bitherm

WIRELESS STEAM LEAK TRANSMITTER
SWWRF50 (LTE-M / NB-IoT)

General Description

Bitherm SWWRF50 is a intrinsically safe transmitter device   part of SmartWatchWeb monitoring network. This device is able to control SWW11 field devices and send the data collected from them through a wireless network.

The SWWRF50 is designed 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.

The SWWRF50 can handle a cluster of SWW11 field devices, reducing the number of RF nodes in a Wireless network. This helps to reduce costs of network deployment and reduces radio frequency interferences.

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 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

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

- Wired communication:
  - Half-Duplex communication over RS-485 /Modbus RTU protocol.

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

- IP 67 Protection Grade.

Configuration

Bitherm SWWRF50 is wired directly to SWW11 field devices, collecting and transmitting all communications to the wireless network. It also provides the electrical supply demanded by all field devices connected to the cluster.

The SWWRF50 includes two gland connections. One for field devices connetion and the other one for the connection of the solar panel.

The SWWRF50 includes its onw rechargeable battery which feeds the whole wired cluster. The battery is recharged by the solar panel.
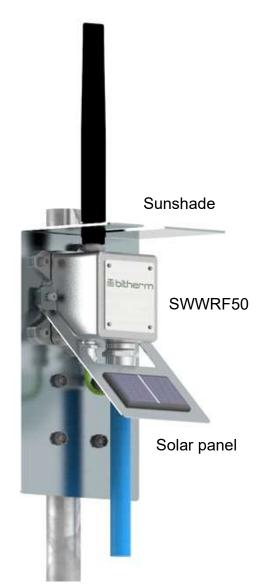

Sunshade

SWWRF50

Solar panel

Fig.1 . SWWRF50 Mounting assembly

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SWWRF50 WIRELESS STEAM LEAK TRANSMITTER

SWWR50 – Technical Specifications

Dimensions	Size		300x150x110 mm
	Weight		3.5 Kg
	Material	Body	Stainless Steel (AISI 316L)
		Cable gland	Stainless Steel (AISI 316L)
		Bolts	Stainless Steel (A2)
	Protection		IP66 , IP67 / NEMA 4x, 6
Communications	Wired		RS-485 Half-Duplex, Modbus RTU protocol
		Max. qty. of SWW11 (field sensor) per cluster	20 nos.
	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
Power Input	Rechargeable battery		(Li-Ion), AA Size, 4v, 330 mAh
			TADIRAN (TLI-1550A)
Operating Range	Ambient Temperature		-20 to 60 ºC
	Humidity		0 to 99 %RH, non-condensing
	Voltage		4 VDC
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

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