

# Direct heat meter Conteca Solar - M-bus Transmission

75525 series

**CALEFFI  
SOLAR**



BSI EN ISO 9001:2000  
Cert. n° FM 21654



UNI EN ISO 9001:2000  
Cert. n° 0003



01146/08 GB



## Function

Conteca Solar is a **direct heat energy** meter especially suited for measuring heat energy recovered from a solar source used for an alternative management of the allocation of energy expenditures.

The device comprises an electronic calculator unit, a flow rate volume meter and two temperature probes. The Conteca Solar meter is extremely simple to install and needs no special maintenance.

The Conteca Solar flow rate meter is the turbine type. The turbine speed is measured by means of a high-resistance protected magnetic joint. Thanks to the mechanism being in a vacuum there is no condensation.

The mechanism block cap, made of **non-magnetic** material, prevents all attempted tampering. The electronic technology and the materials used enable **precise and reliable measurements**.

The temperature probes are high-precision Pt 100 that are easy to seal for greater protection against tampering. The cables connecting the flow and return probes to the calculator unit are 1,9 m long.

The Conteca Solar meter is equipped with an **8-digit liquid crystal display** that can be turned on with a button as it is normally off in order to save battery charge. This display enables easy reading of consumption and a range of technical data to permit evaluation of the operating status of the device and log the data.

**The Conteca Solar meter** is fitted for **centralised teletransmission** (max 250 modules) in M-Bus mode.



## Product range

75525 series	Heat meter	Size 1/2" - 3/4" - 1" with union
Code 755000	Controller	
Code 755055/56	M-Bus interface - Teletransmission interface	
7558 series	Additional options	

## Technical specifications

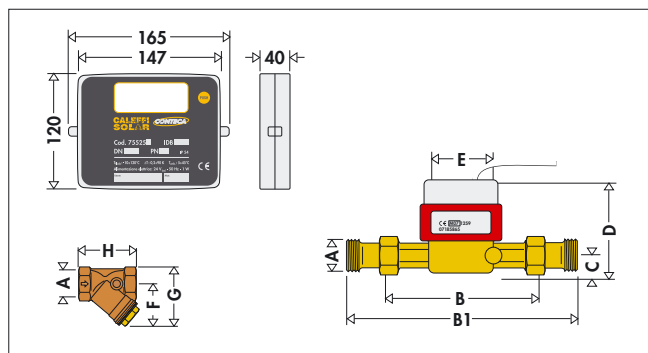
### Performance:

Electric supply:	24 V (ac) - 50 Hz - 1 W
Long life storage battery:	5 years
Data transmission:	using M Bus protocol EN 1434
Antitamper protection	
Conformity to standards:	EN 1434
Max. percentage of glycol:	50%

## Technical data

<b>Temperature probes</b>				
Flow probe length		m		1,9
Return probe length		m		1,9
Probe type				Pt 100
Temperature range limits		°C		5–120
Temperature difference limits	$\Delta T$	K		0–115
Measurement sensitivity		°C		$\geq 0,05$
<b>Volumetric part</b>				
Dimensions/Connection				1/2"–1"
Body				brass
Type of hydraulic connection				<b>male with union ISO 228</b>
Nominal flow rate	$Q_p$	l/h		see table 1
Lower measurement range	$Q_i$	l/h		see table 1
Upper measurement range	$Q_{max}$	l/h		see table 1
Nominal pressure	PN	bar		threaded PN 10
Max. medium temperature		°C		120
Installation				normally horizontal
Pulse output				class OA-OC according to EN 1434-2
<b>Microprocessor calculator unit</b>				
Metrological specifications				<b>in conformity with EN 1434-1</b>
Centralised transmission				in M-Bus mode
Ambient temperature range limits		°C		5–45
Ambient classification				MID 2004/22/CE E1 - M1
Heat consumption indicator		kWh		8 digit display
Electric supply:	- (without centralisation)			Incorporated battery, 5 year life
	- (with centralisation)			24V (ac) - 1W - 50 Hz
Protection class				according to DIN 40050: IP 54
Pulse inputs				class IB according to EN 1434-2

## Dimensions



Code	A	B	B1	C	D	E	F	G	H
755254	1/2"	110	190	18	96	80	44	59	59
755255	3/4"	130	230	21	96	80	51	69	69
755256	1"	260	378	45	185	102	60	82	87

**TAB. 1 - Flow rate range (m<sup>3</sup>/h) - Connections from 1/2" to 1":**

Code	Meas. type	$Q_i$	$Q_p$	$Q_{max}$
755254	Single jet	0,12	1,5	1,5
755255	Single jet	0,20	2,5	2,5
755256	Multi jet	0,35	3,5	3,5

The Conteca Solar heat meter is supplied complete with accessories for installation, positioning of the probes and subsequent sealing. Each Conteca Solar meter has n. 2 Y pockets (the flow pocket is fitted with a mesh strainer).

## Guidelines for first installation

It is a good rule to have straight sections of piping immediately upstream and downstream from the meter.

Length upstream  $\geq 4$  diameters.

Length downstream  $\geq 2$  diameters.

It is a good rule to have **shut-off valves** upstream and downstream from the meter in order to facilitate installation and maintenance, if required.

In order to protect the meter, **a strainer is fitted inside the temperature flow pocket.**

After installation, it is a good rule to **wash the pipes and carry out a pressure test.**

After flushing and before securing the temperature probe, **it is a good rule to check the state of clogging of the mesh strainer.**

After installing the hydraulic part you can install the electric/electronic parts.

The default percentage of glycol set is 30%. If the percentage to be used is not 30%, the actual percentage must be notified when ordering.

## Application diagram

**Normally** the hydraulic installation of the flow-rate meter is to be done on the **return** pipe.

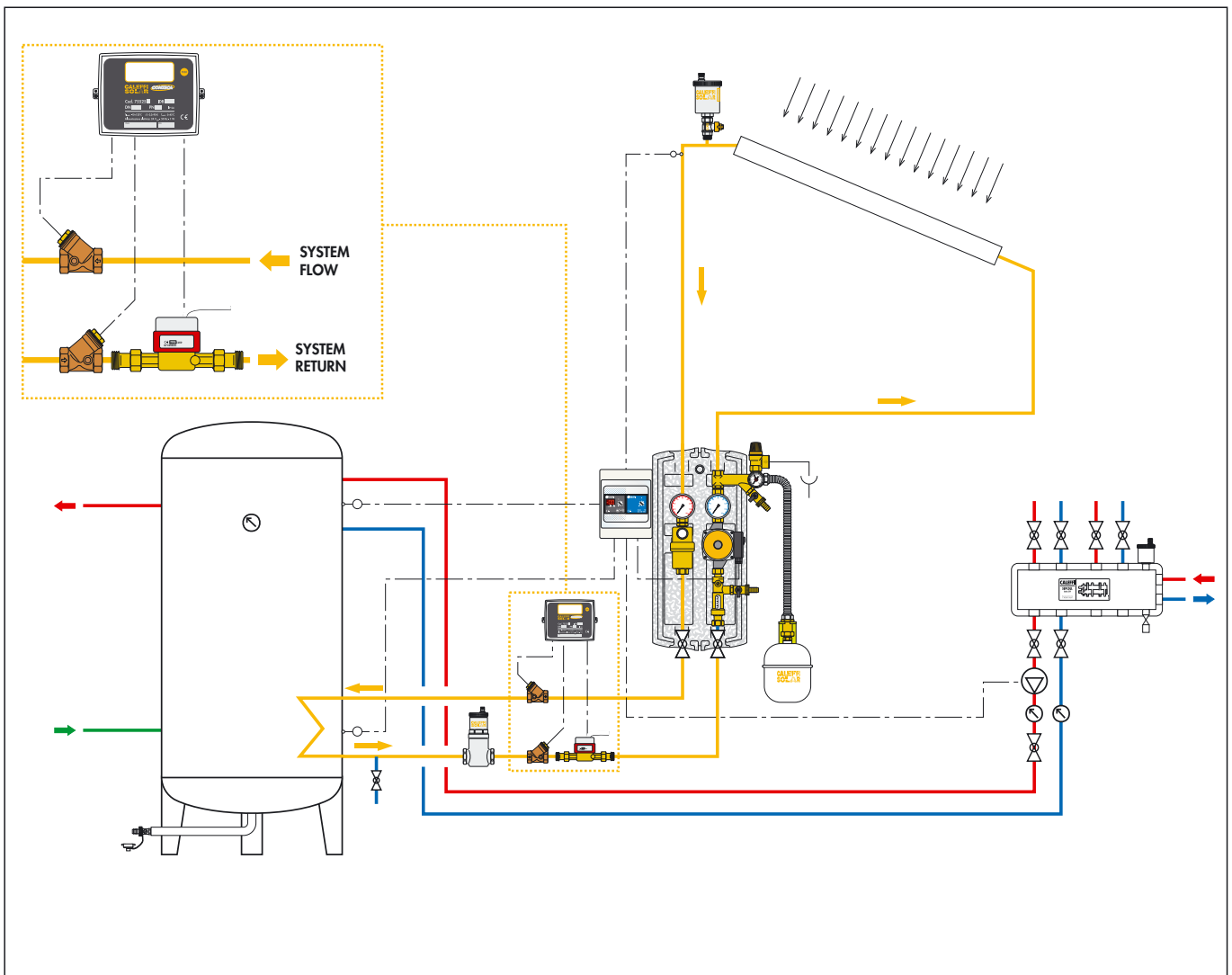
- The hydraulic diagrams given below show:

a) the **positioning of the meter** so that it is at rest when there is no service.

The flow-rate meter **must preferably be installed** in a horizontal position with the turbine axis vertical and **respecting** the direction of flow indicated by the arrow on the body.

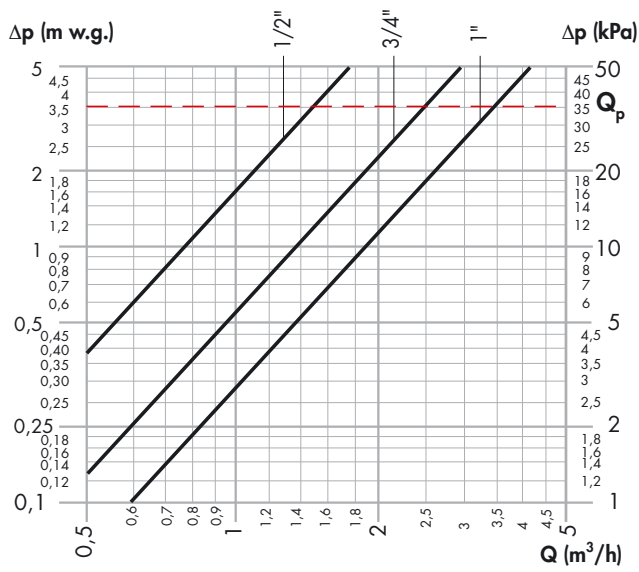
b) **the positioning of the probes**

The temperature probes (by means of the pocket) must be positioned on the corresponding flow/return pipes. The corresponding flow and return pipes **are the ones involved with the same flow rate** when the flow has started.



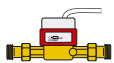
## Hydraulic characteristics

### Volume meter + pockets for probe



	1/2"	3/4"	1"
<b>Kv</b>	2,5	4,2	5,9

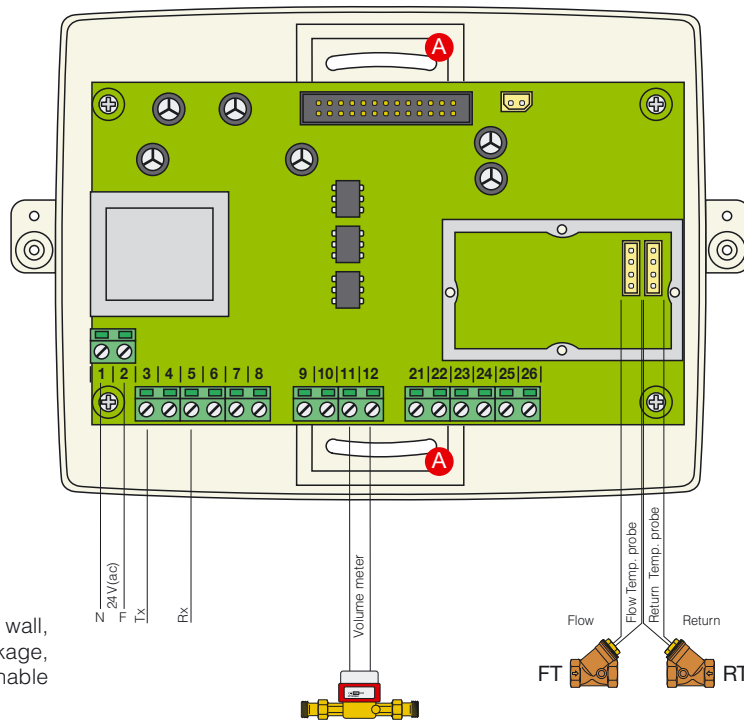
## Conteca Solar meter electrical connections



Cooling/Heating mass meter

FT Flow temperature probe

RT Return temperature probe



For mounting in a box or directly on a wall, use the screws provided in the package, fixing them in the curved slots that enable levelling the device correctly ( **A** )

**• Data centralisation**

In the case of centralised data transmission via bus, the following connection plan must necessarily be carried out:

- 1** - **2** Centralised power supply 24 V (ac)
- 3** - **5** Transmission bus
- 3 Tx** (Transmission)
- 5 Rx** (Reception)

For the transmission bus, use shieldless cable 2 x 1 mm<sup>2</sup> type FROR 450/750 2x1 CEI 20-22 I I IMQ (our code **755855/N**).

**• Energy pulse outputs, code. 755881**

- 21** - **23** Remote thermie totalizer output (kWh) (Type OC)

These outputs can be connected to our code 755890 (remote energy totalizer) or a general supervisor.

Output specifications:

1 IMP = 1 kWh - open collector contact  
Pulse duration: 120 msec

**Notes:** - The heat meter is equipped with a storage battery (life 5 years).

- With **centralised transmission it is necessary and essential** to have a power supply of 24 V (ac) - 50 Hz - 1 W. To prevent tampering on the device, **this line must be centralised** and not under the direct control of the user.

- Each 75525 series device is supplied with a kit of lead seals and wire to allow sealing of both the temperature probes and the plastic box containing the electronic components.

- Help the cables to pass through by breaking and shaping the plastic partition in the cable fairlead.

The basic function of the partition is to protect the electronic card from dust and from any spray of water.

**User information cycle**

The heat meter is equipped with a liquid crystal display. The display is activated by pressing the button on the front . By repeatedly pressing the button briefly it is possible to scroll through the various information windows. In order to have a longer battery life, the display is switched off 30 s after last pressing the sensor button.

<b>Heating - Energy (Thermie)</b>		←
<b>Cooling - Energy (Refrigeration units) (Not active)</b>		↑
<b>Medium volume</b>		↑
<b>1st supplementary consumption</b>		↑
<b>Flow rate</b>		↑
<b>Power</b>		↑
<b>Flow temperature</b>		↑
<b>Return temperature</b>		↑
<b>Temperature difference</b>		↑
<b>Bus network address</b>		↑
<b>Number of openings in the ABS shell (Antitamper system)</b>		↑
<b>Check Sum</b>		↑
<b>Segment test</b>		↑

**ELECTRONIC OPTIONS**

**755881 Pulse output**

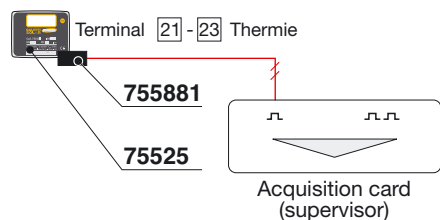
The pulse output allows energy data to be transferred to a generic data acquisition device.

**The pulse weighs 1 kWh.**

The pulse output with no potential is **open collector** with pulse time 120 ms - Vmax 24 V (ac).

Code

**755881** Single pulse output - THERMIE



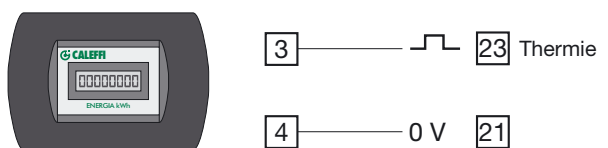
**755890 Remote energy totalizer**

Electronic 8 digit LCD totalizer equipped with cover plate for **three-slot wall-mounting** electric box.

Lithium battery: life 8 years - max frequency 20 Hz

Suitable for pulse outputs code 755881.

Cable length (2x1 mm<sup>2</sup>) not supplied by us: max 150 m.



## SPECIFICATION SUMMARIES

### **75525 series**

CONTECA SOLAR direct dynamic heat meter for use in solar heating systems with the following characteristics: volume meter for hot water **with magnetic joint** (Maximum temperature 120°C) with pulse output; Pt100 temperature probe; data visualised on 8 digit display; temperature range 5–120°C; protection class IP 54; transmission via **TWO-WAY** bus according to M-bus mode; conformity to EN 1434; electric supply by battery 24 V (ac) in M-bus transmission mode.

*We reserve the right to make changes and improvements to the products and related data in this publication, at any time and without prior notice.*



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