

TOMi Water Meters

PULSED OUTPUT DATA

Pulsed output data is highly reliable and positioned at the top of the meter for ease of installation.

- Volt Free (maximum voltage to be introduced 12vdc)
- Black = pulse 1 (-) to the - pulse input terminals of your equipment
- Red = pulse 2 (+) to the + input terminal of your equipment



KEY FEATURES

- Anti-magnetic volt free contact (Reed Switch)
- Temperature Range - Flexing - 5°C to + 50°C
- Temperature Range - Static - 20°C to + 70°C
- Bending radius 10 x cable diameter

ELECTRICAL CHARACTERISTICS

- Cross section 24//0.22 AWG/mm²
 - Installation resistance 20 (min) M ohm km
 - Pulsed output from TOMi is volt free
 - 2 Wires
 - Black = Pulse 1 (-) to the - pulse input terminals of equipment
 - Red = Pulse 2 (+) to the + pulse input terminal of equipment
- Maximum voltage that can be introduced = 24vdc

PULSE VALUE

15mm	½"	1 Pulse per 1 Litre
20mm	¾"	1 Pulse per 1 Litre
25mm	1"	1 Pulse per 1 Litre
30mm	1 ¼"	1 Pulse per 10 Litres
40mm	1 ½"	1 Pulse per 10 Litres
50mm	2"	1 Pulse per 100 Litres

EXTENSION PULSE CABLES

The standard length of a pulse cable is 1.5 meters.
For distances longer than 1.5m it is recommended that longer length cables are purchased, as jointed cables can induce problems such as electrical noise and interference.

Complete pulse cables are available in the following lengths:-

- 1.5 metres (code. 408000)
- 5 metres (code. 408001)
- 10 metres (code. 408002)
- 20 metres (code. 408003)
- 50 metres (code. 408004)

CABLE SPECIFICATION

Cable structure specifically designed for low voltage drop.
Polarity Line Indicator CSA 0.22MM³
Strands 2 x 7/0.2mm
Current 1.0A max
Cable Dimension 2.0 x 4.0m



OTHER REMOTE READING OPTIONS

Pulse Converters



www.meters.co.uk/ef1.htm



www.meters.co.uk/shara100.htm

Modbus is a serial communications protocol originally published by Modicon (now Schneider Electric) in 1979 for use with its programmable logic controllers (PLCs). Modbus has become a de facto standard communication protocol and is now a commonly available means of connecting industrial electronic devices.

The main reasons for the use of Modbus in the industrial environment are:

- developed with industrial applications in mind,
- openly published and royalty-free,
- easy to deploy and maintain,
- moves raw bits or words without placing many restrictions on vendors.

Modbus enables communication among many devices connected to the same network, for example, a system that measures temperature and humidity and communicates the results to a computer. Modbus is often used to connect a supervisory computer with a remote terminal unit (RTU) in supervisory control and data acquisition (SCADA) systems. Many of the data types are named from its use in driving relays: a single-bit physical output is called a coil, and a single-bit physical input is called a discrete input or a contact.

The development and update of Modbus protocols has been managed by the Modbus Organization[2] since April 2004, when Schneider Electric transferred rights to that organization. The Modbus Organization is an association of users and suppliers of Modbus-compliant devices that advocates for the continued use of the technology.

M-Bus (Meter-Bus) is a European standard (EN 13757-2 physical and link layer, EN 13757-3 application layer) for the remote reading of gas or electricity meters.

M-Bus is also usable for other types of consumption meters. The M-Bus interface is made for communication on two wires, making it cost-effective. A radio variant of M-Bus (Wireless M-Bus) is also specified in EN 13757-4.

The M-Bus was developed to fill the need for a system for the networking and remote reading of utility meters, for example to measure the consumption of gas or water in the home. This bus fulfills the special requirements of remotely powered or battery-driven systems, including consumer utility meters.

When interrogated, the meters deliver the data they have collected to a common master, such as a hand-held computer, connected at periodic intervals to read all utility meters of a building. An alternative method of collecting data centrally is to transmit meter readings via a modem.

Other applications for the M-Bus such as alarm systems, flexible illumination installations, heating control, etc. are suitable.