Isolating Signal Converter/Amplifier SI300 & SI310

Function: The SI300 is a general purpose isolating signal converter, conditioner, transmitter, amplifier which will give a transmission level voltage or current output from a single low or medium level process signal input. The SI310 is an SI300 with an edgewise analogue meter in the front panel displaying 0 to 100% of the input span. For multi-channel isolation on euro-card see the SI320/330/340.
Options on the SI300/310 include: a signal inverter; a sample and hold function; and an isolator with integral transmitter power supply. Further options on the SI300 include; a high signal select (1 from 4); a low signal select (1 from 4); a summator (upto 4 inputs); a subtractor (upto 4 inputs); an adder/subtractor (A + B–C); a differentiator; a peak selector; a trough selector; an integrator; an Ingold dissolved oxygen transducer input; a difference between two 2 wire RTDs input; and a signal limiter.

SPECIFICATIONS

Please note that the following are typical standard ranges. We will manufacture instruments to cater for other ranges too, within certain limitations. Please contact our internal sales department for further clarification.

INPUTS:

DC Current
0 to 1mA into 1K ohms
0 to 10mA into 100 ohms
4 to 20mA into 62.5 ohms
10 to 50mA into 25 ohms
Other current inputs as required
Minimum current 10µA
Maximum current 100mA

DC Voltage
Between 0 and 250 Volts DC
Minimum voltage span 5mV
Maximum voltage span 250V

Input Impedance
1M ohms or greater

Resistance (2 wire)
Between 0 and 10K ohms
Minimum span 10 ohms
Maximum span 10K ohms

Potentiometers (3 wire)
Between 0 and 20K ohms
Minimum span 10 ohms
Maximum span 20K ohms

Resistance Thermometers (RTDs, PT100s)
2 or 3 wire, 100 ohms at 0ºC or 130 ohms at 0ºC
Minimum temperature span 10ºC
Maximum temperature span 600ºC

Thermocouples
Type B, E, J, K, N, R, S & T
Temperatures covered:

Type	Range	Min Temp Change
B	600 to 1800ºC	400ºC
E	–260 to 1000ºC	65ºC
J	–200 to 1200ºC	80ºC
K	–260 to 1600ºC	100ºC
N	0 to 1300ºC	150ºC
R	0 to 2000ºC	400ºC
S	0 to 1800ºC	400ºC
T	–260 to 800ºC	100ºC

Automatic cold junction compensation
Open circuit thermocouple monitoring upscale or downscale drive

OUTPUTS:

DC Current
0 to 1mA into 10 to 20K ohms
1 to 5mA into 10 to 4K ohms
0 to 10mA into 10 to 2K ohms
4 to 20mA into 10 to 1K ohms
Minimum span 1mA
Maximum span 20mA

DC Voltage
0 to 1 Volt into 100 ohms min
1 to 5 Volts into 500 ohms min
0 to 10 Volts into 1K ohms min
Minimum span 100mVolt
Maximum span 10 Volts

Input/Output/Supply Isolation
250 Volts RMS

SUPPLY:

Power Supplies
100 to 120 Volt 50/60 Hz
200 to 240 Volt 50/60 Hz
or 24 Volt DC with inverter to maintain signal to power supply isolation

Power Required
3 Watts Maximum

Pilot Light
Green LED shown Power ON

GENERAL:

Linearity Error
Proportional to input ±0.1% of span

Temperature Coefficient
±0.1% of span/⌓ 10ºC
(for inputs > 100mV)
+ Cold junction error, for thermocouple inputs

Ripple Rejection
Greater than 60dB at 50 Hz

Load Stability
Less than 0.02% over the load range specified

Operating Temperature Range
0 to +50ºC

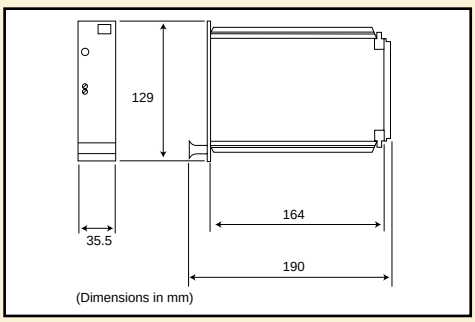
Storage Temperature Range
–20 to +85ºC

Operating Humidity Range
0 to 95% RH non-condensing

Storage Humidity Range
0 to 95% RH non-condensing

Weight
SI300 295 gms
SI310 320 gms

MECHANICAL DETAILS



TERMINATION DETAILS

Termination details are dependent upon input type and upon type of housing chosen (19" rack or DIN rail mounting enclosure) and, if 19" rack, screw terminals or solder terminals. Further details upon request from our internal sales department.

ORDERING DETAILS

(a) Give identification code, i.e. SI300
(b) Give power supply voltage, i.e. 240 Volt 60 Hz
(c) Give all details of input signal, i.e. Chromel/Alumel thermocouple, span 0 to 250ºC. (If thermocouple input please specify upscale or downscale burnout drive)
(d) Give details of output required, i.e. 4 to 20mA

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