Datasheet
SmartEAR®+ ePF

PRESSURE **FLOW** **POSEYEDON® ready!** ✓

sebaKMT by Megger

The SmartEAR®+ ePF sensor offers advanced solutions for monitoring water distribution systems. The SmartEAR+ePF can be connected and digitze measurement data from mechanical water meters as well on-site existing pressure sensors. Also it is perfectly suited to monitor and digitize pressure reducing valves soc. PRV, where it is demanding to run a water meter and two pressure sensors in parallel.

Mechanic

IP classification	IP68 (3m/120h certified; 10 m/24h optional on demand)
Operating temperature	-20°C ... +70°C
Storage temperature	-20°C ... +70°C
Status	Blue LED
Deployment	Via Smartphone App SmartEAR®-GO!

Electronic

Processor	32 bit
Theft protection	Movement sensor
On / Off	Magnetic switch
Datenspeicher	8 MB internal ring memory FiFo-Principal. (Meassurement data of last 7 days stored in logger memory)

Power management

Power supply	lithium metal cell 3.6 V / 13 Ah
Battery lifetime	between 9 to 5 years on standard profile. Depending on type and quality of connected sensor.
Battery exchange	In field possible. Without affecting IP68.

Measurement profiles

Standard measurement profile	1 flow meter in pulse mode connected, permanent measurement from 0 – 24 h, </= 1 pulse/sec., Upload 1 daily. 1 external pressure sensor connected, permanent measurement each 15 min. from 0 – 24 h, Upload 1 daily.
Customizable profiles	Freely configurable measurement and upload times

Note:
Data transmission is carried out via NB-IoT and LTE-M (CAT-M1), requiring sufficient IoT network coverage at the installation site. The network coverage for NB-IoT and LTE-M can be checked with any mobile network provider. Alternatively, our TechSupport is also available to assist you. The battery life can be reduced by up to 50% in installations with permanent temperatures of 40°C or higher, as well as in very poor signal reception conditions.

Communication

Long range communication	NB-IoT & LTE-M (Combi-Modem)
Short range communication	Bluetooth Low Energy
Transmission protocol	MQTT

Housing

Height	120 mm
Diameter	69 mm (79 mm max.)
Weight	440 g
Material	Stainless steel A4, PPH and PPS
Mounting options	Magnet ring, Loop, GeKa, Storz, thread fittings, UF-Adaptor, thread adaptor metric-imperial
Theft protection possibility	Steel wire rope

External Sensors

Flow meter	Supports pulses from water meters (Open-Collector), flow meter is not powered by SmartEAR®+, 1 or 2 Pulse-Inputs (e.g. Bulk water meter),supports various modes like volume forward/backward, or flow direction. Also 2 x flow (e.g. bulk water meter) + 1 x pressure in parallel possible (SenseHUB connection box as accessory is then necessary)
Pressure sensor	Supports various pressure sensors with 0 – 10 V interface, (analog signal), 1 or 2 pressure sensors possible in parallel (2 x pressure requires also SenseHUB connection box from accessories). Also 2 x pressure + 1 x flow in parallel (e.g. on PRVs) possible.
SenseHUB SmartEAR+ePF	Connection box IP68 with PG-cable inlets to be used with 2 x external pressure sensors, or pressure- and flow measurement in parallel.
SenseCON SmartEAR+ePF	Connection cable with open ends, cable length 3m, ODU plug on one end for SmartEAR®+ePF. To be used to connect external pressure- or flow meters.

Certification

Drinking water certification	None (SmartEAR®+ePF has no direct contact with water)
Encryption	AES 128

Typical applications:

Monitor PRVs as well as digitize and transmit its data,Monitor Bulk-Meters or also mechanic water meter data (pulses) transmission, Upgrade MIDs without existing data transmission,Deployment on man holes, service casts, Pump stations, fire water systems or pipes, Trunk-mains, underground hydrants (if space is sufficient), Pressure measurement / Pressure monitoring permanent or temporarily, Flow measurement permanent oder temporarily, ...

Smartphone App

SmartEAR®-GO!	Android and IOS
Functionality	Guided configuration and wiring of external pressure- and flow meters, FW-Update, Function-/Signal strength, Create sites, Read-/Program, Deployment routine, Battery status, Read logfiles, Realtime measurement, Supports pressure- and flow data.

Standard scope of delivery:

SmartEAR®+ ePF, without SIM-Card	1015769
SmartEAR®+ ePF, Telekom EU	1015769-001
SmartEAR®+ ePF, Telekom N-AM / S-AM / ASIA / AFRI	1015769-005
SmartEAR®+ ePF, Vodafone EU / AUS / JP	1015769-210
SmartEAR®+ ePF, Vodafone USA / CAN	1015769-220

Optional accessories and Spare Parts:

SenseHUB	1016034
SenseCON (VK189)	90043652
GeKa Coupling 1½" IG	90015675
Storz Coupling 1½" IG, Size C	90016062
UF-Adaptor G 1½", V4A	90043167
UF-Adaptor G 1½", V2A, Pam Hydro-3	90029961
Transport box complete, SmartEAR®	2014649
Steel wire rope complete for SmartEAR®	2015049
Magnet holding ring Set, SmartEAR®	2015069
Stubby antenna LTE NB-IoT SMA-M 698-960 MHz	90035958
Antenna extension SMA 0,5 m	2015410
Antenna extension SMA 1,0 m	2015409
Antenna extension SMA 4,0 m	2016832
SAFT lithium metal cell 3.6 V / 13 Ah, LSH-20 Size D	820007318
External antenna, angled	90043013

Specialities summary:

- Use of external sensors, optimized solution for PRV monitoring
- Optimized solution to upgrade non-transmitting water meters
- Optimized solution for bulk-water meters
- Pressure- and flow measurement in parallel possible, realtime measurement on site via smartphone app
- SIM-Card with 5-year-POSEYEDON® package
- IP68 with certification
- App for Android and IOS
- Battery lifetime 5 years respectively 9 years on standard profile
- Measurement profiles freely configureable

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