

## Frequency to Current Converter



measuring  
•  
monitoring  
•  
analyzing

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



Order from: **C A Briggs Company**  
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[Sales@cabriggs.com](mailto:Sales@cabriggs.com) - [www.cabriggs.com](http://www.cabriggs.com)

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1801 Parkway View Drive  
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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**

|   |   |                               |  |
|---|---|-------------------------------|--|
| <b>Input</b>                              |   | <b>Analog Output</b>          |  |
| <b>High Level</b>                         |   | <b>Signal:</b>                | 4–20 mA, 2-wire  |
| <b>Type:</b>                              | Opto-isolated   | <b>Accuracy:</b>              | ±0.1% of Span at 68 °F   |
| <b>Logic 1:</b>                           | 4–30 V <sub>DC</sub>  | <b>Linearity:</b>             | ±0.1% of Span  |
| <b>Logic 0:</b>                           | 0–1 V <sub>DC</sub>   | <b>Response Time:</b>         | 0.1 sec. (1 sec. w/"L")  |
| <b>Input Frequency Range:</b>             | 0–10 kHz  | <b>Errors</b>                 |  |
| <b>Fault Tolerance:</b>                   | Reverse Polarity, Overvoltage   | <b>Output Voltage Effect:</b> | < ±0.002% Span/Volt  |
| <b>Millivolt Input (Magnetic Pickups)</b> |   | <b>Temperature Effect:</b>    | < 200 ppm/°C   |
| <b>Type:</b>                              | Differential  | <b>Noise:</b>                 | < 0.2% of Span   |
| <b>Impedance:</b>                         | 10 kOhms  | <b>Supply Voltage:</b>        | 10-40 VDC  |
| <b>Sensitivity:</b>                       | 30 mV p-p   | <b>Loop Burden:</b>           | < 10 VDC   |
| <b>Input Frequency Range:</b>             | 0–3500 Hz   | <b>Load:</b>                  | 500 ohms Nominal<br>1,500 ohms Max.                                    |
| <b>Over Voltage Protection:</b>           | ±30 VDC   | <b>Trim Controls:</b>         | Zero & Span<br>(Independent)   |
| <b>Contact Closure Input "L"</b>          |   | <b>Span Range:</b>            | 50% to 100% F. S.  |
| <b>Sensor Compatibility:</b>              | Requires an isolated contact closure  | <b>Overcurrent Limit:</b>     | 35 mA  |
| <b>Maximum Contact Voltage:</b>           | 5 V   | <b>Fault Tolerance:</b>       | Reverse Polarity   |
| <b>Maximum Contact Current:</b>           | 0.12 mA   | <b>Operating Temperature</b>  |  |
| <b>Nominal Pull-up Resistance:</b>        | 47 Kohm to 5 Vdc  | <b>Standard:</b>              | 32...158 °F  |
| <b>Input Frequency Range:</b>             | 0–1920 Hz   | <b>Optional (E):</b>          | -4...185 °F  |
| <b>Frequency to Current Conversion</b>    |   | <b>Mounting Options</b>       |  |
| <b>Range Selection:</b>                   | DIP Switch Selectable   | <b>DIN Rail:</b>              | DIN 46 277 or<br>DIN EN 50 022   |
| <b>Available Ranges:</b>                  |   | <b>Plastic Enclosure:</b>     | NEMA 4X<br>4.9"x4.9"x4.9"  |
| <b>Standard:</b>                          | 150 Hz, 300 Hz, 600 Hz, 1200 Hz,<br>2500 Hz, 5000 Hz, 10,000 Hz<br>Factory Default: 1000 Hz | <b>Explosion Proof:</b>       | Aluminum Enclosure,<br>Cl I, Div I, Gr B,C,D<br>Cl II, Div I, Gr E,F,G |
| <b>Contact Closure Option "L":</b>        | 30 Hz, 60 Hz, 120 Hz, 240 Hz,<br>480 Hz, 960 Hz, 1920 Hz<br>Factory Default: 100 Hz         |                               |  |

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

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