



Datascan 7011-M Modbus Gateway Module



Main Features

- Connects SCADA packages running Modbus™ ASCII Master Protocol to the Datascan 7000 Network
- Upto 38k4 Baud Data Transfer
- 500V Isolation from Network
- Compact DIN-Rail Mounting

General Description

The Datascan 7011-M Modbus™ Gateway module allows the Datascan 7000 network to be connected to a host computer running SCADA Packages using the Modbus ASCII Master Protocol (7 or 8 bit support)

The 7011-M gives the host 500V isolation from the network, thereby protecting both host and network from undesirable large voltages.

The 7011-M is connected to the real time Datascan 7000 Network by means of the isolated RS485 Network Port. This token passing network can extend over a distance of 1.2km (4000ft) and support a total channel capacity of 1000 channels of various types.

The network bandwidth permits an update rate of 1000 channels/sec. Since all of the measured data is always available at any point, the 7011-M allows any subset of the measured data to be read in real-time.

The network supports dual token operation which enables one set of channels to be scanned at a higher frequency than a second set, thus providing a facility for mixing high and low speed measurement.



7011-M Technical Specification

RS232 Interface	Baud rates selectable are : 4800, 9600, 19200, 38400			Isolation : 500V
Network				
Electrical Specification : RS485	Transmission : 93.75 kBaud	Data Rate : 1000 results/sec	Total Channels per Network : 1000	Max. No. of nodes (Processors) : 32
Max. Network Length : 1.2km (4000ft)	Recommended Cable Types	Belden 9207 : upto 1.2km	Belden 8761 : upto 300m	
Modbus to Datascan Channel Mapping				
Modbus		Datascan		<p>Datascan Channels MUST be configured through the 7011-M to enable it to perform the correct channel result ranging and make the most of the 16 bit resolution available in the Modbus protocol.</p> <p>All Datascan Channels are configurable and accessible through the 7011-M using the modbus registers.</p> <p>Each Channel has two corresponding modbus registers : 1 register for the channel configuration. 1 register for the channel value</p> <p>A Datascan Channel is configured by setting the appropriate MODBUS holding register (No.48XXX) to an integer value which has the form TTRS where : TT is the channel type: e.g. 15 for resistance R is the range e.g. 0 = autorange, 4 = 10V S is the speed i.e. 0 = 14 bit, 1 = 16 bit</p>
Register No.	Type	Ch.No.	Type	
1...1000	Logic Coils	1-1000	Digital Outputs	
10001...11000	Discrete Inputs	1-1000	Digital Inputs	
30001...31000	Input Registers	1-1000	Analog Inputs	
40001...41000	Holding Registers	1-1000	Analog Outputs	
48001...49000	Holding Registers	-	These registers contain the configuration of Datascan channels 1-1000	
Channel Set up examples				
Modbus Command		gives Datascan Configuration		
set register 48002 to value 1401		Channel 2 configured as a PT100, autorange, 16 bit		
set register 48121 to value 6500		Channel 121 configured as a Digital Output		
Reading and Setting Outputs				
Modbus Read/Write		gives Datascan Channel value		
Read register 30002 = 230		Input Channel 2 = 23.0 degrees C		
Write value 1 to register 00125		Digital Output channel 125 forced to ON Condition		
All Datascan Channels can be accessed using the Modbus protocol by reading and writing to the corresponding Modbus registers as shown.				

Dimensions	Width	Depth	Height	Weight
	230mm	80mm	123mm	600g
Enviromental				
Operating Temperature Range		-10 C to +60 C		
Storage Temperature Range		-20 C to +80 C		
Relative Humidity		90% Non Condensing		

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