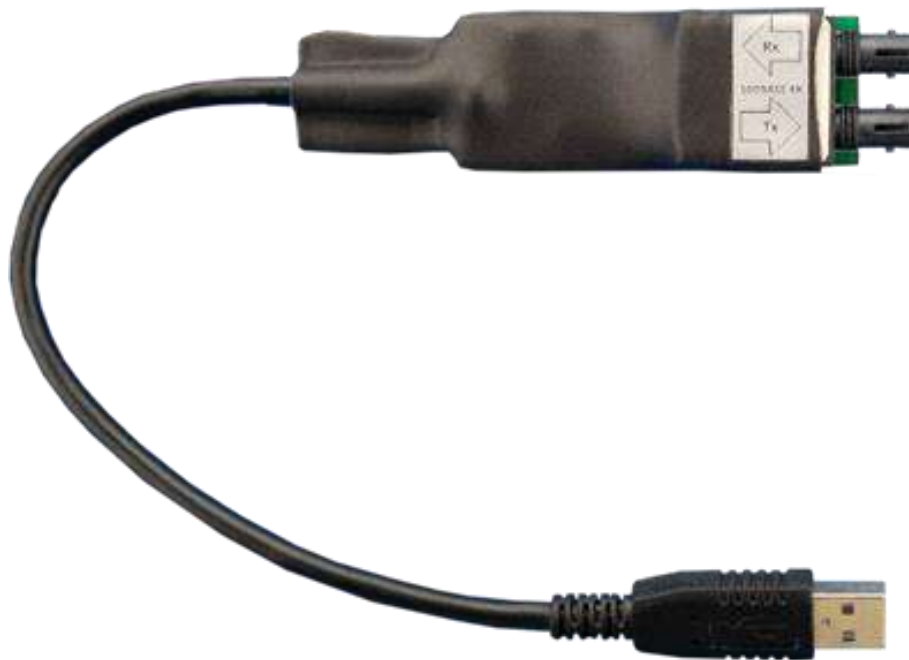


Resource
Data Management

USB to Fibre Interface

Installation/User Guide
Revision 1.0b



PR0459-FIB

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USB to Fibre Interface

From Resource Data Management

The USB to Fibre Optic adapter provides an additional network interface so that the RDM products listed below can connect to an RDM Fibre optic network or another Fibre network with similar characteristics (i.e. fibre interface, frequency etc).

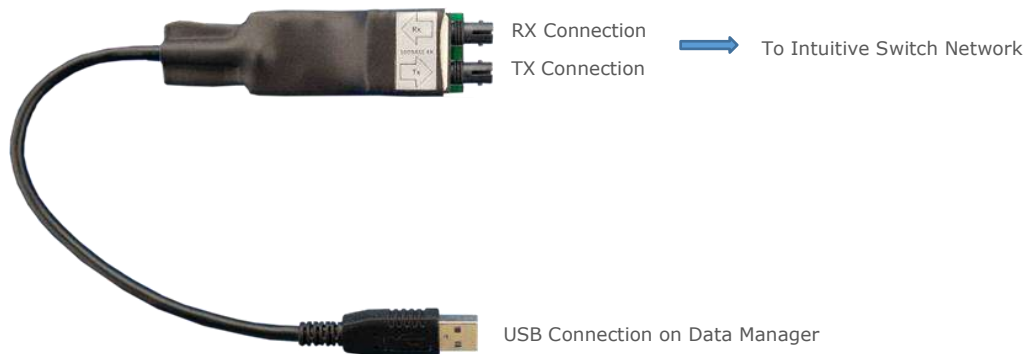
USB Fibre Compatible Products	
DMTouch	miniDM
Intuitive TDB	Mini Intuitive TDB
Superpack	Mini Superpack
TouchXL TDB	

A fibre optic network is an alternative to an Ethernet IP network. A single fibre optic cable can be up to 2000 metres / 2187 yards in length without any additional hardware whereas a CAT5/CAT6 cable on an IP network can only be a maximum of 100m in length. As fibre optic cable uses light as a transmission medium instead of electricity it is immune to electromagnetic interference, contains no metal and cannot produce electrical sparks.

Note: This feature requires DMTouch software version V4.0 or above or Intuitive Plant TDB V4.2 or above.

Connection

Fibre Optic communications uses the RX/ TX 100 Base-FX ports on the adapter, connect the other end of the cable to the RX/ TX 100 Base-FX ports on the Mercury/Intuitive Fibre Switch. The adapter is USB powered and does not require an external power supply and is separate to the Data Manager Eth0 network.



Note: Fibre optic connectors and cables can be damaged from airborne particles, humidity, moisture, oils 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.



RDM do not provide these cables but they are readily available for other sources.



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DMTouch/miniDM Connection

For ease, this section of the document will only reference the DMTouch.

The USB to Fibre interface (PR0459-FIB) plugs into the USB port of the DMTouch to create a fibre interface on the DMTouch. This enables the communication with other fibre enabled devices like a TouchXL Oribt and will allow devices to log on to the DMTouch via this Fibre connection. This can also be achieved by connecting to a Fibre Mercury/Intuitive Switch which would allow 10 or 16 RS232 devices to log on over the network or Fibre Intuitive device.

To create the fibre network using this adapter, the DMTouch will need to have the Secondary IP feature activated. This will allow the creation of another network.

Once this has been activated, the user will see the option for Eth. Please note that the USB adapter must be plugged in for this menu to appear.

On the network card setup screen (System – Miscellaneous – Network Card Setup), the user must populate the address and netmask. Once this has been set by the user, any fibre device that is in that range can then be logged onto the DMTouch through the USB adapter.

Note: As the DHCP only runs on the Eth0 network, the devices on the Fibre network will need to be manually added on.

In the example on the right the Eth0 network is in the 10.1.2.xx range, Eth1 is in the 192.168.0.xx range.

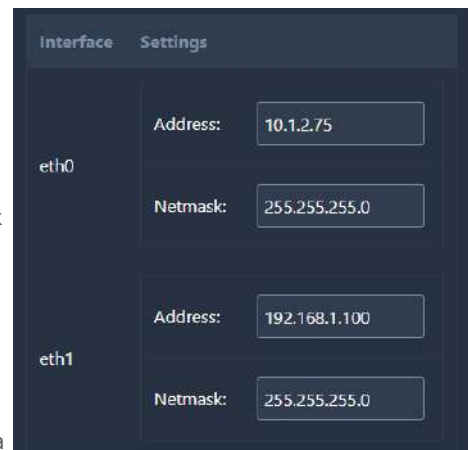
Please note that great care must be taken when inputting the network details in the Network Card Setup. These settings affect how data is sent and received by the Data Manager and could have an adverse effect if incorrect details have been entered. These settings should be confirmed with the administrator for that network prior to setup.

Any devices that are connected on this network must have statically assigned address that start 192.168.1.xx. For example if the user wanted to log on a Mercury/Intuitive Switch, they would need to use a display (PR0725) to set up the Switch so that its address was 192.168.1.xx (e.g. 192.168.1.10) and any controller connected (through the 232 ports or IP ports) would also need to have static addresses set.

Once addresses have been set in the Switch/Controllers, then the devices can be added by going to Service – Devices – Network – Add Device and add the device on by selecting 'Other Device', entering the IP address of the device and clicking add.

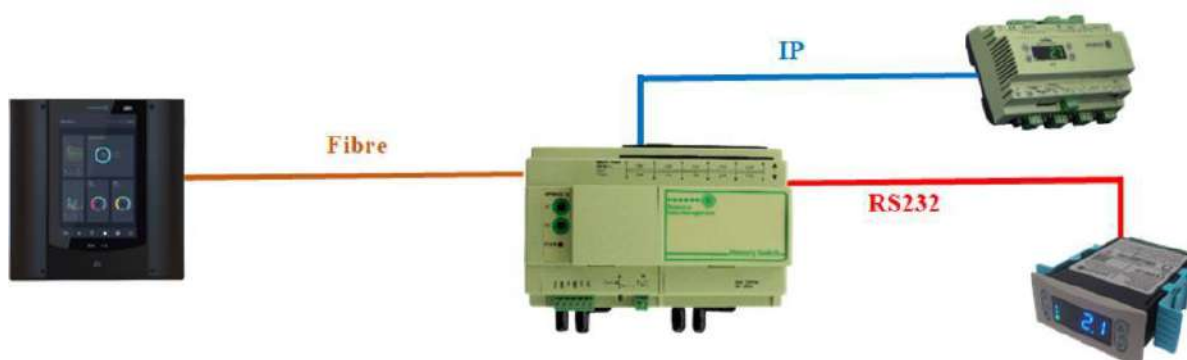
The fibre device should then appear in the device list.

Note: The DMTouch and miniDM can only support **one** adapter. If more than one USB adapter is plugged in more Ethernet connections are created within the panel, and on a restart these could be moved around. For example if eth1 was a PR0486 2nd IP USB adapter and eth2 was the PR0459-FIB USB Fibre adapter, when the panel is powered off and on, the 2nd IP USB adapter could become eth2 with and take its settings and vice versa.



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Below is an example of the network connections of a DMTouch with the USB Fibre.



It could also be used to connect multiple Mercury Switches onto the Fibre network



Intuitive TDB & Mini Intuitive TDB Connection

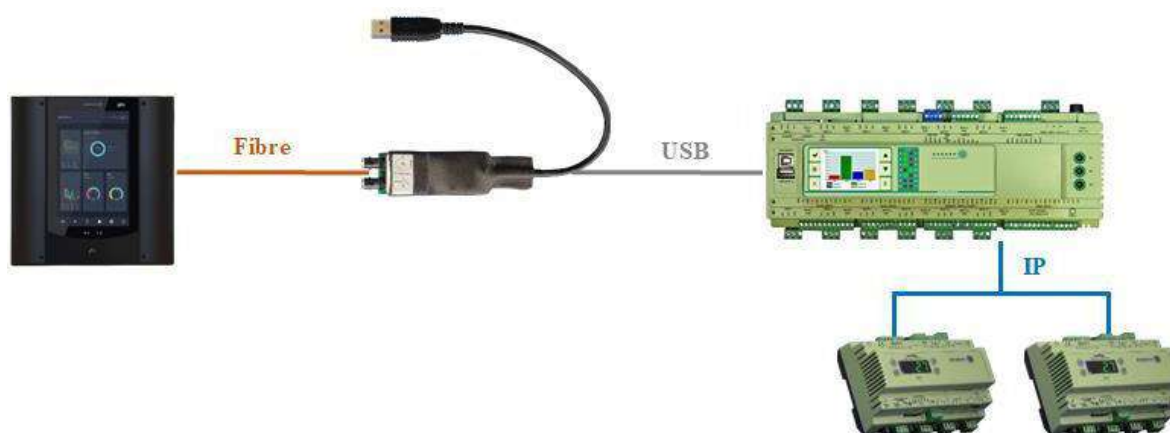
When the USB Fibre interface is connected to an Intuitive TDB, Mini Intuitive TDB or TouchXL TDB an extra address network field in the network setup menu will appear. This will display as Eth1 or Eth2 (depending if 2nd IP network has already been configured). The new field is the fibre network.

A fixed static IP address and netmask should be entered in the same range as the DMTouch's Fibre network. And then the controller will need to be manually added to the Data Manager.

When added to the Intuitive TDB controller it also allows the controller to become a 'Fibre Switch' utilising its built-in two port Ethernet Network switch to attach other Ethernet IP devices to the Fibre network (see example below).



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TouchXL TDB Connection

The TouchXL connection works in the same way as the Intuitive controller. Again it will need to have 'allow extra network cards' enabled to be able to create another network. Once that has been activated, it would again need to be setup in the same range as the Data Managers fibre network.



Overview of RDM Fibre Interface Specifications

- A pair of Duplex (zipcord) ST receptacle is found on each RDM device for Rx & TX
- Devices are connected via an ST Connector and fibre cable
- It utilises a wavelength of 1310nm (Class 1 Laser – LED Light Source)*
- Our Fibre interface is 125Mbps IEEE 802.3u 100Base-FX compliant
- It is also 125Mbps FDDI ISO/IEC 9314-1 compatible
- Max length up to 2km (1.24 Miles): - multimode optical fibre used to achieve this.
- Can use 50/125-micron or 62.5/125-micron multimode fibre cable
- For installation the bend radius is dependent upon manufacturer, but a rule of thumb is 15x the cable diameter, making it much more flexible than CAT 5 or 6 Ethernet patch cables
- Data Rates – Measureable in Kbps or a few Mbps worst case. Note the interface defaults to a 100 Mbps connection speed.

* This is an important value to note when selecting test equipment or setting up test units as differing fibre network designs may use different wave lengths.



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Specifications

Power Requirements	
Supply Voltage Range	USB powered 4.4V to 5.25V.
Connector	USB 2.0 Type A.
General	
Operating Temperature Range	0°C to +50°C (32°F to +122°F).
Operating Humidity	80% Maximum.
Storage Temperature Range	0°C to +65°C (32°F to +149°F).
Environmental	Indoor use at altitudes up to 2000m, pollution degree 2.
Dimensions – L x W x H	120mm x 28mm x 15mm plus 250mm (4.7" x 1.1" x 0.5") cable length.
Approx. Mass	<50g.
Safety	This is a SELV connection, as there is no mains voltage, safety certification is not required.
IP Rating	IP3X
EMC	CE Emissions [EN 55032:2015 Immunity [EN55035:2017] FCC [FCC Title 47 CFR parts 15B 15.107 Class A] IC [ICES-003]
Ventilation	There is no requirement for forced cooling ventilation.
Origins	Product designed in the UK manufactured in Taiwan.
Communications Ports	
USB	Conforms to USB 1.1 & 2.0.
Fibre	Conforms to 100Base-FX. Multimode fibre, OM3 50/125 micron, wavelength 1310nm. Max ST fibre length must not exceed 2000m.

Revision History

Date	Version	Update No	Changes
15/09/2022	V1.0	01	First release
10/11/2022	V1.0	02	Update to DM Connection information



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Visit www.resourcedm.com/support for more information on RDM solutions, additional product documentation and software downloads.

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