

# RF-M1

## FIELD MONITORING NODE

The new **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 between nodes.
- 3G / LTE 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 Personnel set configurations and help monitor the farm status via WOS & DropControl applications
- Compatible with other WiseConn RF units.

## 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.



## SPECIFICATIONS

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

## 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 variators.
- SDI12 devices - Dataloggers, stations meteorological or soil sensors.

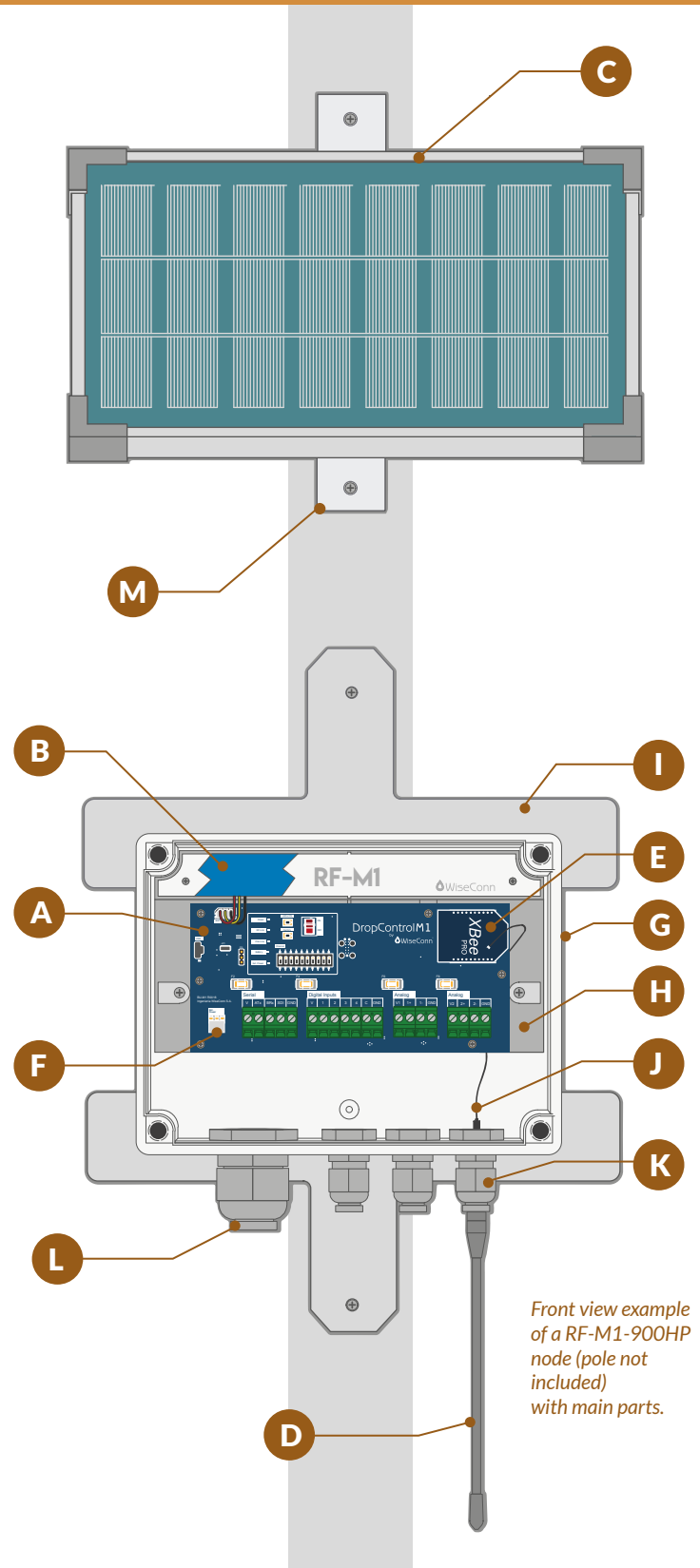


## VERSIONS

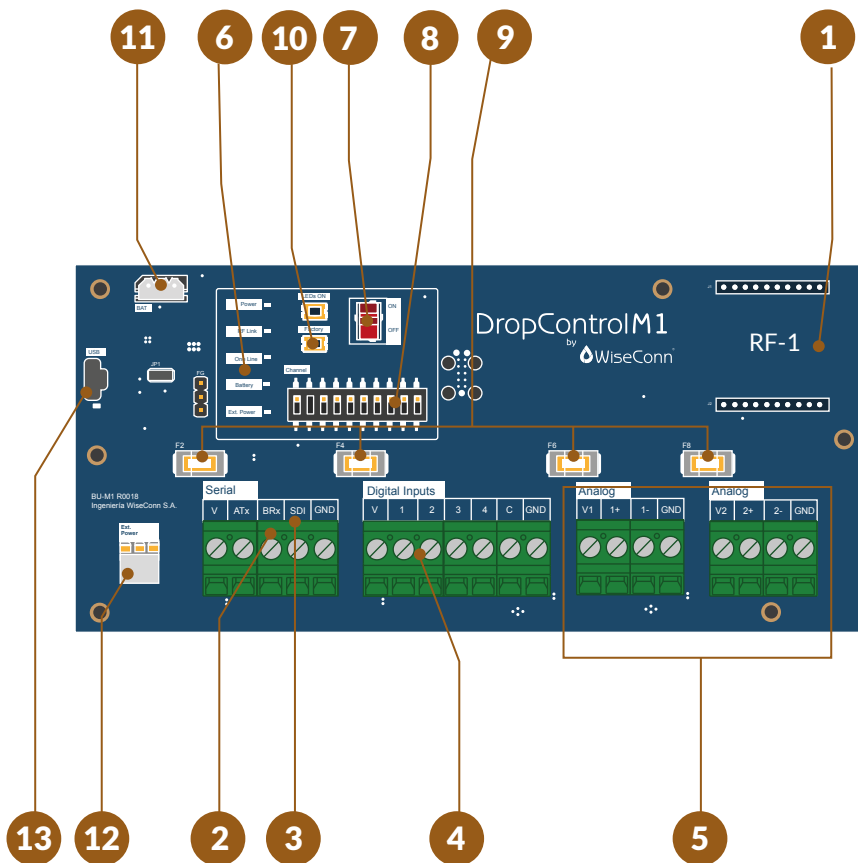
	RF-M1-900HP	RF-M1-LTE-A	RF-M1-LTE-V
<ul style="list-style-type: none"> <li><b>Digi XBee Pro Module - 900MHz</b> - FHSS modulation - 250mW (+ 24dBm)</li> <li>Male connector for RP-SMA antenna</li> <li>2dBi antenna included (1.2 miles range, and 2 miles with optional 6dBi antenna)</li> <li>10 bit DIP switch channel selection</li> <li>Xbee Certifications: FCC, IC, RoHs, ANATEL, IFETEL, IDA</li> </ul>	✓		
<ul style="list-style-type: none"> <li><b>Modem XBee3 Cellular LTE Cat1</b> (with microSIM)</li> <li>Standard: LTE Cat1</li> <li>Cellular Antenna for 700-2700Mhz 4G LTE 2dBi (Monopole)</li> <li>Modem Certifications: FCC, GCF, PTCRB, AT&amp;T, CE</li> </ul>		✓	
<ul style="list-style-type: none"> <li><b>Modem XBee3 Cellular LTE-M</b> (with microSIM)</li> <li>Standard: LTE-M</li> <li>Cellular Antenna for 700-2700Mhz 4G LTE 2dBi (Monopole)</li> <li>Modem Certifications: FCC, GCF, PTCRB, Verizon, CE</li> </ul>			✓

**PARTS**

ID	DESCRIPTION	Q	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	Xbee Pro Digimesh 900HP	1	BU - M1 - RF - DIGI 900 - HP
F	Solar Panel Connector	1	--
G	Polycarbonate box 5.9 x 7.9 x 3.9[in]	1	--
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	--
J	Pigtail UFL - SMA 6"	1	--
K	PG9 tow presses	5	--
L	PG21 tow presses	1	--
M	Solar Panel Bracket for mounting	1	--



CENTRAL UNIT CARD BU-M1



### TERMINAL LAYOUT

ID	DESCRIPTION
1	Radio Xbee 900HP/ modem 3G/LTE 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°
F	2.2 in (55 mm)	M	2.5 in (266 mm)
G	7.9 in (200 mm)		

