

WIRELESS GAS & STEAM LEAK DETECTOR SWWRFxx (LTE-M / NB-IoT / LoRA)

General Description

The Bitherm SWWRFxx wireless electronic device is a non-intrusive and continuous gas & steam leak detector based on the Internet of Things (IoT) Technology to extend its radio distance range for hundreds of Kilometers even in industrial environments.

The SWWRFxx includes temperature and ultrasound sensors and is powered by a battery of Li-SOCl₂ designed for ultralow energy consumption and extra-long lasting battery life.

SWWRFxx features a compact size for easy clamp-on installation for any size pipe or valve.

Typical Applications

Bitherm SmartWatchWeb system can be used to detect and survey steam leaks and gas leakages on any steam trap, relief & safety valve, or other type of valves. Among the typical applications for this product we can list:

- Improving energy efficiency.
- Reducing deployment cost.
- Autonomous monitoring nodes.
- Network support for other Bitherm products.



Main Features

- Communications :
 - NB-IoT (180 KHz) (available only for NB-IoT variant).
 - LTE-M (1.4 Mhz) (available only for LTE-M variant).
 - LoRa (*Mhz) (available only for LoRA variant)
 - * (868 MHz for Europe, 915 MHz for America & 433 MHz for Asia).
- Measurement channels:
 - Temperature.
 - Ultrasound.
 - Pressure (optional).
 - Auxiliar channel (optional).
- Low power:
 - <100 µA sleeping mode.
 - Down to 500 µA equivalent continuous consumption in active mode (configuration dependent).
- IP 67 Protection Grade.

Installation

The SWWRFxx equipment is easy to install, using a non-invasive system where penetration is not required inside pipes or valves.

The device can be installed in any type of steam trap, safety valve or on-off valve. The installation process is done through a clamp attached to the pipe.



Bitherm steam traps do not require the use of clamps to install the SWWRFxx device due to the existence of a specific connector on the top of the trap itself.





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SWWRFxx – Technical Specifications

Enclosure	Size	With antenna (HxLxW)	275x130x95mm (10.8x5.1x3.7 in)
		Without antenna (HxLxW)	195x130x95 mm (7.7x5.1x3.7in)
	Weight		1.5 kg (3.3 lbs)
	Material	Stainless steel (316L) / Aluminium Alloy (optional) / PC (optional)	
	Protection		IP67
Communications	Radio	(available only for NB-IoT variant)	NB-IoT (180 KHz)
		(available only for LTE-M variant)	LTE-M (1.4 MHz)
		(available only for LoRa variant)	LoRa (several frequencies)
	Output Power		20 / 23 dBm
Operating Range	Process Temp.	Thermocouple (type K)	-20°C to 540°C / -4°F to 1004°F
	Ultrasound	Piezoelectric sensor	40 KHz ± 2KHz
	Humidity		0 to 99 %RH, non-condensing
	Battery	Type	Lithium -thionyl chloride (Li-SOCl ₂)
		Voltage	3.6V
		Nominal capacity	19000 mAh
Power Consumption	Sleep		< 100 uA
		Idle	< 0.5 mA
	Active	RX	< 30 mA
		TX	< 65 mA
Ex Certification	IECEX	Marking	Ex ia IIC T4 Ga, -20 °C < Ta < 60°C (-4°F < Ta < 140°F)
	ATEX	Marking	II 1 G Ex ia IIC T4 Ga, -20°C < Ta < 60 °C (-4°F < Ta < 140°F)

For more information please visit www.bitherm.com or contact your Bitherm distributor.

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