EN DE FR ES

HRI-Mei

INSTALLATION AND OPERATING INSTRUCTIONS – HRI-Mei Bx

Installation
Just before mounting the HRI-Mei on the meter it is essential to remove the aluminium foil at the bottom side!

Installation (see image 1)
1. Open the cover for OD with slight pressure against the left side.
2. Turn blue ring counterclockwise against stop (ca. 10°); pulse sensor slots are open.
3. Insert the two hooks of the HRI-Mei diagonally from above into the holes of the backfitting ring.
4. Push HRI-Mei down until it is fixed on the backfitting ring.
5. Turn blue ring clockwise against stop (ca. 10°); pulse sensor slots are barred.
6. Close cover for OD. If required the HRI-Mei can be protected with a seal wire against removal.
7. Release the round cover from the hinge and replace it with the supplied semicircular cover.

Type
HRI-Mei provides 7 different pulse modes each with the following pulse weights
D = 10 / 50 / 100 / 250 / 500 or 1000 litres/pulse
Pulse length T= 32, 128 or 500 ms (not with B5, B6)

Pulse mode	Wire	
	I1 (white)	I2 (yellow)
B1	Balanced pulses**	Tamper = closed
B2	Forward pulses	Backward pulses
B3	Forwards and backwards pulses	Direction signal forward = open
B4	Balanced pulses**	Tamper = open
B5	NAMUR with forward / backward signal	Not used
B6	NAMUR with suppressing backward flow ("OD-AM")	Not used
B7	Balanced pulses	Balanced pulses

Ground (grey)
**) Balanced pulses: Reverse volume must be compensated by identical forward volume before more pulses are output. That means, no output pulses during this period even though the meter register is counting forward.

DATA (green/brown) Also used for external power supply

Battery or external supply
Battery: 3.6V Lithium. Integral battery, not replaceable.

Durability
- 20 °C medium temperature: up to 12 years
- 12hrs 20 °C / 12 hrs 60 °C: up to 10 years

With a continuous external power supply of 10 V DC (max. 42 V DC) the durability increases to more than 15 years. In case of a voltage breakdown the battery of the module takes over the power supply. Therefore the stored values are not lost and the module continues the volume detection autonomously. The external supply can also be provided via an M-Bus system.

Technical Data
- Environmental temperature range: -10 °C ... +60 °C
- Cable length: 3 m
- Protection class IP 68
- EMC acc. EC98/34 (EN 61000-6-2 and EN 61000-6-3)

Output pulses (I1/I2) for Mode B1 to B4 and B7
Open Collector pulse output module acc. ISO/TC30

Maximum voltage: 48 V DC / Imax: 200mA/ Pmax: 4 W

Maximum residual voltage (output interconnected, -20 °C / +60 °C): 0,45 V@ 5 µA/ 0,55 V @5 mA/ 1,4 V @200 mA
Pulse width (32, 128 or 500 ms) adjustable

Flow direction in Mode B3: Signal I2 is active low = 200 µs prior to first pulse in reverse direction.

Acceptable cable extension: depending on cable type and connected devices; several kilometres possible.

Transient voltage protection is highly recommended for wiring outside buildings.

Output pulses (I1) for Mode B5 and B6 (NAMUR-compatible)
Acc. EN 60947-5-6 with constant pulse width from 6ms resp. 7ms.

Transient voltage protection is highly recommended for wiring outside buildings.

Data interface
M-Bus and MiniBus (Auto speed detection: 300 / 2400 Baud)

Protocol acc. EN13757-3 conforms IEC 870 / EN 1434

The data interface is NOT galvanically isolated from the grey connection lead, see connection diagram 2. This is to be considered when used simultaneously.

Data: Meter number and counter reading, monthly meter readings, min./max. flow rate and backflow with date and time, etc.

Tamper and alarm settings (s.a. MiniCom)

Cable extension: acc. M-Bus specification.

The quantity/number of readouts with M-Bus is unlimited. If MiniBus is used, do not readout more than hourly so that the battery life of 12 years is maintained.

With the data interface the following values can be adjusted with the help of the MiniCom software (Version > 3.6.40). (Default settings in brackets):

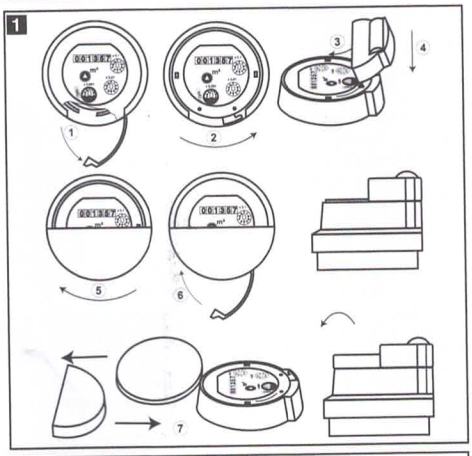
- Primary address (0)
- Secondary address (Fab.no. of HRI-Mei)
- Meter no. (Fab.no. of HRI-Mei)
- Counter reading (0); when the aluminum foil is missing the counter reading can be <> 0.
- Day of month for monthly value storage (1).
- Operator password = 00000001
- Pulse mode, pulse value, pulse duration (depending on order)

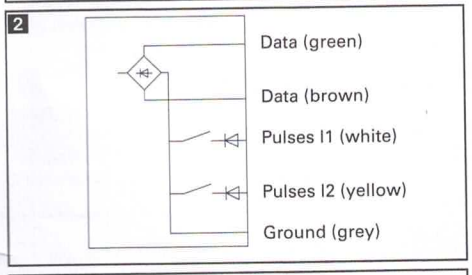
Further settings s.a. MiniCom
Reading with the MiniReader (182080) is supported from firmware version >2.0.

If the HRI-Mei is ordered as a version mounted on a meter, the secondary address, meter number and the meter reading are pre-set with the ones from the mounted meter ex works.
The pulse value and the pulse period are set according to the order. An adjustment on-site is then not required.

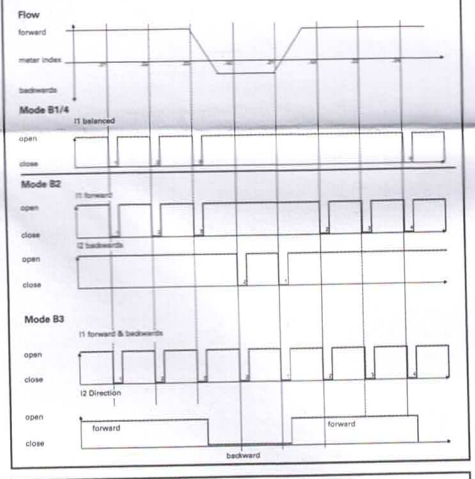
When using M-Bus with separate delivered HRI-Mei, after mounting at a meter, the programming of the input pulse value and the alignment of the volume index has to be done.

Disposal
This product contains a lithium battery. In the interest of protecting the environment, this battery may not be disposed in household waste after its period of use. The local and national regulations for environmental protection are to be considered.

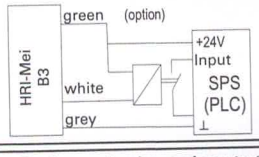




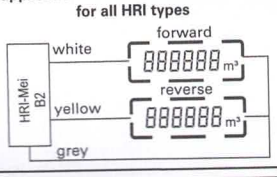
Application examples
All connections with external power supply are optional. The HRI-Mei's internal battery can also be used.



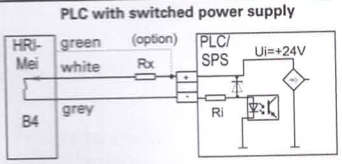
PLC with switched ground
HRI-Mei with external power supply



This application can be also used as a test tool for all HRI types



PLC with switched power supply



e. g. Rx = 1 KOhm I = Ui/(Rx+Ri) = <200 mA

sensus