CONTECA direct heat meter - MID directive - M-bus transmission

7554 series

BS EN ISO 9001:2008 Cert. n° FM 21654
UNI EN ISO 9001:2000 Cert. n° 0003
01111/09 GB

Function

CONTECA is a **direct heat energy meter** especially suited to measuring thermal consumption in residential buildings. Thanks to its double memory register, it is able to keep a record of power in both **heating** and **air-conditioning** modes (option 755810).

The device comprises an electronic calculator unit, a positive displacement flow rate gauge and two temperature probes. The CONTECA meter is very easy to install and hardly requires any maintenance.

The CONTECA meter flow rate gauge is the turbine type. The turbine speed is measured by means of a high-resistance protected magnetic joint. As the mechanism is inside a vacuum there is no condensation. The mechanism block nut, made of **non-magnetic** material, prevents all attempted tampering.
The electronic technology and the materials used offer **precise and reliable measurements**.

The high-precision NTC temperature probes 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 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 minimise battery usage. This display enables easy reading of consumption values as well as a range of technical data to allow appliance operating status evaluation and data logging.

The CONTECA meter is able to acquire three additional pulse inputs and two additional alarm-status digital inputs, and is designed for **centralised remote transmission** (max. 250 modules) in M-Bus mode.

CE

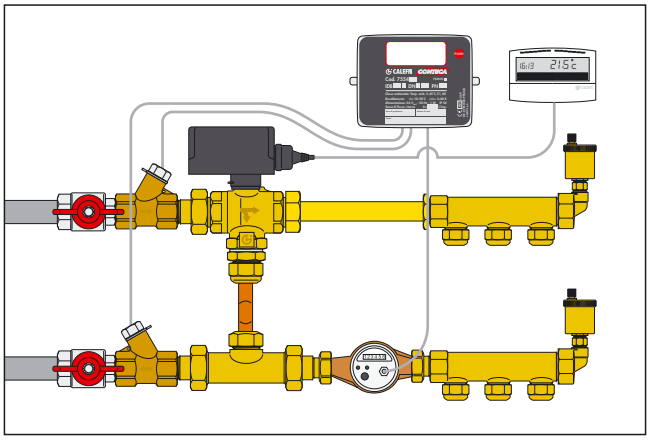
Product range

7554 series	Heat meter	size 1/2" – 2" with union DN 65 – DN 200 flanged
Code 755010	Touch-Screen controller	
Code 755055/56	M-Bus interface - Remote transmission interface	
7558 series	Additional options	

Technical specifications

- Electric supply:	24 V (ac) - 50 Hz - 1 W
- Data transmission:	in accordance with M-Bus method
- Anti-tamper protection	
- Advanced control software	
- Conformity:	directive 2004/22/CE EN1434

Standard installation



Technical data

Temperature probes				
Flow probe length		m	1,9	
Return probe length		m	1,9	
Probe type			NTC	
Temperature range limits		°C	10–90 (THERMIE) - 2–25 (REFRIGERATION UNIT)	
Temperature difference limits		K	3–80 (THERMIE) - 3–20 (REFRIGERATION UNIT)	
Measurement sensitivity		°C	≤ 0,05	
Positive displacement portion				
Dimensions/Connection			1/2"–2"	DN 65–DN 200
Body			Brass	Steel FE510
Type of hydraulic connection			**Male with union ISO 228**	**Flanged PN 16 EN 1092-1**
Nominal pressure	PN	bar	Threaded PN 10	Flanged PN 16
Maximum temperature of the medium		°C	90	
Assembly			normally horizontal	
Pulse output			class OA-OC in accordance with E1434-2	
Permanent flow rate	Q_p	l/h	see table 1 and 2	
Minimum flow rate	Q_i	l/h	see table 1 and 2	
Maximum flow rate	Q_s	l/h	see table 1 and 2	
Microprocessor calculation unit				
Metrological specifications			**in compliance with EN 1434-1 - MID 2004/22/CE**	
Centralised transmission			in M-Bus mode	
Ambient temperature range limits		°C	5–45	
Ambient classification			MID 2004/22/CE E1-M1	
Thermie/refrigeration measurement unit		kWh	8-digit display	
Electric supply			24 V (ac) - 1 W - 50 Hz	
Protection class			In accordance with DIN 40050: IP 54	
Pulse inputs			class IB in accordance with EN 1434-2	

The CONTECA heat meter is supplied with accessories for installation, probe positioning and subsequent lead sealing.

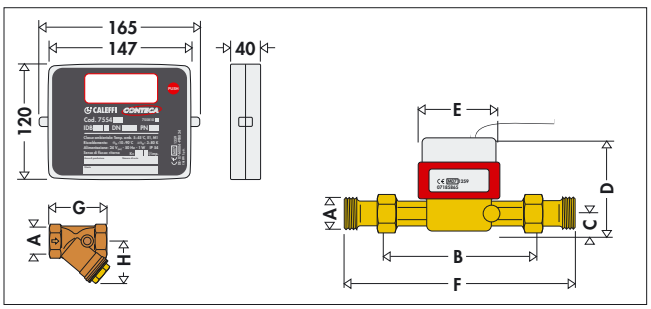
TAB. 1 – Flow rate limits – Connections from 1/2" to 2":
2 Y pockets (the flow pocket is fitted with filter mesh)

Code	Connect.	Meas. type	Q_i (l/h)	Q_p(mc/h)	Q_s (mc/h)
755404	1/2"	Single jet	30	1,5	1,5
755405	3/4"	Single jet	50	2,5	2,5
755406	1"	Multi jet	70	3,5	3,5
755407	1 1/4"	Multi jet	120	6	6
755408	1 1/2"	Multi jet	200	10	10
755409	2"	Multi jet	300	15	15

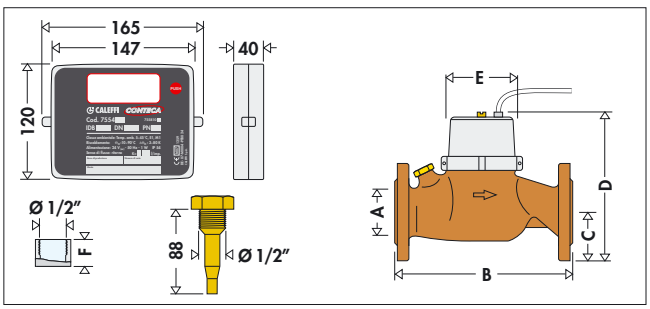
TAB. 2 - Flow rate limits (m^3/h) - Connection from DN 65 to DN 200:
2 sleeves, 1/2", to be welded, with brass pocket and 1 lead sealing kit

Code	Connect.	Meas. type	Q_i (mc/h)	Q_p (mc/h)	Q_s (mc/h)
755410	DN 65	Woltmann	1,0	25	50
755411	DN 80	Woltmann	1,4	45	80
755412	DN 100	Woltmann	2,0	70	120
755413	DN 125	Woltmann	3,5	100	200
755414	DN 150	Woltmann	4,5	150	300
755415	DN 200	Woltmann	8,0	250	500

Dimensions



Code	A	B	C	D	E	F	H	G	Weight (Kg)
755404	1/2"	110	18	108	80	190	44	59	2,8
755405	3/4"	130	18	108	80	226	51	69	3,2
755406	1"	260	43	159	102	358	60	87	5,2
755407	1 1/4"	260	43	159	102	378	73	99	5,5
755408	1 1/2"	300	46	185	136	438	80	109	8,5
755409	2"	300	57	199	166	458	90	126	9,5



Code	A	B	C	D	E	F	Weight (Kg)
755410	DN 65	200	85	205	200	34	12
755411	DN 80	225	95	245	200	34	16
755412	DN 100	250	105	255	225	25	20
755413	DN 125	250	118	278	270	17	23
755414	DN 150	300	135	312	300	17	38
755415	DN 200	350	162	368	375	17	55

Pre-installation guidelines

It is good practice to provide **shut-off valves** upstream and downstream of the meter in order to facilitate installation and maintenance, if required.

Upstream from the flow rate gauge, it is necessary to fit **a filtering device** in order to protect the gauge.
From diameter 1/2" to diameter 2", this filter is already inside the flow temperature pocket.

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

After washing and before installing the temperature probes, **it is wise to check the mesh filter saturation level**.

After completing the hydraulic installation you can install the electric/electronic parts.

When work has been completed, qualified technicians will lead seal the electronic module and the temperature probes.

Hydraulic installation diagrams

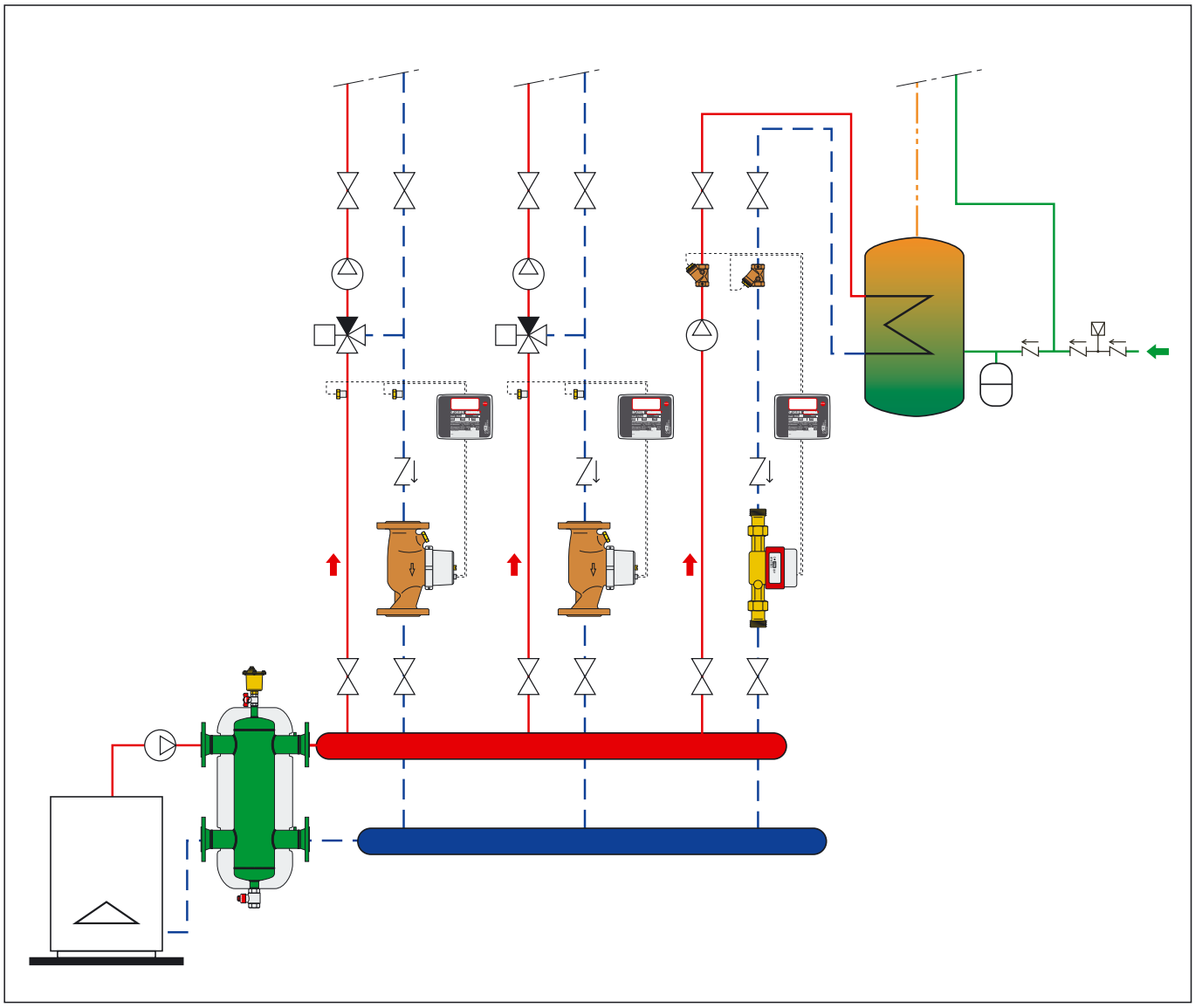
Normally the flow rate gauge should be installed on the **return pipe**.

The hydraulic diagrams given below show:

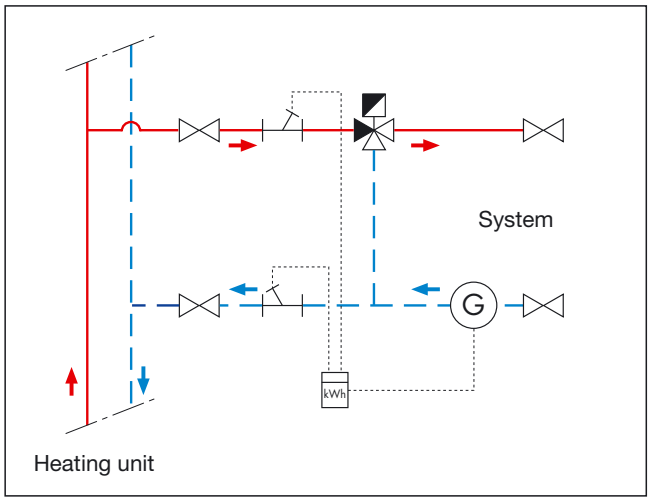
a) **Positioning the gauge**
The flow rate gauge **should preferably be installed** in a horizontal position with the turbine axis vertical, **respecting** the flow direction indicated by the arrow on the body, and so that it is in standby when there is no service.

b) **Positioning the probes**
The temperature probes (by means of the pocket or sleeve according to the DN) must be positioned on the corresponding flow/return pipes. The corresponding flow and return pipes **are understood to be the ones involved with the same flow rate** when the flow has started.

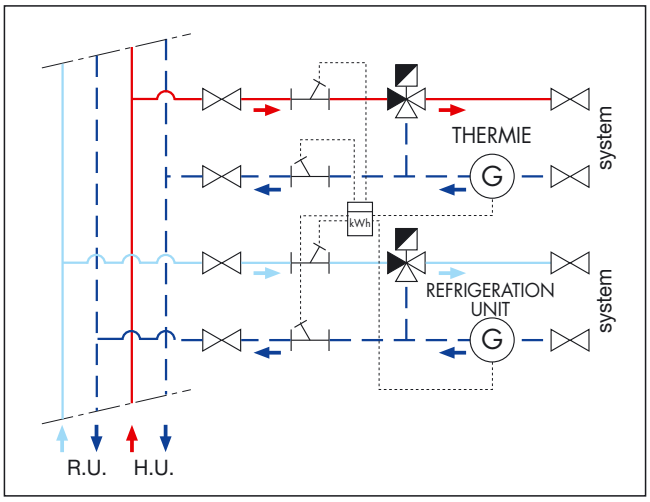
1) Diagram of system with metering on manifold with several stages.



2) Diagram of user circuit - adjustment with 3-way zone valves.



3) Diagram of user circuit in system with 4 pipes.



Maintenance work

Filter cleaning

Sometimes it will be necessary to **clean the filter installed in the flow circuit in a suitable position for the protection of the flow rate gauge**.

By observing the instantaneous flow rate and thermal gradient values (flow rate significantly reduced in relation to the nominal user value and thermal gradient significantly increased), it is easy to work out whether the filter is saturated and then clean it as necessary.

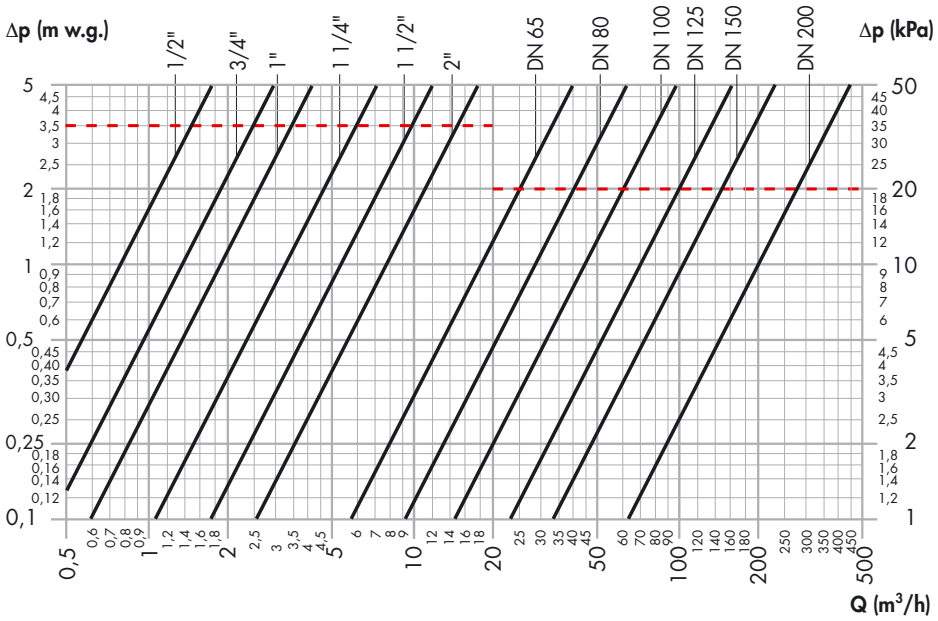
Metering variants (systems with 4 pipes)

The CONTECA system is able, after the software has been activated (see refrigeration unit option code 755810), to keep separate records of the thermie and refrigeration units. The CONTECA system also makes it possible to keep a record of thermie and refrigeration units in a four-pipe distribution system.

For a 7554 series complete meter **with the addition of just** 1 **pulse positive displacement meter** code 75591. of 2 **pockets** code 75590. and of 2 **probes** code 75593. it is possible to take two complete and separate thermie/refrigeration unit measurements.

Hydraulic characteristics

Positive displacement meter + pockets for probe (if threaded connection)



The dotted red line indicates the head loss (ΔP=2 m. w.g.) for threaded connections and (Δp=2 m. w.g.) for flanged connections referring to the permanent flow rate (Q_p).

CONTECA meter electrical connections

Mass meter Thermie/Refrigeration units

HW (domestic hot water) meter

DCW (domestic cold water) meter

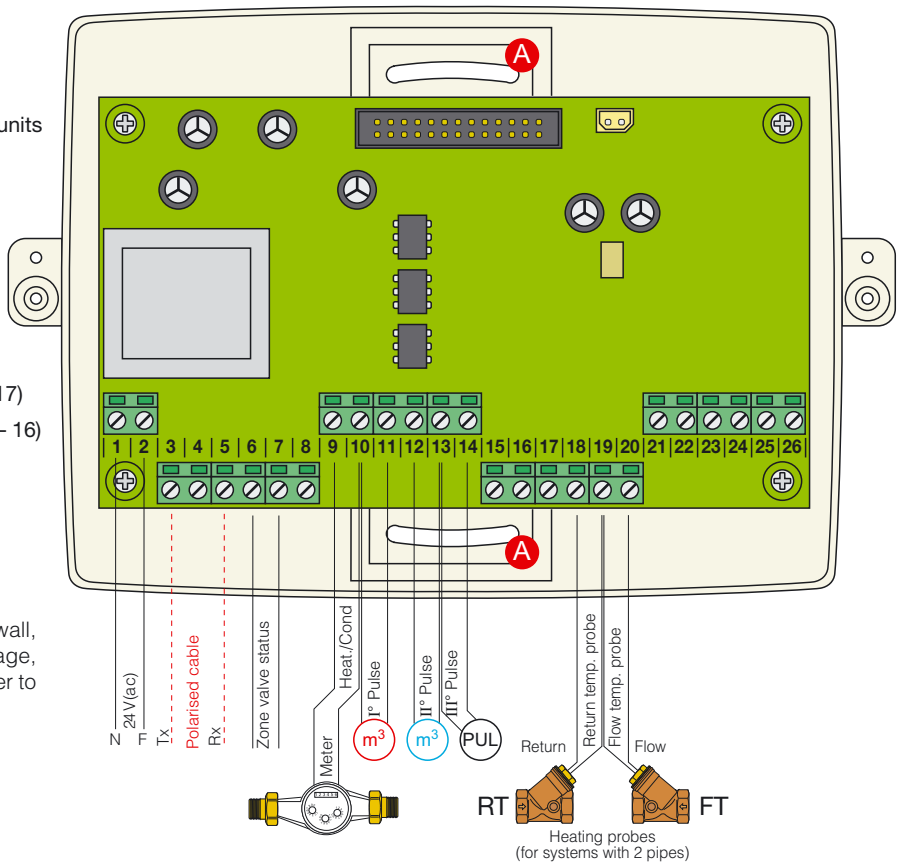
Generic pulse meter:
- gas
- electric
- technological or dual water

FT Flow temperature probe

RT RT Return temperature probe

FT2 2nd flow temperature probe (16 – 17)

RT2 2nd return temperature probe (15 – 16)



When mounting in a box or directly on a wall, use the screws provided in the package, fixing them in the curved slots that in order to level the device correctly (A).

The CONTECA heat meter features various metering configurations referring to two-pipe or four-pipe and aggregated pulse acquisition systems that determine set connection positions.

Two-pipe system

1) Thermie and/or refrigeration unit metering

6 - 7 Zone valve status*
9 - 10 Mass meter
19 - 20 Flow temperature probe (FT)
18 - 19 Return temperature probe (RT)

2) Pulse acquisition (Type OA-OC)

2.1) A single pulse meter

10 - 11 DHW or DCW (Ist pulse consumption)

2.2) Two pulse meters

10 - 11 DHW (Ist pulse consumption)
12 - 13 DCW (IInd pulse consumption)

2.2) Three pulse meters

10 - 11 DHW (Ist pulse consumption)
12 - 13 DCW (IInd pulse consumption)
13 - 14 Generic (IIIrd pulse consumption)

Four-pipe system

1) Thermie and/or refrigeration unit metering

6 - 7 Heating zone valve status*
7 - 8 Cooling zone valve status*
9 - 10 Heating mass meter
10 - 11 Cooling mass meter
19 - 20 Heating flow temperature probe (FT)
18 - 19 Heating return temperature probe (RT)
16 - 17 Cooling flow temperature probe (FT2)
15 - 16 Cooling return temperature probe (RT2)

2) Pulse acquisition

2.1) A single pulse meter

12 - 13 DHW or DCW (Ist pulse consumption)

2.2) Two pulse meters

12 - 13 DHW (Ist pulse consumption)
13 - 14 DCW (IInd pulse consumption)

*connection obligatory for certification

• **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** Polarised transmission bus

3 Tx (Transmission)
5 Rx (Reception)

For the transmission bus, use an unshielded 2 x 1 mm² FROR 450/750 2x1 CEI 20-2211 IMQ cable (**our code 755855/N**).
Note: The transmission polarity must be fully observed.

• **Energy pulse outputs, code 755881/755882**

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

21 - **22** Remote refrigeration unit totaliser output (kWh) (Type OC)

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

Output specifications:
1 IMP = 1 kWh - open collector contact
Pulse duration: 120 ms
Max. frequency = 1 Hz

• **Output relay code 755871**
Relay 8 A - 230 V (ac) - 50 Hz

24 - **25** N/O

25 - **26** N/C

• **Digital inputs**
The digital inputs must have no potential (class IB)

6 - **7** Privileged to connect the ON/OFF status of the zone valve. For the ON times an internal register is increased by the hours of opening.

7 - **8** General status and/or alarm input

Notes: - If **centralised data transmission is used, the 24 V (ac) electricity supply line should be used solely for that purpose** and not directly controlled by the user.

- Each 7554 series device is supplied with an anti-tamper lead sealing kit for the temperature probes and for the plastic electronics box.

- 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 electronics card from dust and jets of water.

Operating information
The accumulated energy amounts are retrieved in a non-volatile memory device (EEPROM) each time the units of measurement are completed (1 kWh) and, at the same time, this increase causes the display to be updated (see User information cycle).

- When the electricity mains is connected (24 V (ac)), the following occurs:
  - display always on
  - metering always enabled
- If the electricity mains is not connected, the following occurs:
  - display off but can be activated for 20 seconds each time the "PUSH" button is pressed.

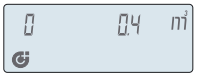
User information cycle

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

Heating - Energy (Thermie)

Cooling - Energy (Refrigeration units)

Carrier medium volume



1st pulse consumption

2nd pulse consumption

3rd pulse consumption

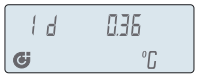
Flow rate

Power

Flow temperature

Return temperature

Thermal gradient



Bus network address

Tamper

CKSUM

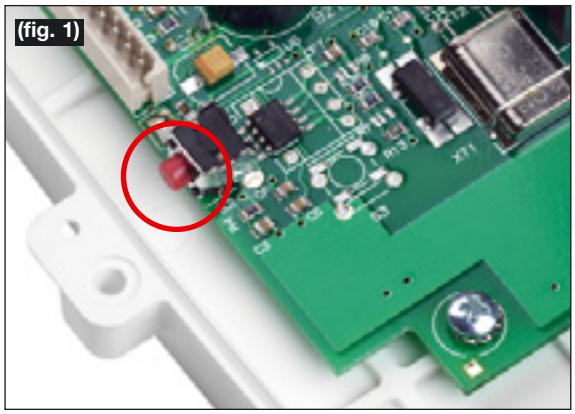
Segment test

Test instructions

The 7554 series calculator is equipped with a quick output test feature, located inside the plastic container.
In order to access this, remove the seal and take out the fixing screws.

The electronics card on the deepest level has a button on the very edge of the right-hand side (fig. 1) which can be used to select the technical menu.

(fig. 1)



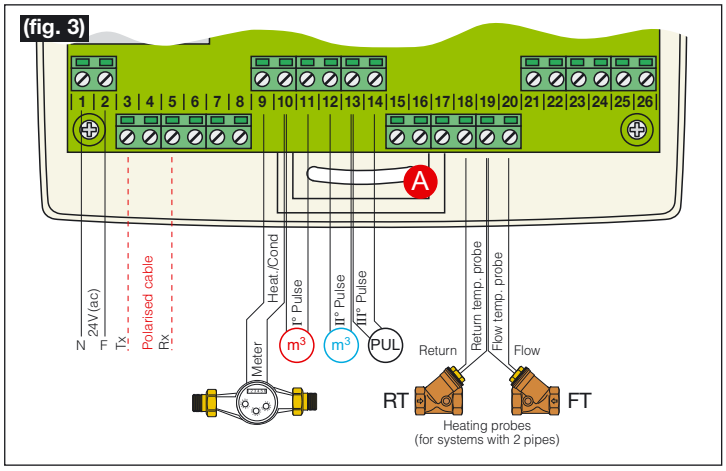
Use the button (push) on the display front panel to scroll through the screens. The unit of measurement for the energy - test is Wh (fig. 2).

(fig. 2)

d - Date (DD.MM.YY)	01.01.07
t - Time (hh.mm)	10.09
E1⁺ - Thermie - Test	10 Wh
E1⁻ - Refrigeration units - Test	10 Wh

The pulse input can be simulated by connecting pins 9 - 10 (fig. 3).
The maximum input frequency is 1 Hz.

(fig. 3)



The probes, which are absolutely inseparable from the electronics circuit, may be placed in a thermostatic bath, observing the temperature range 10–90°C and taking into account a ΔT of between 3–80 K.

The energy increases on the basis of the following equation:

$$\Delta E = \kappa \cdot \Delta T \cdot \Delta V \cdot 0{,}2777698 \cdot 10^{-3}\ [Wh]$$

κ = heat coefficient [kJ/m³K]
ΔT = temperature variation [K]
ΔV = volume variation [l]

$\Delta V = N \cdot P$
where N = number of pulses
P = pulse value for each litre

If the errors, after the metrological checking of the CONTECA meter in the 7554 series, are greater than the max. permitted value, the product should be sent to the Caleffi S.p.A. head office; 28010 Fontaneto d'Agogna; S.R. 229 n° 25; ITALY, for metrological requalification.

Operating specifications

1) The software used to control the metering process, in order to avoid unnecessary action or unwanted metering procedures, operates on the principle that consumption processing depends on a specific flow temperature value (FT).

The **thermie cycle is activated for a FT value >22°C** (factory set).
The **refrigeration unit cycle is activated for a FT value <15°C** (factory set).

The set values may be modified by an authorised technician on request.

2) The software used to control the metering process also operates on the principle that consumption processing depends on **the presence of a minimum temperature difference** in order to further safeguard against unnecessary measurements or minimal unwanted metering deriving from natural dispersion. At the time of factory setting, **a dead band of 0,4 K** (factory set) is therefore defined.

3) The software used to control the metering process also works on the principle that **the flow rate gauge is installed on the return pipe**. Authorised technicians can, on request, adapt the configuration set so as to position the gauge on the flow pipe.

DATA CENTRALISATION

Architecture of centralisation

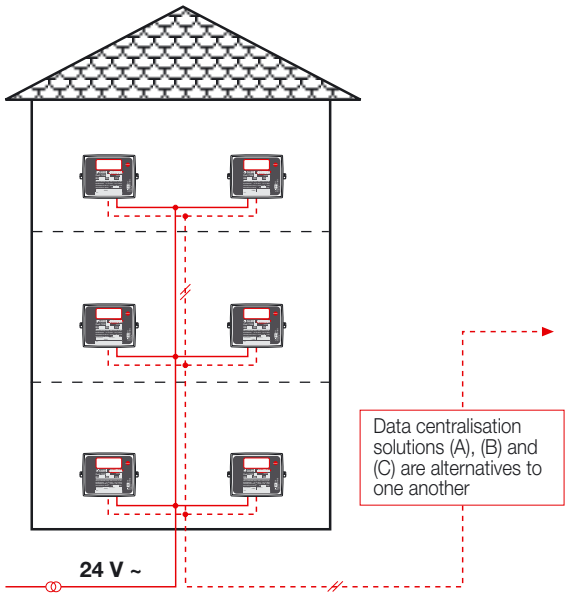
- It is understood that every individual may have a specific idea relating to the complexity of the system and personal expectations.

- It is also understood, for this very reason, that in general there is no divine law governing the drafting of a particular architecture.
  It is therefore true to say that an increase in the number of users, combined with the application of a centralised system, will necessarily increase the complexity of this system.
  In order to distinguish between a “normal” system and a “complex” system, you could argue that a centralised system with over 25 users could be a “complex” system which, for many obvious management-related reasons, practically requires continuous monitoring.
  Therefore, if the distinction made can, in principle, be perceived as correct, you can establish the following:

- WORKS for a NORMAL SYSTEM
  - Metering system
  - Laying down central power supply
  - Laying down transmission bus (code 755855/N)
  - Using FAST INTERFACE (code 755055) alternatively:
  - Using FAST/REMOTE INTERFACE (code 755056)
  - Using modem (code 755845 - 755846)

- WORKS for COMPLEX SYSTEMS (25 users or more)
  - Metering system
  - Laying down central power supply
  - Laying down transmission bus (code 755855/N)
  - Using CONTECA controller (code 755010)
  - Using GSM modem (code 755846)
  - Using data breakdown software (code 755830)

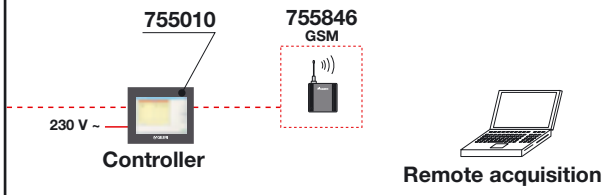
  and as an option
  - Individual user control (code 755871)



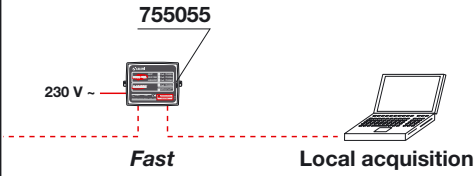
❶ ---- Bus transmission line 2-way x 1 mm² (755855/N)

❷ —— 24 V ~ centralised electric supply line

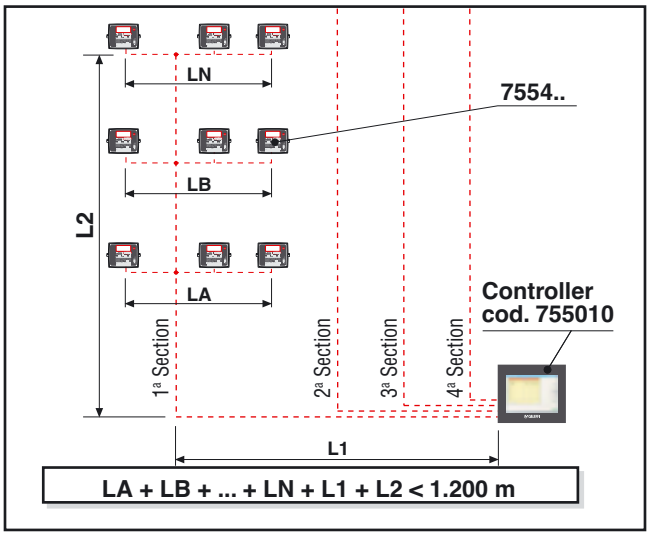
(A) Controller (max no. of 250 users)



(B) Interface Fast (max no. of 30 users)



N.B.:
The transmission bus code 755855/N is a 2-way device (section 2 x 1 mm²). The controller allows a **maximum of 250 users**. The laying methods are in accordance with tree distribution (star). The **maximum length** of each individual section is **1200 m**.
It is possible to lay up to a **maximum of 4 separate sections**, using code 755005.



7550 CONTECA controller

- Electric supply: 230 V (ac) ±10% - 50 Hz - 60 W.
- Ambient conditions 10–35°C with no dust.
- **Maximum number of users: 250.**

Includes:
- 1 touch-screen CPU
- 1 wall-mounting bracket

The controller has the following ferratures:
- 1 touch-screen LCD monitor for viewing consumption and user data.
- 1 RS232 port
- 1 RS485 port
- 2 USB ports
- 1 LAN port

The function of the controller is to acquire, via bus, all the totalised values of the individual users (thermie / refrigeration units / mass / hours of opening of the zone valve), consumer operating status (ON/OFF), totalised values from the additional pulse meters (domestic cold/hot water) and operational diagnostics.
All the above-described totalised values are recorded on a daily basis in log files that are useful for consumption analysis and cost breakdown. The remote transmission and print software for consumption data is supplied with the product.

755845 external 56 K analogue modem

External 56K analogue modem includes:
- 230 V (ac) - 50 Hz - 10 W power supply unit
- Telephone cable
- Serial cable
- Quick start guide for the installation of the drivers with CD-ROMs.
- RS232C serial port interface / Standard V.92

Activating remote transmission via modem makes it possible to transfer the log files, over a telephone line, onto a remote personal computer.

755846 Digital GSM modem

The modem is supplied with an activation request module. It the customer's responsibility to activate the SIM card. Activating remote transmission via modem makes it possible to transfer the log files, over a telephone line, onto a remote personal computer and to send activation / deactivation SMS messages.

The GSM modem is a dual-band GSM900/1800 device which is capable of managing AT Modem commands. It is an external device and includes:
- Power supply unit with input 230 V (ac) 50 Hz - 3 VA / Output 8-30 V (dc)
- Mini Sim card reader (Sim card NOT supplied)
- FME-F antenna connector for antenna cable
- Antenna cable: standard length 2 m
- 9-pole sub-D female connector V.24/V.28 for RS 232C serial port output

Operating specifications:
- Dual-Band GSM900 and GSM1800
- GSM compatible phase 2/2+

Output power:
- Class 4 (2W) GSM900
- Classe (1W) GSM1800

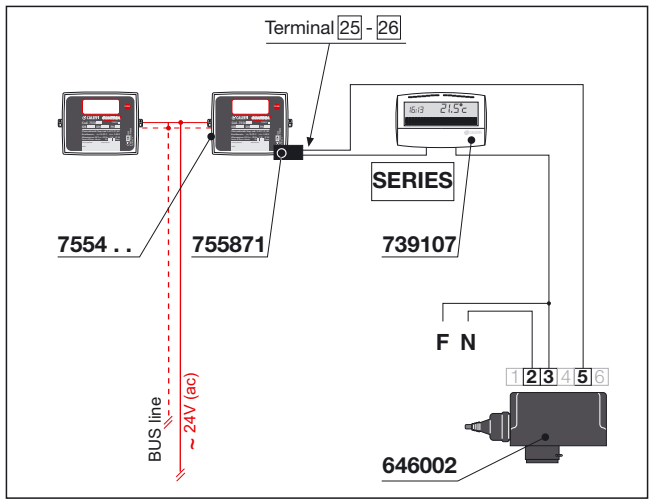
SMS specifications:
- Point to Point Mobile Originated
- Point to Point Mobile Terminated
- SMS Cell Broadcast

755871 OUT device

In centralised transmission and CONTECA controller mode (code 755010) **the heating / cooling function can be activated / deactivated remotely via SMS** for every individual user.
Relay out specifications: 8 A - 230 V (ac) - cos φ = 1.

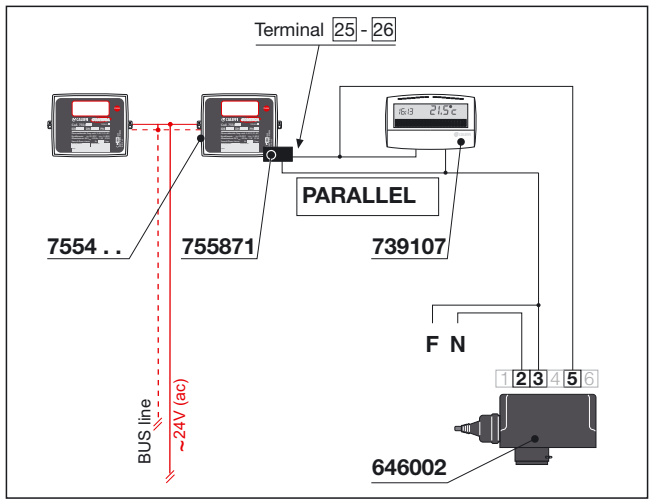
• MANAGER version - connection in SERIES

Residences and hotels are particularly suitable types of users.



• USER version - connection in PARALLEL

Holiday homes are a particularly suitable application.



In this regard, entering a database of enabled phone numbers for a specific user on the controller is the user's security code. It is possible to add up to 3 enabled cellphone numbers.

ID	TEL. 1	TEL. 2	TEL. 3
1	.....	.....	.....
2	.....	.....	.....
3	.....	.....	.....
....	.....	.....	.....

Any change in the enabled phone numbers can only be made by technical personnel authorised by the system manager (Administrator - Service - Certifier).

755830 Software for the breakdown of costs relating to heat consumption

The software can be used to transfer or manage log files containing consumption data; these log files are transferred as necessary onto an office PC to produce a printout of consumption and heating cost breakdown (thermie and refrigeration units), as well as any additional consumption (domestic water/electricity/gas).
The reports are generated in Windows.

N.B.: A comprehensive installation and user guide manual is an aid to performing the various operational steps.

Consumption certification

The natural difficulties in starting up a centralised system suggest it is wise to rely on a competent SERVICE, monitoring the first year of operation and then hopefully confirming this service for future years.

Relying on a competent service means:

- Having installed a centralized transmission system (controller code 755010 and modem, GSM code 755846).
- Formally providing the service company with consent for the processing of your personal data.

and therefore:

- On request, Caleffi (via a regional service) offers FREE monitoring of consumption data for the **first year of operation**.
- Caleffi sends monthly reports on the CERTIFIED consumption to the administration manager of the complex.

At the end of the first year of operation, Caleffi, through its own regional services, offers product service and consumption certification contractors in times and manners to be defined.

The CONTECA system offers many options: some are dictated by the plant engineering system (thermie/refrigeration units), others are suggested by the presence of a central transmission bus (pulse aggregation for other consumption data), others are for management (user status) with user enabling/disabling.

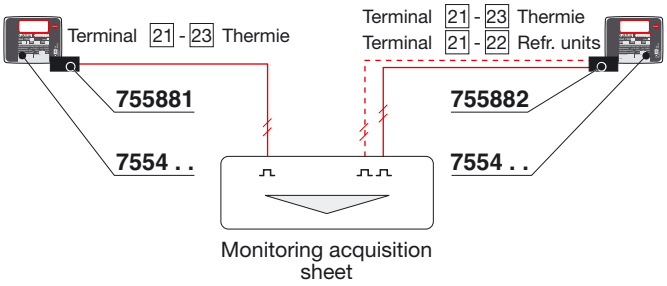
755810 Refrigeration unit metering

The CONTECA meter, once the software module has been activated, is able to **keep a record of the thermie and refrigeration units in separate registers through the evaluation of the thermal gradient inversion**, both for current values and for log files.

75588. Pulse output

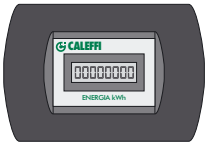
The pulse output can be used to transfer the thermie and/or refrigeration unit energy values to a generic acquirer. **The pulse weighs 1 kWh**.
The pulse output with no potential is an **open collector** with pulse period 120 ms - Vmax 24 V (dc).

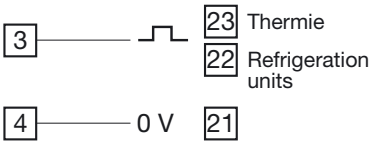
Code	
755881	Single pulse output - THERMIE
755882	Double pulse output - THERMIE/REFRIGERATION UNITS



755890 Remote energy totaliser

Electronic 8-digit LCD totaliser equipped with cover plate for **three-slot recessed electric box**.
Lithium battery: duration 8 years - max. frequency 20 Hz
Suitable for pulse outputs code 75588**.**.
Cable length (2x1 mm²) not supplied by us: max. 150 m.





CE

755825 Pulse input acquisition generic

The CONTECA module can, through the application of Hardware/Software code 755825, **acquire an additional** pulse input (as well as the 2 already dedicated to DHW and DCW).
Sometimes, and normally when there is a controller (code 755010, it is beneficial to use the bus to transfer the user data in terms of consumption (gas meter / electricity meter). The generic pulse input must **have no potential (no voltage, maximum frequency 1 Hz**). Class IB. Residences and hotels are particularly suitable types of users.

SPECIFICATION SUMMARY

7554 series
CONTECA direct heat meter **conforming to directive 2004/22/CE (MID)** for use in heating and air-conditioning systems, with the following characteristics: hot water positive displacement meter **with magnetic joint** (maximum temperature 90°C), with pulse output, NTC temperature probe, 8-digit data display, temperature range 10–90°C, protection class IP 54, transmission via **TWO-WAY** bus in accordance with M-bus mode, electric supply 24 V (ac) 50 Hz - 1 W. Designed for **remote activation** of user services. **Options:** 3 additional pulse inputs - 2 voltage-free digital inputs for status/alarm - 1 relay output.

Code 755010
Compact touch-screen CONTECA controller, equipped with RS232 - RS485, USB and LAN ports, with user monitoring function (max. 250) and daily logging of consumption data. Enabled for SMS message alarm and remote activation management, and for automatic transmission of data via email and FTP server. Electric supply 230 V (ac).

Code 755055/755056
HW-SW interface for consumption data acquisition via digital transmission, in M-Bus mode. Electric supply 230 V (ac) - 50 Hz - 5 VA. Includes software. Maximum number of users: 30. Code 755056 is designed for transmission via analogue/digital modem code 755845/755846. Ambient temperature range 10–35°C. Dimensions: width 160 mm x height 125 mm x depth 40 mm.

7940 series
User domestic water cut-off for centralised system with user module **featuring direct local reading meter**, consisting of: 1/2" (3/4") direct reading positive displacement meter, BALLSTOP ball shut-off valve with incorporated check valve, ball shut-off valve with male terminal, fixing screws and collars.

7941 series
User domestic water cut-off for centralised CONTECA system consisting of: **1/2" (3/4") positive displacement meter with pulse output** (K=10), BALLSTOP ball shut-off valve with incorporated check valve, ball shut-off valve with male terminal, fixing screws and collars.

7930 - 7931 series
User domestic water cut-off for centralised CONTECA system. 7930 series **with direct local reading meter**.
7931 series **with positive displacement meter with pulse output** (K=10). Consist of: pair of BALLSTOP ball shut-off valves with incorporated check valve, **pair of 1/2" (3/4") positive displacement meters with/without pulse output**, thermostatic mixing valve, fittings.

Code 755810
Refrigeration unit metering. Upon activation of the software module, CONTECA is able to keep a record of the thermal units and refrigeration units, on the evaluation of the temperature difference reversal, in separate registers for both the current values and for the logged files.

Code 75588.
The single pulse output code 755881 or the double pulse output code 755882 can be used to transfer the thermie and/or refrigeration unit energy values to a generic acquirer. **The pulse weighs 1 kWh**. The pulse output with no potential is **open collector** with pulse time 120 ms - Vmax 24 V (dc).

Code 755890
Electronic 8-digit LCD totaliser equipped with cover plate for **three-slot recessed electric box**. Lithium battery: duration 8 years - maximum frequency 20 Hz. Suitable for pulse outputs code 75588**.**. Cable length (2x1 mm^2) not supplied by us: maximum 150 mm.

CERTIFICATION OF EVALUATION PROCEDURE FOR CONFORMITY TO DIRECTIVE 2004/22/EC (MID directive)

CONTECA 7554 series

With reference to CONTECA 7554 series heat meters, please note that the procedure for conformity to the requirements of directive 2004/22/EC, better known as the MID (Measuring Instruments Directive), has been completed.

This directive has been made binding in Italy by means of *Italian Law Decree N° 22 dated 2nd February 2007,* which makes it obligatory to use only meters that conform to the MID within the Italian market.

Typical examination certificate (in accordance with form B - MID directive)

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

PTB

EG-Baumusterprüfbescheinigung

EC type-examination certificate

CONTTCA, Serie 7554

PTB-7.0-4024611

30.10.2017

0102

30.10.2007

Certificate of conformity for production process (in accordance with form D - MID directive)

Konformitätszertifikat Nr. 511-00132

Certificate of conformity

Caleffi S.p.A.
Hydronic Solutions
S.R. 229, n. 25
I-28010 Fontaneto d'Agogna

Schweizerische Messmittelverordnung (SR 941.210) vom 15. Februar 2006, Anhang 2 Modul D;
Richtlinie 2004/22/EG des Europäischen Parlaments und des Rates vom 31. März 2004 über Messgeräte (MID), Anhang D

6. November 2007

CH-3003 Bern-Wabern, 15. November 2007

30. November 2010

Zertifizierungsstelle METAS Cert
Nr. 1259

Dr. Hugo Bissig, Fachexperte

Jurg Ramseyer, Leiter METAS-Cert

CALEFFI

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