

CONTECA™ heat energy meter

7504 series



Submittal Data 03651 NA — Issue Date 10/2018

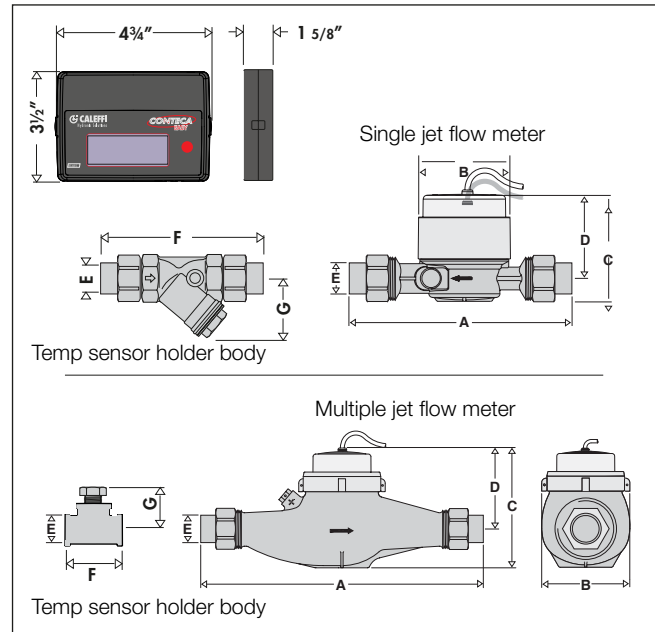
Application

CONTECA™ is a direct heat energy meter designed to measure and record thermal energy usage in residential and commercial buildings, for heating only, cooling only, or both heating and cooling. It features an 8-digit liquid crystal display that enables easy reading of BTU consumed as well as a range of technical data indicating equipment operating status and logged data. Each CONTECA™ includes a heat meter with an electronic calculator and user interface, two temperature sensors, and sensor holder bodies, fittings included. The rotary pulse flow meter comes with the CONTECA™ meter kit. In addition to the two temperature inputs and flow meter input, 4 additional pulse inputs are available for optional equipment monitoring. Data logging is available using the CONTECA™ datalogger via RS-485 connection. The CONTECA™ is easy to install and commission, and is certified to ASTM E3137/E3137M-17 Standard Specification for Heat Meter Instruments by ICC-ES, and Directive 2014/32/EU EN 1434 (MI 004).

The CONTECA™ heat meter has integral RS485 protocol 2-wire communication for remote access and configuration. M-bus protocol is used with the CONTECA™ Datalogger (default). The protocol can be changed to Modbus when using the CONTECA™ heat meter directly with a Modbus BAS or when using the Modbus-to-BACnet gateway for communication to a BACnet BAS. Up to 250 CONTECA™ meters can connect to one CONTECA™ data logger.



Dimensions



Typical Specification

Furnish and install on the plans and described herein, a Caleffi 7504 series CONTECA™ heat energy meter as manufactured by Caleffi. The heat meter must be designed with 8-digit liquid crystal display. The meter must have two temperature inputs, one flow meter input, and 4 additional inputs. Heat meter is certified to ASTM E3137/E3137M-17 Standard Specification for Heat Meter Instruments by ICC-ES, and Directive 2014/32/EU EN 1434 (MI 004). Power supply is 24 VAC 50/60 HZ, power consumption 1 W with data transmission 2-wire RS485. Selectable Modbus or M-bus (fww Datalogger). Pulse inputs Class 1B per EN 1434-2. Ambient temperature range 40°F to 113°F (4°C to 45°C). Environmental rating (protection class) NEMA 3X (IP54). The temperature sensors must be 100 kOhm NTC matched sensors with <0.1°F (0.05°C) sensitivity. Stainless steel thermowell and brass sensor holder body. Maximum working pressure 150 psi (10 bar). The rotary pulse meter must be designed with brass body with sweat, press or NPT male connections, ½", ¾", or 1" single jet turbine flow meter, flow rate 0.25 gpm to 10 gpm; NPT female 1" 1¼" and 1½" multiple jet turbine flow meter, flow rate 0.3 gpm to 45 gpm. Maximum working pressure 235 psi (16 bar), maximum fluid temperature 265°F (130°C). Pulse output class OA-OC in accordance with EN 1434-2. Equipped with lead seals to prevent tampering. Provide with optional Datalogger, code 750450 and, if needed, code NA10520 Modbus-to-BACnet gateway. Each heat energy meter shall be Caleffi model 7504 series or approved equal. (See product instructions for specific installation information.)

| Code | A | B | C | D | ends* | E | F | G | Wt (lb) |
|---------|---------|--------|---------|--------|-------|--------|--------|---------|---------|
| 750449A | 6 7/8" | 3 1/8" | 4 1/4" | 3 1/2" | sweat | 1/2" | 7 1/4" | 2" | 6.2 |
| 750440A | 8 3/8" | | | | mnpt | | 8 3/4" | | |
| 750446A | 7 1/8" | | | | press | | 5 3/4" | | |
| 750459A | 7 3/8" | | | | sweat | 7 3/4" | 7.1 | | |
| 750450A | 7 5/8" | | | | mnpt | 8" | | | |
| 750456A | 7 3/4" | | | | press | 6 1/8" | | | |
| 750469A | 8 5/8" | | | | sweat | 9" | 7.9 | | |
| 750460A | 8 3/8" | | | | mnpt | 8 3/4" | | | |
| 750466A | 8" | | | | press | 6 3/8" | | | |
| 750463A | 12 1/4" | 4" | 5 3/8" | 3 3/4" | fnpt | 1" | 5 1/8" | 2 1/16" | 11.5 |
| 750473A | 12 1/4" | 4" | 5 3/8" | 3 3/4" | fnpt | 1 1/4" | 5 7/8" | 2 3/8" | 12.1 |
| 750483A | 17 1/4" | 5 1/4" | 6 7/16" | 4 5/8" | fnpt | 1 1/2" | 5 5/8" | 2 5/16" | 18.7 |

*end connections are the same for the flowmeter and sensor holder bodies for each code.
ex: code 750449A has union sweat ends on both the flow meter and the sensor holder bodies.

Datalogger, Caleffi code NA7504450, for BTU usage data acquisition and logging. Communication via RS-485 physical layer in M-Bus protocol. Power supply 24 V (dc) - 3 W or 24 V (ac) - 3 W. Integrated web interface. Daily data logging: 10 years. Mounting on a 35 mm DIN rail (EN 60715). 2 Ethernet ports. Reports in .XLS or .CSV format. Maximum number of heat meters connected 250. Ambient temperature range 2°F to 122°F (4 to 50°C).

Modbus-to-BACnet gateway, Caleffi code NA10520, Modbus RS-485 serial output to BACnet IP or MSTP communications.

Technical specifications

Heat meter:

Materials: -Housing & cover: ABS, RAL 9004
 Power supply: 24 VAC, 50/60 Hz, 1W
 Data transmission: 2-wire RS485; selectable Modbus or M-bus (for use with datalogger)
 Ambient temperature: 40 – 113°F (4– 45°C)
 Environmental rating (protection class): NEMA 3S (IP 54)
 Pulse inputs: Class 1B per EN 1434-2
 Certification: ASTM E3137/E3137M-17 by ICC-ES
 Directive 2014/32/EU EN 1434 (MI 004)

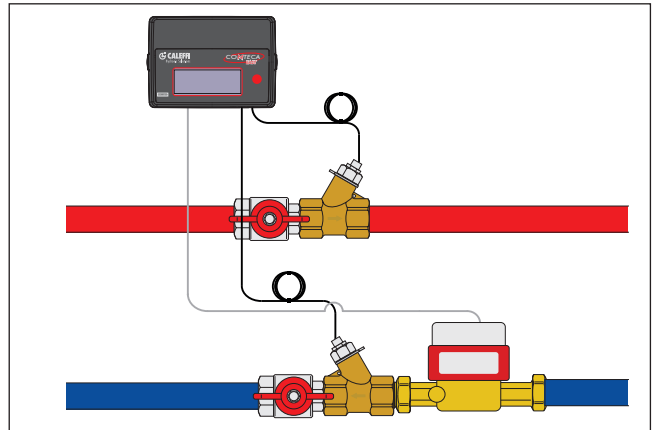
Temperature sensors:

Cable length*: 26¼ ft. (8 m)
 Sensor type: 100 kOhm NTC matched
 Temperature sensitivity: < 0.1°F (0.05°C)
 Temperature sensor thermowell: Stainless steel
 Sensor holder body: Brass
 Max. working pressure: 150 psi (10 bar)

*Extra length of the 26¼ ft. cable must be carefully coiled and mounted in a safe place. Do not cut or splice.

Flow meters:

Body material: Brass
 Pulse output: class OA-OC in accordance with EN 1434-2
 Body threads: ISO 228 male straight
 Piping connections: Dual unions, tailpieces NPT, sweat, press
 Max. working pressure: 235 psi (16 bar)

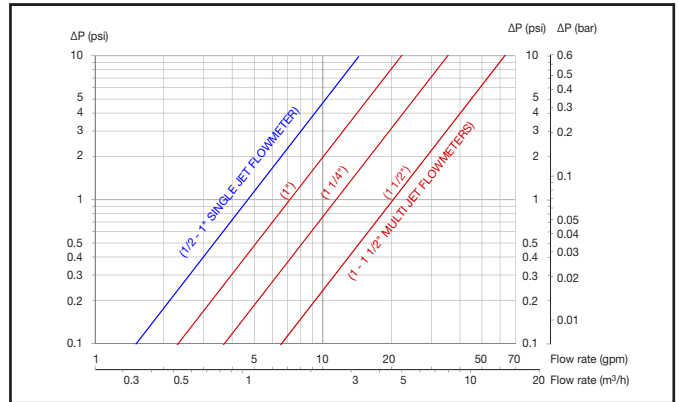


Flow rates

| Code | Size | Flow meter type | Liters per pulse | Minimum Flow rate (gpm) | Maximum flow rate (gpm) |
|---------|------|-----------------|------------------|-------------------------|-------------------------|
| 75044xA | ½" | Single jet | 1 (.26 gal) | 0.25 | 10 |
| 75045xA | ¾" | | | | |
| 75046xA | 1" | | | | |
| 750463A | 1" | Multiple jet | 2.5 (.66 gal) | 0.3 | 15 |
| 750473A | 1¼" | | | | |
| 750483A | 1½" | | | | |

Flow rate range for combined flow meter and 2 sensor holder bodies.

Hydraulic characteristics



| Cv | Single jet flow meter | | | Multiple jet flow meter | | |
|----|-----------------------|----|----|-------------------------|------|------|
| | ½" | ¾" | 1" | 1" | 1 ¼" | 1 ½" |
| | | | | 6.8 | 11.7 | 19.6 |

Flow rate range for combined flow meter and 2 sensor holder bodies.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system.

Job name _____
 Job location _____
 Engineer _____
 Mechanical contractor _____
 Contractor's P.O. No. _____
 Representative _____

Size _____
 Quantity _____
 Approval _____
 Service _____
 Tag No. _____
 Notes _____