bitherm

NB-IoT / LTE-M TRANSMITTER
SWWRF51

General Description

Bitherm SmartWatchWeb RF51 is an intrinsically safe wireless device for steam and gas leak detection on steam traps and valves. SWWRF51 allows to detect steam leakage on valves by monitoring ultrasounds and temperature.

SWWRF51 is powered by a lithium thionyl chloride battery. Its design is optimized for low power operation, improving lifetime of battery. High output power allows to improve link quality and maximum distance between nodes even in industrial environments.

SWWRF51 has a small size which makes easy to install on small steam traps.

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.
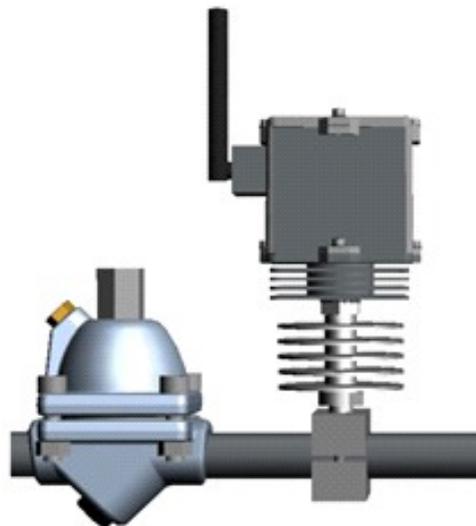
- Network support for other Bitherm products.

Main Features

- Communications :
  - NB-IoT (180 Khz) (available only for NB-IoT variant).
  - LTE-M (1.4 Mhz) (available only for LTE-M variant).

- Measurement channels:
  - Temperature.
  - Ultrasounds.
  - Pressure (optional).

- Low power:
  - <100 µA sleeping mode.
  - Down to 500 µA equivalent continuous consumption in active mode (configuration dependent).

- IP 67 Protection Grade.

Installation

Bitherm SWWRF51 is easy to install, it being a non invasive system, no penetration is required.

Field devices can be installed on any kind of steam trap, safety valve or on-off valve. Installation process is made with a clamp or brackets fixed to the pipeline.

Bitherm steam traps do not require brackets, as the transmitter can be mounted directly on the available connector located on the top of the steam trap.

Steam Trap

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SWWRF51 – 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
	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)
	Output Power		20 / 23 dBm
Operating Range	Ambient Temp.		-20 to 60 ºC
	Process Temp.		-40 to 540ºC
	Humidity		0 to 99 %RH, non-condensing
	Battery	Type	Lithium -thionyl chloride (Li-SOCl2)
		Voltage	3.6V
		Nominal capacity	19000 mAh
Power Consumption	Sleep		< 100 uA
	Active	Idle	< 0.5 mA
		RX	< 30 mA
		TX	< 65 mA
Ex Certification	IECEx	Marking	Ex ia IIC T4 Ga, -20 < Ta < 60 ºC
	ATEX	Marking	II 1 G Ex ia IIC T4 Ga, -20 < Ta < 60 ºC

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