

# SC/A Signal Conditioner with Amplifier

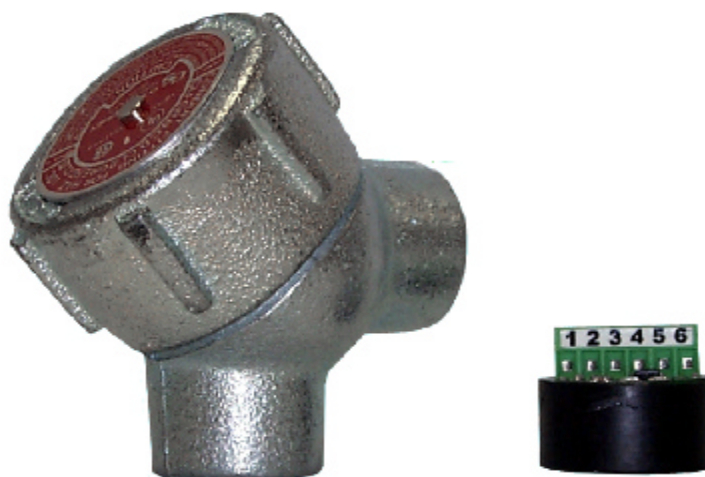


## Description

Exact Flow's SC/A signal conditioner and amplifier is used to monitor a turbine flowmeter output frequency. The signal conditioner excites the pickoff with a signal, which is then modulated by the motion of the turbine blades. This pulse output signal is amplified by the SC/A, with each pulse representing the motion of one turbine rotor blade passing the pickoff. Carrier frequency pickoffs used with an SC/A allow a much wider flow range over magnetic pickoffs because they eliminate the magnetic drag at slower speeds. Magnetic pickoffs do not require an amplifier due to their signal type, but they severely reduce the flow range of turbine flowmeters.

## Features

- ¥ 1 to 4,000 Hz scaled frequency output
- ¥ Transmits up to 1,500 feet for remote mount electronics
- ¥ Encapsulated, Solid State Electronics
- ¥ Explosion proof
- ¥ Non-Intrusive Pick-Ups
- ¥ Bi-Directional Flow
- ¥ 3,000 PSIG Standard  
Up to 10,000 PSIG Optional



## Specifications

### DC Power Input

Voltage: 10 to 30 VDC (Filtered)  
Current Draw: @ 20 mA (Typical)  
Reverse polarity protected

### RF Pickoff Input

Frequency: 0.5 to 5,000 Hz  
Modulated Carrier Frequency: 20 KHz  
Coil Inductance: 1.0 mH +/- 10%  
Max. Distance from Pickup to Preamp: 100 feet  
Max. Air Gap: 0.150"

### Magnetic Pickup Input

Frequency: 0-10 KHz, adjustable trigger level  
Trigger Sensitivity: 4 mV RMS min.  
(Freq. Range is 10 Hz to 3 KHz at 4 mV)  
Input Impedance: 40 K Ohms (nominal)  
Input Protected, RF and band pass filtered  
Max Input Signal: 60 V RMS  
Max. Distance from Pickup to Preamp: 100 feet

### Pulse Output

TTL / CMOS Fan-out of 5 TTL/CMOS loads  
Open Collector VMOS Transistor:  
Off: VMAX 60 VDC Absolute Maximum  
On: IMAX 1.2 ADV Absolute Maximum  
Compatible with power supply range  
Logic 0: 0.4 VDC @ 2.6 mA  
Logic 1: 2.4 VDC @ -0.800 mA  
Square Wave: 0 - 10 V  
High Output: Appr. 1 V less than DC supply  
Low Output: Less than 0.5 V

### Environment

Operating Temperature Range  
-20° F to 160° F (-29° C to 71° C)  
Storage Range  
-58° F to 302° F (-50° to 150° C)

**Signal Conditioner Part Number**

- SC/A** Direct Mount, Explosion Proof Signal Conditioner with Amplifier. Required with RF Pickoff
- SC/A-1** Direct Mount, Explosion Proof Signal Conditioner with Amplifier. Includes (1) RF Pickoff.
- SC/DA** Direct Mount, Explosion Proof Signal Conditioner with Amplifier. Includes 4-20 mA output module.
- SC/PDA** Direct Mount, Explosion Proof Signal Signal Conditioner with Amplifier. Includes 4-20 mA output module and power supply for RF Pickoff.
- SC/A-2** Replacement Signal Conditioner with Amplifier Module. Does not include enclosure.
- SC/A-EM** Extended Direct Mount for Hot Environment. Explosion Proof Signal Conditioner with Amplifier.