Resource
Data Management

DMTouch
Installation Guide
Revision 2.7.0b

PR05XX

Contents

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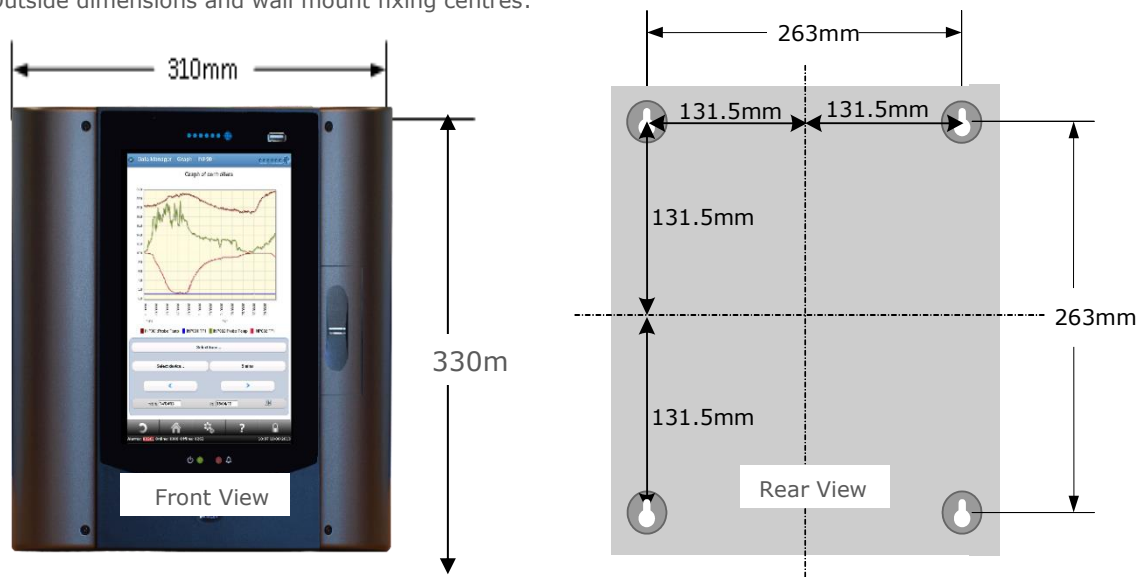
Please ensure all power is switched off before installing or maintaining this product.

Installation

Wall Mounting

Outside dimensions and wall mount fixing centres:

Front View

310mm

330m

Rear View

263mm

131.5mm 131.5mm

131.5mm

131.5mm

131.5mm

263mm

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.
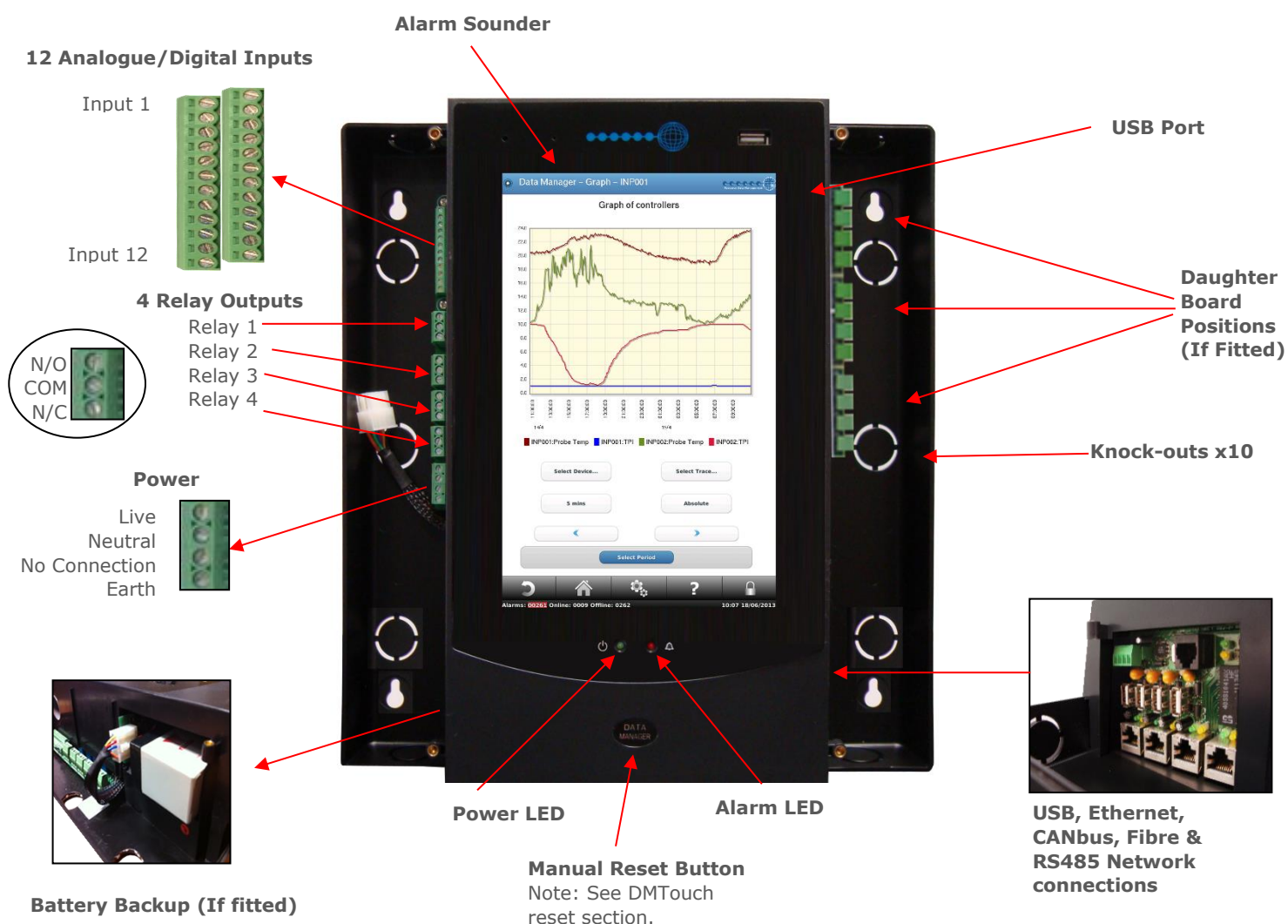
Electrical Connections

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.

Alarm Sounder

12 Analogue/Digital Inputs

Input 1

Input 12

4 Relay Outputs

Relay 1
Relay 2
Relay 3
Relay 4

N/O
COM
N/C

Power

Live
Neutral
No Connection
Earth

Battery Backup (If fitted)

Power LED

Manual Reset Button
Note: See DMTouch reset section.

Alarm LED

USB Port

Daughter Board Positions (If Fitted)

Knock-outs x10

USB, Ethernet, CANbus, Fibre & RS485 Network connections

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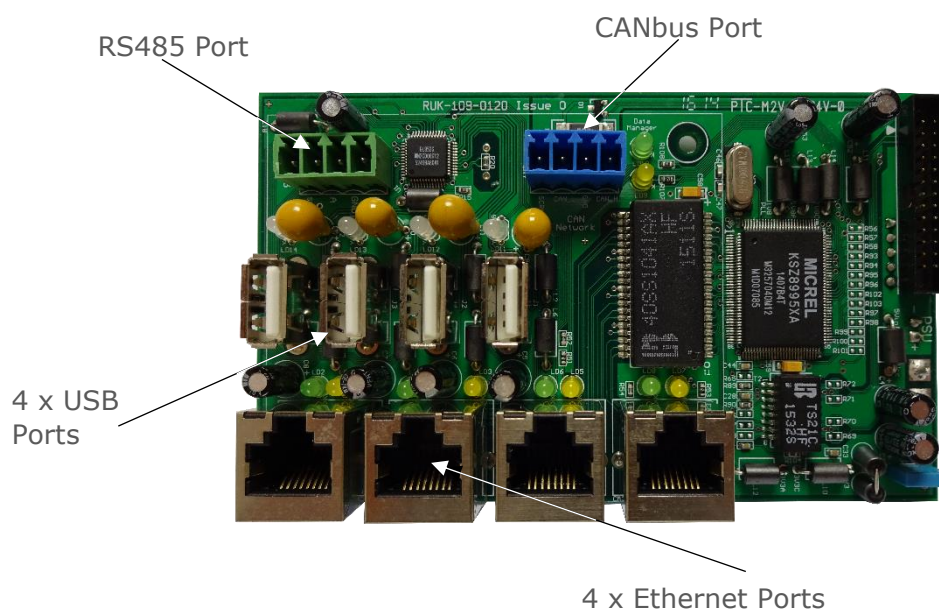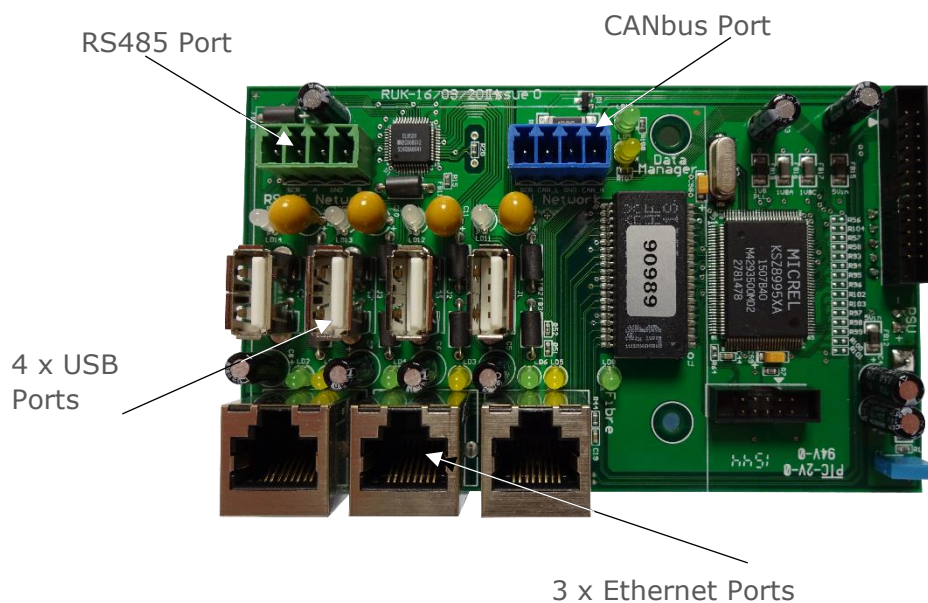
Please ensure all power is switched off before installing or maintaining this product.

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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 Aare 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;

RS485 Port

CANbus Port

4 x USB Ports

3 x Ethernet Ports

RS485 Port

CANbus Port

4 x USB Ports

4 x Ethernet Ports

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RS485 Port

CANbus Port

Optic Fibre
Network
Interface

4 x USB
Ports
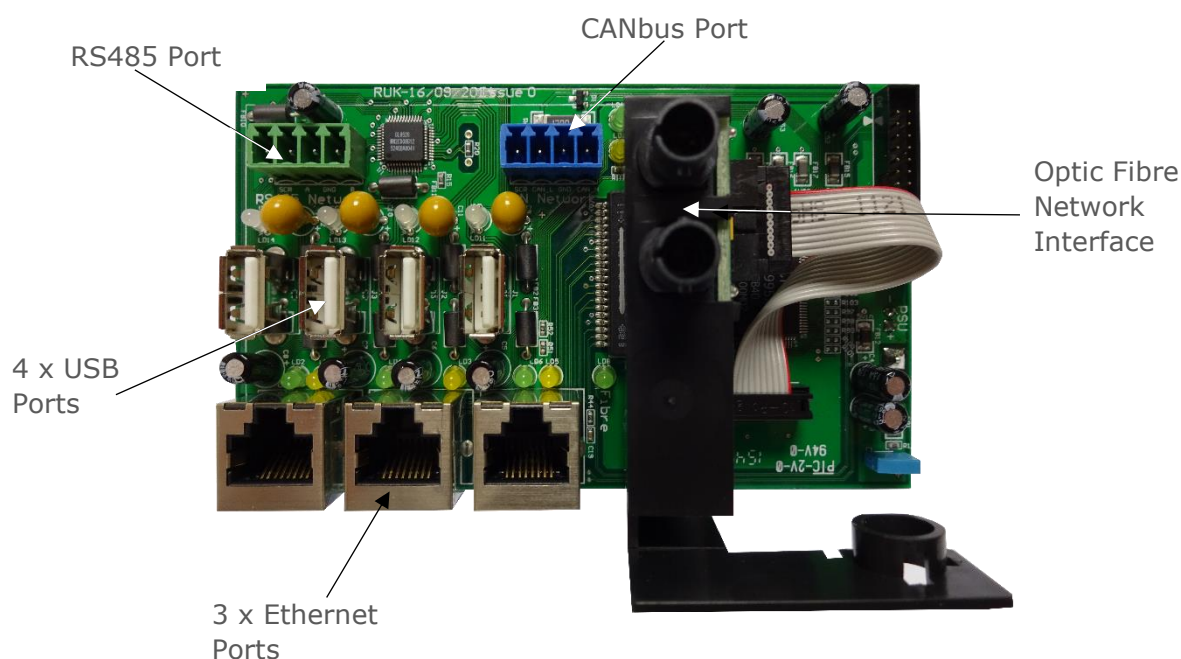
3 x Ethernet
Ports

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

* 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.

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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.

Rx Terminal

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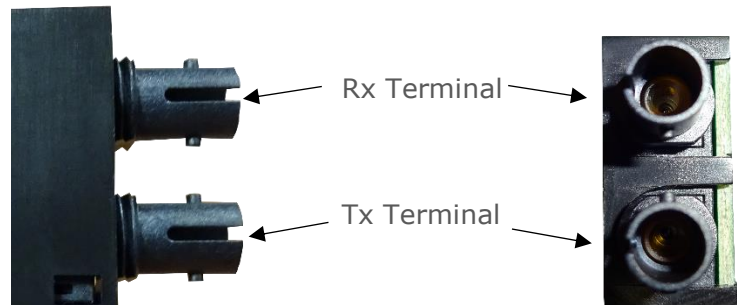
- 125Mbps IEEE 802.3u 100Base-FX compliant.
- 125Mbps FDDI ISO/IEC 9314-1 compatible.
- Max length up to 2km on a multimode optical fibre.
- Can use 50/125-micron or 62.5/125-micron multimode fibre.
- Bend radius is dependent upon manufacturer, but a rule of thumb is 15x cable diameter.

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 in 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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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
		RL2, RL3	RL1
Disallowed Configurations:		RL1, RL2	RL3
		RL2	RL1, RL3
		RL3	RL1, RL2

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

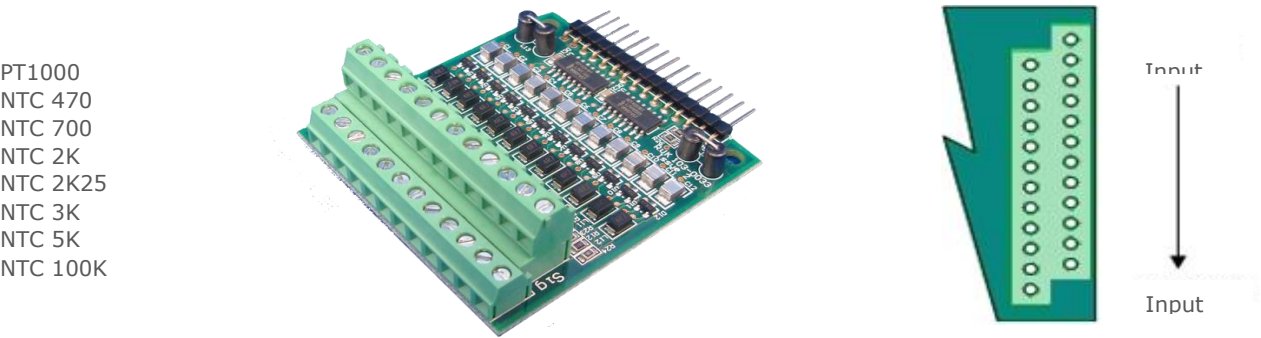All 3 relays are rated at 5A/250V~/AC1

Contact connection detail is shown below: -
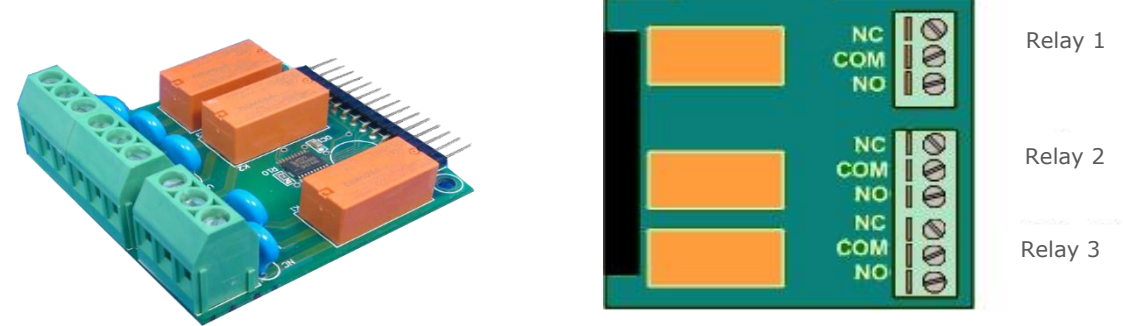
12 Analogue Probe Input Expansion Board: (PR0460)

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

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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.

4-20 mA Loop Input 1
+12 Vdc Supply

4-20 mA Loop Input 4
+12 Vdc Supply
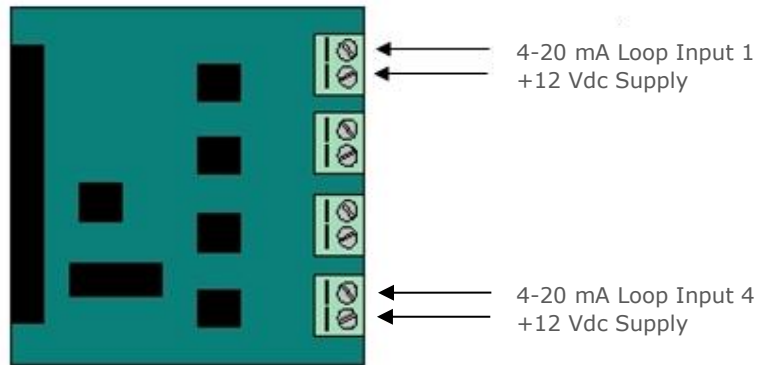
4 x 4-20mA Output Board (PR0463)

Ground
4-20 mA Output Signal 1

Ground
4-20 mA Output Signal 4
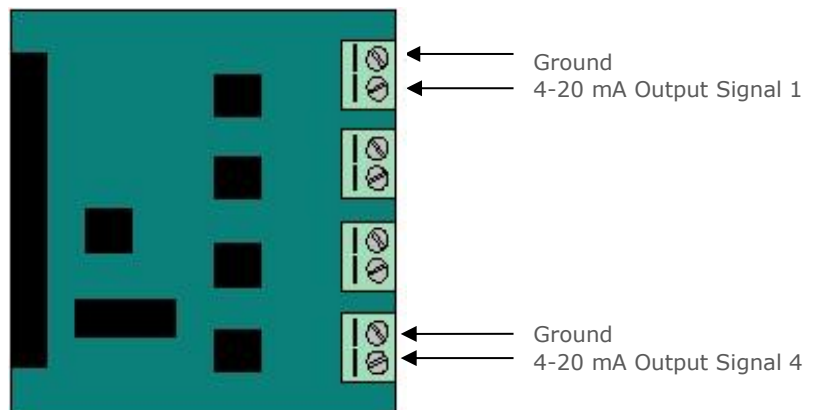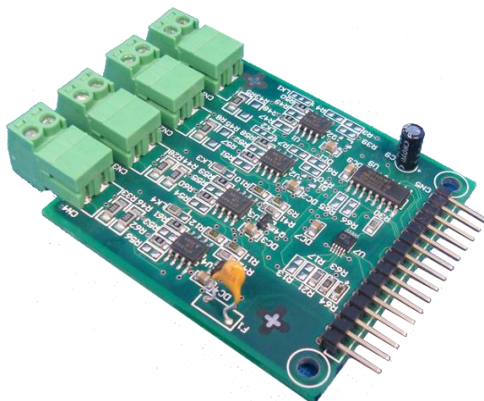
4 x 0 – 5V/10V Output Board (PR0464)
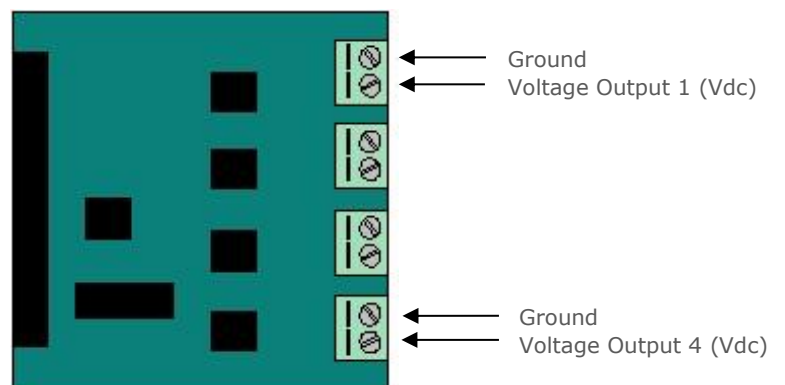
Ground
Voltage Output 1 (Vdc)

Ground
Voltage Output 4 (Vdc)

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4 x 0 – 5V/10Vdc Input Board (PR0465)

Ground
Voltage Input 1 (Vdc)

Ground
Voltage Input 4 (Vdc)
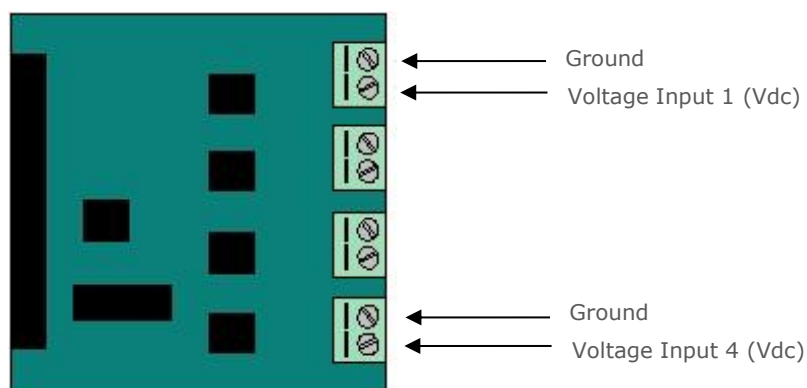
2 x 0 – 10V Input & 2 x 0 – 10V Output Board (PR0466)

Ground
Voltage Output 1 (Vdc)

Ground
Voltage Output 4 (Vdc)
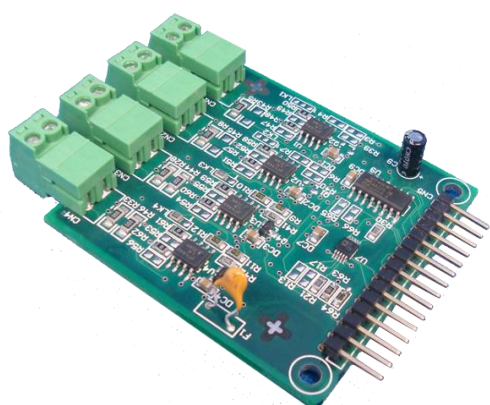
6 x 240V Inputs – 240V Status Detect Input Board. (PR0467)

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
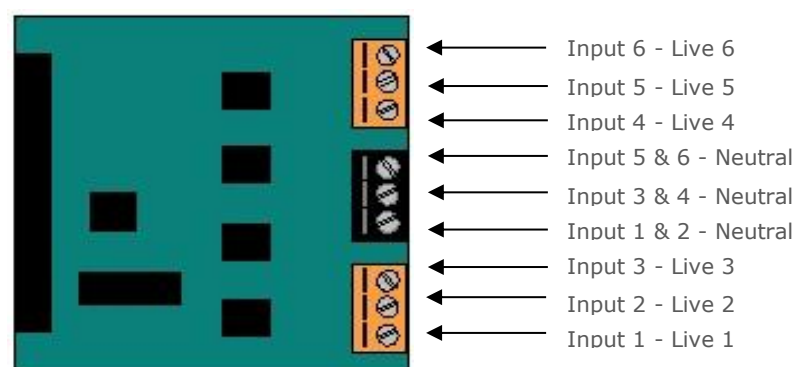
All inputs are rated to 240Vac.

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.

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

Daughter Card Installation

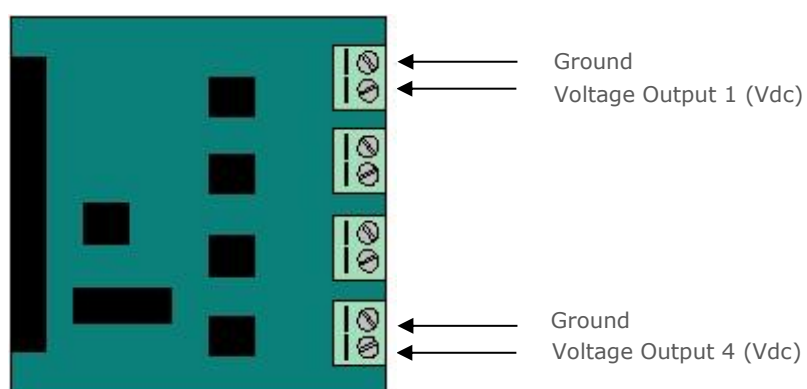**Note:** if a daughter card is ordered with a DMTouch then it will come pre-installed.

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.

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

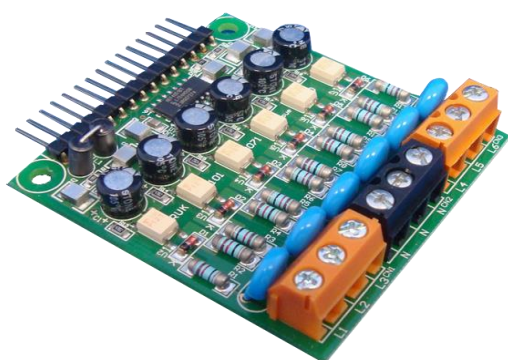www.resourcedm.com

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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Cleaning

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

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