



# EU Type Examination Certificate No CH-MI004-13019-06\_EN

## Translation

<i>Applicant</i>	<b>Sontex SA</b> Rue de la Gare 27 2605 Sonceboz-Sombeval Switzerland
<i>Requirements</i>	Ordinance of 15 February 2006 on Measuring Instruments (SR 941.210) and Ordinance of the FDJP of 19 March 2006 on Heat Meters (SR 941.231)  Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (MID) and the instrument-specific annex VI (MI-004)
<i>Conformity standards:</i>	EN 1434:2007; EN 1434:2015 OIML R75:2002
<i>Type of instrument</i>	<b>Compact heat meter</b>
<i>Type designation</i>	<b>Superstatic 749/ Superstatic 789</b>
<i>Accuracy class(es)</i>	2 or 3 (according to the EN1434)
<i>Characteristics</i>	$q_p$ : 0.6 ... 2.5 m <sup>3</sup> /h $q_p/q_i$ : 100 Nominal pressure: 1.6 MPa Nominal diameter: DN15 to DN20
<i>Certificate valid until</i>	30 July 2023

3003 Berne-Wabern, 30 October 2018

*Approved by* Gulian Couvreur, Head of sector  
METAS-Cert



Note: This certificate is a translation. In case of equivocality, the content from the original certificate is decisive

## 1 Name and type of instrument

Compact heat meter, composed of a flow sensor, a calculator and a temperature sensor pair building a unit.

Type: **Superstatic 749/ Superstatic 789**

## 2 Type description

The Superstatic 749 and Superstatic 789 are battery or M-Bus supplied compact heat meter composed of a flow sensor, a calculator and a temperature sensor pair building a unit.

The Superstatic 749 as well as the Superstatic 789 can be used as heat meters, cooling meters or as combined cold/ heat meters.

### 2.1 Construction

The Superstatic 749/ 789 (Figure 1 and Figure 2) is a battery or M-Bus supplied compact heat meter composed of a flow sensor, a calculator and a temperature sensor pair building a unit. The compact heat meter consists of a static fluidic oscillation flow sensor for the flow rates  $q_p$  0.6 m<sup>3</sup>/h (Superstatic 749),  $q_p$  1.5 m<sup>3</sup>/h and  $q_p$  2.5 m<sup>3</sup>/h (Superstatic 749/ 789) and for the temperature range from 5° C to 90° C. The calculator is removable from the flow sensor.

The flow sensor has in its downstream outlet a socket for a directly immersing temperature sensor. The temperature sensors are designated for the optional mounting at the flow or return of a heat-exchange circuit system, preferable for a symmetric mounting of the temperature sensor pair.

Optionally, conformity assessed pockets can be used with the temperature sensors (see table below).

Optionally, the heat meter can also be used for non-symmetric installation circumstances of the temperature sensor pair. In this case, the following rated operating conditions have to be respected:  $\Delta T_{min} \geq 6$  K with  $q \leq 100$  l/h. In this version, one temperature sensor is always directly immersing mounted in the flow sensor.

#### Pockets

Thread size	Diameter of the temperature sensor's probe			
	5.0 mm x 31 mm	5.2 mm x 31 mm	6.0 mm x 31 mm	3.4 mm x 56 mm
M10x1 mm	0460P129 (0460A212)	0460P146 (0460A215)		
G3/8"	0460P013 (0460A213)	0460P145 (0460A216)	0460P012 (0460A202)	
G1/2"	0460P158 (0460A214)	0460P201 (0460A217)	0460P011 (0460A206)	
M10x1 mm Allmess			Original Allmess	

0460Axxx: Manufacturer's Article number

Remark: The sensor «3.4 mm x 56 mm» can't be installed using a pocket.

## **2.2 Measurement unit**

The flow sensor is available as static fluidic oscillation flow sensor. The temperature sensor pair is available as Pt1000.

## **2.3 Indicating devices**

Accumulated energy, accumulated volume, flow rate as well as the flow and return temperatures are indicated by the calculator.

## **2.4 Measurement value processing**

The pulses emitted by the piezoelectric scanning circuitry are, based on the stimulus of the fluidic oscillation in the flow sensor, multiplied by the computational unit under software control with the computed temperature difference from the forward and reverse flows as well as with the computed thermal coefficient and added up for presentation as a quantity of heat on the LC display.

## **2.5 Software / Firmware**

The approved firmware versions are:

<b>Firmware version</b>	<b>CRC16-checksum</b>	<b>Validity</b>	<b>Rev. cert.<sup>1</sup></b>
1.1.x	0xC704	Yes	00
	0xEBFD	Yes	00
	0xF326	Yes	00
	0xA8C3	Yes	00
1.2.x	0xD279	Yes	01
	0xB295	Yes	01
1.3.x	0xF7D3	Yes	02
1.4.x	0xA4CF	Yes	03
1.5.x	0xE732	Yes	04
1.6.x	0x679F	Yes	05
1.7.x	0x510A	Yes	06

The firmware version can be read on the display (without .x, according to the instructions in the user manual) or from the M-Bus telegram. The checksum is made up of the metrology and application part of the whole firmware. The checksum (CRC16) can be read out with the parameterization software Prog7x9.

## **2.6 Optional equipment and functions subjected to MID requirements**

None

---

<sup>1</sup> Revision number of the type examination certificate

### 3 Technical data

#### 3.1 Rated operating conditions

Nominal pressure MAP	(MPa)	1.6
Accuracy class		2 or 3
Environmental class		C: M1, E1, T <sub>Amb</sub> = 5 °C ... 55 °C
Sensitivity to flow profile		U3/D0 Installation length 110 mm U0/D0 Installation lengths 130 mm and 190 mm
Medium		Water
Temperature range, flow sensor	(°C)	5 ... 90
Temperature range	(°C)	0 ... 110, display resolution 0.1
Temperature difference	(K)	3 ... 75, display resolution 0.01
Degree of protection of enclosure		IP 65

#### 3.2 Technical data

q <sub>p</sub>	m <sup>3</sup> /h	0.6	1.5	1.5	1.5	2.5	2.5
Superstatic...		749	749/789	749/789	749	749/789	749
q <sub>i</sub>	m <sup>3</sup> /h	0.006	0.015	0.015	0.015	0.025	0.025
q <sub>s</sub>	m <sup>3</sup> /h	1.2	3.0	3.0	3.0	5.0	5.0
q <sub>p</sub> /q <sub>i</sub>		100	100	100	100	100	100
Pressure loss at q <sub>p</sub>	(MPa)	0.019	0.020	0.020	0.020	0.019/ 0.020	0.019
Meter thread	Inch	¾	¾	1	1	1	1
Nominal widths	DN	15	15	20	20	20	20
Installation lengths	mm	110	110	130	190	130	190

#### 3.3 Technical documents

All of the documents and drawings used for the conformity assessment have been submitted to METAS-Cert.

### 4 Integrated equipment and functions not subject to MID requirements

Optional, no interacting interfaces:

- M-Bus Module, with M-Bus supply
- Radio Module Supercom
- Wireless M-Bus (OMS)
- 2 pulse outputs
- 2 pulse inputs

A hot water and a cold water meter can be readout or remote readout with the two additional, optional pulse inputs via the heat meter.

## **5 Conditions for the market introduction**

The compact heat meter shall be marked with the following information:

- Name of the product
- Brand or name of the manufacturer
- Year of manufacture and serial number
- CE and metrology marking according to the directive 2014/32/EU, article 20
- Type examination certificate number (CH-MI004-13019)
- Temperature limits
- Temperature difference limits
- Flow limit
- Accuracy class
- Indication of flow direction
- Max. operating pressure
- Environmental class
- Installation location for the flow sensor: flow or return

## **6 Requirements for production, commissioning and utilization**

### **6.1 Production requirements**

The compact heat meter is tested at the end of the production in accordance with the EN 1434-5:2015.

#### **6.1.1 Information accompanying the heat meter**

The manufacturer undertakes to provide information and instructions for use (operating instructions) with the devices placed on the market as this allows the users to connect the measurement device safely and according to the intended purpose.

### **6.2 Commissioning requirements**

See the assembly and operating instructions.

The installation of inlet and outlet sections is defined in chapter 3.1.

Installation length 110 mm:

At the installation location, a straight inlet section of 3D is required; no outlet section is required.

Installation length 130 mm and 190 mm:

At the installation location, a straight inlet section and an outlet section are not required.

Minimal operating pressure 0.8 bar at  $q_p$  and 50°C to avoid cavitation.

### **6.3 Requirements for use**

See the assembly and operating instructions.

## **7 Control of devices in operation**

### **7.1 Testing equipment**

The test equipment must satisfy the test requirements in accordance with the EN 1434-5:2015.

## 7.2 Identification

The type designation is shown on the type plate (Figure 5).

## 8 Sealing

The flow sensor and the temperature sensors (Figure 3) as well as the calculator (Figure 4) are secured with stickers.

## 9 EC conformity markings and descriptive plate

The name-plate (Figure 5) must be visible on the compact heat meter with the listed information in chapter 0.

The CE marking and supplementary metrology marking (together with the CE marking, this shows conformity with the fundamental requirements of the Directive 2014/32/EU) must both be directly inscribed on the compact heat meter (Figure 5).

The number of the Type Examination Certificate on the descriptive plate can be written without the revision number as follows: **CH-MI004-13019**

## 10 Certificate history

Version	Date	Description
CH-MI004-13019-00_e	31 July 2013	- Initial type examination certificate
CH-MI004-13019-01_EN	26 September 2013	- qp 0.6 m <sup>3</sup> /h
CH-MI004-13019-02_EN	17 October 2014	- New temperature sensors (6.0 x 31 mm, 3.4 x 56 mm); Type from temperature sensor 5.2 x 31 mm corrected in table
CH-MI004-13019-03_EN	9 April 2015	- Added qp = 2.5 m <sup>3</sup> /h
CH-MI004-13019-04_EN	26 May 2015	- Added Superstatic 789
CH-MI004-13019-05_EN	7 February 2017	- New requirements according to the directive 2014/32/EU - Modifications to hydraulic base and internal support plate - New pocket 5.2 x 31 mm, G1/2"
CH-MI004-13019-06_EN	30 October 2018	- New Firmware 1.7.x

11 Pictures and drawings



Figure 1 – Compact heat meter SUPERTATIC 749



Figure 2 – Compact heat meter SUPERSTATIC 789

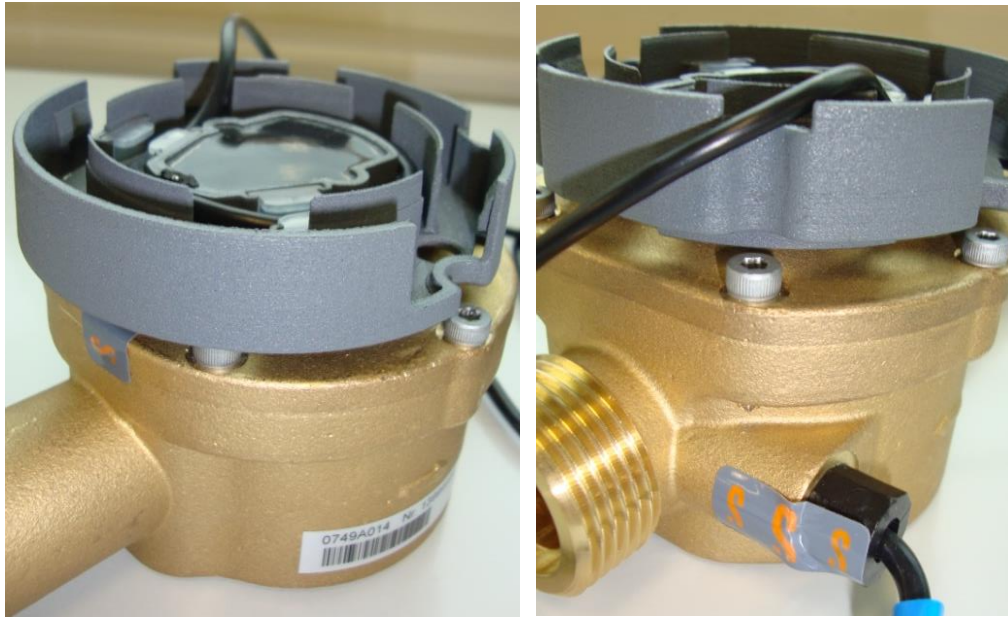


Figure 3 – Flow sensor and temperature sensors are secured with stickers



Figure 4 – Securing of the calculator with a sticker



0749RM111M21ZZZ

142999999 2016  
**Superstatic 749**  
Sontex SA Gare 27  
2605 Sonceboz Swiss

Wärmezähler  
Einbau → LCD

Class C / M1 / E1

PN/PS: 16 qp: 1.5m<sup>3</sup>/h  
DN15 qs: 3.0m<sup>3</sup>/h  
θq: 5...90°C qi: 0.015m<sup>3</sup>/h  
Δθ: 3..75K  
θ: 0...110°C EN1434: Classe 2



  1259

CH-MI004-13019

Figure 5 – Example of a descriptive plate