Frequency to Current Converter

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SCI

- Frequency to Current Conversion
- Optically Isolated Input
- Compact DIN Rail Mounting Option
- Explosion-Proof Enclosure Available
- High-Level Pulse and Mag Pickup Inputs
- 4–20 mA Loop Powered

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Description

The SCI is a two wire frequency to analog converter that converts a pulse rate input into a 4-20 mA output signal proportional to frequency or rate. The input pulse rate is amplified and filtered by the input signal conditioning circuitry. Two forms of input signal conditioning are provided, one for magnetic pickups or contact closure inputs and the other is an isolated pulse input (depending on order code). The amplified frequency signal is then converted to an analog signal using a precision frequency to analog converter. The output stage derives it's power from the output current loop. The output stage converts the analog input signal into the desired output range. Multi-turn potentiometers provide for the necessary trimming of span and zero.

Specifications

Input

High Level

Type:	Opto-isolated
Logic 1:	4–30 V_{DC}
Logic 0:	0–1 V_{DC}
Input Frequency Range:	0–10 kHz
Fault Tolerance:	Reverse Polarity, Overvoltage

Millivolt Input (Magnetic Pickups)

Type:	Differential
Impedance:	10 kOhms
Sensitivity:	30 mV p-p
Input Frequency Range:	0–3500 Hz
Over Voltage Protection:	±30 VDC

Contact Closure Input "L"

Sensor Compatibility:	Requires an isolated contact closure
Maximum Contact Voltage:	5 V
Maximum Contact Current:	0.12 mA
Nominal Pull-up Resistance:	47 Kohm to 5 Vdc
Input Frequency Range:	0–1920 Hz

Frequency to Current Conversion

Range Selection:	DIP Switch Selectable
Available Ranges:	
Standard:	150 Hz, 300 Hz, 600 Hz, 1200 Hz, 2500 Hz, 5000 Hz, 10,000 Hz Factory Default: 1000 Hz
Contact Closure Option "L":	30 Hz, 60 Hz, 120 Hz, 240 Hz, 480 Hz, 960 Hz, 1920 Hz Factory Default: 100 Hz

Analog Output

Signal:	4–20 mA, 2-wire
Accuracy:	±0.1% of Span at 68 °F
Linearity:	±0.1% of Span
Response Time:	0.1 sec. (1 sec. w/"L")
Errors	
Output Voltage Effect:	< ±0.002% Span/Volt
Temperature Effect:	< 200 ppm/°C
Noise:	< 0.2% of Span
Supply Voltage:	10-40 VDC
Loop Burden:	< 10 VDC
Load:	500 ohms Nominal 1,500 ohms Max.
Trim Controls:	Zero & Span (Independent)
Span Range:	50% to 100% F. S.
Overcurrent Limit:	35 mA
Fault Tolerance:	Reverse Polarity

Operating Temperature

Standard:	32...158 °F
Optional (E):	-4...185 °F

Mounting Options

DIN Rail:	DIN 46 277 or DIN EN 50 022
Plastic Enclosure:	NEMA 4X 4.9"x4.9"x4.9"
Explosion Proof:	Aluminum Enclosure, Cl I, Div I, Gr B,C,D Cl II, Div I, Gr E,F,G

Order Details (Example: **SCI-121L**)

Model Number	Mounting Options	Options
SCI-121	DIN Case (NEMA 1)	**..E** = Extended Temperature Range (-4...185 °F) **..F** = Factory Scaling of Output **..L** = Low Count Speed for Isolated Contact Closure Inputs
SCI-122	Plastic Enclosure (NEMA 4X)	
SCI-123	Explosion Proof Enclosure	