

Datasheet



AUS-iot MONITOR

Automated Utility Systems Monitor

FEATURES:

- Dynamic Radio
- Flexible Input
- Extended Product life
- Anti-tamper

Dynamic Radio

The AUS-iot Monitor's radio communication has been implemented utilising a dynamic radio protocol. The protocol continuously evaluates the radio communication conditions and automatically adjusts to compensate for the changes. This continuous adjustment of the radio settings ensures that the communications consumes minimal power whilst retaining a reliable communication link. The radio has been implemented using the Semtech LoRa® wireless radio device. The radio protocol is implemented in the license free ISM (Industrial Scientific and Medical) radio band. No radio license fees or

special approvals are required by the management agent to deploy the radio network. On the occasional where the physical locations results in a poor communication environment, Automated Utility Systems recommends that the AUS-iot Monitor be fitted with an extended meter probe and repositioned to an optimal position, up to 3 m from the AUS-iot Monitor's original position.

Flexible Input

The AUS-iot Monitor supports a variety of input options and a selection in the number of inputs. The inputs are fully configurable and the AUS-iot Monitor can interface directly with the following: Reed switches, this being the most common type of pulse output from utility meters, the AUS-iot Monitor supports both normally open and normally closed operation. The Monitor supports digital inputs as found on electronic pulse output meters, as well as the AUS-iot meter probe and some analogue inputs.

The software can condition the input signal to accommodate a wide range of meter sizes, it supports either scaling up or dividing down of the input signal. Dependant on the input format, the AUS-iot Monitor can be ordered in either one of two variants, namely single or dual input. The interface can be configured to provide output drive power for certain types of pulse circuits.

Extended Product life

The AUS-iot Monitor has been designed and manufactured to achieve an optimum product life span. The factors that primarily impact on this performance are:

- Excessive temperatures.
- Poor radio communications

The recommendations are therefore not to

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Reed switch

The following parameters apply when connecting to reed switch or an open collector type probe:

Parameter		
N° of inputs	1 - 2	
Minimum pulse width	0.1	sec
Maximum sample rate	2.0	Hz
Software Debounce	0.01	sec
Power out	No	
Tamper detect	No	

Digital

The following parameters apply when connecting to a digital output probes:

Parameter		
N° of inputs	1 - 2	
Minimum pulse width	0.02	sec
Maximum sample rate	2.0	Hz
Software Debounce	0.001	sec
Minimum input level	0.5	Volt
Maximum input level	3.0	Volt
Input impedance	1.0	MΩ
Power out	No	
Tamper detect	Yes	

Analogue

The following parameters apply when connecting to an analogue input signal or an analogue probe output:

Parameter		
N° of inputs	1 - 2	
Wave shape	N/A	
Maximum sample rate	0.5	Hz
Minimum input level	0.1	Volt
Maximum input level	2.9	Volt
Input impedance	1.0	MΩ
Power out	No	
Tamper detect	Yes	

AUS-iot

The following applies when connecting to an Automated Utility System's meter probes:

Parameter		
N° of inputs	1 - 2	
Wave shape	N/A	
Maximum sample rate	2.0	Hz
Power out	Yes	
Tamper detect	Yes	

Tamper

When supported by the meter probe the following options are available:

Parameter	
Loop back detect	Yes
Level detect	Yes
Multiple tamper	Yes

Order code

Product	Type	Band	N° of inputs	Input Type	Antenna	Tamper
AUS-iot	MONITOR	868	1 or 2	R - Reed	I - Internal	T - Enabled
		905		D - Digital		
		915		A - Analogue		
				H - AUS-iot		

Radio

The radio performance and specifications are detailed below.

Band	915 MHz		868 MHz	
Region	USA	AUS	EU	AFR
Power	+20 dBm	+13 dBm	+14 dBm	+10 dBm
Radio	Semtech LoRa® wireless radio			
Specification	FCC CFR47 Part 15	AS/NZS 4268	EN 300 220	EN 300 220
Modulation	Spread spectrum			

Antenna

Typical radio range performances are as follows:

Environment	Urban	Rural
	1000m	5000m

Operational life

The product life performance is specified as 10 years under the following conditions.

Parameter		
Ambient temperature	25	°C
Daily transmissions	6	
Average Tx power	+10	dBm

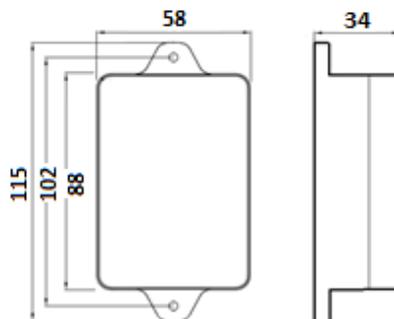
Environmental

The Monitor environmental performance conforms to the following:

Parameter		
Protection rating	IP65	
Storage (electronics)	-20 to 70	°C
Operational (electronics)	-10 to 50	°C

Dimensions

Parameter		
Size	88x115x34	mm
Mass	100	gr
Material	ABS / PC	



install the monitor in direct sunlight or near a heat sources. Ensuring that the monitor is installed to achieve optimal Radio performance.

The installation process verifies the radio performance at time of deployment via the AUS-iot Mobile App and the AUS-iot Services software.

Anti-tamper

When the AUS-iot Monitor is fitted with a pulse circuit that supports tamper detection, such as the AUS-iot meter probe, then the additional anti-tamper features are supported by the backend AUS-iot Services. In the case of the AUS-iot meter Probe the anti-tamper features guards against the physical removal of the probe from the meter as well as cutting of the wire. The tamper detection can be implemented as a loop back or as a level detect. The AUS-iot Monitor can accommodate multiple tamper inputs. The AUS-iot Monitor can further be protected against tamper with a sticker seal after installation, the AUS-iot meter probe design can accommodate a physical seal that provides a visible indication of tampering. The physical tamper features are further enhanced through the use of analytics that run within the AUS-iot services software.

Cell: Africa +27 67 161 3801
Australia +61 48 015 5354

Email: sales@aus-iot.com

Web: www.aus-iot.com

Africa:

3 Dartmouth Avenue
Durban
KZN
South Africa
4001

Australia:

3/19 The Esplanade
Maroochydore
QLD
Australia
4558