

SIGMA 311A DC CURRENT INPUT WITH SENSOR SUPPLY

Sigma 311a



- 20 input channels
- 2 poles per channel
- DC current inputs
- 24V power supply for 4-20mA sensors
- Connector inputs for fast set-up

SPECIFICATION

Full signal conditioning is provided in the Sigma 311a module, enabling 20 channels DC current channels to be connected via miniature connectors on the front panel. A local 240V mains input gives a 24Vdc supply suitable for 2 wire 4-20mA current loop sensors.

Number of channels :	20
Poles per channel :	2
Input connections :	2 pin miniature copper connectors
Measurement modes :	DC Current

DC Current

Ranges :	4 to 20mA
	0 to ± 20 mA
	0 to ± 2.5 mA
Shunt resistor :	62 (Internal)
Accuracy :	0.005%
Stability :	3ppm/ $^{\circ}$ C

4-20mA Sensor Energisation

2 wire sensors only - Each transmitter is connected in series with the 24V supply and the internal high stability shunt resistor. The resulting current is proportional to the measured parameter and is measured by the Sigma module.

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 ($\pm 0.05\%$) :	>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 381 interface and is supplied over the communication cable. If 4-20mA current loop sensors are to be powered from the 311a, the local 240V mains supply must be connected to produce the 24Vdc transmitter energisation.

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 $^{\circ}$ C
Relative humidity (0 to 40 $^{\circ}$ 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 :	1.8 Kg

Accessories

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