

# 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

IP classification:	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
Battery exchange:	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.

#### SebaKMT® - A member of the Megger Group

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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

SmartEAR®-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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## Standard scope of delivery:

SmartEAR®+ eC, without SIM-Card	1015768
SmartEAR®+ eC, Telekom EU	1015768-001
SmartEAR®+ eC, Telekom N-AM / S-AM / ASIA / AFRI	1015768-005
SmartEAR®+ eC, Vodafone EU / AUS / JP	1015768-210
SmartEAR®+ eC, Vodafone USA / CAN	1015768-220

## Optional Accessories and Spare Parts:

CombiSense (Hydrophone, Pressure, Temp.)	1015932
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:

- Acoustic-, pressure- and water temperature measurement in parallel
- Real time measurement on site via smartphone app
- SIM-card with 5-year-POSEYEDON® package
- IP68 with certification
- App for Android and IOS
- Battery lifetime 7 years on standard profile
- Measurement profiles freely configurable
- Drinking water certifications DVGW (EU) and NSF (USA/CAN)

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