

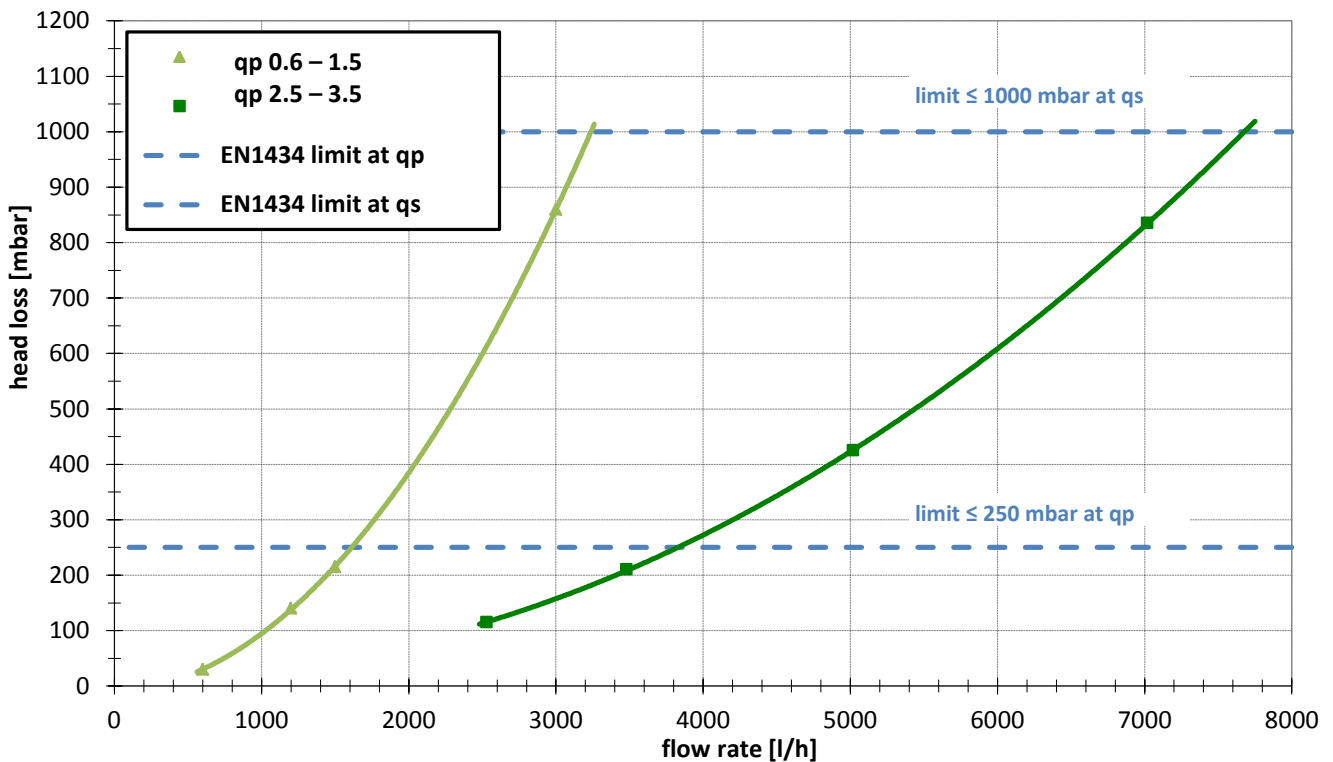
microCLIMA U

Compact ultrasonic thermal energy meter

- Certified to Directive 2004/22/EC on measuring instruments (Annex MI-004)
- Sizes available: DN 15, 20 and 25
- Class 2
- Flow measurement without moving parts
- Designed for heating or heating/cooling applications
- Back flow and air detection
- Low head loss
- Removable calculator (cable length: 85 cm)
- Communication interfaces: M-Bus; M-Bus + 2 pulse inputs; wireless M-bus; wireless M-Bus + 2 pulse inputs; pulse output



HEAD LOSS DIAGRAM



Flow sensor

| | | | | | | |
|---------------------------------------|-------------------|---|------------------|-------------|------------------|------------------|
| Nominal flow rate q_p | m ³ /h | 0.6 | 1.5 | 2.5 | 3.5 | 3.5 |
| Starting flow rate | l/h | 6 | 6 | 12 | 17 | 17 |
| Minimum flow rate q_i | l/h | 12 | 15 | 25 | 35 | 35 |
| Maximum flow rate q_s | m ³ /h | 1.2 | 3.0 | 5 | 7 | 7 |
| Dynamic range q_i/q_p (optional) | | 1:50 | 1:100 (1:125) | 1:100 | 1:100 (1:125) | 1:100 (1:125) |
| Head loss at q_p/q_s | Δp bar | 0.03/0.15 | 0.21/0.87 | 0.115/0.425 | 0.21/0.835 | 0.21/0.835 |
| Nominal pressure | PN bar | 16 | | | | |
| Accuracy class – Directive 2004/22/EC | | classe 2 | | | | |
| Temperature range | °C | 15 ... 90 | | | | |
| Point of installation | | return flow; upon request: forward flow | | | | |
| Mounting position | | horizontal/vertical | | | | |
| Size DN | mm | 15 | 15 | 20 | 20 | 25 |
| External thread | in | G3/4B | G3/4B | G1B | G1B | G1 1/4B |
| Length | mm | 110 | 110 | 130 | 130 | 150 |

Calculator

| | | | | | | |
|--------------------------------|--------------|---|--|--|--|--|
| Temperature range | °C | 1 - 105 | | | | |
| Temperature difference limits | ΔT K | 3 - 90 | | | | |
| Ambient temperature | °C | 5 - 55 | | | | |
| Minimum temperature difference | ΔT K | > 0.5 | | | | |
| Resolution temperature | °C | 0.01 | | | | |
| Measurement frequency at q_p | sec | 4 - 60 | | | | |
| Display | | LCD, 8 digits + special characters | | | | |
| Units | | kWh, MWh, GJ, l, m ³ , m ³ /h, l/h, kW, MW | | | | |
| Interfaces | | optical interface (with M-Bus protocol). Optional: Bus; M-Bus + 2 pulse inputs; wireless M-Bus; wireless M-Bus + 2 pulse inputs; pulse output | | | | |
| Power supply | | 3 V lithium battery | | | | |
| Battery service life | | 10 years + 1 | | | | |
| Data storage | | non-volatile memory; once daily | | | | |
| Billing dates | | 15 monthly values on display, annual billing date selectable; 18 monthly values readable via optical or M-Bus interface | | | | |
| Storage of maximum values | | flow and power | | | | |
| Protection class | | IP54 | | | | |
| CE | | yes | | | | |
| EMC | | EN 1434 | | | | |

Temperature sensors

| | | | | | | |
|-----------------------------|----------|--|--|--|--|--|
| Platinum precision resistor | | Pt1000 | | | | |
| Size | mm | 5; 5.2 | | | | |
| Length of connecting cables | m | 1.5 | | | | |
| Installation | standard | return flow: integrated in flow sensor forward flow: direct in ball valve/TEE | | | | |
| | optional | forward flow: integrated in flow sensor return flow: direct in ball valve/TEE | | | | |

Size

| | | | | | | |
|---------------------------|----|----------|------|------|------|------|
| Calculator housing | mm | 75 x 110 | | | | |
| Pulse cable length | mm | 0.85 | | | | |
| Height from pipe middle | mm | 68 | | | | |
| Weight (standard version) | kg | 0.73 | 0.73 | 0.78 | 0.78 | 0.93 |