

Datasheet SmartEAR® + eC

PRESSURE

ACOUSTIC

TEMP

POSEYEDON® ready! ✓



sebaKMT
by Megger



SmartEAR®+ CombiSense

The SmartEAR®+ CombiSense Sensor is an advanced product specifically designed for leak detection in water distribution networks. It is particularly suitable for use on main lines and plastic pipes (Water Distribution Network - WDN). It combines measurement of hydrophone acoustic, pressure and water temperature in one sensor.

Mechanic

IPclassification:	IP68 (3m/120h certified; tested)
Operating temperature:	-20°C ... +70°C
Storage temperature:	-20°C ... +70°C
Status:	Blue LED
Deployment:	Via Smartphone App SmartEAR®-GO!

Elektronik

Processor:	Ultra-low-power Arm Cortex 32 bit MCU
Theft protection:	Movement sensor
On / Off:	Magnetic switch
Data storage:	Internal ring memory (FiFo-principal)

Power management

Power supply:	lithium metal cell 3.6 V / 13 Ah
Battery lifetime:	Up to 7 years on standard measurement profile
Batteryexchange:	No effect on IP68 if the manufacturer's specifications for battery replacement are followed (e.g., no contamination or damage to the O-ring).

Measurement profile

Standard measurement profile:	(Press. a. Temp. every 15 min permanent from 0-24 h, acoustic every 5 min from 2-4 a.m., Duration 5 sec, Upload 1 per day)
Customizable profiles:	Freely configurable measurement and upload times

Communication

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

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 service provider. Alternatively, our TechSupport is also available to assist you. The battery life can be reduced significantly in installations with extreme temperatures (<5°C and >40°C), as well as in very poor signal reception conditions.

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Housing (SmartEAR+ eC)

Height:	122 mm
Diameter:	60 mm (78 mm max.)
Weight:	450 g
Material:	Stainless steel V2A, plastic PP, and PPS-GF
Mounting options:	Magnet ring, Loop, GEKA, Storz, thread fittings, UF-Adaptor, thread adapter metric-imperial
Theft protection possibility:	Steel wire rope

Sensor (CombiSense)

Height:	110 mm (without hose connection)
Diameter:	63 mm (70 mm max.)
Weight:	1400 g
CombiSense	with ODU connector, cable length 3m, venting valve
Acoustic:	Hydrophone
Pressure:	0-16 bar absolute pressure, +/- 0,9 %
Temperature:	-20°C ... +80°C, +/- 2°C
Process connection	G 1½" outer thread, stainless steel V4A

Certification

Fresh water certification:	DVGW (EU), NSF (USA/CAN)
Data encryption:	AES 128

Smartphone App

Smar tEAR [®] -GO!:	Android and IOS
Functionality:	FW-Update, Function-/Signal strength test, Create sites, Read and Program, Deployment routine, Battery status, Read logfiles, Realtime measurement, Supports Audio-/ Pressure-/ Flow- and Temperature data, Supports SmartEAR [®] + device recognition.

Typical Applications:

Leakage monitoring/detection on plastic pipes in water distribution networks as well as on long-distance water pipelines.

Combined measurement of hydrophone acoustics, pressure, and water temperature.

Permanent or temporary pressure measurement/monitoring.

Use in underground hydrants (with sufficient space), transfer shafts, maintenance shafts, long-distance water pipelines, fire water pipelines, etc.

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