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 handshaking 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.

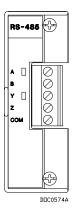
RS-232 and RS-485 modules are hot-swappable, meaning you can remove the module and install another module of the same kind while under power. The module acquires the previous module's configuration.

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).



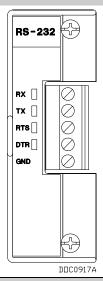
RS-485 Communications Module

301171X012



ROC800-Series RS-232 Module

Field Wiring Terminals



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

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

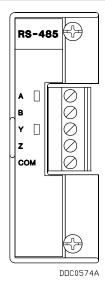
Approvals

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			tandard		
Data Rate	57.6 Kb/s ı	maximum	ı		
Over-Voltage Protection	±25 Vdc, c	±25 Vdc, continuous on any terminal			
Power					
Consumption	Main powe loading at Battery Te (at 12.0 Vo	the rminals	Typical	4 mA	
	Additional that may a		Per Active LED	1.5 mA	
Physical					
Dimensions	26 mm W I	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 termina		at the removable terminal block			
LEDs	RX	RX Receive			
	TX	K Transmit			
	RTS	RTS Request To Send			
	DTR	DTR Data Terminal Ready			
Environmental					

ROC800-Series RS-485 Module

Field Wiring Terminals



EIA-422 (RS-422)

Terminal	Label Definition	
1	Α	Receive +
2	В	Receive –
3	Υ	Transmit +
4	Z	Transmit –
5 COM		Floating EIA-422 Common

EIA-485 (RS-485)

Terminal Label		Definition	
1	Α	Receive/Transmit +	
2	В	Receive/Transmit -	
3	Υ	No Connect	
4	Z	No Connect	
5 COM		Floating EIA-485 Common	

Communications					
Туре	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, o	±14 Vdc, continuous on any terminal			
Termination Resistor	Jumper-se	electable			
Power					
Consumption	Main power loading at Battery Te (at 12.0 Vo	the rminals	Typical	112 mA	
	Additional that may a	•	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	Upper On when receiving			
	Lower	On whe	en transmitting		

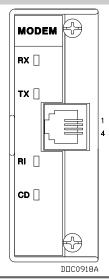
Same as the ROC800-Series unit in which it is installed

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					
Туре	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	57.6 Kb/s maximum.			
Error Correction	V.42, MNP2-4 and N	MNP10			
Certification	FCC Part 68 approv	FCC Part 68 approved			
Ring Voltage Detected	38 to 150 RMS, type	38 to 150 RMS, type B ringer			
Ring Frequency Detected	15.3 to 68 Hz, type I	3 ringer	ringer		
Data Transmit Level	-12 to -9.0 dBm, 10	.5 typical			
DTMF Transmit Level	-2.5 to 0 dBm, avera	-2.5 to 0 dBm, average over 3 second interval			
Surge Protection	Conforms to FCC Pa	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			
·	loading at the Battery Terminals (at 12.0 Vdc) Additional loading that may apply Field to Logic Field to Power	(on hook) Telephone Loop Current (off hook) Per Active LED 2500 Vdc, 1 minute 2500 Vdc, 1 minute	20 to 100 mA 1.5 mA minimum minimum		

Physical					
Dimensions	26 mm \	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	113.4 g (4.0 oz)			
Wiring	RJ-11 s	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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