



Wireless I/O Module

WM11 Datasheet



OVERVIEW

The WM11 provides long-distance wireless connectivity to reduce the cost of wiring sensors and equipment in hard to reach places. With a range of over 300m in open-air settings, the built-in analog and digital IO capture and transmit data directly to the Samsara IG41 Industrial Gateway where it is automatically uploaded to the Samsara cloud.

The WM11 is battery powered, IP66-rated, and mounts easily on industrial equipment for rapid deployment. Lower costs and save time by eliminating wiring, and bring visibility to industrial equipment no matter the location.

HIGHLIGHTS

Long range wireless	300m+ open air range for industry-standard analog and digital sensors
Analog & digital IO	Connects up to 4 analog inputs, 2 digital inputs, 1 digital output
Ruggedized	Rugged, IP66-rated enclosure
Low power consumption	Low power consumption with field replaceable batteries or optional external power

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ENCLOSURE

Dimensions (WxHxD)	93mm x 124mm x 65mm
Weight	400 g
Mounting	Four mounting ears, M5 (#10)

ENVIRONMENTAL

Operating temperature	-40°C to +75°C (-40°F to +167°F)
Storage temperature	-40°C to +85°C (-40°F to +185°F)
Operating humidity	10% RH to 90% RH, noncondensing
Ingress protection	IP66

POWER

Battery life	2 years with 1 poll per hour
Batteries	Two 3.6-V 2500-mAH lithium AA batteries
External power (optional)	9 ~ 36 VDC

SHOCK & VIBRATION

Free fall	IEC 60068-2-32
Operating shock	IEC 60068-2-27
Operating vibration	IEC 60068-2-6

CONNECTIVITY

Protocol	LoRaWAN
Range	300m+ in open air
Polling interval	Configurable from 20s to one day

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ANALOG INPUTS

Number of inputs	4
Configuration	2 AI voltage, 2 AI current
Input range	0-10V, 0-20mA
Resolution	16 bit
Input load resistance	10 M Ω (voltage), 120 Ω (current)
Accuracy	$\pm 0.1\%$ (Voltage) at 25 °C $\pm 0.2\%$ (Current) at 25 °C

DIGITAL INPUTS

Number of inputs	2
Voltage range	Dry contact : Logic level 0: close to GND, Logic level 1: open Wet contact : Logic level 0: 0 ~ 1 VDC, Logic level 1: 3 ~ 30 VDC
Pull-up current	32 μ A
Input high voltage	2.0 V min
Input low voltage	0.8 V max
Isolation	None
Channels	2ch

DIGITAL OUTPUTS

Number of outputs	1
Voltage range	0-30 V
Output type	Open drain
Output current	100 mA max
Protection	Current limit protection
Isolation	None

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SAFETY, HAZARDOUS LOCATIONS, & COMPLIANCE

Hazardous locations

US (UL)

- Class I, Division 2, Groups A, B, C, D, T4
- Class I, Zone 2, AEx nA IIC T4

Electromagnetic compatibility

- FCC 47 CFR Part 15B, Class A
- ICES-003:2016 Issue 6 (ITE) Class A
- ANSI C63.4:2014
- EN 61000-4-2:2009 / IEC 61000-4-2:2008 ED. 2.0
- EN 61000-4-3:2006 +A1:2008 +A2:2010 / IEC 61000-4-3:2010 ED. 3.2
- EN 61000-4-4:2012 / IEC 61000-4-4:2012 ED. 3.0
- EN 61000-4-5:2014 +A1:2017 / IEC 61000-4-5:2014 +A1:2017 ED. 3.0
- EN 61000-4-6:2014 +AC:2015 / IEC 61000-4-6:2013 ED. 4.0
- EN 61000-4-8:2010 / IEC 61000-4-8:2009 ED. 2.0

Note: In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia and New Zealand (per CISPR 11) Class A equipment is intended for use only in heavy-industrial locations.

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FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.