ICM-USBi

Inline Contamination Monitor
USB Interface

User Guide

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200.056-EN

1 Introduction

The ICM-USBi provides a complete "plug and play'' solution for connecting a PC to the ICM. It plugs in directly to a computer using a USB cable, and to the ICM using a pre-wired connector. It can be used simply for the initial customer configuration of the ICM before installation, or for a regular/permanent PC connection where this is needed for data downloading/control.

The following functions are provided:

- USB to RS485 adaptor with Microsoft certified (WHQL) drivers.
- 5V:12V DC:DC converter. This allows the ICM to be powered from the USB connector, if desired, removing the need for a separate power supply (in the case where a computer is always connected).
- Pre-wired ICM connector on 3m flying lead
- ICM signals brought out to user-accessible terminal block. This allows external alarms, PLCs or a start button to be easily connected.
- DC connector for optional external power supply (where USB power is not always available, i.e. when operation is required without a computer connection).
- LED Indicators indicating Transmit (Tx) and Receive (Rx) data.

Figure 1

2 Usage Scenarios

Users may typically wish to operate the remote control facility in one of two ways:

A. Direct Online Operation, Powered from Computer

   The ICM is permanently connected to a computer whilst tests are carried out. The operator can set parameters, type a label and initiate the test. They can then monitor the progress of each test. Each test result is displayed and downloaded into the test database as it is completed.

B. Disconnected Operation, Separate DC Power Supply

   Here the ICM operates as a stand alone item, performing tests on a schedule or under external command from a control system. If a permanent record of the results is needed, an operator can occasionally connect a computer and use LPA-View to download the accumulated test data. For this mode an external DC adaptor will also be required, to power the ICM in the absence of a computer. (Or the customer system power supply may be used via the terminal strip provided).

3 Connection

Plug the ICM-USBi cable into the ICM, and connect the USB cable between the computer and the interface. The computer will then run the "Found New Hardware'' Wizard to install the hardware drivers. You can either download them from Windows Update (if connected to the Internet) or use the ones supplied with the unit on the enclosed CD.

After the driver installation, a new "COM'' port will be available to the LPA-View Test Analysis Software. Proceed to connect to the ICM as detailed in the main ICM manual.

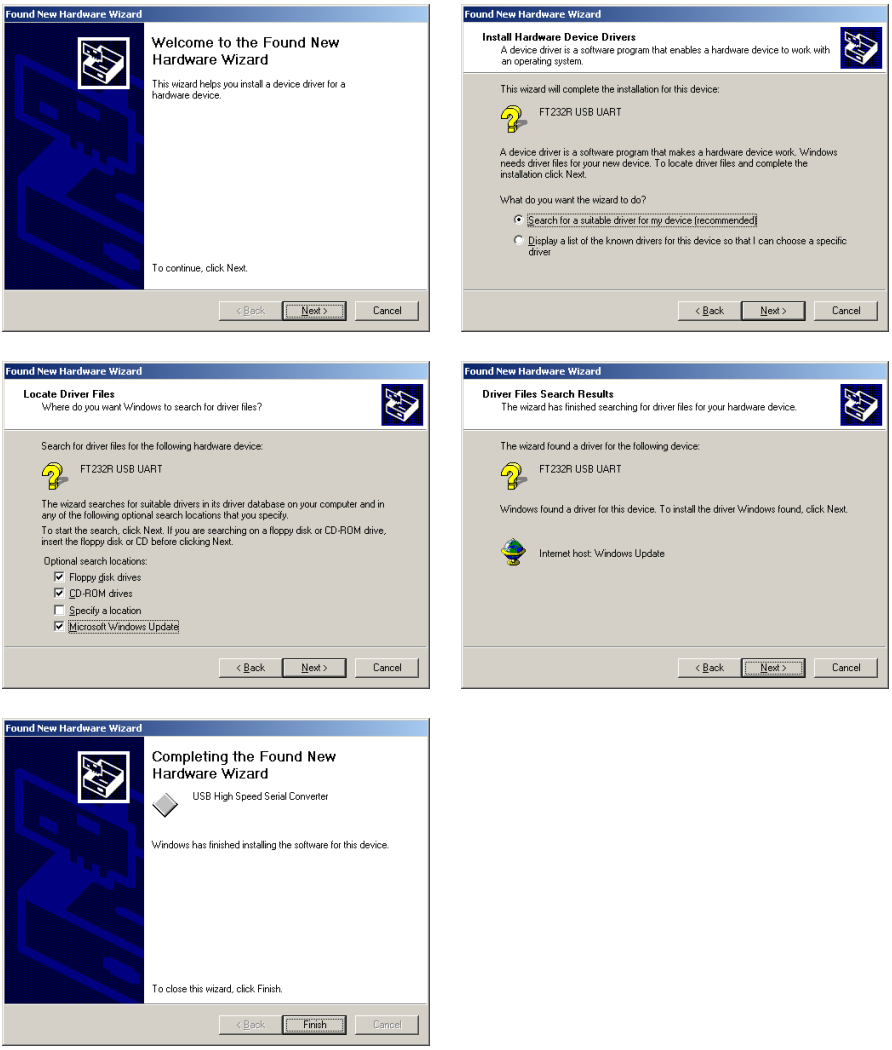

Figure 1 The "New Hardware Found'' Wizard

4 Wiring Options

The unit can be used as-is for simple PC control of an ICM.

However all the ICM signals are made available at a terminal strip within the interface, so that these can be connected to customer equipment. These include a start signal and the two alarm outputs. Also included are the DC power input, customers may prefer to permanently connect an existing supply here rather than plugging in the provided DC adaptor. The RS485 signals (Data+, Data-) are also present - these may be connected to an existing Modbus network.

To access the terminal strip, remove the four screws holding on the right hand end-plate (the one with the ICM cable). The end-plate can then be detached and the top plate slid off. An additional cable gland (supplied) can be fitted in the spare position on the end-plate and used for customer wires. Some example arrangements are shown here, there is more information in the main ICM manual.

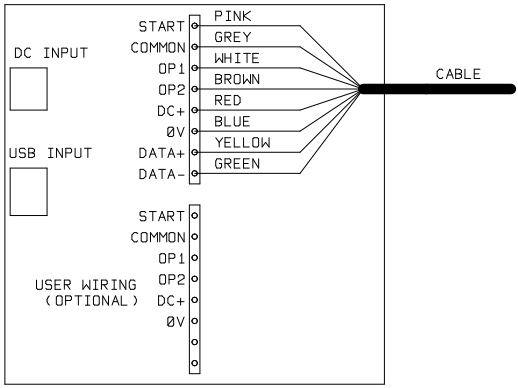

Figure 1 Pre-wired ICM Cable

Figure 1 shows the standard cable wiring. This is how the standard ICM-USBi unit is delivered.

5 Operation with Lamps and Pushbuttons

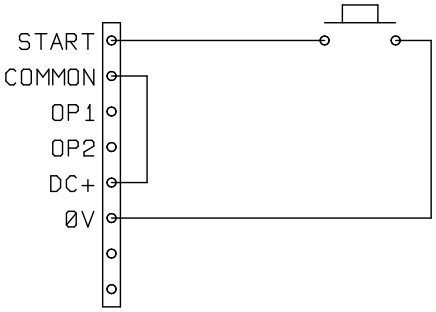

Figure 1 External Start

Figure 1 shows how to connect an external start button (or PLC output relay).

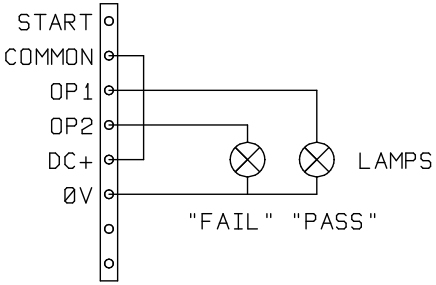

Figure 2 External Indicators

Figure 2 shows how to connect external indicator lamps (in case the built-in LED is not sufficient). These could also be PLC inputs.

6 External Power Supply

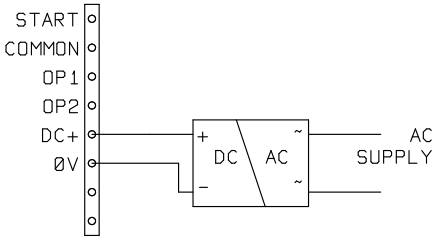

Figure 1 External Power Supply

Figure 1 shows how to connect an external power supply. This arrangement may be preferred for permanent installations over the removable "plug-top'' power supply that comes with the unit.

7 Extending the Control Cable

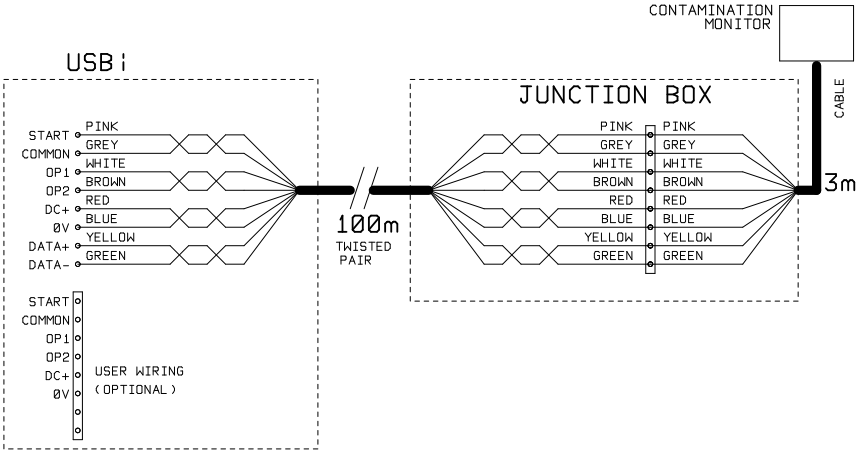

Figure 1 Control Cable Extension

The standard cable is 3m in length. Wiring over longer distances should be done using twisted pair cabling (assuming the serial communications signals are being used). Figure 1 shows an example.

8 Notes

- The DC supply 0V will be connected to the computer 0V and chassis Earth via the USB cable.

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