MHT Technology Ltd's Tank Gauging Hardware

Remote I/O

MHT Technology Ltd

Digital Transformation with Human Design

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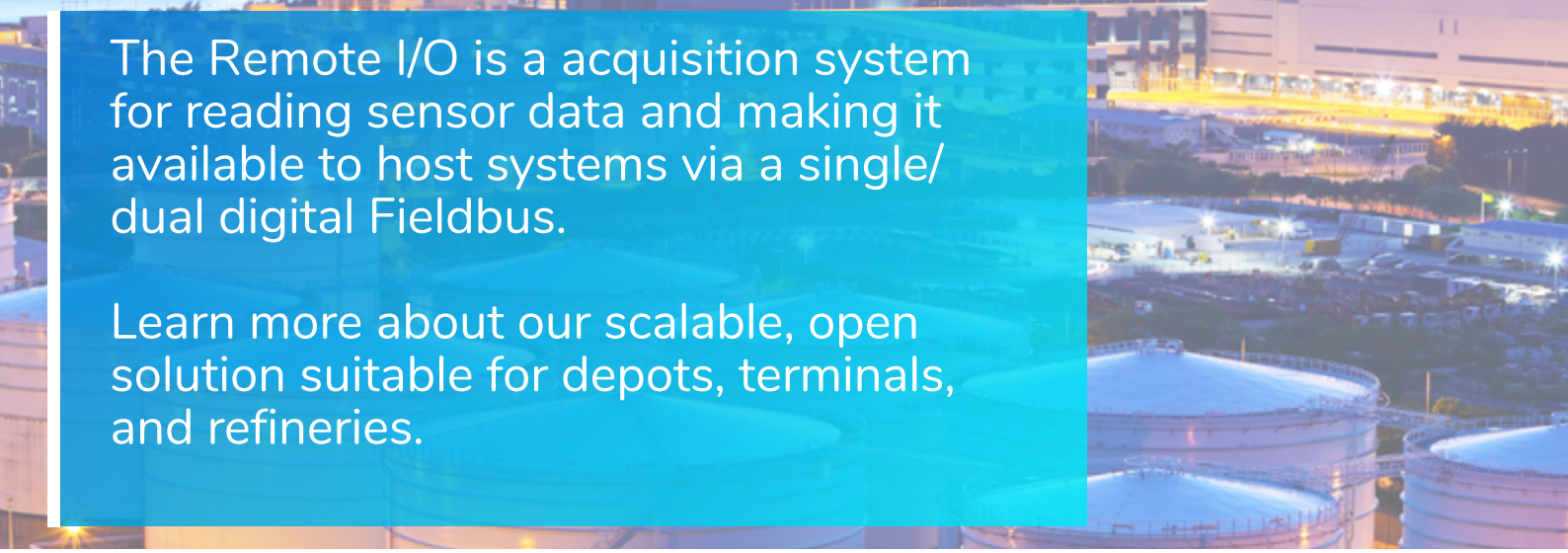


The Remote I/O is a acquisition system for reading sensor data and making it available to host systems via a single/ dual digital Fieldbus.

Learn more about our scalable, open solution suitable for depots, terminals, and refineries.

Launched in 2006

Trusted by customers

In use on sites around the world

Up 6 channels

Overview

The Remote I/O is a field data acquisition system for reading sensor data and making it available to host systems via a single/dual digital field bus. It can collect process data from various types of instruments and sensors, and relay that data over a range of media including:

Modbus over RS485
Modbus over RS232
Enraf GPU over BPM
Varec Mark/Space

Fieldbus support

The unit is supplied as standard with a single server interface based upon 2-wire RS-485 signalling with a Modbus RTU protocol. As an option, a second field bus interface can be fitted for dual redundant fieldbus communication. The field bus interfaces are 'plug in' modules and can be provided with the above range of different electrical signalling and protocols.

Physical Characteristics

The RIO family comprises 3 different types of enclosure and configurations with 6 ports.

6 channel - ATEX
6 channel - IECEx
6 channel - wall mount

The intrinsically safe models come in explosion-proof enclosures suitable for installation in ATEX/IECEx Zone 1 areas; the rack and wall-mounted model is intended for installation in switch rooms.

The RIO has been designed to use modern state of the art analogue and digital electronics complete with a micro-controller that includes the software in the onboard flash memory. Each input has precision components for filtering, amplification and analogue to digital conversion.

Key Features

Redundancy

Redundant field interface ports can be fitted to give you the reassurance that a comms failure won't prevent your field data getting to the control room.

Cost Savings

By emulating the signals of Honeywell Enraf GPU gauges, Varec gauges, E+H Proservo and Radar gauges etc. low cost HART gauges can be used on where the highest accuracy is not required.

Sweat your assets

Has your manufacturer abandoned your temperature transmitter leaving your working probe without a supported interface unit? A RIO could replace the probe's interface unit keeping it in service.

Safety

Field display complies with ATEX and IECEx Zone 1 requirements. Produced in the UK from a manufacturer with over 15 years experience of designing and manufacturing solutions for explosive atmospheres.

6 Channel, Ex Enclosure

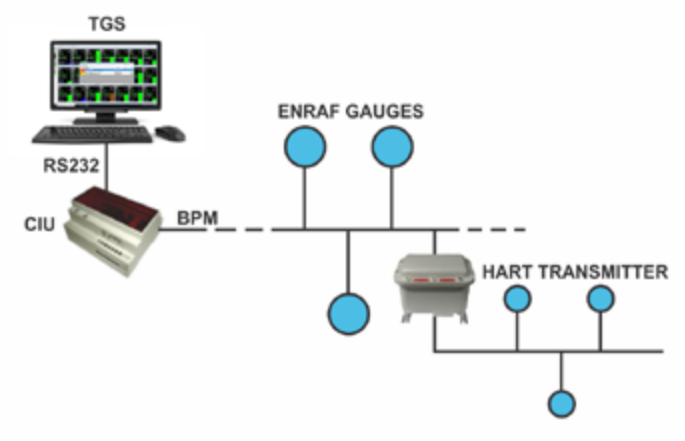
Inputs

The unit has up to six inputs which can either accept 4-20mA or HART sensor inputs. An input can support a single 4-20mA device; the device will digitise the analogue signal and apply any scaling and offset in order to convert the data into engineering units. Both loop-powered and passive sensors are supported by this unit. For the HART input, the number of HART transmitters that can be connected is dependent on the application, the cable length and quality.

For non-IS applications, a maximum of 15 HART based transmitters can be connected. For IS applications the number of transmitters is less and depends on the current drawn by the transmitters. We have experience installing many types of transmitters with our RIO and have found that a maximum of 5 devices that draw a small current can be used on one input. Some devices use more current as they start up; consequently only 2 such devices could be connected to an input.

Applications

- Data Acquisition System for Level, Temperature Measurement Systems.
- General Remote I/O Unit for Analogue Inputs or HART Transmitters.
- Protocol Conversion for HART based transmitters.



Tank gauging application

The RIO can be used to integrate analogue and HART based sensor instruments into existing systems, legacy or otherwise. The wide choice of fieldbus interfaces available for the RIO allows tanks, that would otherwise not be automated, to be gauged by lower cost technologies and integrated into existing tank gauging systems.

The illustration shows the RIO being used to read either analogue or HART based instruments, and making data available to a Honeywell Enraf BPM fieldbus.

The host Tank Gauging System sees the HART instruments as though they were standard Honeywell Enraf instruments.

The application of the RIO in this way can be used with any of the main tank gauging system vendors such as Emerson, Endress+Hauser, Varec, etc.

Power:	100-240 Vac 50-60 Hz 25 VA 0.375 A max
Certification:	ATEX II 2 G D Ex ‘d’ IIC T6 IECEx II 2 G D Ex d [ia] IIC T6
Environment:	Hazardous Area Zone 1
Operating temperature:	-20 °C to +55 °C
Storage temperature:	-40 °C to +85 °C
Enclosure:	Aluminium alloy Painted RAL 7035 grey epoxy
IP rating:	IP66
Entries:	M20 threaded entries

Terminations:	Screw terminals 2.5 mm² capacity
External dimensions:	300 x 220 x 235 mm
Fixings:	To suit M8 bolts, 4 positions
Weight:	8 kg
No. of host ports:	2 ports
Interfaces supported:	RS-232, RS-422/485, Honeywell Enraf BPM, ‘Saab’ Emerson/Rosemount TRL/2, Whessoe Current Loop, Varec Mark/Space, Modbus RTU, L&J Tankway, Motherwell, HART®, Scientific Instruments.