

Data sheet

SonoSelect 10 and SonoSafe 10 Energy Meters

Description

The Danfoss SonoSelect 10 and SonoSafe 10 are ultrasonic compact energy meters intended for measuring energy consumption in heating and cooling applications for billing purposes. The meters are designed for remote meter read-out (AMR).

The energy meters consist of an ultrasonic flow sensor, a pair of Pt1000 temperature sensors and a calculator with integrated circuits for temperature measurement, flow calculation and energy calculation.



Feature highlights:	
<ul style="list-style-type: none"> • Proven ultrasonic measuring principle designed for long operating life time • No calming section or inlet/outlet restrictions • Low pressure drop down to 0.03 bar at q_p • Large 85 x 35 mm LCD display with 8 digits (11.5 mm high), guiding menu and info panel • Compact design • Extensive change and error log • Memory: 2 years of data, yearly and monthly values stored (incl. pulse input) • Upgradable with communication modules • Battery is replacable • Communication baud rate 300, 2400, 4800 and 9600 bps • SonoApp usable for Android (Bluetooth LE via dongle) 	

Special features:	SonoSelect 10	SonoSafe 10
Battery	<ul style="list-style-type: none"> • 16 + 1 years battery life (from productiondate) 	<ul style="list-style-type: none"> • 10 + 1 years battery life
Flexibility	<ul style="list-style-type: none"> • Heating or cooling • Supply and return can be configured on site • Energy units can be configured on site • Slot for communication upgrade • 1.5 m cable PUR between calculator and flow sensor allow for flexible installation, e.g. in flat stations 	<ul style="list-style-type: none"> • Heating • Energy units can be configured on site • Slot for communication upgrade • 0.5 m cable PVC between calculator and flow sensor
Safe	<ul style="list-style-type: none"> • EN1434 class 2 + flow and energy calculated every 0.5 second • Tamper monitor sets alarm if meter is opened by unauthorized personnel • Diagnostic function to secure confidence in meter data • IP65 calculator • Reverse flow indication 	<ul style="list-style-type: none"> • EN1434 class 2 + flow and energy calculated every 2 seconds • IP54 calculator
SonoApp	<ul style="list-style-type: none"> • Installer tool (Guides and configure e.g. AMR, Pulse, units, supply/return) • Commissioning tool (Link location to serial number) • Operation tool (walk by + diagnostics) 	<ul style="list-style-type: none"> • Installer tool (Guides and configure e.g. AMR, Pulse, units) • Operation tool (walk-by) • Commissioning tool (Link location to serial number)

**Technical specifications,
Complete energy meter**

Application	Heating and Cooling	
Medium	Water quality with pH 7 to 9.5 VDI 2035, VdTÜV TCh 1466	
Approvals, heating	EN1434 class 2 and 3, MID (DK-0200-MI004-034), CPA according to JIG225 -2010	
Approvals, cooling	Denmark: TS 27.02 010, Switzerland: METAS CH-T2-17763-01, Germany: PTB 17-22.001-DK, Austria: BEV-13.426_0078-E2_2017	
Measuring cycle	Flow: 0.5 sec. (SonoSelect 10), 2 sec. (SonoSafe 10) Energy: 0.5 sec. (SonoSelect 10), 2 sec. (SonoSafe 10) Temperature: 4 sec. (SonoSelect 10), 10 sec. (SonoSafe 10)	
Approved meteorological range	$\Delta\Theta$: 3 - 90K	Θ : 5 - 95°C
Temperature limits (energy calculation)	$\Delta\Theta$: 0.25 - 100K	Θ : 0 - 105°C
IP	65 (SonoSelect 10), 54 (SonoSafe 10)	
Cable strain relief	Withstand more than 5 kg	
Ambient operating temperature	Class A: 5 - 55° C indoor installation non condensing	
Ambient storage temperature	-25 - 60° C	
Temperature media	5 - 95° C	
Mechanical environment	Class M2	
Electromagnetic environment	Class E1	

**Technical specifications,
Calculator**

Power supply	3.6 V DC lithium battery (2 AA SonoSelect 1 AA SonoSafe)
Battery life time*	16+1 years (SonoSelect 10), 10+1 years (SonoSafe 10)
Display	85 x 35 mm LCD display with 8 digits (11.5 mm high main characters) Menu guide and info panel 16 years of operation at qp, 45K without display overflow
Units	MWh - kWh - GJ - Gcal - °C - K - m ³ - m ³ /h - l/h
Memory	2 years of data, yearly and monthly values stored (incl. pulse input)
Optical interface	Optical acc. to EN62056-21. Data protocol acc. to EN13757-3, supports 2400 or 4800 baud.
Communication	Wired M-Bus to EN13757-3, supports 300, 2400, 4800, 9600 baud. Delivered with 1 m cable (SonoSelect 10: PUR, SonoSafe 10: PVC) Serial number: ssssvNNyyWW (addressing) ss : Primary address, yWWsssss : Secondary address
Additional communication	1 slot for communication module (delivered from factory or later upgrade)

* Battery life time measured under following preconditions: enclosure temp. 45° C, communication every 15 min. at 2400 baud or faster, 80 meters on bus. Please contact Danfoss for further information.

**Technical specifications,
Flow sensor**

DN		15	15	20	20	25	25	32
Nominal flow qp	[m ³ /h]	0.6	1.5	1.5	2.5	3.5	6.0	6.0
Max flow qs	[m ³ /h]	1.2	3	3	5	7	12	12
Minimum flow (1:100) qi*	[m ³ /h]	0.006	0.015	0.015	0.025	0.035	0.06	0.06
Cut off flow qc	[m ³ /h]	0.0012	0.003	0.003	0.005	0.007	0.012	0.012
Overflow qss	[m ³ /h]	1.32	3.3	3.3	5.5	7.7	12.3	12.3
Pressure drop (at qp 50°C)		30	150	150	160	130	220	220
Kvs values ($\Delta p=Q2/Kvs2$)		3.46	3.87		6.25	9.71	12.79	
Connection		G ³ / ₄ " 110mm		G1" 130mm	G1 ¹ / ₄ " 160mm	G1 ¹ / ₄ " 260mm	G1 ¹ / ₂ " 260mm	
Pressure PN	[bar]	16 bar						
IP [EN60529]		65						
Temperature limits	[°C]	0 to 105						
Cable length		1.5m (SonoSelect 10: PUR), 0.5m (SonoSafe 10: PVC)						
Mounting		Any position, no inlet or outlet restrictions						

*(1:250) qi on request

**Technical specifications,
Temperature sensor**

Type	Pt1000 direct short, 2 wire
Size	Diameter: Ø5.2 mm, length: 26 mm
Nipple	M10 x 1 mm brass, with pin lock
Cable length	1.5 m
Accuracy	Class B (EN60751)
Temperature range	Ø: 0 - 105° C (SonoSelect 10), 5 - 95° C (SonoSafe 10)
IP	65
Approved temperature range to EN60751	Ø: 0 - 105° C
Difference temperature EN60751	ΔØ: 3 - 105K
Pressure	25 bar

**Communication
modules**

Modules in general

To adapt the meter for various applications SonoSelect 10 and SonoSafe 10 features a slot for mounting communication modules. Each module features its own μ -controller and is powered by its own battery. Modules have their own parameter set which is saved in the module μ -controller flash memory. A local copy of the energy meter parameters used for communication is stored in the module. Data from module is updated in meter every 10 minutes. Power: Lithium Thionyl Chloride battery (half of AA size). 2 pulse in/outputs have common ground. Modules are galvanically isolated from main Energy Meter circuitry

Wired M-Bus module with 2 pulse inputs

Once installed the meter will display the icon for wired communication and pulse inputs in loop 2 of the display. Wired M-Bus is galvanically isolated from μ -controller and pulse inputs. The two pulse inputs can be programmed independently of each other (see specification for pulse input module).

M-Bus (primary)	Lithium Thionyl Chloride battery (half of AA size)
M-Bus (secondary)	M-Bus supply
Baud rate supported	300, 2400, 4800, 9600
Communication protocol	According to EN1434-3 & EN13757-3
Battery life time	16+1 year
Addressing	Serial number: ssssvvNNyyWW ss : Primary address, yWWsssss : Secondary address

Wireless OMS communication module, 868.95MHz with 2 pulse inputs

Once installed the meter will display the icon for wireless communication and pulse inputs in loop 2 of the display. The two pulse inputs can be programmed independently of each other (see specification for pulse input module).

Standard	Open Metering System (OMS) issue 4.0.2
Frequency	868.95 MHz
Antenna	Internal
Transmission power	10mW (Max. 25mW; 13,9 dBm)
Mode	T1 mode
Encryption	AES 128 bit encryption (mode 5), Parameterized Static key
Sending interval	Fixed network: 15 min.
Telegram	Standard telegram*
Battery life time	16+1 year (with pulse inputs off)
Addressing	Serial number: ssssvvNNyyWW yWWsssss : Secondary address

* See section with data telegram.

Communication modules *(continuous)*

2 pulse input module

Once installed the meter will display the icon for pulse inputs in menu 2 of the display. Accumulated volume is only readable by communication. The two pulse inputs can be programmed independently of each other.

Pulse value	0.001 m ³ to 1 m ³ per pulse
Voltage supply	≤ 6.0 V
Source current	≤ 0.1 mA
High level input threshold	≥ 2 V
Low level input threshold	≤ 0.5 V
Pull-up resistor	100 kΩ
Pulse length	≥100 ms
Maximum frequency	≤ 5 Hz
Pulse inputs	According to EN1434-2, section 7.1.5 (Classification of pulse input devices Class IB)
Battery life time	16+1 year

* Suitable for both electronic switch and Reed contact.

2 pulse output module

Once installed the meter will display the icon for wired communication in menu 2 of the display.

Pulse 1 (energy*)	+ terminal 16, - terminal 17
Pulse 2 (volume*)	+ terminal 18, - terminal 19
Pulse value*	Unit follow the display. Scaling follow least significant digit of the display (default setting can be changed via SonoApp)
Pulse timing	Updates every 15 seconds
Polarity reversal:	Not possible, but can withstand -30V, max 27 mA without damage
Pulse length	≥100 ms
Pulse Pause:	≥100 ms
Voltage supply	3-30 V
Source current	≤ 27 mA
"ON" condition	U<2,0 @ 27mA
"OFF" condition	R>=6 MΩ
Maximum frequency	≤ 5 Hz
Pulse outputs	According to EN1434-2, section 8.2.3 (Classification of pulse output devices Class OB)
Battery life time	16+1 year
Cable length	Max 25 m
Alarms	E32 activates in meter if: 1) Module battery is empty 2) When no. of delayed pulses exceeds 5000 (incorrect scaling)

*Default setting. Can be changed via SonoApp

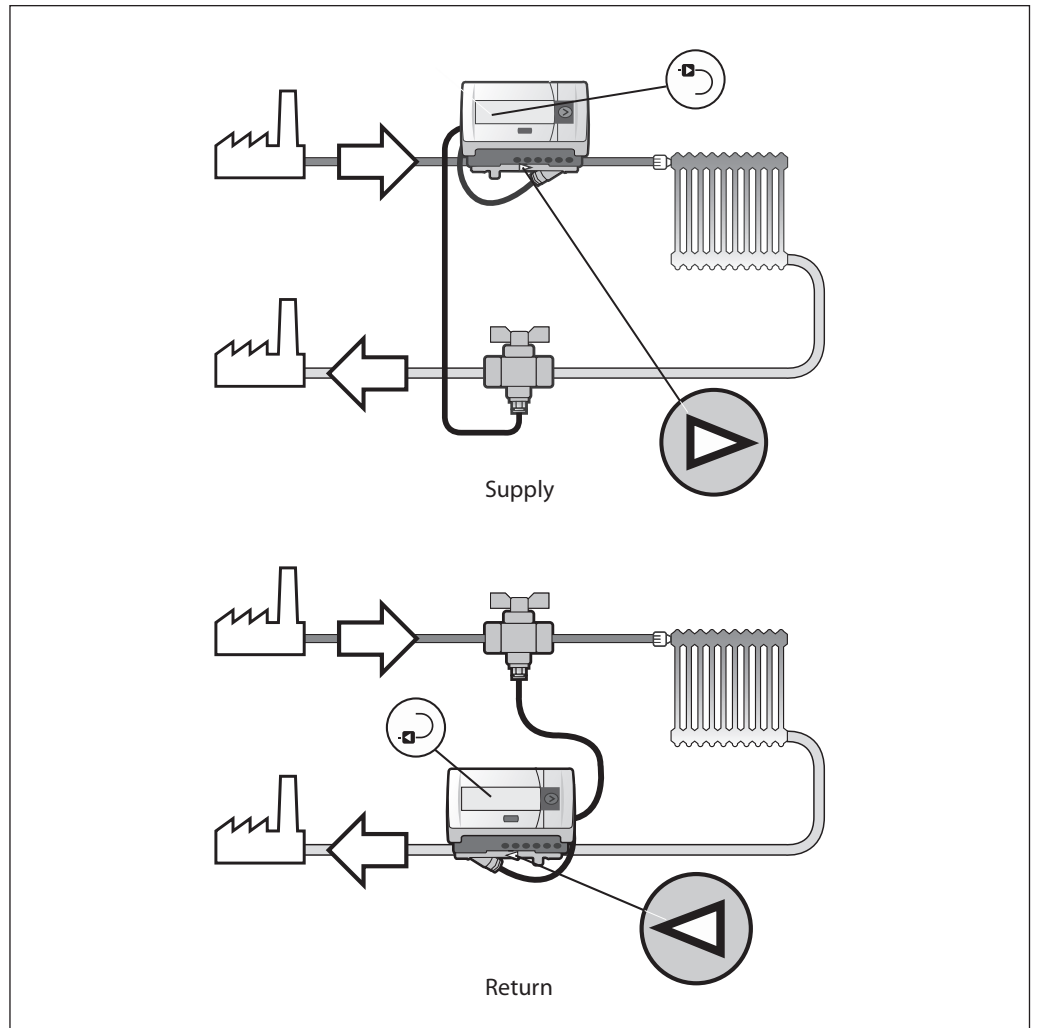
Data telegram

<p>Wired M-bus Standard telegram:</p> <ul style="list-style-type: none"> Accumulated energy Accumulated volume Current flow Current power Supply temperature Return temperature Difference temperature Enclosure temperature Current time Hour counter factory Hour counter OK 	<p>Wireless M-bus (OMS) Standard telegram fixed network (15 minutes sending interval):</p> <ul style="list-style-type: none"> Accumulated energy Accumulated volume Current flow Current power SupplyTemperature ReturnTemperature CurrentTime 	<p>Wireless M-Bus (Walk -by) Standard telegram Walk by (2 minutes sending interval):</p> <ul style="list-style-type: none"> Accumulated energy Accumulated volume CurrentTime Hour counter factory Month log 1 (last month log)
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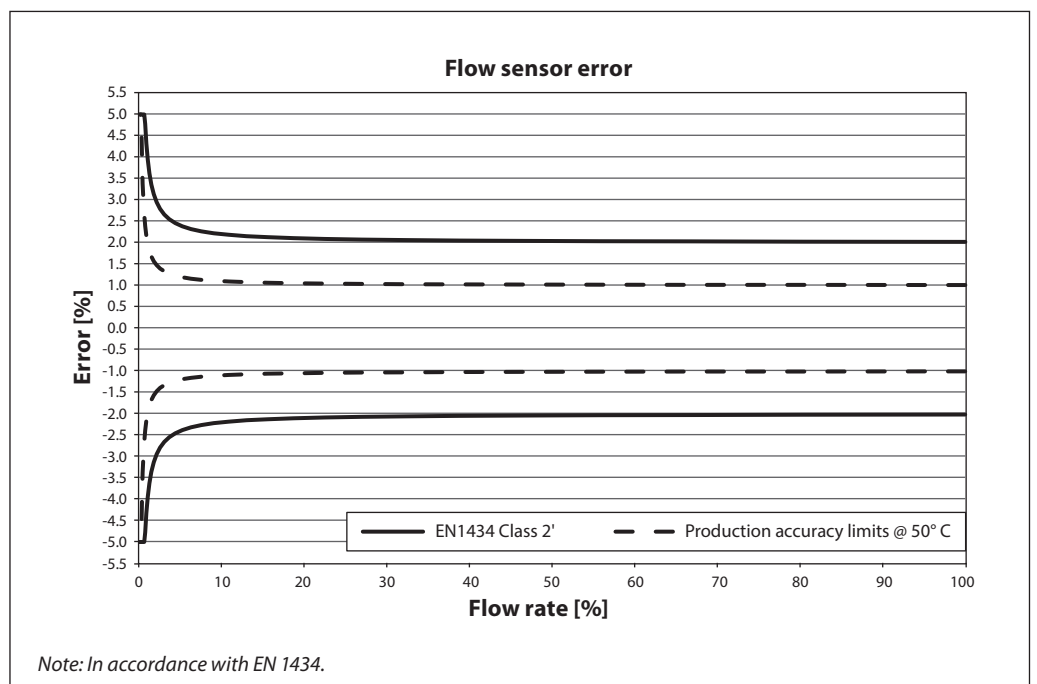
*Can be changed via SonoApp

Application drawings

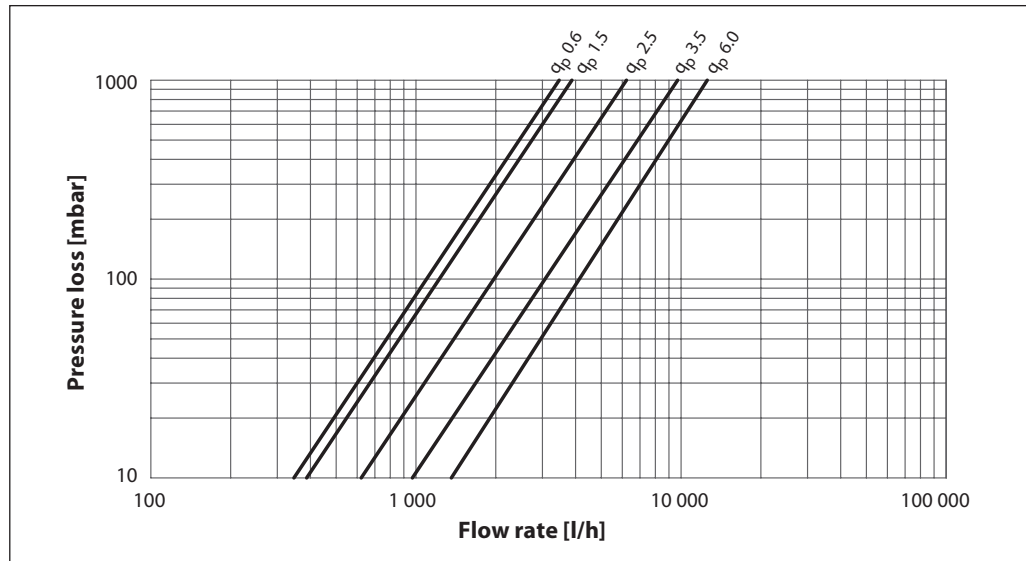
Heat meters have red temp sensor in supply pipe and all cooling meters have blue temp sensor in supply pipe



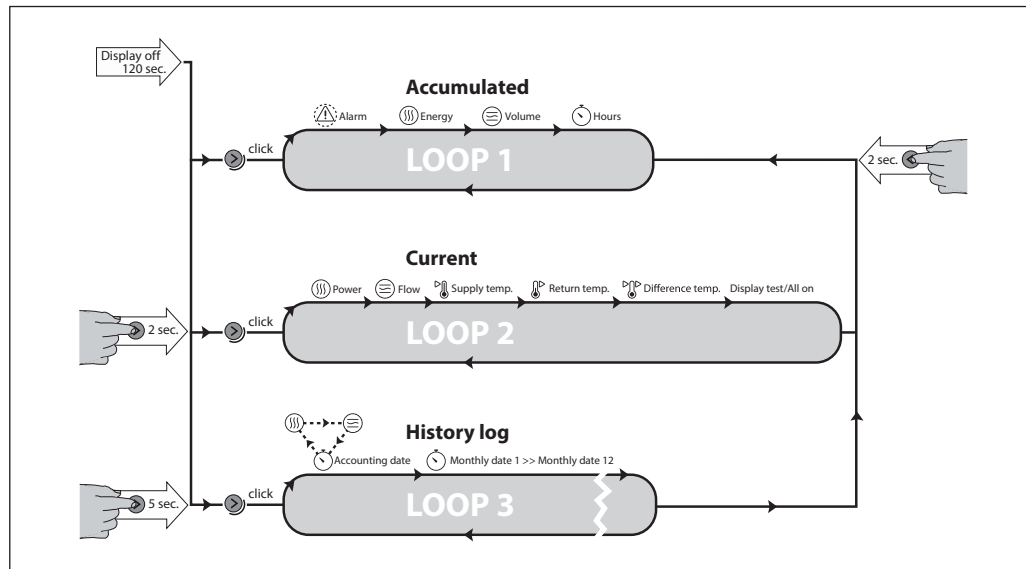
Accuracy



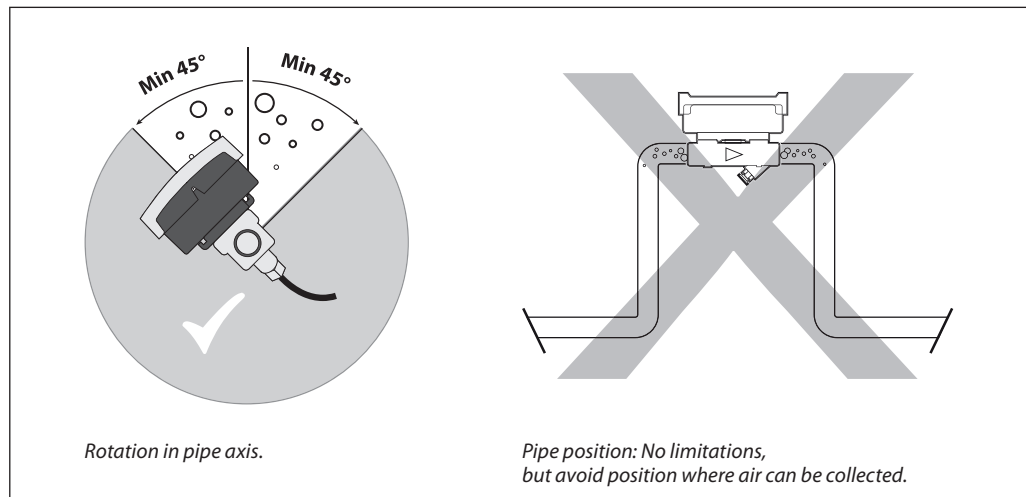
Pressure loss



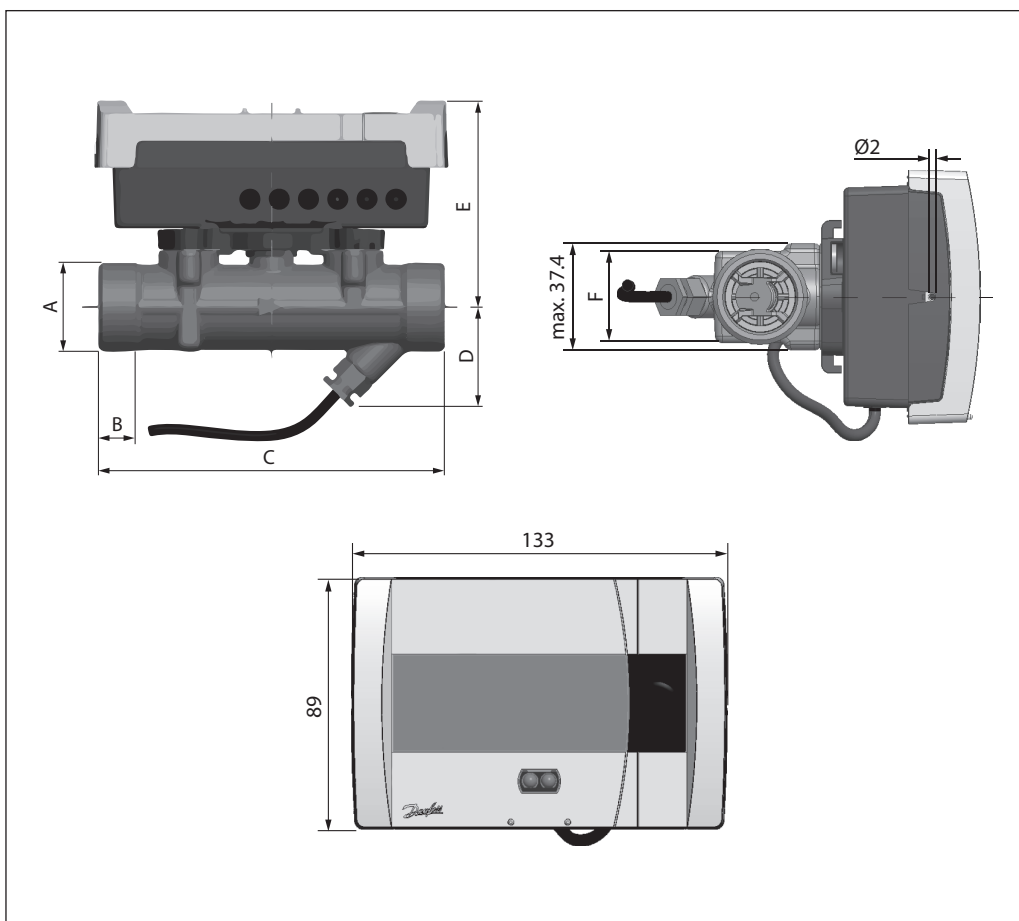
Menu structure



Mounting



Dimensions



Dimension	DN15	DN20	DN20 + extension pipe 014U1957	DN25	DN25	DN32
A	G $\frac{3}{4}$ A	G1A	G1A	G1 $\frac{1}{4}$ A	G1 $\frac{1}{4}$ A	G1 $\frac{1}{2}$ A
B	12 mm	14 mm	14 mm	16 mm	16 mm	18 mm
C	110 mm	130 mm	190 mm	160 mm	260 mm	260 mm
D	33.5 mm	38 mm	38 mm	40.5 mm	40.5 mm	40.5 mm
E	74.5 mm	77.5 mm	77.5 mm	80.5 mm	80.5 mm	80.5 mm
F	32 mm	32 mm	32 mm	41 mm	41 mm	41 mm
Weight	700 g	800 g	1100 g	1100 g	1500 g	1600 g

Ordering
SonoSelect 10 - Heating

Meter size	Installation	Cable length	Power supply	Integrated communication	Modules	Energy unit	Code No.
DN15 qp0.6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0183
DN15 qp0.6 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0184
DN15 qp1.5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0185
DN15 qp1.5 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0186
DN20 qp1.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0187
DN20 qp1.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0188
DN20 qp2.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0189
DN20 qp2.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0190
DN25 qp3.5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0191
DN25 qp3.5 G1¼A 160mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0192
DN25 qp6.0 G1¼A 260mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0270
DN25 qp6.0 G1¼A 260mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0271
DN32 qp6.0 G1½A 260mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0280
DN32 qp6.0 G1½A 260mm	Supply	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0281
DN15 qp0.6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0165
DN15 qp0.6 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0166
DN15 qp1.5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0167
DN15 qp1.5 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0168
DN20 qp1.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0169
DN20 qp1.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0170
DN20 qp2.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0171
DN20 qp2.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0172
DN25 qp3.5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0173
DN25 qp3.5 G1¼A 160mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0174
DN25 qp6.0 G1¼A 260mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0272
DN25 qp6.0 G1¼A 260mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0273
DN32 qp6.0 G1½A 260mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0282
DN32 qp6.0 G1½A 260mm	Supply	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U0283
DN15 qp0.6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0068
DN15 qp0.6 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0069
DN15 qp0.6 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0070
DN15 qp0.6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0071
DN15 qp1.5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0081
DN15 qp1.5 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0082
DN15 qp1.5 G¾A 110mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0083
DN15 qp1.5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0084
DN20 qp1.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0094
DN20 qp1.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0095
DN20 qp1.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0096
DN20 qp1.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0097
DN20 qp2.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0107
DN20 qp2.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0108
DN20 qp2.5 G1A 130mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0109
DN20 qp2.5 G1A 130mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0110
DN25 qp3.5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0120
DN25 qp3.5 G1¼A 160mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0121
DN25 qp3.5 G1¼A 160mm	Supply	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0122
DN25 qp3.5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	GJ	014U0123

Ordering
SonoSafe 10 - Heating

Meter size	Installation	Cable length	Power supply	Integrated communication	Modules	Energy unit	Code No.
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0203
DN15 qp0.6 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0204
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0205
DN15 qp1.5 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0206
DN20 qp1.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0207
DN20 qp1.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0208
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0209
DN20 qp2.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0210
DN25 qp3.5 G1¼A 160mm	Return	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0211
DN25 qp3.5 G1¼A 160mm	Supply	PVC 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U0212
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0001
DN15 qp0.6 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0002
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0003
DN15 qp0.6 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0004
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0005
DN15 qp1.5 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0006
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0007
DN15 qp1.5 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0008
DN20 qp1.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0009
DN20 qp1.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0010
DN20 qp1.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0011
DN20 qp1.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0012
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0013
DN20 qp2.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0014
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0015
DN20 qp2.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0016
DN25 qp3.5 G1¼A 160mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0017
DN25 qp3.5 G1¼A 160mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0018
DN25 qp3.5 G1¼A 160mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0019
DN25 qp3.5 G1¼A 160mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0020
DN25 qp3.5 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0021
DN25 qp3.5 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0022
DN25 qp3.5 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0023
DN25 qp3.5 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0024
DN15 qp0.6 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	None	None	GJ	014U0026
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	None	GJ	014U0027
DN15 qp0.6 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0028
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0029
DN15 qp1.5 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	None	None	GJ	014U0033
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	None	GJ	014U0034
DN15 qp1.5 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0035
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0036
DN20 qp1.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	None	None	GJ	014U0040
DN20 qp1.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	None	GJ	014U0041
DN20 qp1.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0042
DN20 qp1.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0043
DN20 qp2.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	None	None	GJ	014U0047
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	None	GJ	014U0048
DN20 qp2.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0049
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0050
DN25 qp3.5 G1¼A 160mm	Supply	PVC 1.5m	3.6V DC	None	None	GJ	014U0054
DN25 qp3.5 G1¼A 160mm	Return	PVC 1.5m	3.6V DC	None	None	GJ	014U0055
DN25 qp3.5 G1¼A 160mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0056
DN25 qp3.5 G1¼A 160mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0057
DN25 qp3.5 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	None	None	GJ	014U0061
DN25 qp3.5 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	None	None	GJ	014U0062
DN25 qp3.5 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0063
DN25 qp3.5 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	GJ	014U0064

**Ordering (continous)
SonoSafe 10 - Heating**

Meter size	Installation	Cable length	Power supply	Integrated communication	Modules	Energy unit	Code No.
DN25 qp6.0 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0264
DN25 qp6.0 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0265
DN25 qp6.0 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0266
DN25 qp6.0 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0267
DN32 qp6.0 G1½A 260mm	Return	PVC 1.5m	3.6V DC	None	None	kWh	014U0274
DN32 qp6.0 G1½A 260mm	Supply	PVC 1.5m	3.6V DC	None	None	kWh	014U0275
DN32 qp6.0 G1½A 260mm	Return	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0276
DN32 qp6.0 G1½A 260mm	Supply	PVC 1.5m	3.6V DC	M-Bus	None	kWh	014U0277
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0235
DN15 qp0.6 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0236
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0237
DN15 qp1.5 G¾A 110mm	Supply	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0238
DN20 qp1.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0239
DN20 qp1.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0240
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0241
DN20 qp2.5 G1A 130mm	Supply	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0242
DN25 qp3.5 G1¼A 160mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0243
DN25 qp3.5 G1¼A 160mm	Supply	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0244
DN25 qp3.5 G1¼A 260mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0245
DN25 qp3.5 G1¼A 260mm	Supply	PVC 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U0246
DN15 qp0.6 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS WB 868.95 MHz with 2 pulse inputs	kWh	014U0250
DN15 qp1.5 G¾A 110mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS WB 868.95 MHz with 2 pulse inputs	kWh	014U0251
DN20 qp2.5 G1A 130mm	Return	PVC 1.5m	3.6V DC	None	Wireless OMS WB 868.95 MHz with 2 pulse inputs	kWh	014U0252

**Ordering
SonoSelect 10 - Cooling**

Meter size	Installation	Cable length	Power supply	Integrated communication	Modules	Energy unit	Code No.
DN15 qp0,6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U1400
DN15 qp1,5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U1401
DN20 qp1,5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U1402
DN20 qp2,5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U1403
DN25 qp3,5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	M-Bus	None	kWh	014U1404
DN15 qp0,6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U1405
DN15 qp1,5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U1406
DN20 qp1,5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U1407
DN20 qp2,5 G1A 130mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U1408
DN25 qp3,5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	M-Bus	2 pulse inputs	kWh	014U1409
DN15 qp0,6 G¾A 110mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U1410
DN15 qp1,5 G¾A 110mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U1411
DN20 qp1,5 G1A 130mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U1412
DN20 qp2,5 G1A 130mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U1413
DN25 qp3,5 G1¼A 160mm	Return	PUR 1.5m	3.6V DC	None	Wireless OMS 868.95 MHz with 2 pulse inputs	kWh	014U1414

Accessories

Product	Designation	Quantity	Code No.
Tail piece set PN25 130°C	DN15 R $\frac{1}{2}$ x G $\frac{3}{4}$	1 set	087G6071
Tail piece set PN25 130°C	DN20 R $\frac{3}{4}$ x G1	1 set	087G6072
Tail piece set PN25 130°C	DN25 R1 x G1 $\frac{1}{4}$	1 set	087G6073
Tail piece set PN16 95°C	Tail Piece DN15 G3/4"-R1/2" PN16 95°C	1 set	014U1936
Tail piece set PN16 95°C	Tail Piece DN20 G1"-R3/4" PN16 95°C	1 set	014U1937
Tail piece set PN16 95°C	Tail Piece DN25 G1 1/4"-R1" PN16 95°C	1 set	014U1938
Tail piece set PN16 95°C	Tail Piece DN32: G1 1/2"-R5/4" PN16 95°C	1 set	014U1939
Adaptor for temperature sensor	Adaptor R $\frac{1}{2}$ " to M10x1 (32pcs.)	32 pcs	014U1935
Adaptor for temperature sensor	Adaptor R1/2" to M10x1 (1pcs)	1 pc	014U1941
Tee fitting	T-fitting DN15: G $\frac{1}{2}$ ", G $\frac{1}{2}$ ", G $\frac{1}{2}$ " PN25 130°C	1 pc	014U1959
Tee fitting	T-fitting DN20: G $\frac{3}{4}$ ", G $\frac{1}{2}$ ", G $\frac{3}{4}$ " PN25 130°C	1 pc	014U1960
Tee fitting	T-fitting DN25: G1", G $\frac{1}{2}$ ", G1" PN25 130°C	1 pc	014U1961
Tee fitting	T-Fitting DN32: G11/4", G $\frac{1}{2}$ ", G11/4" PN25 130°C	1 pc	014U1943
Adaptor for temperature sensor	R $\frac{1}{2}$ x M10 x 1	1 pc.	014U1935
Adaptor for temperature sensor	R $\frac{1}{2}$ x M10 x 1	32 pcs.	014U1941
Ball valve	G $\frac{1}{2}$ " internal thread, Pt sensor connection M10	1 pc.	187F0593
Ball valve	G $\frac{1}{2}$ " internal thread, Pt sensor connection M10	12 pcs.	087H0118
Ball valve	G $\frac{3}{4}$ " internal thread, Pt sensor connection M10	1 pc.	187F0592
Ball valve	G $\frac{3}{4}$ " internal thread, Pt sensor connection M10	12 pcs.	087H0119
Ball valve	G1" internal thread, Pt sensor connection M10	1 pc.	187F0591
Ball valve	G1" internal thread, Pt sensor connection M10	12 pcs.	087H0120
Wall mounting kit	Calculator wall mounting	1 set	014U1945
Cable	M-Bus 2 wire cable (22 AWG), 1 m PVC, ferrules	1 pc.	014U1946
Cable	M-Bus 2 wire cable (22 AWG), 2.5 m PVC, ferrules	1 pc.	014U1947
Cable	M-Bus 2 wire cable (22 AWG), 5 m PVC, ferrules	1 pc.	014U1948
Cable	M-Bus 2 wire cable (22 AWG), 9.75 m PVC, ferrules	1 pc.	014U1949
Cable	Pulse input/output 2 wire cable. (22 AWG), 2,5 m PVC, ferrules	1 pc.	014U1950
Cable	Pulse input/output 2 wire cable. (22 AWG), 5 m PVC, ferrules	1 pc.	014U1951
Cable	Pulse input/output 2 wire cable. (22 AWG), 9,75 m PVC, ferrules	1 pc.	014U1952
Extension pipe, L = 60 mm	DN20 x G1	1 pc.	014U1957
Extension pipe, L = 100 mm	DN25 x G1 $\frac{1}{4}$	1 pc.	014U1958
Gasket	DN15	1 set	014U1964
Gasket	DN20	1 set	014U1965
Gasket	DN25	1 set	014U1966
Gasket	DN32	1 set	014U1942
O-ring mounting kit	O-ring Ø4.3 x 2.4 + assembly tool	1 set	014U1967
Battery	Battery pack 1 AA cell	1 pc.	014U1968
Battery	Battery pack 2 AA cell	1 pc.	014U1969
Communication module	M-Bus module with 2 pulse inputs	1 pc.	014U1998
Communication module	Wireless OMS 868.95MHz with 2 pulse inputs	1 pc.	014U1999
Communication module	2 pulse inputs	1 pc.	014U1995
Bluetooth dongle	IR2BLE	1 pc.	014U1963
Sealing kit	4 x wire with + 4 x snap lock seal	1 set	014U1962

*On request new codes with unique specification combination can be created. If needed please contact you local product manager.

