

SmartHeat

Thermal Energy Calculating Smart Meters

The world's 'only' Digital Heat Meter
High accuracy
Two way communication
Fully integrated prepayment
Only heat meter with a 20 year design life

Key Features

- Calculates the energy used in heating or cooling systems
- On – site programming facility and digital key option for reprogramming
- Manufactured to EN 1434—1—1997
- Suitable for all billing applications—including Renewable Heat Incentive
- Open collector pulsed output—(with grab circuit) - as standard
- Digital high accuracy sensors
- M-Bus to EN13757—2/3/4 & EN1434—3 and Modbus to EN15745—2/4 and 2007



HCM 45 Product List

4500	Standard Heat Meter
4501	1 Pulsed Inputs
4502	2 Pulsed Inputs
4560	Standard Mbus
4561	Mbus 1 Pulsed Input
4562	Mbus 2 Pulsed Inputs
4580	Standard Modbus
4581	Modbus 1 Pulsed Input
4582	Modbus 2 Pulsed Inputs

Other Options Available

Glycol
Vegetable Glycerine
Thermal Oil

For further information on flow meters www.meters.co.uk/water

Technical Details

Cases	Heavy duty nylon case with Perspex front viewing panel
Case Front Panel	Two programming buttons located on the front panel. Communication LED & Pulse LED.
Case Size	186mm w x 108mm h x 58mm d.
Mounting	Wall mounted.
Case Weight	0.9kg.
Voltages	230 volts (standard) 110 volts (export only) 24 volts.
LCD Display	16 Characters—single line.
Environmental Class	Conforms to the operational requirements of both Class B. (Domestic Outdoor Installations) Class C (Industrial Installations).
Temperature Operating Range	0c to 90c.
Accuracy Class	Class1—complete unit—falls within Accuracy Class1 MID (2004). EN 1434 Parts 1—6 2016 OIML R75.
Temperature Sensors	Smart Heat Fixings.
Long Distance Sensors	(LD Version). Perfect data accuracy transferable up to 100 meter cable lengths manufactured in 5, 10, 20, 50 and 100 metres.
Security Labels	No peel permanent security labels 45.7 x 25.4mm available on request.
Smart Heat Pipe Fittings	Flow parts 15-50mm screwed connections. Conex T pieces suitable for copper/plastic/steel pipes with threaded immersion pockets.
Smart Heat Pipe Fittings	Flow Parts 50-200mm Flanged to PN16. Threaded welding boss and threaded immersion pockets suitable for steel pipes. Multi Jet Dry Dial Turbine suitable for Vertical or Horizontal mounting. Screwed male connections. Maximum temperature 40c Chilled and heating 90c. Manufactured to EN 4064. Anti magnetic security pulsed output. Mid Compliance TCM/10—4792.
Flow Meters 15 to 50mm	

Maximum length coupling to coupling

Meter Size	Length mm
15mm	259
20mm	290
25mm	355
30mm	380
40mm	431
50mm	450

Flow Meters 50-200mm

Multi Jet Dry Dial Turbine suitable for vertical or horizontal mounting. Flanged to PN16. Maximum Temperature chilled 40c hot 90c. Manufactured to EN 4064. Anti-magnetic Security Pulse Output. Mid compliance 142/11/4854. Flow meter maximum pulse 16 bar. Flow meter straight line pipe requirement x 5.

Maximum length coupling to coupling

Meter Size	Length mm
50mm	200
65mm	200
80mm	225
100mm	380
125mm	250
150mm	300
200mm	350

Flow Meter Extending Pulse Cables

Standard	Extending
1.5 metres	5 metres 10 metres 20 metres 50 metres 100 metres

Low flow error compensation

Software compensation greatly improves accuracy at low flow rates.

Power Consumption

Idle 0.03amps. Operational 0.1amp. The repeatable nature of the output over temperature for band gap—based sensors means that an accuracy factor of up to 0.02% is possible.

CE Conformity

Conforms to Low voltage directive 73/23/EEC.

Conformity

Conforms to both RoHS and WEEE directives.

Pulse Output

Open collector—with grab circuit—bandwidth 50ms—10 pulses per kWh/mWh.

Wiring

16 way terminal block on PCB. Removal of terminal case cover is required. Sealable terminals on completion of wiring.

Programming

Two buttons on front case—scroll and accept.

Re-programming Option

Via dongle. 3 wire terminal clips into circuit board for reprogramming.

Operational Error Codes

ERROR 1 No sensors connected or shorted to 5 volts

ERROR 2 Data shorted to 0 volts

ERROR 3 Data transmission error

ERROR 4 Only 1 sensor connected

ERROR 5 Not a pair (either two hot or two cold)