



Data sheet

SonoMeter 30 Energy Meters

Description



The Danfoss SonoMeter 30 is a range of 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).

SonoMeter 30 energy meters consist of an ultrasonic flow sensor, a pair of Pt500 temperature sensors and a calculator with integrated circuits for temperature measurement, flow calculation and energy calculation.

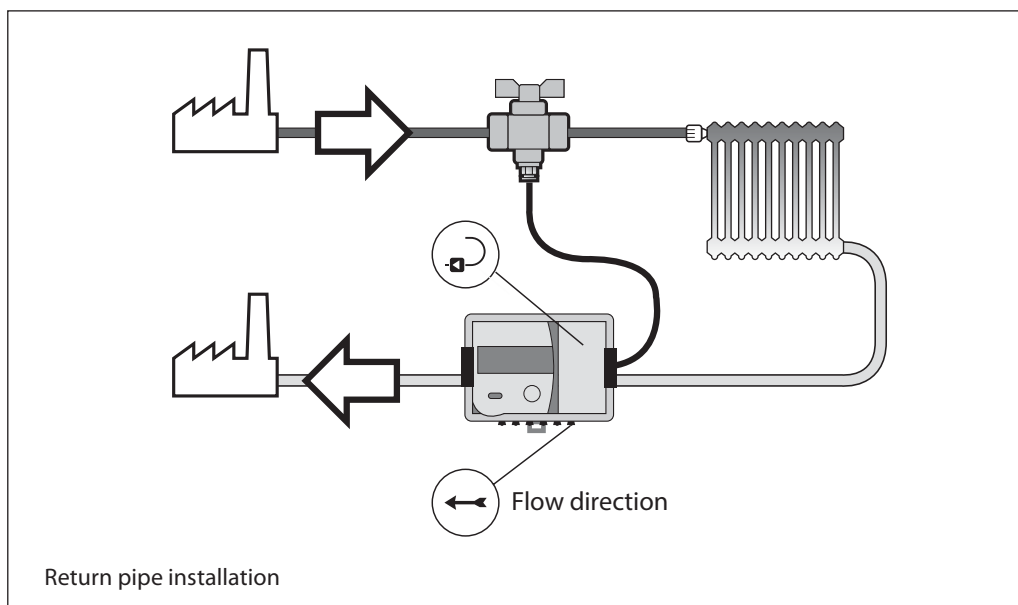
Features

- Available in nominal flow rates q_p 0.6, 1.5, 2.5, 3.5, 6.0, 10.0, 15.0, 25.0, 40.0 and 60 m³/h
- Housings with thread (G3/4 to G2) or flange (DN 20 to DN 100) connections
- MID approval for ultrasonic energy meter with dynamic range of 1:100 ($q_i:q_p$) in class 2
- Optional MID approved dynamic range of 1:250 in class 2 for q_p 1.5, 2.5, 6.0, 10 and 15 m³/h
- Temperature range 5 - 130 °C, PN 16 or 25 bar
- Short overload temperature up to 150 °C
- Glycol mixtures as option up to incl. DN 50 (not MID certified)
- Calculator with IP 65 protection class as standard
- Flow sensor with IP 65 protection class as standard (IP67 for combine heating and cooling applications)
- Return or supply pipe installation, for vertical or horizontal mounting
- Battery lifetime for at least 11 years
- Low pressure loss, insensitive to dirt
- No calming sections needed before or after the flow sensor (DN 15-DN 50)
- For DN 65 to DN 100 calming sections are needed (5 x DN on inlet and 3 x DN on outlet of flow sensor)
- Remote reading via M-Bus, radio OMS 868 Mhz, RS 485 Modbus, BACnet, pulse output or optical interface
- Two pulse inputs or outputs as standard (default delivered as pulse output - can be changed)

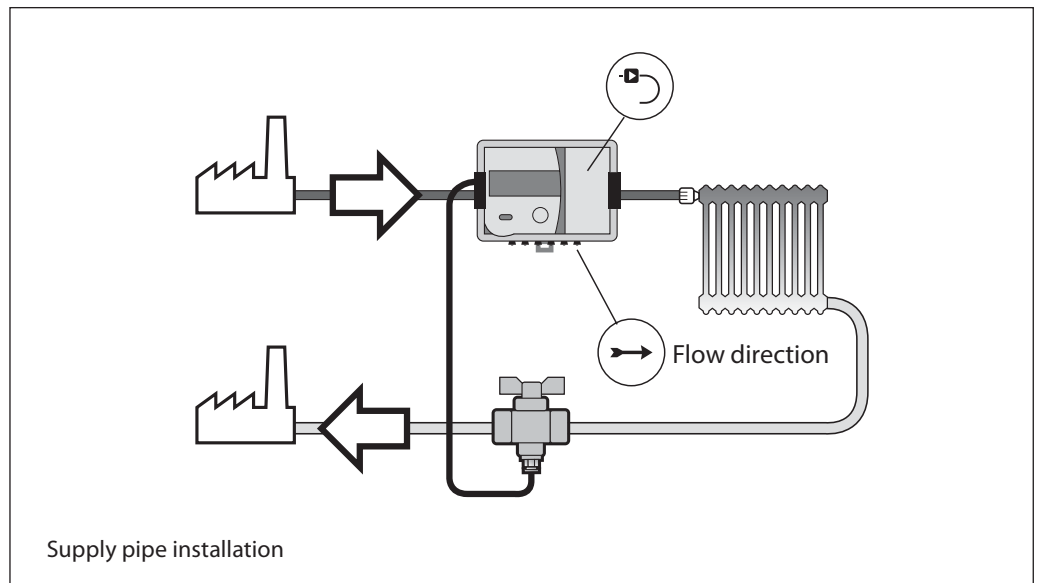
Technical specifications

Diameter	DN 15			DN 20			DN 25			DN 32			DN 40			DN 50			DN 65			DN 80			DN 100		
Connection type	G¾B	G1B	FL	G¾B	G1B	FL	G1B	G1B	G1B	FL	G1¼B	FL	G1¼B	FL	G2B	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	
Overall length, mm	110	190		110	190		130	130	190		260		260		300			270	300		300		300		360		
Flow rate:																											
Nominal (m³/h)	0.6			1.5			2.5			3.5			6			10			15	25		40		60			
Maximum (m³/h)	1.2			3			5			7			12			20			30	50		80		120			
Standard min. (l/h)	6			15			25			35			60			100			150	350		400		600			
Pressure loss at q _p (mbar)	70	9		171	58		72	198	94		40		100		180			120	200		180		180				
K _{vs} values (for nominal flow)	2.27	6.32		3.63	6.23		5.59	5.62	8.15		17.50		18.97		23.57			43.50	55.9		94.3		141.4				
Max. operating pressure	16 bar / 25 bar																										
Flow sensor temp. range	5 to 130 °C (short overload to 150 °C)																										
Flow sensor cable length	1.2m, 2.5m and 5m (optional)																										
Medium	Water quality with pH 7 to 9.5																										
Measuring cycles	Volume every 1 sec., energy, temperature sensors and display update every 16 sec.																										
Temperature sensors	Pt 500 ø 5.2 mm with 2-wire leads																										
Temp. sensor cable length	1.5 m optional 3 m, 5 m and 10 m cable																										
Max. temp. diff. (Δθ _{max})	150 K																										
Min. temp. diff. (Δθ _{min})	3.0 K																										
Starting temp. diff. (Δθ)	0.15 K																										
Temp. measuring range	0 to 180 °C																										
Supply voltage	3.6 V DC Lithium-battery (AA cell) / Mains supply 24 V AC/DC. Mains supply 230 V AC (with external 230 V AC to 24 V AC transformer).																										
Battery life time	min. 11 years (including AMR communication)																										
Approval	EN1434 class 2																										
Environmental class	EN1434 class C																										
Ambient class	class E2 + M1																										
Protection class	Calculator: IP 65; Flow sensor: IP 65 (IP67 for heat and cooling meter)																										
Ambient operating temp.	Calculator: 5 to 55 °C; Flow sensor: -30 to 55 °C																										
Ambient storage and transportation temp.	5 to 55 °C																										
Max. ambient humidity	93% rel. humidity																										
Display	LCD, 8-digit																										
Display units	MWh - kWh - GJ - Gcal - °C - m³ - m³/h																										
Display values	Energy - volume - flow rate - power - temperatures																										

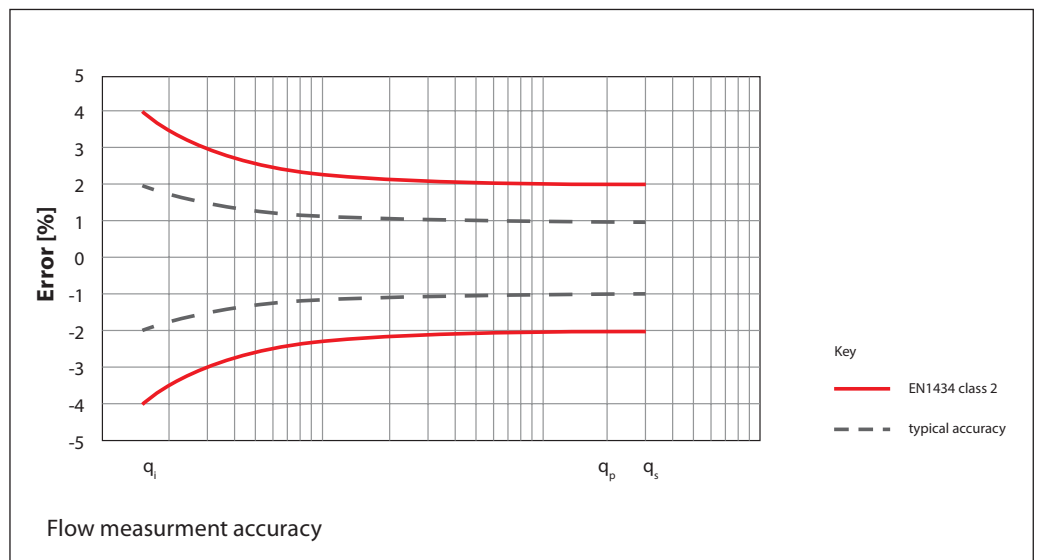
Application drawings



Application drawings
(continuous)



Accuracy



Design and function

Optical interface

Optical interface is integrated into the front panel of the calculator. It is designed for data reading via M-bus protocol and parameterization of the meter using SonoMeter 30 UserConfig software and optical head OG-1-USB.

The optical interface is activated by pressing the control button and shuts automatically off 5 minutes after the last pressing button or after completing data transmission via interface.

Wired M-Bus interface

The energy meter has 1 slot for an additional communication module. The internal M-Bus module provides data reading possibility via M-Bus protocol:

- M-Bus protocol according to EN13757-3 standard
- 2-wire with polarity reversal protection
- Electrical isolation
- Maximum voltage 50 V DC
- Current drawn: one M-Bus load (1.5 mA)
- Primary or secondary addressing
- Baud rate 2400 bps
- Battery lifetime min. 11 years (2 AA cell)
- Battery supply communication is limited on every 15 min at 2400 baud rate or faster, 70 meters on bus
- Fastest reading interval at mains supply: no limits

Radio OMS 868.95 MHz interface

- The module can provide data reading via radio module:
- Wireless M-Bus protocol according to EN13757-4
- OMS (open metering system) compatible, compliant to OMS 4.0.2
- T1 mode (unidirectional)
- Sending interval every 90 seconds (suitable for 'walk by' readings)

Modbus RS-485 module

RS-485 module is Modbus RTU protocol and a serial interface for communication with external devices.

Baud rate	1200, 2400, 4800, 9600(default), 38400, 56000, 57600, 115200 bps
Power supply	Polarity independent connection for power supply – connectors 60 and 61. Voltage 12-24 V AC/DC. Maximum power consumption 2 W max. Typical supply current 50 mA.

BACnet

Baud rate	9600, 19200, 38400 –default, 57600, 76800, 115200 bps
Power supply	Polarity independent connection for power supply – connectors 60 and 61.
	Voltage 12-24 V AC/DC.
	Maximum power consumption 2 W max.
	Typical supply current 50 mA.

2 pulse inputs or 2 pulse outputs (set up by jumpers)

There is a connector J on the calculator plate between the temperature sensors and pulse input / output connection terminals. By means of connecting or opening the connector contacts, the pulse inputs or outputs are activated.

Note: On delivery the heat meter is configured with two outputs.

Pulse inputs (not default, jumper set needed)

Number of pulse inputs	2
Measurement units	m3 (51, 52), kWh (52, 53) or MWh, GJ, GCal
Pulse value	programmable by SonoMeter 30 UserConfig Software
Min. pulse time	100 ms
Pulse type	IB by class IB according to EN1434-2
Max. frequency of input pulses	3 Hz
Max. voltage of input pulses	3.6 V

Design and function
(continuous)
Pulse outputs (default, no jumper set)

Number of pulse outputs	2
Measurement units	m ³ (51, 52), kWh (52, 53) or MWh, GJ, GCal,
Pulse value	according to the table below
Pulse type	open collector, permissible current up to 20 mA, voltage up to 50 V, class OB according to EN1434-2
Max. frequency of output pulses	3 Hz
Pulse duration	100 ms in normal mode, 1.6 ms in the test mode

Energy pulse output values (V1)

Energy units	kWh or MWh	GJ	Gcal
Pulse value of thermal energy	1 kWh/pulse	0.005 GJ/pulse	0.001 Gcal/pulse

Volume pulse output values (V2)

Nominal flow rate (qp), m ³ /h	0.6 - 6	10; 15
Pulse value, l/pulse	1	10

Data logger
Data logger

Following hourly, daily and monthly parameter values are recorded in energy meter memory (can be configured by SonoMeter 30 UserConfig software):

- 1Integrated heating energy
- 2Integrated cooling energy
- 3Integrated energy of tariff 1
- 4Integrated energy of tariff 2
- 5Integrated volume of liquid
- 6Integrated pulse value in pulse input 1
- 7Integrated pulse value in pulse input 2
- 8Maximum thermal power value for heating and date
- 9Maximum thermal power value for cooling and date
- 10Maximum flow rate value and date
- 11Maximum value of flow temperature of heat conveying liquid and date
- 12Maximum value of return temperature of heat conveying liquid and date
- 13Minimum value of flow temperature of heat conveying liquid and date
- 14Minimum value of return temperature of heat conveying liquid and date
- 15Minimum value of temperature difference and date
- 16Average value of flow temperature of heat conveying liquid
- 17Average value of return temperature of heat conveying liquid
- 18Operating time without an error of thermal energy calculation
- 19Total error code
- 20Time when the flow rate exceeded 1.2 q_s
- 21Time when the flow rate was less than q_i

Data logger capacity

- up to 1480 h - for hourly records
- up to 1130 days - for daily records
- up to 36 last months - for monthly records
- Storage time of measured integrated parameters even if device is disconnected from power supply: not less than 15 years

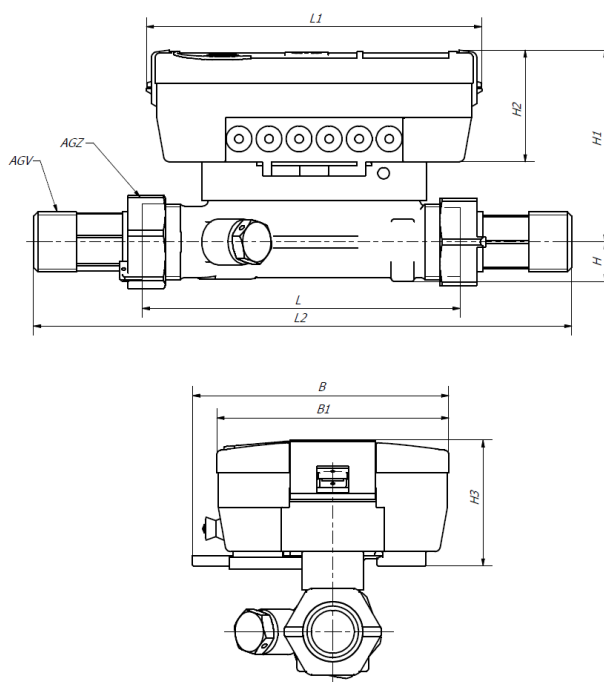
All data from archive can be read by means of the remote reading. In addition data logger records of monthly parameters can be seen on the display.

Power supply

Power supply (one of following depending on meter configuration):

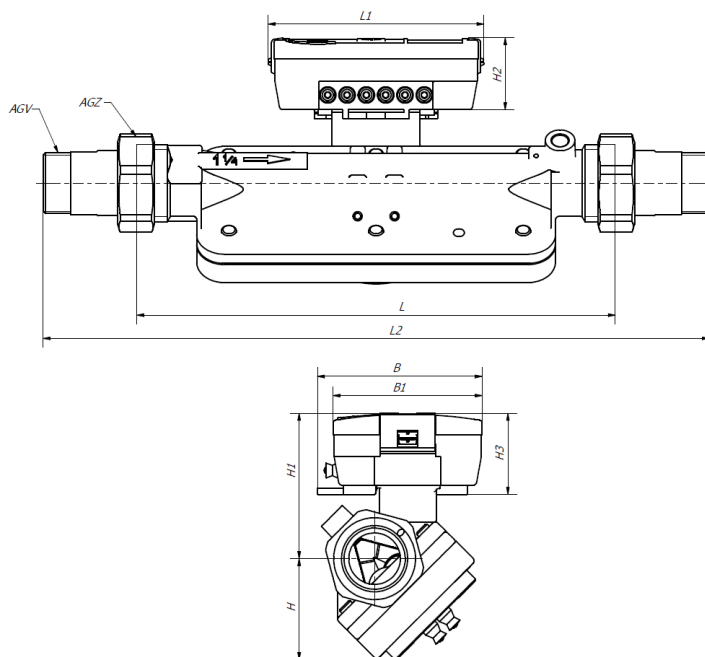
- 2 AA cell battery 3.6 V DC, 2.4 Ah (Li-SOCI₂) lithium battery, life time at least 11 years
- Mains power supply 12 V AC to 36 V AC (50/60 Hz) or 12 V DC to 42 V DC:
 - The mains power supply 24V AC/DC module is mounted inside in the meter
 - Consumption is max 20 mA
 - Galvanically isolated + internal backup battery size AA cell, 3.6 V, 2.4 Ah, lithium battery (Li-SOCI₂). When the external power supply is turned off, the battery life time is not less than 11 years (without data reading via a digital interface)
- Mains power supply 230 V AC (+10% / -30%) 50/60Hz:
 - The meter should be equipped with an internal power supply unit and an external transformer. The 230 V AC to 24 V AC transformer is used for connection to mains power supply 24 V AC/DC module inside the meter
 - Consumption is max 10 mA

Dimensions,
DN15, DN20 thread



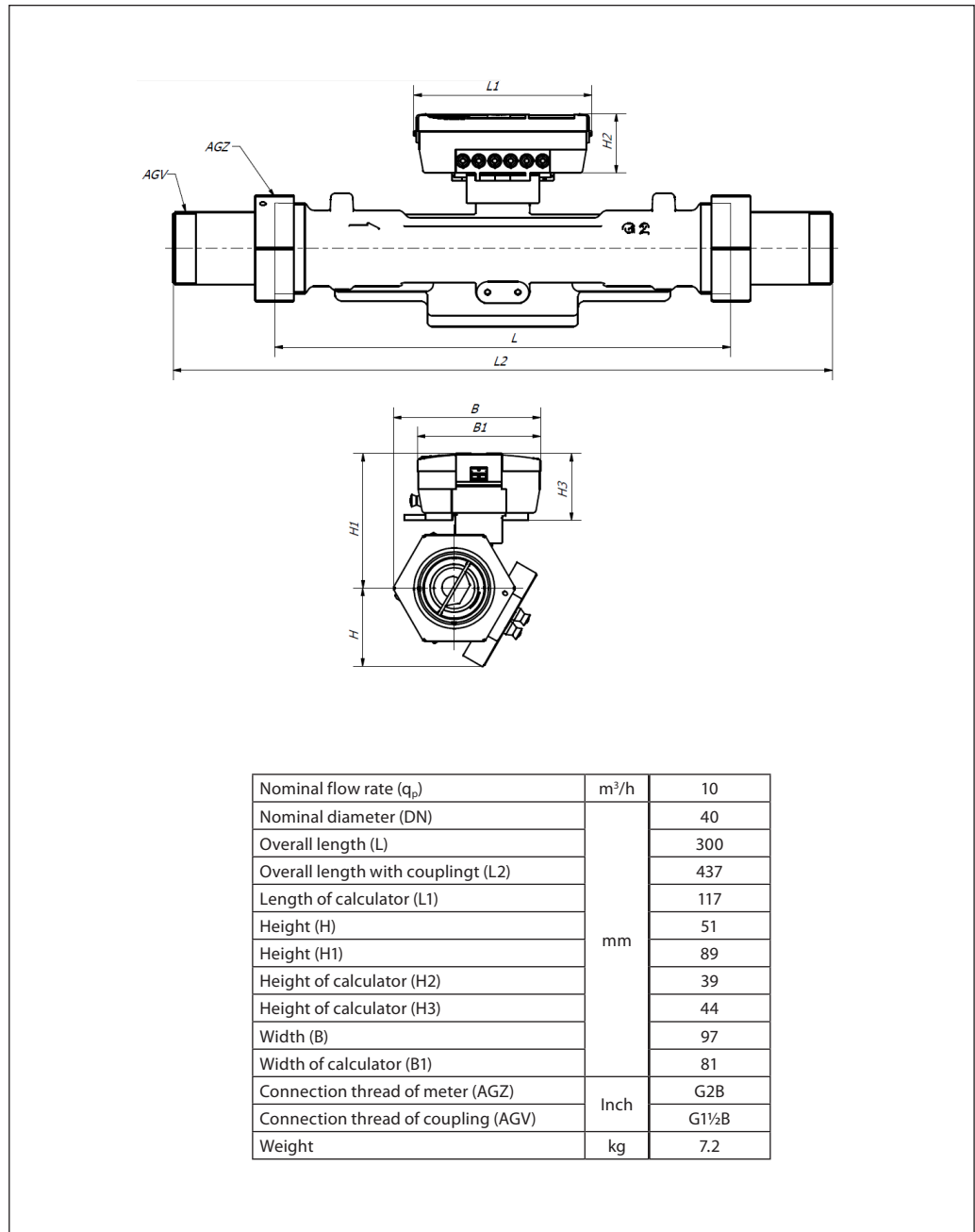
Nominal flow rate (q _p)	m ³ /h	0.6 / 1 / 1.5	1.5 / 2.5	0.6 / 1 / 1.5 / 2.5
Nominal diameter (DN)	mm	15	20	20
Overall length (L)		110	130	190
Overall length with couplingt (L2)		185	224	284
Length of calculator (L1)		117	117	117
Height (H)		14	18	18
Height (H1)		67	67	68
Height of calculator (H2)		39	39	39
Height of calculator (H3)		44	44	44
Width (B)		90	90	90
Width of calculator (B1)		81	81	81
Connection thread of meter (AGZ)		Inch	G¾B	G1B
Connection thread of coupling (AGV)	G½B		G¾B	G¾B
Weight	kg	0.8	0.9	1.0

Dimensions,
DN25 thread

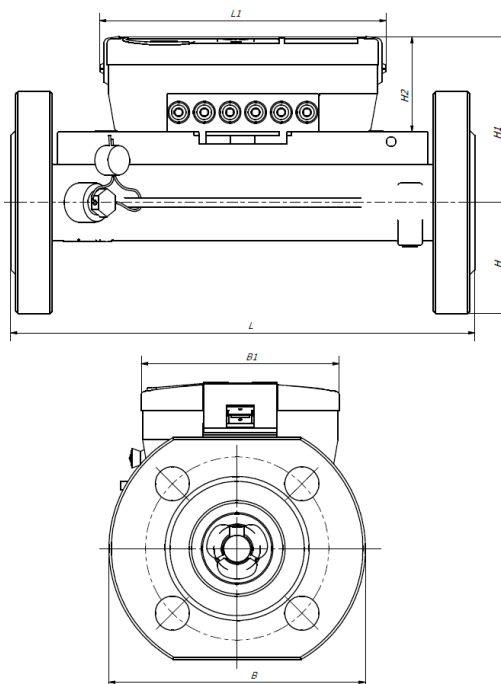


Nominal flow rate (q_p)	m ³ /h	3.5 / 6	
Nominal diameter (DN)		25	
Overall length (L)		260	
Overall length with couplingt (L2)		360	
Length of calculator (L1)		117	
Height (H)	mm	55	
Height (H1)		79	
Height of calculator (H2)		39	
Height of calculator (H3)		44	
Width (B)		90	
Width of calculator (B1)		81	
Connection thread of meter (AGZ)		Inch	G1¼B
Connection thread of coupling (AGV)			G1B
Weight		kg	3.6

Dimensions,
DN40 thread



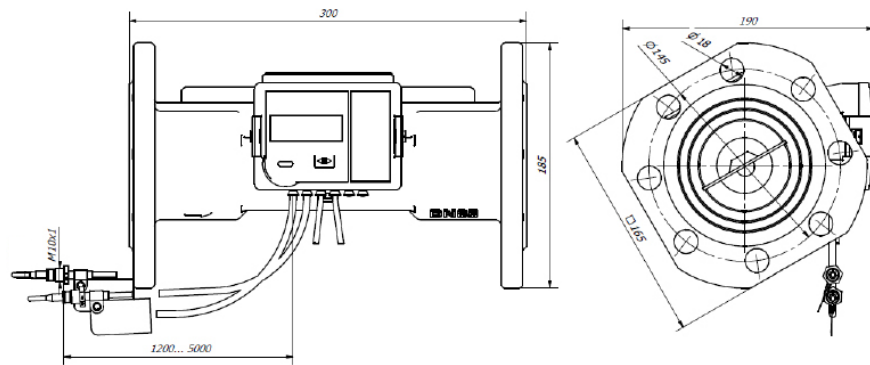
Dimensions,
DN20, DN25, DN40, DN50
flange



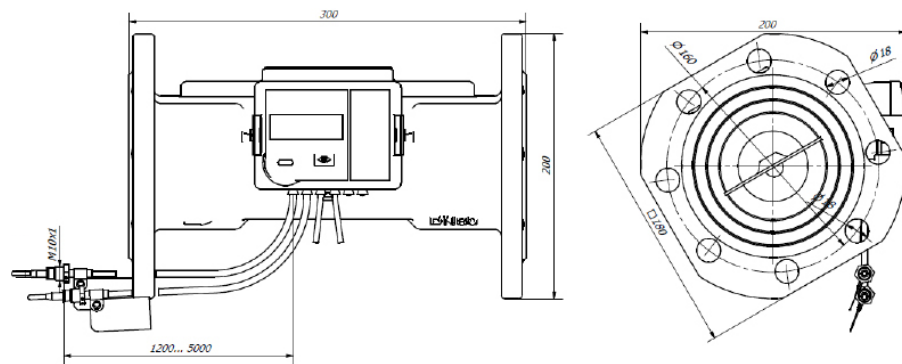
Nominal flow rate (q_p)	m ³ /h	0.6 / 1 / 1.5 / 2.5	3.5/6	10	15
Nominal diameter (DN)	mm	20	25	40	50
Overall length (L)		190	260	300	270
Length of calculator (L1)		117	117	117	117
Height (H)		46	58	73	79
Height (H1)		68	78	91	90
Height of calculator (H2)		39	39	39	39
Width (B)		105	116	150	159
Width of calculator (B1)		81	81	81	81
Connection flange of meter (DNFL)		20	25	40	50
Weight		kg	2.5	5.6	6.8

Dimensions,
DN65, DN80, DN100

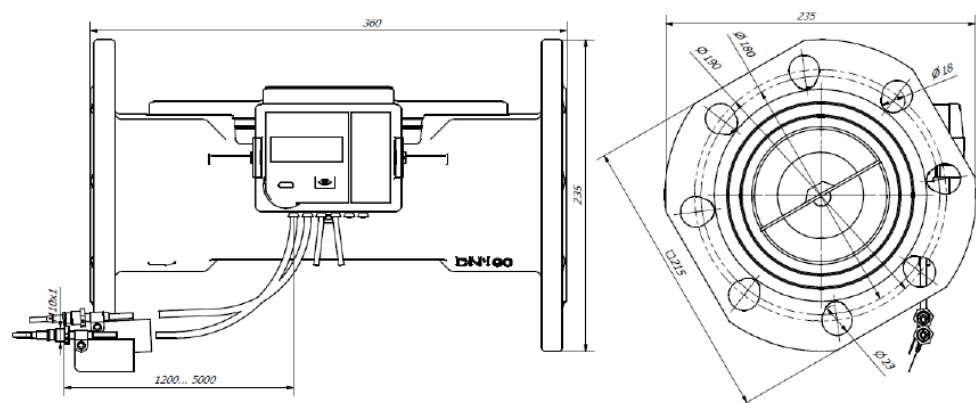
DN 65



DN 80



DN 100



Nominal flow rate (q_p)	m ³ /h	25	40	60
Nominal diameter (DN)		65	80	100
Overall length (L)		300	300	360
Length of calculator (L1)		117	117	117
Height of calculator (H2)		44	44	44
Width (B)	mm	165	180	180
Width of calculator (B1)		90	90	90
Holes		18	18	18
Central pipe diameter		145	160	190
Weight	kg	13	15	18

Ordering

SonoMeter 30 - Heating

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN15 qp0.6m ³ /h G $\frac{3}{4}$ 110mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3648
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3007
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3002
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3004
	RS-485 Modbus	kWh	Return	1.5m	PN16	Mains power 230V	187F3934
	Wired M-Bus	GJ	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3869
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3001
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3003
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3005
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3006
Wired M-Bus	kWh	Supply	1.5m	PN16	Mains power 230V	187F3644	
DN15 qp1.0m ³ /h G $\frac{3}{4}$ 110mm	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3014
DN15 qp1.5m ³ /h G $\frac{3}{4}$ 110mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3649
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3021
	no module	kWh	Supply	3.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3241
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3016
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3018
	Radio OMS 868.95	kWh	Return	1.5m	PN25	Battery 3.6V DC (2 AA-cell)	187F3941
	RS-485 Modbus	kWh	Return	1.5m	PN16	Mains power 230V	187F3283
	Wired M-Bus	GJ	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3852
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3015
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3017
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains unit 24V AC	187F3661
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3019
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3020
	Wired M-Bus	kWh	Return	3.0m	PN25	Mains power 230V	187F3276
	Wired M-Bus	kWh	Supply	1.5m	PN16	Mains power 230V	187F3645
Wired M-Bus	MWh	Return	1.5m	PN25	Mains power 230V	187F3173	
DN20 qp1.5m ³ /h G1 130mm	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3140
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3131
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3133
	RS-485 Modbus	kWh	Return	1.5m	PN16	Mains power 230V	187F3935
	Wired M-Bus	GJ	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3870
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3130
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3132
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3138
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3139
	Wired M-Bus	kWh	Return	3.0m	PN25	Mains power 230V	187F3277
	Wired M-Bus	kWh	Return	5.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3670
	Wired M-Bus	kWh	Supply	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3628
DN20 qp1.5m ³ /h G1 190mm	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3287
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3026
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3027
DN20 qp2.5m ³ /h G1 130mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3654
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3035
	no module	kWh	Supply	3.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3242
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3030
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3032
	Radio OMS 868.95	kWh	Return	1.5m	PN25	Battery 3.6V DC (2 AA-cell)	187F3942
	RS-485 Modbus	kWh	Return	1.5m	PN16	Mains power 230V	187F3284
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3029
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3031
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains unit 24V AC	187F3662
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3033
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3034
	Wired M-Bus	kWh	Supply	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3293

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN20 qp2.5m ³ /h G1 190mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3655
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3040
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3041
	Wired M-Bus	kWh	Return	3.0m	PN25	Mains power 230V	187F3278
	Wired M-Bus	MWh	Return	1.5m	PN25	Mains power 230V	187F3174
DN25 qp3.5m ³ /h G1¼ 260mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3656
	no module	kWh	Supply	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3048
	no module	kWh	Supply	3.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3243
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3044
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Mains power 230V	187F3046
	Wired M-Bus	GJ	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3853
	Wired M-Bus	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3043
	Wired M-Bus	kWh	Return	2.0m	PN16	Mains power 230V	187F3045
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3047
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3646
	Wired M-Bus	kWh	Return	3.0m	PN25	Mains power 230V	187F3279
	Wired M-Bus	kWh	Supply	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3294
	Wired M-Bus	MWh	Return	2.0m	PN25	Mains power 230V	187F3175
DN25 qp3.5m ³ /h threaded flange 260mm	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3143
DN25 qp6.0m ³ /h G1¼ 260mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3657
	no module	kWh	Supply	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3062
	no module	kWh	Supply	3.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3244
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3058
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Mains power 230V	187F3060
	RS-485 Modbus	kWh	Return	2.0m	PN16	Mains power 230V	187F3936
	Wired M-Bus	GJ	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3855
	Wired M-Bus	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3057
	Wired M-Bus	kWh	Return	2.0m	PN16	Mains power 230V	187F3059
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3061
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3647
	Wired M-Bus	kWh	Return	3.0m	PN25	Mains power 230V	187F3280
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3176
DN25 qp6.0m ³ /h threaded flange 260mm	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3179
Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3667	
DN40 qp10m ³ /h G2 300mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3658
	no module	MWh	Supply	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3075
	no module	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3245
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3072
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Mains power 230V	187F3074
	Radio OMS 868.95	kWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3640
	RS-485 Modbus	kWh	Return	2.0m	PN25	Mains power 230V	187F3937
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3071
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3073
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3177
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3281
DN40 qp10m ³ /h threaded flange 300mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3659
	no module	MWh	Supply	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3089
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3086
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Mains power 230V	187F3088
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3085
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3087
DN50 qp15m ³ /h flange 270mm	no module	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3660
	no module	MWh	Supply	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3103
	no module	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3246
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3100
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Mains power 230V	187F3102
	Radio OMS 868.95	kWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3642
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3099
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3101
	Wired M-Bus	kWh	Return	5.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3666
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3178
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3282

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN65 qp25m ³ /h flange 300mm	no module	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3672
	no module	MWh	Return	3.0m	PN25	Mains power 230V	187F3890
	no module	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3671
	no module	MWh	Supply	3.0m	PN25	Mains power 230V	187F3889
DN65 qp25m ³ /h flange 300mm	Radio OMS 868.95	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3676
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Mains power 230V	187F3893
	Radio OMS 868.95	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3675
	Radio OMS 868.95	MWh	Supply	3.0m	PN25	Mains power 230V	187F3892
	Wired M-Bus	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3674
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3845
	Wired M-Bus	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3673
	Wired M-Bus	MWh	Supply	3.0m	PN25	Mains power 230V	187F3891
DN80 qp40m ³ /h flange 300mm	no module	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3680
	no module	MWh	Return	3.0m	PN25	Mains power 230V	187F3896
	no module	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3679
	no module	MWh	Supply	3.0m	PN25	Mains power 230V	187F3895
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3684
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Mains power 230V	187F3899
	Radio OMS 868.95	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3683
	Radio OMS 868.95	MWh	Supply	3.0m	PN25	Mains power 230V	187F3898
	Wired M-Bus	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3682
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3847
	Wired M-Bus	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3681
	Wired M-Bus	MWh	Supply	3.0m	PN25	Mains power 230V	187F3897
DN100 qp60m ³ /h flange 360mm	no module	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3688
	no module	MWh	Return	3.0m	PN25	Mains power 230V	187F3902
	no module	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3687
	no module	MWh	Supply	3.0m	PN25	Mains power 230V	187F3901
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3692
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Mains power 230V	187F3905
	Radio OMS 868.95	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3691
	Radio OMS 868.95	MWh	Supply	3.0m	PN25	Mains power 230V	187F3904
	Wired M-Bus	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3690
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3849
	Wired M-Bus	MWh	Supply	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3689
	Wired M-Bus	MWh	Supply	3.0m	PN25	Mains power 230V	187F3903

Ordering

SonoMeter 30 - Combined heating and cooling

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN15 qp0.6m ³ /h G $\frac{3}{4}$ 110mm	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F3991
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7004
	no module	kWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3969
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3979
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3009
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3011
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3943
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3956
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7020
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7027
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3008
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3010
DN15 qp1.5m ³ /h G $\frac{3}{4}$ 110mm	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F3992
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7005
	no module	kWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3970
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3980
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3023
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3025
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3944
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3957
RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7021	

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN15 qp1.5m ³ /h G3/4 110mm	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7028
	RS-485 Modbus	kWh	Supply	3.0m	PN16	Mains unit 230V AC	187F7036
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3022
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3024
DN20 qp1.5m ³ /h G1 130mm	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F3999
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7012
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3135
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3137
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3951
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3964
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7025
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7032
	Wired M-Bus	GJ	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3871
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3134
DN20 qp1.5m ³ /h G1 190mm	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3286
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3286
DN20 qp2.5m ³ /h G1 130mm	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F3993
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7006
	no module	kWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3971
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3981
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3037
	Radio OMS 868.95	kWh	Return	1.5m	PN16	Mains power 230V	187F3039
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3945
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3958
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7022
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7029
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3036
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3038
DN25 qp3.5m ³ /h G1 260mm	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F7000
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7013
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3952
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3965
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7026
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7033
	Wired M-Bus	kWh	Return	1.5m	PN16	Battery 3.6V DC (2 AA-cell)	187F3285
	Wired M-Bus	kWh	Return	1.5m	PN16	Mains power 230V	187F3663
DN25 qp3.5m ³ /h G1 260mm	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7023
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7030
	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F3994
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7007
	no module	kWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3972
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3982
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3051
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Mains power 230V	187F3053
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3946
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3959
	Wired M-Bus	GJ	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3854
	Wired M-Bus	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3050
	Wired M-Bus	kWh	Return	2.0m	PN16	Mains power 230V	187F3052
	Wired M-Bus	kWh	Supply	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3141
DN25 qp6.0m ³ /h G1 260mm	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 230V AC	187F7024
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F7031
	BACnet	kWh	Supply	1.5m	PN16	Mains power 230V	187F3995
	BACnet	kWh	Supply	1.5m	PN16	Mains unit 24V AC	187F7008
	no module	kWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3973
	no module	kWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3983
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3065
	Radio OMS 868.95	kWh	Return	2.0m	PN16	Mains power 230V	187F3067
	RS-485 Modbus	kWh	Return	10m	PN16	Mains power 230V	187F3947
	RS-485 Modbus	kWh	Return	10m	PN16	Mains unit 24V AC	187F3960
	Wired M-Bus	GJ	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3856

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN25 qp6.0m ³ /h G1¼ 260mm	Wired M-Bus	kWh	Return	10m	PN16	Mains power 230V	187F7017
	Wired M-Bus	kWh	Return	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3064
	Wired M-Bus	kWh	Return	2.0m	PN16	Mains power 230V	187F3066
	Wired M-Bus	kWh	Supply	2.0m	PN16	Battery 3.6V DC (2 AA-cell)	187F3142
DN40 qp10m ³ /h G2 300mm	BACnet	kWh	Supply	1.5m	PN25	Mains power 230V	187F3996
	BACnet	kWh	Supply	1.5m	PN25	Mains unit 24V AC	187F7009
	no module	MWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3974
	no module	MWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3984
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3079
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Mains power 230V	187F3081
	Radio OMS 868.95	kWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3641
	RS-485 Modbus	kWh	Return	10m	PN25	Mains power 230V	187F3948
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F3961
	Wired M-Bus	GJ	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3880
	Wired M-Bus	kWh	Return	10m	PN25	Mains power 230V	187F7018
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3078
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3080
Wired M-Bus	kWh	Supply	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3664	
DN40 qp10m ³ /h threaded flange 300mm	BACnet	kWh	Supply	1.5m	PN25	Mains power 230V	187F3997
	BACnet	kWh	Supply	1.5m	PN25	Mains unit 24V AC	187F7010
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3093
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Mains power 230V	187F3095
	RS-485 Modbus	kWh	Return	10m	PN25	Mains power 230V	187F3949
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F3962
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3092
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3094
	Wired M-Bus	kWh	Supply	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3665
DN50 qp15m ³ /h flange 270mm	BACnet	kWh	Supply	1.5m	PN25	Mains power 230V	187F3998
	BACnet	kWh	Supply	1.5m	PN25	Mains unit 24V AC	187F7011
	no module	MWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3975
	no module	MWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3985
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3107
	Radio OMS 868.95	kWh	Return	2.0m	PN25	Mains power 230V	187F3109
	Radio OMS 868.95	kWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3643
	RS-485 Modbus	kWh	Return	10m	PN25	Mains power 230V	187F3950
	RS-485 Modbus	kWh	Return	10m	PN25	Mains unit 24V AC	187F3963
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3106
	Wired M-Bus	kWh	Return	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3210
	Wired M-Bus	kWh	Return	2.0m	PN25	Mains power 230V	187F3108
Wired M-Bus	kWh	Supply	2.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3296	
DN65 qp25m ³ /h flange 300mm	BACnet	MWh	Supply	1.5m	PN25	Mains power 230V	187F7001
	BACnet	MWh	Supply	1.5m	PN25	Mains unit 24V AC	187F7014
	no module	MWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3976
	no module	MWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3986
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3678
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Mains power 230V	187F3894
	RS-485 Modbus	MWh	Return	10m	PN25	Mains power 230V	187F3953
	RS-485 Modbus	MWh	Return	10m	PN25	Mains unit 24V AC	187F3966
	Wired M-Bus	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3677
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3846
DN80 qp40m ³ /h flange 300mm	BACnet	MWh	Supply	1.5m	PN25	Mains power 230V	187F7002
	BACnet	MWh	Supply	1.5m	PN25	Mains unit 24V AC	187F7015
	no module	MWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3977
	no module	MWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3987
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3686
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Mains power 230V	187F3900
	RS-485 Modbus	MWh	Return	10m	PN25	Mains power 230V	187F3954
	RS-485 Modbus	MWh	Return	10m	PN25	Mains unit 24V AC	187F3967
	Wired M-Bus	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3685
Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3848	
DN100 qp60m ³ /h flange 360mm	BACnet	MWh	Supply	1.5m	PN25	Mains power 230V	187F7003
	BACnet	MWh	Supply	1.5m	PN25	Mains unit 24V AC	187F7016
	no module	MWh	Return	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3978

Data sheet

SonoMeter 30

Nominal flow, size and connection type	Comm. module	Energy	Installation	Temp. Sensor	Pressure	Power supply	Code no.
DN100 qp60m ³ /h flange 360mm	no module	MWh	Supply	1.5m	PN16	Battery 3.6V DC (1 AA-cell)	187F3988
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3694
	Radio OMS 868.95	MWh	Return	3.0m	PN25	Mains power 230V	187F3906
	RS-485 Modbus	MWh	Return	10m	PN25	Mains power 230V	187F3955
	RS-485 Modbus	MWh	Return	10m	PN25	Mains unit 24V AC	187F3968
	Wired M-Bus	MWh	Return	3.0m	PN25	Battery 3.6V DC (2 AA-cell)	187F3693
	Wired M-Bus	MWh	Return	3.0m	PN25	Mains power 230V	187F3850

¹⁾ Cable length between flow sensor and energy calculator.

DN 15 and DN 20 meters with thread has one temperature sensor mounted in the body.
All above codes are battery powered meters with two 3.6 V AA cell batteries (lifetime min 11 years).
More standard codes are available at www.danfoss.com.
Codes with special specifications are available as build up codes - if needed contact your local department.

Accessories

Product	Designation	Quantity	Code no.
Optical head	Optical head	1 pc.	187F3112
Power supply	Battery 3.6 V DC (AA cell)	1 pc.	187F3113
Power supply	Mains unit 230 V AC (external module)	1 pc.	187F3114
Power supply	Mains unit 24 V AC	1 pc.	187F3115
Communication module	M-Bus module	1 pc.	187F3116
Communication module	Radio OMS 868.95 MHz	1 pc.	187F3117
Communication module	RS-485 Modbus	1 pc.	187F3118
Communication module	SonoMeter 30 BACnet module	1 pc.	187F3417
Temperature sensor	Pt 500 / f 5.2 mm / 1.5 m cable, MID	1 pc.	187F3125
Temperature sensor	Pt 500 / f 5.2 mm / 2 m cable, MID	1 pc.	187F3126
Temperature sensor	Pt 500 / f 5.2 mm / 3 m cable, MID	1 pc.	187F3127
Sensor pockets	Ø 5.2 mm, brass, 35 mm length	1 pair	087G6053
Sensor pockets	Ø 5.2 mm, brass, 52 mm length	1 pair	087G6054
Sensor pockets	Ø 5.2 mm, brass, 85 mm length	1 pair	087G6055
Sensor pockets	Ø 5.2 mm, brass, 120 mm length	1 pair	087G6056
Sensor pockets	Ø 5.2 mm, stainless steel, 85 mm length	1 pair	087G6057
Sensor pockets	Ø 5.2 mm, stainless steel, 120 mm length	1 pair	087G6058
Tailpiece connection set	Tailpiece connection set DN15 G3/4"-R1/2" PN25 130 °C	pair	087G6071
Tailpiece connection set	Tailpiece connection set DN 20 G1"-R3/4" PN25 130 °C	pair	087G6072
Tailpiece connection set	Tailpiece connection set DN 25 G1 1/4"-R1" PN25 130 °C	pair	087G6073
Adapter for temperature sensor	R½ x M10 x 1	1 pc.	087G6075
Adapter for temperature sensor	R½ x M10 x 1	32 pcs.	087G6076
Plastic installation set for temperature sensors	Fittings PN16 95 °C	20 pcs.	087G6077
Brass installation set for temperature sensors	Fittings PN16 130 °C	20 pcs.	087G6078
Ball valve	G½" internal thread, Pt sensor connection M10	1 pc.	187F0593
Ball valve	G½" internal thread, Pt sensor connection M10	12 pcs.	087H0118
Ball valve	G¾" internal thread, Pt sensor connection M10	1 pc.	187F0592
Ball valve	G¾" 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
Brass-pockets, 40 mm, f6.0 pair	Fittings PN25 130 °C	pair	087G6061
Brass-pockets, 85 mm, f6.0 pair	Fittings PN25 130 °C	pair	087G6062
Brass-pockets, 120 mm, f6.0 pair	Fittings PN25 130 °C	pair	087G6063
Stainless steel-pockets, 85mm f6.0 pair	Fittings PN25 130 °C	pair	087G6064
Stainless steel-pockets, 120mm f6.0 pair	Fittings PN25 130 °C	pair	087G6065
Stainless steel-pockets, 155mm f6.0 pair	Fittings PN25 130 °C	pair	087G6066
Stainless steel-pockets, 210mm f6.0 pair	Fittings PN25 130 °C	pair	087G6067

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