

Datascan Reed Relay Analog Input Module 7027



ANALOG I/O MODU

General Description

The Datascan is a series of intelligent distributed input output modules designed for real time measurement, data collection and communication. Ideal for factory industrial and scientific applications. The Datascan series includes intelligent Measurement Processors and various types of input modules for channel expansion, in all 26 modules for differing I/O requirements. The 7027 is a reed relay analog input module providing up to 200 volts isolation, and can be used with the 7010 series of measurement processor.

Main Features

- Direct Sensor connection for DC voltages, thermocouple and 4-20 mA converters
- In built Cold Junction compensation
- 16 bit measurement performance with 0.625 μ V sensitivity
- High Common Mode and Series Mode rejection
- Reed Relay differential inputs
- Plug in Screw terminal blocks
- Fully Isolated to 200 volts channel to channel, channel to ground.
- Channel mix and match capability
- Local measurement speed up to 40 readings/sec 1000/sec over the network
- Individual channel programming of sensor type and speed
- Digital configuration permitting mix and match of analog and digital inputs
- Compact Rugged DIN rail mounted

The **Datascan** series is designed to provide a simple reliable accurate and cost effective means of connecting plant sensors to standard computers for real time monitoring and data acquisition. The Datascan can be used universally with any type of computer as the data interface is by means of a standard serial port.

The **Datascan** series can be configured in local clusters of channels or alternatively as part of a total distributed network. Datascan can support up to 256 channels of local inputs or outputs using the units local expansion bus. Alternatively it can become part of a distributed network of up to 1000 channels spanning a distance of up to 4 Km (15000 ft).

Specification	Model Type	No of Inputs	Sensor Types	Resolution	Input Impedance
The 7027 is a reed relay analog input expansion scanner and signal conditioning unit for the 7010. The 7027 is a 16 channel unit providing 200 volts isolation.	7027	16 (3 pole)	DC Voltage, Thermocouple, 4-20 mA	16 bits @ 40 rdgs/sec	1M ohm
The unit provides direct sensor connection for thermocouples DC voltages, 4-20 mA inputs and current. Internal cold junction compensation and linearisation provides direct measurement in degrees C and degrees F.	Sensor	Range	16 bit	14 bit	Accuracy
	DC voltage	10V 1.3V 150mV 20mV Auto	320 µV 40 µV 5 µV 0.625µV	1.28 mV 160 µV 20 µV 2.5 µV	+/-0.02%rdg+0.01%range+2bit +/-0.02%rdg+0.01%range+2bit +/-0.02%rdg+0.01%range+2bit +/-0.02%rdg+0.01%range+10µV
Calibration period 12 months. Calibration temperature 20°C. All quoted errors are worst case.					
<i>Temperature coeff <30 ppm / °C (CJC Error 0.5 °C)</i>					
Each channel can be individually programmed for specific sensors and measurement range.	Sensor Type	Ranges	Sensitivity	Limits of Error	
	Thermocouple		16 bit resolution		
The high performance 16 bit ADC (Analog to digital converters) offers sensitivities as high as 0.625 µV.	K Type	-100 to 500 °C 500 to 1200 °C 1200 to 1600 °C	0.02 °C 0.20 °C 0.20 °C	0.4 °C 0.7 °C 4.5 °C	
	J Type	-50 to 360 °C 360 to 800 °C	0.02 °C 0.20 °C	0.4 °C 0.6 °C	
	N Type	-200 to -100 °C -100 to 580 °C 580 to 1300 °C	0.10 °C 0.05 °C 0.10 °C	0.8 °C 0.6 °C 0.8 °C	
Channels can be mixed and matched under software control.	T Type	-150 to 400 °C	0.02 °C	0.4 °C	
	R Type	0 to 1600 °C	0.10 °C	1.8 °C	
A facility is provided to configure analog channels as digital inputs.	S Type	0 to 1700 °C	0.10 °C	2.0 °C	
	E Type	-50 to 290 °C 290 to 1000 °C	0.02 °C 0.10 °C	0.4 °C 0.9 °C	
The integrating technique of conversion provides very high immunity to mains borne noise.	B Type	200 to 1600 °C	0.50 °C	4.5 °C	
	4-20 mA	4-20 mA		+/-0.15%	
Wide range of supporting software	Other Details			Common mode range (channel to channel) Common mode range (channel to ground)	
	Overload Protection +/- 100 V continuous			+/- 200 V peak +/- 200 V peak	
Connection to 7010 : 26 way PLEB connector	DC Common mode rejection			110 dB 100R unbalance	
	AC Common mode rejection			140 dB 100R unbalance	
AC Series mode rejection			60 dB @ 50 or 60 Hz +/-0.1%		
Power	Dimensions	Weight	Op temp	Humidity	
	200 mW typ 300 mW max	W 178 mm H 123 mm D 80 mm	1 Kg	-20 to 50°C storage -20 to 80°C	RH 90% Non- Condensing

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