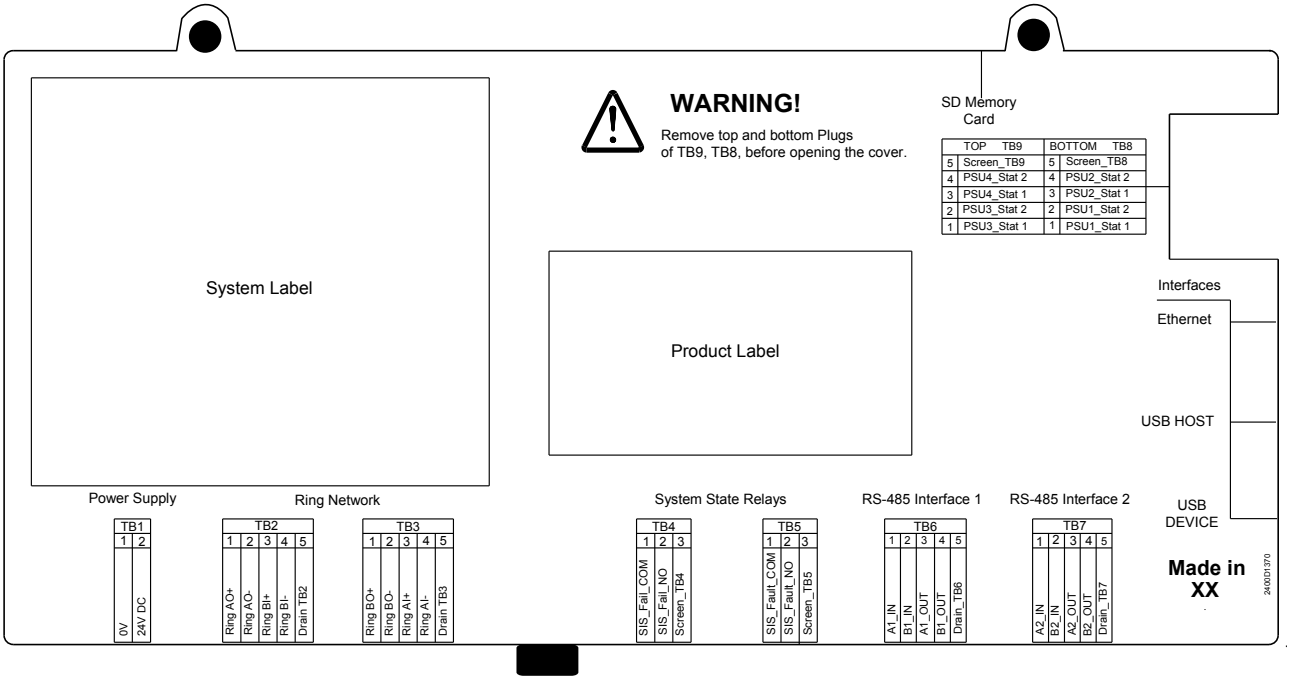


Figure 5.1 Control Module cover

Note: Please read the chapter “User Interface” before proceeding

6. Commissioning

6.1 Introduction

This chapter explains several operations that may be required during commissioning. Users should complete the **First Time Switch On**, **Set Date Time and Language**, **Program Users and Passwords**, and if required **Setup Web Server**. If the PC Configuration Software is being used, complete **First Time Switch On** and **Set Date, Time and Language**, then **Setup PC Configuration Software** using the touchscreen, then continue through the procedures using the PC Configuration Software.

If the system was ordered from Honeywell Analytics with default channel configurations, complete the section **Verify Configuration and Program Tags** for the Analogue Input channels, before proceeding with **Channel Configuration** for the Digital Input and Relay Output channels.

First Time Switch On	Checks that are required on first power up
Set Date, Time and Language	How to set the real time clock and the display language
Program Users and Passwords	How to set up users and access levels
Setup Web Server	How to connect to the web server interface
Setup PC Configuration Software	How to connect to Touchpoint Pro using the PC Configuration Software
Verify Default Configuration and Program Tags	For systems ordered with a default configuration, how to check the configuration and set site specific tags
Module Configuration	How to configure input / output modules
Channel Configuration	How to configure individual input / output channels and program the cause and effect matrix

6.2 First Time Switch On

1. Before applying power to the unit, ensure that the wiring to the unit is correct and all electrical connections are in accordance with Section 4
2. Apply power. Check that the DC supply voltage is between 18 and 32 Vdc. This can be conveniently checked for example at the Vaux terminals of a Relay Output Module (preferably furthest from the power source) or at the V+ and V- terminals of an Analogue Input Module
3. The system start up sequence lasts for 3 - 10 minutes depending on the size of the system
4. When start up is completed, Touchpoint Pro will display the System Status screen, indicating the current status of the system

Note: If Analogue Input mV Bridge channels have been configured but not calibrated, the channels will be in Inhibit, which will be indicated on the System Status screen.

The Touchpoint Pro Controller System Status Screen is shown below, as it appears on the touchscreen interface.

6. Commissioning

	Login		Home		Active Events Screen (with active events)
	Extras		Go to Inputs		
	User is logged in		Active Events Screen (no active events)		

Figure 6.1

A full explanation of the aspects used in Normal Operation is given in chapter 7. For Commissioning, primarily the Login and Extras icons (found in the navigation bar at the top of the screen) will be used.

6.3 Set Date, Time and Language

Note: In the event of power loss, the date, time and language settings will be retained for 3 days. After a longer time interval please check and re-program if necessary.

1. Login with the default Administrator level details supplied with the system.
   Press the Login icon (padlock) in the navigation bar and a prompt will appear for the User Name and Password.
2. From the System Status screen select the **Extras** icon then **Global Settings**, then **Regional Settings**
3. Set the date, time and time zone as required
4. Select the language required (English (default), French, German, Spanish. Italian, Dutch or Russian)
5. Press **Save**
6. If the time zone or language has been changed, the User Interface software will reboot to apply the new settings

Note: During the restart of the User Interface software, the Touchpoint Pro system remains available

6. Commissioning

7. Otherwise, use **Back** and **Home** to return to the System Status screen

Note: Touchpoint Pro does not adjust automatically for daylight savings time.

Note: If the date and time are changed to a time in the past (for example ending daylight savings time), Touchpoint Pro will retain the backup of previous data but this backed up data will not be available in the generated reports.

In the current version there is no provision to check or get the data back and generate the report, though the data is available in backup.

6.4 Program Users and Passwords

The Touchpoint Pro is supplied with a default Administrator login and password attached to the touchscreen. For security reasons at least one new Administrator account should be created during commissioning, and the default account should then be deleted. Two Administrator accounts are safer than one as lost passwords cannot be recovered.

A Honeywell authorised engineer can rescue a locked-out Administrator, but this requires an on-site Service call and installation of a special token and one-time pass phrase.

Note: Administrator level access is required to create an Administrator level user.

Note: User names and passwords are case sensitive. Operator level users cannot change passwords via PC Configuration software.

A maximum number of 20 users can be added to the Touchpoint Pro system. An Administrator level user can create other Administrator and lower level users. An Engineer level user can create other Engineer and lower level users. It is recommended that, when no longer required, the default user “Touchpoint Pro” is deleted or has the password changed to prevent unauthorised access.

The following rules apply to user names and passwords:

- The user name must be 4 to 20 characters long
- The password cannot contain the user name
- The password must be 8 to 10 characters long
- The password must contain a mix of letters, numbers and symbols
- The password cannot contain a string of three or more repeated characters
- Passwords with repeated characters may be rejected

Caution: Touchpoint Pro allows login by the same user from different access points (local User Interface, Web Server etc.). To maintain traceability of system operation and changes, ensure good discipline is maintained with regard to security of login details.

6. Commissioning

1. If not already logged in, login with a valid engineer or administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **User Management**
5. To add a new user, select the **Add User** icon  , and fill in the new user name, password and access level. See the Chapter “User Interface” for details of the available access levels
6. Press **Add** to add the new user
7. Press **Back** and **Home** to return to the System Status screen

6.5 Setup Web Server

Note: Engineer level access is required

To connect via Web Server, the Touchpoint Pro must be connected to a network. The Touchpoint Pro Ethernet port is 10/100 Mbps. Ethernet cable must be CAT5e or CAT6 Ethernet cable terminated to TIA/EIA-568B standard. The cable should have shielded RJ45 plugs with the shield of the cable connected to the metal body (shield) of the connector plug. The cable length should not exceed 100 m.

Note: Web Server performance will depend on the network infrastructure

Note: The Web Server is optimised for a screen of 1024x768 pixels. For optimum viewing on other screens, it may be necessary to view full screen and turn off the Internet Explorer status bar.

6.5.1 TCP/IP Settings

Note: Ping service should not be turned off, ports should not be disabled. Pop-ups should be allowed, and/or Touchpoint Pro should be white-listed.

To access the TCP/IP settings:

1. From the System Status screen select the **Extras** icon then **Global Settings**
2. Select “TCP/IP Settings” to display the current values
3. Select “Edit” to change the values as appropriate to the network
4. To access the Web Server from a remote PC connected to the network, navigate to https://<IP Address>

Note: The Web Server can only be accessed after the Touchpoint Pro system has completed its start up sequence

Note: If the Subnet Mask is set to 255.255.0.0, this means that the first two bytes of the IP Address must match both in the controller and the device that is trying to connect to it. For example, if the controller IP Address is set to 192.168.1.2 it can connect to another device or network that has an IP Address of 192.168.xxx.yyy (where xxx can be any whole number between 0 and 255 inclusive and yyy can be whole number between 1 and 254 inclusive).

6. Commissioning

6.5.2 Internet Explorer Settings

To avoid any issues with file downloads, it is necessary to configure some of the Internet Explorer settings on the PC that is being used:

1. Open Internet Explorer
2. Select Tools -> Internet Options ->Security->Local Intranet->Custom level->Downloads
3. Click on the “Enable” button under “Automatic prompting for file downloads” and under “File download”
4. Select “OK” to return to Internet Options
5. From Tools -> Internet Options select Advanced->Browsing
6. Check the box beside “Display a notification about every script error”
7. Check the box beside “Notify when downloads complete”
8. Select “Apply” to confirm the settings
9. From Tools -> Internet Options select General -> Browsing History -> Settings
10. Under “Check for newer versions of stored pages” click on the “Automatically” button
11. Select “OK” to return to Internet Options
12. Select “Apply” to confirm the settings and “OK” to close the window

6.5.3 Windows Settings

Touchpoint Pro generates reports which can be viewed in Microsoft Excel. To ensure reports are generated and opened correctly please check the file opening settings in Windows on the PC that is being used:

Windows 7

Windows 7 users will only encounter an issue if the “Always ask before opening this type of file” box has previously been unchecked. In this case there will be no option to Open or Save the file that is being downloaded; instead the previous choice will be done automatically. The option to “Confirm open after download” can only be re-enabled by editing the Windows registry. It is recommended to consult your company’s IT Support for assistance.

6.6 Setup PC Configuration Software (optional)

Note: Engineer level access is required

To connect a PC to Touchpoint Pro via the Ethernet port, the TCP/IP settings in the Touchpoint Pro and the PC must be configured appropriately.

Note: PC Screen Resolution is limited to 1024 x 768. Other resolutions may show a grey patch, which does not affect the software operation. Ping service should not be turned off, ports should not be disabled. Pop-ups should be allowed, and/or Touchpoint Pro should be white-listed.

6. Commissioning

To access the TCP/IP settings:

1. On the Touchpoint Pro Controller touchscreen, from the System Status screen select the **Extras** icon then **Global Settings**
2. Select “TCP/IP Settings” to display the current values
3. Select “Edit” to change the values as appropriate to match the PC being used

Note: If the Subnet Mask is set to 255.255.0.0, this means that the first two bytes of the IP Address must match both in the controller and the device that is trying to connect to it. For example, if the controller IP Address is set to 192.168.1.2 it can connect to another device or network that has an IP Address of 192.168.xxx.xxx (where xxx can be any whole number between 0 and 255 inclusive). If the Subnet Mask is set to 255.255.255.0, the first three bytes of the IP Address must match both in the controller and the PC.

4. Install the Touchpoint Pro PC Configuration Software on the PC to be used, and follow the installation routine

Note: To install the software correctly, it is necessary to run the setup program as an administrator. in Windows 7, right click on the setup program and select “Run as administrator”.

5. Connect the Touchpoint Pro unit to the network and launch the PC Configuration Software
6. Enter the IP address of the Touchpoint Pro unit and select **Connect**
7. The Login screen will appear. Enter a valid user name and password

Figure 6.2 Login Details Dialog

The PC Configuration Software follows the same screens as the touchscreen, with the exception that several screens are combined together. Therefore it is possible to follow through all the instructions in this chapter to configure the Touchpoint Pro system. For a detailed navigation and menu structure, please refer to the Appendix - User Interface Software Menu Structure.

6. Commissioning

Figure 6.3 PC Configuration Interface

6.7 Verify Default Configuration and Program Tags

Note: Read this section ONLY if your system has been programmed by Honeywell Analytics with the default configuration during manufacture. Otherwise proceed to section 6.8

If the system has been delivered with a default configuration, then all Analogue Input channels (mA and mV) have been configured. This section explains how to verify that the channel configuration is correct, and how to program any tags that are required.

Note: It is necessary to configure any Digital Input channels and all Output channels

Note: Engineer level access is required

1. If not already logged in, login with a valid engineer level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **System Setup**
5. The screen will show a list of all installed I/O modules and Control Centre Board(s)
6. Press the + beside each module to expand and show the four channels of that module
7. Select the required channel, press the **Menu** icon and select **View Configuration**
8. Use the **Next** and **Previous** buttons to step through the configuration settings and verify that they are as expected. If any settings are incorrect, please refer to the section “Editing a configured channel”
9. Press **Exit**
10. Select the channel again, press the **Menu** icon and select **Edit Configuration**
11. From the menu window select **Channel Name Settings**
12. The screen will show the current location tag and custom ID
13. Enter the required values in the field **New Value** and press **Send**

6. Commissioning

14. The system will return the new value, press **Accept** to confirm
15. Press **Exit** and close the menu window
16. Repeat steps 7 – 15 for each configured channel
17. Proceed to section 6.8

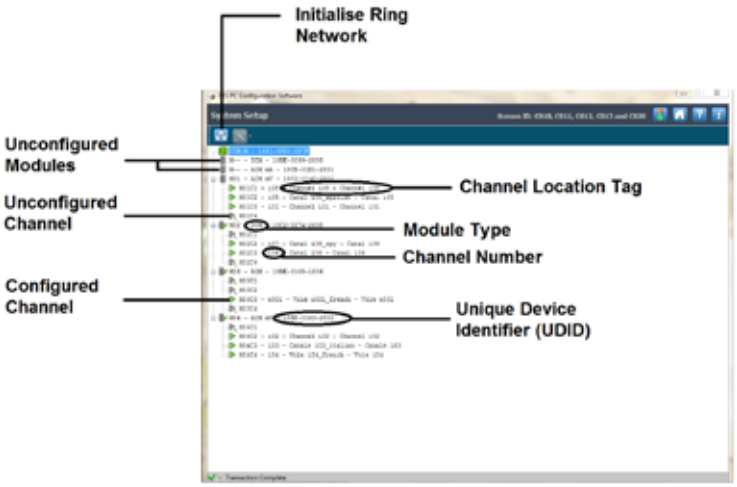


Figure 6.4 System Setup Data

6.8 Commission Input / Output Modules

Note: Administrator level access is required

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **System Setup**
5. If this is a first time configuration, the system will indicate that the Ring network must be initialised. Press the **Ring Network** icon to initialise the network manually
6. The screen will display the System Setup tree list of all Input / Output modules , PSU Status Inputs and Control Centre Board(s) installed on the system. The modules are displayed in the order left to right on the communication / power rail (looking at the rail), and in the direction of Ring A round the complete system (if remote units are being used)
7. Select the required module, press the **Menu** icon and select **Commission Module**
8. Select a module ID number between 1 and 48 (the default is the next available number) and press **Send** to send it to the system
9. The system will then return the value, which will be displayed on the screen. Confirm that it is correct and press **Accept** for the setting to take effect
10. Repeat for all un-commissioned modules on the system

6. Commissioning

Note: After network initialisation, the Input / Output modules are shown according to their physical order on the Ring A network (clockwise). As soon as the module ID is assigned (Input / Output module is commissioned), the Input / Output modules will be sorted according to the assigned module ID (M01, M02, etc.). If there is a combination of commissioned and un-commissioned Input / Output modules on the network, the commissioned modules are shown below the un-commissioned modules.

Note: The LEDs on the module will indicate flashing green when the module is un-commissioned and solid green after commissioning

Note: It is good practice to command the Control Centre Board to remove modules before physically removing them, even if you consider the module(s) to be unserviceable or beyond repair. (The Remove Module button is directly underneath the Commission Module button; just touch the ID of the module you want to remove, and then touch Remove Module. Confirm the ID is correct, and then touch Yes to carry out the action. The removal is added to the event log and a red alarm icon is shown in the menu bar.)

Note: If the Ring Network does not initialise please refer to Chapter 9 - Problem Solving.

6.9 Channel Configuration

Note: Administrator level access is required to commission a channel, but Engineer level access can be used to edit many of the parameters. Please refer to User Interface, Access Levels for details.

6.9.1 Introduction

Individual channels can be configured in several ways – either from the built in sensor catalogue (for Analogue Input modules only), by completing a full custom configuration, or by copying a previously configured channel. When the sensor catalogue or the copy function is used, only the Channel ID and the tags must be programmed. The rest of the configuration is populated automatically.

Note: If a channel is configured from the sensor catalogue or copied from another channel, it is possible to edit individual settings afterwards (see section "Editing a Configured Channel").

The configuration software populates the parameters with appropriate default values. To change any parameter, enter the new value and press **Send** to send it to the system. The system will then return the value, which will be displayed on the screen, and the user must press **Accept** for the setting to take effect. This is to allow the user to verify that the correct value has reached the system.

New values can be entered in various ways:

- Free text (e.g. location tag)
- Numeric keypad
- Check / uncheck a box (e.g. to toggle an alarm between latching and non-latching)
- Select an option by checking a radio button
- Select from a list of available options (e.g. channel number)

The configuration is designed to be simple to follow on the screen. However Appendix 2 should be used as a reference for detailed definitions of all the parameters, as well as the default settings and available ranges.

Caution: It is important to understand the definition of a parameter to avoid unexpected or potentially unsafe behaviour of the system. Please refer to the detailed definitions in the appendix regarding the meaning of a parameter.

6. Commissioning

6.9.2 Configuring a Channel

Note: Have the configuration information to hand

Note: When you enter the System Setup menu, a configuration timeout is active separate to the user login timeout. If no values are sent to the system for 20 minutes, you will be logged out of configuration. If a first time channel configuration has not been completed, all changes will be erased and the channel will be decommissioned.

To configure an individual channel:

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **System Setup**
5. The screen will show the system setup tree listing of all installed I/O modules, PSU Status Inputs and Control Centre Board(s)
6. Press the + beside each module to expand and show the four channels of that module
7. Select the required channel, press the **Menu** icon and select **Commission Channel**

Caution: The I/O Module will be set into Configuration State if configuration is attempted for any of its channels (either Commission Channel or Edit Configuration). Configuration State means that all commissioned channels on the I/O Module are set into Inhibit state – input channels will not trigger any alarms and output channels will not execute any actions.

There are several ways by which a channel can be configured:

Analogue Input channels only

- Select from Sensor Catalogue (Basic): All relevant configuration parameters are loaded automatically from the Sensor Catalogue for the selected field device and sensor.
- Select from Sensor Catalogue (Extended): All relevant configuration parameters are loaded automatically from the Sensor Catalogue for the selected field device and sensor. The user has to run through the full configuration sequence in order to verify or modify each proposed parameter value.

All channels

- Copy from a Configured Channel: All relevant configuration parameters are loaded automatically from a previously configured channel of the same type.
- Configure a Custom Channel: The user enters all configuration parameters.

8. Select the required configuration method, and follow the on-screen instructions. Refer to the Appendix - Configurable Parameter Reference Guide for detailed information.

6. Commissioning

6.9.3 Editing a Configured Channel

Note: When you enter the System Setup menu, a configuration timeout is active separate to the user login timeout. If no values are sent to the system for 20 minutes, you will be logged out of configuration. Any changes that have already been sent to the system will be retained, but any that have been made on screen but not yet sent to the system will be lost. It may be necessary to return to the System Setup screen and set the module to normal state.

To edit an already configured channel:

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **System Setup**
5. The screen will show the system setup tree listing of all installed I/O modules and Control Centre Board(s)
6. Press the + beside each module to expand and show the four channels of that module
7. Select the required channel, press the **Menu** icon and select **Edit Configuration**
8. Select the screen that you want to edit (refer to the previous sections)
9. Enter the required values in the field **New Value** and press **Send**
10. The system will return the new value, press **Accept** to confirm
11. If required, select another screen to edit, otherwise close the menu window

6.9.4 Removing an I/O Module

It is good engineering practice to remove modules from the software before physically removing them from the Touchpoint Pro, even if you consider the module(s) to be unserviceable or beyond repair.

To remove a module:

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **System Setup**
5. The screen will show the system setup tree listing of all installed I/O modules and Control Centre Board(s)
6. Select the required channel, press the **Menu** icon and select **Edit Configuration**
7. Select **Remove Module**, and confirm by selecting **Yes**,
8. Press **OK**.
9. If required, select another screen to edit, otherwise close the menu window

6. Commissioning

6.10 Commission Power Supply Unit Status Channels

Note: The PSU Status Inputs do not need to be used to monitor the power supplies if this function is not required. They can also be configured to be used as Global Acknowledge, Global Reset or Global Inhibit.

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **System Setup**
5. The screen will show the system setup tree listing of all installed I/O modules, PSU Status Inputs and Control Centre Board(s)
6. Select a Power Supply Unit Status channel, press the **Menu** icon and select **Commission Channel**
7. Select the required parameters usijng the table below

Parameter Name	Default Setting	Value Range	Comment
Power Supply Unit Tag	PSU 1 Alarm PSU 2 Alarm PSU 3 Alarm PSU 4 Alarm	30 characters	
Event Type	Alarm	Alarm, Fault, Warning	
Channel Type	Normal PSU	Ack Global, Reset Global, Inhibit Global	
Default State	NO for Standard / NC for Safe	Normally Closed (NC), Normally Open (NO)	
Input Latch	Non-Latching	Non-Latching, Latching	

6.11 Redundant Control Centre Board Configuration

To access the Control Centre Board configuration:

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the **Extras** icon then **System Configuration**
3. Re-enter the password and press **Login**
4. Select **CCB Management** then **CCB Configuration**

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
CCB Redundancy Mode	Single CCB	Single CCB / Dual CCB	Only needs to be changed if a redundant CCB has been added or removed

6. Commissioning

6.12 Buzzer Activation and Button Password Protection

The Touchpoint Pro buzzer can be configured to determine under which conditions it activates. There is also a facility to password protect the Accept and Reset buttons on the Touchpoint Pro front panel.

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the Extras icon then System Configuration
3. Re-enter the password and press Login
4. Select CCB Management then CCB Configuration

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Buzzer Activation	Threshold Alarms Only	Buzzer Off, Threshold Alarms Only, All Alarms Only, All Events (All Alarms, Faults, Inhibits and Warnings)	Determines the activation condition for the buzzer
Password Protection for Accept Button	Disabled	Enabled / Disabled	If enabled, Operator level access is required to acknowledge active events using the Accept button on the front panel
Password Protection for Reset Button	Enabled	Enabled / Disabled	If enabled, Operator level access is required to reset active events using the Reset button on the front panel

6.13 Touch Panel Configuration

To access the panel configuration:

1. If not already logged in, login with a valid engineer level user name
2. From the System Status screen select the **Extras** icon then **Global Settings**
3. Select **Panel Configuration**

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Backlight Duration	15 minutes	10 seconds to 60 minutes / Always On	This is the time that the backlight will remain on after the touchscreen is idle. If a new event occurs, the backlight will come on and will remain on as long as the event remains unacknowledged
Purpose of the System Label	“Gas Monitoring System”	30 characters	This text is displayed on the System Status screen

6. Commissioning

6.13.1 Calibrate touch panel

Calibrate the touch panel if the screen is not responding as expected. Calibration of the touch panel is located in the Panel Configuration screen.

1. If not already logged in, login with a valid engineer level user name
2. From the System Status screen select the **Extras** icon then **Global Settings**
3. Select **Panel Configuration**
4. Select **Calibrate Touch Panel** and follow the instructions on screen

Note: If a user is logged out due to inactivity while the system is in the touch panel calibration screen, it will not return to the System Status screen. Communication via PC Configuration or Web Server software is not possible. Complete the touch panel calibration first, then the system will automatically navigate to the System Status screen.

6.14 Service Contact Settings

To set the Help settings:

1. If not already logged in, login with a valid engineer level user name
2. From the System Status screen select the **Extras** icon then **Global Settings**
3. Select **Service Contact Settings**
4. Update the settings with your local service support contact details

6.15 Back up Configuration

Note: Engineer access level is required

It is recommended to back up the Touchpoint Pro system configuration once it is completed.

Note: Touchpoint Pro will prompt for a configuration back up after any configuration parameter is changed.

Note: The USB Device port is not EMC safe and is for maintenance use only.

To back up the configuration:

1. Ensure that the SD Card is inserted in the Control Module USB Host Port
2. If not already logged in, login with a valid engineer level user name
3. From the **System Status** screen select the **Extras** icon then **System Configuration**
4. Re-enter the password and press **Login**

6. Commissioning

5. Select **CCB Management** and click on **Configuration Backup**
6. The system will display a message “The configuration backup process might take a few minutes. The Local UI is not accessible during this time. Do you want to proceed?”
7. Once the action is confirmed, the configuration backup process starts and a progress message is displayed. The backup may take several minutes depending on the system size
8. The Configuration backup file is stored on the SD Card in “\\Hard Disk\\Touchpoint Pro Configuration\\Touchpoint ProConfig.bin”

Note: Touchpoint Pro always uses the same filename for configuration backups, therefore it is recommended that a dated copy of the backup file is kept in another location

6.16 Calibrate mV input channels

WARNING

Channel calibration is compulsory after changing the bead current of an AIM mV channel, and the channel stays in Inhibit until this is done.

Caution: Gas readings may be generated during this procedure. Disable or inhibit any operations or actions that may result from gas readings before starting this test

Note: Engineer level access is required

Note: If you wish to enable a calibration reminder for the channel, please edit this setting before starting calibration (see Commissioning, Editing a Configured Channel and Configurable Parameter Reference Guide, Calibration Reminder Settings)

For catalytic bead type detectors, the Touchpoint Pro Analogue Input Module forms part of the measuring circuit. Therefore all commissioned mV channels remain in **Inhibit** state until they are calibrated.

Touchpoint Pro monitors the ageing of catalytic bead detectors and can provide a warning when a sensor should be replaced. Please select **First Span** when calibrating a new or replacement sensor for the first time, and **Span** for all calibrations thereafter. When the sensitivity of the sensor has dropped below 50% of the original value, a “Sensor Lifetime Expired” warning will be generated during calibration.

Caution: If First Span is not used, the system will compare the sensitivity of the sensor to the default value of 50 mV. This may result in the “Sensor Lifetime Expired” warning being generated prematurely or not at all.

To calibrate a mV input channel, please follow the procedure below in combination with the relevant instructions in the sensor manual.

6. Commissioning

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Inputs** icon  then select the channel to be calibrated
3. Select **Calibration** from the popup menu
4. Select **Zero Adjust**, and when ready press **OK** and apply clean air to the sensor
5. View the gas reading until it is stable, and then press **Accept**
6. Confirm that the gas reading is zero, and press **Save** then **OK**
7. Select **First Span**
8. Enter the concentration of the span gas and press **Accept**
9. When ready press **OK** and apply gas to the sensor
10. View the gas reading until it is stable, and then press **Accept**
11. Confirm that the gas reading is correct, and press **Save** then **OK**
12. Remove the span gas from the sensor, and confirm that the gas reading has returned to zero
13. Select **Clear Inhibit** to remove the inhibit from the channel

6.17 Calibrate mA input channel loops

WARNING

Where the sensor / transmitter has the facility, the mA loop should always be calibrated at the Touchpoint Pro controller by forcing signal levels at the sensor / transmitter. Any gas calibration required must be carried out at the field device according to the manufacturer's instructions. The Touchpoint Pro controller calibration should not be used to adjust for deficiencies in the sensor / transmitter gas calibration. Failure to observe this can result in significant accuracy errors.

Caution: Ensure that any executive action is inhibited before starting this test

Note: Engineer level access is required

Note: If the sensor is an Oxygen sensor that is not being used with a transmitter that has a force mA function, the zero gas should be 100% v/v Nitrogen, and the span gas should normally be air at 20.9% v/v Oxygen. The Touchpoint Pro controller calibration should not be used to correct deficiencies in the sensor calibration; instead carry out a gas calibration at the sensor according to the manufacturer's instructions.

Note: If you wish to enable a calibration reminder for the channel, please edit this setting before starting calibration (see Commissioning, Editing a Configured Channel and Configurable Parameter Reference Guide, Calibration Reminder Settings)

To calibrate the mA loop of an input channel, please follow the procedure below in combination with the relevant instructions in the sensor manual.

6. Commissioning

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Inputs** icon  then select the channel to be calibrated
3. Select **Calibration** from the popup menu
4. Press **Inhibit** to inhibit the channel
5. Select **Zero Adjust**, and when ready press **OK**
6. Generate a zero signal at the sensor, preferably by forcing the output to 4 mA
7. View the signal reading until it is stable, and then press **Accept**
8. Confirm that the reading is zero, and press **Save** then **OK**
9. Select **Span Adjust**
10. Enter the equivalent concentration of span gas that can be generated by the sensor (preferably 100 %FSD, 20 mA) and press **Accept**
11. When ready press **OK** and generate an equivalent gas reading at the sensor, preferably by forcing the output to 20 mA
12. View the signal reading until it is stable, and then press **Accept**
13. Confirm that the reading is correct, and press **Save** then **OK**
14. Return the sensor to normal operation, and confirm that the signal has returned to zero
15. Select **Clear inhibit** to remove the inhibit from the channel*Note: Please read the chapter "User Interface" before proceeding.*

7. Normal Operation

7.1 Safety Function

During normal operation:

- The Touchpoint Pro system will collect data every 250 ms from all of the Input/Output modules on the Ring Network
- The Cause and Effect matrix will be evaluated every 250 ms, and commands sent accordingly to the appropriate output channels. System response time is ≤1 s
- Any change in status of an I/O channel will be reported to the User Interface and logged in the event history
- Any occurrence of any of the events listed in Appendix 7 will be reported to the User Interface and logged in the event history
- Any fault or inhibit within the system will activate the System Fault relay
- Any failure of the safety function e.g. due to major fault or power loss will activate the System Failure relay

7.2 Overview - Touchscreen Interface

7.2.1 System Status screen

The System Status screen provides a summary of the status of the Touchpoint Pro system as follows:

- Green tick – system OK, all input and output channels are in a Normal state
- Red bell – one or more input channels is in Alarm
- Yellow triangle - one or more channels is in Fault
- Orange triangle - one or more channels is in Inhibit
- Grey triangle - one or more channels is in Warning

7. Normal Operation

Figure 7.1 System Status Screen

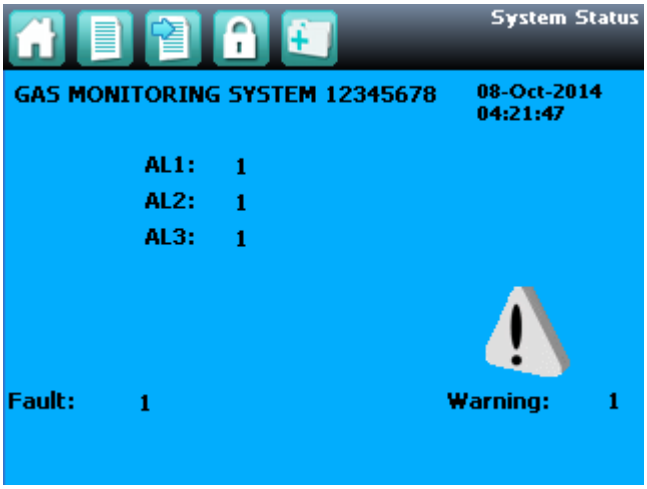
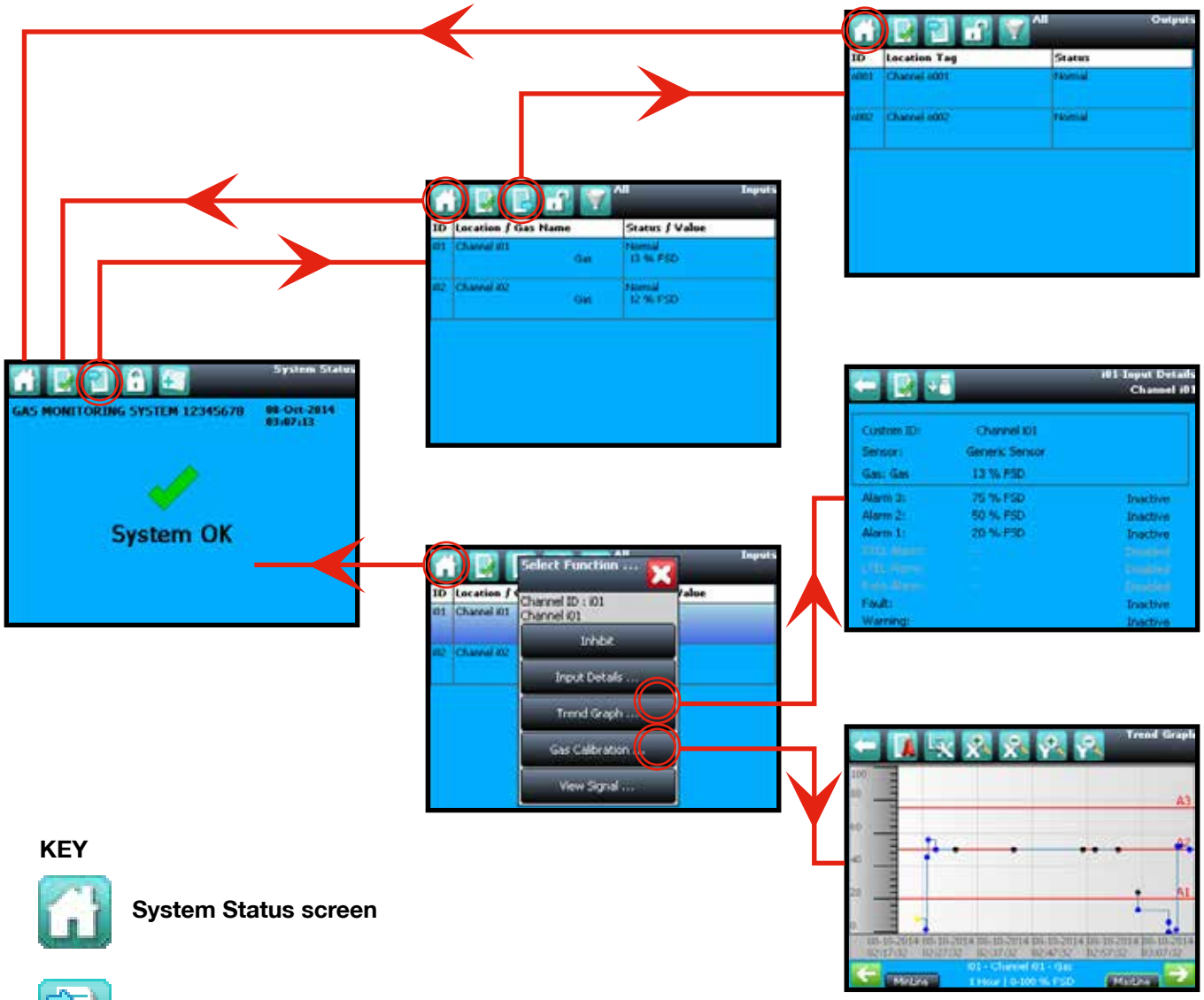


Figure 7.2 System Status Screen with Active Events

7. Normal Operation

7.2.2 Navigation - Inputs and Outputs Screens

The icons in the navigation bar are used to navigate through the User Interface Software.



KEY

System Status screen

Inputs

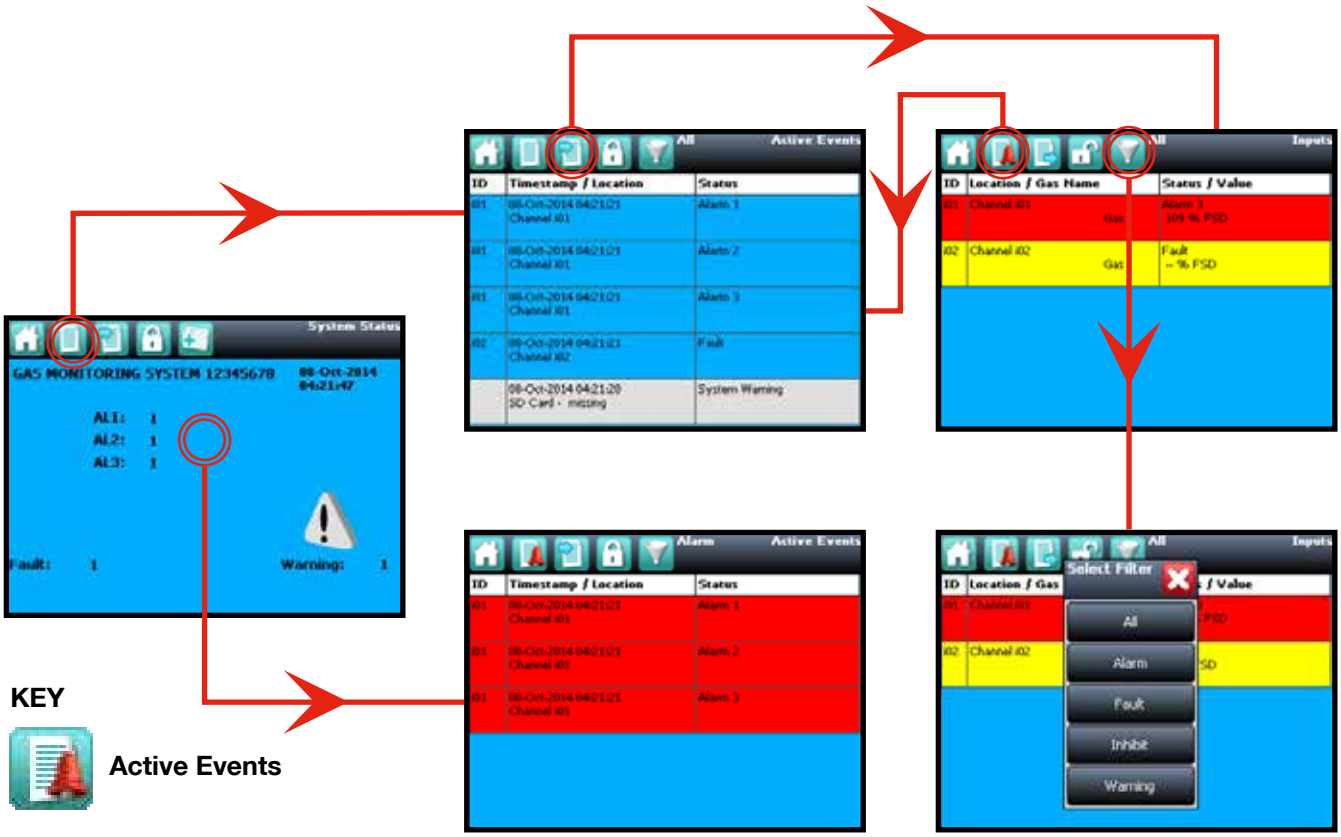
Outputs

Back

Figure 7.3 Examples of Input/Output screens

7. Normal Operation

7.2.3 Navigation - Active Events



KEY

Active Events

Filter

Inputs

Figure 7.4 Example of navigating through Active Events

7.2.4 Login

Login

Extras

User is logged in

To login to the system you must have a user name and password.

Note: For details of access levels and permissions please refer to Chapter 5 User Interface.

Press the Login icon (padlock) in the navigation bar and a prompt will appear for the User Name and Password.

Once a valid user name and password has been entered, the icon in the navigation bar will change to an open padlock, indicating that a user is logged in.

Note: After 20 minutes of inactivity, the system will always logout the user and return to the System Status screen.

7. Normal Operation

7.3 Overview – Web Server Interface

The Web Server displays live information from the Touchpoint Pro system. With the appropriate access level permissions, events can be acknowledged and reset and event history can be analysed. Please refer to **Chapter 5 – User interface, Access Levels** for details.

7.3.1 Start the Web Server

To use the Web Server, the Touchpoint Pro system must be connected to a network, please refer to **Chapter 6 - Commissioning, Setup Web Server** for details.

To access the Touchpoint Pro system from a remote PC connected to the same network, open a web browser and navigate to *http://<IP Address>* (where IP address is the address of the Touchpoint Pro system on the network).

7.3.2 System Status Screen

The System Status screen provides a summary of the status of the Touchpoint Pro system as follows:

- Green tick – system OK, all input and output channels are in a Normal state
- Red bell – one or more input channels is in Alarm
- Yellow triangle - one or more channels is in Fault
- Orange triangle - one or more channels is in Inhibit
- Grey triangle - one or more channels is in Warning

7. Normal Operation

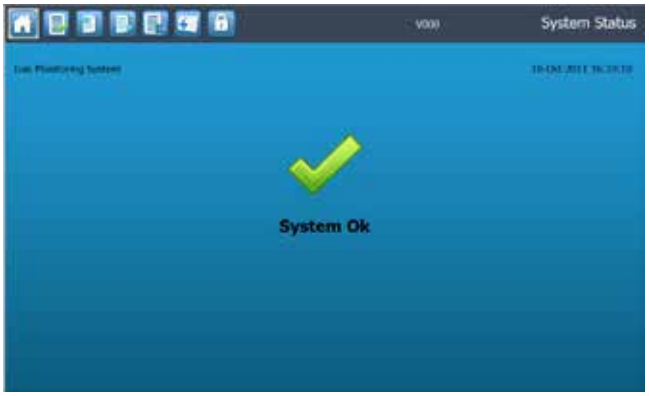


Figure 7.5 Web Server System Status Screen

Figure 7.6 Web Server System Status Screen with Active Events

7. Normal Operation

7.3.3 Navigation – Inputs and Outputs Screens

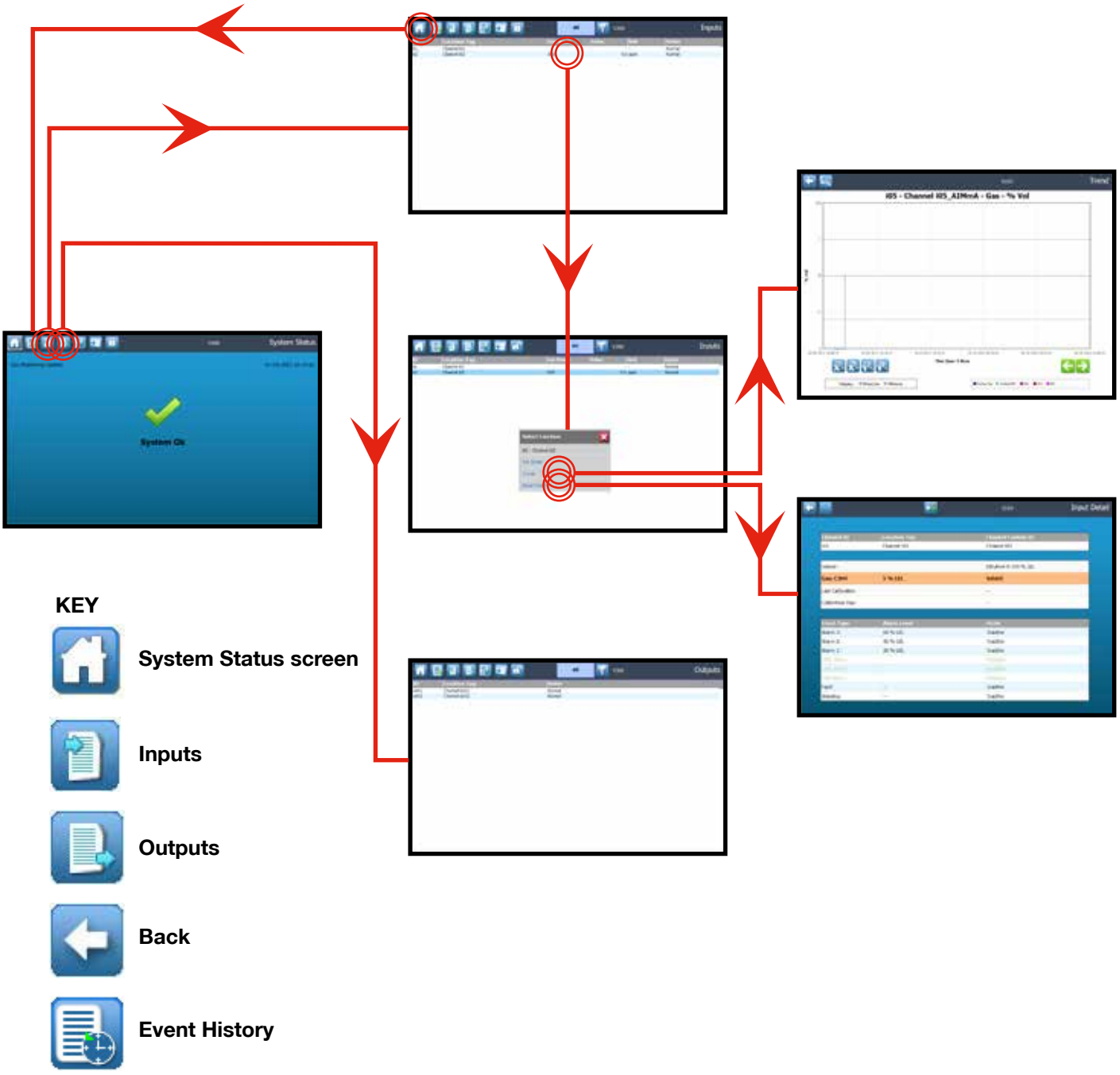


Figure 7.7 Web Server Input and Output Screen Navigation

7. Normal Operation

7.3.4 Navigation – Active Events

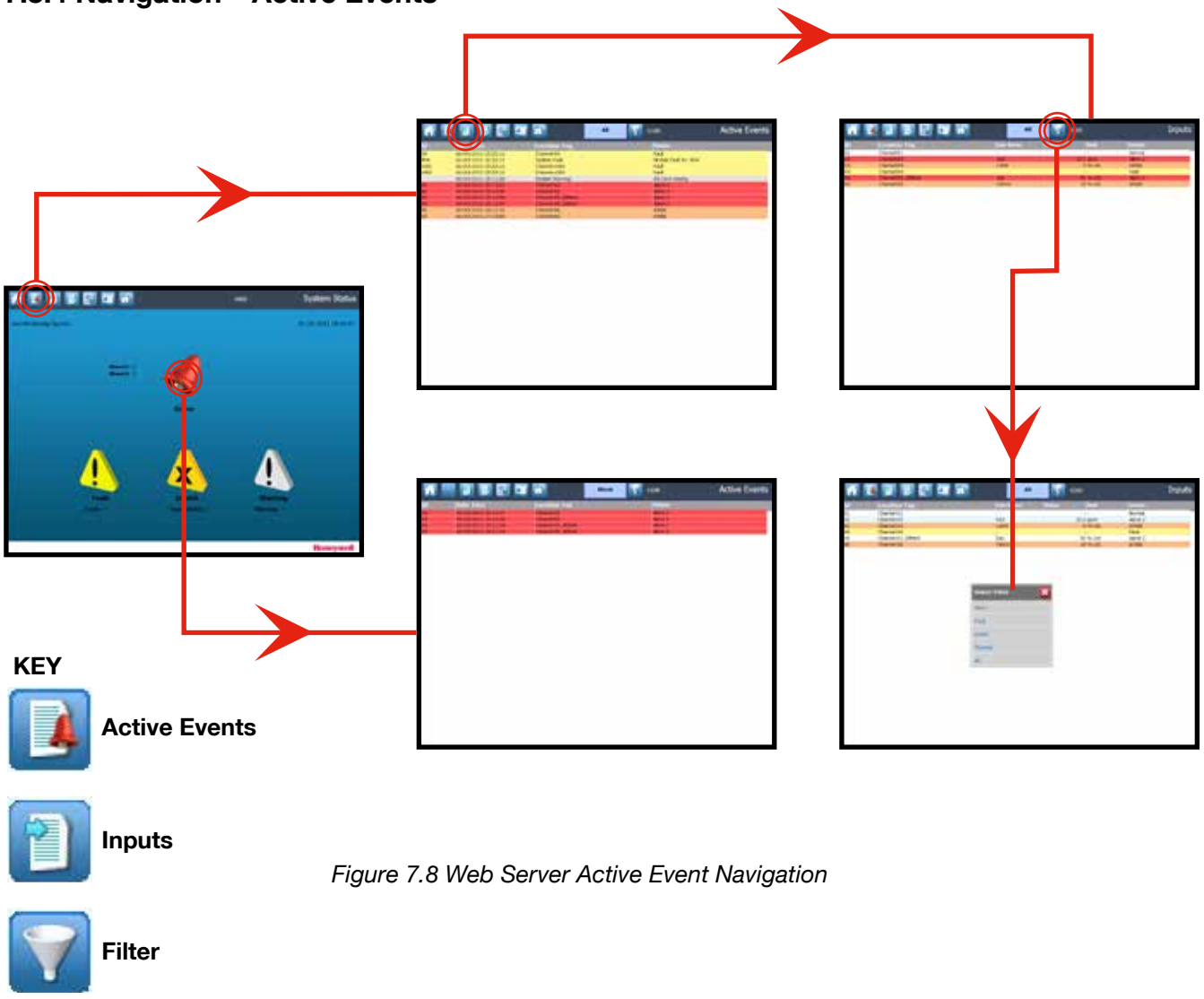


Figure 7.8 Web Server Active Event Navigation

7.3.5 Navigation – Extras

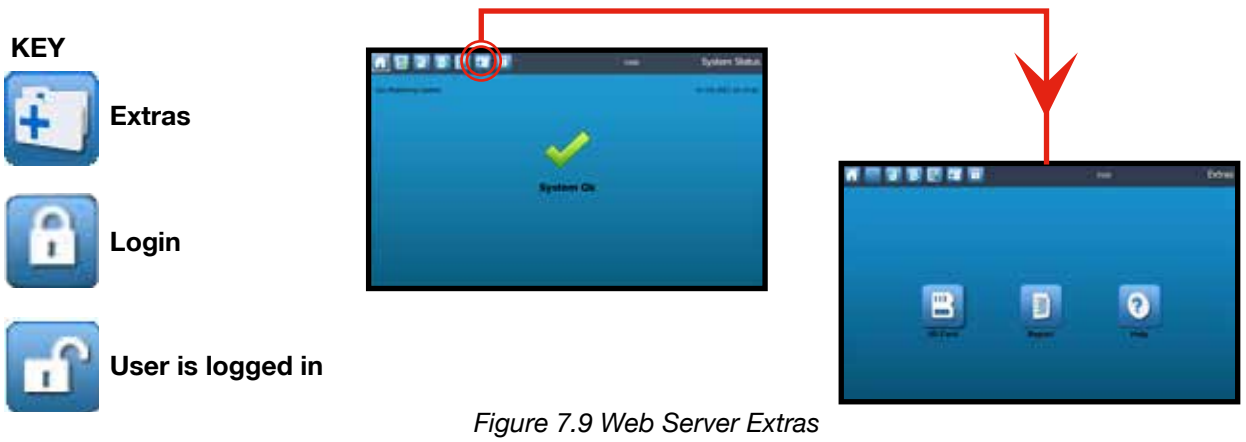


Figure 7.9 Web Server Extras

7. Normal Operation

7.4 Alarms

7.4.1 View active alarms

Active alarms can be viewed in three ways:

1. From the **System Status** screen, select the flashing red bell **Alarm** icon
2. From the **System Status** screen navigation bar, select the **Active Events** icon, then the **Filter** icon and select **Alarm** from the popup menu

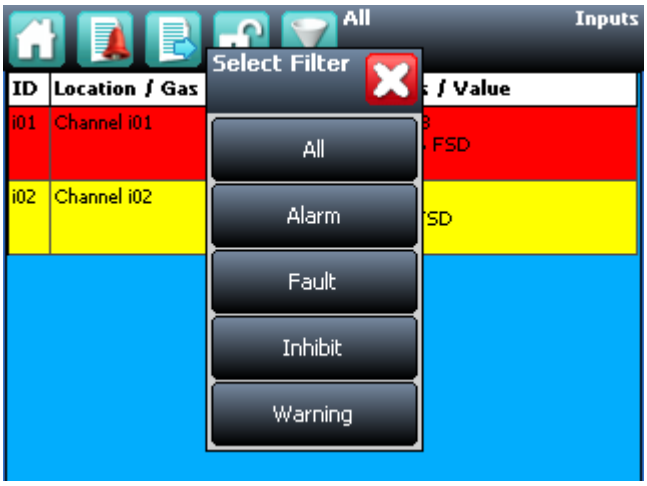


Figure 7.10 Active Events Screen with filter options

3. From the **System Status** screen navigation bar, select the **Inputs** icon, then the **Filter** icon and select **Alarm** from the popup menu

The screen will display a list of all input channels with active Alarms, starting with the most recent event. Unacknowledged alarms will flash, acknowledged ones will be solid

Note: the display will show the channel ID, location tag and the time of the alarm. If more than one alarm level has been triggered on the same channel, all alarm levels will be shown.

7.4.2 Acknowledge an active alarm

Note: The system can be configured so that the Accept button is password protected and requires a user to login (minimum Operator access level) via the touchscreen. See Commissioning, Buzzer Activation and Button Password Protection.

Note: Accept and Acknowledge have the same meaning in this context.

An active alarm can be acknowledged in three ways:

7. Normal Operation

1. Press the **Accept** button on the front panel of the Touchpoint Pro Controller. This will acknowledge ALL active events, including faults and warnings
2. From the Inputs screen, select the channel and press **Acknowledge** from the popup menu. Note: Operator access level is required. This will acknowledge all active events for the channel
3. From the Active Events screen, select the alarm and select **Acknowledge** from the popup menu. This will acknowledge only the selected alarm

When an alarm is acknowledged the buzzer will be silenced and the alarm will stop flashing.

Note: The Accept button on the front panel of the Touchpoint Pro must be pressed for > 0.5 s to take effect.

Note: If a Relay Output channel has the Alarm Update function enabled, the alarm will be ignored for the Cause and Effect matrix once it is acknowledged.

7.4.3 Reset a latched alarm

Note: Operator access level is required (optional, see Commissioning, Buzzer Activation and Button Password Protection).

Caution: The Touchpoint Pro system is designed to alert the user to potentially dangerous events and to trigger protective measures. It is the responsibility of the Operator to ensure that the site emergency response procedures are initiated before accepting alarms, and that the danger has been investigated and cleared before resetting the alarms.

Alarms cannot be reset until the gas concentration is below the threshold limit. An STEL Alarm can be reset if the current value of the time weighted average is below the alarm threshold.

Caution: Resetting an LTEL Alarm has the effect of clearing the time weighted average calculation and starting again. An LTEL Alarm can only be reset if the current gas reading is below the alarm threshold.

A latched alarm can be reset in three ways:

1. Press the **Reset** button on the front panel of the Touchpoint Pro. This will reset ALL latched alarms, faults and warnings, provided that the event has cleared. It will also reset any latched relay outputs
2. From the Inputs screen, select the channel and select **Reset** from the popup menu. This will reset all latched events for the channel, provided that the input signal has returned to Normal status
3. From the Active Events screen, select the alarm and select **Reset** from the popup menu. This will reset only the selected alarm

Note: The Reset button on the front panel of the Touchpoint Pro must be pressed for > 0.5 s to take effect.

7. Normal Operation

7.5 Faults and Warnings

7.5.1 View Faults and Warnings

Detailed information about active Faults and Warnings can be viewed in two ways:

1. From the **System Status** screen, select either the Fault yellow triangle icon, or the Warning grey triangle icon. The screen will show a filtered list of only the active Faults or Warnings.
2. Select the **Active Events** icon to show all active events, then the **Filter** icon and select **Fault** or **Warning** from the popup menu

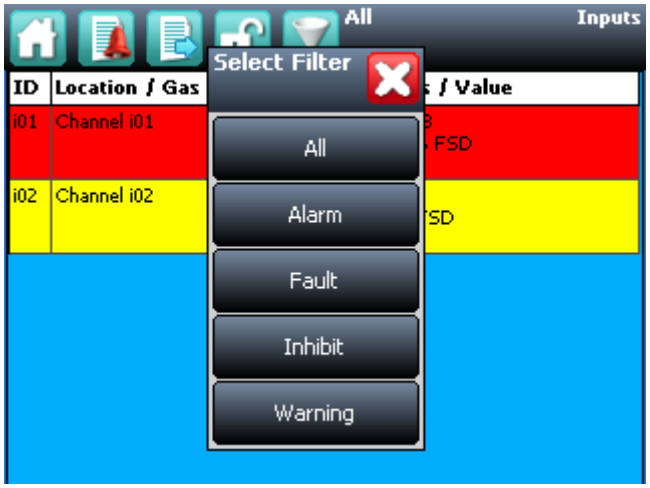


Figure 7.11 Active Events Screen with filter options

7.5.2 Acknowledge an active Fault or Warning

*Note: The system can be configured so that the **Accept** button is password protected and requires a user to login (minimum Operator access level) via the touchscreen. See Commissioning, Control Centre Board Configuration.*

Note: Accept and Acknowledge have the same meaning in this context.

An active fault or warning can be acknowledged in three ways:

1. Press the **Accept** button on the front panel of the Touchpoint Pro. This will acknowledge ALL active events
2. From the Inputs or Outputs screen select the individual channel and select **Acknowledge** from the popup menu. This will acknowledge all active events for the channel

Note: Operator access level is required.

7. Normal Operation

3. From the Active Events screen, select the fault or warning and select Acknowledge from the popup menu. This will acknowledge only the selected fault or warning

When a fault or warning is acknowledged the channel, LED and icon will stop flashing.

Note: The Accept button on the front panel of the Touchpoint Pro must be pressed for > 0.5 s to take effect.

7.5.3 Reset a latched Fault or Warning

Note: Operator access level is required.

A latched fault or warning can be reset in three ways:

1. Press the **Reset** button on the front panel of the Touchpoint Pro. This will reset ALL latched alarms, faults and warnings, provided that the event has cleared. It will also reset any latched relay outputs
2. From the Inputs or Outputs screen, select the channel and select **Reset** from the popup menu. This will reset all latched events for the channel, provided that the input signal has returned to Normal status
3. From the Active Events screen, select the fault or warning and select **Reset** from the popup menu. This will reset only the selected fault or warning

Note: The Reset button on the front panel of the Touchpoint Pro must be pressed for > 0.5 s to be effective.

7.6 Inhibit

Note: Engineer access level is required.

Both input and output channels can be inhibited.

1. From the **System Status** screen navigation bar, select the **Inputs** icon and if appropriate the **Outputs** icon
2. Select the required channel and select **Inhibit** from the popup menu
3. To clear an inhibit, select the required channel and select **Clear Inhibit** from the popup menu

Note: An auto-inhibit cannot be cleared manually. Auto-inhibits occur for example when a mV input channel has been configured but not yet calibrated, when a transmitter is signalling Inhibit, or when an Inhibit delay time is running. Please refer to Chapter 9 Problem Solving for details.

Note: When you manually place an Output Relay into 'Inhibit', it holds the Relay in the current state. I.e. if the Relay is in a Normal (Healthy) state at the time of 'inhibit' it stays in that state and, if the Relay is in an Alarm (Non- Healthy) state at the time of 'inhibit' it stays in that state. An Alarm state cannot be 'over-ridden' by an 'inhibit' of the output Relay.

It is possible to have more than one inhibit condition active on a channel, and you have to resolve all inhibit conditions before the inhibit can be cleared.

7. Normal Operation

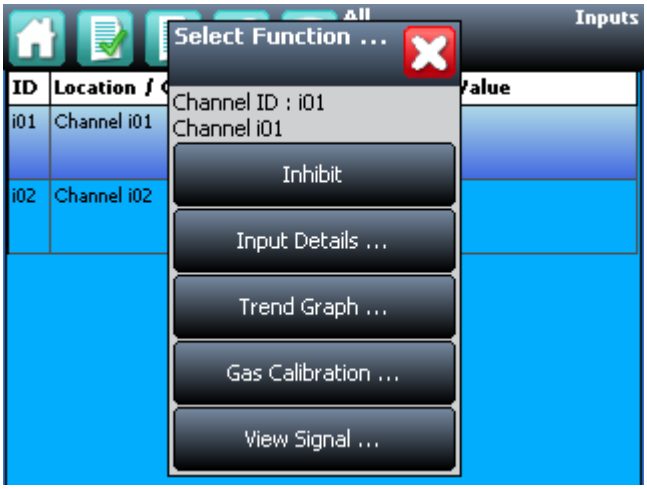


Figure 7.12 Inputs Screen with menu options

7.7 View Input Channels and Input Details

*Note: In the Touchscreen view, the **Inputs** and **Outputs** icons toggle – from the System Status screen navigation bar only the Inputs icon is visible, the **Outputs** icon is visible from the **Inputs** screen and vice versa.*

1. From the **System Status** screen navigation bar, select the **Inputs** icon
2. A list of all input channels is shown in order of channel ID. The channel ID, location tag, gas name, status and current reading are shown
3. The list can be filtered by status – Alarm, Fault, Inhibit, Warning or All
4. Select a channel. Depending on access level, a number of options are shown

Function	Access Level	Comment
Inhibit	Engineer	Inhibits the channel. On an inhibited channel, this option is **Clear Inhibit**. See Normal Operation, Inhibit for more information.
Calibration	Engineer	Option to calibrate the channel. See Commissioning, Calibration for more information.
Trend Graph	View	Shows the trend graph for the channel. See Normal Operation, View Trend Graph for more information
Input Details	View	Shows detailed information about the channel including Custom ID, sensor and gas name, gas reading, configured alarms and alarm levels
View Signal	Administrator	Shows the raw signal being received on the channel

7. Normal Operation

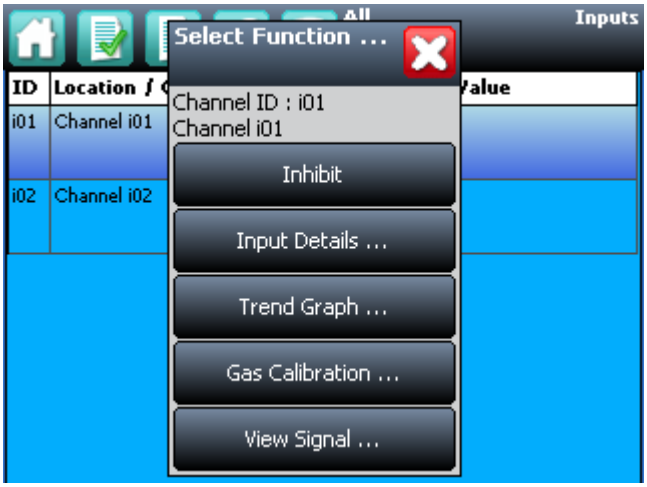


Figure 7.13 Inputs Screen with menu options

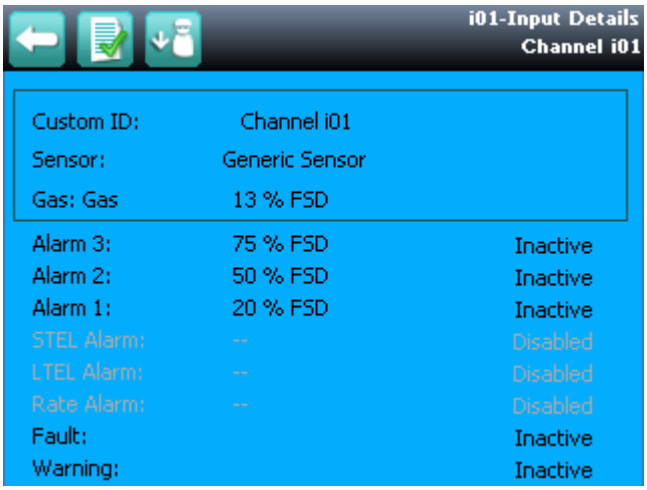


Figure 7.14 Input Details Screen

7.8 View Output Channels

*Note: In the Touchscreen view, the **Inputs** and **Outputs** icons toggle – from the **System Status** screen navigation bar only the **Inputs** icon is visible, the **Outputs** icon is visible from the **Inputs** screen and vice versa.*

1. From the System Status screen navigation bar, select the Inputs icon, then the Outputs icon

7. Normal Operation

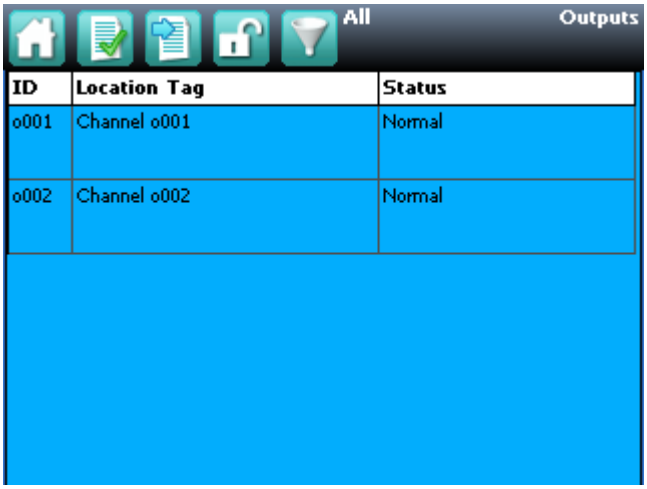


Figure 7.15 Outputs Screen

2. A list of all output channels is shown in order of channel ID. The channel ID, location tag and status are shown
3. The list can be filtered by status – Fault, Inhibit, Warning or All

Figure 7.16 Outputs Screen with filter options

4. Select a channel. Depending on access level, a number of options are shown

Function	Access Level	Comment
Inhibit	Engineer	Inhibits the channel. On an inhibited channel, this option is **Clear Inhibit**. See Normal Operation, Inhibit for more information.
Force	Operator / Engineer	Option to force a relay output channel to its active state, or force an analogue output channel to a set mA level. On a forced channel, this option is Clear Force. See Maintenance Ch. 8.1 Testing the Touchpoint Pro System for more information. *Note: Operator level access is required to Force a channel. Engineer level access is required to Clear Force.*

7. Normal Operation

7.9 View Trend Graph

The trend graph shows the history of the signal on an analogue input channel. The signal value is logged when it changes, or every one hour if there is no change.

Note: Touchpoint Pro does not adjust automatically for daylight savings time. Be aware that if the date and time are changed to a time in the past, (for example ending daylight savings time) Touchpoint Pro will retain a backup of the previous data.

Note: Touchpoint Pro logs the trend data point when the system is in Field Inputs Test Mode, but does not log it when in the Configuration Settings Test or Cause and Effect Test modes.

Note: The system logs when the value changes, with a resolution determined by the gas range of the channel. For a gas range of less than 10, the resolution is 0.01, for a gas range of 10 to 99 the resolution is 0.1, and for a gas range of 100 or more, the resolution is 1.

1. From the **System Status** screen navigation bar, select the **Inputs** icon
2. A list of all input channels is shown in order of channel ID
3. Select the required channel, and select **Trend Graph** from the popup menu
4. The trend graph will be displayed
5. Use the forward and backward arrows to scroll through the graph. Expand or reduce the axes using the X+, X-, Y+ and Y- buttons

If there are more data points than the number of pixels available on the screen, Touchpoint Pro will by default display the maximum value within each set of points. This is the MaxLine. (For example, if one pixel needs to represent 12 seconds, it will display the maximum value that occurred during those 12 seconds.) If you toggle to MinLine, Touchpoint Pro will display the minimum value within each set of points.

Note: The Web Server will by default display both MaxLine and MinLine. This can be changed to show only MaxLine, only MinLine or both.

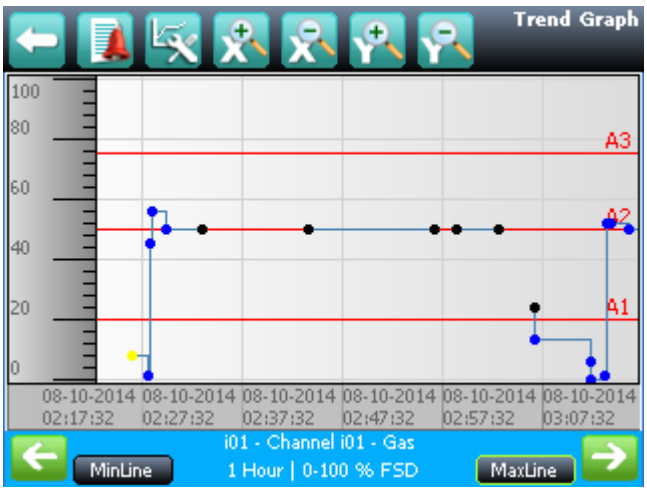


Figure 7.17 Trend Graph Screen

7. Normal Operation

7.10 View Event History

The event history for the complete system can be viewed in date order (latest first). The history can be filtered by Alarm, Fault, Inhibit, Warning, All or by selecting a date range.

To access event history, from the **System Status** screen navigation bar select **Extras**, then **Event History** or in the Web Server directly select the **Event History** icon.

Note: The event history time stamp is accurate to within 5 seconds.

Note: Touchpoint Pro does not adjust automatically for daylight savings time. Be aware that if the date and time are changed to a time in the past, (for example ending daylight savings time) Touchpoint Pro will retain a backup of the previous data.

7.11 Generate Reports

Several reports can be generated from the Touchpoint Pro system. Reports can be saved to a memory device or printed. The report is generated as a Comma Separated Value (.csv) file.

- Trending for a specific channel, date range is selectable
- Channel events for a specific channel, date range is selectable
- Configuration for a specific channel
- All events within a selectable date range
- Calibration Report
- System Configuration Report

To access reports:

1. From the **System Status** screen navigation bar select **Extras**, then **Report**
2. Select the type of report required, and if applicable select the channel required

Note: The Save/Print option is disabled until a channel is selected.

3. Select required start and end dates and times
4. Select **Save** or **Print** as required

Note: The Web Server will automatically open the report in Microsoft Excel (if installed) or in a text editor. Microsoft Excel 2003 is limited to a maximum of 65,526 entries. If the report is larger than this a message "file not loaded completely" may be generated. Microsoft Excel 2010 has a much larger capacity which should be sufficient for all Touchpoint Pro generated reports.

Note: Touchpoint Pro does not adjust automatically for daylight savings time. Be aware that if the date and time are changed to a time in the past, (for example ending daylight savings time) Touchpoint Pro will retain a backup of the previous data.

7. Normal Operation

7.12 Access Diagnostic information

Note: Engineer access level is required

The Diagnostics screen gives information about the firmware versions of system components, and details of the status and any errors. This information could be required by Honeywell Analytics to assist with technical support. The Diagnostics screen also provides access to the Touchpoint Pro system test modes (see “Testing the Touchpoint Pro System”).

To access Diagnostics, from the System Status screen navigation bar select **Extras**, then **Diagnostics**. The Diagnostics screen also provides access to a drop-down menu that offers the following tests:

- LED Panel Test
- Field Inputs Test
- Configuration Settings Test
- Cause and Effect Test

Further information can be found in ‘Testing the Touchpoint Pro System’.

7.13 Check the capacity of the SD Card

From the **System Status** screen navigation bar, select **Extras**, then **SD Card**. This will show the capacity and remaining space on the inserted SD Card. For details of how to change the card, please see Maintenance.

7.14 Access Help

From the **System Status** screen navigation bar, select **Extras**, then **Help**. This help screen will show Date of last configuration change, Configuration version, Previous user with About & Service contact option.

The configuration version increments every time parameters are written to the Touchpoint Pro system, including during calibration. The configuration version can be used as a check against unauthorised modification of the system.

Select **About** to view software and firmware versions.
Select **Service Contact** for details of how to access technical support.

7.15 System State Relays

The Control Module has two System State relays, rated at 30 Vdc 3 A or 250 Vac 3 A, which activate under the following conditions:

- The System Fault relay activates if there is any active fault or inhibit in the system.
- The System Failure relay activates if the safety function of the system is not operating, for example due to a major fault, power loss, or test mode operation.

Note: If the redundant CCB needs to take over from the Master CCB, this is not considered to be a system failure, and the system failure relay will remain in normal state.

Note: During start-up, the system failure relay will be active until the CCB is available (approximately 3 minutes).

8. Maintenance

This chapter describes how to perform common maintenance operations and upgrades.

The required frequency of inspection and maintenance will depend on local site conditions and will need to be established through experience. Please refer to IEC/EN 60079-29-2 or other local or national regulations for guidance on establishing an appropriate maintenance routine.

WARNING

If the relays are switching mains voltages, hazardous live terminals may be present within the Relay Output Module even if the Touchpoint Pro system is isolated.

8.1 Testing the Touchpoint Pro System

The UI navigation menu structure can be found in the MS Visio™ file on the CD.

8.1.1 Introduction

The Touchpoint Pro system has four test modes available, which together enable a full test of the system. The test modes are:

1. LED Panel Test -- tests that all of the panel LEDs are working.
2. Field Inputs Test – test all input channel devices without affecting any outputs. Gas test, force mA, confirmation of correct device connection etc.
3. Configuration Settings Test – force the Touchpoint Pro input channels to specific levels and view the corresponding states, threshold alarm levels, over-range, warning/fault etc.
4. Cause and Effect Test (carried out from the output channel menu) – force the Touchpoint Pro input channels to specific states to test that the correct output channels are activated.

WARNING

In all four test modes, the Touchpoint Pro system is not operational as a safety system and any field device inputs will be ignored.

Caution: During the Cause and Effect Test, outputs will be generated and relays will be activated. To avoid any unwanted activation of output devices (e.g. emergency deluge) disconnect them before starting the test.

When any of the test modes is active, the System Failure relay will activate to indicate that the safety function of the system is not operating. In addition, a “Test Mode” Fault will be shown as an Active Event on the User Interface, which cannot be reset.

Once a test mode is active, the system will remain in test mode until the test is exited. The only exception is in the case of a power cycle of the Touchpoint Pro system, when it will restart in normal mode. Cause and Effect Test inputs can be forced and cleared from any output in that Test.

Note: After 20 minutes of inactivity the system will always logout the user and return to the System Status screen, however it is still running in test mode.

8. Maintenance

The optional PC Configuration Software cannot be used while a test mode is active.

All events generated while the system is in test mode will be logged in the event history. Therefore a record of the testing can be generated once it is complete (see Normal Operation, Generate Reports).

8.1.2 Field Inputs Test

Note: Engineer access level is required.

During this test, all field device inputs will be displayed by the Touchpoint Pro system, but the Cause and Effect matrix will not be evaluated. No outputs will be generated.

The purpose of this test is to check that the input field devices are connected to the correct input channel of the Touchpoint Pro system. Typically, this can be done either by applying gas to the sensor in the field or by forcing the mA output of the sensor to a given value. The gas concentration and alarm states raised for the channel can be viewed on the touchscreen or the Web Server.

To use the Field Inputs Test mode:

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Extras** icon then **Diagnostics**
3. Press the **Menu** icon  and select **Field Inputs Test**
4. The system will ask you to confirm, press **Yes** to proceed
5. The system will display a confirmation message, click on **OK** and you will be automatically navigated to the **Active Events** screen
6. Proceed with the test of the field devices. To see more detailed information at any time, select the channel of interest and select **Input Details** from the popup menu

*Note: If the test is done from the **Active Events** screen, the channel of interest will be shown as soon as its state changes, e.g. a threshold alarm is generated. Alternatively, you may wish to work from the **Inputs** screen (return to **System Status** screen and select **Inputs**) by scrolling down to the channel of interest*

7. When the test is complete, return to the **System Status** screen and select the **Extras** icon then **Diagnostics**
8. Press the **Menu** icon  and select **Stop Field Inputs Test**
9. The system will show a confirmation message that it has returned to normal operation

WARNING

Ensure that the system is returned to normal operation once testing is complete.

8. Maintenance

8.1.3 Configuration Settings Test

Note: Engineer access level is required

During this test, all field device inputs will be ignored by the Touchpoint Pro system. The Cause and Effect matrix will not be evaluated. No outputs will be generated.

The purpose of this test is to check that input channels are configured correctly, including alarm, warning, fault thresholds etc. The gas concentration and alarm states raised for the channel as a consequence of forcing the input to a given value can be viewed on the touchscreen or the Web Server.

To use the Configuration Settings Test mode:

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Extras** icon then **Diagnostics**
3. Press the **Menu** icon  and select **Configuration Settings Test**
4. The system will ask you to confirm, press **Yes** to proceed
5. The system will display a confirmation message, click on **OK** and you will be automatically navigated to the **Inputs** screen
6. Select the channel to be tested and select **Input Details** from the popup menu
7. From the **Input Details** screen, press the **Menu** icon  and select **Force Value**
8. Enter the gas concentration that you want to simulate. This can include over and under range values
9. The system will return to the **Input Details** screen, where it will show the simulated gas value as well as any corresponding active events (e.g. Alarm 1)
10. When ready, press the **Menu** icon  and select **Clear Force**
11. Repeat steps 7-10 as required to complete the channel test
12. Return to the **Inputs** screen and repeat steps 6-10 for the next channel
13. When the test is complete, return to the **System Status** screen and select the **Extras** icon then **Diagnostics**
14. Press the **Menu** icon  and select **Stop Configuration Settings Test**
15. The system will show a confirmation message that it has returned to normal operation

WARNING

Ensure that the system is returned to normal operation once testing is complete.

8. Maintenance

8.1.4 Cause and Effect Test

Note: Engineer access level is required.

During this test, all field device inputs will be ignored by the Touchpoint Pro system. The Cause and Effect matrix will be evaluated based on simulated input states and outputs will be generated.

Caution: During the Cause and Effect Test, outputs will be generated and relays will be activated. To avoid any unwanted activation of output devices (e.g. emergency deluge) disconnect them before starting the test.

This test has two purposes:

1. To verify that Cause and Effect matrix configuration is correct by forcing the state of the input channels to various combinations. The activated/de-activated output channels corresponding to the forced state of input channels can be viewed on the touchscreen or the Web Server.
2. To check that the output channels are configured correctly, including delay on/off times etc. By forcing the state of the output channel to either activate or de-activate the corresponding change in state of the output device after application of delay on/off times can be viewed on the touchscreen or the Web Server.

To use the Cause and Effect Test mode:

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Extras** icon then **Diagnostics**
3. Press the **Menu** icon  and select **Cause and Effect Test**
4. The system will ask you to confirm, press **Yes** to proceed
5. The system will display a confirmation message, click on **OK** and you will be automatically navigated to the **Outputs** screen
6. Select the channel to be tested and select **Output Details** from the popup menu
7. Press the **Menu** icon  and select **Force Input States** to do a full test of the Cause and Effect matrix (test 1 described above)
8. The system will display a matrix of all the input channels that are linked to the output channel being tested
9. Select the input channel states that you wish to simulate, and click on **Force**. The cells corresponding to the forced states will be coloured
10. The system will return to the **Outputs** screen where the results of the forced input states can be viewed
11. When ready, return to the **Output Details** screen, press the **Menu** icon  and select **Clear Force**
12. Repeat steps 6-11 for the next channel
13. To force the output relays (test 2, described above) select the channel to be tested and select **Output Details** from the popup menu

8. Maintenance

14. Press the **Menu** icon  and select **Force** from the popup menu. The output will now be activated and the result can be verified
15. When ready, select the channel again, and select **Clear Force** from the popup menu
16. Repeat steps 13-15 for the next channel
17. When the test is complete, return to the **System Status** screen and select the **Extras** icon then **Diagnostics**
18. Press the **Menu** icon  and select **Stop Cause and Effect Test**
19. The system will show a confirmation message that it has returned to normal operation

WARNING

Ensure that the system is returned to normal operation once testing is complete.

8.2 Routine maintenance

- Visually inspect all cabling
- Check for perishing or loose connections
- Clean the screen of the Touchpoint Pro Controller with a soft cloth and mild detergent
- Check for dust contamination (particularly for rack mount units)
- Periodically exercise the relays to confirm functionality
- Check the condition of the enclosure for corrosion, deterioration of door seals, blocked ventilation seals, loose fixings and other damage that could impair the safety and operation of the equipment.

Caution: Do not use solvent to clean any part of the Touchpoint Pro system

8.3 Exercise the relays

Note: Operator level access is required to Force a channel. Engineer level access is required to Clear Force.

Caution: Disable any operations or actions that may result from relay activation before starting this test

Relay output channels can be tested by forcing the relays to an active state:

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Inputs** icon then the **Outputs** icon
3. Select the channel to be tested, and select **Force** from the popup menu
4. When ready, select the channel again, and select **Clear Force** from the popup menu
5. Repeat steps 3 and 4 for all relay output channels

8. Maintenance

8.4 How to replace a faulty I/O module

A faulty I/O module can be replaced with another of the same type, without needing to re-program the configuration. Touchpoint Pro will automatically copy over the configuration to the new module.

WARNING

If the relays are switching mains voltages, hazardous live terminals may be present within the Relay Output Module even if the Touchpoint Pro system is isolated.

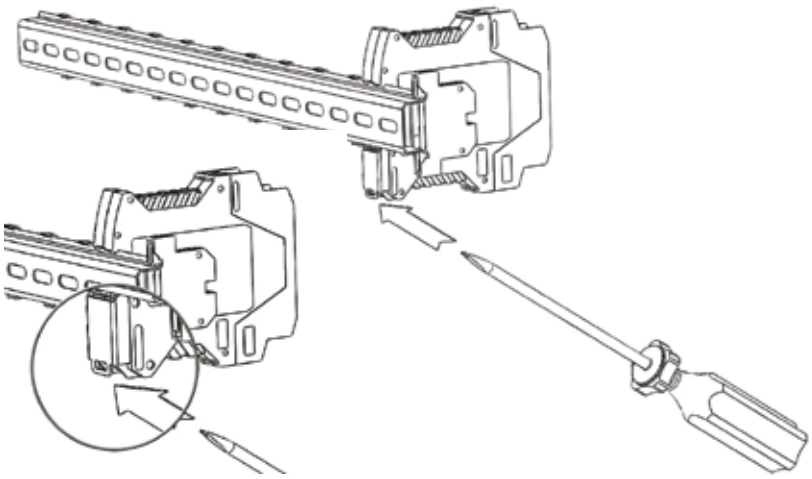
Caution: When installing or replacing an I/O module, avoid static discharge

Note: Administrator level access is required

Note: The new module must be the same type as the old module.

1. Disconnect the field equipment from the faulty module, by unplugging the field terminals
2. Remove the faulty module from the Communication / Power Rail

- *Release the clip at the bottom of the module*
- *Ease the module outwards and unhook it from the top of the DIN rail*



8. Maintenance

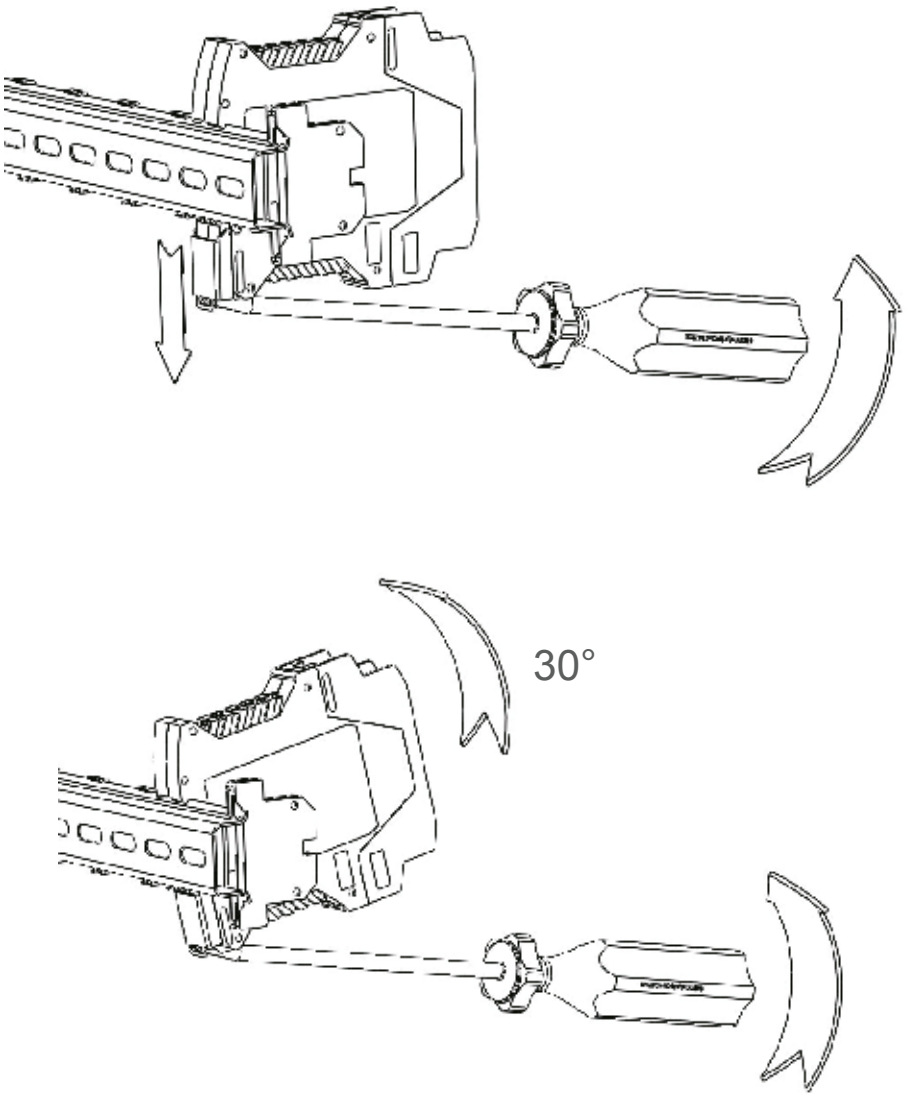


Figure 8.1 Detaching a module

3. Fit a new module of the required type to the same slot on the Communication / Power Rail:

- *Ensure that the module is the correct way up with the label towards you*
- *Hold the module at an angle with the plastic side (top) closest to the DIN rail*
- *Hook the plastic side on to the edge of the DIN rail*

8. Maintenance

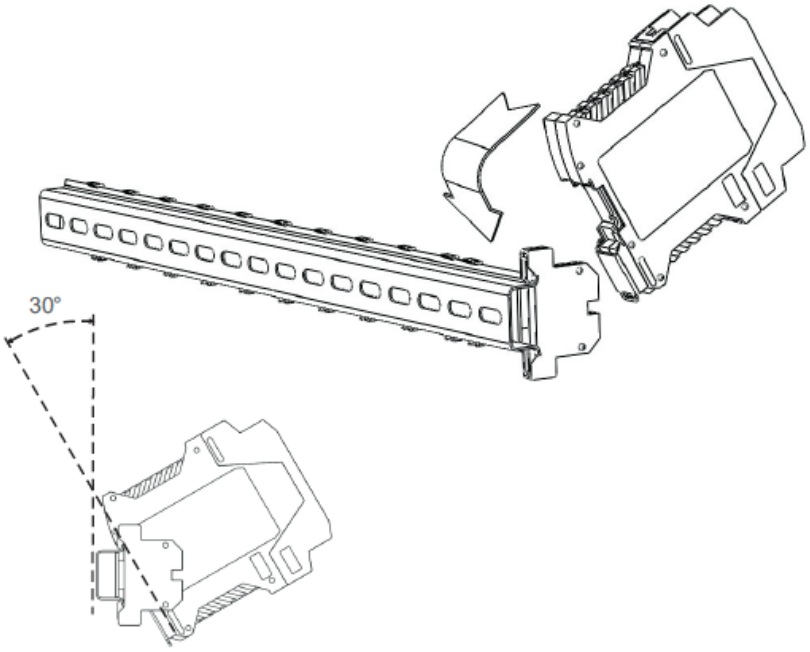


Figure 8.2 Attaching a module

- *Push the bottom of the module into place so that it clips onto the DIN rail.*

Caution: Clipping the module to the DIN rail should not require any force. If the module does not clip easily, check that it is correctly aligned to the connector on the DIN rail.

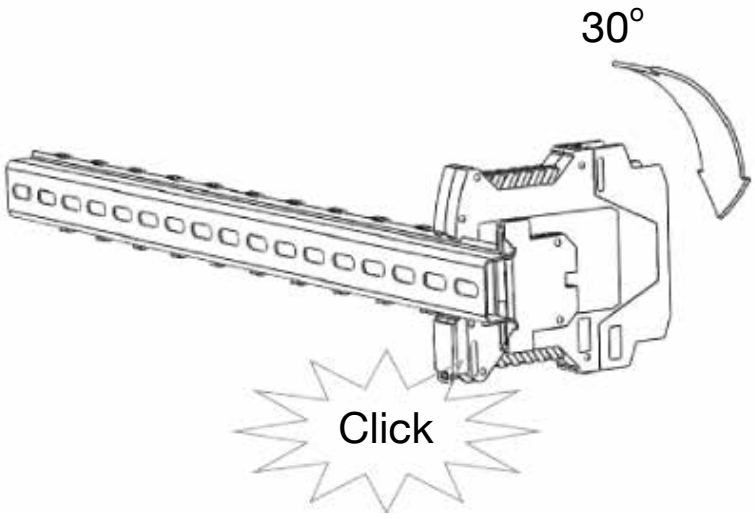


Figure 8.3 Clip the module into place

8. Maintenance

4. Re-connect the field equipment by plugging the field terminals into the new module
5. If not already logged in, login with a valid administrator level user name
6. From the **System Status** screen select the **Extras** icon then **System Configuration**
7. Re-enter the password and press **Login**
8. Initialise the Ring Network. Both the newly inserted module and the old module (in a faulty state) will appear in the System Setup Tree
9. Highlight the old module which has been removed, and select **Replace Module** from the popup menu
10. A list of compatible modules will be shown, including the newly added module
11. Select the new module and a confirmation screen will be shown
12. Select **Replace** to proceed
13. The configuration information will be automatically loaded into the new module

Note: This procedure should only be done to remove a faulty module from the system. The removed module cannot be used in another system unless its state is set back to Unconfigured.

Note: A new AIM mV module will require calibration.

8. Maintenance

8.5 How to add a new I/O Module

The Touchpoint Pro system can easily be expanded by adding new I/O modules.

Caution: When installing or replacing an I/O module, avoid static discharge

Note: Administrator level access is required

Note: A module which has previously been configured in one system cannot be added to another system, unless it was correctly removed from the original system's configuration.

1. Fit a new module of the required type to an empty slot on the Communication / Power Rail:

   - *Ensure that the module is the correct way up with the label towards you*
   - *Hold the module at an angle with the plastic side (top) closest to the DIN rail*
   - *Hook the plastic side on to the edge of the DIN rail*

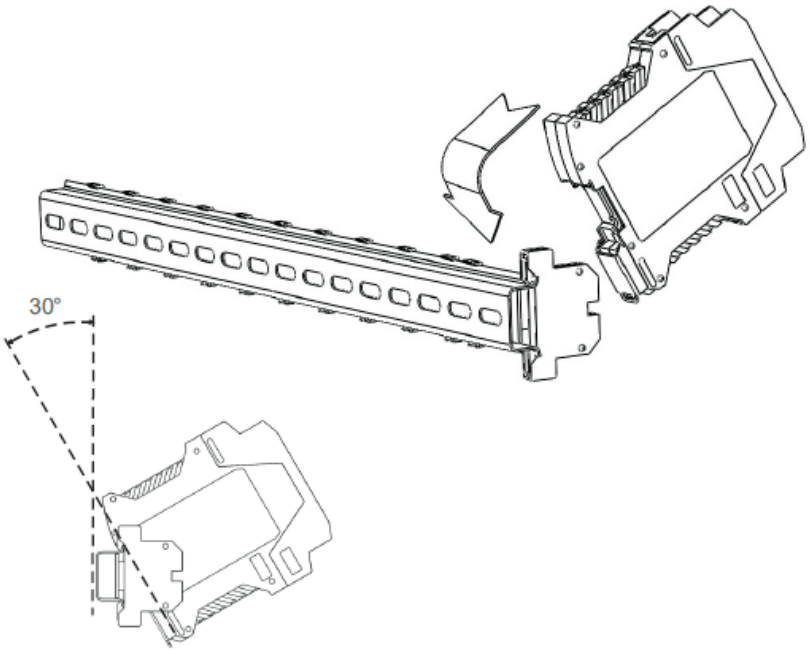


Figure 8.4 Attaching a module

   - *Push the bottom of the module into place so that it clips onto the DIN rail.*

Caution: Clipping the module to the DIN rail should not require any force. If the module does not clip easily, check that it is correctly aligned to the connector on the DIN rail.

8. Maintenance

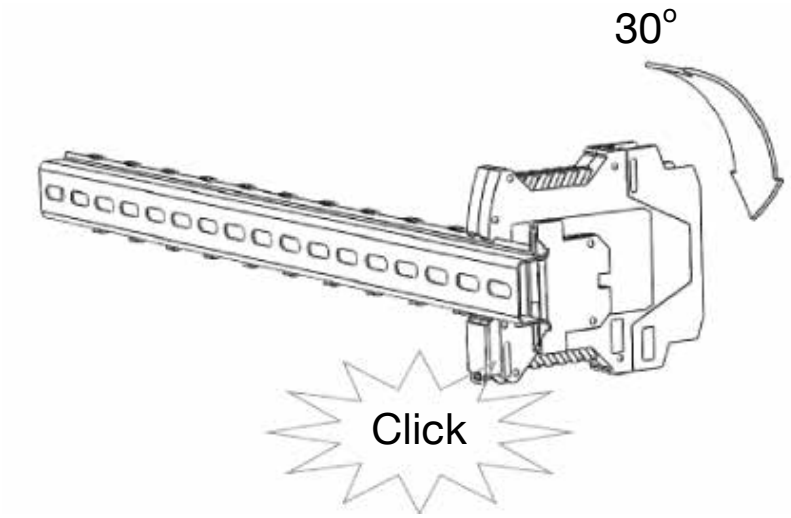


Figure 8.5 Clip the module into place

2. If not already logged in, login with a valid administrator level user name
3. From the **Home** screen select the **Extras** icon then **System Configuration**
4. Re-enter the password and press **Login**
5. Initialise the Ring Network. The newly inserted module will appear in the System Setup Tree
6. Select the new module and commission it
7. Commission each channel in turn

Note: See the chapter Commissioning for detailed instructions if required

8.6 How to Remove or Decommission an I/O Module

WARNING

If the relays are switching mains voltages, hazardous live terminals may be present within the Relay Output Module even if the Touchpoint Pro system is isolated.

Caution: When installing or replacing an I/O module, avoid static discharge

Note: Administrator level access is required

1. If not already logged in, login with a valid administrator level user name
2. From the System Status screen select the Extras icon then System Configuration
3. Re-enter the password and press Login
4. In the System Setup Tree, highlight the module to be removed and expand to show its channels

8. Maintenance

5. Highlight each channel in turn and select “Decommission” from the popup menu
6. Once all channels are decommissioned. highlight the module and select Remove Module from the popup menu
7. If still connected, disconnect the field equipment from the faulty module, by unplugging the field terminals
8. Remove the faulty module from the Communication / Power Rail

- Release the clip at the bottom of the module
- Ease the module outwards and unhook it from the top of the DIN rail

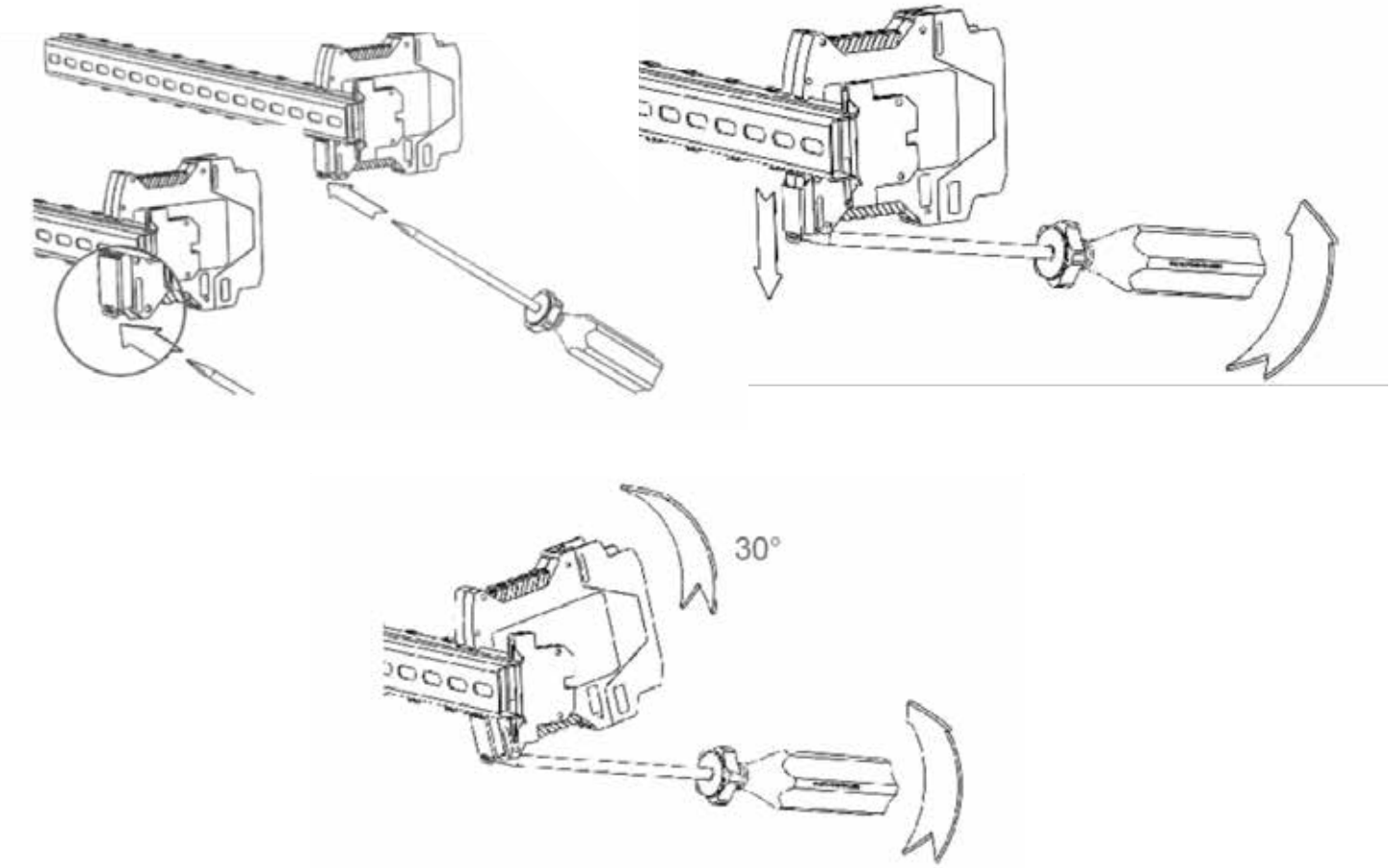


Figure 8.6 Detaching the module

8. Maintenance

8.7 Backup / Restore configuration

Note: Engineer access level is required to back up the configuration. Administrator access level is required to restore configuration.

Note: The Touchpoint Pro system remains available during this procedure.

It is recommended to back up the Touchpoint Pro system configuration once it is completed, and following any changes to the setup or software.

Note: The SD Card fitted in the Touchpoint Pro Controller is used for logging event history. When the SD Card is removed, data is logged in internal memory. To avoid potential loss of event history data, please minimise the length of time that the SD Card is removed from the system.

Note: When the command "Eject SD Card" is used, the event history data is flushed from the internal memory to the SD Card. To ensure that event history is maintained on one SD Card and minimise loss of event history data during updates, please eject the SD Card from the Touchpoint Pro, copy any required files and replace it in the system as soon as possible. If a different SD Card is used, some event history data may be saved to the second card, and will no longer be accessible from the Touchpoint Pro.

To back up the configuration:

1. Ensure that the SD Card memory device is inserted in the Control Module
2. If not already logged in, login with a valid engineer level user name
3. From the **System Status** screen select the **Extras** icon then **System Configuration**
4. Re-enter the password and press **Login**
5. Select **CCB Management** and click on **Configuration Backup**
6. Select the required drive
7. The system will display a message "The configuration backup process might take a few minutes. The User Interface is not accessible during this time. Do you want to proceed?" Please ensure that source drive is always connected during the operation.
8. Once the action is confirmed, the configuration backup process starts and a progress message is displayed. The backup may take several minutes depending on the system size
9. The Configuration backup file is stored on the memory device in:
   \SD Card Drive\TPPR Configuration\TPPR_Config_SystemID.bin

To restore the configuration:

1. Make sure that the backup SD Card is inserted in the Control Module SD Card socket with the configuration backup file saved in:
   \Hard Disk\\TPPR Configuration\TPPR_Config_SystemID.bin
2. If not already logged in, login with a valid administrator level user name
3. From the **System Status** screen select the **Extras** icon then **System Configuration**
4. Re-enter the password and press **Login**

8. Maintenance

5. Select **CCB Management** and click on **Configuration Restore**
6. The system will display a message “Present configuration in CCB will be replaced, do you want to continue?”
7. Once the action is confirmed, the configuration restoration process starts and a progress message is displayed. The process may take several minutes depending on the system size
8. Once the configuration is restored, it is recommended that a configuration report is created to verify the settings

8.8 Change the SD Card

Note: The system will provide a notification when the SD card is 80% full. You then have the option of replacing the card with a new one, or cutting and pasting the card contents into a desktop folder and reusing the same card.

This procedure does not need a password and can be carried out by any trained operator.

To change the SD Card you will need an unlocked and empty SD card formatted for Windows.

1. From the **System Status** screen, select **Extras**, then **SD Card**
2. Select **Eject SD Card**
3. When prompted, remove the SD Card and immediately insert a replacement card

Note: Touchpoint Pro has a temporary internal memory so no data is lost during card replacement

4. Return to the **Extras** screen and select **SD Card** again. Confirm that the SD Card shows status “Inserted” and usage below 80%

8.9 Calibrate mV input channels

Catalytic sensors should be calibrated periodically according to the manufacturer’s recommendations.

Note: Engineer level access is required

Note: If you wish to enable a calibration reminder for the channel, please edit this setting before starting calibration (see Commissioning, Editing a Configured Channel and Configurable Parameter Reference Guide, Calibration Reminder Settings)

Touchpoint Pro tracks and monitors the ageing of catalytic bead detectors and can provide a warning when a sensor should be replaced. Select First Span when calibrating a new or replacement sensor for the first time, and Span for all calibrations thereafter. When the sensitivity of the sensor has dropped below 50% of the original value, a “Sensor Lifetime Expired” warning will be generated.

Caution: If First Span is not used, the system will compare the sensitivity of the sensor to the default value of 50 mV. This may result in the “Sensor Lifetime Expired” warning being generated prematurely or not at all.

To calibrate a mV input channel, please follow the procedure below in combination with the relevant instructions in the sensor manual.

8. Maintenance

1. If not already logged in, login with a valid engineer level user name
2. From the System Status screen select the **Inputs** icon then select the channel to be calibrated
3. From the popup menu, select Inhibit to **inhibit** the channel

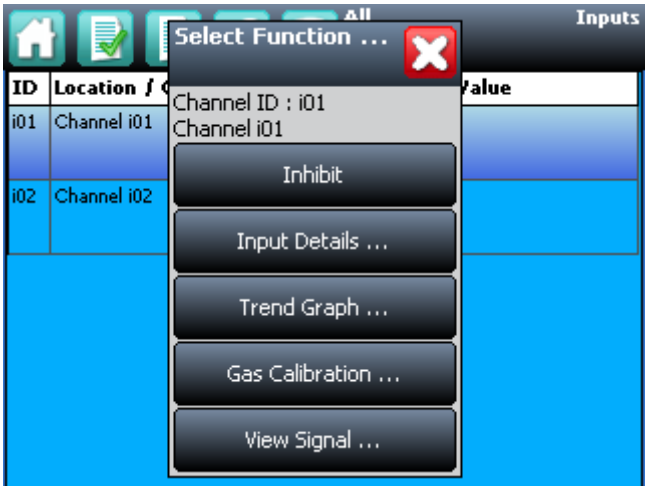


Figure 8.7 Inputs Screen with menu options

4. Select **Calibration** from the popup menu

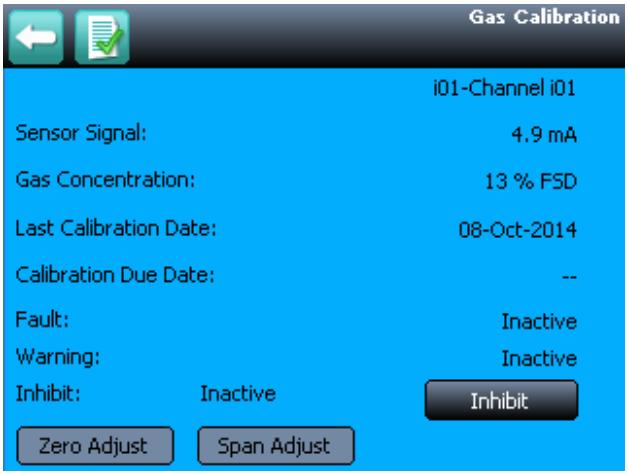


Figure 8.8 Calibration Screen

5. Select **Zero Adjust**, and when ready press **OK** and apply clean air to the sensor
6. View the reading until it is stable, and then press **Accept**

8. Maintenance

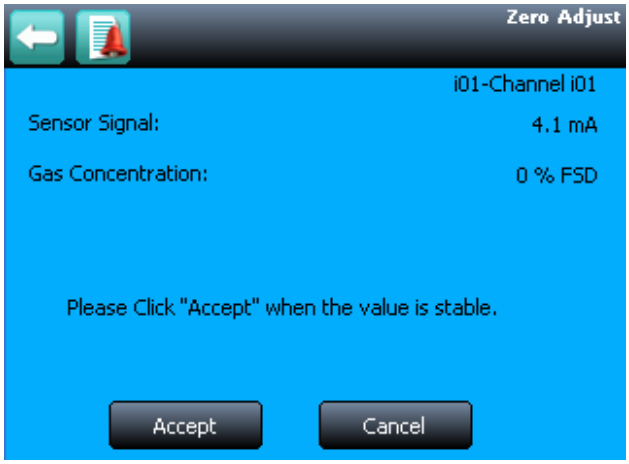


Figure 8.9 Zero Calibration Screen

7. *Confirm that the gas reading is zero, and press Save then OK*

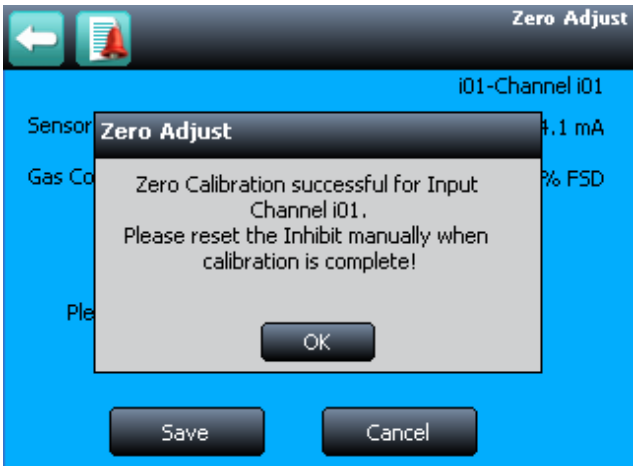


Figure 8.10 Zero Calibration Confirmation

8. Select **Span Adjust**
9. Enter the concentration of the span gas and press **Accept**

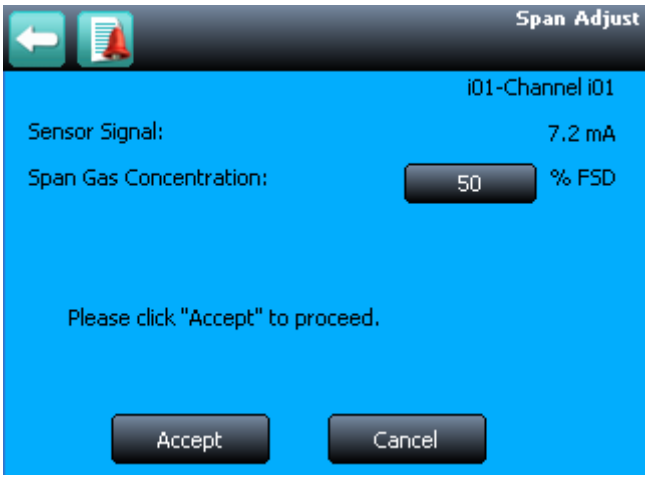


Figure 8.11 Enter Span Gas Concentration

8. Maintenance

10. When ready press **OK** and apply gas to the sensor

Figure 8.12 Apply Span Gas

11. View the reading until it is stable, and then press **Accept**

12. Confirm that the gas reading is correct, and press **Save** then **OK**

13. Remove the span gas from the sensor, and confirm that the gas reading has returned to zero

14. Select **Clear Inhibit** to remove the inhibit from the channel

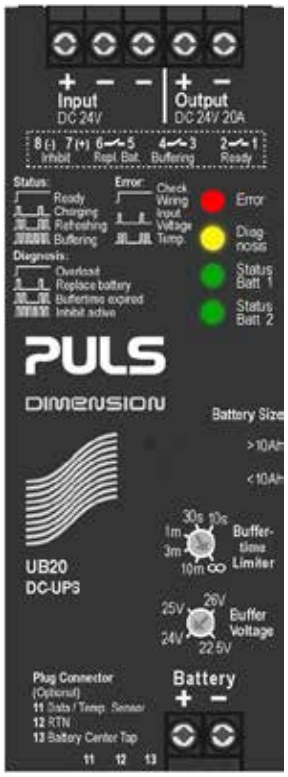
8.10 Touchpoint Pro Battery Box

8.10.1 DC-UPS LED Indications

The DC-UPS module has a range of LEDs that indicate UPS system states, as listed both on the DC-US module cover, and in the table below. These LEDs should be checked regularly and before isolating the battery or mains power supplies.

Note: TPPR batteries are replaced as a pair, 'Battery Center Tap' is not used, and individual status is not shown.

8. Maintenance



LED	Status	Flashing Sequence (1 = On)	Indication
Green	Good		Ready
			Charging
			Refreshing
			Buffering
Yellow	Check		Overload
			Replace batteries
			Buffertime expired
			Inhibit active
Red	Fault		Check wiring and fuse
			Check Input Voltage
			Check Temperature (not used)

Key:	
Battery Size	Sets the charging current, This should be >10Ah for the TPPR 12Ah or 27Ah batteries, which gives a charging current of 3.0A
Buffering	The input voltage is below the transfer threshold level, and the TPPR is running on battery power (buffering). See Buffertime below.
Buffertime	A DC-UPS supplying nominal DC 24V @20A should provide power for ≈15 mins with 12Ah batteries, and ≈30 mins with 27Ah batteries
Buffertime expired	Output has switched off due to the setting on the buffertime limiter, or buffering has stopped because of battery discharge protection. This signal will be displayed for 15 minutes.
Buffertime Limiter	Sets how long the UPS will supply power. Usually set to infinity (∞), which allows the system to run until power is restored or until the batteries discharge below working limits
Buffer Voltage	Sets the nominal output voltage. For the TPPR this is set to DC 24V
Charging	The battery capacity is below 85% and the batteries are charging
Inhibit active	Indicates that buffering ability is disabled (charging of batteries will continue) or that a buffering event was aborted due to the inhibit function
Input Voltage	Input voltage is lower than the selected Buffer voltage + 1.0V, or higher than the input over-voltage protection (OVP) level
Overload	Indicates if the output current is higher than specified values or if the unit has shut down during hiccup mode
Ready	The battery charge is above 85%, no wiring failure is recognized, input voltage is sufficient and inhibit signal is not active
Replace batteries	Indicates that the batteries have failed the battery health check, and that both batteries should be replaced as soon as possible

Caution: Before carrying out any work, ensure that the isolator switch is in the OFF (down) position

8. Maintenance

8.10.2 Routine maintenance

- Visually inspect the Touchpoint Pro Battery Box and all cabling
- Check for physical security, cable damage, or loose connections
- Periodically check that the vents have not become obstructed. If necessary, vacuum to remove any debris

WARNING

The sealed batteries contain lead and acid. Treat all damaged batteries and leaks as hazardous spills, and dispose of the battery and contents as hazardous waste.

8.10.3 Changing a fuse

Caution: To comply with regulatory requirements, only use the specified replacement fuse.

1. Ensure that the isolator switch is in the OFF (down) position
2. Undo the fuse holder by pushing the two sides together and twisting to release
3. Remove the blown fuse and insert a replacement of type Bussman 20 A Fast Acting 1.25” Type ABC-20-R
4. Push the two sides of the fuse holder together and twist to lock in place
5. Return the isolator switch to the ON (up) position

8.10.4 Replacement Batteries

Caution: Batteries should be load-tested at frequent intervals and replaced if they cannot hold a stable current under load.

Caution: To comply with regulatory requirements, only use the specified batteries.

Replace faulty batteries with:

- FIAMM 12 V 12 Ah FG21202 (part number TPPR-V-0406) or
- FIAMM 12 V 27 Ah FG22703 (part number TPPR-V-0405)

Caution: Batteries must be replaced as a pair.

9. Problem Solving

This section explains how to deal with problems that may be encountered when using Touchpoint Pro.

If a problem persists please contact Honeywell Analytics for advice, using the contact details given on the last page of this manual.

9.1 Troubleshooting

Category	Fault / Problem	Possible Cause	Remedial Action
User Interface (touchscreen)	Lost Admin password	User error	A Honeywell authorised engineer can rescue a locked-out Administrator, but this requires an on-site Service call and installation of a special token and one-time pass phrase.
User Interface (touchscreen)	Screen has locked up	Internal communication issue	On the front panel, press the Accept and Reset buttons together for 10 s, which will restart the Communication Board.
User Interface (touchscreen)	Screen does not work as expected	Screen calibration	Calibrate the touchscreen. To do this: 1. Login 2. Select Extras>Global Settings>Panel Configuration>Calibrate Touch Panel 3. Follow the instructions using a stylus or similar. 4. When done, use the Back button to exit. *Note: You may get a fault light if you leave the touchscreen calibration selected and unused for a period of time. Continue with the calibration to clear the fault.*
User Interface	Web browser already open' error message	Windows limitation: Browser does not fully shut down on exit, or other instances remain open on exit	CTRL+ALT+DEL>Start Task Manager>Processes>[Chrome.exe]>End Process (or your [browser.exe] of choice.) Close Task Manager and relaunch your browser.
Configuration	Unexpected timeout during configuration	When you enter the **System Setup** menu, a 20 minute configuration timeout is active separate to the user login timeout	To avoid this timeout, send a value to the Touchpoint Pro system within the 20 minute period. If the timeout has occurred, it may be necessary to set the module back to Normal state. Navigate to the System Setup screen, select the module and from the popup menu select Normal state. If this was a first time configuration, all data will have been deleted and the channel decommissioned. If you were editing a channel, any data not sent to the Touchpoint Pro system will be lost.
Inhibit Mode	Cannot clear Inhibit from a Channel	It is possible to have more than one inhibit condition active on a channel, and you have to resolve all inhibit conditions before the inhibit can be cleared	Ensure all Inhibits are cleared.
I / O channels	Channel / alarm is not functioning as expected	Some parameters may be defined in a different way	Check the definitions of parameters in Commissioning, Channel Configuration and verify settings accordingly.

9. Problem Solving

Category	Fault / Problem	Possible Cause	Remedial Action
I / O channels	Cannot clear Auto Inhibit from channel	System has exited configuration unexpectedly, leaving module in configuration state	Go to **System Configuration**, then **System Setup**. Select one channel of the module, and select **Edit Configuration**. Close the popup windows and the module will automatically return to Normal state.
		AIM mV channel has not yet been calibrated	Calibrate the channel. (For catalytic bead type detectors, the Touchpoint Pro controller is necessary to complete the measuring circuit. Therefore all commissioned mV channels remain in Inhibit state until they are calibrated.)
		Inhibit Delay is active	Wait for the Inhibit Delay time to elapse. (If the Power-On Delay or Fault Recovery Delay is enabled, the system will remain in Inhibit for a period defined by the Inhibit Delay Time.) Please refer to Appendix 2 – Configurable Parameter Reference Guide for further details
		Sensor / Transmitter is signalling Inhibit	The Sensor / Transmitter may be in a start up sequence, or may have been inhibited for maintenance
mA input channel	There is a discrepancy between the sensor reading and the value displayed by Touchpoint Pro	The mA loop requires calibration	Touchpoint Pro converts the 4-20 mA signal it receives from the sensor to a gas reading. If the discrepancy is significant, re-calibrate the 4-20 mA loop by forcing the sensor output to 4 mA then 20 mA, see Commissioning, Calibrating a mA input channel
mA input channel	Error “Calibration Signal Too High” occurs when calibrating the mA loop	The parameter “Maximum Span Signal” has been exceeded (default value 20 mA)	Edit the configuration of the channel – Go to **System Configuration**, then System Setup. Select the channel and select **Edit Configuration**. Under **Calibration Settings**, change the value **Maximum Span Signal**. Alternatively, use a lower forced mA value to calibrate the channel.
mA Input channel	Fluctuating input signal	HART communication with the corresponding field device	HART communication with the field device may appear as a fluctuation on the incoming signal. This will clear when HART communication ceases.
Modbus	No Modbus Communication		Check the wiring between the Control Module terminal blocks TB6 and TB7 and the host computer system port. Try swapping over TDA and TDB. Check that the serial communication configuration parameters of the host computer system and Touchpoint Pro are the same. Ensure that the bus is correctly terminated. If this is the case remove the bus terminators and retry communication. Consider adding network bias resistors. Please refer to Appendix 1 - Modbus Operation for further details
Modbus	Communication data errors		Check the data signal wiring is not routed near sources of electrical noise. Check for earth loops. Ensure that the bus is correctly terminated. If this is the case remove the bus terminators and retry communication. Consider adding network bias resistors. If possible use an oscilloscope to examine the signals on the highway and take appropriate corrective action.

9. Problem Solving

Category	Fault / Problem	Possible Cause	Remedial Action
Modbus	No response from Touchpoint Pro		Check the address parameter used in requests issued by the host computer system matches the address allocated to the slave node. In multi-drop systems check that all nodes have a unique address.
Module configuration	Module is still showing as present and available for configuration in the System Setup	Module has not been properly removed from the system	Follow the instructions to remove a module from the system, see Maintenance, How to Remove or Decommission an I/O Module
PC Configuration	No PC Configuration SW connection		Check IP settings, check proper cable connections. The PC should be connected to the Ethernet port of the Touchpoint Pro Control Module.
System	System does not start		Check power supply / wiring, check fuses. Check RCD and UPS/ Battery Backup if fitted.
System	Ring communication faults observed		Check the Active Events screen for details of the location of the connection break. or Check the LEDs on each Ring Coupling Module (RCM) in the system. The LED flashes to indicate that data is being received, therefore if an LED is not lit, there is a problem in the preceding section of the ring network. LEDs on the Ring coupling module indicate the presence of an incoming signal and they do not take into account the quality of the incoming signal. Check the cables and connections in the area where the fault is indicated.
System	The Event History file is too large to be viewed	The event history file has become too large for the local system memory to process it	Please use the PC Configuration Software to view the Event History, or contact your local service representative who will be able to receive the file by e-mail and process it for you
System	The system is consistently reporting CCB communication failure	There is a small chance that the CCB has failed	If the problem cannot be remedied by a power cycle, schedule maintenance to fit a redundant CCB, or to replace the master CCB. Please contact your local service representative for further assistance
Ring Oscillation Fault	Ring faults are present or have occurred on the system when commissioning a module or ring circuit.	This may occur when all modules are unconfigured, some modules are unconfigured, or some modules are foreign (unrecognised) modules	Remedial action: 1. Take the unconfigured or foreign modules out of the system 2. Clear the ring fault from the system 3. Insert the unconfigured or foreign module back in the system and continue with commissioning.

9. Problem Solving

Category	Fault / Problem	Possible Cause	Remedial Action
Web Server	No Web Server connection		Check TCP/IP settings, check if the PC network adapter is enabled, check that the PC wireless adapter is off *before* connecting to the Web Server, check proper cable connections. The Ethernet port of the Touchpoint Pro Control Module should be connected to a network. Please refer to cable recommendations (chapter 4).
Web Server	Communication with the Controller is lost	The Touchpoint Pro Controller requires some action to be performed (e.g. system restart, restore CCB functionality) before normal Web Server communication can resume	Check the Touchpoint Pro Controller (touchscreen) for any instruction or detailed error message
Web Server	Slow / intermittent response from the Touchpoint Pro system	The Web Server supports 5 concurrent web clients, however it does not restrict further users from connecting	Reduce the number of web clients to five or less

9.2 List of Error Codes

Note: *CCB – Control Centre Board*
COB – Communication Board
UDID – Unique Device Identifier

Error Code	Message	Possible Cause	Remedial Action
2	Operation failed; invalid frame length. Please retry the operation. If the problem persists, please contact your local service representative	The Control Module has an internal communication issue	1. Please retry the operation. 2. If still unsuccessful, on the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 3. If the error has not cleared, if possible cycle the power to the system. 4. If the problem persists, please contact your local service representative.
3	Operation failed; invalid source address. Please verify that the current COB software and CCB firmware revisions are compatible	A software or firmware update is not compatible with other installed components	1. Refer to the Help screen to confirm the currently installed version of software and firmware. 2. Refer to the Touchpoint Pro users support website to verify that the current COB software and CCB firmware revisions are compatible. 3. If required, update the appropriate software / firmware (see Maintenance).

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
4	I/O Module parameter write failed; UDID does not match	The CCB may not recognise the module type	1. Please initialise the ring network and try again. 2. If the error persists, update the CCB firmware (see Maintenance).
5	Not used		
6	Operation failed; invalid channel type	Please refer to error 2	Please refer to error 2
7	Operation failed; invalid request type	Please refer to error 2	Please refer to error 2
8	Operation failed; invalid command code	Please refer to error 2. Can also occur due to non-compatible COB Software and CCB Firmware versions	Please refer to error 2
9	Operation failed; invalid object type	Please refer to error 2	Please refer to error 2
10	Operation failed; invalid object identifier	Please refer to error 2	Please refer to error 2
11	Operation failed; invalid parameter identifier	Please refer to error 2. Can also occur due to non-compatible COB Software and CCB Firmware versions	Please refer to error 2
12	Operation failed; wrong parameter identifier.	Please refer to error 2. Can also occur due to non-compatible COB Software and CCB Firmware versions	Please refer to error 2
13	Operation failed; parameter is read-only	Please refer to error 2	Please refer to error 2
14	Login session has expired or has been ended by another user	A user login will time out after 20 minutes of inactivity, or another user may be logged in via one of the alternative interfaces (local touchscreen or PC Configuration Software)	1. Check if another user is logged in. 2. If your requirement takes priority, you have the option to terminate the existing (other user's) session.
15	Operation failed; invalid transaction identifier.	Please refer to error 2	Please refer to error 2
16	Flash memory write operation failed	During configuration, the CCB was unable to write a value into the non-volatile memory	1. Retry the operation. 2. If the error has not cleared, if possible cycle the power to the system. 3. If the problem persists, please contact your local service representative.
17	Operation failed; invalid module identifier.	Please refer to error 2	Please refer to error 2
18	Operation failed; invalid channel identifier.	Please refer to error 2	Please refer to error 2

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
19	Operation failed; invalid physical channel number.	Please refer to error 2	Please refer to error 2
20	Module ID could not be assigned, because it is already in use by another module	Each module on the system must have a unique module ID (e.g. M03)	Select a different Module ID
21	Operation failed; wrong number of parameter identifiers.	Please refer to error 2	Please refer to error 2
22	Not used		
23	Operation failed; Module ID does not exist.	May occur during configuration or changeover of a module	1. Re-initialise the ring network 2. Retry the operation 3. If the error has not cleared, if possible cycle the power to the system. 4. If the problem persists, please contact your local service representative
24	I/O Module cannot be de-commissioned, because one or more channels on this module are commissioned. Please de-commission all channels before de-commissioning the module.	All channels of a module must be de-commissioned before a module can be de-commissioned	1. De-commission all channels on the I/O Module. 2. Retry the operation.
25	Operation failed; Module ID does not match	Please refer to error 23	Please refer to error 23
26	Operation failed; an I/O Module with the same UDID does already exist on the system.	Each Touchpoint Pro component has a unique identifying code.	Contact your local representative to obtain a replacement module.
27	Operation failed; the intended operation is not allowed for the current I/O Module state	These errors may occur if configuration of the module or its channels was interrupted, leaving the module in an undetermined state	Depending on the intended operation, either: Restart the configuration for the module, or from the configuration screen, remove the module and restart commissioning, or Force the module to Normal state
28	The I/O Module could not be found on the network (unknown UDID)	Please refer to error 23	Please refer to error 23
29	The I/O Module could not be found on the network (unknown SDID)	Please refer to error 23	Please refer to error 23
30	Operation failed; I/O Module state is invalid	Please refer to error 27	Please refer to error 27

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
31	State Change operation failed; could not communicate with I/O Module	Potential issue with the ring network connection, or damaged/faulty I/O Module	1. Check the Active Events screen for any reported failure of the ring communication. In this case, refer to Error 37 – Ring communication failed. 2. Check that the I/O Module is properly seated on the DIN rail. 3. If the error persists, remove the module and check for any damage to the connector on the DIN rail. 4. In this case, it may be possible to move the module to another slot. 5. If the connector is damaged, contact your local representative to obtain a replacement DIN rail PCB assembly. 6. If no damage is apparent to the connector and the module fails to operate in another slot, then the module may be faulty. Follow the procedure in Maintenance, Replace an I/O Module to replace it.
32	The user could not be added. A user with the same name already exists on the system.	User already exists	Create the new user with a different name.
33	User could not be added; maximum number of 20 users reached.	The system has the maximum number of users	Remove another user so that the new user can be created.
34	The Username/Password is incorrect, please try again	Incorrect user name, password or access level	1. Check that the user name and password are correct. 2. Confirm that the user has the required access level (see summary in User Interface, Access Levels) 3. If necessary, create a new user with the appropriate access level.
35	The Username/Password is incorrect, please try again	Please refer to error 34	Please refer to error 34
36	Access denied; your current access level does not allow the intended operation	Please refer to error 34	Please refer to error 34
37	Ring communication failed - please check proper ring network wiring and try again.	There is an issue with the ring network connection	1. If the error occurred during normal operation (i.e. not configuration), check the Active Events screen for details of the location of the connection break. or Check the LEDs on each Ring Coupling Module (RCM) in the system. The LED indicates that data is being received, therefore if an LED is not lit, there is a problem in the preceding section of the ring network. 2. Check the cables and connections in the area where the connection break fault is indicated.
38	System interaction command failed; please try again.	An error occurred during the system interaction	1. Retry the operation. 2. If the error has not cleared, if possible cycle the power to the system. 3. If the problem persists, please contact your local service representative.

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
39	Operation failed; wrong alarm identifier.	Please refer to error 38	Please refer to error 38
40	Flash erase operation failed	The CCB was unable to erase a value from the non-volatile memory	1. Retry the operation. 2. If the error has not cleared, if possible cycle the power to the system. 3. If the problem persists, please contact your local service representative.
41	Not used		
42	Operation failed; maximum file size exceeded	An error occurred during firmware / software update or configuration backup / restore	1. Check that the correct file is being used for the update / restore operation. Refer to the Touchpoint Pro users support website for latest update versions. 2. Retry the operation. 3. If still unsuccessful, on the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 4. Retry the operation. 5. If the error has not cleared, if possible cycle the power to the system. 6. If the problem persists, please contact your local service representative.
43	Operation failed; file ID mismatch - firmware update failed	Please refer to error 42	Please refer to error 42
44	Operation failed; file block out of sequence - firmware update failed	Please refer to error 42	Please refer to error 42
45	Operation failed; invalid file block size - firmware update failed	Please refer to error 42	Please refer to error 42
46	Operation failed; CRC mismatch - firmware update failed	Please refer to error 42	Please refer to error 42
47	Firmware could not be applied - firmware update failed	Please refer to error 42	Please refer to error 42
48	Configuration restore operation failed	Please refer to error 42	Please refer to error 42
49	Input channel cannot be de-commissioned, because it is used in the C&E logic. Please remove the input channel first from the corresponding output channel C&E and retry the de-commission operation.	Touchpoint Pro will not allow the removal of an input from the Cause and Effect matrix	1. Identify the output channel(s) that the input channel is linked to. 2. Modify the Cause and Effect matrix for that channel to remove the input channel. 3. Retry the de-commissioning operation.
50	Invalid calibration status	Channel requires calibration, or has not been successfully calibrated	1. Please retry the operation. 2. If still unsuccessful, on the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 3. If the error has not cleared, if possible cycle the power to the system. 4. If the problem persists, please contact your local service representative.

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
51	Zero gas calibration failed - zero signal too low	The level at which the channel is trying to calibrate zero is outside the configured limits	1. For a mA channel, calibration should always be done by forcing the output from the sensor where the facility exists. Check the configured limits on zero and span gas calibration and ensure that the forced mA value is within the limits. 2. For a mA channel where the sensor has no facility to force the output, consult the manufacturer's instructions and carry out a calibration at the sensor. 3. For a mV channel, there may be a problem with the sensor or the calibration gas. Consult the manufacturer's instructions.
52	Zero gas calibration failed - zero signal too high	The level at which the channel is trying to calibrate zero is outside the configured limits	Please refer to error 51
53	Span gas calibration failed - span signal too low	The level at which the channel is trying to calibrate span is outside the configured limits	Please refer to error 51
54	Span gas calibration failed - span signal too high	The level at which the channel is trying to calibrate span is outside the configured limits	Please refer to error 51
55	Gas calibration failed - sensor lifetime exceeded. The sensor sensitivity has fallen to below 50% of its original value; please replace the sensor.	Touchpoint Pro monitors the performance of mV sensors relative to their first span calibration. If the gas response falls below 50% of the original value this error occurs.	1. Contact your local service representative to schedule a sensor replacement. 2. When the replacement sensor has been fitted, repeat calibration in accordance with the instructions in chapter 6, using the "First Span" function
56	Entered span gas concentration is out of range - please edit and try again	The span gas selected is not within the configured limits	1. Check the configured limits for span gas concentration. 2. Obtain an alternative span gas that is within the limits. 3. Retry the operation.
57	Operation failed; invalid object type	There has been a communication error between the CCB and COB	1. Please retry the operation. 2. If still unsuccessful, on the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 3. If the error has not cleared, if possible cycle the power to the system. 4. If the problem persists, please contact your local service representative.

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
58	Operation failed; CRC calculation timeout	There has been a file transfer error between the CCB and COB	1. Please retry the operation. 2. If still unsuccessful, on the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 3. If the error has not cleared, if possible cycle the power to the system. 4. If the problem persists, please contact your local service representative.
59	Operation failed; a session has already been opened by another user	Another user may be logged in via one of the alternative interfaces (local touchscreen or PC Configuration Software)	1. Check if another user is logged in. 2. If your requirement takes priority, you have the option to terminate the existing (other user's) session.
60	The session has expired - new user login required	A user login will time out after 20 minutes of inactivity	The system will automatically request a new login
61	Not used		
62	Not used		
63	Operation failed; CRC error occurred for safe data.	Please refer to error 2	Please refer to error 2
64	Operation failed; CRC error occurred for non-safe data.	Please refer to error 2	Please refer to error 2
65	Operation failed; session does not exist; user login required	User login is required before carrying out the intended operation	The system will automatically request a new login
66	Operation failed; CCB did not respond within the expected time interval.	Please refer to error 2	Please refer to error 2
67	Configuration read / write request failed; FLASH memory operation timeout	During configuration, the CCB was unable to read or write a value from / to non volatile memory	1. Retry the operation. 2. If the error has not cleared, if possible cycle the power to the system. 3. If the problem persists, please contact your local service representative.
68	The Network Initialisation failed; the Ring Network is interrupted. Please check the Ring Network wiring as explained in the user manual and retry the initialisation once the interruption is rectified.	The system will not allow you to initialise the network if a ring break is present	1. Check the Active Events screen for details of the location of the connection break. 2. Check the cables and connections in the area where the connection break fault is indicated (also see Error 37). 3. Ensure that details of the Ring Network break error have gone from the Active Events screen (problem is resolved) 4. Return to the System Setup screen and retry the Ring Initialisation operation.
69	Not used		

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
70	Cannot clear Inhibit because the channel has been inhibited automatically	A mV input channel has not yet been calibrated or channel configuration was interrupted, or the inhibit delay time is active, or the sensor/ transmitter is signalling inhibit	1. For a mV channel, calibrate the channel (see Commissioning, Calibrating a mV input channel). 2. If this is not the cause, go to **System Configuration**, then **System Setup**. 3. Select the module with the inhibited channel, and select Normal State. 4. If this is not successful, go to Extras then Event History to check if an Inhibit Delay Time is active. The inhibit condition will clear after the Delay Time has expired. 5. If there is no Delay Time active, then investigate the conditions at the sensor/transmitter.
71	Cannot reset because the {0} is still active (where {0} is alarm, fault or warning)	The field device is still signalling an active alarm, fault or warning	Investigate the conditions at the field device.
72	Cannot reset all events for this channel because one or more events are still active	Some alarms, faults or warnings on the channel have been reset, but others are still active	Investigate the conditions at the field device.
73	Replace operation cannot be performed; module type of new module is not compatible.	Replacement module is incorrect type or not recognised by the CCB	1. Check and confirm that the replacement module is of the correct type. 2. Re-initialise the ring network and try again. 3. If the error persists, update the CCB firmware. 4. If the problem persists, please contact your local service representative.
74	Not used		
75	Not used		
76	Not used		
77	Not used		
78	Not used		
79	The Input Module cannot be commissioned: The maximum number of 16 Input Modules has already been commissioned on the system.	Touchpoint Pro has a maximum capacity of 16 Input and 32 Output Modules	If more channels than 64 inputs and 128 outputs are required an additional Touchpoint Pro system is needed. Contact your local representative to discuss your requirements
80	The Output Module cannot be commissioned: The maximum number of 32 Output Modules has already been commissioned on the system.	Please refer to error 79	Please refer to error 79
81	Invalid test sequence	CCB receives wrong Test sequence for Relay tests	Please refer to error 2
82	The user could not be added; invalid user name. Please choose a different user name and try again.	The user name must be 4 to 20 characters long	Please choose a user name that meets the requirements and try again

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
83	Kill Session denied Configuration Backup / Restore in Progress	User has attempted to end a session for the PC configuration SW while a CCB configuration restore is in progress from the local touchscreen	Retry after the configuration restore operation is completed
84	Kill Session denied CCB Firmware update in Progress.	User has attempted to end a session for the PC configuration SW while a CCB firmware download is in progress from the local touchscreen	Retry after the firmware download operation is completed
85	The controller needs a restart to proceed further. Please power cycle the controller and try again.	A system error has occurred that can only be cleared by a power cycle	Please cycle the power to the Touchpoint Pro system
86	System is running in test mode.	One of the three test modes is active, and other operations are restricted or not permitted	1. From the **System Status** screen select the **Extras** icon then **Diagnostics** 2. Press the Menu icon, and from the popup menu choose to stop the test mode that is active.
87	Not used		
88	Operation failed; Save Calibration Failed.	Touchpoint Pro was unable to save the sensor calibration	Please retry the operation.
89	Operation failed; Channel Wiring Fault.	Touchpoint Pro cannot detect that a sensor is connected to the channel	Check all field wiring to the sensor and correct any problems
90	Operation failed; Bead Fault.	Touchpoint Pro cannot read the bead current from the connected mV sensor	Check all field wiring to the sensor. It is possible that the sensor has failed, please refer to the manufacturer's instructions
91	Operation failed; system is running in test mode.	One of the three test modes is active, and other operations are restricted or not permitted	1. From the **System Status** screen select the **Extras** icon then **Diagnostics** 2. Press the Menu icon, and from the popup menu choose to stop the test mode that is active
92	Calculation error	A calculation error has occurred during calibration, for example Zero and SPAN calibration done with the same gas input	Retry the calibration. Ensure that the values for zero and span gas are entered correctly.

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
93	Operation failed; module list is mismatching	The Module list detected and the Module list in Backup file are not the same	Ensure that the correct backup file for the system is being used. Retry the operation.
94	Operation failed; please perform ring initialisation first	Faulty CCB has been replaced by new CCB and configuration restore has been attempted	First initialise the ring network, then try again
95	The username/password is incorrect, please try again	User credential mismatch	This error applies to a specific user login that is only permitted from the local touchscreen. Try again from the local touchscreen
96	Not used		
97	Cannot open session because a channel is being calibrated	A user at the local touchscreen is doing calibration when a PC Configuration Software user tries to open a configuration session	Wait for the calibration to be completed
98	Cannot start calibration because a configuration session on PC is in progress	Calibration is attempted while a configuration session is in progress	Close the configuration session and retry calibration
99	Operation failed; Brownout Fault	Brown out fault (low power supply voltage) is set for a module and configuration is attempted for this module / channels of module	Remedy the fault and then do configuration
100	Replace operation cannot be performed - no free I/O Modules available. Please add a compatible I/O Module and initialize the ring network again.	The replacement module has not been detected on the network	Please refer to section Maintenance, Replacing an I/O Module for the full procedure.
101	Ring initialisation has failed. Please cycle the power to the system	Ring Network Initialisation has failed	1. Power cycle the Touchpoint Pro system 2. Return to the System Setup screen and retry the Ring Initialisation operation.
102	Initialisation timeout has occurred. Please cycle the power to the Touchpoint Pro system.	An internal system timeout has occurred	Power cycle the Touchpoint Pro system
103	Not used		

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
104	Operation failed; response result failure	Internal communication error	1. Please retry the operation. 2. If still unsuccessful, on the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 3. If the error has not cleared, if possible cycle the power to the system. 4. If the problem persists, please contact your local service representative.
105	Operation failed; response timeout	Please refer to error 104	Please refer to error 104
106	Operation failed; CRC error	Please refer to error 104	Please refer to error 104
107	Operation failed; session expired	A user login will time out after 20 minutes of inactivity	The system will automatically request a new login
108	CCB-COB communication failed.	Please refer to error 2	Please refer to error 2
109	Operation failed; CCB is not responding.	Please refer to error 2	Please refer to error 2
110	Channel cannot be commissioned; no free Channel ID available. Please de-commission an adequate channel and try again!	Touchpoint Pro has a maximum capacity of 64 input and 128 output channels	If more channels than 64 inputs and 128 outputs are required an additional Touchpoint Pro system is needed. Contact your local representative to discuss your requirements.
111	Operation failed; invalid command code received from CCB.	Please refer to error 2	Please refer to error 2
112	Module cannot be commissioned. You have exceeded the maximum number of 48 I/O modules. Use the Remove Module or Replace Module function in the System Configuration.	Touchpoint Pro has a maximum capacity of 16 Input and 32 Output Modules	If more channels than 64 inputs and 128 outputs are required an additional Touchpoint Pro system is needed. Contact your local representative to discuss your requirements.
113	Not used		
114	Restore operation failed - backup file could not be found	An error occurred during configuration restore	1. Check that the correct file is being used for the restore operation, and is saved as **\Hard Disk\ Touchpoint Pro Configuration\Touchpoint ProConfig.bin** 2. Retry the operation. 3. On the front panel, press the Accept and Reset buttons together for 10 s, which will restart the COB. 4. Retry the operation.
115	Operation cannot be performed - please insert SD Card!		1. Check that the SD Card memory device has enough free memory available for the operation. 2. Check that it is correctly inserted in the socket. 3. Retry the operation.
116	Operation failed; transaction could not be closed	Please refer to error 2	Please refer to error 2
117	Operation failed; response parsing failure	Please refer to error 2	Please refer to error 2

9. Problem Solving

Error Code	Message	Possible Cause	Remedial Action
249	Operation not allowed; please reset Gas Over Range warning and try again	An individual alarm reset is attempted when Gas over range warning is present	First reset Gas Over Range and then attempt to reset the alarm
250	Operation failed; kill session denied as CCB is busy performing critical operation	A user has attempted to end a session while the CCB is updating memory as result of a configuration request	Try after some time when memory update is completed
252	Operation failed; Redundant CCB failed; Please power cycle the controller and try again	Redundant CCB failed during firmware download	Remedy the fault and then update the firmware
253	STEL timer is reset by this operation	Channel inhibit resets the STEL time-weighted average calculations	This is a warning message to notify the user that the STEL calculation is resetting
254	Gas calibration failed - module in recovery state	When fault recovery or power on inhibit delay is in progress for a channel and calibration is attempted	Wait for the delay time to expire and then retry the calibration
255	Operation failed		Please retry the operation. If the problem persists, please contact your local service representative.
400	Unknown error code received from CCB. Please retry the operation. If the problem persists, please contact your local service representative		Please retry the operation. If the problem persists, please contact your local service representative.

9.3 Further Assistance

If the problem is still unresolved, please contact Honeywell Analytics technical support using the contact details at the back of this manual.

Please have the following information to hand: -

- A description of the problem, including the steps taken to try to resolve it
- The serial number of the Touchpoint Pro system

If possible, please also locate the following information by selecting **Extras***,* **Help** *then* **About**:

- *CCB firmware version*
- *COB firmware version*
- *Local UI version*
- *WebServer version*
- *Modbus version (if applicable)*

Note: see also Certification for additional information.

10. Specifications

10.1 Control Module and User Interface

10.1.1 Display Module and User Interface

Description	Front panel User Interface Assembly
Supply Voltage	DC 24V (18 – 32 VDC ± 10% max) (Self Enclosed Low Voltage)
Power Consumption	Maximum 13 W
Ring Communication Physical layer	Isolated RS485
Ring Network Cable	2 x 2 x 1 mm^2 twisted pair cable
Relay Outputs	2 x System State Relays
Relay Contacts	Min. 12 Vdc, 10 mA
	Max. 5 A at 250 Vac / 30 Vdc (non-inductive)
Interfaces	5.7 inch, 320x240 pixels (QVGA), Touch Screen LCD
	LED and Button Panel with LEDs for Power, Alarm and Fault indication. Buttons for Accept and Reset functions
	Buzzer for audio indication of Alarm/Faults (Sound Level: 85 dB at 100 mm)
	USB 2.0 Device Interface with standard Type B USB connector to interface with PC/Laptop for configuration. Supports memory device up to 32 Gb
	10/100 Mbps Ethernet Interface with standard RJ-45 connector
	Standard SD Card Interface up to 32 Gb. Supports SD cards with form factor of 24 mm x 32 mm x 2.1 mm
	2 x RS-485 Modbus connections supporting maximum 115.2 kbps
Panel Dimension	483 mm x 222 mm
Retention of Real Time Clock	24 hours unpowered

10.1.2 Environmental

Operating Temperature	-20°C to +65°C
Storage conditions	-20°C to +65°C
Operating Humidity	10% to 90% RH (non-condensing)
Environmental Protection Class	Equipment Class III, Installation Cat 2, Pollution Degree 2
Maximum Altitude	2000 m (6562 feet)

10. Specifications

10.1.3 Input Supply

Input Voltage	18-32 Vdc (24 Vdc nominal)

10.2 I/O Modules

10.2.1 Common Specifications

Dimensions	35.0 mm x 99.5 mm x 114.5 mm (W x H x D)
Installation	5, 7, 9 or 10-way Communication / Power Rail
Maximum wire size	2.5 mm^2
IP Rating	IP20
EMC	EN 50270
Power supply	DC 24V (18 - 32 VDC)
DIN rail compatibility	TS-35 / 15
Casing material	Polyamide PA 6.6 V0 (UL94)
Operating Temperature Range	-40°C to 70°C
Storage Conditions	-40°C to 70°C
Operating Humidity Range	10 to 90% RH (non-condensing)
Weight	210 g
Environmental Protection Class	Equipment Class III, Installation Cat 2, Pollution Degree 2 Maximum Altitude I 2000m

10.2.2 Analogue Input Module 4-20 mA

Description	4-channel 4-20 mA Analogue Input Module with 2 or 3 wire interface to detector
Sensor Configuration	4 x 2-wire or 3-wire (current sourced from detector)
Signal Measurement Range	0-25 mA
Supply Voltage (Vs)	24 Vdc (18-32 Vdc)
Field Device Supply Voltage	Supply Voltage (Vs) – 0.7 V
Single Channel Field Device Supply current	Maximum 1 A
Total Field Device supply current	Total Maximum current : 2 A at 70°C ambient Total Maximum current : 4 A at 60°C ambient
Power Consumption	0.8 W (Excluding sensor supply)
Power Dissipation	Maximum 3.7 W, at 4 A total field device load Maximum 2.1 W, at 2 A total field device load
Sense Resistance	101 Ω
Connector Coding	Analogue Input Module connectors (TB1-TB4) are coded with coding keys to avoid mis-wiring
DIN Rail connector (Module Supply and Communication)	18-32 VDC ± 10% max (Supplied from Self Enclosed Low Voltage source only)

10. Specifications

10.2.3 Analogue Input Module mV Bridge

Description	4-channel Analogue Input Module for Catalytic Bridge sensors
Electrical Connection	4 x 3-wire mV-Bridge
Supply Voltage	24 Vdc (18-32 Vdc)
Sensor Drive method	Constant current
Programmable Current Range	180-360 mA
Maximum Loop Resistance	Total Maximum loop resistance: 40 Ω at 200 mA (including Sensor) Total Maximum loop resistance: 27 Ω at 360 mA (including Sensor)
Input Range	±15 mV to ±600 mV
Power Consumption	Maximum 1.2 W (Excluding Sensors)
Power Dissipation	Maximum 3.5 W
Connector Coding	Analogue Input Module connectors (TB1-TB4) are coded with coding keys to avoid mis-wiring
DIN Rail connector (Module Supply and Communication)	18-32 VDC ± 10% max (Supplied from Self Enclosed Low Voltage source only)

10.2.4 Digital Input Module

Description	4-Channel Digital Input Module for switched input devices
Electrical Connection	4 x 2-wire Switch Inputs
Supply Voltage	24 Vdc (18-32 Vdc)
Power Consumption	2.8W maximum
Power Dissipation	2.8 W maximum
Field Terminals (TB1-TB4) Ratings	Maximum current of 14 mA through switched input device at 18-32 Vdc
EOL (End Of Line) Resistance	10 kΩ, 0.25 W, ±1%
INL (In-Line) Resistance	2.7 kΩ, 0.25 W, ±1%
Switch Input Device supply Voltage (Vs)	Minimum 15 V Maximum 32 V
Switch Input Device supply Current (Is)	Minimum 5 mA for Supervised OC/SC Switch ON condition Maximum 14 mA for Unsupervised Switch ON condition
Connector Coding	Digital Input Module connectors (TB1-TB4) are coded with coding keys to avoid mis-wiring
DIN Rail connector (Module Supply and Communication)	18-32 VDC ± 10% max (Supplied from Self Enclosed Low Voltage source only)

10. Specifications

10.2.5 Relay Output Module

Description	4-channel Relay Output Module incorporating 4 single pole change over (SPCO) relays and 24 Vdc Auxiliary Power Output
Electrical Connection	4 x SPCO Relay Terminals (TB1 to TB4) 4 x 2-wire Auxiliary Output Terminals (TB5 to TB8)
Supply Voltage (Vs)	24 Vdc (18-32 Vdc)
Auxiliary Supply Voltage	Supply Voltage (Vs) – 0.7 V
Auxiliary Supply Current	Maximum 1.5 A
Power Consumption	Maximum 1.5 W (excluding auxiliary power consumption)
Power Dissipation	Maximum 2.3 W
Relay Contacts (TB1-TB4)	Maximum 5 A through one relay contact at 250 Vac / 30 Vdc (non-inductive) Maximum 8 A total through all four relay contacts at 250 Vac / 30 Vdc (non-inductive) Minimum 12 Vdc, 10 mA
Connector Coding	Relay output connectors (TB1-TB4) and auxiliary output connectors (TB5-TB8) are coded with coding keys to avoid mis-wiring The relay output connectors (TB1-TB4) are coloured black to identify them for AC supply wiring
DIN Rail connector (Module Supply and Communication)	18-32 VDC ± 10% max (Supplied from Self Enclosed Low Voltage source only)

10. Specifications

10.3 Communication / Power Rail

Description	5, 7, 9 or 10-way Communication / Power Rail consists of 1 DIN Rail, 1 Ring Coupling Module (RCM), and a 5, 7, 9 or 10-way Backplane
DIN Rail	
Total Width	430 mm
Type	TS-35/15
Ring Coupling Module (RCM)	
Description	Module for connection of DIN Rail mounted I/O modules to Ring Network
Electrical Connection	2 x Ring Network TX / RX Driver Pairs (Each 2-Wire plus Drain)
Supply Voltage	24 Vdc (18-32 Vdc)
Power Consumption	Maximum 1 W
Power Dissipation	Maximum 1 W
Ring Network Cable	Minimum 2 x 2 x 1 mm^2 twisted pair, plus Drain and Overall Screen
Operating Temperature	-40°C to +70°C
Storage Temperature	-40°C to +70°C
Environmental Protection Class	Equipment Class III, Installation Cat 2, Pollution Degree 2 Max Altitude I 2000m Humidity I 10 – 90% RH, non-condensing
Connector Coding	Ring cable connectors (TB1-TB4) are coded with coding keys to avoid mis-wiring.
DIN Rail connector (Module Supply and Communication)	18-32 VDC ± 10% max (Supplied from Self Enclosed Low Voltage source only)
Backplane	
Description	5, 7, 9 and 10 I/O slot (excluding first slot reserved for RCM) backplane PCB for providing power and Ring Network connections to the RCM and I/O modules
Electrical Connection	2-wire (+V and –V) at Power Supply Input for 5, 7, 9 I/O Slot Backplane 2 x 2-wire (+V and –V) at Power Supply Input for 10 I/O Slot Backplane 10-pin backplane connector for connection to RCM and I/O Modules
Maximum Wire Size	6 mm^2
Supply Voltage	18-32 VDC ± 10% max (Supplied from Self Enclosed Low Voltage source only)
Backplane current Rating	Maximum 20 A
Power Supply Connector Rating	Maximum 32 V, 41 A
Backplane connector	Maximum 32 V, 4.04 A
Environmental Protection Class	Pollution Degree 2 (indoor sheltered)
Operating Temperature	-40°C to +70°C
Storage Temperature	-40°C to +70°C

10. Specifications

10.4 Power supplies

10.4.1 Power Supply Units

Power Supply	120 W (5 A)	240 W (10 A)	480 W (20 A)
Input Voltage Range	85 - 264 Vac; 88 – 360 Vdc		
Input Frequency Range	50 - 60 Hz ±6%		
Input AC current	1.10 A at 120 Vac 0.62 A at 230 Vac	2.22 A at 120 Vac 1.22 A at 230 Vac	4.56 A at 120 Vac 2.48 A at 230 Vac
Output Voltage	24 Vdc (Adjustable 24 - 28 Vdc)		
DC OK Relay contact ratings (max.)	60 Vdc 0.3 A / 30 Vdc 1 A / 30 Vac 0.5 A resistive load		
Protection	Short Circuit, Overload (current limiting), No load, Over Voltage, Over Temperature		
Dimension	40 mm x 124 mm x 117 mm (WxHxD)	6 mm x 124 mm x 117 mm (WxHxD)	82 mm x 124 mm x 127 mm (WxHxD)
Operating Temperature	-25 °C to +70 °C (-13 °F to 158 °F)		
Derating (60 °C to 70 °C)	3 W/°C	6 W/°C	12 W/°C
Storage Conditions	-40 to +85°C (-40°F to 185°F), 5% to 95% RH		
Operating Humidity	5% to 95% RH (non-condensing)		

10.4.2 Power Supply Redundancy Module (RDN Module)

Description	Suitable for redundant operation of 24 Vdc
Input Voltage Range	8.4 - 36.4 Vdc
Number of Inputs	2
Input Current (max.)	20 A per input
Output Reverse Voltage (max.)	40 Vdc
Output Current (max.)	40 A
Output Voltage Drop	72mV typical for input: 2x10A
Dimension	140mV typical for input: 2x20A
Operating Temperature	36 mm x 124 mm x 127 mm (WxHxD)
Storage Conditions	-40 °C to +70 °C (-40 °F to 158 °F)
Operating Humidity	-40 °C to +85°C (-40°F to 185°F), 5% to 95% RH
Operating Humidity	5% to 95% RH (non-condensing)

10. Specifications

10.4.3 Uninterruptible Power Supply Module (UPS)

Description	23.3 Vdc - 30 Vdc
Input Current	70 mA typical internal current consumption Current consumption for battery charging in constant current mode at 24V input 1.7 A typical at battery selector position <10Ah 3.4 A typical at battery selector position >10Ah
Output Voltage	24 Vdc (nominal) in Normal Operation Adjustable in Battery Operation
Output Current	max. 25 A in Normal Operations min. 20 A in Battery Operation
Allowed Batteries	2 x 12 V 3.9 Ah – 130 Ah VRLA lead acid type
Dimension	46 mm x 124 mm x 127 mm (WxHxD)
Operating Temperature	-40 °C to +70 °C
Derating 60 °C to 70 °C	0.5 A/ºC
Storage Conditions	-40°C to +85°C, 5% to 95% RH
Operating Humidity	5% to 95% RH (non-condensing)

10.4.4 Backup Battery

Description	24 V sealed lead acid battery, 12 Ah or 27 Ah options
Electrical Connection	2 x 12 Vdc batteries in series
Dimensions	395 mm x 300 mm x 215 mm (W x H x D)
Weight	12 Ah version: 15.7 kg
	27 Ah version: 25 kg
Operating Temperature	-20°C to +45°C
Operating Humidity	10 % to 90 % RH non condensing
Storage conditions	-20°C to +40°C, 10 % to 90 %RH
Storage Lifetime without re-charge	18 months at <5°C, 6 months at 25°C, 3 months at 30°C, 2 months at 40°C
Ingress Protection	IP20, NEMA Code 1
Input Voltage (charging)	25 Vdc to 28 Vdc (UPS Supervised)
Output Voltage (when supplying)	20 Vdc to 28 Vdc (dependent on charge level)
Maximum Input Current	3 A
Maximum Output Current	20 A
Environmental Protection Class	Pollution Degree 2 (indoor sheltered)
Battery type	FIAMM 12 V 12 Ah FG21202 or FIAMM 12 V 27 Ah FG22703
Fuse type (inline)	Bussman 20 A Fast Acting 1.25" Type ABC-20-R
Current Limit Protection	Double pole circuit breaker / Isolator, 20 A
Maximum Altitude	2000 m (6562 feet)

10. Specifications

10.5 Enclosures

10.5.1 19” 5U Rack Controller Enclosure

Part Number	TPPR-V-0602
Material	Mild Steel
Earthing Points	M8 (main grounding); other M6
Dimensions (H x W x D)	483 mm x 222 mm x 110 mm
Weight	10 kg

10.5.2 19” 5U Rack Remote Unit Enclosure

Part Number	TPPR-V-0612
Material	Mild Steel
Earthing Points	M8 (main grounding); other M6
Dimensions (H x W x D)	483 mm x 222 mm x 110 mm
Weight	9 kg

10.5.3 Wall Mount Controller Enclosures

Part Number	TPPR-V-1210	TPPR-V-1220	TPPR-V-1230
Material	Mild Steel	Mild Steel	Mild Steel
Dimensions (H x W x D)	600 mm x 600 mm x 300 mm	800 mm x 600 mm x 300 mm	1200 mm x 600 mm x 300 mm
Approximate Weight	37 kg	46 kg	81 kg

10.5.4 Wall Mount Remote Unit Enclosures

Part Number	TPPR-V-1215	TPPR-V-1225
Material	Mild Steel	Mild Steel
Dimensions (H x W x D)	600 mm x 600 mm x 300 mm	800 mm x 600 mm x 300 mm
Weight	37 kg	46 kg

10.5.5 Floor Standing Cabinets Front Access

Part Number	TPPR-V-1250	TPPR-V-1252	TPPR-V-1254
Ventilation Type	No Ventilation	Natural Ventilation	Forced Ventilation
Dimensions (H x W x D)	2000 mm x 800 mm x 600 mm	2000 mm x 800 mm x 600 mm	2000 mm x 800 mm x 600 mm
Approximate Weight	201 kg	201 kg	201 kg

10. Specifications

10.5.6 Floor Standing Cabinets Rear Access

Part Number	TPPR-V-1260	TPPR-V-1262	TPPR-V-1264
Ventilation Type	No Ventilation	Natural Ventilation	Forced Ventilation
Dimensions (H x W x D)	2000 mm x 800 mm x 600 mm	2000 mm x 800 mm x 600 mm	2000 mm x 800 mm x 600 mm
Approximate Weight	201 kg	201 kg	201 kg

10.5.7 Hazardous Area Enclosure - Wall Mount Stainless Steel Div 2/Zone 2 Remote Units

The Touchpoint Pro range includes a wall mounted enclosure which is certified for use in hazardous areas/ locations (ATEX/IECEx Zone 2, Class I Div 2, and Class I (Zone 2)). This enclosure can only be used as a remote unit, no controller option is available.

Part Number	TPPR-V-1241
Material	Stainless Steel
Dimensions (H x W x D)	780 mm x 510 mm x 300 mm
Approximate Weight	42 kg Note: Please be aware that the weight may vary depending on the options selected.

10.5.8 Apparatus

Cabinet Fuses All cabinet dc fuses must have at least the following rating:			
Type	ATO®		
Interrupting Rating	1000 A @ 58 V dc		
Insulation	UL 94-V0		
Complies with	ISO 8820-3:2002(E) UL 248 Special Purpose Fuses		
The ratings must be	CMA, Light & Fan Backplanes UPS (Dual PSU, single UPS setup)	FS1, FS7 & FS8 FS2, FS3, FS4, FS5 & FS6 FS0	5 A 20 A 25 A
Battery enclosure fuse shall be			
Type	¼ x 1 ¼" Ceramic Tube		
Current Rating	20 A		
Interruption Rating	10,000 @ 75 V dc		
Manufacturer	Cooper Bussmann		
Part Number	ABC-20-R.		

11. Certification

11.1 EC declaration of conformity

A full EC declaration of conformity is available on the CD accompanying the product. This document lists the European Standards with which the Touchpoint Pro complies.

12. Ordering Information

12.1 TPPR-M Input and Output Configurator (I/O Configurator)

Part Number		Description
TPPR-M Input and Output Configurator (I/O Configurator)		
TPPR-M		
	10 Way Communication/Power Rail (Select up to maximum 10 I/Os)	
	Consists of a DIN Rail blank panel, 1 Ring Coupling Module and 10 Backplanes	
	Input and Output Modules (I/O Module)	
	X	None
	A	Analogue Input Module mV-Bridge
	C	Analogue Input Module 4-20mA
	H	Digital Input Module
	N	Relay Output Module
		Customer Set-up
		D — Default
		S — Custom
		Optional Terminal Block
		X — None
		T — Terminal Blocks

TPPR-M	A	A	A	A	A	A	A	A	A	A	S	X	

TPPR-M			
	9 Way Communication/Power Rail (Select up to maximum 9 I/Os)		
	R	Consists of a DIN Rail blank panel, 2 x Ring Coupling Modules and 9 Backplanes; (with additional Ring Coupling Module for redundant communications)	
	Input and Output Modules (I/O Module)		
	X	None	
	A	Analogue Input Module mV-Bridge	
	C	Analogue Input Module 4-20mA	
	H	Digital Input Module	
	N	Relay Output Module	
		Customer Set-up	
		D	Default
		S	Custom
		Optional Terminal Block	
		X	None
		T	Terminal Blocks

TPPR-M	R	A	A	A	A	A	A	A	A	A	S	X	

12. Ordering Information

TPPR-M														
	9 Way Communication/Power Rail (Select up to maximum 9 I/Os)													
	H	Consists of a DIN Rail blank panel, 1 x Ring Coupling Module, 1 x DIM, and 9 Backplanes; (with additional DIM for remote PSU failure monitoring)												
		Input and Output Modules (I/O Module)												
		X	None											
		A	Analogue Input Module mV-Bridge											
		C	Analogue Input Module 4-20mA											
		H	Digital Input Module											
		N	Relay Output Module											
												Customer Set-up		
												D	Default	
												S	Custom	
													Optional Terminal Block	
													X	None
													T	Terminal Blocks
TPPR-M	**H**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**		**S**	**X**	

TPPR-M														
	8 Way Communication/Power Rail (Select up to maximum 8 I/Os)													
	R	H	Consists of a DIN Rail blank panel, 2 x Ring Coupling Modules, 1x DIM, and 8 Backplanes; (with additional Ring Coupling Module for redundant communications and additional DIM for remote PSU failure monitoring)											
			Input and Output Modules (I/O Module)											
			X	None										
			A	Analogue Input Module mV-Bridge										
			C	Analogue Input Module 4-20mA										
			H	Digital Input Module										
			N	Relay Output Module										
													Customer Set-up	
													D	Default
													S	Custom
														Optional Terminal Block
													X	None
													T	Terminal Blocks
TPPR-M	**R**	**H**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**		**S**	**X**	

12. Ordering Information

12.2 Touchpoint Pro Control System Part Number Generator

Touchpoint Pro Control System Part Number Generator																		
TPPR-S																		
	19" Rack controller or Remote Unit																	
	RL	19" Rack 5U Controller includes HMI, PCBs, SD card																
	RR	19" Rack 5U Remote Unit without HMI, PCBs, SD card																
		Redundant Control Centre Board (Select if a dual redundant system is required)																
		X	None															
		R	Yes (for TPPR-S-RL selection only)															
			Bus Interface Board															
			X	None														
			M	Modbus® Interface Board (for TPPR-S-RL selection only)														
				5, 7 or 9 Way Communication/Power Rail (Select the appropriate option for your PSU and I/O module combination)														
				Consists of a DIN Rail blank panel, 1 Ring Coupling Module and 5, 7 or 9 Backplanes														
				2	5 Way Communication/Power Rail; select up to maximum 5 I/O Modules													
				3	7 Way Communication/Power Rail; select up to maximum 7 I/O Modules													
				4	9 Way Communication/Power Rail; select up to maximum 9 I/O Modules													
					Power Configuration (Select the Power Supply options and I/O configuration needed)													
					X	None; select up to maximum 9 I/O Modules in any combination												
					A	5A; select up to maximum 7 I/O Modules in any combination												
					B	10A; select up to maximum 7 I/O Modules in any combination												
					C	20A; select up to maximum 5 I/O Modules in any combination												
					U	5A + UPS; select up to maximum 5 I/O Modules in any combination												
					V	10A + UPS; select up to maximum 5 I/O Modules in any combination												
						Input and Output Module (I/O module)												
						The maximum numbers of I/O Modules depend on Communication/Power Rail and Power Configuration selection. Please include a code for each I/O module, including X=NONE, to make a total of 9 codes. The rail will be populated in the order given below:												
						X	None											
						A	Analogue Input Module mV-Bridge											
						C	Analogue Input Module 4-20mA											
						H	Digital Input Module											
						N	Relay Output Module											
																	Customer Logo (for Wall Mount 9U Cabinets only)	
																	H	Honeywell
																	X	None
																		Customer Set up
																		D Default
																		S Custom
TPPR-S	**RL**	**R**	**M**	**3**	**A**	**C**	**C**	**C**	**C**	**N**	**N**	**N**	**X**	**X**	—	**H**	**D**	

12. Ordering Information

12.3 TPPR-V Controllers and Remote Units

1. Touchpoint Pro Controller and Remote Unit	
Wall Mount 9U and 19" Rack enclosure versions	
TPPR-V-0602	19'' Rack 5U Controller includes HMI, PCBs, SD Card
TPPR-V-0612	19'' Rack 5U Remote Unit w/o HMI, PCB, SD Card
TPPR-V-0852	Front Panel 5U Controller includes HMI, PCBs, SD Card
Standard Wall Mount enclosure versions	
TPPR-V-1210	Wall Mount Controller, 600Hx600Wx300D, includes HMI, PCBs, SD Card; with pre-drilled mounting plate
TPPR-V-1215	Wall Mount Remote Unit, 600Hx600Wx300D, w/o HMI, PCBs, SD Card; with pre-drilled mounting plate
TPPR-V-1220	Wall Mount Controller, 800Hx600Wx300D, includes HMI, PCBs, SD Card; with pre-drilled mounting plate
TPPR-V-1225	Wall Mount Remote Unit, 800Hx600Wx300D, w/o HMI, PCBs, SD Card; with pre-drilled mounting plate
TPPR-V-1230	Wall Mount Controller, 1200Hx800Wx300D, includes HMI, PCBs, SD Card; with pre-drilled mounting plate
Wall Mount Stainless Steel Div2/Zone2 Remote Units	
TPPR-V-1241	Wall Mount Stainless Steel Div2/Zone2 Remote Unit, 780Hx510Wx300D, w/o HMI, PCBs, SD Card; with pre-drilled mounting plate
Floor Standing Cabinet versions	
TPPR-V-1250	Floor Standing Cabinet with Front Access, 2000Hx800Wx600D, includes Controller with HMI, PCBs, SD Card; w/o ventilation; with pre-drilled mounting plate
TPPR-V-1252	Floor Standing Cabinet with Front Access, 2000Hx800Wx600D, includes Controller with HMI, PCBs, SD Card; natural ventilation; with pre-drilled mounting plate
TPPR-V-1254	Floor Standing Cabinet with Front Access, 2000Hx800Wx600D, includes Controller with HMI, PCBs, SD Card; forced ventilation; with pre-drilled mounting plate
TPPR-V-1260	Floor Standing Cabinet with Rear Access, 2000Hx800Wx600D, includes Controller with HMI, PCBs, SD Card; w/o ventilation; with pre-drilled mounting plate
TPPR-V-1262	Floor Standing Cabinet with Rear Access, 2000Hx800Wx600D, includes Controller with HMI, PCBs, SD Card; natural ventilation; with pre-drilled mounting plate
TPPR-V-1264	Floor Standing Cabinet with Rear Access, 2000Hx800Wx600D, includes Controller with HMI, PCBs, SD Card; forced ventilation; with pre-drilled mounting plate
2. Touchpoint Pro Components	
Input and Output Modules (I/O Modules)	
TPPR-V-1000	Analogue Input Module 4-20mA
TPPR-V-1010	Analogue Input Module mV-Bridge
TPPR-V-1030	Digital Input Module
TPPR-V-1040	Relay Output Module
Power Supplies	
TPPR-V-0500	Power Supply Redundancy Module 40A
TPPR-V-0501	UPS 40A DC Module
TPPR-V-0502	5A, 120W, 24 Vdc PSU
TPPR-V-0503	10A, 240W, 24 Vdc PSU
TPPR-V-0504	20A, 480W, 24 Vdc PSU

12. Ordering Information

Communication/Power Rail	
For 19" Rack enclosure versions	
TPPR-V-0520	5 Way Communication/Power Rail
TPPR-V-0525	7 Way Communication/Power Rail
TPPR-V-0530	9 Way Communication/Power Rail
For standard Wall Mount and Floor Standing Cabinet versions	
TPPR-V-0540	10 Way Communication/Power Rail
TPPR-V-0541	9 Way Communication/Power Rail with additional RCM
TPPR-V-0542	9 Way Communication/Power Rail with additional DIM
TPPR-V-0543	8 Way Communication/Power Rail with additional DIM and RCM
Bus Interface Board	
TPPR-V-2130	Modbus® Interface Board
Redundant Control System	
TPPR-V-2120	Redundant Control Centre Board
Software	
TPPR-V-1111	PC Config SW licences 12 months
TPPR-V-2223	WebServer SW licences 12 months
3. Touchpoint Pro Accessories and Spares	
TPPR-V-0405	27Ah 24V Battery (2x27Ah 12V in series)
TPPR-V-0406	12Ah 24V Battery (2x12Ah 12V in series)
TPPR-V-2600	Battery Backup Enclosure
TPPR-V-1050	Ring Coupling Module (RCM)
TPPR-V-0842	SD Card
TPPR-V-0703	DIN Rail Blank Panel 430mm for 19'' Rack 5U version
TPPR-V-0704	DIN Rail Blank Panel 487mm for Standard Cabinet versions
TPPR-V-0705	DIN Rail Blank Panel 630mm for Standard Cabinet versions
TPPR-V-0706	DIN Rail Blank Panel 540mm for Standard Cabinet versions
TPPR-V-0707	DIN Rail Blank Panel 205mm for Standard Cabinet versions
TPPR-V-1270	Blank Gland Plate for 600Wx300D Wall Mount enclosure versions
TPPR-V-1271	Gland Plate with standard knock-outs for 600Wx300D Wall Mount enclosure versions
TPPR-V-1272	Gland Plate with custom knock-outs for 600Wx300D Wall Mount enclosure versions
TPPR-V-1275	Blank Gland Plate for 800Wx300D Wall Mount enclosure versions
TPPR-V-1276	Gland Plate with standard knock-outs for 800Wx300D Wall Mount enclosure versions
TPPR-V-1277	Gland Plate with custom knock-outs for 800Wx300D Wall Mount enclosure versions
TPPR-V-1280	Blank Gland Plate for Stainless Steel, Div2/Zone2, 510Wx300D enclosure
TPPR-V-1285	Blank Gland Plate for 800Wx600D Floor Standing Cabinets
TPPR-V-1290	Mild Steel Viewing Window for all Standard Wall Mount Controllers and Floor Standing cabinet versions, IP54, RAL 7035
TPPR-V-1291	Plinth 100Hx800W for Floor Standing Cabinet
TPPR-V-1292	Plinth Sides 100Hx600D for Floor Standing Cabinet
TPPR-V-1293	Mild Steel Bezel with PUR Gasket, 227Hx288W

12. Ordering Information

TPPR-V-1211	Mounting plate Blank 600Hx600W Mild Steel
TPPR-V-1221	Mounting plate blank 800Hx600W Mild Steel
TPPR-V-1231	Mounting plate blank 1200Hx800W Mild Steel
TPPR-V-1267	Mounting plate blank 2000Hx800W Mild Steel
TPPR-V-1243	Mounting plate blank 780Hx510W Stainless Steel Div2/Zone2
TPPR-V-1294	Lifing Eyes for Floor Standing Cabinet
TPPR-V-1295	Wall Mounting Brackets for Standard Wall Mount Enclosure
TPPR-V-1298	Wall Mounting Brackets for Floor Standing Cabinet
TPPR-V-1984	Enclosure Breather Drain
TPPR-V-1995	24V DC LED Light w Movement Sensor Floor Cabinet
TPPR-V-1996	Roof Outlet Vent Floor Cabinet Natural or Forced Ventilation
TPPR-V-1997	Door Inlet Vent Floor Cabinet Natural or Forced Ventilation
TPPR-V-1998	Thermostat Floor Cabinet Forced Ventilation
TPPR-V-1999	24V DC Filter Fan Floor Cabinet Forced Ventilation
4. Touchpoint Pro Manuals	
TPPR-L-2500	TPPR CD (multi language)
TPPR-L-2501	TPPR Operating Instruction Hard Copy (English)

12.4 TPPR-H Enclosures

TPPR-H-Wall Mount Enclosure	
TPPR-H Small Wall Mount Enclosures	
TPPR-HW-S-LXXHXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card
TPPR-HW-S-LRXHXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board
TPPR-HW-S-LXMHXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, Modbus® Interface Board
TPPR-HW-S-LRMHXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board
TPPR-HW-S-LXXXXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, w/o HON Logo
TPPR-HW-S-LRXXXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo
TPPR-HW-S-LXMXXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo
TPPR-HW-S-LRMXXX	Wall Mount Controller 600Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo
TPPR-HW-S-RXXHXX	Wall Mount Remote Unit 600Hx600Wx300D w/o HMI, PCBs, SD Card
TPPR-HW-S-RXXXXX	Wall Mount Remote Unit 600Hx600Wx300D w/o HMI, PCBs, SD Card, w/o HON Logo
TPPR-H Medium Wall Mount Enclosures	
TPPR-HW-M-LXXHXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card
TPPR-HW-M-LRXHXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board

12. Ordering Information

TPPR-HW-M-LXMHXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, Modbus® Interface Board
TPPR-HW-M-LRMHXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board
TPPR-HW-M-LXXXXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, w/o HON Logo
TPPR-HW-M-LRXXXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo
TPPR-HW-M-LXMXXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo
TPPR-HW-M-LRMXXX	Wall Mount Controller 800Hx600Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo
TPPR-HW-M-RXXHXX	Wall Mount Remote Unit 800Hx600Wx300D w/o HMI, PCBs, SD Card
TPPR-HW-M-RXXXXX	Wall Mount Remote Unit 800Hx600Wx300D w/o HMI, PCBs, SD Card, w/o HON Logo
TPPR-H Large Wall Mount Enclosures	
TPPR-HW-L-LXXHXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card
TPPR-HW-L-LRXHXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board
TPPR-HW-L-LXMHXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card, Modbus® Interface Board
TPPR-HW-L-LRMHXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board
TPPR-HW-L-LXXXXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card, w/o HON Logo
TPPR-HW-L-LRXXXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo
TPPR-HW-L-LXMXXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo
TPPR-HW-L-LRMXXX	Wall Mount Controller 1200Hx800Wx300D includes HMI, PCBs, SD Card,Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo
TPPR-Z Wall Mount Remote Unit Stainless Steel Div2/Zone2	
TPPR-Z-Div2Z2-SM-H	Wall Mount Remote Unit Stainless Steel Div2/Zone2 780Hx510Wx300D w/o HMI, PCBs, SD Card, 9 Way Communication Power Rail
TPPR-Z-Div2Z2-SM-X	Wall Mount Remote Unit Stainless Steel Div2/Zone2 780Hx510Wx300D w/o HMI, PCBs, SD Card, w/o HON Logo, 9 Way Communication Power Rail
TPPR-H-Floor Standing Cabinets	
TPPR-H Floor Standing Cabinets - Front Access	
Without ventilation, without plinth	
TPPR-HF-F-LXXHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o ventilation
TPPR-HF-F-LRXHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o ventilation
TPPR-HF-F-LXMHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o ventilation
TPPR-HF-F-LRMHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o ventilation

12. Ordering Information

TPPR-HF-F-LXXXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, w/o ventilation
TPPR-HF-F-LRXXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, w/o ventilation
TPPR-HF-F-LXMXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, w/o ventilation
TPPR-HF-F-LRMXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, w/o ventilation
Without ventilation, without plinth, without power distribution	
TPPR-HF-FS-LXXHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRXHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o ventilation, w/o power distribution
TPPR-HF-FS-LXMHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRMHXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o ventilation, w/o power distribution
TPPR-HF-FS-LXXXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRXXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-FS-LXMXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRMXXX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, w/o ventilation, w/o power distribution
Without Ventilation and with plinth	
TPPR-HF-F-LXXHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, w/o ventilation
TPPR-HF-F-LRXHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o ventilation
TPPR-HF-F-LXMHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o ventilation
TPPR-HF-F-LRMHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o ventilation
TPPR-HF-F-LXXXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, w/o ventilation
TPPR-HF-F-LRXXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, w/o ventilation
TPPR-HF-F-LXMXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation
TPPR-HF-F-LRMXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation

12. Ordering Information

Without ventilation, with plinth, without power distribution	
TPPR-HF-FS-LXXHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRXHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-FS-LXMHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRMHPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-FS-LXXXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRXXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-FS-LXMXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-FS-LRMXPX	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation, w/o power distribution
Natural Ventilation and without plinth	
TPPR-HF-F-LXXHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, natural ventilation
TPPR-HF-F-LRXHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, natural ventilation
TPPR-HF-F-LXMHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, natural ventilation
TPPR-HF-F-LRMHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, natural ventilation
TPPR-HF-F-LXXXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, natural ventilation
TPPR-HF-F-LRXXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, natural ventilation
TPPR-HF-F-LXMXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, natural ventilation
TPPR-HF-F-LRMXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, natural ventilation
Natural ventilation, without plinth, without power distribution	
TPPR-HF-FS-LXXHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, natural ventilation, w/o power distribution
TPPR-HF-FS-LRXHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, natural ventilation, w/o power distribution
TPPR-HF-FS-LXMHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, natural ventilation, w/o power distribution

12. Ordering Information

TPPR-HF-FS-LRMHXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, natural ventilation, w/o power distribution
TPPR-HF-FS-LXXXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-FS-LRXXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-FS-LXMXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-FS-LRMXXN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, natural ventilation, w/o power distribution
Natural ventilation, with plinth	
TPPR-HF-F-LXXHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, natural ventilation
TPPR-HF-F-LRXHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, natural ventilation
TPPR-HF-F-LXMHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, natural ventilation
TPPR-HF-F-LRMHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, natural ventilation
TPPR-HF-F-LXXXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, natural ventilation
TPPR-HF-F-LRXXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, natural ventilation
TPPR-HF-F-LXMXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation
TPPR-HF-F-LRMXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation
Natural ventilation, with plinth, w/o power distribution	
TPPR-HF-FS-LXXHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-FS-LRXHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-FS-LXMHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-FS-LRMHPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-FS-LXXXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, natural ventilation, w/o power distribution

12. Ordering Information

TPPR-HF-FS-LRXXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-FS-LXMXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-FS-LRMXPN	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation, w/o power distribution
Forced ventilation, without plinth	
TPPR-HF-F-LXXHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, forced ventilation
TPPR-HF-F-LRXHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, forced ventilation
TPPR-HF-F-LXMHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, forced ventilation
TPPR-HF-F-LRMHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, forced ventilation
TPPR-HF-F-LXXXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, forced ventilation
TPPR-HF-F-LRXXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, forced ventilation
TPPR-HF-F-LXMXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, forced ventilation
TPPR-HF-F-LRMXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, forced ventilation
Forced ventilation, without plinth, without power distribution	
TPPR-HF-FS-LXXHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, forced ventilation, w/o power distribution
TPPR-HF-FS-LRXHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, forced ventilation, w/o power distribution
TPPR-HF-FS-LXMHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, forced ventilation, w/o power distribution
TPPR-HF-FS-LRMHXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, forced ventilation, w/o power distribution
TPPR-HF-FS-LXXXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-FS-LRXXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-FS-LXMXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-FS-LRMXXF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, forced ventilation, w/o power distribution

12. Ordering Information

Forced Ventilation and with plinth	
TPPR-HF-F-LXXHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, forced ventilation
TPPR-HF-F-LRXHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, forced ventilation
TPPR-HF-F-LXMHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, forced ventilation
TPPR-HF-F-LRMHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, forced ventilation
TPPR-HF-F-LXXXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, forced ventilation
TPPR-HF-F-LRXXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, forced ventilation
TPPR-HF-F-LXMXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation
TPPR-HF-F-LRMXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation
Forced ventilation, with plinth, without power distribution	
TPPR-HF-FS-LXXHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-FS-LRXHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-FS-LXMHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-FS-LRMHPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-FS-LXXXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-FS-LRXXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-FS-LXMXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-FS-LRMXPF	Floor Standing Cabinet with Front Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-H Floor Standing Cabinets - Rear Access	
Without Ventilation and without plinth	
TPPR-HF-R-LXXHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o ventilation

12. Ordering Information

TPPR-HF-R-LRXHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o ventilation
TPPR-HF-R-LXMHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o ventilation
TPPR-HF-R-LRMHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o ventilation
TPPR-HF-R-LXXXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, w/o ventilation
TPPR-HF-R-LRXXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, w/o ventilation
TPPR-HF-R-LXMXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, w/o ventilation
TPPR-HF-R-LRMXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, w/o ventilation
Without ventilation, without plinth, without power distribution	
TPPR-HF-RS-LXXHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o ventilation; w/o
TPPR-HF-RS-LRXHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o ventilation, w/o power distribution
TPPR-HF-RS-LXMHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRMHXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o ventilation, w/o power distribution
TPPR-HF-RS-LXXXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRXXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-RS-LXMXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRMXXX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, w/o ventilation, w/o power distribution
Without ventilation, with plinth	
TPPR-HF-R-LXXHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, w/o ventilation
TPPR-HF-R-LRXHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o ventilation
TPPR-HF-R-LXMHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o ventilation
TPPR-HF-R-LRMHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o ventilation

12. Ordering Information

TPPR-HF-R-LXXXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, w/o ventilation
TPPR-HF-R-LRXXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, w/o ventilation
TPPR-HF-R-LXMXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation
TPPR-HF-R-LRMXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation
Without ventilation, with plinth, without power distribution	
TPPR-HF-RS-LXXHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRXHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-RS-LXMHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRMHPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-RS-LXXXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRXXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-RS-LXMXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation, w/o power distribution
TPPR-HF-RS-LRMXPX	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, w/o ventilation, w/o power distribution
Natural ventilation, without plinth	
TPPR-HF-R-LXXHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, natural ventilation
TPPR-HF-R-LRXHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, natural ventilation
TPPR-HF-R-LXMHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, natural ventilation
TPPR-HF-R-LRMHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, natural ventilation
TPPR-HF-R-LXXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, natural ventilation
TPPR-HF-R-LRXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, natural ventilation
TPPR-HF-R-LXMXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, natural ventilation

12. Ordering Information

TPPR-HF-R-LRMXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, natural ventilation
Natural ventilation, without plinth, without power distribution	
TPPR-HF-RS-LXXHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, natural ventilation, w/o power distribution
TPPR-HF-RS-LRXHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, natural ventilation, w/o power distribution
TPPR-HF-RS-LXMHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, natural ventilation, w/o power distribution
TPPR-HF-RS-LRMHXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, natural ventilation, w/o power distribution
TPPR-HF-RS-LXXXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-RS-LRXXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-RS-LXMXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-RS-LRMXXN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, natural ventilation, w/o power distribution
Natural ventilation, with plinth	
TPPR-HF-R-LXXHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, natural ventilation
TPPR-HF-R-LRXHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, natural ventilation
TPPR-HF-R-LXMHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, natural ventilation
TPPR-HF-R-LRMHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, natural ventilation
TPPR-HF-R-LXXXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, natural ventilation
TPPR-HF-R-LRXXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, natural ventilation
TPPR-HF-R-LXMXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation
TPPR-HF-R-LRMXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation
Natural Ventilation and with plinth, without power distribution	
TPPR-HF-RS-LXXHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-RS-LRXHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, natural ventilation, w/o power distribution

12. Ordering Information

TPPR-HF-RS-LXMHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-RS-LRMHPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-RS-LXXXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, natural ventilation, w/o power distribution
TPPR-HF-RS-LRXXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-RS-LXMXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation, w/o power distribution
TPPR-HF-RS-LRMXPN	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, natural ventilation, w/o power distribution
Forced ventilation, without plinth	
TPPR-HF-R-LXXHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, forced ventilation
TPPR-HF-R-LRXHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, forced ventilation
TPPR-HF-R-LXMHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, forced ventilation
TPPR-HF-R-LRMHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, forced ventilation
TPPR-HF-R-LXXXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, forced ventilation
TPPR-HF-R-LRXXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, forced ventilation
TPPR-HF-R-LXMXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, forced ventilation
TPPR-HF-R-LRMXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, forced ventilation
Forced ventilation, without plinth, without power distribution	
TPPR-HF-RS-LXXHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, forced ventilation, w/o power distribution
TPPR-HF-RS-LRXHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, forced ventilation, w/o power distribution
TPPR-HF-RS-LXMHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, forced ventilation, w/o power distribution
TPPR-HF-RS-LRMHXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, forced ventilation, w/o power distribution
TPPR-HF-RS-LXXXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, forced ventilation, w/o power distribution

12. Ordering Information

TPPR-HF-RS-LRXXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-RS-LXMXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-R-LRMXXF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, w/o HON Logo, forced ventilation, w/o power distribution
Forced ventilation, with plinth	
TPPR-HF-R-LXXHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, forced ventilation
TPPR-HF-R-LRXHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, forced ventilation
TPPR-HF-R-LXMHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, forced ventilation
TPPR-HF-R-LRMHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, forced ventilation
TPPR-HF-R-LXXXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, forced ventilation
TPPR-HF-R-LRXXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, forced ventilation
TPPR-HF-R-LXMXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation
TPPR-HF-R-LRMXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation
Forced ventilation, with plinth, without power distribution	
TPPR-HF-RS-LXXHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-RS-LRXHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-RS-LXMHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-RS-LRMHPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-RS-LXXXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, w/o HON Logo, with 100mm plinth, forced ventilation, w/o power distribution
TPPR-HF-RS-LRXXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, with 100mm plinth, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-RS-LXMXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation, w/o power distribution
TPPR-HF-RS-LRMXPF	Floor Standing Cabinet with Rear Access 2000Hx800Wx600D includes Controller with HMI, PCBs, SD Card, Redundant Control Centre Board, Modbus® Interface Board, with 100mm plinth, w/o HON Logo, forced ventilation, w/o power distribution

12. Ordering Information

12.5 TPPR-W PSUs

TPPR-W PSUs	
TPPR-W-000-1	2 Way DC Distribution Only
TPPR-W-000-2	4 Way DC Distribution Only
TPPR-W-000-3	8 Way DC Distribution Only
TPPR-W-005-1	5A PSU Only
TPPR-W-010-1	10A PSU Only
TPPR-W-020-1	20A PSU Only
TPPR-W-005-2	5A PSU + UPS
TPPR-W-010-2	10A PSU + UPS
TPPR-W-020-2	20A PSU + UPS
TPPR-W-005-3	2 x 5A PSU + RDN
TPPR-W-010-3	2x 10A PSU + RDN
TPPR-W-020-3	2x 20A PSU + RDN + 4 Way DC Distribution
TPPR-W-005-4	2x 5A PSU + RDN + UPS
TPPR-W-010-4	2x 10A PSU + RDN + UPS
TPPR-W-020-4	2x 20A PSU + RDN + UPS + 4 Way DC Distribution
TPPR-W-020-5	20A PSU + 4 Way DC Distribution
TPPR-W-020-6	20A PSU + UPS + 4 Way DC Distribution
TPPR-W-040-1	2x 20A + RDN + Power Distribution
TPPR-W-040-2	2x 20A + RDN + UPS + Power Distribution (2x 20A PSU + 2x UPS + RDN)
TPPR-W-040-3	2x20A + Fault Tolerant + Power Distribution (3x 20A PSU + 2x RDN)
TPPR-W-040-4	2x 20A + Fault Tolerant + UPS + Power Distribution (3x 20A PSU + 3x UPS + 2x RDN)
TPPR-W-060-1	3x 20A + Power Distribution (3x 20A PSU + 2x RDN)
TPPR-W-060-2	3x 20A + UPS + Power Distribution (3x 20A PSU + 3x UPS + 2x RDN)
TPPR-W-060-3	60A + Fault Tolerant + Power Distribution (4x 20A PSU + 2x RDN)
TPPR-W-060-4	60A + Fault Tolerant + UPS + Power Distribution (4x 20A PSU + 4x UPS + 2x RDN)
TPPR-W-080-1	80A + Power Distribution (4x 20A PSU + 2x RDN)
TPPR-W-080-2	80A + UPS + Power Distribution (4x 20A PSU + 4x UPS + 2x RDN)
TPPR-W-080-3	80A + Fault Tolerant + Power Distribution (5x 20A PSU + 3x RDN)
TPPR-W-080-4	80A + Fault Tolerant + UPS + Power Distribution (5x 20A PSU + 5x UPS + 3x RDN)
TPPR-W-100-1	100A + Power Distribution (5x 20A PSU + 3x RDN)
TPPR-W-100-2	100A + UPS + Power Distribution (5x 20A PSU + 5x UPS + 3x RDN)
TPPR-W-100-3	100A + Fault Tolerant + Power Distribution (6x 20A PSU + 3x RDN)

13. Honeywell Analytics Product Warranty

Honeywell Analytics warrants the TouchPoint Pro system against defective parts and workmanship, and will repair or (at its discretion) replace any components that are or may become defective under proper usage within 24 months from the date of shipment from Honeywell Analytics.

This warranty does not cover consumable, batteries, fuses, normal wear and tear, or damage caused by accident, abuse, improper installation, unauthorized use, modification or repair, ambient environment, poisons, contaminants or abnormal operating conditions.

This warranty does not apply to sensors or components that are covered under separate warranties, or to any 3rd-party cables and components

Honeywell Analytics' financial liability under this warranty shall not exceed the original net purchase price.

In no event shall Honeywell Analytics be liable for any damages or injury of any nature or kind, no matter how caused, that arise from incorrect handling or use of this equipment.

In no event shall Honeywell Analytics be liable for any equipment malfunction or damages whatsoever, including (without limitation) incidental, direct, indirect, special, and consequential damages, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss, resulting from the incorrect installation or use of this equipment.

Any claim under the Honeywell Analytics Product Warranty must be made within the warranty period and as soon as reasonably practicable after a defect is discovered. Please contact your local Honeywell Analytics Service representative to register your claim.

This is a summary. For full warranty terms please refer to the Honeywell Analytics' *General Statement of Limited Product Warranty*, which is available on request.

14. Appendix 1 - Modbus Option

14.1 Introduction

The Touchpoint Pro Modbus Interface provides a facility for digital communication between the Touchpoint Pro and an external computer system. Modbus is a well supported digital data communication protocol which provides a set of standard commands by which system data can be communicated.

The principal features of the Modbus Interface are:

- Operates as a Modbus Remote Terminal Unit (RTU) slave device node
- Supports functions 02, 03, 04, 06 and 16 of the Modbus protocol
- Provides sensor gas readings and alarm status for Fault, Inhibit, Warning, A1, A2, A3, STEL, LTEL and Rate alarms from all input channels in the system
- Supports commands to Inhibit, Reset and Acknowledge for all channels in the system, as well as Global Reset and Global Acknowledge
- Dual RS485 half duplex communication with multi-drop capability
- Asynchronous serial link configurable for baud rate and parity

Note: The Modbus broadcast commands are not supported and will be ignored

There are no standard Modbus function formats defined for the communication of data from a gas detection system. The host computer system will therefore require programming in order to interpret the signal and status data made available by the Touchpoint Pro. It is recommended that the host computer system should, as a minimum, be programmed to use Function 02 to collect alarm and status data from all channels of the Touchpoint Pro Control System.

Full details of the Modbus protocol can be found in the latest revision of the Modicon Modbus Protocol Reference Guide PI-MBUS-300 available at www.modbus.org.

Note. Some transceiver manufacturers incorrectly use RS-485 pin A as data positive and pin B as data negative. You may have to swap over TDA and TDB (A in and B in) if your Modbus does not work as expected.

The addressing conventions and register values used follow those set by Modicon. The first digit of the on-board memory address refers to the data type stored in the register and therefore defines the Modbus function command that should be used when polling it.

1xxxx – The Input Status Register addresses record the individual channels' status. They are read using Modbus Function 02

3xxxx – The Input Register addresses record the current input values of the individual channels. They are read using Modbus Function 04

4xxxx – The Holding Register addresses have two purposes. One range of addresses is used to send commands and receive the results of those commands. The other address range is used to send queries and store the results of those queries. They can be written singly using Modbus Function 06, written as a block using Modbus Function 16 and read using Modbus Function 03.

14. Appendix 1 - Modbus Option

14.2 Installation

14.2.1 Installing the Bus Interface Board (Upgrade or Assembly by system integrators)

Caution: All electronic hardware and PCB assemblies contain static sensitive components. Take appropriate precautions to minimise the risk of electrostatic discharge.

Caution: The SD Card, any USB device and all cables must be removed before attempting to remove the Control Module cover panel.

If not already fitted, the Bus Interface Board is installed as follows:

1. Power off the supply to the system
2. Locate the cover panel of the Control Module
3. Remove all cables

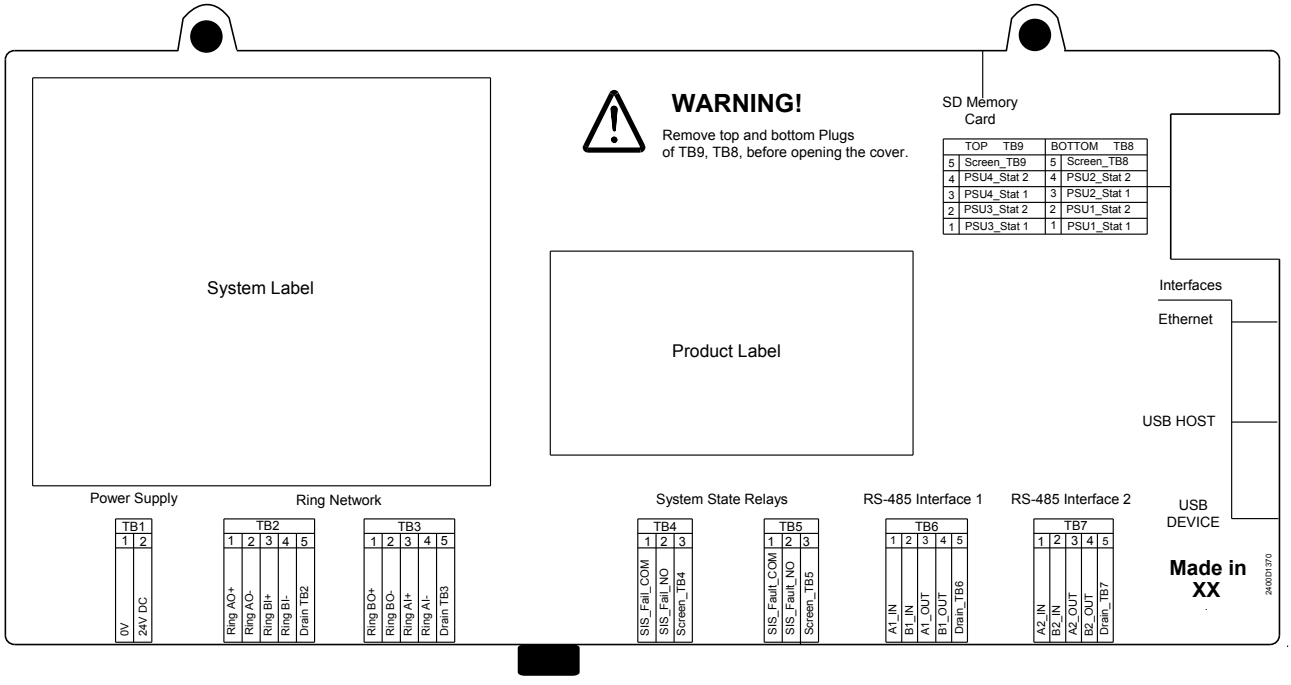


Figure 14.1 Removing the Control Module cover

4. Remove the two M4 locknut screws at the top of the cover
5. Loosen the M4 locknut screw on the underside of the cover
6. Carefully slide the cover off
7. Locate the position for the Bus Interface Board (four stand-offs (pillars) to the right side of the Control Module motherboard)
8. Align the connectors and gently push into place

14. Appendix 1 - Modbus Option

9. Secure the Bus Interface Board using the four sets of screws and washers supplied
10. Carefully slide the cover back into place and secure using the M4 locknuts
11. Re-connect all cables back in place
12. Apply power to the system

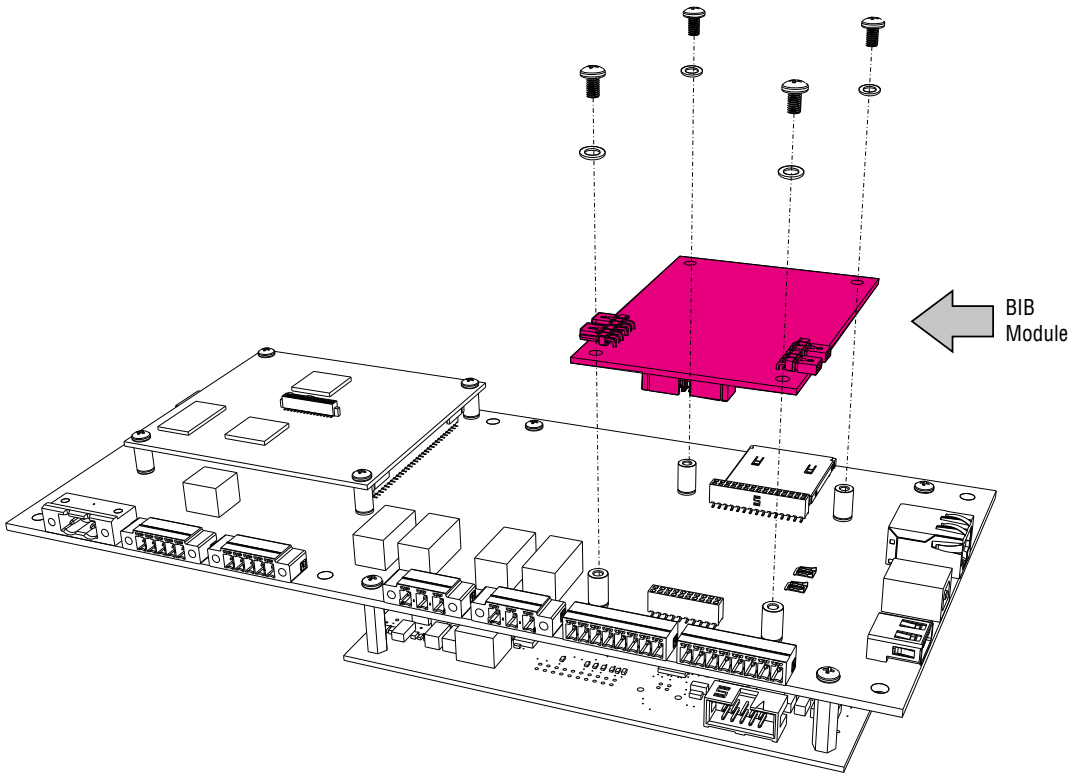


Figure 14.2 Attaching the BIB

14.2.2 Cable recommendation

The cable used should be suitable data communication cable allowing for the installation distance and environmental factors.

If spurs are used, they should be no longer than 1m each, with a maximum of 10m total for an installation.

The maximum operating distance without the use of line repeaters is 1.2km (3900ft).

The terminals will accept a maximum wire size of 1.5mm^2.

14. Appendix 1 - Modbus Option

14.2.3 Electrical connections

The electrical connections are shown below:

Modbus RTU Interface		
Terminal	**TB6**	**TB7**
1	A1 IN	A2 IN
2	B1 IN	B2 IN
3	A1 OUT	A2 OUT
4	B1 OUT	B2 OUT
5	Drain TB6	Drain TB7

Note: The respective IN and OUT terminals are connected together internally, i.e. A1 IN is connected to A1 OUT

14.2.4 Configuration Examples

The Modbus interface consists of two independent Modbus ports. The RS485 connections are located on terminals TB6 and TB7 of the Control Module. For convenience, IN and OUT terminals are provided which are connected together internally.

The diagram below gives example configurations of which the second and third offer redundancy:

14.2.5 Termination resistor

If the Touchpoint Pro is the last node in a Modbus system highway, it is necessary to connect a termination resistor between A and B, to avoid reflections on the RS485 circuit.

For convenience, Touchpoint Pro has a set of jumpers which will switch a 120 Ω resistor across the connection. In this case, the RS485 IN and OUT terminals are no longer connected together internally, and the OUT terminals are floating. Only the IN terminals should be used.

Note: The default configuration for the jumpers is with the termination resistance off.

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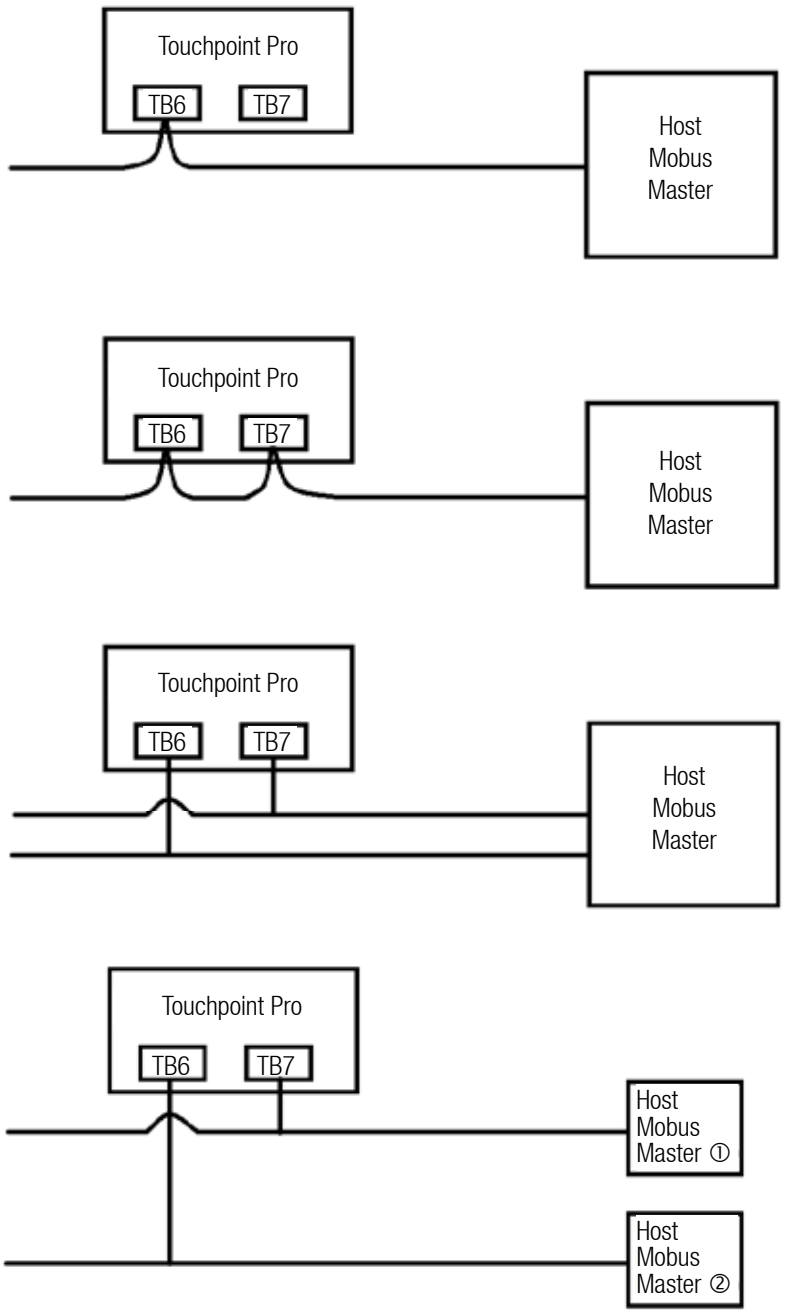
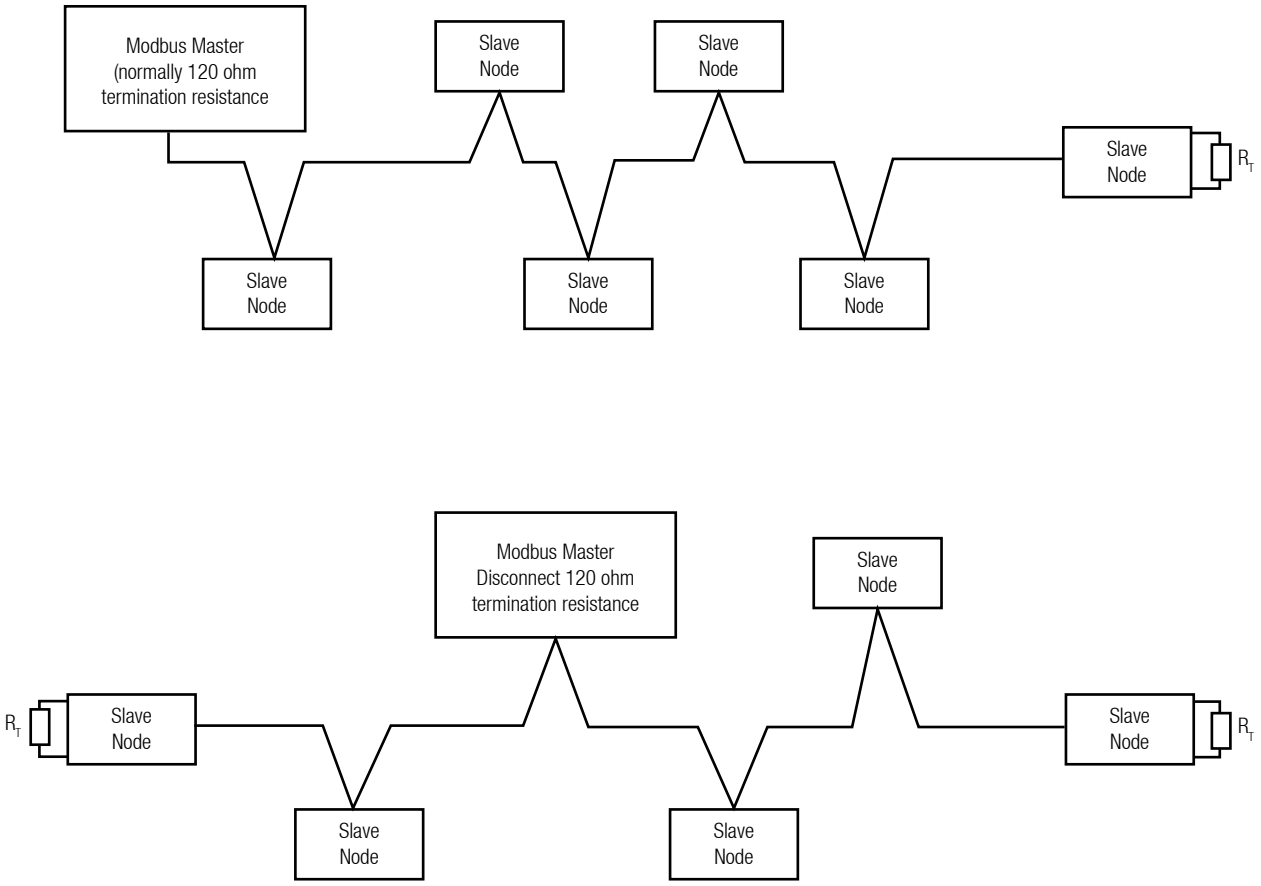


14.3 Configuration Examples

14. Appendix 1 - Modbus Option



14.4 Example Systems - Touchpoint Pro can be any one of the slave nodes

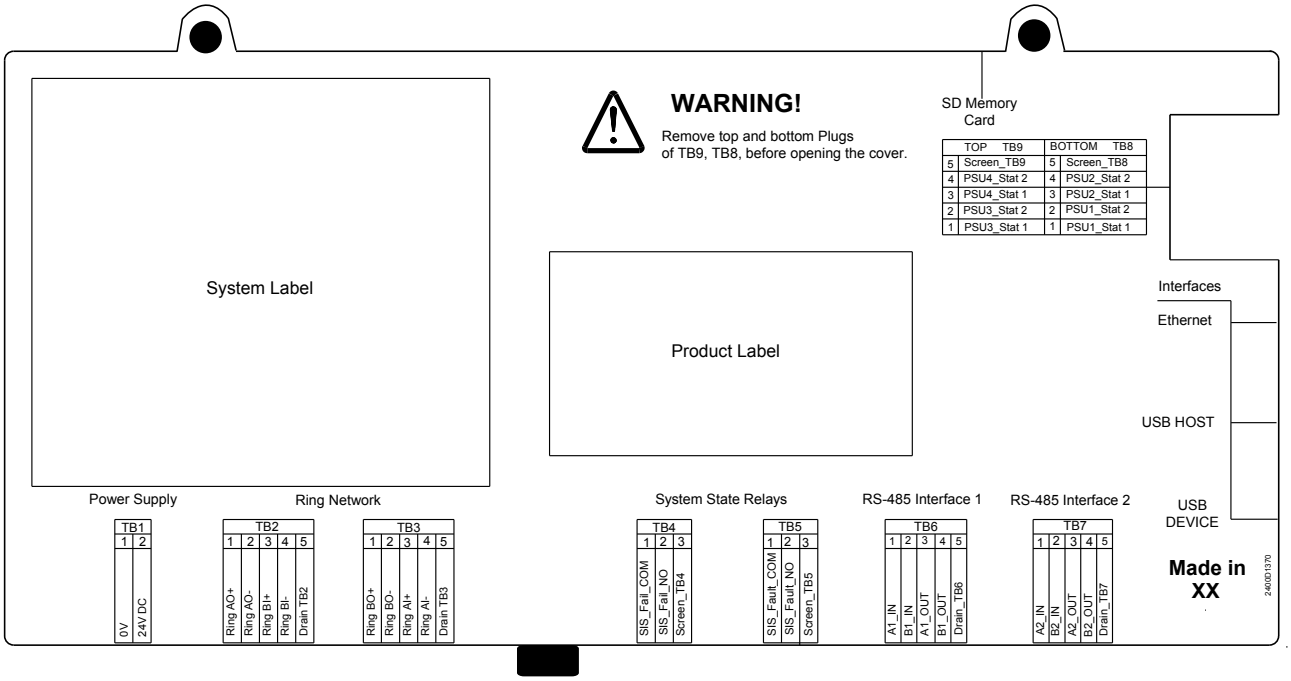
Alternatively, if a different resistance is required for a specific installation, do not change the jumper settings but connect a resistor directly between terminals 3 and 4 (A OUT and B OUT) of TB6 and / or TB7 without using the internal termination resistor.

To connect the termination resistor using the Touchpoint Pro jumpers located on the Bus Interface Board:

Caution: The SD Card, any USB device and all cables must be removed before attempting to remove the Control Module cover panel.

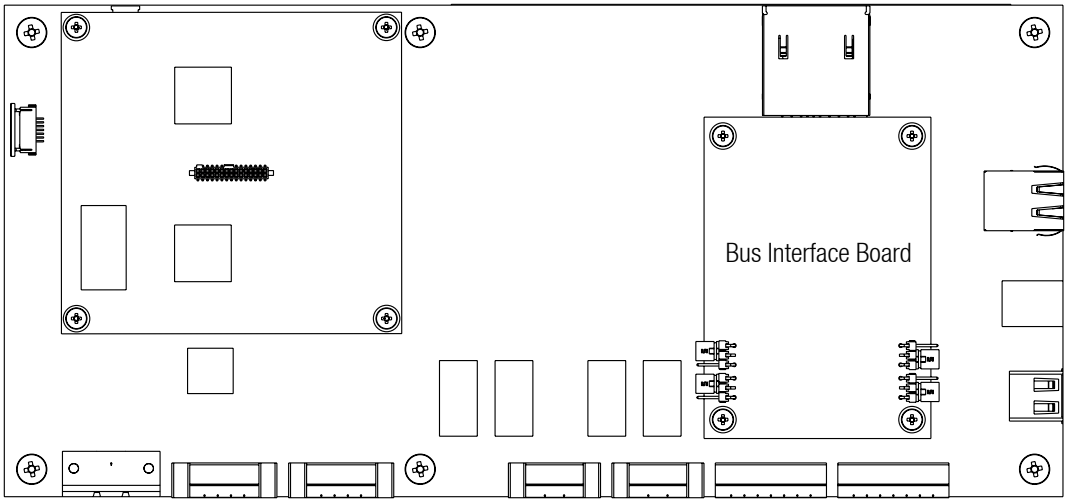
1. Locate the cover panel of the Control Module
2. Remove all cables

14. Appendix 1 - Modbus Option



14.5 Removing the Control Module Cover

3. Remove the two M4 locknut screws at the top of the cover
4. Loosen the M4 locknut screw on the underside of the cover
5. Carefully slide the cover off



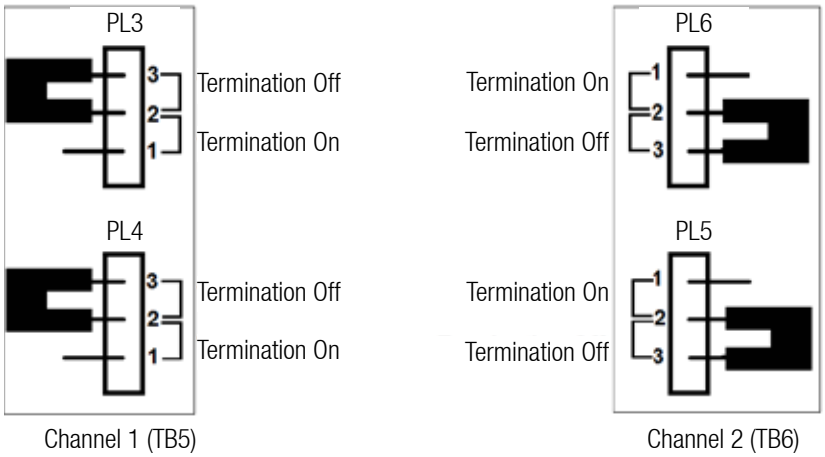
14.6 Location of Bus Interface Board

6. Locate the Bus Interface Board (BIB) which is mounted on the right side of the Control Module motherboard

14. Appendix 1 - Modbus Option

7. Set the jumpers for the appropriate channel to the “Termination On” position according to the diagram and table below
8. Carefully replace the cover on the Control Module, refit and re-tighten the three locknut screws
9. Refit the cables

Note: The termination resistor should only be switched across a channel that forms the final node of an RS485 highway. It is necessary to set both jumpers for the channel.



14.7 Jumpers for the Termination Resistance - default configuration

Setting	Channel 1		Channel 2	
	PL3	PL4	PL5	PL6
Termination ON	1-2	1-2	1-2	1-2
Termination OFF	2-3	2-3	2-3	2-3

14.2.6 Multi-drop mode

For a multi-drop installation, a maximum of 32 nodes (31 slave nodes plus one master node) can be supported.

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14.3 Configuration

Note: It is recommended that the host computer is configured to provide at least two retries in the event of a communication frame loss with a minimum delay of 1 s between each poll, and a minimum timeout of 2 s. Refer to the documentation supplied with the host computer for details of its communication and Modbus configuration. Touchpoint Pro Modbus communication uses 8 data bits and 2 stop bits.

To configure the Touchpoint Pro Modbus communication parameters, follow the procedure below.

1. If not already logged in, login with a valid engineer level user name
2. From the **System Status** screen select the **Extras** icon then **Global Settings**
3. Select **Modbus Settings**, then **Edit** to adjust the parameters
4. When complete, press **Save**

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Baud Rate	9600	9600, 19200	Should be set to correspond to the baud rate of the host system
Parity	None	Even, Odd, None	Should be set to correspond to the parity checking set on the host system
Primary Slave Address	1	1 to 247	Each node connected to the RS485 highway must have a different address setting
Secondary Slave Address	2	1 to 247	

Touchpoint Pro Modbus communication uses 8 data bits and 2 stop bits.

14. Appendix 1 - Modbus Option

14.4 Register Allocation for Function 02 – Read Input Status

This function reads the input channel status bits. Each status bit can have the value 1 = Active or 0 = Not active. For the Channel Type only, 1 = Analogue or 0 = Digital. There are twelve status bits for each channel. The maximum number of status bits read in one frame is 512.

Input channels

Channel	Rate Alarm	LTEL Alarm	STEL Alarm	Alarm 3	Alarm 2	Alarm 1	Inhibit	Fault	No Data	Channel Type	not used	SIL Channel (future use)	Safe State (future use)	Warning	Acknowledged	not used
01	10001	10002	10003	10004	10005	10006	10007	10008	10009	10010	10011	10012	10013	10014	10015	10016
02	10017	10018	10019	10020	10021	10022	10023	10024	10025	10026	10027	10028	10029	10030	10031	10032
...																
64	11009	11010	11011	11012	11013	11014	11015	11016	11017	11018	11019	11020	11021	11022	11023	11024

Output channels

Channel	Rate Alarm	LTEL Alarm	STEL Alarm	Alarm 3	Alarm 2	Alarm 1	Inhibit	Fault	No Data	Channel Type	Force state	SIL Channel (future use)	Safe State (future use)	Warning	Acknowledged	free
01	11073	11074	11075	11076	11077	11078	11079	11080	11081	11082	11083	11084	11085	11086	11087	11088
02	11089	11090	11091	11092	11093	11094	11095	11096	11097	11098	11099	11100	11101	11102	11103	11104
...																
128	13105	13106	13107	13108	13109	13110	13111	13112	13113	13114	13115	13116	13117	13118	13119	13120

	Rate Alarm Summary	LTEL Alarm Summary	STEL Alarm Summary	Alarm 3 Summary	Alarm 2 Summary	Alarm 1 Summary	Inhibit Summary	Fault Summary	not used	not used	not used	not used	not used	not used	not used	not used
System Summary	11025	11026	11027	11028	11029	11030	11031	11032	11033	11034	11035	11036	11037	11038	11039	11040

	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used
System Summary	11041	11042	11043	11044	11045	11046	11047	11048	11049	11050	11051	11052	11053	11054	11055	11056

	Safe State Summary (future use)	Warning Summary	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used	not used
System Summary	11057	11058	11059	11060	11061	11062	11063	11064	11065	11066	11067	11068	11069	11070	11071	11072

14. Appendix 1 - Modbus Option

14.5 Register Allocation for Function 04 – Read Input Registers

There are three sets of input registers for each channel:

1. The analogue signal expressed as a 16 bit signed integer value
2. The analogue signal expressed as a 32 bit floating point value
3. An animation value

14.5.1 Analogue Registers (Integer)

Channel	Analogue Value (Integer)
01	30001
02	30002
...	
64	30064

Note: The Integer format is a 16 bit signed integer, range -10000 to +10000 in steps of 0.1 %FSD

14.5.2 Analogue Registers (Float)

Channel	Analogue Value (Float) Register 1	Analogue Value (Float) Register 2
01	30129	30130
02	30131	30132
...		
64	30255	30256

Note: The Float format is a 32 bit floating point value in accordance with IEEE 754-2008

14.5.3 Animation Registers

A group of animation values are allocated for registers 30065 to 30128. These are intended to be used by graphics packages for defining the colours of various screen objects based upon the status of a channel. A 16 bit unsigned word format is used.

Channel	Animation Register
01	30065
02	30066
...	
64	30128

14. Appendix 1 - Modbus Option

The data value for each register can be one of the following:

Value	Status
0	Channel operating normally
1	RATE alarm active
2	LTEL alarm active
3	STEL alarm active
4	A1 alarm active
5	A2 alarm active
6	A3 alarm active
7	Fault active
8	Inhibit active
9	Not used
10	Not used
11 or higher	No data available

14.6 Register Allocation for Function 03 / 06 / 16 – Read / Write Holding Registers

All registers use 16 bit data words.

The Channel Type field identifies the channel as Input or Output. The decimal value 105 (= ASCII “i”) is used for Inputs, the decimal value 111 (= ASCII “o”) for Outputs. The decimal value 6 together with channel ID 0 is used for master commands. Function 16 can be used to write to the 40n01 to 40n04 and 41n01 to 41n05 (n = 0 to 9) ranges of registers only.

Caution: When using Function 6 or Function 16, ensure that the registers related to the command are completely filled before setting the Block Active flag, otherwise an unintended command may be performed.

14.6.1 Query Poll Registers

Query Poll Block	Block Active	Channel Type	Channel ID	Query Type	Result	Result String
1	40001	40002	40003	40004	40005	40006 to 40036
2	40101	40102	40103	40104	40105	40106 to 40136
3	40201	40202	40203	40204	40205	40206 to 40236
4	40301	40302	40303	40304	40305	40306 to 40336
5	40401	40402	40403	40404	40405	40406 to 40436
6	40501	40502	40503	40504	40505	40506 to 40536
7	40601	40602	40603	40604	40605	40606 to 40636
8	40701	40702	40703	40704	40705	40706 to 40736
9	40801	40802	40803	40804	40805	40806 to 40836
10	40901	40902	40903	40904	40905	40906 to 40936

14. Appendix 1 - Modbus Option

Allowed values for the Result register 40n05 (n = 0 to 9)

Value	Meaning
0	Success
1	Command not permitted
2	Inter process communication failure
67	Failure

14.6.2 Query Types available

Poll No	Description	Response Format
02	Read System Label	B
39	Read Alarm 1 level	A
40	Read Alarm 2 level	A
41	Read Alarm 3 level	A
42	Read STEL level	A
43	Read LTEL level	A
44	Read Rate level	A
102	Read Gas Name	B
103	Read Channel Tag Name	B
104	Read Gas Unit	B

Response formats for the Result String registers 40n06 - 40n36 (n = 0 to 9)

Type	Format
A	Float (4 Bytes – 32 bit floating point)
B	Unicode String – 35 (Unicode chars) + 1(null)

Example: Read Alarm 1 level (Query Type)

Register	Block Active (40n01)	Channel Type (40n02)	Channel ID (40n03)	Query Type (40n04)	Result (40n05)	Result String (40n06 to 40n36)
Value	1	105	2	39	(Updated upon request execution)	(Updated upon request execution)

If Block Active is set to 1, the Controller processes the request. If Block Active is set to 0 the Controller will not process the request or has already processed the request.

The options for Channel Type are 105 – Input Channel and 111 – Output Channel.

14. Appendix 1 - Modbus Option

14.6.3 Command Poll Registers

Command Poll Block	Block Active	Channel Type	Channel ID	Command Type	Command Data	Result
1	41001	41002	41003	41004	41005	41006
2	41101	41102	41103	41104	41105	41106
3	41201	41202	41203	41204	41205	41206
4	41301	41302	41303	41304	41305	41306
5	41401	41402	41403	41404	41405	41406
6	41501	41502	41503	41504	41505	41506
7	41601	41602	41603	41604	41605	41606
8	41701	41702	41703	41704	41705	41706
9	41801	41802	41803	41804	41805	41806
10	41901	41902	41903	41904	41905	41906

Allowed values for the Result register 41n05 (n = 0 to 9)

Value	Meaning
0	Success
1	Command not permitted
2	Inter process communication failure
67	Failure

14.6.4 Command Types Available

Note: Function 06 cannot be used for SIL channels

Command Type	Description
23	Alarm Acknowledge
24	Alarm Reset
25	Set Inhibit
26	Clear inhibit

Example: Alarm Acknowledge (Command Type)

Register	Block Active (41n01)	Channel Type (41n02)	Channel ID (41n03)	Command Type (41n04)	Command Data (41n05)	Result (41n06)
Value	1	105	2	23	0	(Updated upon request execution)

14. Appendix 1 - Modbus Option

If Block Active is set to 1, the Controller processes the request. If Block Active is set to 0 the Controller will not process the request or has already processed the request.

The options for Channel Type are 105 – Input Channel, 111 – Output Channel and 6 – Global (all channels).

If the Command Data is set to 0, the command will apply to all the channel alarms if a specific channel is identified, or to all channels if the channel type is Global.

14.7 Exception Responses

The Modbus exception response is detailed in the Modicon Modbus manual. Any

one of the following exception responses may be returned by the Touchpoint Pro Modbus interface:

Exception	Description
01 ILLEGAL FUNCTION	Only Modbus functions 02, 03, 04 and 06 are supported. This response is returned if any other requests are received.
02 ILLEGAL DATA ADDRESS	The register addresses supported by each function are listed in this chapter. Any attempt to access a register outside of these ranges will result in this error.
03 ILLEGAL DATA VALUE	This exception is returned if the request has the incorrect length, or if the maximum number of registers is exceeded. The maximum number of registers that can be requested by function 02 is 512, function 04 is 64, and function 03 is 36 for the Query poll block or 6 for the Command poll block.
06 SLAVE DEVICE BUSY	Applies to function 06 only. Once a poll or command block's active register has been set, its contents must not be changed until the main program has carried out the request. This exception is returned if any attempt is made to change an active poll or command block.

Note: A function 06 that leaves the block unchanged will not generate this error

15. Appendix 2 - Configurable Parameter Reference Guide

Note: For text fields, the maximum number of characters that can be entered is given throughout this reference guide. However, in exceptional cases where many wide characters are used the text may be too long for the field. The full text will be visible in any reports.

15.1 Analogue Input Module 4-20 mA

The Analogue Input Module 4-20 mA has the option to use the sensor catalogue (basic / extended), configure a custom channel, or copy from a configured channel (basic / extended).

Note: When making changes using Extended options, it is the user's responsibility to determine whether other settings have been affected and to make any corresponding changes.

If a basic configuration is selected, only the first two screens detailed below will be used (Commission Channel and Field Device Selection). The rest of the configuration will be programmed automatically, either from the sensor catalogue or from the channel that is being copied.

Note: If a channel is configured from the sensor catalogue, it is possible to edit individual settings afterwards (see Section "Editing a Configured Channel").

15.1.1 Commission Channel

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Channel ID	Next available	1 to 64	Can only be assigned during first time configuration. Otherwise de-commission the channel and re-assign another channel number
Channel Location Tag	"Channel <Channel ID>"	Maximum 30 Alphanumeric Characters	30 character location tag name. This is the main channel description used throughout the interface
Channel Custom ID	"Channel <Channel ID>"	Maximum 20 Alphanumeric Characters	20 character custom ID. This is displayed on the "Channel Details" screen and in the Configuration Report

Note: Channel Location Tag and Channel Custom ID only require Engineer level access for editing

15.1.2 Field Device Selection

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Field Device Name	"Generic Field Device"	Maximum 30 Alphanumeric Characters	If the sensor catalogue is used, a list of available field devices will be displayed for selection. If copy channel is being used, this value cannot be changed
Sensor Name	"Generic Sensor"	Maximum 30 Alphanumeric Characters	If the sensor catalogue is used, a list of available gases and ranges will be displayed for selection. If copy channel is being used, this value cannot be changed

15. Appendix 2 - Configurable Parameter Reference Guide

15.1.3 Sensor Settings

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Gas Name	"Gas"	Maximum 10 Alphanumeric Characters	
Gas Unit	"%FSD"	%FSD, %LEL, % Vol., ppm, ppb, mA, mV, mg/m3, LEL.m or maximum 5 Alphanumeric Characters	FSD – Full Scale Deflection LEL – Lower Explosive Limit LEL.m – LEL metres

15.1.4 Range Settings

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Signal Range Min	4 mA	0.5 mA to 4 mA	X1 = Signal Range Min (Electrical Input from Sensor) X2 = Signal Range Max (Electrical input from Sensor) Y1 = Gas Range Min Y2 = Gas Range Max Gas concentration (y) is calculated as follows: y = (((Y2-Y1)/(X2-X1))*(x-X1))+Y1
Signal Range Max	20 mA	12 mA to 24 mA	
Gas Range Min	0	Sensor / Unit specific	
Gas Range Max	100	Sensor / Unit specific	

15.1.5 Display Settings

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Peak Hold Enable	Disabled	Enabled / Disabled	If "Peak Hold" is enabled, and the gas reading rises above the configured full scale value, the channel will display the maximum gas reading that has been measured until it is reset

Note: The number of decimal places to be displayed is determined by the Gas Range Max setting as follows:

Gas Range Max	Decimal Places
≥ 100	0
≥ 10 and < 99	1
< 10	2

This is also the resolution at which data will be logged for the trend report.

15. Appendix 2 - Configurable Parameter Reference Guide

15.1.6 Suppression Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Zero Suppression Positive	0	0.0 to 25.0 %FSD	The gas concentration shall be set to 0.0 when the gas concentration value received from the sensor is between the “Zero suppression Positive” and “Zero suppression Negative” values.
Zero Suppression Negative	0	0.0 to -25.0 %FSD	

Note: Trend logging takes place when the value of an input channel changes. The system will not log values while they remain within the zero suppression limits.

Note: If a threshold alarm level is set within the zero suppression band, no alarm signal will be generated.

15.1.7 Threshold Alarm 1 Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Alarm 1 Enable	Enabled	Enabled / Disabled
Alarm 1 Level	20 %FSD	According to sensor range
Alarm 1 Trigger	Rising	Rising / Falling
Alarm 1 Latch	Latching	Non-Latching / Latching

15.1.8 Threshold Alarm 2 Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Alarm 2 Enable	Enabled	Enabled / Disabled
Alarm 2 Level	50 %FSD	According to sensor range
Alarm 2 Trigger	Rising	Rising / Falling
Alarm 2 Latch	Latching	Non-Latching / Latching

15.1.9 Threshold Alarm 3 Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Alarm 3 Enable	Enabled	Enabled / Disabled
Alarm3 Level	75 %FSD	According to sensor range
Alarm3 Trigger	Rising	Rising / Falling
Alarm3 Latch	Latching	Non-Latching / Latching

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15.1.10 Threshold Alarm Hysteresis

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Threshold Alarm Hysteresis	2 %FSD	0.0 to 10.0 %FSD	The hysteresis value will be applied to a channel coming out of an alarm condition, e.g. if the alarm level is 20 %FSD, and hysteresis is set to 2 %, the alarm will not be cancelled until the reading has dropped below 18 %FSD.

15.1.11 Short Term Exposure Limit (STEL) Alarm Settings

Caution: In some countries, the use of STEL and LTEL alarms with fixed gas detection equipment is not recommended. Refer to local and national regulations.

Note: The Short Term Exposure Limit (STEL) calculation is a moving time-weighted average (TWA) gas reading over a given time interval (STEL Time Interval). The STEL alarm is set if the result exceeds the configured STEL Alarm Level. The STEL sample rate is 4 Hz, and the STEL reading is updated every 30 s.

STEL = (HM_TWA1 + HM_TWA2 + HM_TWA3 …….+ HM_TWAN) / STELN
where
STEL = Short Term Exposure Limit TWA
HM_TWA1 = 1st Half Minute TWA
HM_TWA2 = 2nd Half Minute TWA
HM_TWAN = Nth Half Minute TWA
STELN = Number of Half Minute TWA Samples received in STEL interval

Access Level: Engineer

Parameter Name	Default Setting	Value Range
STEL Alarm Enable	Disabled	Enabled / Disabled
STEL Alarm Level	20 %FSD	According to sensor range
STEL Alarm Latch	Latching	Latching / Non-Latching
STEL Time Interval	10 min.	5, 10, 15, 20, 30, 40 and 60 min.

15.1.12 Long Term Exposure Limit (LTEL) Alarm Settings

Caution: The Touchpoint Pro LTEL calculation assumes an 8 hour working period. In some countries, the use of STEL and LTEL alarms with fixed gas detection equipment is not recommended. Refer to local and national regulations.

Note: The Long Term Exposure Limit (LTEL) calculation is a moving time-weighted average (TWA) over an 8 hour time interval. The sample interval is 30 s, and the LTEL reading is updated every 10 minutes.

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LTEL = (TEN_MIN_TWA1 + TEN_MIN _TWA2 + …….+ TEN_MIN _TWAN) / LTELN
Where
LTEL = Long Term Exposure Limit TWA.
TEN_MIN_TWA1 = 1st Ten Minute TWA,
TEN_MIN_TWA2 = 2nd Ten Minute TWA
TEN_MIN_TWAN = Nth Ten Minute TWA
LTELN = Number of Ten Minute TWA Samples received in 8 hours

Access Level: Engineer

Parameter Name	Default Setting	Value Range
LTEL Alarm Enable	Disabled	Enabled / Disabled
LTEL Alarm Level	10 %FSD	According to sensor range
LTEL Alarm Latch	Latching	Latching / Non-Latching

15.1.13 Rate Alarm Settings 1

Note: The Rate of Change Alarm is set when a specific rate of rise (or fall; depending if the Rate Alarm Trigger is set as Rising or Falling) is observed. The Alarm Level and the Alarm Interval can be configured. If the Alarm Level = 10 %LEL and the Alarm Interval = 5 s, the Rate Alarm will be set if the concentration has risen by 10 %LEL within 5 s.

The rate alarm is calculated from the displayed reading.

Note: If zero suppression is used it has the effect of sensitizing the rate alarm. It is recommended to set the rate alarm to twice the suppression band value to avoid nuisance alarms.

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Rate Alarm Enable	Disabled	Enable / Disable
Rate Alarm Level	5 %FSD	According to sensor range
Rate Alarm Trigger	Rising	Rising / Falling
Rate Alarm Latch	Latching	Non-Latching / Latching

15.1.14 Rate Alarm Settings 2

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Rate Alarm Time Interval	1 s	1 s to 30 s	Determines the Rate Alarm evaluation interval.

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15.1.15 Inhibit Delay Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Power-On Delay Enable	Enabled	Enabled / Disabled	If enabled, the channel will be inhibited for a specific time interval (the Inhibit Delay Time) after power-up in order to prevent false alarms (e.g. during sensor warm-up).
Fault Recovery Delay Enable	Enabled	Enabled / Disabled	If enabled, the channel will be inhibited for a specific time interval (the Inhibit Delay Time) after a channel fault condition has been cleared in order to prevent false alarms (e.g. due to sensor recovery).
Inhibit Delay Time	30 s	0 to 3000 s	This is the delay time before a channel returns to normal operation if the Power-On Delay or the Fault Recovery Delay are enabled.

15.1.16 Signal Range Fault Settings

Note: When setting up the Gas Over / Under Range and Signal Over / Under Range limits, take account of any diagnostic signals that may be generated by the field device under and over the measuring range. Failure to do so may result in confusing or misleading messages. Remember that up to 5 Custom Transmitter Faults and Inhibit Signalling are available, so that diagnostic information from the transmitter can be clearly understood.

Note: When commissioning or testing sensors with a Transmitter, check that all fault messages from the 4-20 mA transmitter match the Touchpoint Pro settings.

Some typical diagnostic signal levels and equivalent %FSD values that may be used by intelligent transmitters are given below:

Diagnostic level	Equivalent %FSD
22 mA	112.5 %
21 mA	106.25 %
3 mA	-6.25 %
2.5 mA	-9.4 %
2 mA	-12.5 %
1.5 mA	-15.6 %
1 mA	-18.75 %

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Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Signal Under Range Limit	1.5mA	0.7 to 4.0 mA	The 'Signal Under Range Fault' will be set if the sensor signal reading is less than the configured 'Signal Under Range Limit'.
Signal Under Range Latch	Latching	Non-Latching / Latching	
Signal Over Range Limit	22.0mA	20.0 to 24.0 mA	The 'Signal Over Range Fault' will be set if the sensor signal reading is greater than the configured 'Signal Over Range Limit'.
Signal Over Range Latch	Latching	Non-Latching / Latching	

15.1.17 Gas Range Fault Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Gas Under Range Limit	-10 %FSD	According to sensor range	The 'Gas Under Range Fault' will be set if the calculated gas concentration is less than the configured 'Gas Under Range Limit'. This fault may be due to the sensor signal drifting below the normal zero operating point.
Gas Under Range Latch	Latching	Non-Latching / Latching	
Gas Over Range Limit	110 %FSD	According to sensor range	The 'Gas Over Range Warning' will be set if the calculated gas concentration is greater than the configured 'Gas Over Range Limit'.
Gas Over Range Latch	Latching	Non-Latching / Latching	

15.1.18 Calibration Reminder Settings

Access Level: Engineer

Note: Once the Calibration Overdue Warning is active, it can only be cleared by calibrating the channel.

Parameter Name	Default Setting	Value Range	Comment
Calibration Reminder Enable	Disabled	Enabled / Disabled	'Calibration Overdue Warning' is set if the 'Calibration Reminder Interval' is exceeded.
Calibration Reminder Interval	6 months	1 to 24 months	Calibration reminder is calculated to the day, e.g. if the reminder is set on 27 January for 6 months time, the calibration overdue reminder will appear on 27 July.

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15.1.19 Calibration Signal Settings

Access Level: Engineer

Note: These settings refer to the range of signal values from the sensor over which calibration will be permitted, and are used to avoid incorrect calibration e.g. due to incorrect application of gas.

Parameter Name	Default Setting	Value Range	Comment
Maximum Zero Offset	5 mA	1 to 15 mA	During calibration, the “Zero Signal Too High” warning is set if the zero signal exceeds the Maximum Zero Offset
Minimum Zero Offset	3 mA	1 to 8 mA	During calibration, the “Zero Signal Too Low” warning is set if the zero signal is below the Minimum Zero Offset
Maximum Span Signal	20.0 mA	8.0 to 24.0 mA	During calibration, the “Calibration Signal Too High” warning will be set if the span signal exceeds the Maximum Span Signal.
Minimum Span Signal	5 mA	0.0 to 12.0 mA	During calibration, the “Calibration Signal Too Low” warning will be set if the span signal is below the Minimum Span Signal

15.1.20 Calibration Span Gas Settings

Access Level: Engineer

Note: These settings refer to the range of gas concentration values that can be used for span calibration, and are used to ensure that the sensor is calibrated at an appropriate level.

Parameter Name	Default Setting	Value Range	Comment
Maximum Span Gas Conc	100 %FSD	80 to 100 %FSD (According to sensor range)	Sets the Maximum Span Gas Concentration that can be used during calibration. Must be greater than the Minimum Span Gas Conc.
Minimum Span Gas Conc	30 %FSD	15 to 80 %FSD (According to sensor range)	Sets the Minimum Span Gas Concentration that can be used during calibration. Has to be less than the Maximum Span Gas Conc.
Default Span Gas Conc	50 %FSD	According to sensor range	Sets the Default Span Gas Concentration to be used during calibration.

15.1.21 Inhibit Signalling Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Inhibit Signalling Enable	Disabled	Enabled / Disabled	If enabled, a specific signal level from the sensor will activate an inhibit condition for the channel.
Inhibit Level Max	2.0 mA	1.0 to 3.9 mA	The recommended minimum difference between Inhibit Level Max and Inhibit Level Min is 0.2 mA
Inhibit Level Min	2.0 mA	0.8 to 3.8 mA	

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15.1.22 Fault Signalling Settings 1

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Custom Transmitter Fault 1 Enable	Disabled	Enabled / Disabled	If enabled, a specific signal level from the sensor will activate a custom fault condition for the channel. An example of a custom fault is the “Beam Block” condition for an open path IR detector
Custom Transmitter Fault 2 Enable	Disabled	Enabled / Disabled	
Custom Transmitter Fault 3 Enable	Disabled	Enabled / Disabled	

15.1.23 Fault Signalling Settings 2

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Custom Transmitter Fault 4 Enable	Disabled	Enabled / Disabled	If enabled, a specific signal level from the sensor will activate a custom fault condition for the channel. An example of a custom fault is the “Beam Block” condition for an open path IR detector
Custom Transmitter Fault 5 Enable	Disabled	Enabled / Disabled	

15.1.24 Custom Fault “X” Detail Settings

The Fault details can be set for each of the enabled custom faults.

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Custom Transmitter Fault (1-5) Name	“Custom Fault 1”	Maximum 20 Alphanumeric Characters	This is the fault description, which will be displayed on the “Input Details” screen
Custom Transmitter Fault (1-5) Level Max	3.0 mA	1.0 to 3.9 mA	The recommended minimum difference between Fault Level Max and Fault Level Min is 0.2 mA
Custom Transmitter Fault (1-5) Level Min	2.0 mA	0.8 to 3.8 mA	
Custom Transmitter Fault (1-5) Latch	Latching	Non-Latching / Latching	
Custom Transmitter Fault (1-5) Definition	Fault	Fault / Warning	Select whether the “custom fault” should be treated as a fault condition or as a warning condition.

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15.2 Analogue Input Module mV Bridge

The Analogue Input Module mV Bridge has the option to use the sensor catalogue (basic / extended), configure a custom channel, or copy from a configured channel (basic / extended).

Note: When making changes using Extended options, it is the user's responsibility to determine whether other settings have been affected and to make any corresponding changes.

If a basic configuration is selected, only the first two screens detailed below will be used (Commission Channel and Field Device Selection). The rest of the configuration will be programmed automatically, either from the sensor catalogue or from the channel that is being copied.

Note: If a channel is configured from the sensor catalogue, it is possible to edit individual settings afterwards (see Section "Editing a Configured Channel").

Note: For catalytic bead type detectors, the Touchpoint Pro controller is necessary to complete the measuring circuit. Therefore all commissioned mV channels remain in Inhibit state until they are calibrated.

15.2.1 Commission Channel

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Channel ID	Next available	1 to 64	Can only be assigned during first time configuration. Otherwise de-commission the channel and re-assign another channel number
Channel Location Tag	"Channel <Channel ID>"	Maximum 30 Alphanumeric Characters	30 character location tag name. This is the main channel description used throughout the interface
Channel Custom ID	"Channel <Channel ID>"	Maximum 20 Alphanumeric Characters	20 character custom ID. This is displayed on the "Channel Details" screen and in the Configuration Report

Note: Channel Location Tag and Channel Custom ID only require Engineer level access for editing

15.2.2 Field Device Selection

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Field Device Name	"Generic Field Device"	Maximum 30 Alphanumeric Characters	If the sensor catalogue is used, a list of available field devices will be displayed for selection. If copy channel is being used, this value cannot be changed
Sensor Name	"Generic Sensor"	Maximum 30 Alphanumeric Characters	If the sensor catalogue is used, a list of available gases and ranges will be displayed for selection. If copy channel is being used, this value cannot be changed

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15.2.3 Sensor Settings

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Gas Name	"Gas"	Maximum 10 Alphanumeric Characters	
Gas Unit	"%FSD"	%FSD, % Vol., ppm, ppb, mA, mV, mg/m3, LEL.m or maximum 5 Alphanumeric Characters	FSD – Full Scale Deflection LEL – Lower Explosive Limit LEL.m – LEL metres
Bridge Current	200 mA	180 to 360 mA	

15.2.4 Range Settings

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Signal Range Min	0	0 mV to 100 mV	X1 = Signal Range Min (Electrical Input from Sensor) X2 = Signal Range Max (Electrical input from Sensor) Y1 = Gas Range Min Y2 = Gas Range Max Gas concentration (y) is calculated as follows: y = (((Y2-Y1)/(X2-X1))*(x-X1))+Y1 *Note: Signal Range Min and Max are over-written during calibration, and are then no longer editable*
Signal Range Max	100	5 mV to 300 mV	
Gas Range Min	0	Sensor / Unit specific	
Gas Range Max	100	Sensor / Unit specific	

15.2.5 Display Settings

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Peak Hold Enable	Enabled	Enabled / Disabled	If Peak Hold is enabled and the gas reading rises above the configured full scale value, the channel will display the maximum gas reading that has been measured until it is reset

Note: The number of decimal places to be displayed is determined by the Gas Range Max setting as follows:

Gas Range Max	Decimal Places
≥ 100	0
≥ 10 and < 99	1
< 10	2

This is also the resolution at which data will be logged for the trend report.

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15.2.6 Suppression Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Zero Suppression Positive	0	0.0 to 25.0 %FSD	The gas concentration shall be set to 0.0 when the gas concentration value received from the sensor is between the “Zero suppression Positive” and “Zero suppression Negative” values.
Zero Suppression Negative	0	0.0 to -25.0 %FSD	

Note: Trend logging takes place when the value of an input channel changes. The system will not log values while they remain within the zero suppression limits.

Note: If a threshold alarm level is set within the zero suppression band, no alarm signal will be generated.

15.2.7 Threshold Alarm 1 Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Alarm 1 Enable	Enabled	Enabled / Disabled
Alarm 1 Level	20 %FSD	According to sensor range
Alarm 1 Trigger	Rising	Rising / Falling
Alarm 1 Latch	Latching	Non-Latching / Latching

15.2.8 Threshold Alarm 2 Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Alarm 2 Enable	Enabled	Enabled / Disabled
Alarm 2 Level	50 %FSD	According to sensor range
Alarm 2 Trigger	Rising	Rising / Falling
Alarm 2 Latch	Latching	Non-Latching / Latching

15.2.9 Threshold Alarm 3 Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Alarm 3 Enable	Enabled	Enabled / Disabled
Alarm3 Level	75 %FSD	According to sensor range
Alarm3 Trigger	Rising	Rising / Falling
Alarm3 Latch	Latching	Non-Latching / Latching

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15.2.10 Threshold Alarm Hysteresis

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Threshold Alarm Hysteresis	2 %FSD	0.0 to 10.0 %FSD	The hysteresis value will be applied to a channel coming out of an alarm condition, e.g. if the alarm level is 20 %FSD, and hysteresis is set to 2 %, the alarm will not be cancelled until the reading has dropped below 18 %FSD.

15.2.11 Rate Alarm Settings 1

Note: The Rate of Change Alarm is set when a specific rate of rise (or fall; depending if the Rate Alarm Trigger is set as Rising or Falling) is observed. The Alarm Level and the Alarm Interval can be configured. If the Alarm Level = 10 %LEL and the Alarm Interval = 5 s, the Rate Alarm will be set if the concentration has risen by 10 %LEL within 5 s.

The rate alarm is calculated from the displayed reading.

Note: If zero suppression is used it has the effect of sensitizing the rate alarm. It is recommended to set the rate alarm to twice the suppression band value to avoid nuisance alarms.

Access Level: Engineer

Parameter Name	Default Setting	Value Range
Rate Alarm Enable	Disabled	Enable / Disable
Rate Alarm Level	5 %FSD	According to sensor range
Rate Alarm Trigger	Rising	Rising / Falling
Rate Alarm Latch	Latching	Non-Latching / Latching

15.2.12 Rate Alarm Settings 2

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Rate Alarm Time Interval	1 s	1 s to 30 s	Determines the Rate Alarm evaluation interval.

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15.2.13 Inhibit Delay Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Power-On Delay Enable	Enabled	Enabled / Disabled	If enabled, the channel will be inhibited for a specific time interval (the Inhibit Delay Time) after power-up in order to prevent false alarms (e.g. during sensor warm-up).
Fault Recovery Delay Enable	Enabled	Enabled / Disabled	If enabled, the channel will be inhibited for a specific time interval (the Inhibit Delay Time) after a channel fault condition has been cleared in order to prevent false alarms (e.g. due to sensor recovery).
Inhibit Delay Time	30 s	0 to 3000 s	This is the delay time before a channel returns to normal operation if the Power-On Delay or the Fault Recovery Delay are enabled.

15.2.14 Signal Range Fault Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Signal Under Range Limit	-50 mV	-90 to -5 mV	The 'Signal Under Range Fault' will be set if the sensor signal reading is less than the configured 'Signal Under Range Limit'.
Signal Under Range Latch	Latching	Non-Latching / Latching	
Signal Over Range Limit	300 mV	25 to 360 mV	The 'Signal Over Range Fault' will be set if the sensor signal reading is greater than the configured 'Signal Over Range Limit'.
Signal Over Range Latch	Latching	Non-Latching / Latching	

15.2.15 Gas Range Fault Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Gas Under Range Limit	-10 %FSD	-24 % FSD to 0 %FSD	The 'Gas Under Range Fault' will be set if the calculated gas concentration is less than the configured 'Gas Under Range Limit'. This fault may be due to the sensor signal drifting below the normal zero operating point.
Gas Under Range Latch	Latching	Non-Latching / Latching	
Gas Over Range Limit	110 %FSD	100 % FSD to 125 % FSD	The 'Gas Over Range Warning' will be set if the calculated gas concentration is greater than the configured 'Gas Over Range Limit'.
Gas Over Range Latch	Latching	Non-Latching / Latching	

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15.2.16 Calibration Reminder Settings

Access Level: Engineer

Note: Once the Calibration Overdue Warning is active, it can only be cleared by calibrating the channel.

Parameter Name	Default Setting	Value Range	Comment
Calibration Reminder Enable	Disabled	Enabled / Disabled	'Calibration Overdue Warning' is set if the 'Calibration Reminder Interval' is exceeded.
Calibration Reminder Interval	6 months	1 to 24 months	Calibration reminder is calculated to the day, e.g. if the reminder is set on 27 January for 6 months time, the calibration overdue reminder will appear on 27 July.

15.2.17 Calibration Signal Settings

Access Level: Engineer

Note: These settings refer to the range of signal values from the sensor over which calibration will be permitted, and are used to avoid incorrect calibration e.g. due to a decaying sensor or incorrect application of gas.

Parameter Name	Default Setting	Value Range	Comment
Maximum Zero Offset	100 mV	0 mV to 200 mV	During calibration, the "Zero Signal Too High" warning is set if the zero signal exceeds the Maximum Zero Offset
Minimum Zero Offset	-90 mV	-90 mV to 0 mV	During calibration, the "Zero Signal Too Low" warning is set if the zero signal is below the Minimum Zero Offset
Maximum Span Signal	100 mV	100 to 300 mV	During calibration, the "Calibration Signal Too High" warning will be set if the span signal exceeds the Maximum Span Signal
Minimum Span Signal	0 mV	-50 to 100 mV	During calibration, the "Calibration Signal Too Low" warning will be set if the span signal is below the Minimum Span Signal

15.2.18 Calibration Span Gas Settings

Access Level: Engineer

Note: These settings refer to the range of gas concentration values that can be used for span calibration, and are used to ensure that the sensor is calibrated at an appropriate level.

Parameter Name	Default Setting	Value Range	Comment
Maximum Span Gas Conc	100 %FSD	80 to 100 %FSD (According to sensor range)	Sets the Maximum Span Gas Concentration that can be used during calibration. Must be greater than the Minimum Span Gas Conc.
Minimum Span Gas Conc	30 %FSD	15 to 80 %FSD (According to sensor range)	Sets the Minimum Span Gas Concentration that can be used during calibration. Must be less than the Maximum Span Gas Conc.
Default Span Gas Conc	50 %FSD	According to sensor range	Sets the Default Span Gas Concentration to be used during calibration.

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15.3 Digital Input Module

The Digital Input Module has the option to configure a custom channel, or copy from a configured channel.

Note: The Digital Input will be treated as an alarm unless one of the Remote Interaction Settings is enabled

Note: If a channel is configured by copying from another channel, it is possible to edit individual settings afterwards (see Section "Editing a Configured Channel").

15.3.1 Commission Channel

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Channel ID	Next available	1 to 64	Can only be assigned during first time configuration. Otherwise de-commission the channel and re-assign another channel number
Channel Location Tag	"Channel <Channel ID>"	Maximum 30 Alphanumeric Characters	30 character location tag name. This is the main channel description used throughout the interface
Channel Custom ID	"Channel <Channel ID>"	Maximum 20 Alphanumeric Characters	20 character custom ID. This is displayed on the "Channel Details" screen and in the Configuration Report

Note: Channel Location Tag and Channel Custom ID only require Engineer level access for editing

15.3.2 Digital Input Settings

Note: These parameters can only be set on first configuration. To edit later, it is necessary to decommission and re-commission the channel.

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Input Type	Supervised OC/SC	Unsupervised / Supervised OC / Supervised OC/SC	A digital input (usually a switch) can be connected unsupervised, supervised for open circuit (OC) or supervised for both open circuit and short circuit (SC). See Electrical Installation, Connections, Digital Input Module for details
Default State	Normally Open (NO) for Standard modules / Normally Closed (NC) for Safe modules	Normally Closed (NC) / Normally Open (NO)	This parameter is not configurable for a SIL input channel

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15.3.3 Alarm Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Input Latch	Latching	Non-Latching / Latching	
Event Type	Alarm	Alarm, Fault, Warning	

15.3.4 Remote Interaction Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Remote Reset Enable	Disabled	Enabled / Disabled	The digital input can be used to reset latched alarm conditions or latched output channels.
Remote Inhibit Enable	Disabled	Enabled / Disabled	The digital input can be used to inhibit input- or output channels.
Remote Acknowledge Enable	Disabled	Enabled / Disabled	The digital input can be used to acknowledge alarm conditions.

If none of the remote interaction settings are enabled, the digital input is treated as a Threshold Alarm 1 in the Cause and Effect matrix.

15.3.5 Remote Group Interaction Settings

Access Level: Engineer

If any of the remote interaction options are enabled above, select **Add / View Group Member** to choose the channels to associate with the Reset, Inhibit or Acknowledge action.

Channels can be assigned to more than one interaction group.

A DIM channel assigned to carry out a remote interaction is not available to take part in any other interaction group.

WARNING

Remote reset should not be used for catalytic sensors, since gas could still be present even though the sensor reading has dropped. Conditions at the field device should always be investigated before resetting an alarm.

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15.4 Relay Output Module

The Relay Output Module has the option to configure a custom channel, or copy from a configured channel.

Note: If a channel is configured by copying from another channel, it is possible to edit individual settings afterwards (see Section "Editing a Configured Channel").

15.4.1 Commission Channel

Access Level: Administrator

Parameter Name	Default Setting	Value Range	Comment
Channel ID	Next available	1 to 128	Can only be assigned during first time configuration. Otherwise de-commission the channel and re-assign another channel number
Channel Location Tag	"Channel <Channel ID>"	Maximum 30 Alphanumeric Characters	30 character location tag name. This is the main channel description used throughout the interface
Channel Custom ID	"Channel <Channel ID>"	Maximum 20 Alphanumeric Characters	20 character custom ID. This is displayed on the "Channel Details" screen and in the Configuration Report

Note: Channel Location Tag and Channel Custom ID only require Engineer level access for editing

15.4.2 Relay Output Settings

Access Level: Engineer

Parameter Name	Default Setting	Value Range	Comment
Normal State	De-energised for Standard modules / Energised for Safe modules	De-energised / Energised	Not configurable for a Safe ROM
Latch Function	Non-Latching	Non-Latching / Latching	The alarm conditions are usually already configured as latching; therefore the output channel is configured non-latching as default setting.
Delay Time	00m:00s	00m:00s to 05m:00s	The output module will activate the output channel after the 'Delay Time' interval has expired. This only applies for the transition "normal to active".
Hold Time	00m:00s	00m:00s to 60m:00s	The output module will set the output channel into normal condition after the 'Hold Time' interval has expired. This only applies for the transition "active to normal" and only if the output is configured as non-latching.
Auxiliary Output Overload	Disabled	Enabled / Disabled	If enabled the system will report any auxiliary output overload as a fault. The overload condition applies to the module, so it will be reported on all enabled channels.

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Alarm Update Enable	Disabled	Enabled / Disabled	If enabled, only unacknowledged alarm conditions will be considered during C&E evaluation for this output channel. An alarm acknowledgement will reset a relay output that is configured for alarm update function. However if the alarm update is NOT enabled the relay contact will only be reset if the alarm is reset.
Action on New Event	Steady	Steady / Pulsed	

15.4.3 Cause and Effect Type Selection

A Relay Output channel can be configured as a “Master” relay, which activates if any specific condition is present anywhere in the system (e.g. Alarm 1), or as a “Normal” relay, which activates according to the programmed Cause and Effect matrix for that channel.

15.4.4 Input Channel Pre-selection for Cause and Effect Matrix (Normal Relay channel only)

Note: Engineer level access required

This screen helps to reduce the number of channels listed in the Cause and Effect Matrix to only the channels the operator would like to map. Select the required input channels to link to this relay output channel by checking the box next to the channel ID. The details of this link (Alarm1, Warning…) will be assigned in the next screen.

Note: If you used the option to copy from a configured channel, the input channels linked to that channel will be automatically pre-selected. The alarms, faults etc. associated with these channels may be disabled in the next screen if required.

15.4.5 Cause & Effect Matrix

Note: Engineer level access required

1. For each input channel, select the status conditions (alarm, fault, warning, etc.) to be considered by checking the appropriate boxes.

Note: The column for Alarm 1 is shared with STEL, Alarm 2 shared with LTEL, and Alarm 3 shared with Rate Alarm - in each case the output will activate for either condition.

2. Enter the vote count and specify if the vote count should include at least one alarm.

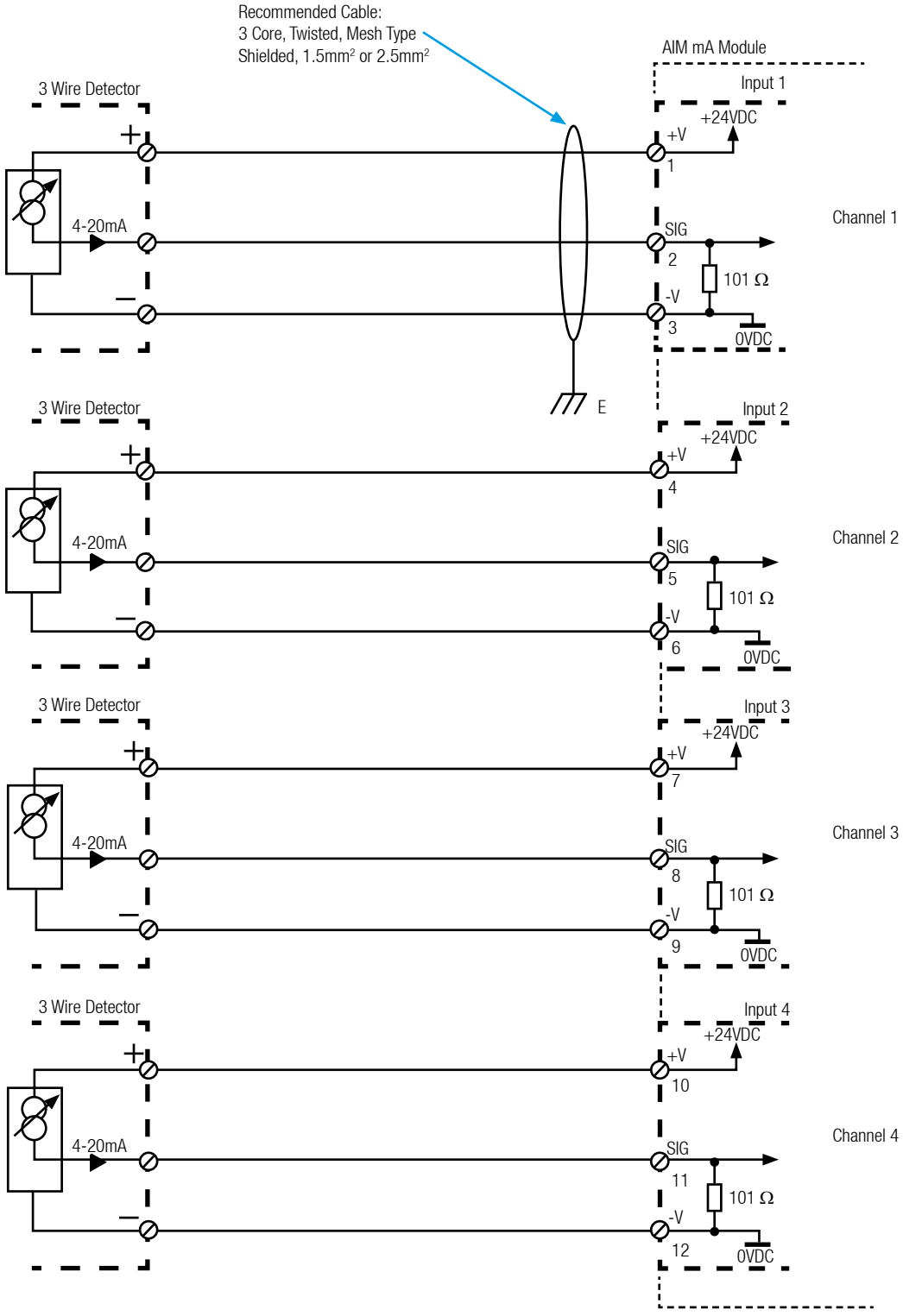
Note: Enabling the “At least one alarm” option means that there will be output **only when an alarm is active** *while faults, warnings and inhibits will be ignored, even when the vote count is exceeded.*

Note: The number of selected channels is shown at the bottom of the screen

3. **Send** the values to the system. The system will return the new values
4. Check and confirm that the settings are correct, then press **Accept**

16. Appendix 3 - Wiring Diagrams

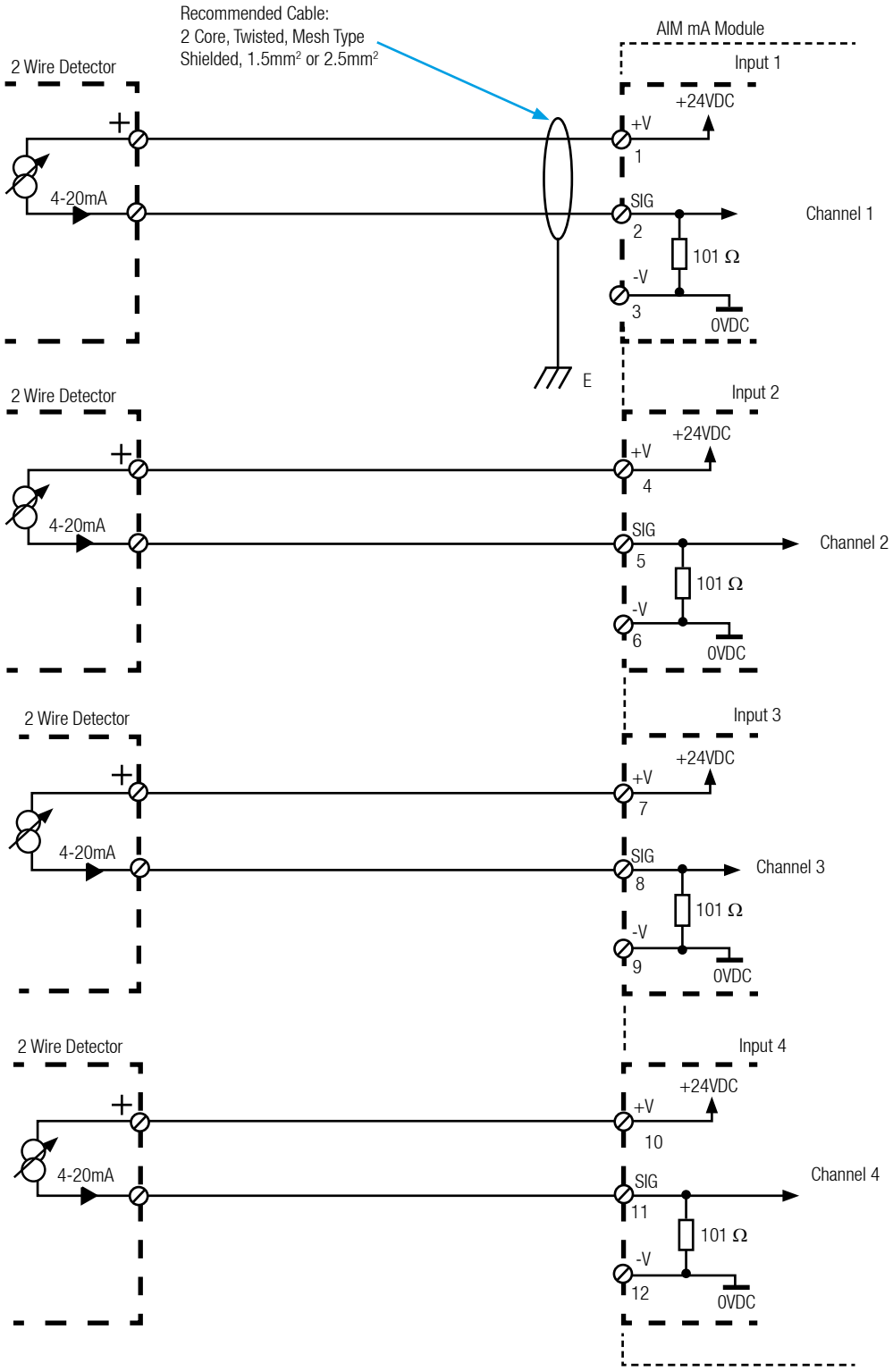
16.1 AIM 4-20 mA with 3 Wire Device Powered by AIM mA



Note:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.

16. Appendix 3 - Wiring Diagrams

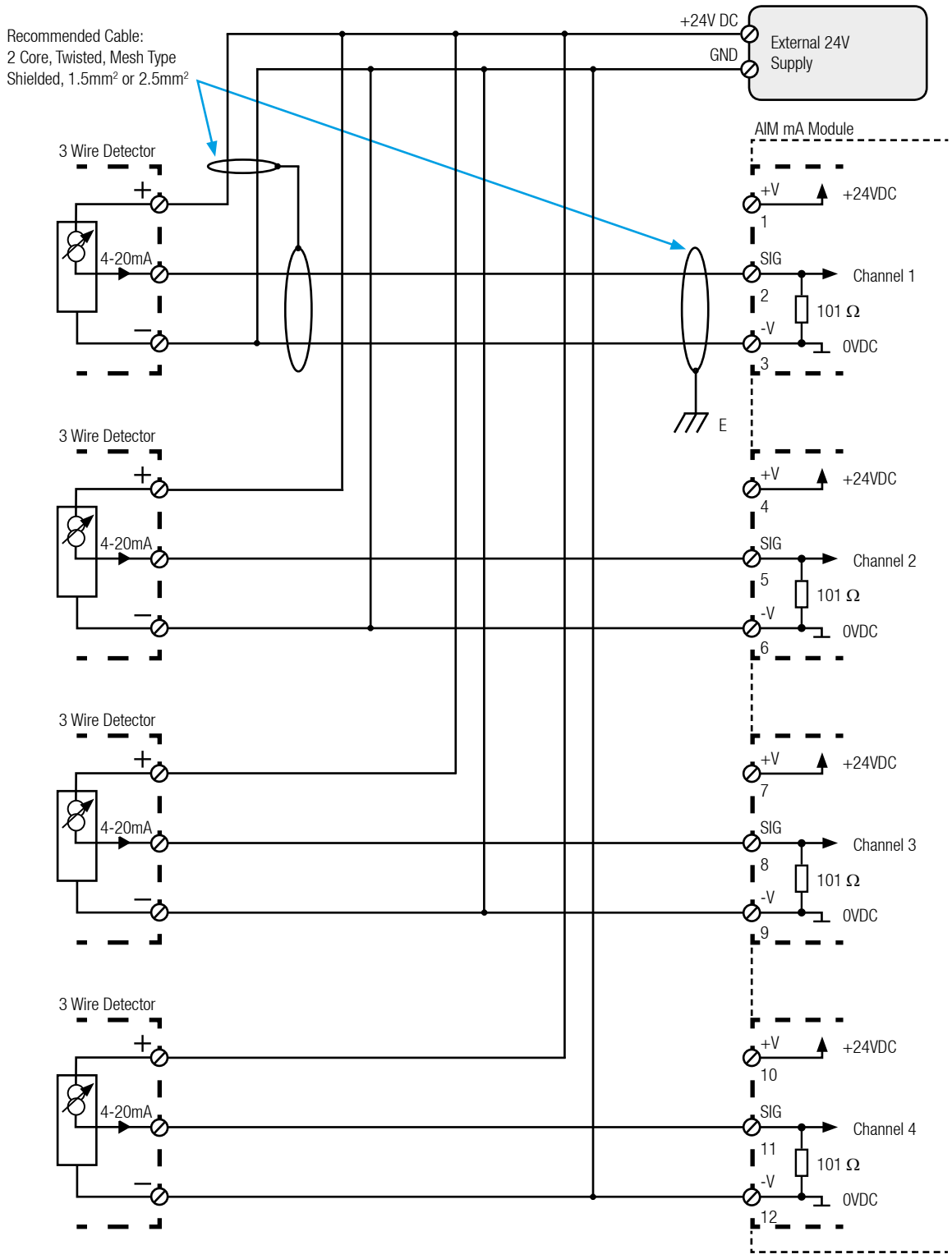
16.2 AIM 4-20 mA with 2 Wire Device Powered by AIM mA



Note:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.

16. Appendix 3 - Wiring Diagrams

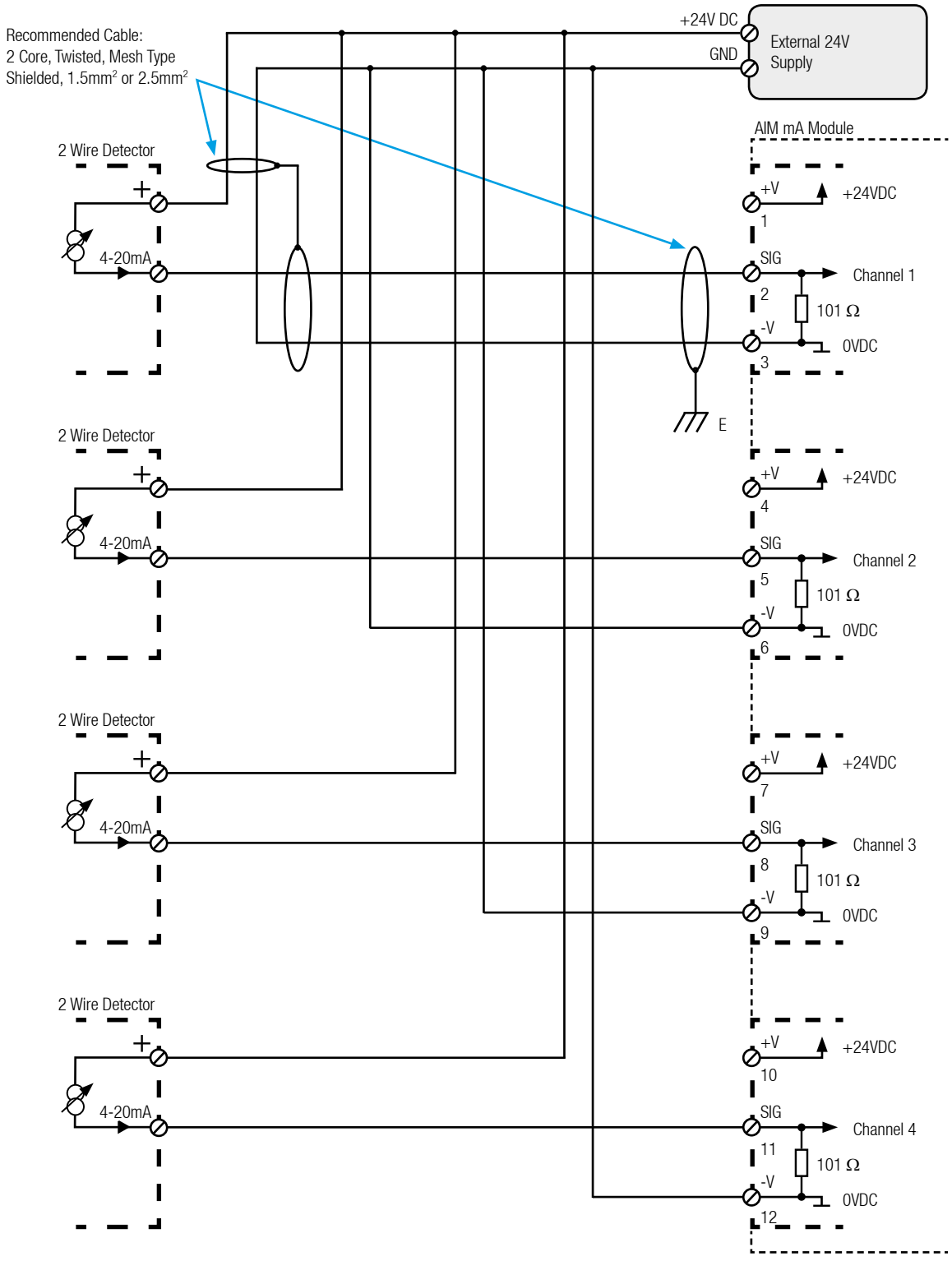
16.3 AIM 4-20 mA with 3 Wire Device Powered by External Power Supply



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. A separate enclosure/ provision should be considered for mounting of external power supply and its field wiring.

16. Appendix 3 - Wiring Diagrams

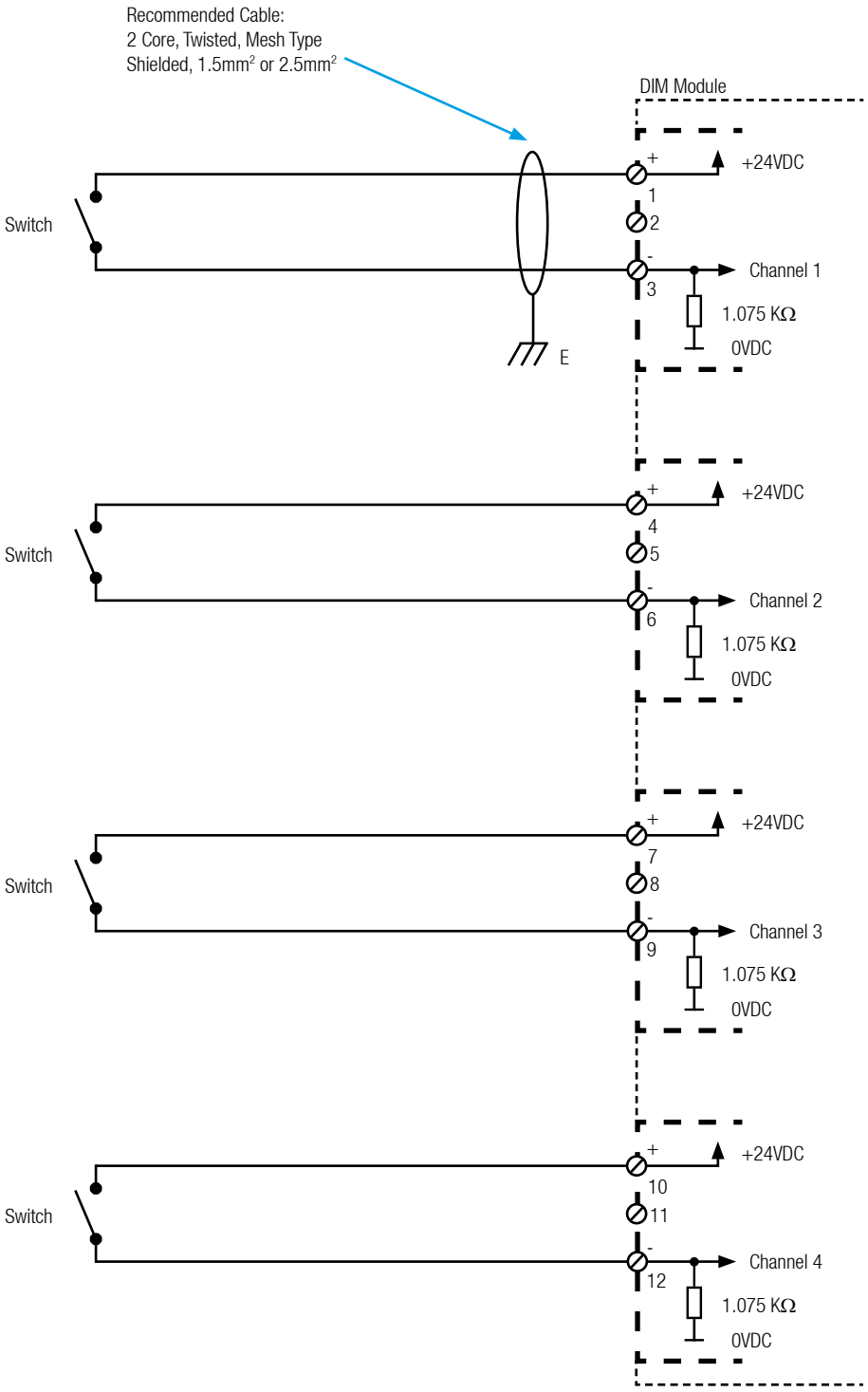
16.4 AIM 4-20 mA with 2 Wire Device Powered by External Power Supply



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. A separate enclosure/ provision should be considered for mounting of external power supply and its field wiring.

16. Appendix 3 - Wiring Diagrams

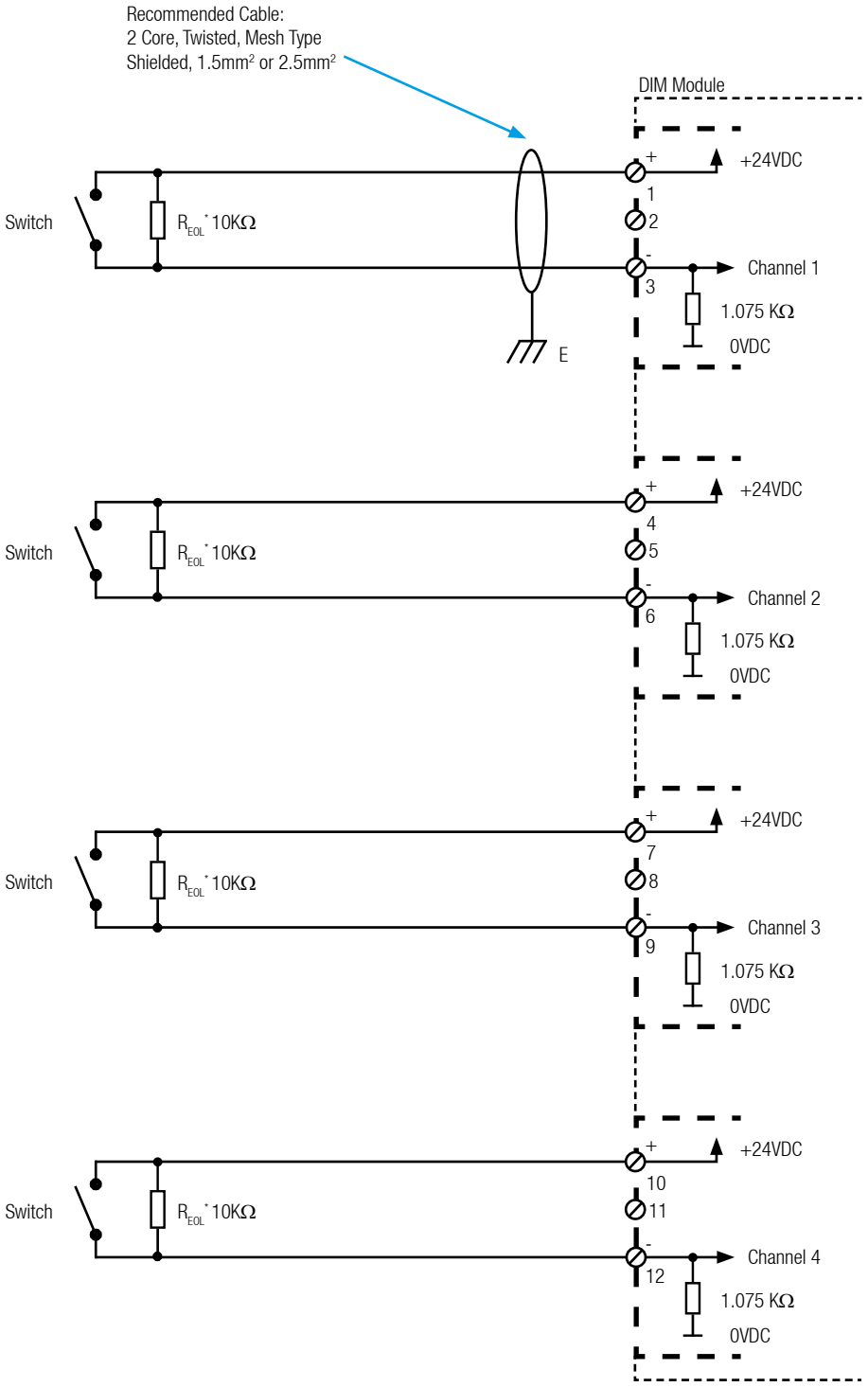
16.5 DIM in Unsupervised Configuration



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. Switch can be manually operated push button or potential free contact.
3. Maximum current through closed contact limited to 15mA.

16. Appendix 3 - Wiring Diagrams

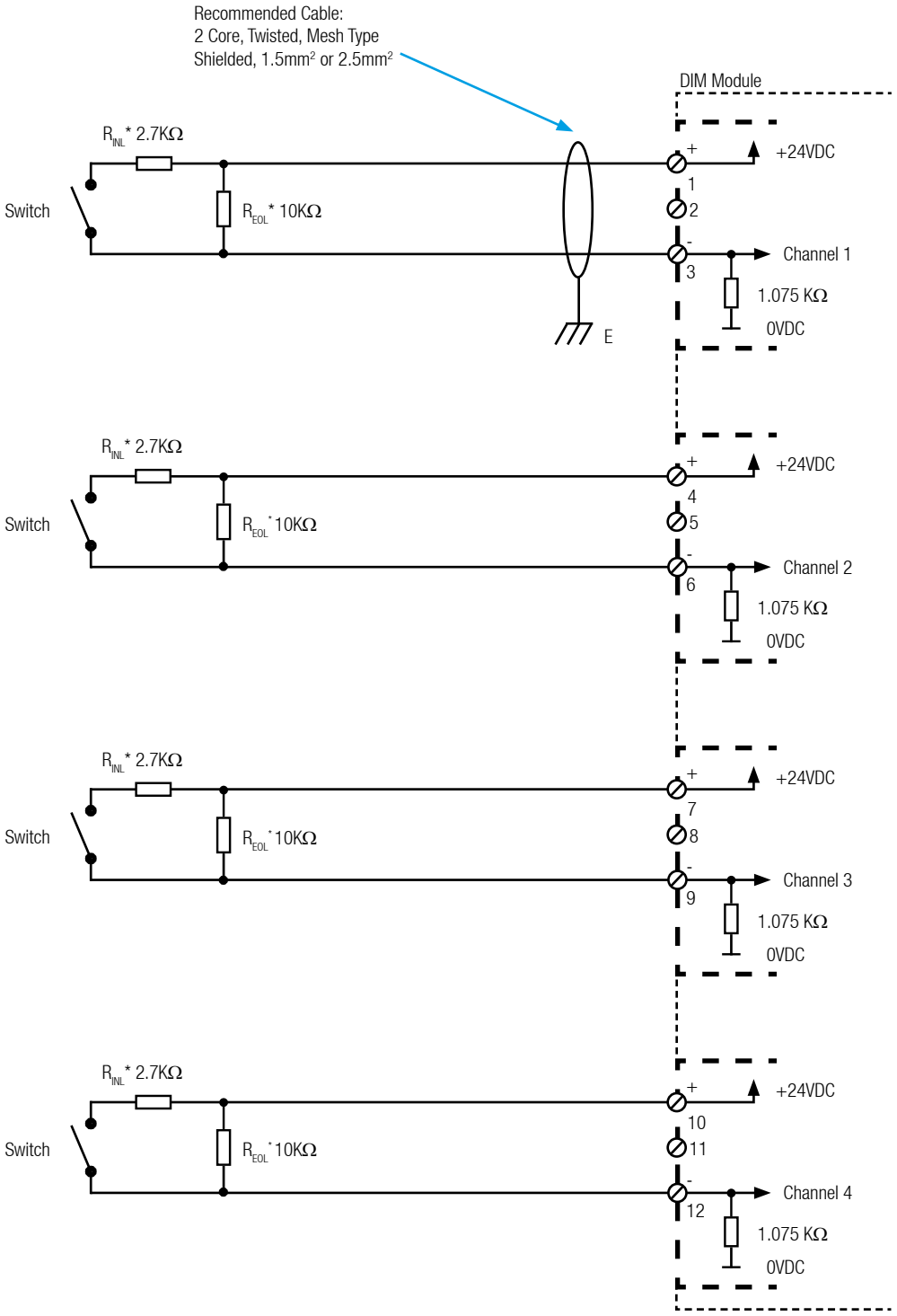
16.6 DIM in Supervised Open Circuit Configuration



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. Switch can be manually operated push button or potential free contact.
3. Components marked with '*' in field for individual channels R_{EOL} = 10KΩ / 0.25W / 1%.
3. Maximum current through closed contact limited to 15mA

16. Appendix 3 - Wiring Diagrams

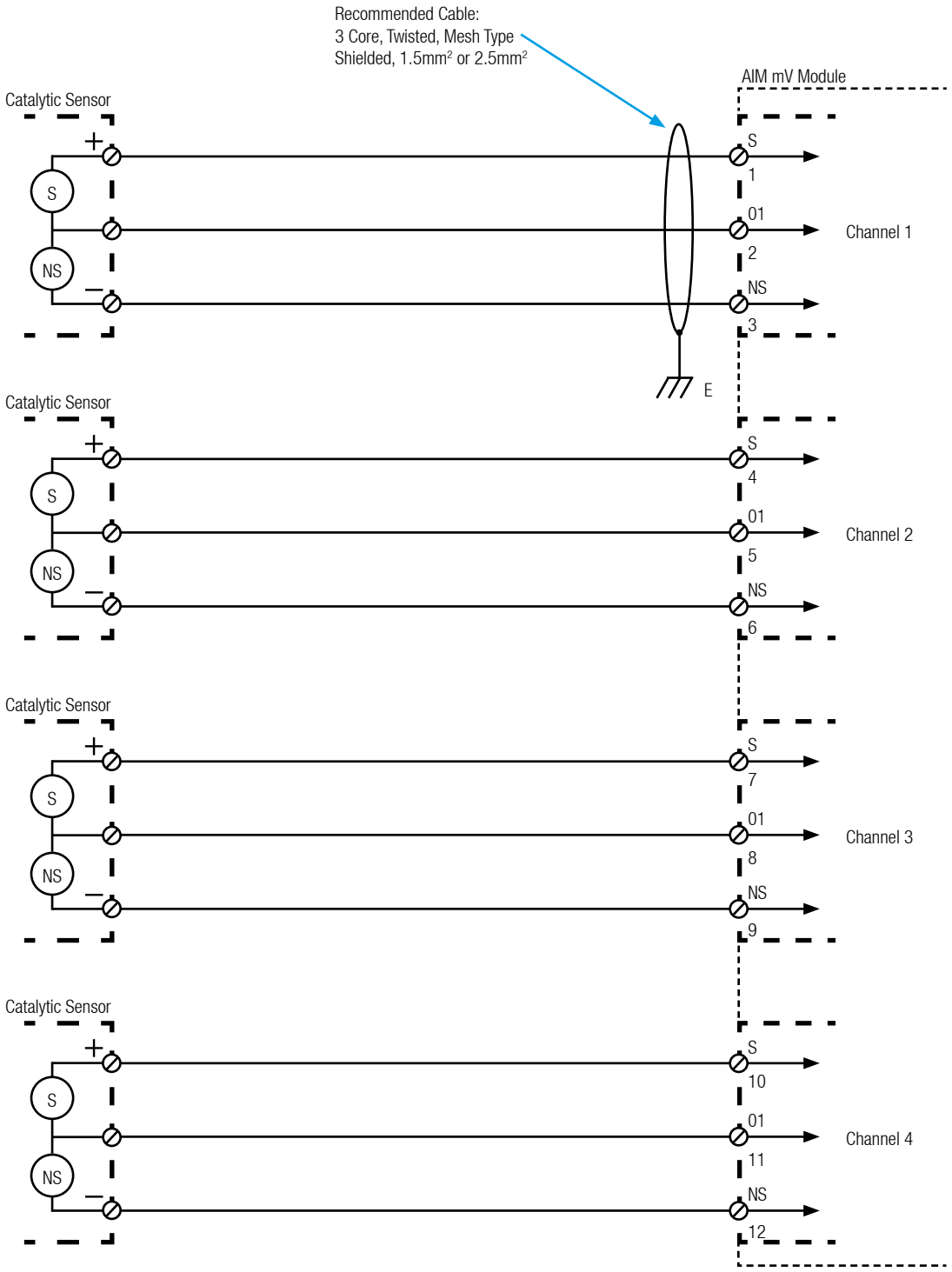
16.7 DIM in Supervised Configuration



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. Switch can be manually operated push button or potential free contact.
3. Components marked with '*' in field for individual channels, R_{EOL} = 10KΩ / 0.25W / 1%, R_{INL} = 2.7KΩ / 0.25W / 1%.
3. Maximum current through closed contact limited to 15mA.

16. Appendix 3 - Wiring Diagrams

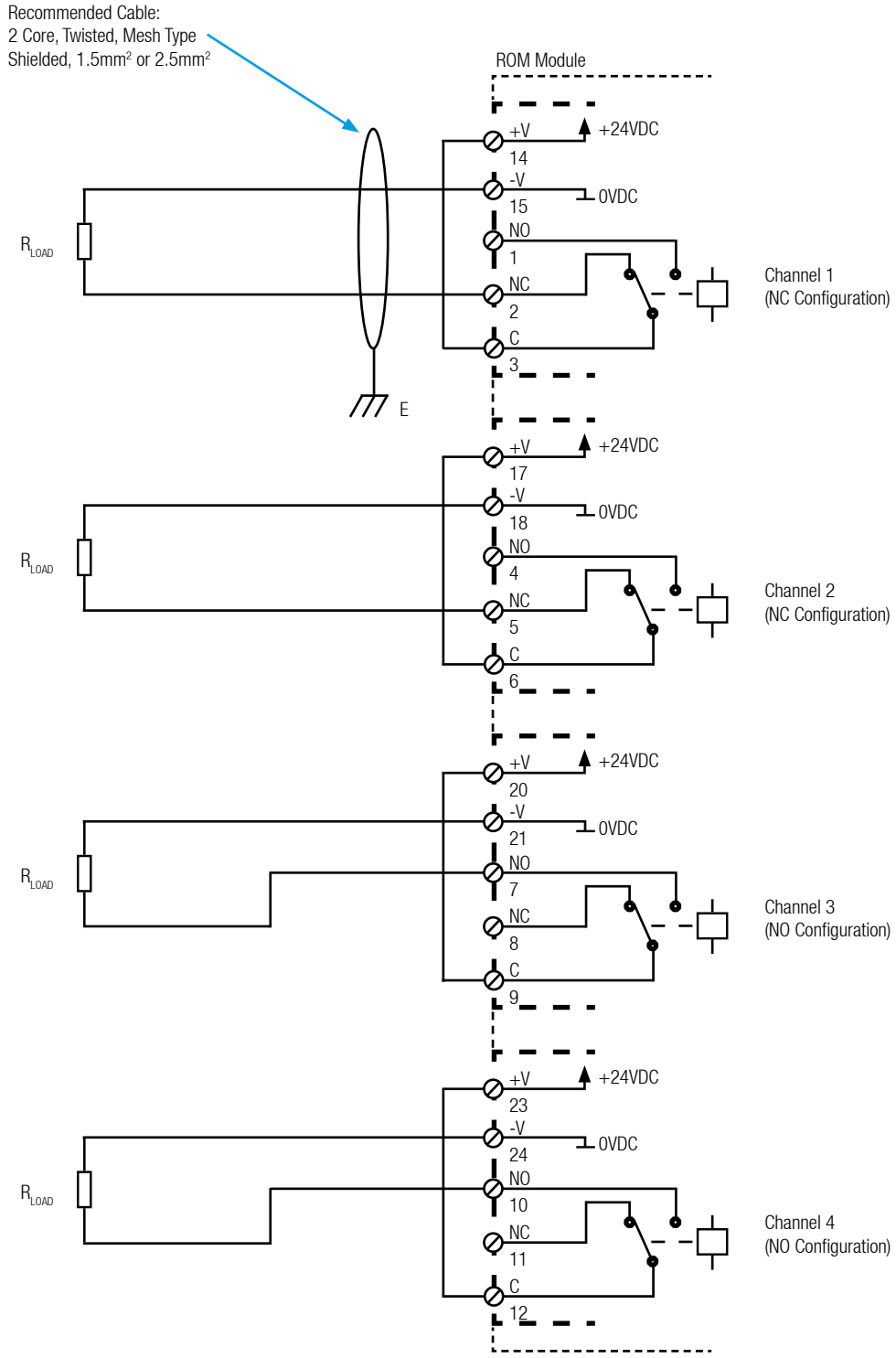
16.8 AIM mV with Sensor connectivity



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.

16. Appendix 3 - Wiring Diagrams

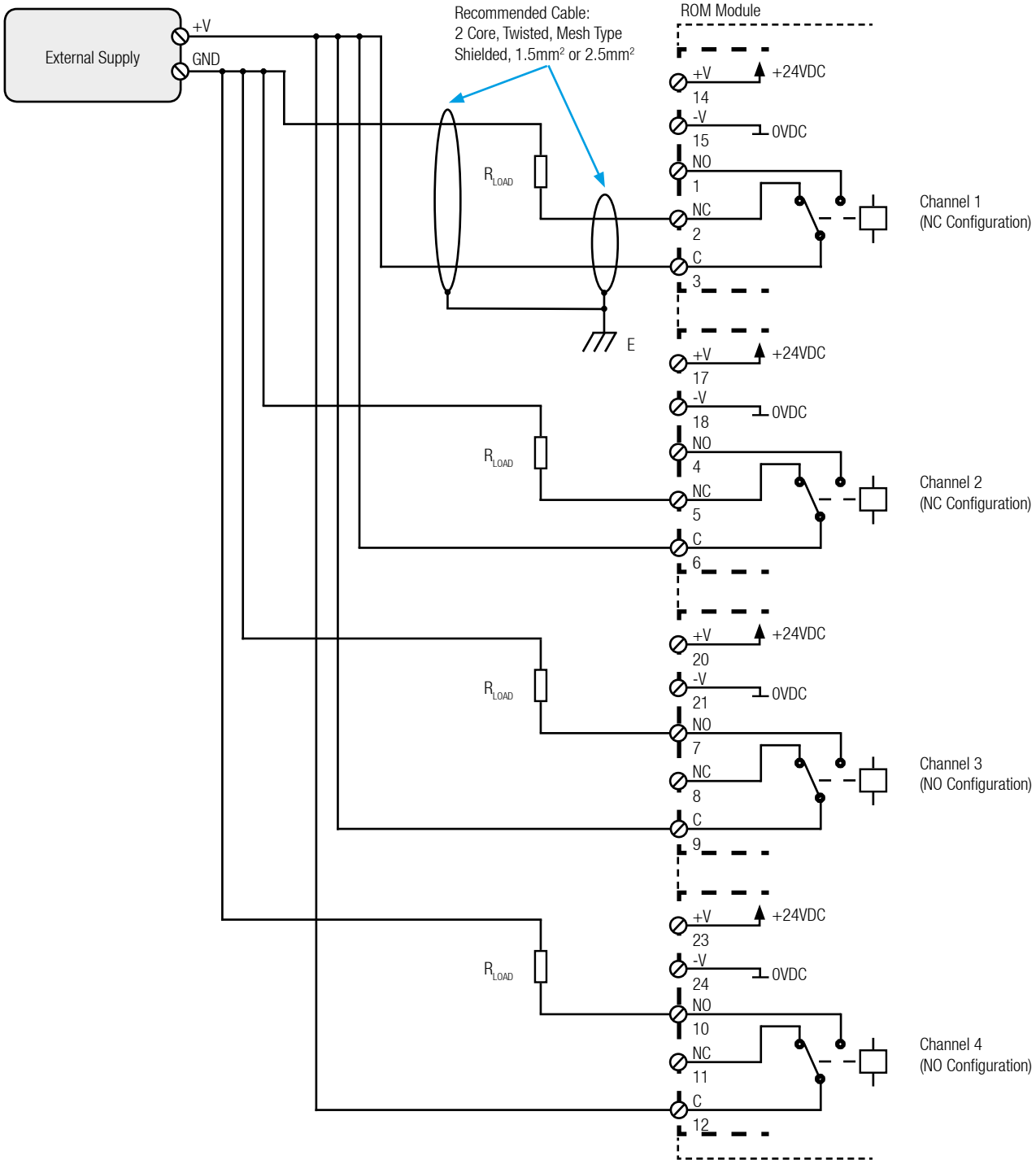
16.9 ROM With Internal Auxiliary Supply in NC and NO Configuration



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. Maximum +24Vdc Output Load, 1.5A per channel, and 1.5A total per module. With Overload protection.
3. Maximum Relay contact rating, 5A@ 24Vdc and 5A@230Vac (resistive loads only)

16. Appendix 3 - Wiring Diagrams

16.10 ROM With External Auxiliary Supply in NC and NO Configuration



Notes:
1. For all shielded cables, shield (screen) should be connected to Earth tag bar/bus bar provided in Touchpoint Pro enclosure.
2. Maximum +24Vdc Output Load, 1.5A per channel, and 1.5A total per module. With Overload protection.
3. Maximum Relay contact rating, 5A@ 24Vdc and 5A@230Vac (resistive loads only)

17. Appendix 4 - Abbreviations

Abbreviation	Meaning
A1, A2 or A3	Level 1, 2 or 3 Threshold Alarm
AIM	Analogue Input Module
AOM	Analogue Output Module
CCB	Control Centre Board
COB	Communication Board
CM	Control Module
C&E	Cause and Effect, usually used in conjunction with the C&E Matrix
DIM	Digital Input Module
DOM	Digital Output Module
HART	Highway Addressable Remote Transducer
I/O	Input/Output
IP	Internet Protocol
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
NOC / NO	Normally Open Contact. Relay contacts that are normally open when a power supply is absent (open circuit)
NCC / NC	Normally Closed Contact. Relay contacts that are normally closed when a power supply is absent (closed circuit)
OS	Operating System
P2P	Peer to Peer
PCB	Printed Circuit Board
RAM	Random Access Memory; volatile memory
RCM	Ring Coupling Module
RDN	Redundant power supply module
RJ45	Mechanical interface of the standard Ethernet connector
ROM	Relay Output Module
RTC	Real Time Clock
SD	Secure Digital (FLASH memory card)
SOC	System On a Chip
SFF	Safe Failure Fraction
T90	Sensor Response Time
UART	Universal Asynchronous Receiver / Transmitter
UDID	Unique Device Identifier
UPS	Uninterruptible Power Supply
WAN	Wide Area Network

18. Appendix 5 - User Interface Software Menu Structure

18.1 Menu Structure

The diagrams on the following pages show the menu structure of the interface software. They can be used to gain familiarity with the interface and to assist navigation.

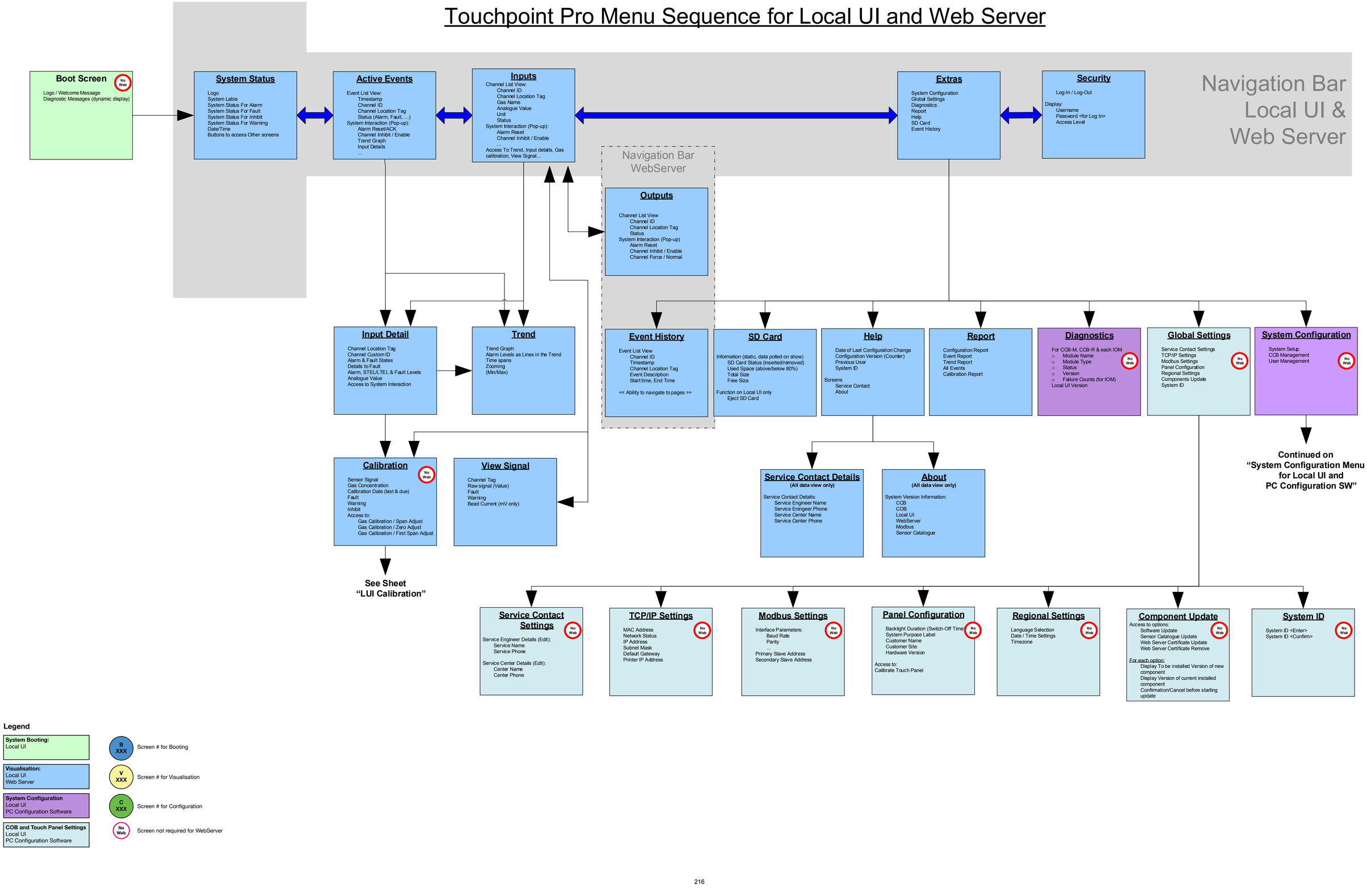
Note: The pages of sections 18.1.1 and 18.1.2 can be printed out to show the complete menu structure.

Each box indicates a screen and shows the title of the screen and the contents. Note that if the PC Configuration software is used, several of the screens are combined to take advantage of the larger display.

Note: After 20 minutes of inactivity, the system will always logout the user and return to the System Status screen.

18. Appendix 5 - User Interface Software Menu Structure

18.1.1 Screen Navigation Sequence for Local UI and WebServer

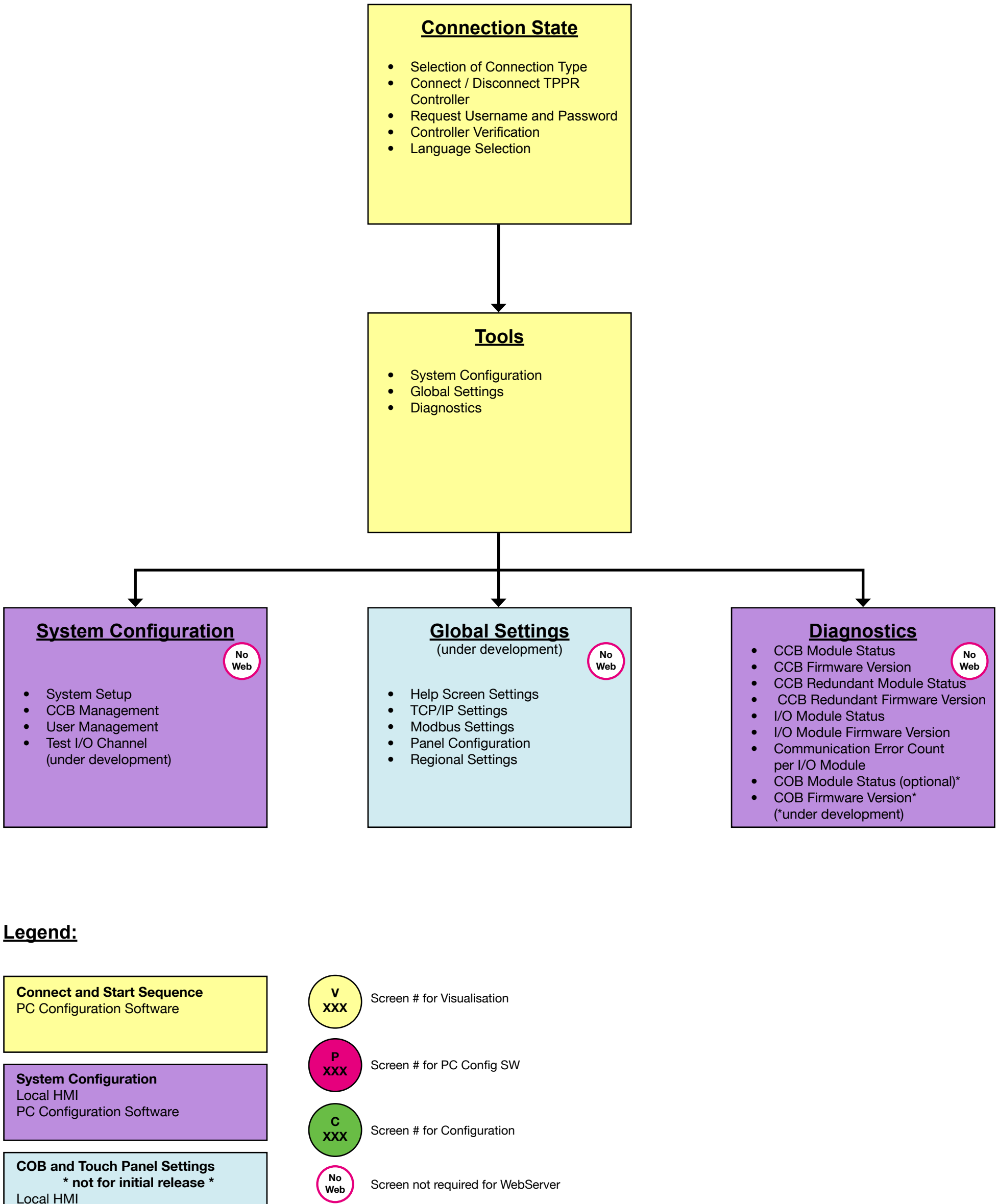


18. Appendix 5 - User Interface Software Menu Structure

18.1.2 Sequence of System Configuration Screens for Local Configuration (and PC Configuration SW)

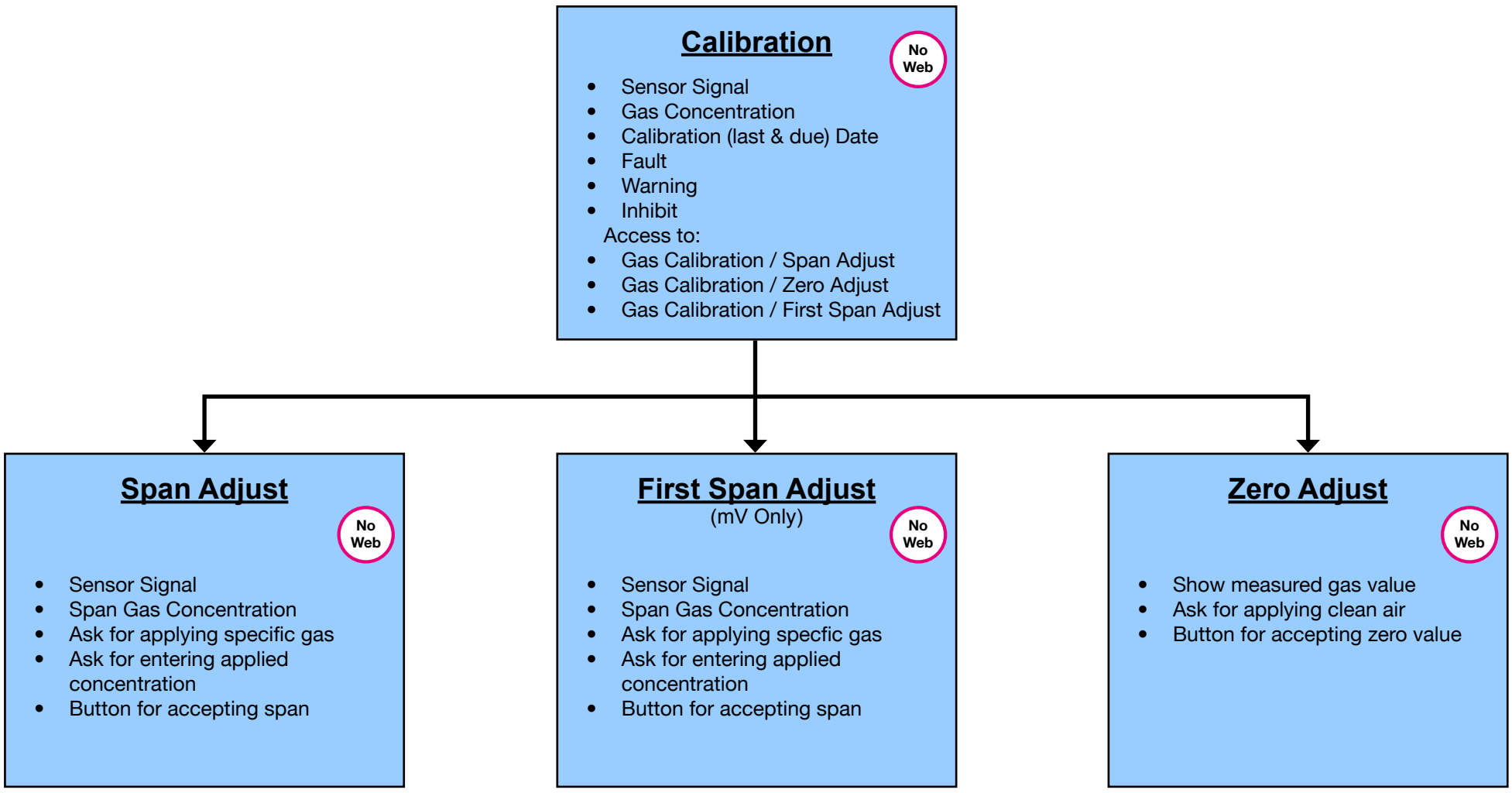
18. Appendix 5 - User Interface Software Menu Structure

18.1.3 Navigation Sequence for PC Configuration SW



18. Appendix 5 - User Interface Software Menu Structure

18.1.4 Calibration from the Local User Interface (Touchscreen)



19. Appendix 6 - Glossary of Icons

19.1 Icons

Meaning	T/screen Icon	PC Config Icon
About	N/A	
About Active User	N/A	
Active Events Screen (no active events)		N/A
Active Events Screen (with active events)		N/A
Add User		
Back		N/A
CCB Configuration		N/A
CCB Management		
CCB Replacement		N/A
Configuration Backup		N/A
Configuration Restore		N/A
Delete Configuration		N/A
Diagnostics		
Event History		N/A

Meaning	T/screen Icon	PC Config Icon
Extras		N/A
Filter		N/A
Firmware Update		N/A
Global Settings		N/A
Go to Inputs		N/A
Go to Outputs		N/A
Help		
Home		
Licence Cancel	N/A	
Licence Install	N/A	
Licence Manage	N/A	
Drop-down Menu		
Modbus Settings		N/A
Panel Configuration		N/A

19. Appendix 6 - Glossary of Icons

Meaning	T/screen Icon	PC Config Icon
Password Change	N/A	
Regional settings		N/A
Remove User	Menu Item	
Reports		N/A
Ring Network		
Screen Locked (User Login)		
Screen Unlocked (User Logout)		
SD Card		N/A
Select Language	Menu Item	
Sensor Catalogue Update		N/A
Service Contact Settings		N/A
System Configuration		
System Setup		
TCP/IP Settings		N/A
Trend Graph Settings		N/A

Meaning	T/screen Icon	PC Config Icon
User Management		
Zoom in (X axis)		N/A
Zoom in (Y axis)		N/A
Zoom out (X axis)		N/A
Zoom out (Y axis)		N/A

19. Appendix 6 - Glossary of Icons

19.2 Icons for System Setup Tree (Configuration Mode)

Icon	Meaning
	Module State is normal
	Channel state is normal
	Module is in configuration state
	Channel is in configuration state
	Module state is unconfigured
	Channel state is unconfigured
	Module state is to be tested
	Channel state is to be tested
	Module state is faulty
	Channel state is faulty
	CCB State: Master Mode (Normal)
	CCB State: Fault
	CCB State: Idle
	CCB State: Unconfigured

20. Appendix 7 - Logged events and where they are displayed

All of the events listed below are captured in the Event History of the system. In addition, some are displayed on the Active Events, Input/Output Details, or Inputs/Outputs screens as appropriate. Each event is logged with a timestamp and if applicable the module or channel to which it applies.

Note: ADC – Analogue to Digital Converter
AIM – Analogue Input Module
CCB – Control Centre Board
COB – Communication Board
DIM – Digital Input Module
FW – Firmware
HMI – Human Machine Interface (User Interface)
I/O – Input/Output
UI/LHMI – Local User Interface (Touchscreen)
ROM – Relay Output Module
SW – Software

Event	Comment	Where Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
49th Module present	System has detected that too many I/O modules are connected			✔		
49th Module removed						
Accept Button Password Setting Modified	The Accept button on the Touchpoint Pro front panel can optionally be password protected – the setting has been changed					
Active Fault				✔		
Active Fault Cleared						
Active Warning				✔		
Active Warning Cleared						
ADC Error	Raised for hardware error in IO Module channel diagnostics	✔				DIM
ADC Error Cleared						DIM
AIM Fault Acknowledged						
AIM mA Channel Modified						
AIM mV Channel Modified						
AIM Warning Acknowledged						
Alarm		✔		✔	✔	
Alarm 1		✔		✔	✔	mA, mV
Alarm 1 Acknowledged						mA, mV
Alarm 1 Cleared						mA, mV
Alarm 2		✔		✔	✔	mA, mV
Alarm 2 Acknowledged						mA, mV
Alarm 2 Cleared						mA, mV
Alarm 3		✔		✔	✔	mA, mV

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
Alarm 3 Acknowledged						mA, mV
Alarm 3 Cleared						mA, mV
Alarm acknowledged						
Alarm cleared						
Auxiliary output overload	Occurs when a short circuit is detected on one of the ROM auxiliary voltage output channels		✔	✔		ROM
Auxiliary output overload acknowledged						ROM
Auxiliary output overload cleared						ROM
Bead Current Fault	When bead current for channel deviates +/-1% from configured value.	✔				mV
Bead Current Fault Cleared						mV
Buzzer Activation Settings Modified	The buzzer can be configured to determine by which event types it is activated – the setting has been changed					
Calibration Active						
Calibration Inactive						
Calibration Overdue	The configured 'Calibration Reminder Interval' has been exceeded					mA, mV
Calibration Overdue Cleared						mA, mV
Cause and Effect Test ended						
Cause and Effect Test started				✔		
CCB Configuration Modified						
CCB FW Update	Logged when CCB firmware is updated					
CCB Master Configuration transferred	CCB configuration has been transferred from the master to the redundant CCB					
CCB Redundancy Mode changed	CCB redundancy mode can be either single or dual CCB					
CCB Redundant Configuration transferred	CCB configuration has been transferred from the redundant to the master CCB					
CCB-COB Communication lost	Error in the system, or fault with CCBs					
Channel Decommissioned						All

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
C&E Test Mode Acknowledged						
COB FW Update	Logged when COB firmware is updated					
Configuration Backup created	Logged after configuration backup file is saved successfully					
Configuration has changed; save backup	Configuration has been modified by the user and after that Configuration backup has not yet been carried out			✔		
Configuration changed is acknowledged	Logged when user acknowledges this event from menu on local or remote user interface					
Configuration changed is cleared	Logged after configuration backup file is saved successfully					
Configuration Data Deleted						
Configuration Error		✔				All
Configuration Error Cleared						
Configuration Restored	Configuration has been restored from a previously saved backup					
Configuration Settings Test ended						
Configuration Settings Test started				✔		
Configuration Test Mode Acknowledged						
Delay Time Active	Configured delay for ROM channel activation.		✔			ROM
Delay Time Inactive						ROM
Diagnostic Error	Raised when channel runtime diagnostics of IO module fails.	✔				All
Diagnostic Error Cleared						All
DIM Channel Modified						DIM
DIM Configuration State Inhibit	Channel is in Inhibit because the module is being configured					DIM
DIM Configuration State Inhibit Cleared						DIM
DIM User Inhibit	Channel has been inhibited by the user					DIM
DIM User Inhibit Cleared						DIM
Fault				✔	✔	All

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
Fault Acknowledged						All
Fault Cleared						
Field Device Detached						
Field Device detected						mA, mV
Field Input Test Mode Acknowledged						
Field Inputs Test ended						
Field Inputs Test started				✔		
First Span Calibration	Logs the first span calibration for a channel					mV
Gas Over Range	Calculated gas concentration is greater than the configured 'Gas Over Range Limit'	✔				mA, mV
Gas Over Range Cleared						mA, mV
Gas Under Range	Calculated gas concentration is less than the configured 'Gas Under Range Limit'	✔				mA, mV
Gas Under Range Cleared						mA, mV
Hardware Fault	Hardware fault has occurred within the Control Module					
Hardware Fault acknowledged						
Hardware Fault cleared						
Hold Time Active	Configured delay for ROM channel de-activation.					ROM
I/O Module Removed						All
Inhibit		✔		✔	✔	All
Inhibit by CCB	Channel has been inhibited by the CCB because it is being configured, or one of the channels on the same module is being configured					
Inhibit Cleared						All
Inhibit Cleared by CCB						
Input Activation Acknowledged	Logged when DIM input active is acknowledged					DIM
Input Active	DIM channel active	✔		✔	✔	DIM
Input Cleared	Logged when DIM input active is cleared					DIM
Input Force Cleared						

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
UI SW Update	Logged when local HMI is updated					
Local HMI Functional	Logged when Local HMI System Status screen is shown (this indicates Local HMI is functional)					
Local HMI Login	Logged when user logs in from HMI					
Local HMI Logout	Logged when user logs out from HMI					
Local HMI OFF	TBC					
Local HMI ON	TBC					
LTEL Alarm		✔		✔	✔	mA
LTEL Alarm Acknowledged						mA
LTEL Alarm Cleared						mA
mA Configuration State Inhibit	Channel is in Inhibit because the module is being configured					mA
mA Configuration State Inhibit cleared						mA
mA Fault Recovery Inhibit	Channel is in inhibit because a fault recovery delay time has been configured					mA
mA Fault Recovery Inhibit cleared						mA
mA module inhibited channel						mA
mA User Inhibit	Channel has been inhibited by the user					mA
mA User Inhibit cleared						mA
Modbus Update	Logged when modbus application is updated					
Module Configuration Modified						
Module Fault Acknowledged for						All
Module Fault Cleared for						All
Module Fault for						All
Module ID assigned						
Module Inhibit Cleared						
Module Removed						
Module Replaced						
mV Auto Inhibit	mV channel has been configured but not yet calibrated					mV
mV Auto Inhibit cleared						mV

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
mV Configuration State Inhibit	Channel is in Inhibit because the module is being configured					mV
mV Configuration State Inhibit cleared						mV
mV Fault Recovery Inhibit	Channel is in inhibit because a fault recovery delay time has been configured					mV
mV Fault Recovery Inhibit cleared						mV
mV module inhibited channel	TBC					mV
mV module Inhibited channel Cleared						mV
mV User Inhibit	Channel has been inhibited by the user					mV
mV User Inhibit Cleared						mV
New I/O Channel added						All
New I/O Module detected				✔		
Open Circuit	TBC	✔				mV
Open Circuit Cleared						mV
Output Active	ROM channel output active				✔	ROM
Output Active Forced	ROM channel output has been forced to activate					ROM
Output Deactive Forced	ROM channel output has been forced to deactivate					
Output Forced	ROM channel output has been forced to activate				✔	ROM
Output Verification Error	TBC					
Output Active Force Cleared						ROM
Output Cleared						ROM
Output Deactive Force Cleared						ROM
Output Force Cleared						ROM
Output Verification Error Cleared						
PC Config SW Login	Logged when user logs in from PC					
PC Config SW Logout	Logged when user logs out from PC					
Peak Hold	When actual gas concentration value rises above the configured maximum gas range	✔		✔	✔	mA, mV
Peak Hold Active	TBC					

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
PSU Channel Modified	One of the Status input channels has been modified					
PSU Decommissioned	One of the Status input channels has been removed					
Pwd for Accept button Disabled by UI	Password settings changed					
Pwd for Accept button Enabled by UI	Password settings changed					
Pwd for Reset button Disabled by UI	Password settings changed					
Pwd for Reset button Enabled by UI	Password settings changed					
Rate Alarm		✔		✔	✔	mA, mV
Rate Alarm Acknowledged						mA, mV
Rate Alarm Cleared						mA, mV
Redundant CCB active, Master failed	Master CCB has failed and the redundant CCB has taken over control of the system			✔		
Redundant CCB Failure	TBC					
Redundant CCB successfully replaced						
Relay Output Error	TBC					ROM
Relay Output Error Cleared						ROM
Remote Input Active	If DIM channel is active and, DIM is participating in Remote Interactions.	✔			✔	DIM
Remote Input Cleared						DIM
Reset Button Password Setting Modified	The Reset button on the Touchpoint Pro front panel can optionally be password protected – the setting has been changed					
Ring {0} Fault	0 will be replaced by A or B.			✔		
Ring {0} Fault Acknowledged	0 will be replaced by A or B					
Ring {0} Fault Acknowledged at	0 will be replaced by A or B					
Ring {0} Fault at CCB	0 will be replaced by A or B.			✔		
Ring {0} Fault at CCB Acknowledged	0 will be replaced by A or B					
Ring {0} Fault at CCB Cleared	0 will be replaced by A or B					
Ring {0} Fault between Controller	0 will be replaced by A or B					

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
Ring {0} Fault Cleared at	0 will be replaced by A or B					
Ring Communication Error	If Module is in Fault all channels of the Module will show Ring Communication Error	✔	✔			All
Ring Communication Error Cleared						All
Ring Oscillation Fault	TBC					
Ring Oscillation Fault Acknowledged						
Ring Oscillation Fault Cleared						
ROM Channel Modified						ROM
ROM User Inhibit	Channel has been inhibited by the user					
ROM User Inhibit Cleared						
SD Card Full - Overwriting old data				✔		
SD Card inserted						
SD Card memory 80% full				✔		
SD Card missing				✔		
SD card system ID mismatch	The inserted SD card contains data from a different Touchpoint Pro system					
Sensor Catalogue	Logged when sensor catalogue is updated					
Sensor Lifetime Exceeded	Sensitivity of the mV sensor has dropped below 50% of the original value	✔				mV
Sensor Lifetime Exceeded Cleared						mV
Session kill by UI	A user on the touchscreen has ended another user's login session					
Session kill by PC	A user on the PC Configuration Software has ended another user's login session					
Short Circuit	TBC	✔				mA, mV
Short Circuit Cleared						mA, mV
Signal Over Range	Sensor mA or mV signal reading is greater than the configured 'Signal Over Range Limit'	✔				mA, mV

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
Signal Under Range	Sensor mA or mV signal reading is less than the configured 'Signal Under Range Limit'	✔				mA, mV
Signal Under Range Cleared						mA, mV
Span Calibration	Logged when span calibration is performed					mA, mV
Span Calibration - {0} % Sensitivity	{0} will be replaced with a number indicating the percentage sensitivity of the sensor compared to its first span					mV
STEL Alarm		✔		✔	✔	mA
STEL Alarm Acknowledged						mA
STEL Alarm Cleared						mA
System Date / Time changed						
System date and time not set						
System ID missing						
System ID updated						
System SRAM Failed	There is a problem with the Touchpoint Pro internal memory					
System Time Zone changed						
Uncommissioned Module Removed	TBC					
User {0} added	{0} will be replace with the user name					
User {0} new password	{0} will be replace with the user name					
User {0} removed	{0} will be replace with the user name					
Warning				✔	✔	mA, mV
Warning Acknowledged						All
Warning Cleared						
Web Login	Logged when user logs in from Web					
Web Logout	Logged when user logs out from Web					
Web SW Update	Logged when web server software is updated					
Wiring Fault	TBC	✔				mA

20. Appendix 7 - Logged events and where they are displayed

Event	Comment	Displayed				Specific Channel Type (if applicable)
		Input Details screen	Output Details screen	Active Events screen	Inputs / Outputs screen	
Wiring Fault Cleared						mA
Zero Calibration	Logged when a zero calibration is performed					mA, mV

Notes

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Issue 2_02/2015
H_MAN0923_EMEA
2400M2501 A04522

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