

Modicon
140 NOM 252 00




Modbus Plus on Fiber Module

Publication # 043510817

Specifications

Communication Ports											
Optical Ports	2 (consisting of an optical receiver and transmitter)										
Transmission/Data Rate	1 Mbit/second for Modbus plus with Bi-Phase S encoded data										
Optical Interface	ST-Type connectors										
Pulse Width Distortions and Jitter	5 ns or better										
Wavelength	820 nm										
Power Loss Budget (includes 3 dB of system margins)	50/125 um fiber – 6.5 dB 62.5/125 um fiber – 11 dB 100/140 um fiber – 16.5 dB										
Maximum Distance for point-to-point connection	2 km over 50 um fiber 3 km over 62.5 um fiber 3 km over 100 um fiber										
Maximum System Length in Self Healing Ring Configuration	10 km over 62.5 um fiber										
Optical Transmitter Specifications											
Optical Power (Measured with 1 m test fiber)	-12.8 ... -19.8 dBm average power in 50/125 um fiber cable -9.0 ... -16 dBm average power in 62.5/125 um fiber cable -3.5 ... -10.5 dBm average power in 100/140 um fiber cable										
Rise/Fall Time	20 ns or better										
Silence (OFF leakage)	-43 dBm										
Optical Receiver Specifications											
Receiver Sensitivity	-30 dBm average power										
Dynamic Range	20 dB										
Detected Silence	-36 dBm										
Diagnostics	<table border="0"> <tr> <td>Power Up</td> <td>Runtime</td> </tr> <tr> <td>RAM</td> <td>RAM</td> </tr> <tr> <td>RAM Address</td> <td>RAM Address</td> </tr> <tr> <td>Executive Checksum</td> <td>Executive Checksum</td> </tr> <tr> <td>Processor</td> <td></td> </tr> </table>	Power Up	Runtime	RAM	RAM	RAM Address	RAM Address	Executive Checksum	Executive Checksum	Processor	
Power Up	Runtime										
RAM	RAM										
RAM Address	RAM Address										
Executive Checksum	Executive Checksum										
Processor											
Power Consumption	4 W										
Bus Current Required	750 mA max										
External Power	Not required for this module										

 **Note:** A fiber cable clasp tool is included with the 140 NOM 252 00 module. Use of this tool is described in the *Quantum Automation Series Hardware Reference Guide* (840 USE 100 00).



4351081780

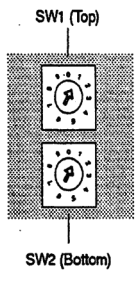
Rear Panel Switches

Two rotary switches are located on the rear panel of the module. They are used together to set the Modbus Plus node and Modbus port address for the unit.

Note: The highest address that may be set with these switches is 64.

Rotary SW1 (top switch) sets the upper digit (tens), and rotary SW2 (bottom switch) sets the lower digit (ones) of the Modbus Plus node address. The illustration below shows the setting for an example address of 11.

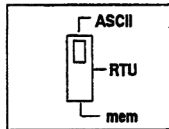
SW1 and SW2 Address Settings		
Node Address	SW1	SW2
1 ... 9	0	1 ... 9
10 ... 19	1	0 ... 9
20 ... 29	2	0 ... 9
30 ... 39	3	0 ... 9
40 ... 49	4	0 ... 9
50 ... 59	5	0 ... 9
60 ... 64	6	0 ... 4



Note: If "0" or an address greater than 64 is selected, the Modbus + LED will be "on" steady, to indicate the selection of an invalid address.

Front Panel Switch

Three-position slide switches are located on the front of the unit. These switches are used to select the comm parameter settings for the Modbus (RS-232) port. Three options are available:



- Setting the slide switch to the top position assigns ASCII functionality to the port; the following comm parameters are set and cannot be changed:

ASCII Comm Port Parameters	
Baud	2,400
Parity	Even
Data Bits	7
Stop Bits	1
Device Address	Rear panel rotary switch setting

- Setting the slide switch to the middle position assigns remote terminal unit (RTU) functionality to the port; the following comm parameters are set and cannot be changed:

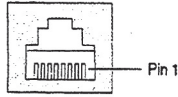
RTU Comm Port Parameters	
Baud	9,600
Parity	Even
Data Bits	8
Stop Bits	1
Device Address	Rear panel rotary switch setting

- Setting the slide switch to the bottom position gives you the ability to assign comm parameters to the port in software; the following parameters are valid:

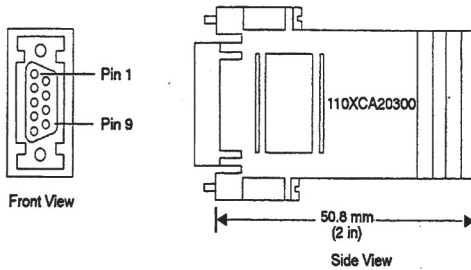
Valid Comm Port Parameters		
Baud	19,200	1,200
	9,600	600
	7,200	300
	4,800	150
	3,600	134.5
	2,400	110
	2,000	75
	1,800	50
Data Bits	7 / 8	
Stop Bits	1 / 2	
Parity	Enable/Disable Odd/Even	
Device Address	Rear panel rotary switch setting	

140 NOM 252 00 Modbus Connector

The 140 NOM 252 00 module is equipped with an RS-232 port (see below) located on the front of the module. This port uses an eight-position RJ45 (phone jack-type) connector.



Note: A D-shell adapter is available from Modicon for NOM 252 00-to-computer connections: a (110 XCA 20 300) 9-pin adapter for PC-AT type computers (see the illustration pinout table below).



RJ45 Connector		9-pin D-shell
DTR	1	1 DCD
TXD	3	2 RXD
RXD	4	3 TXD
DSR	2	4 DTR
GND	5	5 GND
		6 DSR
CTS	7	7 RTS
RTS	6	8 CTS
		9 RI
Chassis Ground	8	Case of the Connector

For complete information concerning this and other modules, please obtain a copy of the *Quantum Automation Series Hardware Reference Guide* (840 USE 100 00) from your distributor or local sales office.