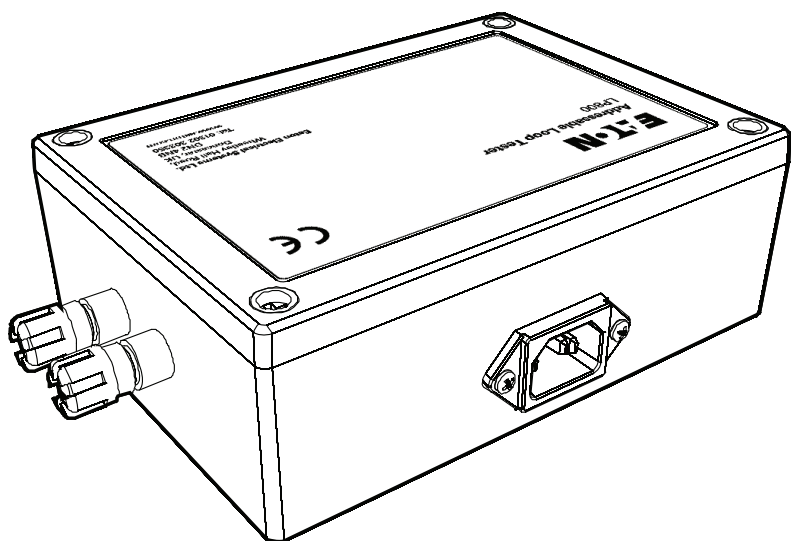# Installation and Operation Manual

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Contents

Hardware connections

The loop tester hardware requires a free serial port on the PC, either internal or via a USB extension, a mains power supply and a direct connection to the device loop. It need only be connected to one end of the loop, effectively making it a spur.

Connect the loop leads into the loop tester hardware ensuring to match the PC serial port using a regular RS232 cable.

Power up the device before loading the PC software to avoid confusion.
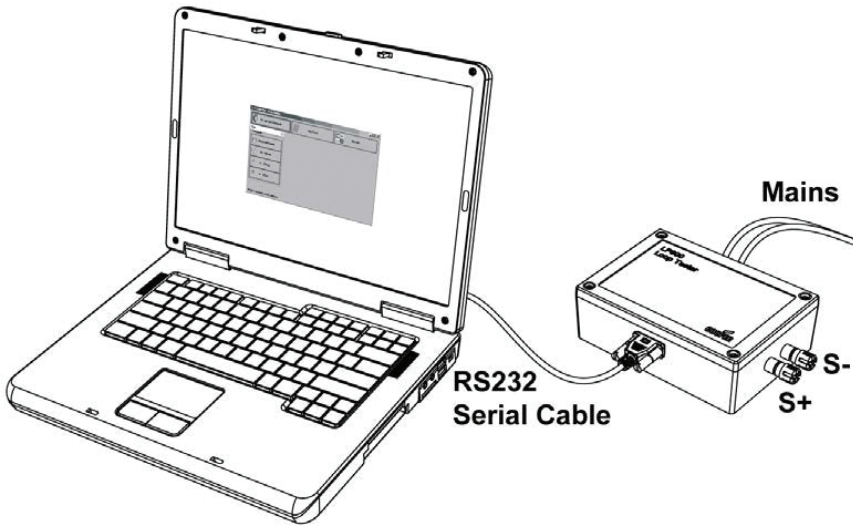
Typical wiring diagram

Software

Installation

The install program will guide you through the setup process, including asking for a password. This password is to prevent unauthorised and/or accident readdress of loop devices. See "Soft addressing." The password maybe left blank if desired.

Start up

On start up, the application will attempt to connect to the loop device via the default com port. Unless changed, this is COM1 and will be right in most cases. Upon successfully opening the com port an initial handshake with the hardware is performed. If this fails, please ensure all hardware is correctly connected and the device has a working mains power supply. If the device is connected to a port other than the default, select it from the drop down list. This will restart the connection and handshake process. If the port you're using is not listed, seek technical advice from your administrator or consult your hardware documentation.

Upon successful connection to the loop tester hardware, you will be informed in the status bar and the features for interfacing with the loop will be enabled.

Loop devices

Before devices on the loop can be interfaced with, they need to be address and learned by the loop tester. If the loop being tested is already commissioned, using the existing device addresses is advisable under normal circumstances. Once the loop devices have been learnt by either of the processes below, the features for querying the loop devices will be enabled and the view will automatically switch to the "Analogue replies" pane.

Pre-addressed

This process simply queries the loop for all devices and uses their existing address. No change to the devices take place and is thus suitable for working on an already commissioned loop.

Soft addressing

Soft addressing will assign a new, and potentially different, address to every device found on the loop. This does mean that once testing is complete, the loop will have to be commissioned again by the panel it is to be connected to. Do not use this option unless you have to. A password will be required from the user to initiate the soft addressing process to avoid unauthorised and/or accidental readdressing of commissioned loop devices. See "Installation."

Device statuses

Device icons

The "Analogue replies" pane will show all known devices on the loop. If a device is missing it most likely indicates a problem with the physical connections in the loop. This will need to be resolved before any interaction with the missing devices will be possible.

The device icons each show a symbolic representation of the device type along with its given address. Devices are display in address order, this may be different to the order they are physically connected. To the right of this, the textual device type, analogue value and status as determined by its analogue value.
See "Device settings."

If an "Unknown device" appears on your loop, it could be that the device is faulty and sending an incorrect type ID back to the loop tester hardware. This can be confirmed in the communications log. It could also mean that the version of Loop Tester you are using does not recognise the device because it is new. Please obtain a newer release of the software.
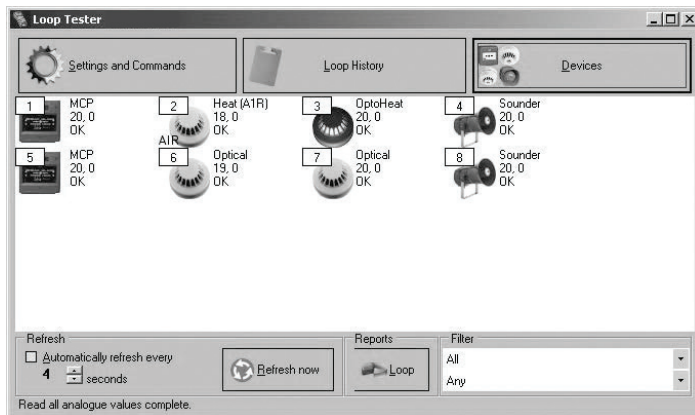
Analogue values

Upon retrieving a list of devices, an initial query for analogue values is performed. During this time, all devices may appear in the fault state, this is perfectly normal. These values can be refreshed at any time using the "Refresh now" button; this may take a few seconds depending on the number of devices connected. It will not detect devices added or removed from the loop. Those removed will receive an analogue value of 0 (zero) which will be taken to indicate a fault on that device. Analogue value refresh may to scheduled to occur at regular intervals by setting an interval (this is the delay between successfully retrieving analogue values and

Device statuses

beginning the process again, not between beginning the process once and beginning it a subsequent time) and checking the box labelled "Refresh every…" This feature will enable you to visit and test (with a smoke can for example) each device whilst recording the results. See "Reports" for how to make use of this information.

Test LED

The test LED of any device can be enabled or disabled from this pane. Right click on the device icon and select "Toggle test LED". Also, on small loops, options for turning the test LED on for all devices is available from the "General commands" pane. Note: enabling the test LED of a sounder will cause the sounder to enter the alarm state.

Device settings

All devices are broken down into one of three general categories according to how the analogue value of the device is processed. Each device can then have the details of this altered. Note that retrieving a device list, either by pre-addressed or by soft addressing, will remove any changes made to these values

Analogue

Devices that fall into this category have their value interpreted according to ranges for OK, Pre-alarm and Alarm. The boundaries for these ranges can be changed. Any value that is outside these ranges will be interpreted as a fault.

Enumerating

The analogue values of these devices are assigned specifically. A list of values for OK, Pre-alarm and Alarm can be assigned. These lists should be space separated (e.g. "10 20 30"). Any value not in any list will be interpreted as a fault.

Binary

Binary devices use their analogue values to indicate a set of flags. No changes can be made to the way these flags are interpreted. Loop Tester will interpret them according the device specification.

Filters

When working with very large loops, it may not be possible to show all device icons on screen at once. In this case, it is possible to filter the list of displayed icons according to their type (either specific device types or by the more general types listed above) or by their status, as determined by their current settings and analogue value. The impact on device visibility according to status is re-evaluated upon a refresh of analogue values. For example, selecting "Alarm" would clear the display of all devices to begin with, but triggering a call point with a key would cause it to appear the next time its analogue value is refreshed.

Reports

Two flavours of log are available depending on what details you need.

History log

This log shows all the history of events that have taken place on the loop since the application was started (or the log was manually cleared.) It is possible to only select certain event types to reduce report size and improve readability. This report is available from the "Communication history" pane.

Communication

This is a very low level log of all communication between the PC and the loop tester hardware. Its verbosity makes it useful only for diagnosing faults and producing very large reports.

Event

This will show a summarised version of the communication log indicating the beginning and end of operations, such as retrieving analogue values. It can be mixed with the communication log to provide an indication of what operation produced what communication data.

Device status

These log events simply show when a device changed state and can be used to provide a history of the loop status over a long period of time, perhaps while a visit it each device took place.

Loop overview

The loop overview simply provides a report of all devices found on their loop along with current status, a count of how many times each device has been in any given state and finally a summary of the loop.

Supported devices

- Optical
- Ion
- Heat A1R
- Heat BS
- Heat CS
- Optical heat combination
- Carbon monoxide
- Sounder
- Sounder control unit
- Voice annunciator
- 3-Channel IO unit
- Manual call point
- Repeater
- Zone monitor unit
- Beam detector
- Access control unit
- Emergency lighting module
- 4-20ma interface
- SP40s interface
- Technical input
- Technical timer
- Non-fire input

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