**SC-FI Series**

**Features:**
- Magnetic Pickup or Contact Closure Input
- Optically Isolated Input
- 10 kHz Maximum Input Frequency
- Standard, 2-Wire, 4-20 mA Output
- Two Year Warranty
- Loop Powered
- Various Mounting Styles
- LED Indicator

**Description:**
The SC-FI 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 its 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:**

**Operating Temperature**
32° F (0°C) to 158°F (70°C)

**High Level Pulse Input**
- Type: Opto-Isolated
- Input Impedance: 3.3 kΩ
- Logic 1: 4-30 VDC
- Logic 0: 0-1 VDC
- Frequency Range: 0-10 kHz
- Fault Protection: Reverse Polarity Protection
- Over Voltage Protection
- Isolation Voltage: 500 V
- Fast Transient Immunity: 500 V
- Maximum Rise Time: No Limit
- Maximum Fall Time: No Limit

**Magnetic Pickup Input**
- Differential Input
- Input Impedance: 10 kΩ
- Frequency Response: 0-3500 Hz
- Trigger Sensitivity: 30 mV p-p
- Over Voltage Protection: ± 30 VDC

**Contact Closure Input**
- Sensor Compatibility - Requires an isolated, contact closure
- Maximum Contact Voltage - 5 V
- Maximum Contact Current - 0.12 mA
- Nominal Pullup Resistance - 47 Kohm to 5 Vdc
- Frequency Range - 0-100 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**
- 30 Hz, 60 Hz, 120 Hz, 240 Hz,
- 480 Hz, 960 Hz, 1920 Hz
- Factory Default: 100 Hz

**Analog Output**
- Accuracy: ± 0.1% Span (@ 20° C)
- Output Type: Two Wire, Loop Powered
- Range: 4-20 mA
- Compliance Voltage: 10 to 40 VDC
- Loop Burden: < 10 VDC
- Trim Controls: Zero & Span, non-interacting
- Span (20 mA) Trim Range: 50% to 100% of full scale
- Linearity: < ±0.1% Span
- Output Voltage Effect: < ± 0.002% Span/Volt
- Temperature Effect: < 200 PPM/C°
- Reverse Polarity Protected
- Noise Content: < 0.2% Span
- Response Time: 0.1 second (1 sec. jumper selectable)
- Overcurrent Limiting: 35 mA
- Output Loop Indicator: LED illuminates when output loop is powered by proper polarity and blinks proportionally to the input frequency.

**Mounting Styles**
- DIN Rail Mount: Plastic enclosure with a snap fastener for fitting to DIN 46 277 and DIN EN 50 022 assembly rails.
- NEMA 4X: 4.92” x 4.92” NEMA 4X Enclosure for wall mounting.

**Explosion Proof**
- Aluminum enclosure for:
  - Class I, Division 1, Groups B, C & D
  - Class II, Division I, Groups E, F & G.

**Listing:** CE Compliant
**Terminal Designations**

**Standard**

**Termination**

1• Magnetic pickup
2• Magnetic pickup
3• Shield (common)
4• Opto-isolator In +
5• Opto-isolator In –
6• Shield (common)
7• Output +
8• Output –
9• Do Not Use

**SCFI-X-L (low count speed)**

**Termination**

1• Do Not Use
2• Contact Input
3• Shield (common)
4• Opto-isolator In +
5• Opto-isolator In –
6• Shield (common)
7• Output +
8• Output –
9• Do Not Use

**Simplified Block Diagram**

![Simplified Block Diagram](image)

**Typical Application**

**Magnetic Pickup Input**

Raw Signal

Flowmeter with Magnetic Pickup

**Contact Closure Input**

Flowmeter with Contact Closure

**Ordering Information**

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**Series**

FI= Frequency to Current

**Mounting:**

B= Nema 4X
C= Explosion Proof
D= DIN Rail

**Options:**

ET= Extended Temp: -4° to 185°F (-20° to 85°C)
L = Low Count Speed for Contact Closure Inputs
T = Third 3/4" conduit entry for Explosion Proof Housing
H2 = 0.875" Hole for NEMA4 mounting style
HF2 = 0.5" Female NPT Hub fitting
H3 = 1.125" Hole for NEMA4 mounting style
HF3 = 0.75" Female NPT Hub fitting

**Accessories:** (add to end of part number)

DR-4= 4" DIN Rail