

Resource
Data Management

DMTouch

Installation Guide

Revision 4.1.2



PRO5XX

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Please ensure all power is switched off before installing or maintaining this product.

DMTouch Hardware Installation Guide

Description

The Data Manager Touch (DMTouch) is a fully featured front end solution providing control, monitoring, data logging, remote access, multiple network interface options and much more. Offering the ultimate flexibility, the DMTouch allows the end user to choose both the hardware and software options required to suit their application. The DMTouch is equipped with the industry's first fully interactive colour multi-touch screen interface, enabling installers, clients and service staff to quickly configure the system and navigate to areas of interest. The DMTouch has a versatile Graphic User Interface for use with RDM's own range of products and a range of 3rd Party equipment. The standard unit has 12 inputs that can be configured for temperature probes, plant or defrost, and 4 volt free relays.

There are multiple daughter board expansion cards for various monitoring and control applications. Expand your DMTouch with anyone of the following boards: -

- Analogue/ Digital Input Board (12 Inputs)
- Relay output Board (3 Outputs)
- 4-20mA Input Board (4 Inputs)
- 4-20mA Output Board (4 Outputs)
- 0-5/ 0-10V Input Board (4 Inputs)
- 0-5/ 0-10V Output Board (4 Outputs)
- 0-5/ 0-10V Input/ Output Board (2 Inputs & 2 Outputs)
- 240V Status Input Board (6 Inputs)

Further information can be found in [Appendix 1](#)

The DMTouch will support an IP network line, via the built-in 3 or 4 port Ethernet switch and an RS485 line, allowing for many devices to be monitored and logged. A 2x RS485 USB adapter is available for expansion to 96 RS485 devices (Two adapters would allow 160 controllers online etc.). A second USB Ethernet adapter is available for connection to a second LAN or WAN.

The DMTouch also has provision for an internal battery back-up along with 4 USB ports for additional support devices/equipment.

This wall mount unit is compact (310mm x 310mm x 80mm) and is powered by a 90-270 Vac 50/60Hz.

The CANbus interface can be used to expand the DMTouch's IO, using the Intuitive expansion boards. When connected, the on-board TDB software can utilise the expansion board's IO in its bespoke algorithm designed by the end user.

With the option of the Optic Fibre interface installed, the DMTouch allows the connection of RDM Fibre enabled devices such as the Mercury Switch and Touch XL.

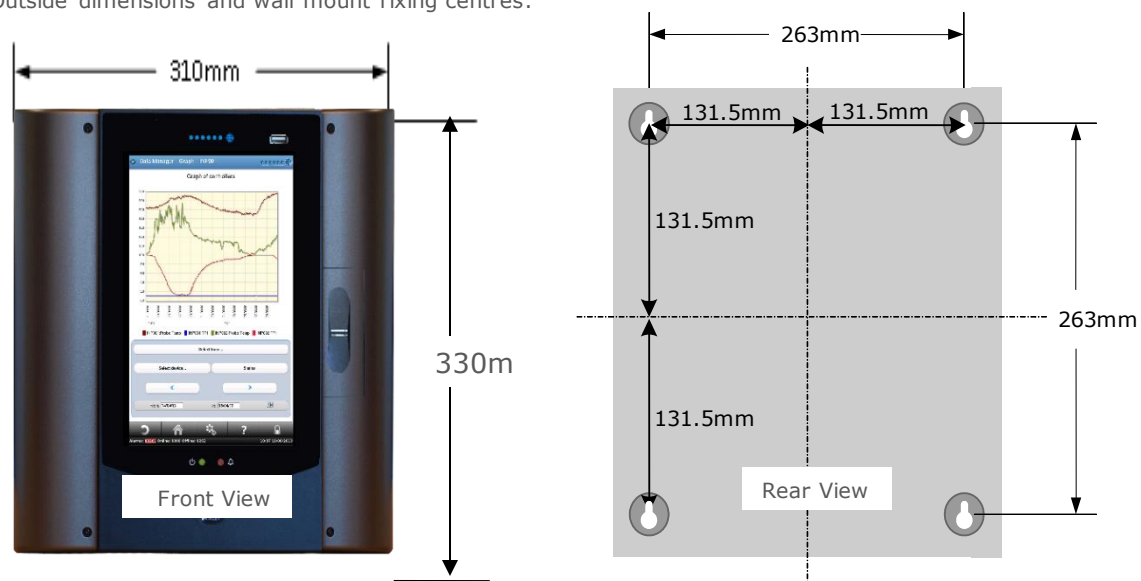


Please ensure all power is switched off before installing or maintaining this product.

Installation

Wall Mounting

Outside dimensions and wall mount fixing centres:



Fixing, the DMTouch is secured to a flat surface via the four wall mounting points at each corner of the DMTouch base. Use screw type: - No. 10 x 3" with suitable raw plug.

Note: The top and bottom faces of the DMTouch have a draft angle (slope). To compensate for this draft angle, shaped adapters are included so that a straight-edge can be achieved for coupling conduit.



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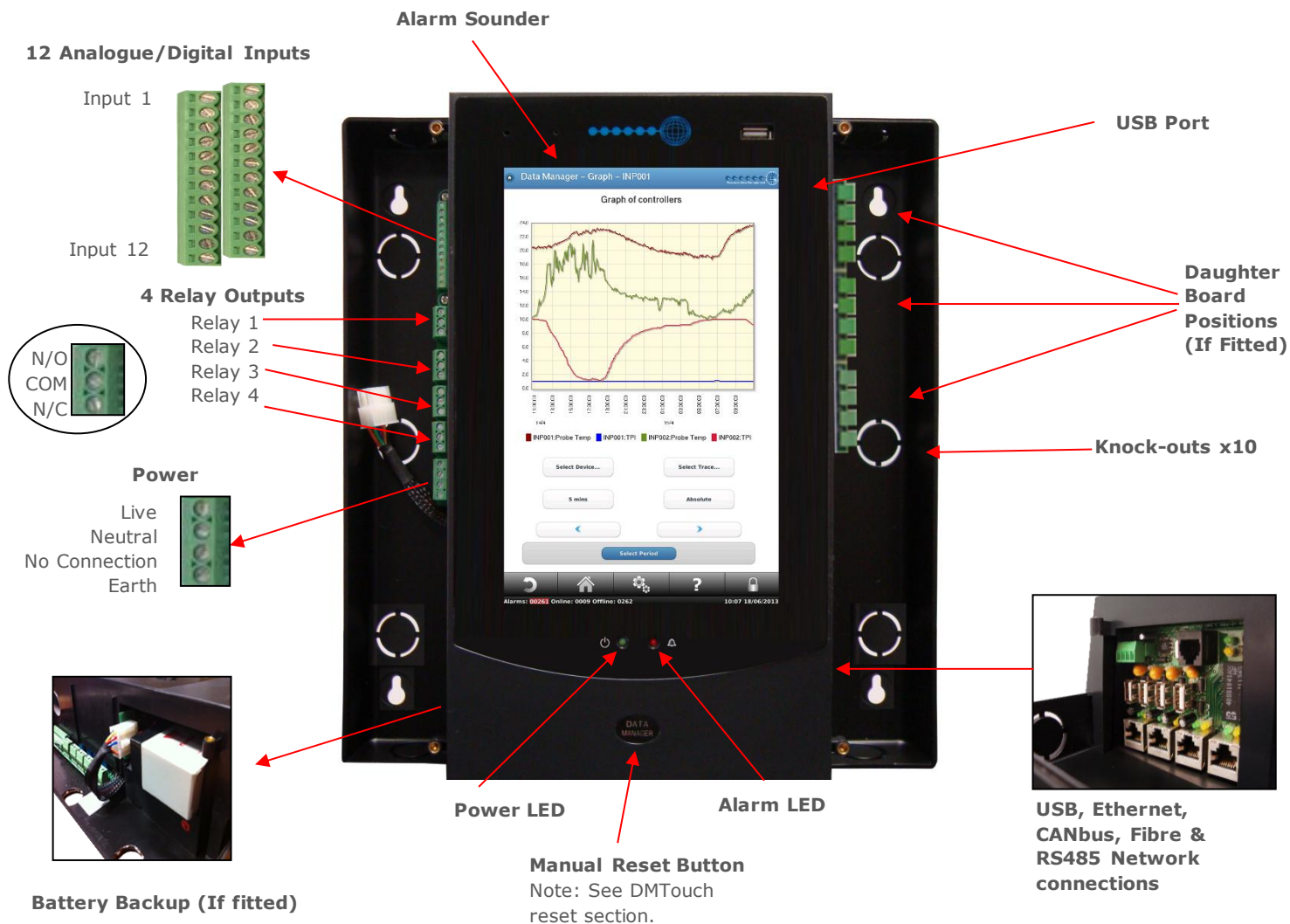
Electrical Connections

Remove the left and right side panels by unscrewing the 4 screws on the side plates and lifting the side wings off. Once the side wings have been removed, power and input/output connections are available.

Note: that these will vary according to your configuration; see [appendix 1](#) for daughter card detail.

Knock-outs are provided on the top, bottom and back for cable entry.

This unit meets the European EMC standards for immunity and radiation, if the location of the device is such that there is a high level of electrical noise (spike, surges or dips); it is recommended that either a surge suppressor or UPS is fitted to the unit.



Probe connections:	Lower tier: -	Probe Grounds
	Upper tier: -	Probe inputs
Plant and Defrost:	Lower tier: -	Grounds (0V)
	Upper tier: -	Grounds (0V) return inputs
Power Supply:	100 - 240 Vac 50/60 Hz	

Once the wiring is complete, the two front covers must be replaced and secured by the 4 screws on the front.



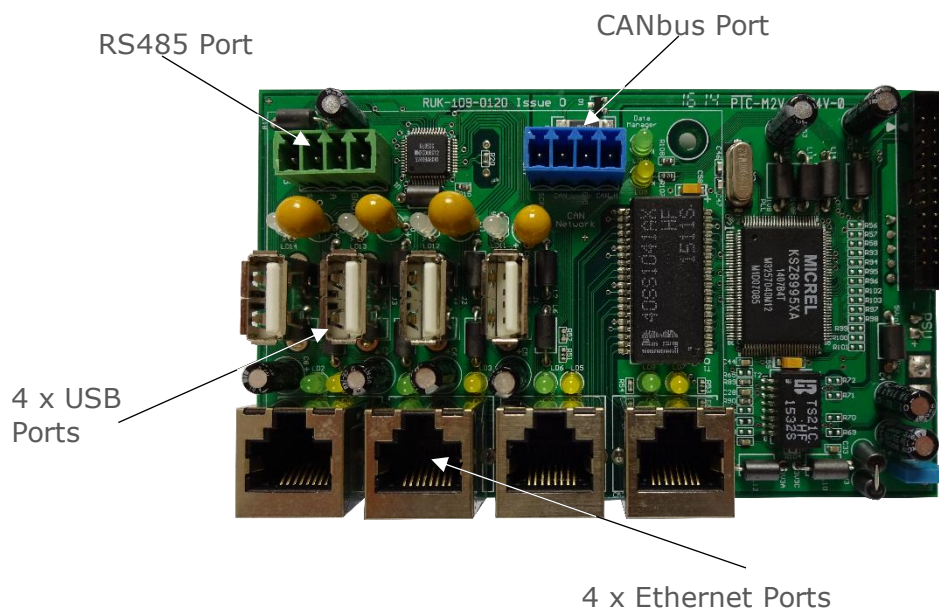
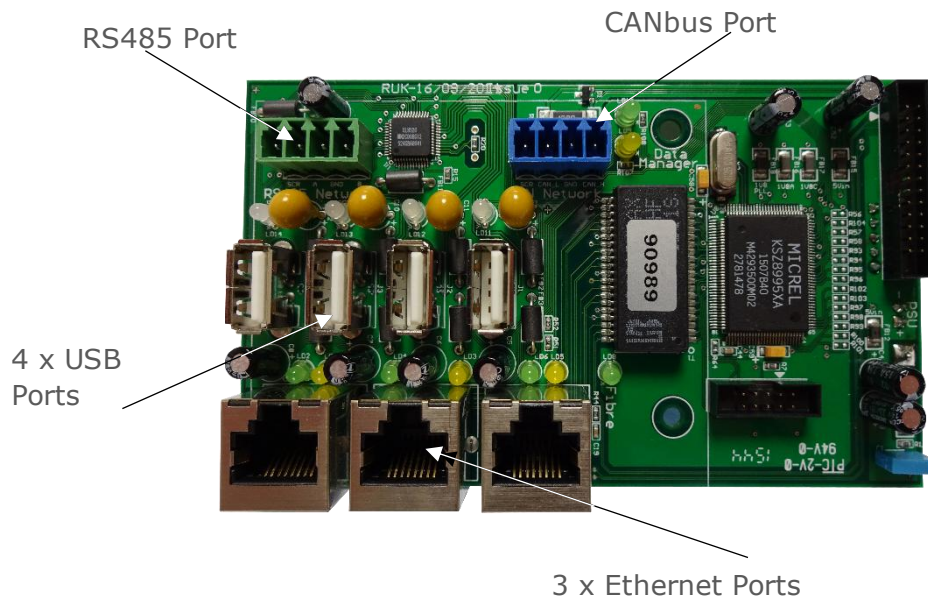
Please ensure all power is switched off before installing or maintaining this product.

On Board Network Connections

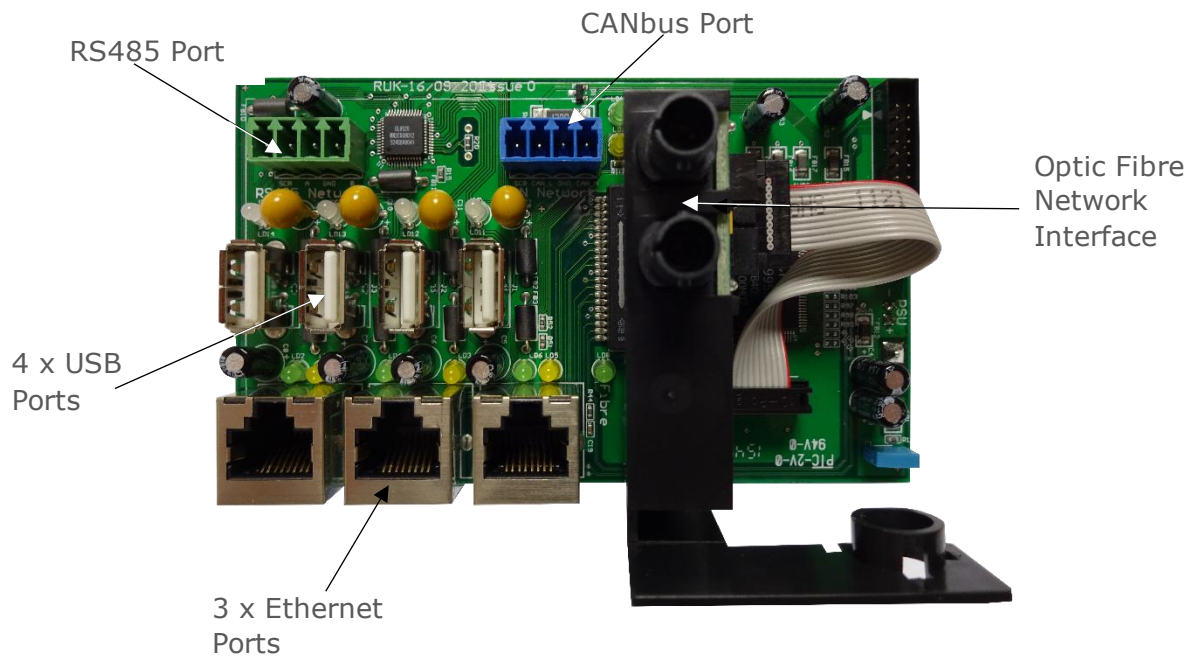
The network connections can be found under the right hand wing of the DMTouch – remove the wing for access. Upon ordering a DMTouch there are different options for the network interface. Please consult RDM accounts manager for more details. The network boards will have;

- x4 USB 2.0 ports
- x3 OR x4 Ethernet 10/100BaseT ports. Local Area Network (LAN), Eth 0.
- x1 RS485 Port (Genus Network Protocol Only)
- x1 CANbus port
- Optional x1 Fibre Optic port

Depending on the board ordered, it will be one of the following;



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3 or 4 Port Ethernet Switch

There is a green and yellow LED associated to each of the 3/ 4 ports.

The green LED, when static, indicates that the connection to the device is good, the green LED flickers when data is being transmitted.

When the yellow LED is off, it indicates a 10 BaseT connection. When the yellow LED is on it indicates a 100 BaseT connection. The Yellow LED is also a collision LED and will flicker when active.

4 Port USB Hub

There is a single bi-colour LED associated to each of the 4 USB ports.

When the LED is off the port is inactive.

When the LED is Green the port is active.

When the LED is Yellow there is an error on the port, for example over current.

RS485 Connections*

S	= screen
A	= Data +
G	= Ground
B	= Data -



* RDM recommend the use of a network termination resistor. There are two resistors fitted to a network, one at the start of the RS485 network and the other at the end.

CANbus Connections*

SCRN	= Screen
CAN_L	= CANbus Low signal
GND	= Ground
CAN_H	= CANbus High signal



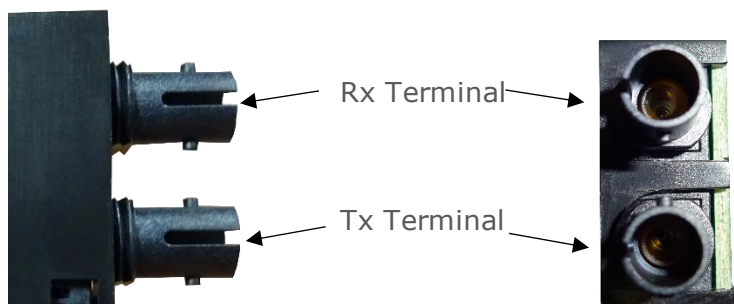
Please ensure all power is switched off before installing or maintaining this product.

* RDM recommend the use of a 120 ohm termination resistor at the start and end of the CANbus network. The Data Manager CANbus connector has a built in termination resistor fitted so this should be the start of the CANbus network line. A termination resistor should also be fitted at the end of the CANbus network line, most RDM controllers have this resistor built in and is enabled by fitting a jumper link on the last controller on the line.

Fibre Network interface

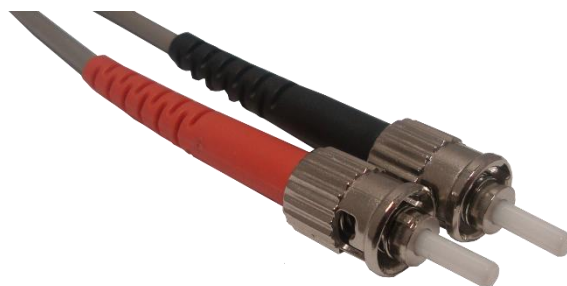
The Fibre connection uses the ST Connector and uses a 1310nm Class 1 Laser*.

* Class 1 Laser safety IEC60825 compliant. Class 1 - This class is eye-safe under all operating conditions.



- 125Mbps IEEE 802.3u 100Base-FX compliant.
- 125Mbps FDDI ISO/IEC 9314-1 compatible.
- Max length up to 2km on a multimode optical fibre.
- Can use 50/125-micron or 62.5/125-micron multimode fibre.
- Bend radius is dependent upon manufacturer, but a rule of thumb is 15x cable diameter.

Note: Fibre optic connectors and cables can be damaged from airborne particles, humidity and moisture, oils from the human body, and debris from the connectors they plug into. Always handle connectors and cables with care. Failure to do so may result in damage to the fibre optic connectors or cables. Before performing any maintenance, disconnect the fibre optic cables from the unit and turn off power. When disconnecting fibre optic cables, cover with the included dust caps to the ends to maintain their integrity. Before connecting fibre optic cables, clean the connector tips and in-line connectors.



DMTouch Reset

On versions of DMTouch manufactured after December 2016, there is a manual reset button located on the front, below the power and alarm LEDs. Pressing it continuously for 30 seconds will cause the unit to perform a full system reset.

Note: This button must be left uncovered.

DM Configuration Files

NEVER attempt to install a configuration file from a newer Data Manager Software version into a Data Manager with an older software version as this could result in complete system failure.

RDM will not be liable for anything that occurs as a result of this action having been carried out.

For further information or for questions regarding this matter please feel free to contact RDM Technical Support



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Technical Specifications

Note: the product must be used as detailed by the manufacturer, failure to comply may result in the level of protection being affected.

Power Requirements

Supply Voltage Range	100 - 240 Vac \pm 10%
Supply Frequency	50 - 60 Hz
Maximum supply current	1 Amps
Typical supply current	<1 Amp
The host equipment must provide a suitable external over-current protection device such as:	
Fuse	1A, 240 Vac Anti-surge (T) HRC conforming to IEC 60127
Or MCB	1A, 240 VAC Type C conforming to BS EN 60898

Safety

Safety	EN61010
EMC	EN61326, FCC Part 15b
Ventilation	There is no requirement for forced cooling ventilation
Class 2 Insulation	No protective Earth is required*
Disposal	Please observe local legislation with regards to electrical products
Origins	Product designed in the UK manufactured in Taiwan

* The earth connection on the DMTouch is a functional earth and this must be used to ensure the correct operation.

Environmental

Operating temperature range	-10°C to +60°C
Operating Humidity	80% maximum
Storage temperature range	-20°C to +65°C
Environmental	Indoor use at altitudes up to 2000m, Pollution Degree 1, Installation Category II. Voltage fluctuations not to exceed \pm 10% of nominal voltage
Size	310mm (W) x 330mm (H) x 96mm (D)
Weight	2300 Grams Weight is dependent on the DM configuration as some items are optional.

Display

Type	25.65cm (10.1") a-Si TFT Colour
Resolution (pixels)	1280 x 800
Brightness (cd/m ²)	450
Contrast Ratio	800:1
Viewing Angle	70°
Backlight	LED
Backlight Lifespan	15,000 hours

Touch Interface

Type	Balance Capacitive
Resolution (dot)	1280x800
Light Transmission	>88%



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Inputs

Input resistance	3.01K Ohms (for PTC or NTC type probes)
Input type	Selectable probe types
Rated voltage	3.3V

Rated for Measurement category I: - Category 1 allows for measurements on circuits not directly connected to an AC power supply examples of which are protected secondary's and limited energy circuits. Do not use equipment for measurement categories II, III & IV.

Relays

Fixed on-board relays	7.5A resistive load 250Vac COS ϕ =0.4 5A inductive load 250Vac
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All relays are independent and can operate at different potentials to the supply voltage. For compliance with the Low Voltage Directive (LVD) relay 2, 3 & 4 must be at the same voltage potential.

Daughter board relays, See [Appendix 1](#)



Please ensure all power is switched off before installing or maintaining this product.

Appendix 1: Daughter Card Connection Detail & Installation

3 Relay Digital Output Expansion Board: (PR0461)

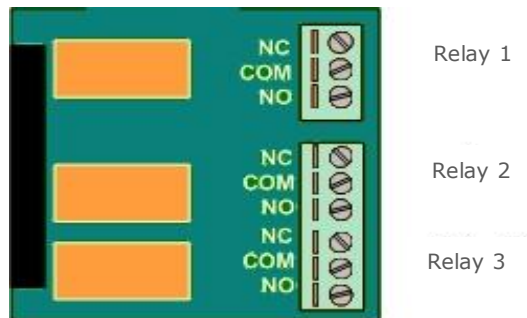
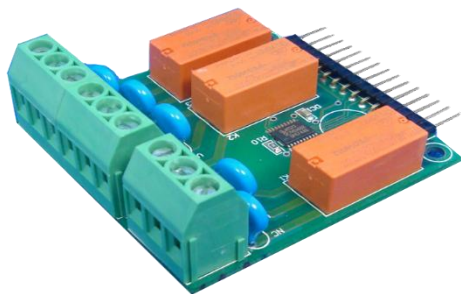
Relay boards have 3 x volt free relays, In order to conform to the Low Voltage Directive, some configurations of voltages are not allowed - see table 1 below.

	Low Voltage* on: -	High Voltage* on: -
Allowed Configurations:	RL1, RL2, RL3	
		RL1, RL2, RL3
	RL1	RL2, RL3
Disallowed Configurations:	RL2, RL3	RL1
	RL1, RL2	RL3
	RL2	RL1, RL3
	RL3	RL1, RL2

***Low Voltage defined as < 35V**
High voltage defined as >110V

All 3 relays are rated at 5A/250V~/AC1

Contact connection detail is shown below: -

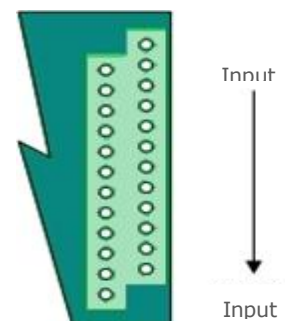
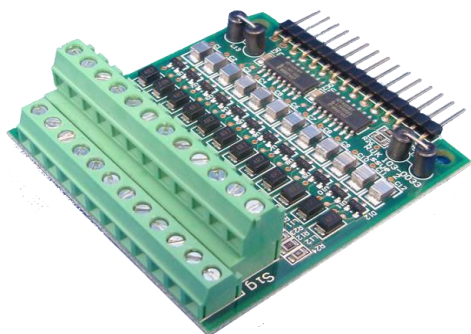


12 Analogue Probe Input Expansion Board: (PR0460)

This board has 12 analogue inputs; each input can be configured (setup option) as a Temperature probe, Plant or Defrost input.

A variety of temperature probe options are available: -

- PT1000
- NTC 470
- NTC 700
- NTC 2K
- NTC 2K25
- NTC 3K
- NTC 5K
- NTC 100K



Connection details are as follows;

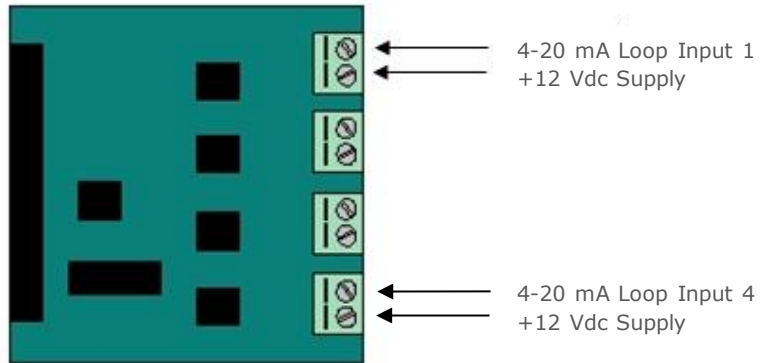
Probe connectors:	lower tier: -	Probe Grounds (0V)
	Upper tier: -	Probe inputs
Plant and Defrost:	Lower tier: -	Grounds (0V)
	Upper tier: -	Ground (0V) return input



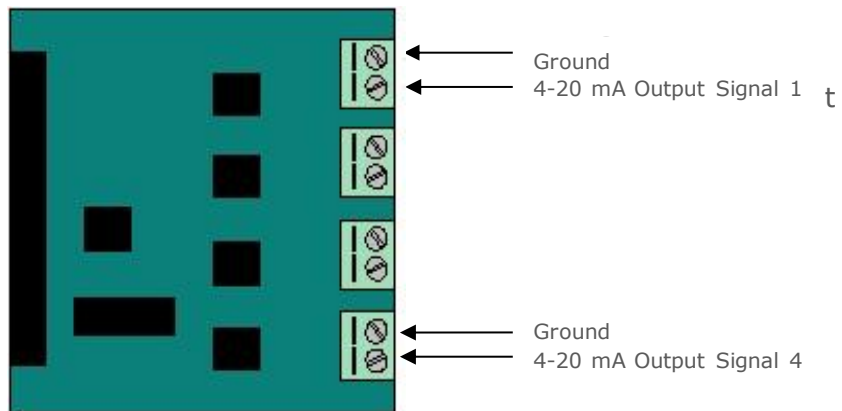
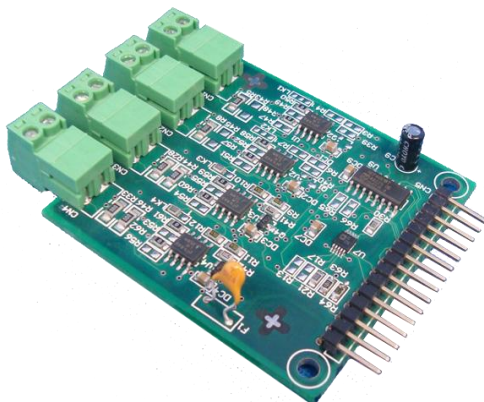
Please ensure all power is switched off before installing or maintaining this product.

4 x 4-20mA Input Board (PR0462)

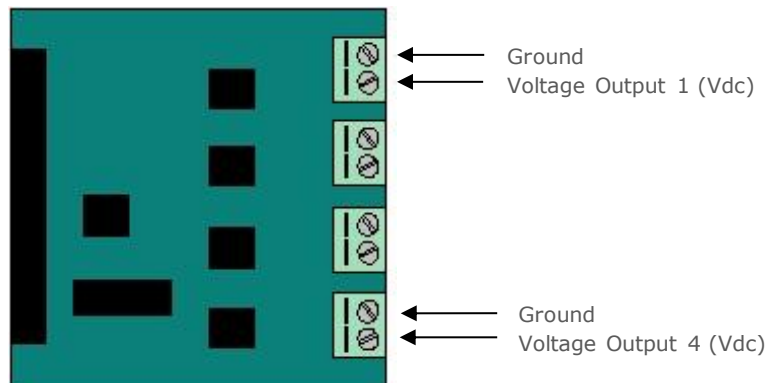
This board has 4 independent 4-20mA inputs. There is a +12 V DC output to feed the external device. The following units can be configured by the Data Manager: %, Bar, PSI, Volts & PPM



4 x 4-20mA Output Board (PR0463)



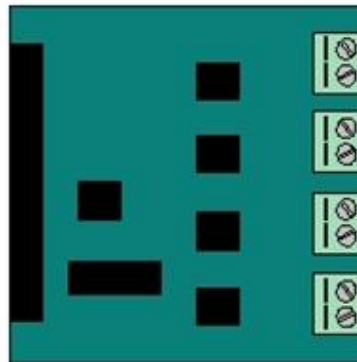
4 x 0 – 5V/10V Output Board (PR0464)



Please ensure all power is switched off before installing or maintaining this product.

4 x 0 – 5V/10Vdc Input Board (PR0465)

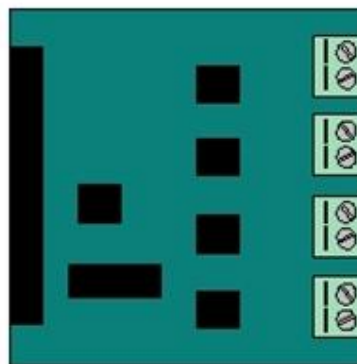
The following units can be configured by the Data Manager: %, Bar, PSI, Volts & PPM



- ← 4-20 mA Loop Input 1 1 (Vdc)
- ← +12 Vdc Supply
- ← 4-20 mA Loop Input 4 4 (Vdc)
- ← +12 Vdc Supply

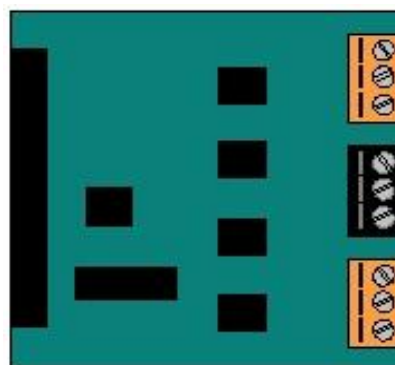
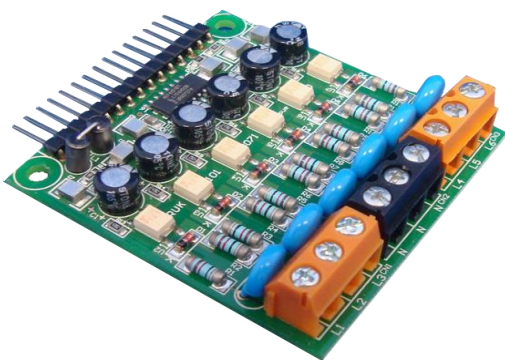
2 x 0 – 10V Input & 2 x 0 – 10V Output Board (PR0466)

The following units can be configured by the Data Manager: %, Bar, PSI, Volts & PPM



- ← 4-20 mA Loop Input 1 1 (Vdc)
- ← +12 Vdc Supply
- ← 4-20 mA Loop Input 4 4 (Vdc)
- ← +12 Vdc Supply

6 x 240V Inputs – 240V Status Detect Input Board. (PR0467)



- ← Input 6 - Live 6
- ← Input 5 - Live 5
- ← Input 4 - Live 4
- ← Input 5 & 6 - Neutral
- ← Input 3 & 4 - Neutral
- ← Input 1 & 2 - Neutral
- ← Input 3 - Live 3
- ← Input 2 - Live 2
- ← Input 1 - Live 1

All inputs are rated to 240Vac.

Note all Neutral connections are common as they are linked on the PCB.

Note: Products PR0462, PR0463, PR0464, PR0465 and PR0466 are suitable for use only with the Data Builder. When used with TDB, additional units of measurement can be configured beyond those listed above..



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Daughter Card Installation

Note: if a daughter card is ordered with a DMTouch then it will come pre-installed.

Before working on this equipment, ensure that the device is fully isolated from any supply voltage, including connections to all relays and other I/O connectors. Installation of this part must be carried out by competent personnel.

RDM will not be held responsible for any damage incurred to the equipment through mishandling or faulty installation of this part.

- 1) Disconnect the DMTouch battery backup kit (if fitted).
- 2) Remove the right hand wing of the DMTouch by unscrewing the 2 screws at the top and bottom of the wing.
- 3) Insert the daughter card into an empty slot using the plastic card guide with the screw terminals to the right and PCB pins to the left.
- 4) With the daughter card lying flat, gently slide the card into the slot, the PCB pins will engage inside the DMTouch.
- 5) Once the daughter card is installed refit the wing and connect the battery backup kit (if fitted).
- 6) The daughter card will be automatically detected when the DMTouch power is re applied.



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Appendix 2: Related Part Numbers

Feature Description	Part Numbers	Feature Description	Part Numbers
DMTouch Base model with on board PSU & SSD	PR0510	Energy Saving - Optimisation Features Only	PR0474
DMTouch Base model with on board PSU, SSD & Fibre network interface	PR0510F	Energy Saving - Network Trim Heaters Control Features only	PR0475
On-board battery backup (UPS)	PR0492	Energy Saving - Night Blinds Features only	PR0476
12 Analogue probe input expansion card	PR0460	Energy Saving - Condenser TD Features only	PR0477
3 Relay digital output expansion card	PR0461	Energy Saving - Performance Features only	PR0478
4 x 4 - 20mA Input expansion card	PR0462	Energy Saving - Defrost Warning Features only	PR0479
4 x 4 - 20mA Output expansion card	PR0463	Energy Saving - All Features	PR0484
4 x 0 - 5 or 0 - 10 Volt Output expansion card	PR0464	Energy Monitoring Feature Enabler	PR0484-EMON
4 x 0 - 5 or 0 - 10 Volt Input expansion cards	PR0465	485 Genus compatible network	PR0480
2 x 0-10 V Input & 2 x 0-10 V Output	PR0466	IP Network Enabler - Each 32 devices	PR0481
6 Input (240V Status)	PR0467	Wireless Mesh Software Enabler - Each 32 devices	PR0735
USB to RS485 Network Adapter -2 x 32 devices	PR0482	DMTouch Software Upgrade to Latest Version	DMSWUPG
USB card reader kit with DMTouch wing cover	PR0493	Wireless Mesh Software Enabler	PR0735
DMTouch 4 Port hub I/O board upgrade kit	PR0459	ActiveFM	PR0487
USB to CANbus Adapter (For use with TDB)	PR0489	The Data Builder	PR0485
Remote Alarm Beacon (Operated from DMTouch Relay.	PR0458-CLR	The Data Builder Lite	PR0485-LITE
USB analogue Modem	PR0491	Modbus TCP/IP Interface Enabler	PR0470*
Touch XL - Orbit Out Station	PR0617-XXXX	BACnet Interface Enabler - Max 32 devices	PR0471
Secondary IP Interface (USB Adapter)	PR0486	Philips Envision Lighting Interface	PR0471-PHENV
USB/485 Modbus Adapter for DMTouch	PR0623	Siemens NetRS/NetPX Interface Enabler	PR0483*
USB/485 Tektronics® Adapter for DMTouch	PR0470-TEK	Cbiss Gas Interface	PR0498*
Wireless Mesh USB Adapter	PR0734	Shuttle USB Logger Interface Enabler	PR0499
XLON RS485 or FTT-10A Adapter	PR0488-485 or FTT	Pack Shutdown Support (Intelligent Load Shedding)	PR0484-PSS
Wireless Mesh Ethernet Router	PR0732	Carel® Webgate Enabler	PR0490-CWG
		RCS Interface Enabler	PR0470-RCS
		CPT and Predictive Alarming Functions	PR0487-CPA
		Plant Backup	PR0468-PB

The options below indicate if the part number is software only, hardware only or hardware & software.

Hardware only, plug and play. No software activation required.

Hardware & Software activation required. Software activation included in price.

Software only.



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Appendix 3

Installation of internal Battery Back-up for Data Manager

PR0492

Before working on this equipment, ensure that the device is fully isolated from any supply voltage, including connections to all relays and other I/O connectors.

Installation of this part must be carried out by competent personnel.

RDM will not be held responsible for any damage incurred to the equipment through mishandling or faulty installation of this part

Instructions:

1. Remove the left side wing by unscrewing the 2 screws at the top and bottom.
2. Before removing the battery and charger board from its' packaging, make sure that you are static free.
Connect the battery + terminal (red) to the red + lead of the charger board, Connect the battery - terminal (black) to the Black - lead of the charger board.
3. Slide the battery into its compartment and slide the charger PCB into the guides making sure the interconnecting lead is to the outside. Ensure no internal cables are "snagged" or damaged during this procedure. Once the battery and charger board are in place, connect the 10 way interconnecting cable to its mating half (dangles down from the main PCB)
4. The installation is complete. Re-assemble the left side wing and secure it with the 2 bolts.

RDM recommend that the battery is inspected and the battery backup feature tested at least once a year. The battery should be replaced if required. Note: A new or fully discharged battery can take up to 16 hours to fully charge when installed.

The Data Manager System log will display "battery not charged – disabled" on start-up if the battery connected is not fully charged. Once fully charged the System Log will display "battery charged – enabled" and the battery backup feature will be active.



Please ensure all power is switched off before installing or maintaining this product.

Cleaning

Do not wet the DMTouch when cleaning. Clean the front by wiping with slightly dampened lint free cloth.

Default Username, Password & Pin

When a panel is shipped it will be, as standard, factory defaulted with no configuration*.

Please contact Technical Support for further information regarding the default user name and password.

Please note that for security reasons the default username and password MUST be removed during the initial installation.

***Note:** If replacing a panel that periodically has its configuration stored within RDM's ActiveFM, please consult RDM Sales for details of ordering with pre-loaded configurations.

Note: In the unlikely event the front panel PIN and username and/or password is unknown, for example a new service contract is undertaken and the previous contractor has not passed across the login credentials, it is possible for RDM Technical Support to generate a Data Manager specific, time limited, 'ONCE' code which allows temporary access to only the Data Manager in question at install level allowing an engineer to add a new 'Install' level user. To do this RDM requires in writing, from the end-user/owner of the Data Manager, permission to provide access to the Data Manager. There will also be an administration charge for this request.

For further information please contact Technical Support.



Please ensure all power is switched off before installing or maintaining this product.

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