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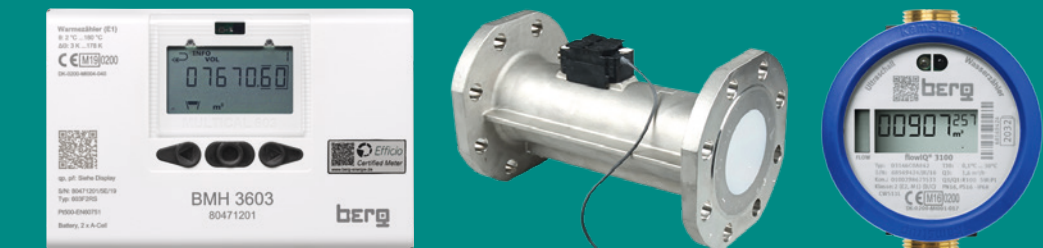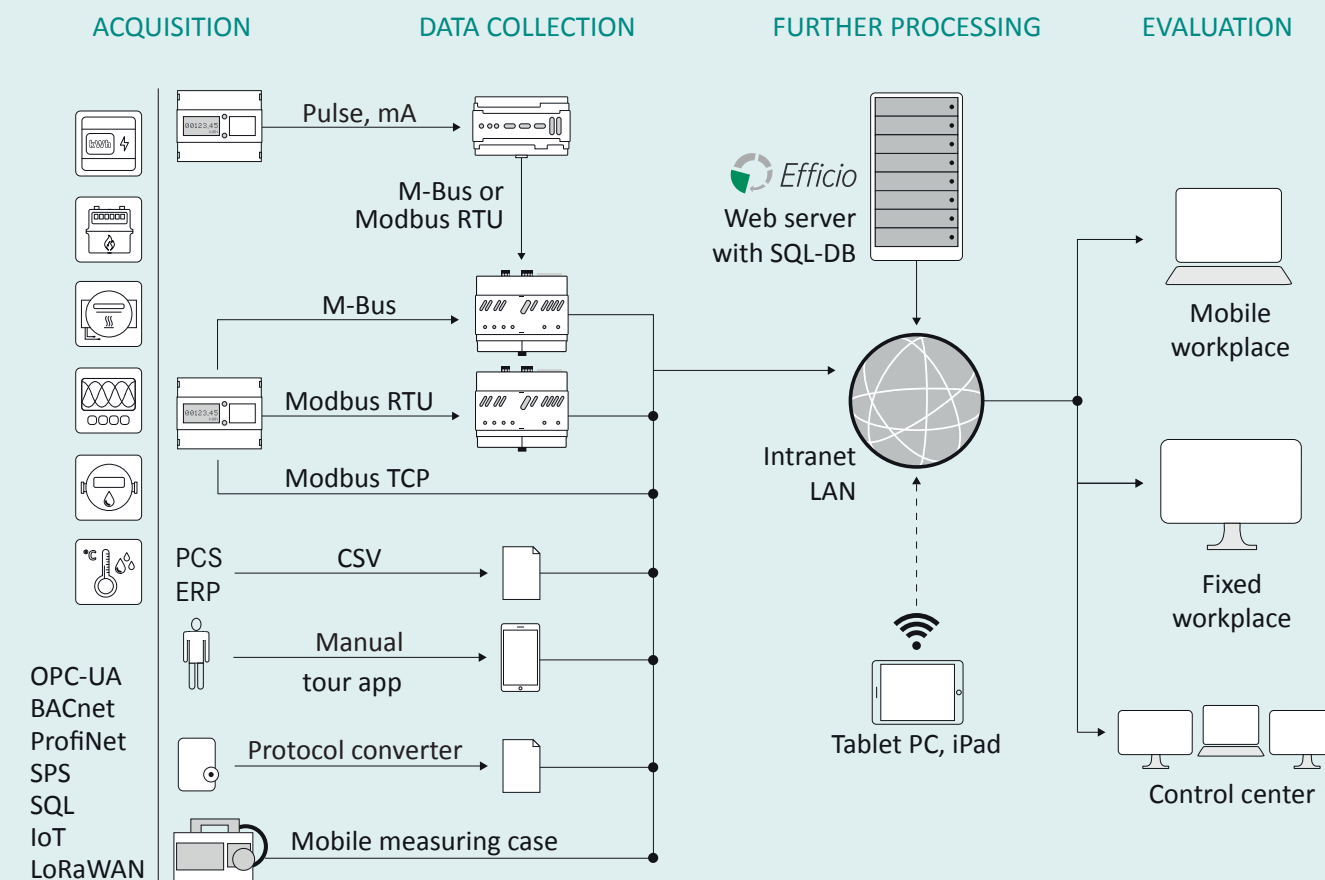**berg**
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Smart Energy- and Load Management 4.0

Energy meters and sensors from Berg provide precise, reproducible and reliable measurement results. Over standardized interfaces like M-Bus, BACnet or Modbus TCP, your measuring devices can be integrated very easily in your energy management software. With the energy monitoring system EFFICIO you can reduce your energy costs through full transparency and you can have absolute energy cost control. With the load management system OPTIMO you can optimize your energy supply by reducing your grid charges and minimize your costs for maximal savings in energy, time and money.

Overview Diagram of Energy Data Acquisition

ACQUISITION   DATA COLLECTION   FURTHER PROCESSING   EVALUATION

Pulse, mA
M-Bus or Modbus RTU
M-Bus
Modbus RTU
Modbus TCP
PCS ERP   CSV
Manual tour app
Protocol converter
Mobile measuring case

OPC-UA
BACnet
ProfiNet
SPS
SQL
IoT
LoRaWAN

Efficio
Web server with SQL-DB

Intranet LAN

Tablet PC, iPad

Mobile workplace
Fixed workplace
Control center

Flow Measurement Technology

Water, Heat and Cold Meter

Your Advantages with our Energy - and Load Management Solutions

+ Energy monitoring and load management in just one system

+ 100% transparency through extensive analysis and reports

+ Quick installation, implementation and handling

+ Quick identification from possible savings and potential for improvements

+ Securing „green" image advantages over competitors

+ Switch or control electrical power generators and power consumers

Smart Modules for Acquisition and Energy Consumption Data

BCM 4/BCM 8
+ Consumption recording of meters with inpulse output
+ Choice of 4 or 8 pulse inputs (S0)
+ M-Bus or Modbus RTU interface

BAC 2
+ Consumption recording of meters with analog output
+ High-resolution measuring module with 2 inputs (0)4...20 mA
+ M-Bus or Modbus RTU interface

MBL SENS TI/AT
+ Sensors for measuring temperature and humidity
+ Optional for indoor or outdoor use
+ Power supply via M-Bus

Efficio tours app
+ Smart metering acquisition via smartphone iOS/Android
+ Input manually or via barcode scanner
+ Plausibility check and automatic synchronization

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FLOW METER

	BMH 3603	BMC 3603	FlowIQ 2101	FlowIQ 3100
	Heat meter for industry	**Cold meter for industry**	**Hot and cold water meter**	**Industrial cold water meter**
Medium	Water, district heating water	Water, district heating water	Drinking water	Drinking water
Application area	Billing meter for indoor installation for process optimization and balancing in trade and industry	Billing meter for indoor installation for process optimization and balancing in trade and industry	Compact billing meter for household and commercial use with leakage detection	Billing meter for trade and industry with leakage detection
Measuring principle	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic
Nominal flow	qp: 0,6 – 1.000 m³/h	qp: 0,6 – 1.000 m³/h	Q3: 1,6 – 4,0 m³/h	Q3: 4,0 – 100 m³/h
Medium temperatur	15...130 °C	2...50 °C	0,1...50 °C coldwater/ 0,1...70 °C hotwater	0,1...50 °C
Protection class	IP65/IP65	IP65/IP65	IP68	IP68
Approvals	MID/DK-0200-MI004-040	MID/TS 27.02 012	MID/DK-0200-MI001-015	MID/DK-0200-MI001-017
Drinking water approval	–	–	DVGW W 421, WRAS	DVGW W 421, WRAS
Process connection and nominal pipe size				
Thread (pressure level PN16)	G¾B (R½) – G2B (R1½) qp: 0,6 – 10,0 m³/h	G¾B (R½) – G2B (R1½) qp: 0,6 – 10,0 m³/h	G¾B (R½) – G1B (R¾) Q3: 1,6 – 4,0 m³/h	G¾B (R½) – G2B (R1½) Q3: 1,6 – 16 m³/h
Flange (pressure level PN25)	DN 20 – DN 300 qp: 1,5 – 1000 m³/h	DN 20 – DN 300 qp: 1,5 – 1000 m³/h	–	DN 50 – DN 100 Q3: 16 – 100 m³/h
Output signals/communication	2 plug-in slots	2 plug-in slots	Firmly integrated	Firmly integrated
M-Bus/wireless M-Bus	•/○	•/○	•/○[1]	•/○
Modbus RTU/TCP	○/○*	○/○*	–	–
BACnet MS/TP	○	○	–	–
Pulse input/output	○ (2)/○ (2)	○ (2)/○ (2)	–	–
4...20mA output	○	○	–	–
Supply 230 V AC/battery 3.65 VDC	•/○	•/○	–/•	–/•
Temperature sensor	• (2x Pt500)	• (2x Pt500)	–	–
Immersion sleeves (65, 90 oder 140 mm)	• (2)	• (2)	–	–
Ultrasonic sensor	• Ultraflow 54 DN 15 – DN 125 • Ultraflow 54 DN 150 – DN 300	• Ultraflow 44 DN 15 – DN 125 • Ultraflow 54 DN 150 – DN 300	• (integrated)	• (integrated)
Special features	+ High measurement accuracy + No wear and long life + Selectable communication + Low pressure drop + Wide dynamic range + MID certified	+ High measurement accuracy + No wear and long life + Selectable communication + UF44 is flood resistant + Wide dynamic range + MID certified	+ High measurement accuracy + No wear and long life + Temperature measurement + Low initial flow rate + Integrated communication + Drinking water approval EU-DSGVO	+ High measurement accuracy + No wear and long life + Designed for underwater operation + Low initial flow rate + Simple installation + Drinking water approval EU-DSGVO

• standard equipment/○ option   * high power supply required   [1] type designation for wireless M-Bus: Multical 21

FLOW METER

	FlowIQ 2200/3200	deltawaveC fix
	Modular cold and hot water meter	**Clamp-on flow sensor**
Medium	Drinking water	Sound conductive liquids
Application area	Billing meter for indoor installation for balancing in trade and industry	Robust sensor for process optimization for demanding measurement tasks
Measuring principle	Ultrasonic	Ultrasonic (clamp-on)
Nominal flow	Q3: 1,6 – 70 m³/h	−30...+30 m/s²
Medium temperatur	0,1...50 °C coldwater/ 0,1...70 °C hotwater	−40...150 °C
Protection class	IP68/IP65	IP68/IP65
Approvals	MID/DK-0200-MI001-038, -039	○ (PTB 06 ATEX 1077, IECEx PTB 07.0029)
Drinking water approval	KIWA, ACS, KTW-BWGL (except DN 100)	–
Process connection and nominal pipe size		
Thread (pressure level PN16)	G¾B (R½) – G2B (R1½) Q3: 1,6 – 16 m³/h	DN 10 – DN 6000
Flange (pressure level PN25)	DN 50 – DN 100 Q3: 16 – 100 m³/h	
Output signals/communication	2 plug-in slots (in the flowIQ gateway)	Firmly integrated
M-Bus/wireless M-Bus	•/○	○/–
Modbus RTU/TCP	○/○*	•/–
BACnet MS/TP	○	–
Pulse input/output	• (2)	–/• (2)
4...20mA output	○	• (2)
Supply 230 V AC/battery 3.65 VDC	• (for arithmetic unit)/○ (for meter)	•/–
Temperature sensor	–	○ (2x Pt100)
Immersion sleeves (65, 90 oder 140 mm)	–	–
Ultrasonic sensor	• (integrated)	• (2 x external clamp-on sensors)
Special features	+ High measurement accuracy + No wear and long life + Several communication modules + Low initial flow rate + MID certified + Drinking water approval EU-DSGVO	+ High measurement accuracy + Flow and heat measurement + Liquid and viscous media + Retrofittable without cutting the pipe + Hygienic proper measurement + Fast assembly and commissioning

[2] flow rate (min./max.)

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