Model SC1000/SC2000

Transducer Display and Signal Conditioning Unit

DESCRIPTION

The SC series models are self-calibrating microprocessor-based transducer signal conditioners when used with sig mod equipped transducers. Indicators are available with several different types of input channels and output channels. When used with unamplified strain gage transducers that have the signature calibration module installed, these instruments will completely self calibrate zero, span, decimal point, and engineering units automatically.

Input channels are available for a variety of transducers. Each input channel includes an excitation power supply and either an isolated voltage or isolated current analog output.

- Unamplified pressure or load
- Pressure or load with internal voltage amplifiers
- Pressure or load with internal or external two-wire current amplifiers
- ac/ac displacement transducer
- dc/dc displacement transducer
- RTD temperature probes (Pt100)

FEATURES

- One to four channels
- ±6 digit display
- "Sig cal" auto setup
- Up to 800 Hz frequency response, field selectable
- Pressure, load, displacement transducer, voltage, current, strain gage based sensor input
- Alarm outputs
- CE approved

Available output channels for the SC2000 include:

- Contact relays for the four standard limits or additional limits (max. 16 limits/chassis)
- Isolated digital-to-analog voltage (±5 Vdc or 0 Vdc to 10 Vdc) or current (4 mA to 20 mA)

In addition to the physical input and output channels, up to seven virtual channels can be configured to assist in many potential applications.

Four channel chassis

The models SC1000 and SC2000 can hold up to four physical channels in their 3/8 DIN Aluminum bench-top chassis. A bright, dual-line 16-character display can display 5, 6 or 7 numeric digits; simply press a button to select the next channel to be viewed. If configured for split-screen operation, up to four channel values can be displayed at the same time. The SC2000 includes four open collector limit (alarm) outputs plus peak and valley detection.

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GENERAL SPECIFICATIONS

Characteristic	Measure
Model	SC1000/SC2000
Number of physical channels	1 to 4
Number of virtual channels	1 to 7
Case material	Aluminum
Form factor	3/8 DIN
Mounting	Bench (standard)
Size (W x H x D)	142,24 mm x 71,12 mm x 222,25 mm [5.6 in x 2.8 in x 8.75 in]
Weight	1,81 kg [4 lb]

DISPLAY SPECIFICATIONS

Characteristic	Measure
Number of displays	1
Number of lines/display	2
Number of characters/line	16
Scaling	Automatic or manual setup
Max. display count	9999999
Decimal point selection	0 to 5
Display type	Vacuum/Fluorescent

ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, storage	-29 °C to 93 °C [-20 °F to 200 °F]
Temperature, operating	4 °C to 41 °C [40 °F to 105 °F]

SPECIAL FEATURES (SC2000 ONLY) SPECIFICATIONS

Characteristic	Measure
Limits setup	Front panel
Limits output, standard	Open-collector
Limits output, relay output channel	Contact relays
Limits quantity	4 std., 16 max. (contact relays)
Peak/valley hold on input channels	Yes
Digital, isolated control inputs	4
Approvals	CE approved (except vehicle powered unit)
Interfaces	Signature calibration

COMMUNICATIONS SPECIFICATIONS

Characteristic	Measure
Serial setup and output	RS-232/RS-485
Isolation	500 V
Max. baud rate	38400

POWER SPECIFICATIONS

Characteristic	Measure
Standard ac powered	100 Vac to 230 Vac, 47 Hz to 63 Hz
Excitation drive	120 mA max.

Not RoHS compliant

INPUT AMPLIFIER CARDS

All input cards include non-isolated, open collector control inputs that can be field configured for any one of the following functions: 1) track hold, 2) peak/valley hold, 3) tare on, and 4) tare off.

Input	Strain gage millivolts	High level volts/mA	RTD millivolts	ac/ac displacement transducer
Transducer type	Unamplified sensors	Amplified pressure or load, dc/dc displacement transducer	Platinum 100 ohm, alpha = 0.00385	ac/ac displacement transducer
Ranges*	0.5 mV/V to 11 mV/V @ 5 V 0.5 mV/V to 5.5 mV/V @ 10 V	±5 Vdc or ±10 Vdc, 4 mA to 20 mA	-200 °C to 800 °C [-328 °F to 1472 °F]	0.1 VRMS to 15 VRMS
Frequency response	See table below	See table below	See table below	See table below
Resolution	See table below	See table below	See table below	See table below
Calibration type	Shunt; mV/V; 2-, 3-, or 5-point known load	Shunt; 2-, 3-, or 5-point known load	2-, 3-, or 5-point known load	2-, 3-, or 5-point known load
Transducer excitation	5 Vdc or 10 Vdc with sense	±15 Vdc, 28 Vdc, or 12 Vdc	10 Vdc	3 Vac @ 3 kHz
Push button 100 % tare	Yes	Yes	N/A	Yes
Push button shunt test	Yes	Yes	N/A	Yes

* Ranges are field programmable, except for RTD input

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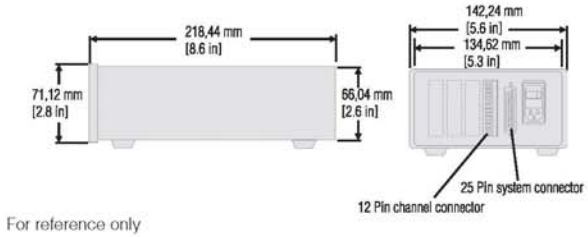
OUTPUT

Output	Strain gage millivolts	High level volts/mA	RTD millivolts	ac/ac displacement transducer
Voltage range (field selectable)	5 Vdc, ±5 Vdc, 10 Vdc, ±10 Vdc	5 Vdc, ±5 Vdc, 10 Vdc, ±10 Vdc	5 Vdc, ±5 Vdc, 10 Vdc, ±10 Vdc	5 Vdc, ±5 Vdc, 10 Vdc, ±10 Vdc
Current range	4 mA to 20 mA	4 mA to 20 mA	4 mA to 20 mA	4 mA to 20 mA
Source	Any channel	Any channel	Any channel	Any channel
Isolation	500 V	500 V	500 V	500 V
Resolution	13 bits	13 bits	13 bits	13 bits
Frequency response	Same as input	Same as input	Same as input	Same as input

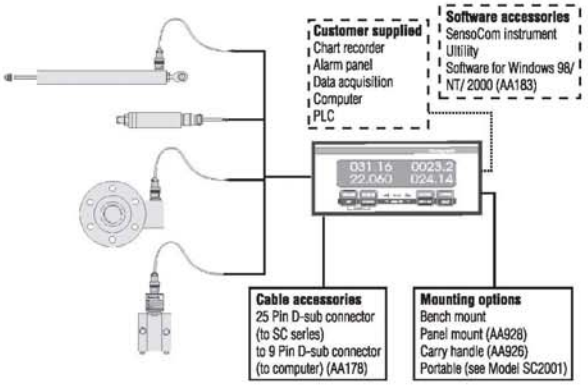
		Resolution (counts) (not including min. 10 % overrange/underrange capability)		
Frequency response (Hz) field selectable	Step response (ms) typical	Strain gage/RTD	High level	ac/ac displacement transducer
2 (fast mode)	40	±50000	±50000	±25000
2	440	±50000	±50000	±25000
8	110	±25000	±25000	±15000
16	55	±20000	±25000	±10000
32	28	±10000	±20000	±10000
50	16	±5000	±15000	±5000
100	8	±5000	±10000	±5000
250	3	±2000	±10000	±2000
500	2	±2000	±4000	±2000
800	2	±2000	±2500	±2000

MOUNTING DIMENSIONS AND CHARACTERISTICS

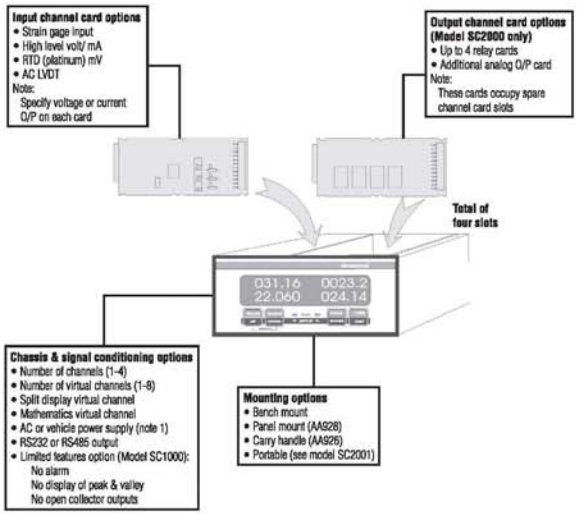


For reference only

TYPICAL SYSTEM DIAGRAM



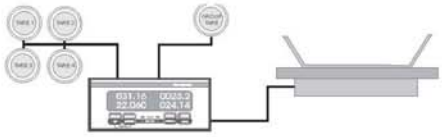
FLEXIBLE AND EXPANDABLE PLATFORM OPTIONS



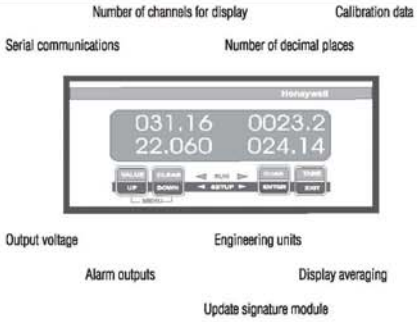
Model SC1000/SC2000

SC2000 CAPABILITIES

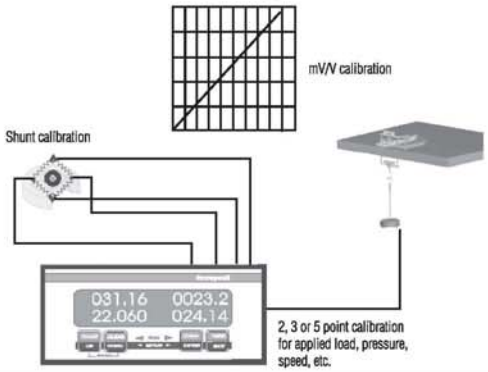
Front panel or remote tare



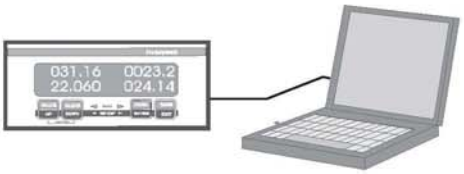
Flexible user setup



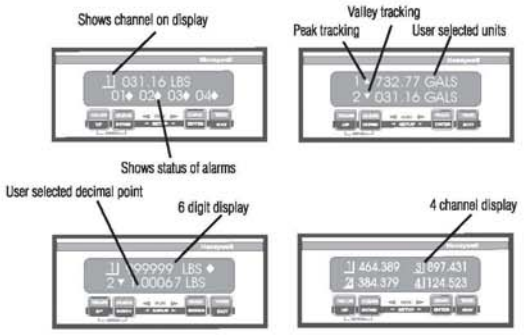
mV/V or shunt calibration or five-point calibration



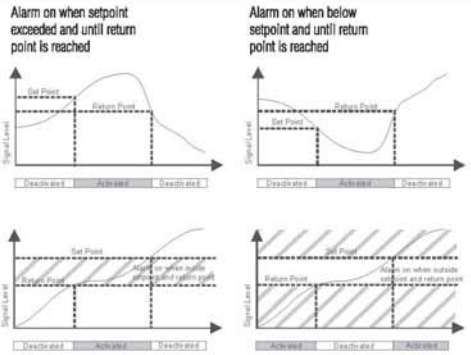
Remote setup



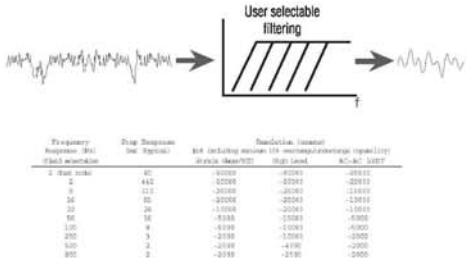
User selectable display options



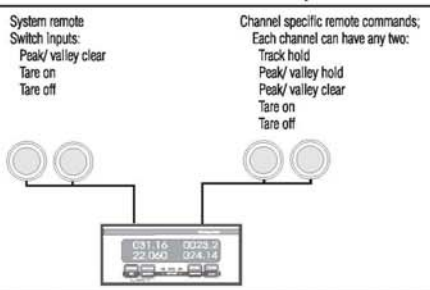
Different alarm configurations



User selectable filtering



Group and individual channel remote inputs



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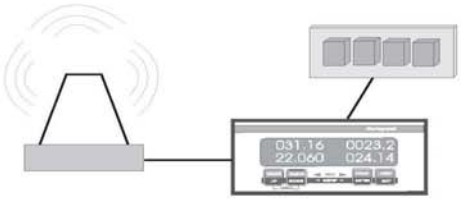
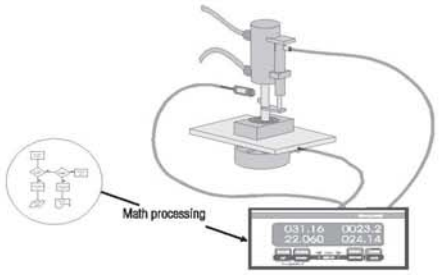
SC2000 CAPABILITIES

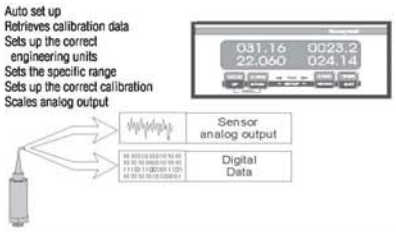
Open collector alarms or via optional four-relay cards



Optional math channel can act like PLC



Sig cal auto setup



Analog and digital outputs