

## ► Brunata Ray Radio energy meter

Compact energy meter with integrated radio transmitter. Used for measuring and allocating heat energy consumption.

### Properties

- Meter types:  $q_p = 0,6$  og  $1,5$  m<sup>3</sup>/h
- Dynamic measuring range ( $q_i/q_p$ ) 1:100
- Measuring accuracy according to EN 1434, class 2
- Environmental standard C acc. to EN 1434
- Electronically controlled measurements
- Non-magnetic electronic scanning of impeller
- Optical interface with ZVEI with IEC870-5-1 protocol as standard
- Remote reading via 868 MHz radio
- Permanently connected temp. sensors
- User-friendly display with main menu and service menu
- Programmable closing date for accounting
- Non-replaceable lithium battery with 12 years battery life

### Further information

Brunata Ray Radio energy meter consists of a calculation unit with battery, sensors with 1.5 m cable, sensor fittings and couplings.

The meter is constructed according to the multi-jet principle, which ensures very high measuring accuracy. Its dimension corresponds to the maximum flow speed in the heating system circuit and it can be ordered for either supply or return flow.



The energy meter is type approved in Denmark for energy accounting according to MID, with approval number DE-07-MI004-PTB030.

As a standard, the meter is supplied without outputs and with Pt 500 temperature sensors according to DIN IEC 751 (ITS 90). The temperature sensors (5.2 mm diameter) are permanently connected to the counter with 1.5 m cables.

The meter's LCD display has two menus, connected en bloc. The first is the 'main menu' and the second the 'service menu'.

The main menu is programmed to display data for current energy consumption and energy consumption until the closing date. The service menu displays the current data for flow, temperatures, effect, water volume and the next closing date.

*Brunata is a Danish owned company. We have more than 90 years of experience within developing and producing meters, heat cost allocators, consumption accounts, meter services and latest substations. Today meters are often remotely read with access to the internet. We have a quality control system fulfilling DSI/EN ISO 9001 and 14001.*

## Technical data

Counter			
Basic characteristics	Accuracy	EN 1434, class 2	
	Environmental classification	EN 1434, class C	
	Protection	IP 54	
	Type	Compact energy meter	
	Dynamic range $q_i / q_p$	1 : 100	
Display readings	Display	7-digit LCD display	
	Readings	Energy (9999999) · Effect · Flow (9999,999) · Temperature	
	Unit	kWh	
Temperature-input	Temperature sensor type	Pt 500 / 2-leder	
	Max. temperature difference	$\Delta T_{\max}$ K	147
	Min. temperature difference	$\Delta T_{\min}$ K	3
	Absolute temperature measuring range	$^{\circ}$ C	0...150
Radio interface - specification	Protocol: Real data (according to EN 13757)		
	Frequency	MHz	868.95
	Transmission power	mW	25
	Transmission interval	sek.	64
Power supply	Integrated 3V lithium battery. Non-replaceable.		
Battery lifetime	12 years at normal operation (< 60 $^{\circ}$ )		

## Measuring technical data

Measurements and weight				
Type		$q_p$ 0,6	$q_p$ 1,5	
Maximum flow $q_s$	$m^3/h$	1,2	3	
Permanent flow $q_p$	$m^3/h$	0,6	1,5	
Minimum flow $q_i$	l/h	6	15	
Pressure loss at $q_p$	kPa	24	24	
Start flow	l/h	2	4	
Operating pressure	max.	bar	16	
Temperature range	$^{\circ}$ C	5-90		

## Dimensions

Measurements and weight				
Type			$q_p$ 0,6	$q_p$ 1,5
Nominal connection		DN mm	15	15
Build length	L	mm	110	110
Length incl. coupling	L1*	mm	188	188
Height	H	mm	75	75
	H1	mm	95	95
Connection meter		inches (")	G 3/4 B	G 3/4 B
Connection coupling		inches (")	R 1/2	R 1/2
Weight incl. counter		kg	0,90	0,90
Installation position	vertical/ horizontal			

\* applies to standard coupling

## Pressure loss graph

