Penny+Giles

A Curtiss-Wright Company

SSC SENSOR SIGNAL CONDITIONING MODULE

Innovation In Motion

INNOVATION IN MOTION

The new Penny+Giles model SSC is a Sensor Signal Conditioning unit housed in an IP68 protected metal enclosure. It is suitable for use with any sensor that produces a dc output signal voltage in the range 0 - 5Vdc. The SSC also provides a 5Vdc source that may be used as a supply for many types of sensor, including potentiometers, contactless position transducers, tilt sensors, pressure transducers and load cells.

Choice of outputs

The SSC converts the sensor output voltage signal to a 4 - 20mA (or optional 5 - 19mA) current output, or by using additional module cards, into a variety of different voltage formats or a digital PWM output. Model SSC normally operates from an unregulated 10 - 30Vdc supply. Where lowest noise performance is required with the optional voltage module card, a negative supply in the range -10 to -30Vdc may also be employed.

Simple installation

The SSC housing is designed to be mounted on a bulkhead close to the sensor, by using M5 screws through the mounting holes that are located under the housing lid. The supply, output and sensor connections are routed through two IP68 rated cable glands that can accommodate cable diameters of between 3 and 8mm. Connections are made to a screw terminal block on the SSC board.

User adjustment

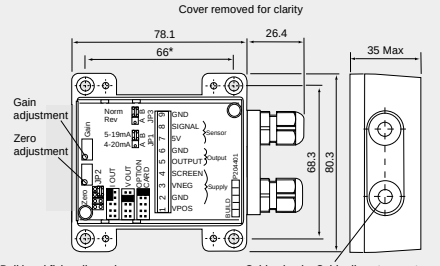
The SSC module has the following user-enabled features that allow flexible set-up to suit a variety of applications:

- Output slope reversal – selected by jumper JP3
- Output type (Current, Voltage or PWM) selected by jumper JP2
- Output current range (4-20 or 5-19mA) selected by jumper JP1
- Extended voltage range by using plug-in **VM** output option card
- Optional PWM output – by using plug-in **PWM** output option card
- Zero and Gain adjustment to set-up sensor minimum and maximum outputs

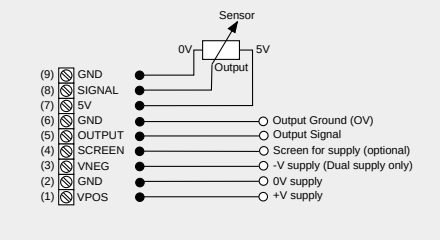
Rugged protection in hostile conditions

The SSC module is housed in a rugged die-cast aluminium alloy housing, suitable for harsh environmental conditions and electrically noisy installations, with EMC Immunity to 100V/m. The housing features an impressive environmental performance, with dust and fluid protection to IP68 and submersion to 2m.

DIMENSIONS



ELECTRICAL CONNECTIONS
Screw terminals



EMC Directive 89/336/EEC
The products detailed in this document have been tested to the requirements of EN 61000-6-2 (Immunity).

Quality Assurance
Penny+Giles are accredited to BS EN ISO9001:2000
Quality is at the heart of all our systems ensuring the reliability of our products from initial design to final despatch.

Certificate No. LRQ 0924881

SSC
SENSOR SIGNAL CONDITIONING MODULE

PERFORMANCE
ELECTRICAL

Supply voltage	**Vdc**	10 - 30 unregulated When optional Voltage Module (**VM**) card is fitted, a -10 to -30Vdc negative supply may also be connected to increase current sinking capability and reduce noise. If a negative supply is not connected, the VM card automatically generates its own
Over voltage protection		Unit can operate indefinitely at 33Vdc and is capable of absorbing short duration transients above this
Supply current	**mA**	10 maximum (plus output currents from 5Vdc source and current output). Additional 9mA with **VM** card fitted or additional 3mA with **PWM** card fitted
Reverse polarity protection		Yes - indefinitely
Sensor excitation	**Vdc**	5 ±0.15 (up to 30mA)
Sensor output pull down resistor	**MΩ**	1
Linearity (circuit only)	**%**	<±0.01 full stroke
Output signals (jumper selected)	**Vdc**	0.5 - 4.5
	mA	4 - 20 (and 5 - 19)
with additional VM card	**Vdc**	0 to 5 & -5 to 0, 0 -10 & -10 to 0, ±2.5, ±5, ±7.5, ±10
with additional PWM card		TTL level compatible signal with a 10 - 90% duty cycle. User selectable frequencies of 100, 130, 310 and 1000Hz. Logic Signals: LOW <0.4Vdc HIGH 4.5 ±0.5Vdc
Output noise - voltage range	**mVrms**	<5
- current range	**µArms**	<10
Output load (voltage output)	Ω	10k minimum (resistive to 0V line) for nominal 0.5 – 4.5Vdc range only Output current with VM card ranges from 250-750µA (sourcing and sinking) depending on supply voltage. Refer to Penny & Giles where more than 250 µA is required
Output compliance voltage (current output)		Vsupply -4V
Output lag	**ms**	<2
Influence of variation in supply voltage on output		<0.001% span
Temperature stability	**ppm/°C**	<100 (-40 to +70°C) <300 (-40 to +100°C)
Zero adjustment		0% -75% of range
Span adjustment		25% - 100% of range (Turn down = 4)
Output direction		Normal or reversed - jumper selected

MECHANICAL

Enclosure		Powder coated aluminium alloy
Weight	**g**	250
Mounting		Bulkhead mounting via M5 fixing holes
Cable exit		Via glands – cable diameter must be between 3.0 and 8.0mm diameter to seal to IP68

ENVIRONMENTAL

Operational temperature range	**°C**	-40 to +100
Protection class		IP68 to 2m for 1 hour duration
EMC immunity level **EN 61000-6-2**		>100V/m with 1m maximum distance to sensor

AVAILABILITY

Normally available from stock

ORDERING CODE

SSC base module with current (4-20 or 5-19mA) or voltage (0.5 - 4.5Vdc) outputs

ACCESSORIES
order separately

VM additional Voltage Module card to provide extended range of voltage outputs (see specification above)

PWM additional Pulse Width Modulation card to provide TTL level signal with 10-90% duty cycle

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