

# RF-C1

## FERTIGATION CONTROLLER NODE

The new **C1 fertigation controller node** is specially designed for the local control tasks of a pump station, with all the advantages of synchronization with the DropControl platform in the cloud. The patent pending hydraulic control logic makes the local control robust and communicates with other C1's or the classic RF-X1.

The direct communication with the new **C1 App** makes it ideal for the local control next to the pump. You can control multiple fertigation pumps and you can expand the number of inputs and outputs.



## DROPCONTROL TECHNOLOGY

- Collaborative wireless networks with 2 miles between nodes.
- 3G / 4G cellular connection to the cloud for synchronization.
- With energy backup and solar power options.
- Wide variety of sensors and actuators available.
- Irrigation control with patent pending.
- Patent pending hydraulic control logic



## DEVICE FEATURES

- Local controller with web programming.
- Local mesh networks + desktop & mobile.
- IP65 protection for the weather.
- Bluetooth for local control and irrigation monitoring.
- Firmware updates via cloud software. Support Personnel set configurations and help monitor the farm status via WOS & DropControl applications.
- Compatible with all other WiseConn RF units.
- Compliance with FCC and Subtel regulations.

## APPLICATIONS

- Control and monitoring of pump stations.
- Control of fertilizer injection and pH.
- Monitoring and control of Frequency Variators.
- Remote Industrial Automation.

## SPECIFICATIONS

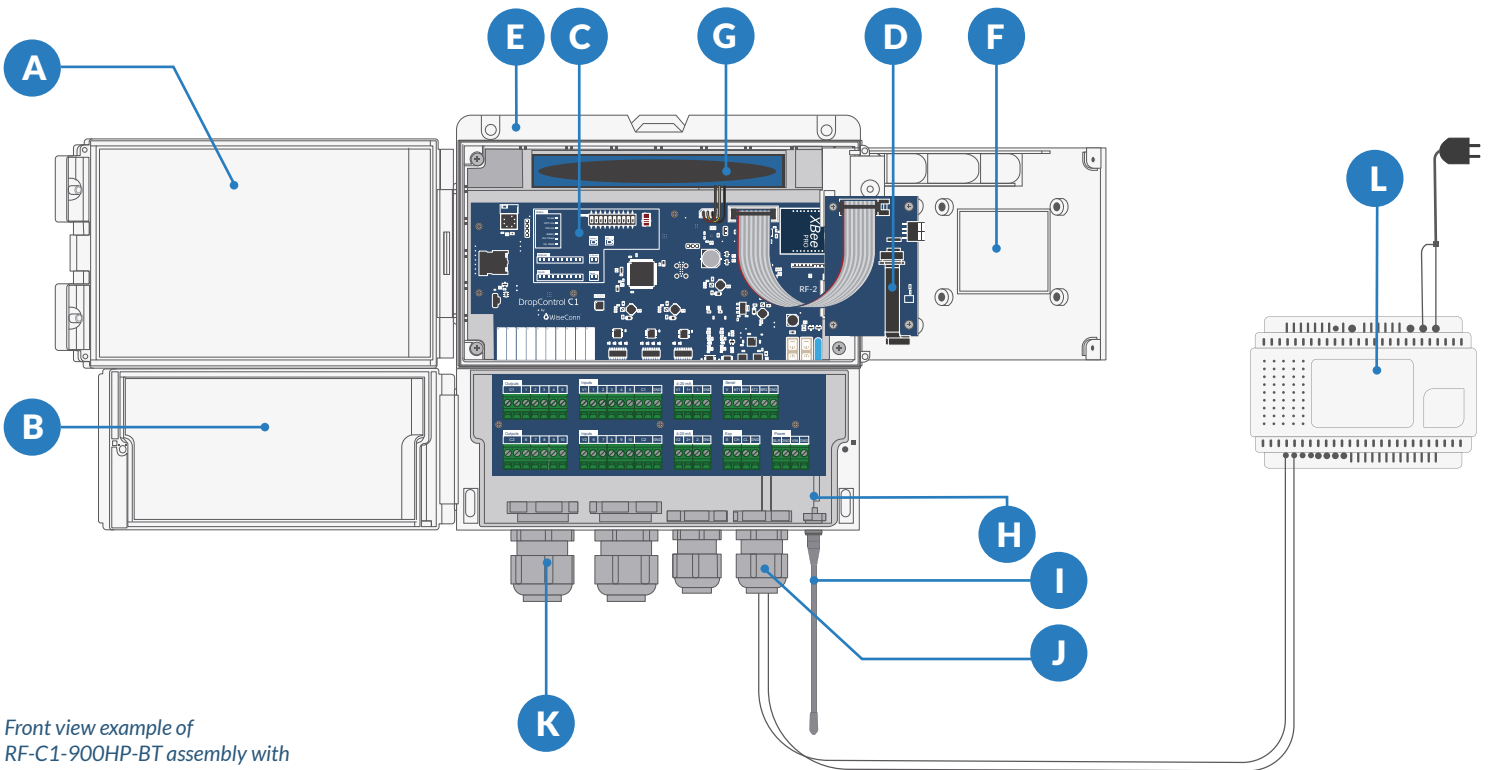
Processor	<ul style="list-style-type: none"> <li>ARM® 32-bit Cortex®-M4</li> </ul>	Synchronization	<ul style="list-style-type: none"> <li>Local RF synchronization every 5 seconds</li> <li>Sending data to the cloud every 15 minutes (can be as low as 1 minute)</li> <li>All alarms and control actions: maximum 20 seconds</li> </ul>
Local storage	<ul style="list-style-type: none"> <li>1Mbyte Flash</li> <li>8GB microSD card</li> </ul>		
Dimensions	<ul style="list-style-type: none"> <li>9.05x9.64x4.13 in</li> <li>230x245x105 mm</li> </ul>	Expansions	<ul style="list-style-type: none"> <li>Up to 120 total digital inputs or outputs</li> <li>CAN communication with expansions</li> </ul>
Weight	<ul style="list-style-type: none"> <li>3.82 Lbs</li> <li>1730 gm</li> </ul>	Power	<ul style="list-style-type: none"> <li>Transformer 220-110VAC at 24VDC</li> <li>Optional 10W, 5V Solar panel (10x11.5in)(relays not functional with only solar)</li> <li>13,000mAh Lithium (Li-ion) batteries</li> <li>Consumption of 40mAh at rest without sensors / 140 mA Gateway Version</li> </ul>
Enclosure	<ul style="list-style-type: none"> <li>IP65 outdoor rugged UV resistant polycarbonate enclosure</li> </ul>		
User Interface	<ul style="list-style-type: none"> <li>Status Leds on the cover</li> <li>Status LEDs for outputs and inputs on the main board</li> <li>5 functional buttons (available Sept. 2019)</li> <li>128x64 dot monochrome LCD backlit (available Sep. 2019)</li> </ul>	Inputs and outputs	<ul style="list-style-type: none"> <li>10x Digital inputs: counter (up to 40Hz) or discrete (9 to 24 VAC/DC), configurable from the cloud</li> <li>10x Dry contacts Outputs: 3Amp 277VAC / 125VDC SPST</li> <li>4x Independent Analog inputs: 4..20mA, 12bit resolution (or 2x differential inputs)</li> <li>2x RS232 / RS485 serial ports. MODBUS enabled.</li> </ul>
Bluetooth	<ul style="list-style-type: none"> <li>BL652 LairdTechnologies, BLE 4.2, 4dBm</li> </ul>		

## VERSIONS

	RF-C1-900HP-BT	RF-C1-900HP-LTE-BT-A	RF-C1-900HP-LTE-BT-V	RF-C1-LTE-BT-A	RF-C1-LTE-BT-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>			✓		✓

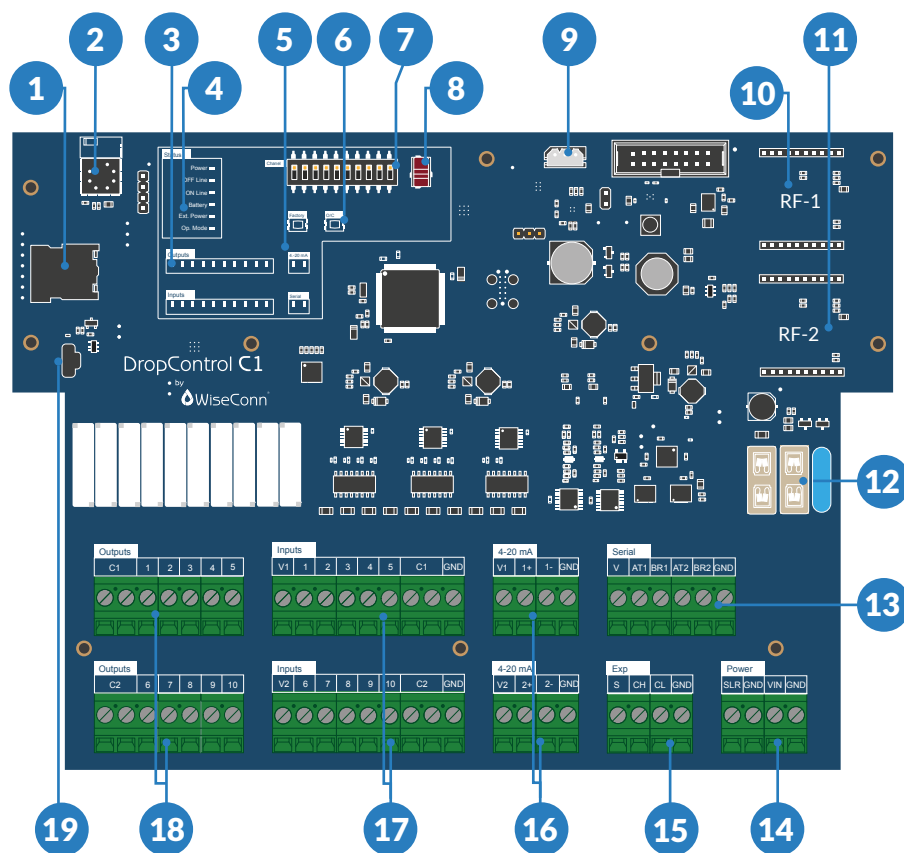
**PARTS**

ID	DESCRIPTION	Q	CODE	ID	DESCRIPTION	Q	CODE
A	Translucent top outer cover	1	--	G	Ion Lithium Battery 3.7 [VDC] - 13 [Ah]	1	ACC-ENERGY-BATT-4-13
B	Internal connection cover	1	--	H	Pigtail UFL - SMA 6"	1	--
C	Central Unit C1	1	PCB-BU-C1	I	Omnidirectional antenna 2[dBi] SMA straight	1	ACC-ANT-900-OM2
D	HMI Card	1	PCB-BU-C1-HMI	J	PG16 tow presses	2	--
E	Polycarbonate box	1	--	K	PG21 tow presses	2	--
F	Inner cover	-	--	L	Power supply 110/220 VAC to 24VDC	1	ACC-ENERGY-PS-110-24-3



Front view example of RF-C1-900HP-BT assembly with main parts.

CENTRAL UNIT CARD BU-C1



TERMINAL LAYOUT

ID	DESCRIPTION
1	Micro SD
2	Bluetooth module
3	LED indicator ports
4	LED status indicators
5	Factory reset button
6	Open/Close button
7	Dip Switch (channel selection)
8	On/Off Switch
9	Battery connector
10	Radio Xbee 900Mhz port
11	Modem 3G/LTE port
12	Fuse protections
13	Serial ports RS232/RS485
14	Power 24VDC and solar panel
15	Terminal for expansion modules
16	Analog Inputs 4..20 mA
17	Digital inputs 9V 24 AC/DC
18	Dry contact outputs
19	Micro USB port service

DIMENSIONS

ID	MEASURE	ID	MEASURE
A	16 in (405 mm)	G	10.5 in (268 mm)
B	5 in (127 mm)	H	9 in (230 mm)
C	4 in (103 mm)	I	1.5 in (38 mm)
D	1.2 in (30 mm)	J	9.7 in (246 mm)
E	3 in (80 mm)	K	4.5 in (115 mm)
F	7 in (175 mm)	L	3.5 in (90 mm)
		M	2 in (59 mm)

