

SIGMA 310A THERMOCOUPLE INPUT MODULE

Sigma 310a



- 20 input channels
- 2 poles per channel
- Thermocouple inputs
- Connector inputs for fast set-up

SPECIFICATION

Full signal conditioning is provided in the Sigma 310a module, enabling 20 thermocouples to be connected via miniature 2 pin thermocouple connectors mounted on the front panel. The standard unit supports type K thermocouples, but any of the thermocouple types listed below can be accommodated on request :-

Number of channels : 20
 Poles per channel : 2
 Input connections : 2 pin miniature thermocouple sockets
 Measurement modes : Thermocouple only (type to be specified)

Thermocouples:

Thermocouple types : K, J, T, R, S, E, B, N

Health monitor : Resistance measurement

Cold junction comp : Internal via isothermal block

Accuracy :	K	-100 to 500°C	0.5°C
	K	500 to 1200°C	0.7°C
	K	1200 to 1600°C	3.0°C
	J	-50 to 360°C	0.5°C
	J	360 to 800°C	0.7°C
	T	-150 to 400°C	0.5°C
	R	0 to 1600°C	2.0°C
	S	0 to 1700°C	2.2°C
	E	-50 to 290°C	0.7°C
	E	290 to 1000°C	1.0°C
	B	-200 to 1600°C	1.3°C
	N	-100 to 580°C	1.1°C
	N	580 to 1300°C	1.3°C

A-D Converter

Resolution	Channels per second	SMR
19 bits	10	>60dB
18 bits	20	>60dB
17 bits	40	>60dB
15 bits	100	0dB
13 bits	200	0dB

Interference rejection

AC common mode rejection ratio (channel group) : >140dB
 AC single channel common mode rejection ratio : >120dB
 DC channel common mode rejection ratio : >108dB
 AC series mode rejection ratio 50 or 60Hz (±0.05%) : >60dB

Maximum operating voltages

Max voltage between any + and all - inputs : 12V
 Max voltage between any two - inputs : 11V
 Max voltage between any two terminals : 22V
 Channel overload protection (continuous) : 50V
 Isolation between channel group and RS485 : 1500V

Power requirements

Operating voltage : 12 to 28V
 Power consumption : 3W

Note : The DC voltage for this module is provided by the Sigma 381a interface and is supplied over the communication cable. No local power supply is required.

System architecture

Communication interface : RS485
 Maximum Baud rate : 153kB
 Max number of Sigma modules on network : 99
 Maximum length of network : 1Km

General

Connection for comms and power in : 5 pin connector
 Connection for comms and power out : 5 pin connector
 Connection for local display : 5 pin connector
 Status lights : Power & comms

Operating Conditions

Temperature range : -20 to +70°C
 Relative humidity (0 to 40°C) : <90%
 Vibration (0 to 400Hz) : 3g in 3 planes

Mechanical

Casing : Aluminium sealed to IP55
 Size (w x d x h) : 250 x 215 x 68mm
 Weight : 2.2 Kg

Accessories

Cable plug for communications and power in
 Cable plug for communications and power out
 Cable plug for thermocouple input
 Dust cap for local display socket