

RF-M1

FIELD MONITORING NODE

The M1 Field Monitoring Node is suitable for simple monitoring tasks as part of the DropControl network or on its own. It has a combination of inputs that allows you to perform multiple monitoring tasks and store them in the cloud.



M1 DROPCONTROL TECHNOLOGY

- Collaborative wireless networks with 2 miles (3.2km) between nodes.
- Cellular connection to the cloud for synchronization.
- Solar-powered with low-power consumption
- Wide variety of sensors and compatible accessories.



M1 DEVICE FEATURES

- RF mesh networks or cellular communication.
- IP65 outdoor protection.
- Autonomous energy, solar + battery.
- Firmware updates via cloud software. Support team sets configurations and help monitor the farm status via WOS & DropControl applications.
- Compatible with other WiseConn RF units.
- FCC, AS/NZS, CE, RoHS compliant.

M1 APPLICATIONS

- Agroclimatic variables: humidity, precipitation, temperature, wind, and radiation.
- Soil and plant variables.
- Irrigation sensors: flow, pressure, and electrical variables.
- Industrial sensors with communication 4.20mA; serial 232 or 485.

DESCRIPTION

Processor	<ul style="list-style-type: none"> Cortex M4-F (32 bit STM32L4)
Local storage	<ul style="list-style-type: none"> 64MB Flash 1 Year of data, up to 18 sensors every 15
Dimensions	<ul style="list-style-type: none"> 180x200x100mm (7x8x4 in)
Weight	<ul style="list-style-type: none"> 1090gm (2.4 Lbs)
Synchronization	<ul style="list-style-type: none"> Local RF synchronization every 5 seconds Sending data to the cloud every 15 minutes (can be as low as 1 minute)
Enclosure	<ul style="list-style-type: none"> IP65 outdoor rugged UV resistant polycarbonate
Power	<ul style="list-style-type: none"> Consumption of 20mAh at rest without sensors or cellular Solar panel 10W, 5V (10x11,5in) 13,000mAh Lithium (Li-ion) batteries
Inputs	<ul style="list-style-type: none"> 1x Serial RS232 / RS485 (MODBUS enabled) 1x SDI12 4x Opto-coupled Inputs (9-28V) 2x Analog inputs (differentials) <ul style="list-style-type: none"> 0-5V 0-10V 4-20mA

M1 EXTERNAL DEVICES

- Sensors 4.20mA - Temperature, pH, EC, flow meter, pressure, etc.
- Sensors 0.5V - Temperature, etc.
- Digital contact sensors: Sensors wind speed, flow meter, etc.
- RS485 / 232 devices - Dataloggers and frequency variator s.
- SDI12 devices - Dataloggers, meteorological stations, or soil sensors.



RF-M1	Radio Module	Cellular Modem	Region	Radio / Cellular	Description
RF-M1-900HP	Xbee 900 HP	-	LATAM, US	Xbee LTE-M	Digi Xbee 3 Cellular LTE-M/NB-IoT modem Standard: LTE-M Cellular Antenna for 700-2700Mhz 4G LTE 2dBi (Monopole) Modem Certifications: FCC, GCF, PTCRB, Verizon, CE
RF-M1-LTE	-	Xbee LTE-M	US, EU, AUS & NZ		
RF-M1-3G	-	Nimbelink 3G	LATAM		
RF-M1-868SX	Xbee 868 SX	-	EU		
RF-M1-900AU	Xbee 900 AU	-	AUS & NZ		
				Nimbelink 3G	Modem Nimbelink SkywireR Embedded 3G GSM (microSIM) Standard: HSPA+/GSM + GPS Cellular Antenna for 700-2700Mhz 4G LTE 2dBi (Monopole) Modem Certifications: FCC, GCF, PTCRB, AT&T, CE
				Xbee 900 HP	Xbee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW Up to 2 km (1.2mi) w/ included 2.1 dBi antenna (Line of Sight) Optional: Up to 3.2km (2mi) w/ 6dBi antenna
				Xbee 868 SX	Digi Xbee SX 868, 32 mW, DigiMesh, Europe Up to 2 km (1.2mi) w/ included 2.1 dBi antenna (Line of Sight) Optional: Up to 3.2km (2mi) w/ 6dBi antenna
				Xbee 900 AU	Xbee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW Up to 2 km (1.2mi) w/ included 2.1 dBi antenna (Line of Sight) Optional: Up to 3.2km (2mi) w/ 6dBi antenna

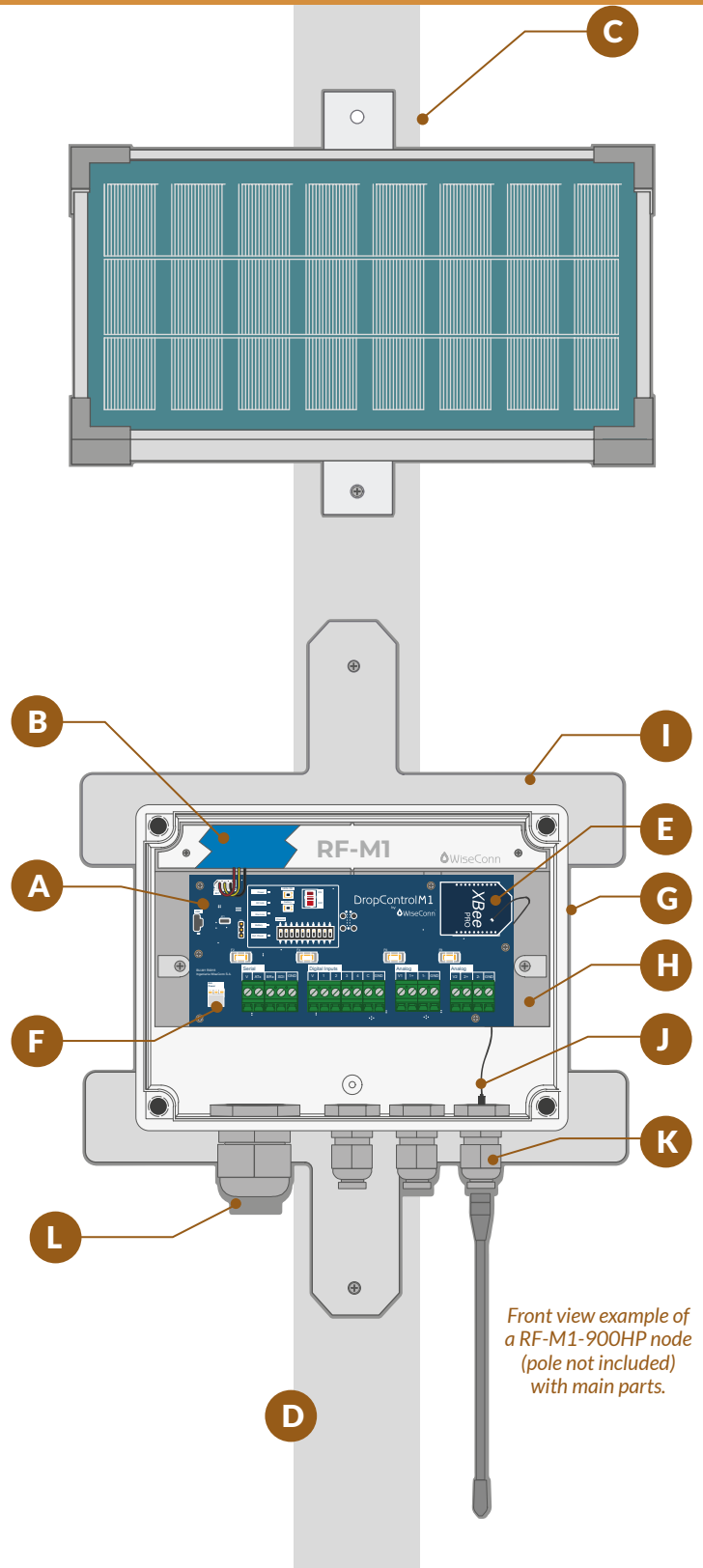
Options:	Details
- WG	Node with glands
- WOG	Node without glands

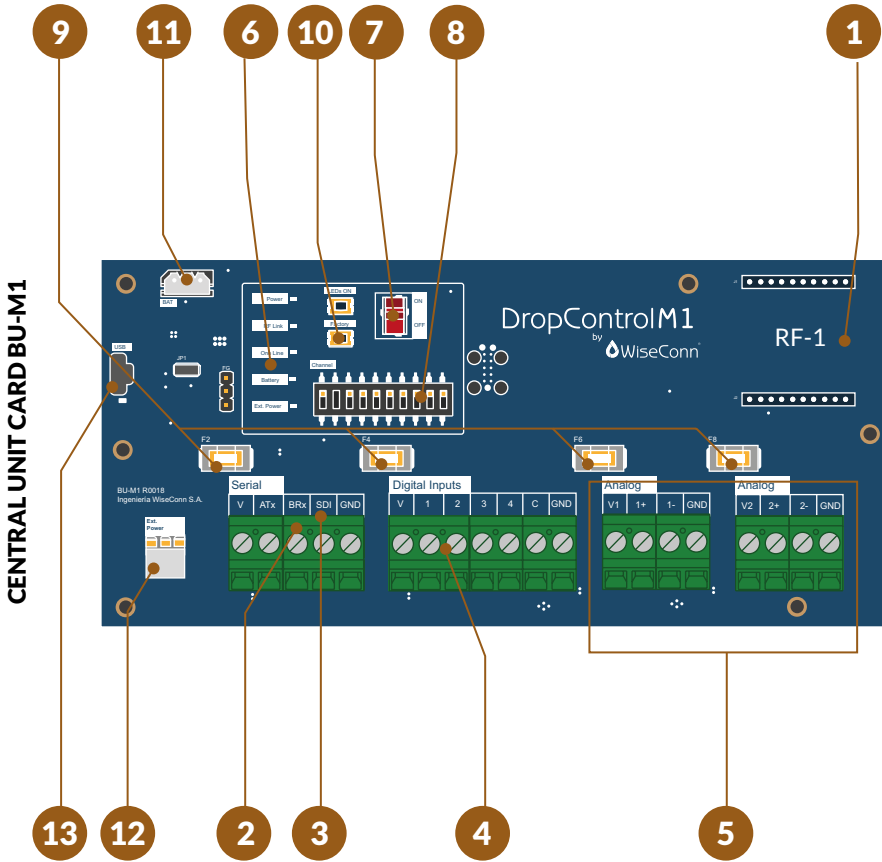


Cloud Services: C1 nodes include a free connection license to the WOS platform, simple configuration and visualization for one user. They require subscription to the Premium DropControl plans to function connected to the mobile applications and have multiple user access to the DropControl functionalities.

PARTS

ID	DESCRIPTION	ID	CODE
A	M1 Central Unit	1	PCB-BU-M1
B	Ion Lithium Battery 3.7 [VDC] - 13 [Ah]	1	ACC-ENERGY-BATT-4-13
C	Solar panel 10[W] - 5[VDC] with basic support	1	ACC-ENERGY-SOLAR-10
D	Omnidirectional antenna 2[dBi] SMA straight	1	ACC-ANT-900-OM2
E	Radio Module	1	*See Versions
F	Solar Panel Connector	1	-
G	Polycarbonate box 5.9 x 7.9 x 3.9[in]	1	ACC-ENC-M1-5.9x7.9
H	Mounting chassis, case-fixing screws and supports for BU - M1 with plate and its screws	-	-
I	Metal part type T for basic exterior mounting	2	ACC-MOUNT-NODE-T
J	Pigtail UFL - SMA 6"	1	ACC-ANT-EXT-CELL-UFL
K	PG9 Cable Glands	3	ACC-ENC-PG9-CGLAND
L	PG21 Cable Glands	1	ACC-ENC-PG21-CGLAND





TERMINAL LAYOUT

ID	DESCRIPTION
1	Radio module or cellular modem port
2	1 Serial port (RS232/RS485)
3	1 SDI-12 port
4	4 digital inputs (9-28V)
5	2 analog inputs 0-5V / 0-10V / 4-20mA
6	Status indicators LEDs
7	ON/OFF Switch
8	Dip Switch (channel selection)
9	Fuse protections
10	Factory reset button
11	Battery connector
12	Solar Panel Connector
13	Service micro USB port

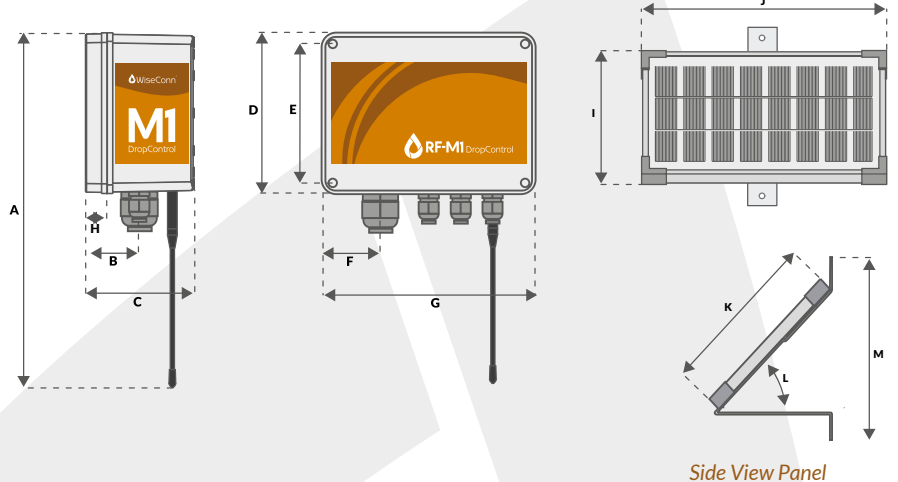
DIMENSIONS

ID	MEASURE	ID	MEASURE
A	13 in (330 mm)	H	0.8 in (20 mm)
B	1.2 in (30 mm)	I	6.9 in (175 mm)
C	3.9 in (100 mm)	J	13.6 in (346 mm)
D	5.9 in (150 mm)	K	9.7 in (247 mm)
E	5.2 in (132 mm)	L	45°Unit
F	2.2 in (55 mm)	M	2.5 in (266 mm)
G	7.9 in (200 mm)		

Side View Node

Front View Node

Front View Panel



Side View Panel