Figure 1: RMC-100

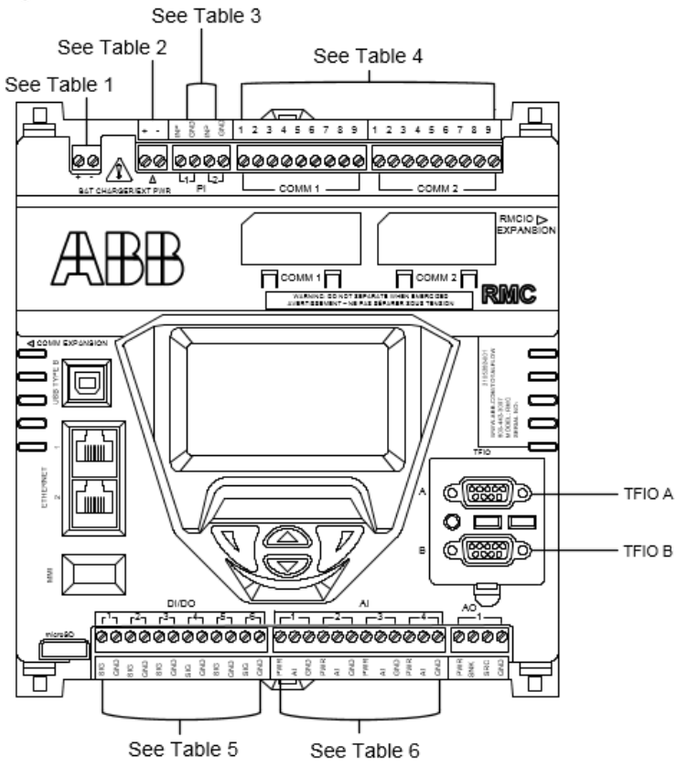

Table 1: Battery

Port	Function
+	Battery pos
-	Battery neg

Table 2: Chrg/Ext

Port	Function
+	Power pos
-	Power neg

Table 3: Pulse inputs

Port	Function
INP	Pulse signal
GND	Pulse GND

Table 4: COMM Port Pinouts

PIN	RS-232	RS-485
1	Voltage Out (VOUT)	Voltage Out (VOUT)
2	Ground (GND)	Ground (GND)
3	Switched voltage (Sw VOUT)	Switched voltage (Sw VOUT)
4	Operate (OPER)	Operate (OPER)
5	Remote request to send (RRTS)	Remote request to send (RRTS)
6	Request to send (RTS)	Transmit / Receive (RBUS+)
7	Transmit data (TX)	Transmit / Receive (RBUS-)
8	Receive data (RX)	Not used
9	Clear to send (CTS)	Not used

IMPORTANT NOTE: For a COMM port to be activated (all pins are active including VOUT and Sw VOUT), the COMM module (part 2105236-001) must be in the slot for the appropriate COMM port. The module's communication protocol type is software selectable. For RS-422 pinouts (not shown above), refer to the RMC User Manual.

Figure 2: AO pinouts

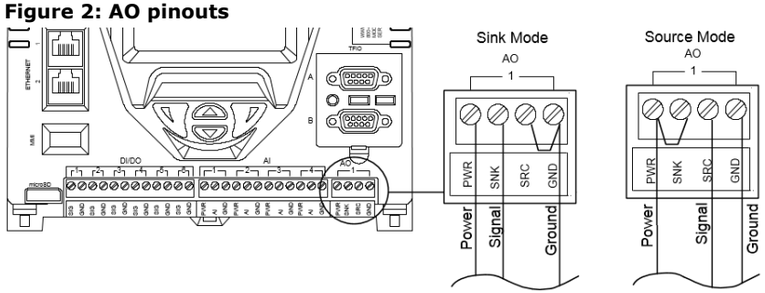

Table 5: DI/DOs

Port	Function
SIG	Signal POS
GND	Signal NEG

Table 6: AIs

Port	Function
PWR	POS
AI	Signal POS
GND	Signal NEG

Additional information

Scan the code for more product publications:

RMC-100 home page

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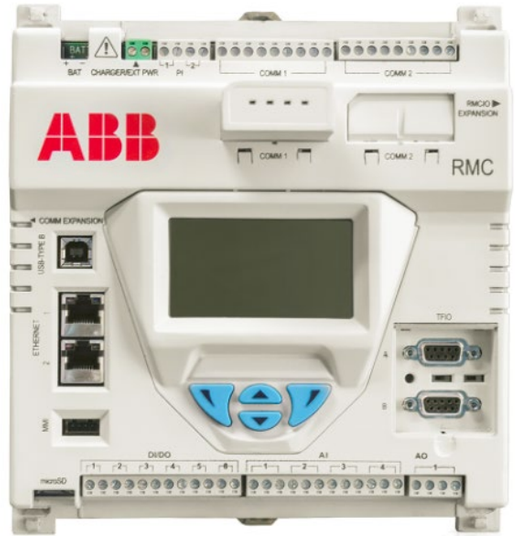
ABB MEASUREMENT & ANALYTICS

RMC-100

Quick Start Guide



Measurement made easy

Safety and compliance information is included with the device in the shipping packaging.

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RMC-100 Quick Start Guide

Power modes

The RMC-100 supports either of two power modes:

Power mode	Primary power source to device	Specifications
Battery	Battery with charger	**Battery:** Nominal 12 Vdc Sealed Lead Acid **Charger is solar panel:** Nominal 12 Vdc, 20 W or less, OR **Charger is power Source:** 14.5 Vdc to 15.5 Vdc, 1.65 A
External power	Outside power supply	+9 Vdc to 30 Vdc, 5 A max

WARNING – Bodily injury. Do not connect the battery/charger or external power supply to the device until all wiring is complete.

Battery mode

ABB (*X*Core) enclosures for the RMC-100 do not come with a battery. You can install an external battery and charge with an ABB solar panel charger. See battery and charger specifications above.

ABB solar panel as charger

Mount the solar panel outdoors on a stand-alone 2-inch pipe.

IMPORTANT NOTE: For best charging, place the solar panel in full sun all day. Clean the solar panel on a regular basis to ensure maximum charging.

Required materials:

- One (1) solar panel with cable
- One (1) solar panel mounting kit (includes U-bolts, brackets, and hardware)
- Mounting pipe extension and coupling if required (length determined by technician depending on the size of the solar panel)
- Nylon tie wraps

NOTICE – Equipment damage. Exercise caution when handling the solar panel to avoid damage.

Install the solar panel:

1. Verify that the solar panel is operating properly before installation:
   a. Check the solar panel using a digital voltmeter to verify polarity and output voltage.
   b. If the measured output voltage is within the manufacturer's specification, continue with the installation.
   c. If the measured voltage is out of specification, contact ABB for a replacement panel.
2. Install the mounting bracket on the solar panel using the provided hardware.
3. Attach the solar panel mounting bracket to the top end of the mounting pipe with the U-bolts and associated mounting hardware. Do not tighten completely.
4. Insert the panel cable into the enclosure leaving enough length to reach the CHARGER/EXT PWR terminal block.

Wire and power the device

For wiring, refer to Figures 1 and 2 on the reverse side.

1. Wire all peripherals to the controller.
2. If battery powered:
   a. Connect the battery to the BAT connector.
   b. Remove the connector from the CHARGER/EXT PWR terminal block.
   c. Wire the solar panel cable wires into the removed connector with correct polarity (+, -).
   d. Reinsert the wired connector into the CHARGER/EXT PWR terminal.
3. If externally powered:
   a. Remove the connector from the CHARGER/EXT PWR terminal block.
   b. Wire the external power supply cables into the removed connector with correct polarity (+, -).
   c. Reinsert the wired connector into the CHARGER/ EXT PWR terminal.
4. Verify the power-on sequence on the LCD.

Local communication with the device

Establish initial communication with the RMC-100 with a direct connection to the USB or Ethernet ports.

IMPORTANT NOTE: Use PCCU32 software to configure the device. Ensure PCCU32 is already installed in the PC or laptop. PCCU32 has context-sensitive online help. Click **Help** on the screen of interest for details.

Local connection on USB

1. Connect the laptop to the USB port.
2. Start PCCU32.
3. Click the **Setup** icon on the PCCU32 toolbar menu. The System Setup window displays.
4. Under Communications, select **Serial port**.
5. Under Connection Parameters, on the PCCU Com Port drop-down list, select the port on the PC or laptop assigned to the local connection.
6. Click **Close** to exit connection setup and return to the main PCCU screen.
7. Click **Entry** on the top PCCU toolbar to establish connection.

Local connection on Ethernet

The RMC is configured as a 2-port switch from the factory. A default IP address (169.254.0.11) is ready for initial local communication using either of the 2 ports. Both ports are enabled by default.

1. Connect the laptop to either Ethernet port.
2. Start PCCU32.
3. Click the **Setup** icon on the PCCU32 toolbar menu. The System Setup window displays.
4. Under Communications, select **TCP/IP**.
5. Under Connection Parameters, type the IP address: **169.254.0.11**
6. Click **Close** to exit connection setup and return to the main PCCU screen.
7. Click **Entry** on the top PCCU tool bar to establish connection.

Configure for network communication

Configure valid IP parameters based on the RMC Ethernet mode and field network topology required. **1 Network** mode requires 1 IP address. **2 Network** mode requires 2 IP addresses.

In 2 Network mode, traffic on each Ethernet port is isolated from the other (two separate subnets). An external router is required for communication between these two networks. Make sure to use the configuration, topology, and network equipment to support your specific field requirements.

1. On the PCCU Entry mode navigation tree, select **Communications**>**Networking**.
2. In the Ethernet section, configure IP parameters:
   a. For automatic IP addressing (DHCP), select **Enable**.
   b. For static IP addressing, type parameters manually.
3. Click **Send**.
4. Connect one of the RMC Ethernet ports to the appropriate network equipment or additional Totalflow device.
5. Click **Restart**.

Enable MQTT support

MQTT supports connection to a service provider or private cloud. It may require authentication certificates for the device. Consult with your IT administrator for configuration options or requirements when using certificates.

NOTICE – Cybersecurity risk: The RMC-100 is not an internet-facing device. Do not connect directly to the Internet. An MQTT gateway is required between the Digital Oilfield and the RMC. If the customer's corporate network firewall is compromised, the RMC-100 would be at risk without the MQTT gateway.

Enable MQTT and REST (MQTT configuration interface):

1. On the PCCU Entry mode navigation tree, select **Communications**>**Services**.
2. Select the **MQTT Service** checkbox.
3. Select the **MQTT REST Service** checkbox.
4. Click **Send.**