

Integral-V UltraMaxx (USA)

Heat and cooling meter



Your benefits

- Ultrasonic technology:
Long-term stable energy measurement with maximum measuring accuracy
- Compact design:
Less installation space required
- Large measuring range:
Lower storage costs
- Replaceable calculator:
Flexible mounting possible (compact/split)
- Display of operating faults and soiling warning:
Increased operational safety
- Big display:
Easy to read

Applications

- High-end device for building management
- As a replacement for mechanical impeller heat meters
- Metering of heat and/or cooling consumption in building management

Properties

- Nominal diameters NPS 1/2 or 3/4 inch
- Nominal flow rates q_p 6.6 gpm or q_p 11 gpm
- Supply via 10-year battery or M-Bus with back-up battery
- Max. operating pressure PN 230 psi
- Universal installation position
- No moving parts
- Electronic calculator
- LCD-resolution 8 digits
- Temperature range 32 - 194 °F
- Temperature sensor Pt 500
- 18 month register
- Max. values (P, Q, T)
- Standard EN 1434
- **CE** Conformity according European Measuring Instruments Directive (MID) or Conformity according to the Directive Measurement Canada

Options

- Execution on-site reading (Supply via battery, small calculator housing)
- Execution with 2 pulse outputs for heating- and cooling energy (Supply via battery, small calculator housing)
- Execution with M-Bus interface and 4 water meter inputs (Supply via battery, large calculator housing)
- Execution with M-Bus interface and 2 water meter inputs (Supply via M-Bus, large calculator housing)

Technical Data

Calculator	
Temperature range	32 to 194 °F
Temperature difference	3 to 90 K
LCD resolution	99'999'999 kWh 999'999,99 m³
Battery lifetime (Execution with battery)	10 years
Battery lifetime back-up battery (Execution supply via M-Bus)	1 year
Environment class	EN 1434 - class C, 2004/22/EC class E1, M1
Protection class	IP54
Environment temperature	41 to 131 °F
Storage temperature	14 to 140 °F
Optical interface	EN 60870-5 / M-Bus protocol
Temperature sensor type	2-wires, Pt 500
Cable length	19.7 in

Temperature sensor	Direct immersion sensor	Pocket sensor
Sensor element	Pt 500	Pt 500
Resistor acc. to	EN 60751 / EN 1434	EN 60751 / EN 1434
Measuring tolerance	Class B	Class B
Temperature measuring range	32 to 194 °F	32 to 194 °F
Temperature difference	3 to 90 K	3 to 90 K
Sensor diameter	0.142/0.213 in	0.236 in
Sensor length	1.083 in	1.969 in
Connection thread	M10x1	Knurled nut M12
Cable type	Smooth cable	Coiled cable
Cable length	5 ft 9 in	3 ft 11 in

Volume measuring meter					
Nominal diameter	NPS	inch	1/2	1/2	3/4
Operating pressure	PN	psi	232	232	232
Connection thread on meter	G...A	Inch	3/4	1	1
Nominal flow rate	qp	gpm	6.6	6.6	11
Maximum flow rate	qs	gpm	13.2	13.2	22
Minimum flow rate	qi	gpm	0.026	0.026	0.044
Starting flow		gpm	0.009	0.009	0.018
Kvs value		gpm	13.21	13.21	22.01
Temperature		max. °F	194	194	194
Measuring range	qi/qp		1:250	1:250	1:250

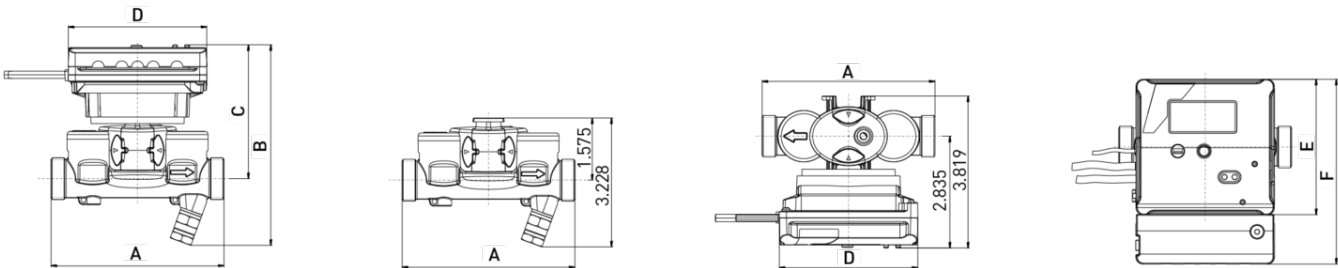
Volume measuring meter

Metrological class			EN 1434 - class 2	EN 1434 - class 2	EN 1434 - class 2
Protection class			IP67	IP67	IP67

Dimensions

Length without couplings	A	inch	4.33	5.12	5.12
Height total	B	inch	5.04	5.04	5.04
Height from pipe centre line	C	inch	3.39	3.39	3.39
Width calculator	D	inch	3.46	3.46	3.46
Height calculator (small housing)	E	inch	3.39	3.39	3.39
Height calculator (large housing)	F	inch	4.96	4.96	4.96

Dimension Diagram



Installation

Integral-V UltraMaXX is approved for all horizontal and vertical installation positions, even overhead.

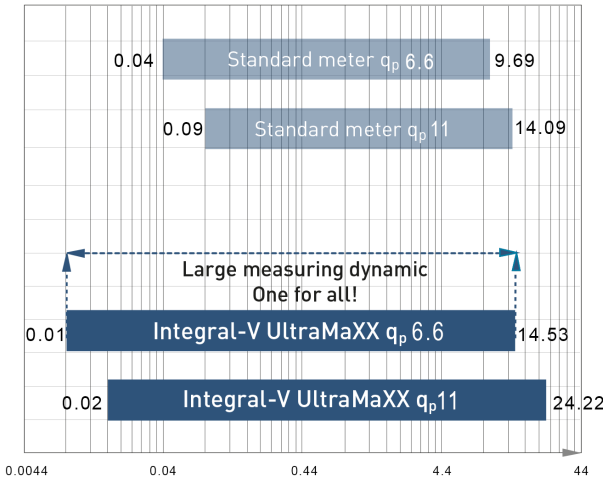
In combination with the flexible calculation unit attachment, it ensures an optimum reading position.



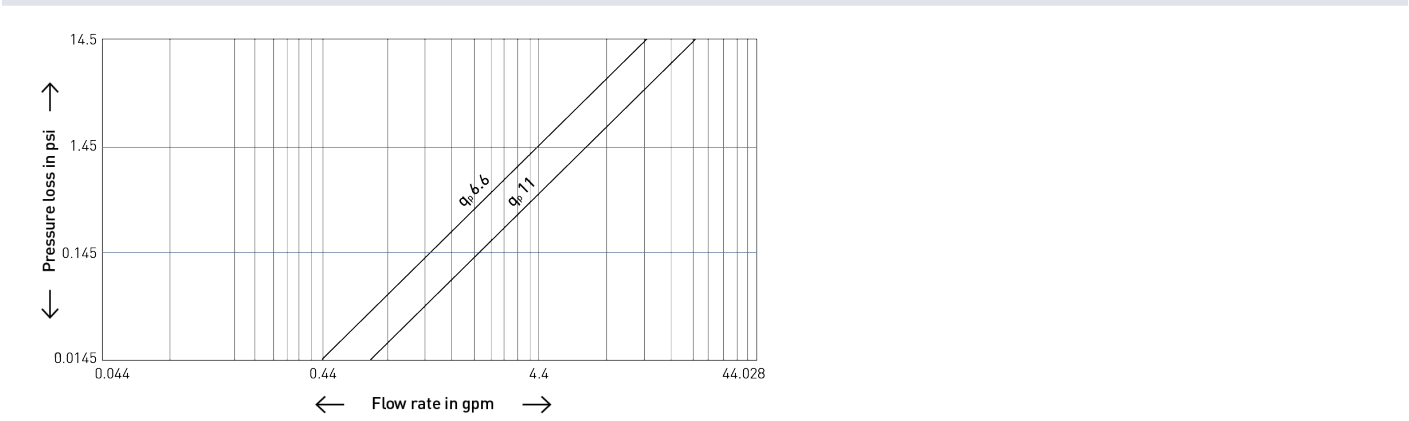
Flow Measuring Dynamic

The exceptionally large measuring dynamic (0.009–14.53 gpm at q_p 6.6 gpm) means Integral-V UltraMaXX is a real multi-range meter

All figures in gpm



Typical Head Loss Curve



Options

Integral-V UltraMaXX is supplied with integrated options. This enables quick and efficient installation and system setup.

The following versions are available.

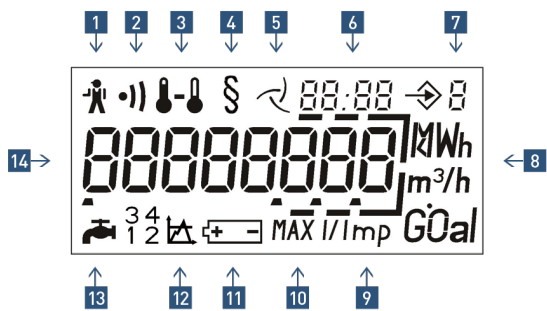
Specification for pulse outputs for heating- and cooling energy	
Pulse value	Heating energy: 1 pulse = 1 kWh Cooling energy: 1 pulse = 1 kWh
Pulse characteristic	Passive transducer, Open Collector Pull-down switch
Scanning voltage	max. 30 V, min. 2.5 V
Max. permissible current	max. 20 mA
Max. internal resistance R _{on}	100 Ω (during pulse ON)
Impulse length	120 ms

Specification for water meter inputs	
Pulse value	1, 2.5, 10, 25, 100, 250 l/pulse (programmable, same pulse value for all connected water meters, standard 10 l)
Scanning voltage	Typically 3 V
Impulse recognition	Contact closed: R <500 Ω Contact opened: R > 1 MΩ Impulse duration / break every > 3 s
Cable length	max. 393.7 in

Specification for M-Bus interface	
Protocol	M-Bus according EN 13757-3
M-Bus standard load	Supply via battery: 1 standard load (1.5 mA) Supply via M-Bus: 2 standard loads (3 mA)
Standard baud rate	2400 baud
Standard data set	Manufacturer no., energy, volume, flow, power, temperatures (supply, return, difference), operating time, date and time, optional volume water meter inputs, firmware version, software version

Multi-function display

Reading errors are minimised by the concise layout on 3 display levels and the clear symbols for status and alarm messages. The various display levels are selected via a red button. Press the button for app. 3 s to access the next level.



- | | |
|-----------------------------|-------------------------------|
| 1. Operating fault | 8. Units |
| 2. Soiling warning | 9. Pulse value of water meter |
| 3. Temperature | 10. Max. values |
| 4. Calibrated value display | 11. Calculated battery life |
| 5. Flow rate display | 12. Threshold (not occupied) |
| 6. Date/time | 13. Water meter inputs |
| 7. Display level | 14. Main display section |