

SAPHIR[®] Modularis

Surface-mounted and flush-mounted water meter

Application

The SAPHIR[®] Modularis water meter is used to measure hot and cold water in small commercial units such as homes, offices, shops, etc. The SAPHIR[®] Modularis can be supplied with pulse output, M-Bus interface or wireless M-Bus (radio) in accordance with the manufacturer-independent OMS[®] standard. The unit can also be retrofitted with communication modules. Surface-mounted and flush-mounted versions are available.



Features

- For cold and hot water up to 90°C
- Energy supply for the communication module > 10 years
- Available with wireless M-Bus radio
- Compatible with the open OMS[®] standard
- The last 12 month-end values are stored in the communication modules
- Surface/flush-mounted and flush-mounted installation / front-wall installation on horizontal and vertical pipes
- Metrological certification in accordance with 2004/22/EC (MID)

Customer benefits

- Precise calculation of water consumption and consumption-based billing
- Easy installation
- Long service life
- Rotating roller counter for optimum readout
- The radio function complies with the open OMS[®] standard for straightforward mobile or permanent readouts

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1 Operation and system layout

The SAPHIR® Modularis water meter works in accordance with the singlejet (surface-mounted) and multijet (flush-mounted) principle. Its sophisticated design ensures accurate readings with a high level of reliability. The systematic separation of wet and dry areas protects the roller counter against the build-up of deposits and corrosion.

The 8-digit roller counters are rotatable and can be aligned to ensure maximum readability for both horizontal and vertical installation.

The register units can be fitted with wired (pulse, M-Bus) or wireless (wireless M-Bus) communication modules, which makes them perfect for modern counter communication systems. The modular structure means that the unit can be integrated into this kind of readout system retroactively. In M-Bus and wireless M-Bus units, the month-end values for the last year are stored by the built-in data logger in the communication module, making them available for a temporary walk-by readout. The wireless M-Bus radio module complies with the open OMS® standard.

2 Technical data and order information

Water meter	
Basic features	
Operating temperature	0 – 60°C
Water temperature, max.	90°C
Nominal pressure (PN)	16 bar
Protection rating	IP68
Installation position	Horizontal or vertical
Required inlet and outlet sections	None
Display	Rotating 8-digit roller counter
Resolution	1 litre
Certification	MID 2004/22/EG
Interfaces	
Power supply	Battery 10+1 years
Pulse output (depending on version)	Pulse generator, S0 DIN 43864, open collector, reed-compatible, 1 litre / pulse
M-Bus (depending on version)	M-Bus compliant with EN1434-3 / EN13757 Unlimited readout frequency 12 month-end values
Wireless M-Bus radio (depending on version)	868 MHz, Open Metering Standard (OMS) For S1/T1 and S2/T2 modes as per EN13757 Short or long telegram For mobile walk-by or automatic meter reading (AMR) Sending interval 2 - 240 minutes Sending times freely selectable AES 128 encryption Parameter setting via optical M-Bus interface (Default: Mode T1, long telegram with current reading and the last 15 end of month values, sending interval of 4 minutes on working days from 07:00 – 19:00, encrypted)

Singlejet meter – surface-mounted			
Nominal flow Qn (EEC)	[m3/h]	Qn = 1.5	Qn = 2.5
Nominal flow Q3 (MID)	[m3/h]	2.5	4
Nominal diameter (DN)	[mm]	15	20
Connecting thread	[Inches]	G3/4	G1
Installation length L	[mm]	110	130
Low flow threshold values	[l/h]	8	15
Kvs value	[m3/h]	3.2	5
Installed height from pipe centre H, variants basic design, pulse output, M-Bus	[mm]	53	53

Installed height from pipe centre H variant radio	[mm]	66	66
MID accuracy class		R80H/R50V	R80H/R50V
Item no. of basic version		95144	95145
Item no. with pulse output		95146	95147
Item no. with M-Bus		95148	95149
Item no. with radio		95150	95151
Multijet measuring capsule – flush-mounted	[m ³ /h]	Qn = 1.5	
Nominal flow Qn (EEC)			
Nominal flow Q3 (MID)	[m ³ /h]	2.5	
Connecting thread:	[Inches]	G2	
Low flow threshold values	[l/h]	10	
Kvs value	[m ³ /h]	3.3	
Installation height from EASN H, variants basic design, pulse output, M-Bus	[mm]	62	
Installation height from EASN H, variant radio	[mm]	75	
Installed height from pipe centre with EASN AM, variants basic design, pulse output, M-Bus	[mm]	92	
Installed height from pipe centre with EASN AM, variant radio	[mm]	105	
Dimensions (D1)	[mm]	75	
Dimensions (D2)	[mm]	65	
Dimensions (D3)	[mm]	71	
MID accuracy class		R80H/R40V	
Item no. of basic version		95140	
Item no. with pulse output		95141	
Item no. with M-Bus		95142	
Item no. with radio		95143	
Installation accessories for measuring capsule			
Item no. Flush-mounted installation kit, 3/4" outer thread (EASN housing, seal, cover, plastering aid)		93126	
Item no. Flush-mounted installation kit, 3/4" interior thread (EASN housing, seal, cover, plastering aid)		93574	
Item no. Surface-mounted installation kit, 3/4" outer thread (EASN housing, seal, cover, plastering aid)		93173	
Item no. Rosette set, diameter 125, chrome (tube with sliding rosette)		94083	
Item no. Dummy cap for rosette set		95369	
Item No. EAS extension 20 mm		95377	
Item No. EAS extension 40 mm		93174	
Item No. Universal installation wrench		80487	

3 Engineering notes

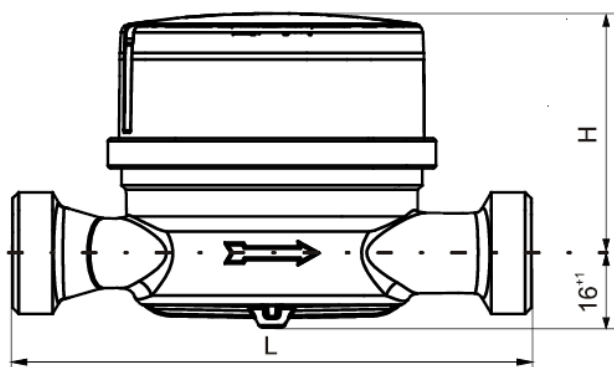
For automatic readouts via M-Bus or wireless M-Bus radio, we offer you comprehensive system technology for fixed or mobile readout. We would also be happy to advise you on readout and billing services.

4 Installation

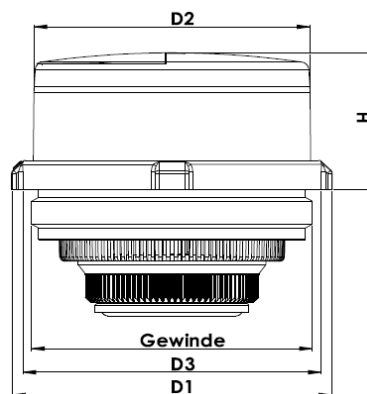
The SAPHIR® Modularis water meter can be installed either horizontally or vertically in cold or hot water pipes. No inlet or outlet straight piping is required. The head of the meter can be aligned facing upwards or to the side. The register unit is rotatable and can be aligned for maximum readability.

5 Dimensional drawings

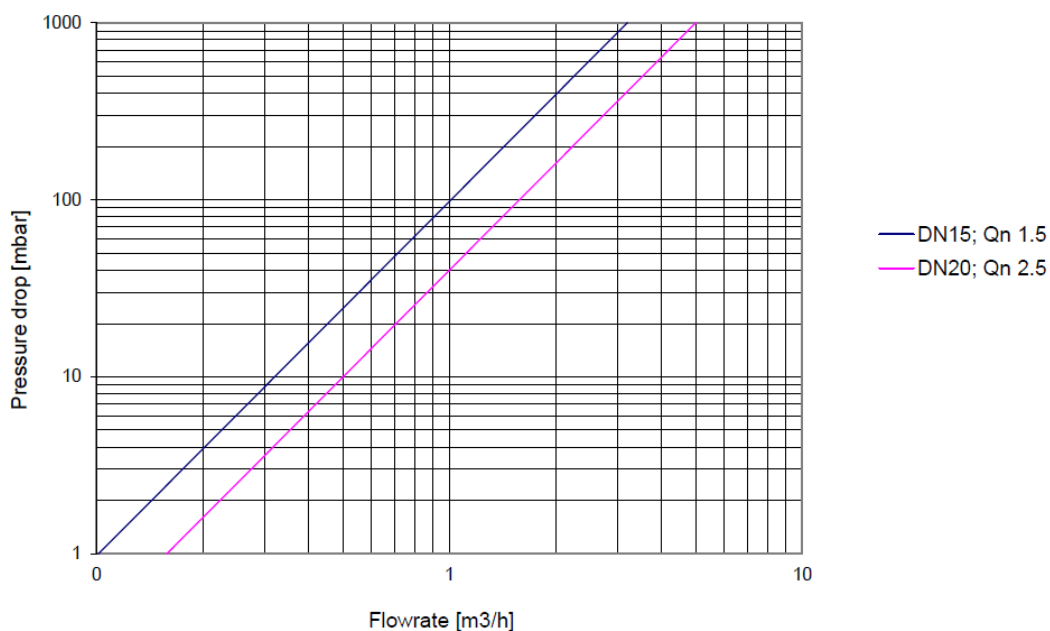
Singlejet meter, surface-mounted



Multijet measuring capsule, flush-mounted



6 Nomogram of pressure loss



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