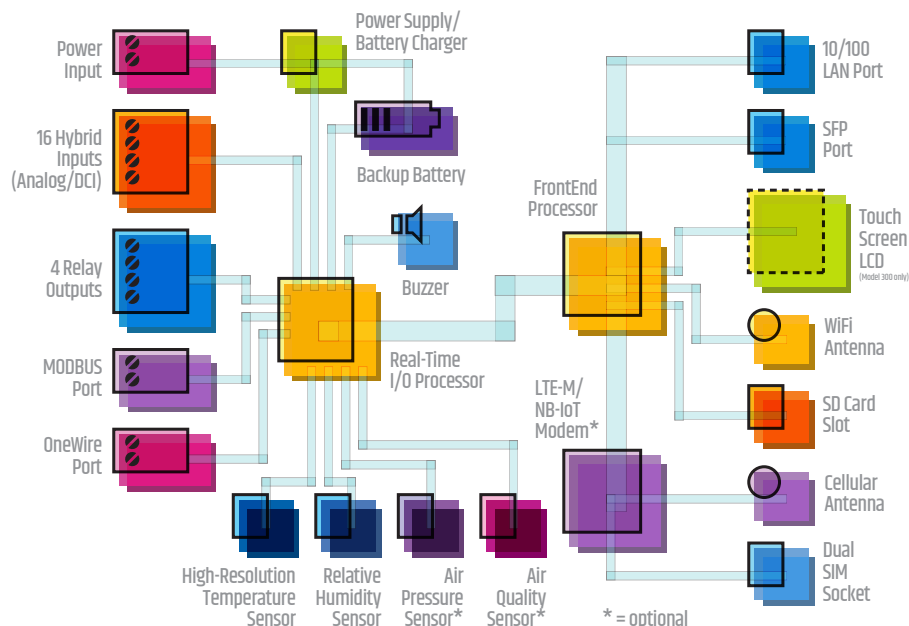
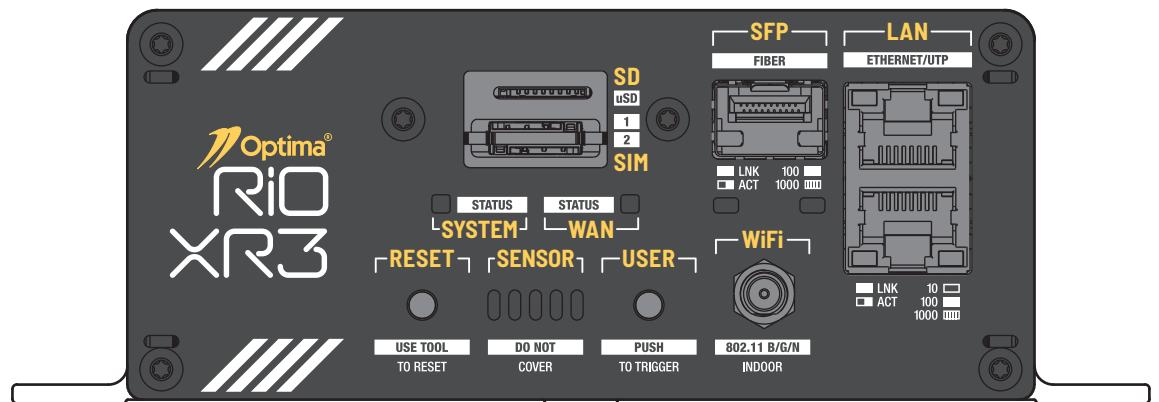
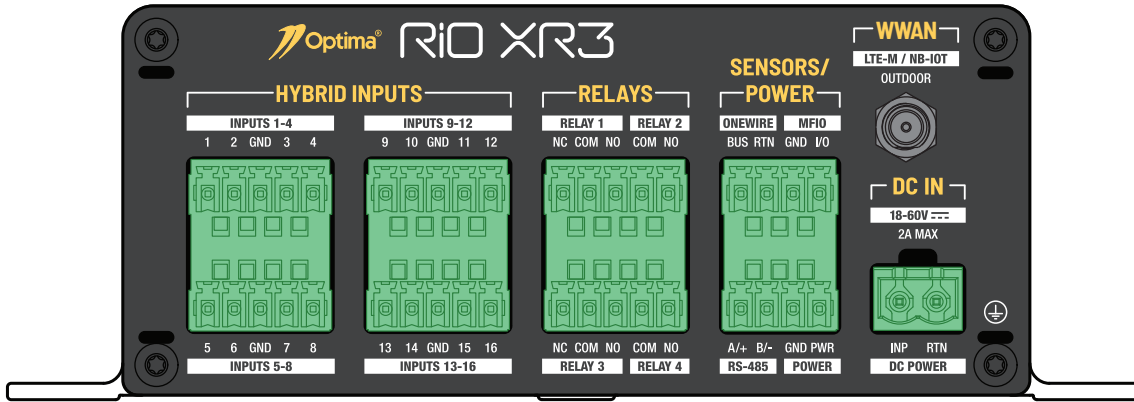


# IoT Telemetry, Remote Network Supervisory Module with Cellular & Satellite Connectivity

RIO XR3-200  
1017-A220111C



# IoT Telemetry, Remote Network Supervisory Module with Cellular & Satellite Connectivity

## Technical Specifications

**RIO XR3-200**  
1017-A220111C

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### Physical

**Dimensions:**

150.4 mm x 133.2 mm x 52 mm  
5.92 " x 5.24 " x 2.05 "

**Weight:**

775 g (including internal battery)

**Mounting:**

Supports tabletop, shelf and wall mounting

### Environmental

**Temperature:**

-40 °C to +65 °C  
-40 °F to +150 °F

**Humidity:**

Up to 80 % relative humidity  
(non-condensing)

### Power

**Type:**

DC Input

**Range:**

48Vdc nominal (positive or negative)  
18 to 60Vdc, max. 2A

**Connector:**

2-position screw terminals (5 mm)

**Type:**

Backup Battery

**Battery:**

25.7 Wh, Li-Ion (internal) or  
37.2 Wh, Li-Ion (internal)

**Runtime:**

72 h on backup battery  
depending on load and conditions

**Type:**

DC Output

**Power:**

24Vdc, max. 420mA (10W),  
surge protected

**Monitoring:**

Continuous load monitor (current and voltage)  
Auto-shutdown with user selectable  
overcurrent levels

**Connector:**

1 set of 4-position screw terminals (3.5 mm)

### Protocols

**Protocols:**

mDNS,  
eMail,  
MQTT,  
SNMP,  
MODBUS RTU,  
Modbus over TCP/IP,  
Alarms Uplink

### Connectivity

**Links:**

LTE-M  
NB-IoT  
WIFI Station/Access Point  
(IEEE 802.11b/g/n)  
Ethernet 10Base-T/100Base-TX/1000Base-T  
100Base-FX/1000Base-X SFP  
Satellite (requires external satellite modem)

### Firmware

**Updates:**

Supports OTA updates



4-20 Cachet Woods Court  
Markham ON L6C 3G1  
Canada

[sales@optimatele.com](mailto:sales@optimatele.com)

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# IoT Telemetry, Remote Network Supervisory Module with Cellular & Satellite Connectivity

## Technical Specifications (Cont'd)

**RIO XR3-200**  
1017-A220111C

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### Cellular

**Frequencies:**

700-2200 MHz LTE  
(B1,B2,B3,B4,B5,B8,B12,B13,B14,  
B17,B18,B19,B20,B25,B26,B28,B66)

**For Canada**

**LTE-M:** B2,B4,B5,B12,B13,B17,B66

**NB-IoT:** B4,B12,B13,B6

**Compliance:**

3GPP LTE Release 13 Cat-M1  
and Cat-NB1,  
3GPP LTE Release 14 Cat-NB1  
and Cat-NB2 compliant

**Sensitivity:**

-108dBm (LTE-M),  
-114dBm (NB-IoT)

**Output power:**

up to +23 dBm

**Antenna:**

External (50 ohm)

**SIM Slot:**

2x Nano

**Certifications:**

USA (FCC, PTCRB/CTIA),  
Europe (CE),  
Canada (ISED),  
Australia (ACMA, RCM),  
Singapore (IMDA),  
Japan (MIC),  
Taiwan (NCC),  
Korea (MSIP),  
Global (GCF, PTCRB certified)

**Connector:**

1 SMA(F)

### Inputs

**Type:**

Hybrid Inputs

**Quantity:**

16, individually software configurable as  
DCI (discrete contact inputs), or  
analog inputs

**Range:**

-60 Vdc to +60 Vdc

**Resolution:**

1 mV

**DCI Bias:**

24 Vdc

**DCI Trigger:**

positive voltage,  
negative voltage or  
ground

**Connectors:**

4 sets of 5-position screw terminals (3.5 mm)

**Type:**

Multi-Function I/O

**Quantity:**

1

**Range:**

**Current Loop Input:** 0 to 25mA

**Frequency/Pulse Counter Input:** up to 2kHz

**General Purpose Digital Input:** max. 36Vdc

**Resolution:**

0.4 uA

**Connector:**

1 set of 4-position screw terminals (3.5 mm)

### Outputs

**Type:**

Latching Relays

2 Form A

2 Form C

**Quantity:**

4

**Range:**

220 Vdc / 250 Vac max.

2A max, 60W / 62.5VA

**Connectors:**

4 sets of 5-position screw terminals (3.5 mm)

**Type:**

Audible Buzzer

**Quantity:**

1

**Type:**

Low Power Digital Output

**Quantity:**

1

**Connector:**

1 set of 4-position screw terminals (3.5 mm)



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# IoT Telemetry, Remote Network Supervisory Module with Cellular & Satellite Connectivity

## Technical Specifications (Cont'd)

**RIO XR3-200**  
1017-A220111C

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### Sensors

**Type:**  
Temperature

**Range:**  
-40 °C to 85 °C  
-40 °F to 185 °F

**Accuracy:**  
± 1 °C

**Type:**  
Humidity

**Range:**  
0 to 100 % r.H.

**Accuracy:**  
± 3 % r.H.

**Type:**  
Air Pressure

**Range:**  
300 hPa to 1100 hPa

**Accuracy:**  
± 0.25 %

**Type:**  
Air Quality (VOC)

**Range:**  
7 steps from Excellent to  
Extremely Polluted

### Interfaces

**Type:**  
MODBUS/RS-485

**Quantity:**  
1

**Features:**  
Programmable termination resistor

**Connector:**  
1 set of screw terminals (3.5 mm)

**Type:**  
OneWire

**Quantity:**  
1

**Features:**  
Supports up to 8 external sensors

**Connector:**  
1 set of screw terminals (3.5 mm)

**Type:**  
10Base-T/100Base-TX/1000Base-T

**Quantity:**  
2

**Features:**  
Auto-MDIX, Auto-Negotiation,  
power savings mode

**Connector:**  
2 RJ45

### Interfaces (Cont'd)

**Type:**  
100Base-FX/1000Base-X SFP

**Quantity:**  
1

**Features:**  
Supports wide variety of industry  
standard 100Base-FX and 1000Base-X  
SFP modules

**Connector:**  
1 SFP cage

**Type:**  
WiFi (Station/Access Point Mode)

**Quantity:**  
1

**Standards:**  
IEEE 802.11b/g/n

**Connector:**  
1 SMA



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# IoT Telemetry, Remote Network Supervisory Module with Cellular & Satellite Connectivity

## Technical Specifications (Cont'd)

**RIO XR3-200**  
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### Interfaces (Cont'd)

**Type:**  
Cellular

**Quantity:**  
1

**Standards:**  
LTE-M, NB-IoT

**Connector:**  
1 SMA

**Type:**  
SD Card

**Quantity:**  
1

**Capacity:**  
up to 64GB

**Connector:**  
1 micro SD Card Slot,  
located under safety cover

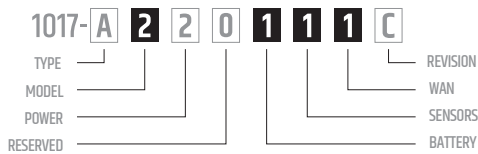
**Type:**  
SIM

**Quantity:**  
2, software selectable

**Form Factor:**  
nano SIM  
Optional: micro SIM, contact factory

**Connector:**  
2 nano SIM Garages,  
located under safety cover  
Optional: 2 micro SIM Garages,  
located under safety cover

### Part Number Diagram



**TYPE** 1017-A RIO XR3

**MODEL** 1 Model 100 (MODBUS device only, no LCD)  
2 Model 200 (fully featured, no LCD)  
3 Model 300 (fully featured + touch-screen LCD)

**POWER** 0\* 24VDC nominal ( 10 to 36Vdc), max. 2A  
1\* -48VDC nominal (-30 to -60Vdc), max. 1.5A  
2 48VDC nominal, positive or negative, (18 to 60Vdc), max. 2A

**BATTERY** 0 not installed  
1 25.7 Wh Backup Battery & Charger  
2 37.2 Wh Backup Battery & Charger

**SENSORS** 0 not installed  
1 BASIC: Temperature + Humidity  
2 STANDARD: Temperature + Humidity + Air Pressure  
3 ENHANCED: Temperature + Humidity + Air Pressure + Air Quality

**WAN** 0 not installed  
1 POLARIS (LTE-M/NB-IoT)

**REVISION** A\*\* Rev.1A  
C Rev.1C (current)

\* Available only for Rev.1A models.  
\*\* Phased out. Not recommended for new orders

### Example Part Number Examples

**1017-A100010A** RIO XR3 Model 100 , Rev.1C with BASIC sensor module.

**1017-A200110A** RIO XR3 Model 200, Rev.1C with 25.7 Wh Backup Battery & Charger, with BASIC sensor module.

**1017-A300131A** RIO XR3 Model 300, Rev.1C with 25.7 Wh Backup Battery & Charger, with ENHANCED sensor module, and POLARIS modem option.



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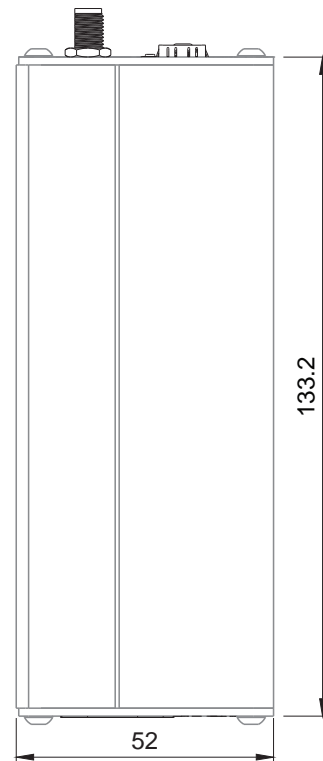
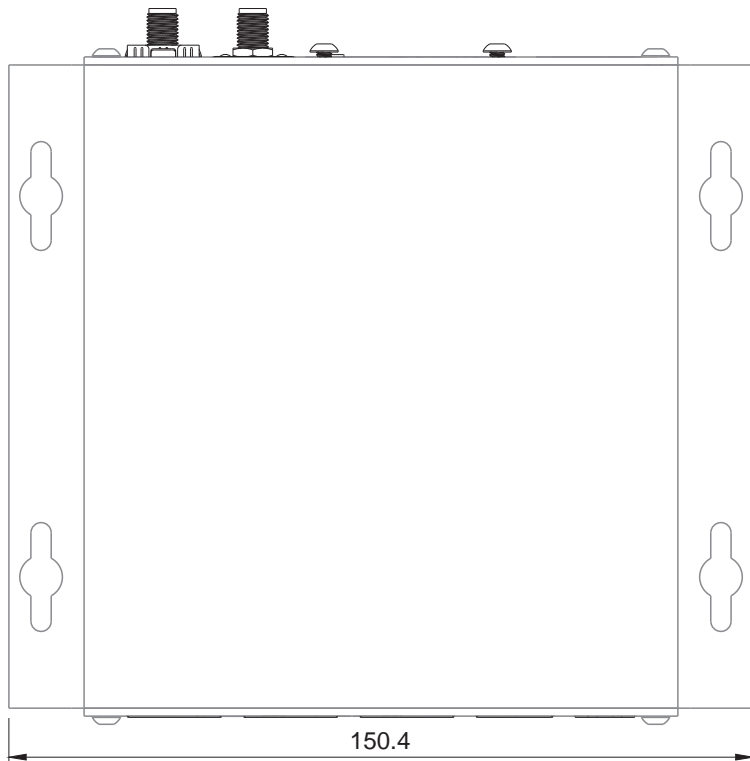
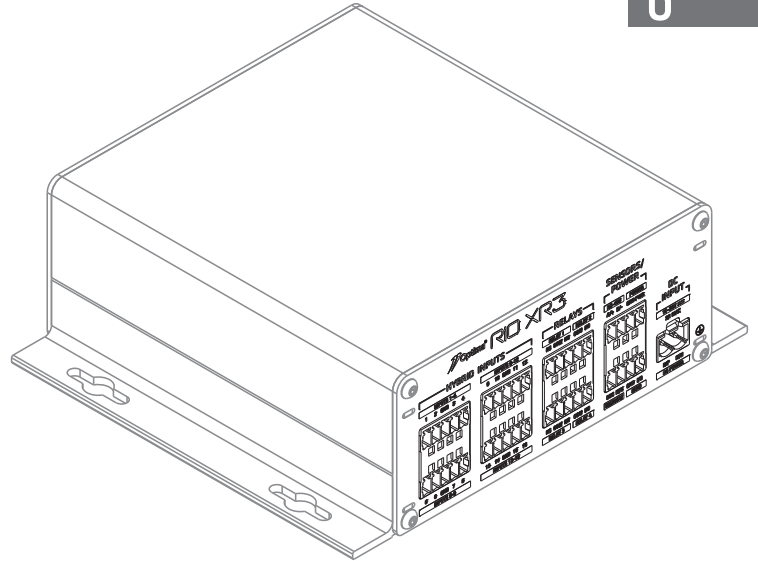
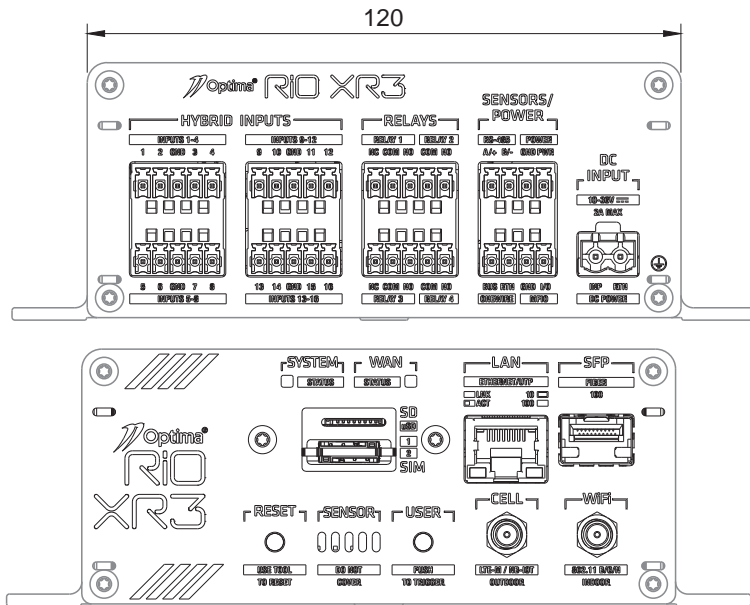
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