ROC800-Series Communication Modules

Communication modules add communication ports to a ROC800-Series Remote Operations Controller (ROC800). The central processor unit (CPU) of a ROC800 provides three built-in communication ports. You can add up to three communication modules which result in a maximum of six communication ports per ROC800.

A variety of communication modules are available including:

- RS-232 module
- RS-485 module
- Dial-up modem module

RS-232 Module

The RS-232 module provides one EIA-232 (RS-232) port for point-to-point asynchronous serial communication. EIA-232 (RS-232) communications commonly provide the physical interface for connecting serial devices, such as gas chromatographs and radios. The RS-232 communications module provides essential hand-shaking lines required for radio communications, such as Data Terminal Ready (DTR) and Request to Send (RTS).

RS-485 Module

The RS-485 module provides one EIA-422/485 (RS-422/485) port for asynchronous serial communications for multi-drop units on a serial network over distances of up to 1220 meters (4000 feet) using inexpensive twisted-pair cables. When the module is set to EIA-485 (RS-485) mode, it allows multiple-point communications. When set to EIA-422 (RS-422) mode, it allows long distance point-to-point communications. Modules are set via hardware jumpers.

The RS-485 module has four jumpers to select between:

- EIA-422 (RS-422) mode, 4-wire
- EIA-485 (RS-485) mode, 2-wire
- Switch termination resistors in or out

Dial-Up Modem Module

The Dial-Up Modem module provides the ROC800 with the ability to communicate over a Public-Switched Telephone Network (PSTN) at up to 57.6 Kb/s using V.42 bis, MNP2-4 and MNP10 error correction.

Compatibility and Installation

Communication modules can be installed in module slot 1, 2, or 3 of a ROC800-Series unit with a Series 1 or Series 2 CPU. Install or remove modules from the module slots at any time by removing the two captive screws accessible from the front of the unit.

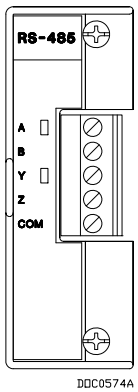
RS-232 and RS-485 modules are hot-swappable, meaning you can remove the module and install another module of the same kind while under power. The module acquires the previous module's configuration.

RS-232 and RS-485 modules are hot-pluggable, meaning you may install them directly into unused module slots under power. The modules require configuration. The modules are also self-identifying, meaning ROCLINK™ 800 Configuration Software automatically recognizes them.

Dial-up modem modules may only be inserted when the ROC800-Series unit is powered down.

Each communication module is isolated from other modules, the backplane, power, and other signals, with the exception of the RS-232 module. The field interface protects the electronics in the isolated modules. Each module reduces the effect of noise on communication errors through filtering.

All modules have removable terminal blocks for convenient wiring and servicing. The terminal blocks can accommodate a wide range of wire gauges from 12 to 22 American Wire Gauge (AWG).

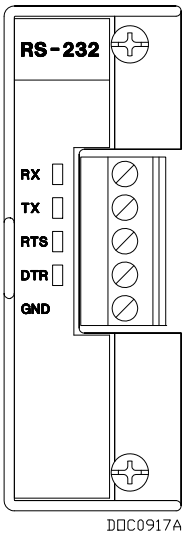


RS-485 Communications Module

D301171X012

ROC800-Series RS-232 Module

Field Wiring Terminals



Terminal	Label	Definition
1	RX	Receive
2	TX	Transmit
3	RTS	Request To Send
4	DTR	Data Terminal Ready
5	GND	Ground

Communications

Type	Single, meets EIA-232C and RS-232C standard		
Data Rate	57.6 Kb/s maximum		
Over-Voltage Protection	±25 Vdc, continuous on any terminal		

Power

Consumption	Main power supply loading at the Battery Terminals (at 12.0 Vdc)	Typical	4 mA
	Additional loading that may apply	Per Active LED	1.5 mA

Physical

Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	47.6 g (1.68 oz)	
Wiring	12 to 22 American Wire Gauge (AWG) at the removable terminal block	
LEDs	RX	Receive
	TX	Transmit
	RTS	Request To Send
	DTR	Data Terminal Ready

Environmental

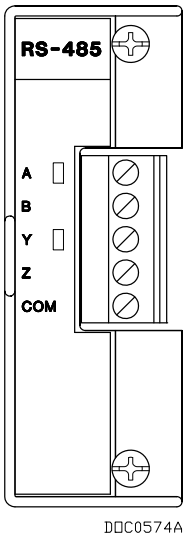
Same as the ROC800-Series unit in which it is installed

Approvals

Same as the ROC800-Series unit in which it is installed

ROC800-Series RS-485 Module

Field Wiring Terminals



EIA-422 (RS-422)

Terminal	Label	Definition
1	A	Receive +
2	B	Receive –
3	Y	Transmit +
4	Z	Transmit –
5	COM	Floating EIA-422 Common

EIA-485 (RS-485)

Terminal	Label	Definition
1	A	Receive/Transmit +
2	B	Receive/Transmit –
3	Y	No Connect
4	Z	No Connect
5	COM	Floating EIA-485 Common

Communications

Type	Single, half-duplex, meets EIA-422 (RS-422) and EIA-485 (RS-485) standards, jumper-selectable		
Data Rate	57.6 Kb/s maximum		
Output-Voltage Protection	±14 Vdc, continuous on any terminal		
Termination Resistor	Jumper-selectable		

Power

Consumption	Main power supply loading at the Battery Terminals (at 12.0 Vdc)	Typical	112 mA
	Additional loading that may apply	Per Active LED	1.5 mA
Isolation	Field to Logic	2500 Vdc, 1 minute minimum	
	Field to Power	2500 Vdc, 1 minute minimum	
	Module to Module	2500 Vdc, 1 minute minimum	

Physical

Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	49.9 g (1.76 oz)	
Wiring	12 to 22 American Wire Gauge (AWG) at the removable terminal block	
LEDs	Upper	On when receiving
	Lower	On when transmitting

Environmental

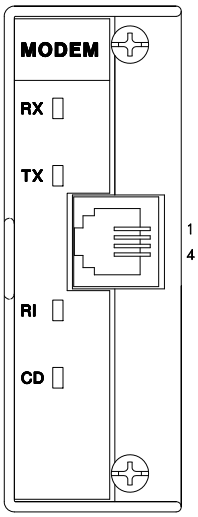
Same as the ROC800-Series unit in which it is installed

Approvals

Same as the ROC800-Series unit in which it is installed

ROC800-Series Dial-Up Modem Module

Field Wiring Terminals



Terminal	Definition
1	Not Used
2	Ring
3	Tip
4	Not Used

Communications

Type	Single, 14.4 K bps with V.42 bis
Mode	2-wire for dial-up PSTN (Bell 212A and 103 compatible)
Connector	RJ-11 type
Data Rate	57.6 Kb/s maximum.
Error Correction	V.42, MNP2-4 and MNP10
Certification	FCC Part 68 approved
Ring Voltage Detected	38 to 150 RMS, type B ringer
Ring Frequency Detected	15.3 to 68 Hz, type B ringer
Data Transmit Level	–12 to –9.0 dBm, 10.5 typical
DTMF Transmit Level	–2.5 to 0 dBm, average over 3 second interval
Surge Protection	Conforms to FCC Part 68
Over-Voltage Protection	±14 Vdc, continuous on any terminal

Power

Consumption	Main power supply loading at the Battery Terminals (at 12.0 Vdc)	No Connection (on hook)	95 mA
	Additional loading that may apply	Telephone Loop Current (off hook)	20 to 100 mA
		Per Active LED	1.5 mA
Isolation	Field to Logic	2500 Vdc, 1 minute minimum	
	Field to Power	2500 Vdc, 1 minute minimum	
	Module to Module	2500 Vdc, 1 minute minimum	

Technical Specifications

Physical		
Dimensions	26 mm W by 75 mm H by 133 mm D (1.03 in. W by 2.96 in. H by 5.24 in. D)	
Weight	113.4 g (4.0 oz)	
Wiring	RJ-11 socket	
LEDs	TX	Transmit
	RX	Receive
	RI	Ring
	CD	Carrier Detect
Environmental		
Same as the ROC800-Series unit in which it is installed		
Approvals		
Same as the ROC800-Series unit in which it is installed		

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