

DESCRIPTION

Cox signal conditioning amplifiers (SCAs) accept low level pickup signals and produce a stable, amplified pulse output. These SCAs are designed for magnetic or radio frequency (RF) pickups and are provided in multiple product configurations:

- MS type (mounts to existing pickup)
- Module only, with wire terminals
- Integral assembly
- Remote assembly

APPLICATION

Cox SCAs were primarily designed to maintain signal integrity when greater transmission distance is required from the flow meter pickup. Additionally, they can provide an added layer of protection from signal distortion in environments with higher levels of ambient electrical noise from various flow processes, such as, but not limited to:

- Motors/Pumps
- Fluorescent Lighting
- Wireless Devices



OPERATING PRINCIPLE

Flow meter frequency output is fed into the signal conditioning amplifier, which in turn produces a stable, amplified pulse output. Unscaled, amplified pulse data is then fed into a pulse counting indicator or a data acquisition system. The receiving device must scale the amplified, square wave signal into an applicable unit of measurement.

CONSTRUCTION

Radio Frequency (RF/Carrier)

Part Number	Description and Materials	Mount
SCA-243	RF SCA; MS Type 3-Pin Out 303 SST Tube; Solid Epoxy Encapsulation; Compatible with C01 Pickoff	Integral
SCA-245-NP	RF SCA; Assembly Y Enclosure 1/2 in. NPT Includes an Aluminum Encl. and SCA-249; Compatible with C02 pickoff	Integral
SCA-249	RF SCA; Module Only PVC; Solid Epoxy Encapsulation; Compatible with C02 pickoff	—
SCA-922	RF SCA; Assembly Includes NEMA 4 Polycarbonate Encl., Internal Power Supply and SCA-249	Remote
106-255	RF SCA; Assembly Includes an Aluminum Encl. and a two, or three-wire RF Module	Integral

Magnetic (Mag)

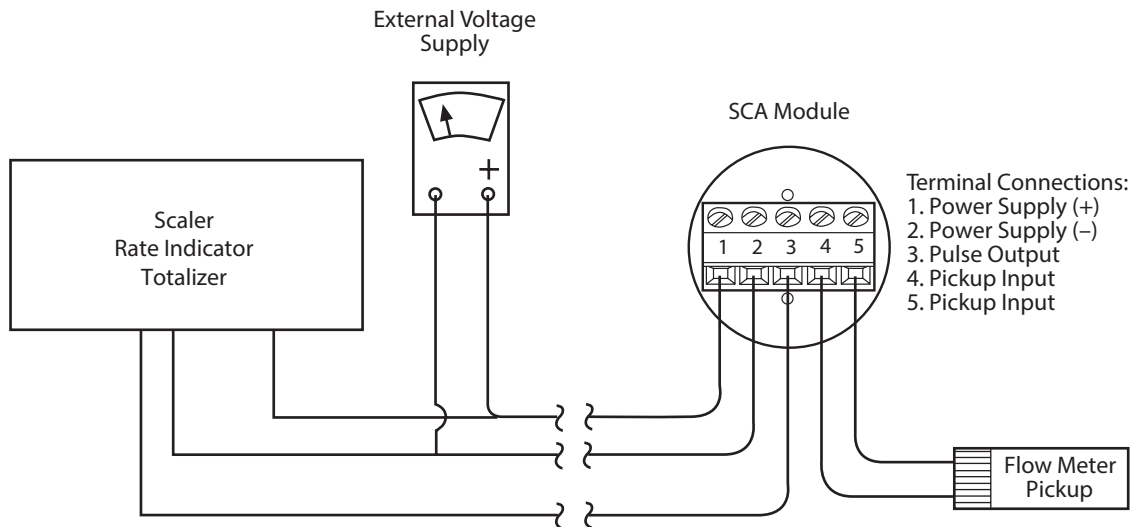
Part Number	Description	Mount
SCA-242	MAG SCA; MS Type 3-Pin Out 303 SST Tube; Solid Epoxy Encapsulation; Compatible with M01 or M02 pickoff	Integral
SCA-244-NP	MAG SCA; Assembly Includes an Aluminum Encl., MAG Pickup and SCA-248; Compatible with M25 or M36	Integral
SCA-248	MAG SCA; Module Only PVC; Solid Epoxy Encapsulation; Compatible with M25 or M36	—
SCA-923	MAG SCA; Assembly Includes NEMA 4 Polycarbonate Encl., Internal Power Supply and SCA-248	Remote

INSTALLATION

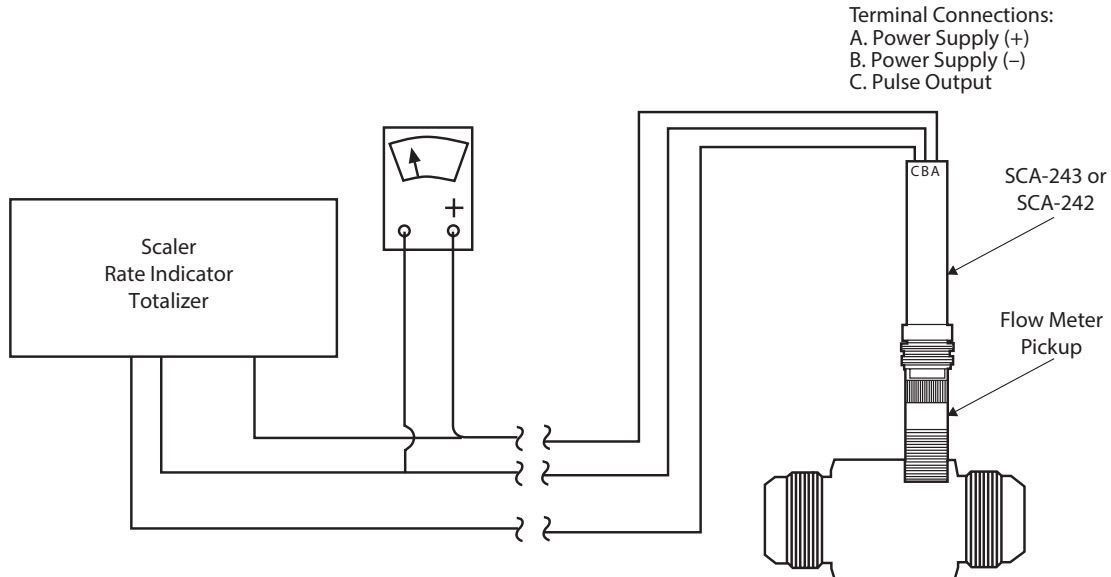
Cox magnetic and carrier pickup signal conditioning amplifiers can either mount directly onto the flow meter pickup or in a remote location and are routed into pulse counting electronics. Use the wiring diagrams below for reference.

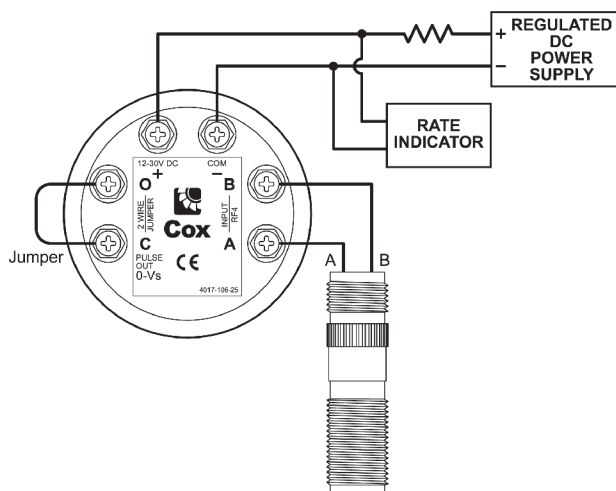
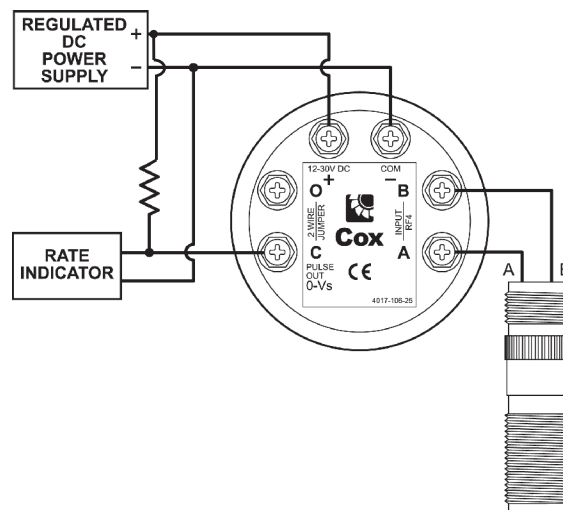
NOTE: Remote indicator is required for rate, total and scaling.

Module and Assembly Type Wiring



MS Type Wiring



2-Wire Module Wiring (106-255 Only)**3-Wire Module Wiring (106-255 Only)****SPECIFICATIONS**

CE Compliance EN 55011, EN50022-2

Radio Frequency**SCA-243 (MS Type) , SCA-249 (Module) and 106-255 (Integral Assembly)**

Pulse Rise and Fall Time	0.04 μ S
Temperature Range	-40 ... 220° F (-40 ... 105° C)
Input Voltage	11.5...30V DC
Input Current Standard	16 mA
Frequency Input Range	1...5000 Hz
Output (Standard)	0...10V Pulse
Output Protection	Reverse Polarity Protected
Explosion Proof Rated Enclosure (SCA-245)	Class I: Groups C and D Class II: Groups E, F and G Class III

Magnetic**SCA-242 (MS Type) and SCA-248 (Module)**

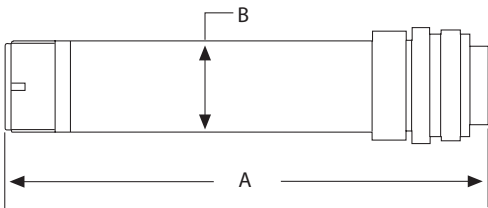
Pulse Rise and Fall Time	0.04 μ S
Temperature Range	-40 ... 220° F (-40 ... 105° C)
Input Voltage	8...30V DC
Input Current Standard	$\leq$ 12 mA
Frequency Input Range	3...10,000 Hz
Input Sensitivity	5 mV P-P
Output (Standard)	0...10V Pulse
Output Protection	Reverse Polarity Protected
Explosion Proof Rated Housing (SCA-244 Only)	Class I: Groups C and D Class II: Groups E, F and G Class III

SCA-922 (RF) and SCA-923 (Magnetic) Remote Assemblies

Pulse Rise and Fall Time	0.04 μ S	
Temperature Range	-40...220° F (-40...105° C)	
Input Voltage	115/230V AC @ 50/60 Hz 11.5...30V DC	
Input Current Standard	DC Powered RF	$\leq$ 16 mA
	DC Powered MAG	$\leq$ 12 mA
Frequency Input	SCA-922 (RF)	1...5000 Hz
	SCA-923 (Mag)	3...10,000 Hz
Input Sensitivity	5 mV P-P (Magnetic Only)	
Output (Standard)	0 ...10V Pulse	
Output Protection	Reverse Polarity Protected	
NEMA 4, 12 and 13 Rated Housing	UL 508 Type 1 CSA Type 1	

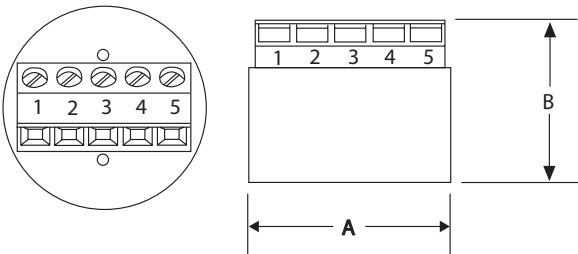
DIMENSIONS

SCA-242 and SCA-243 MS Type



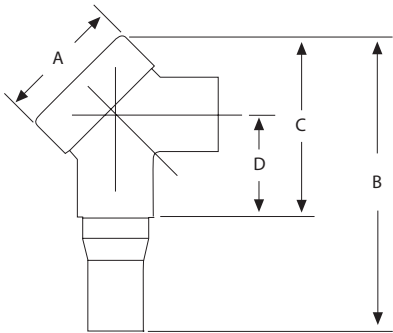
A	B
in. (mm)	in. (mm)
3.75 (95.25)	0.63 (16.00)

SCA-249 and SCA-248 Module



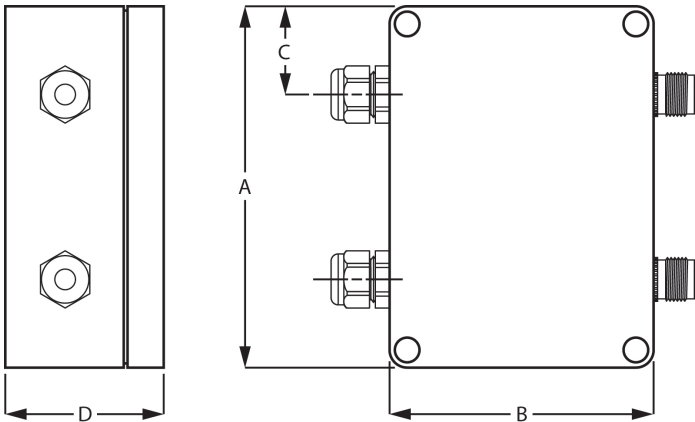
	A	B
	in. (mm)	in. (mm)
Magnetic	1.33 (33.78)	0.83 (21.08)
Radio Frequency	1.25 (31.75)	1.13 (28.70)

SCA-245-NP and SCA-244-NP Integral Assembly



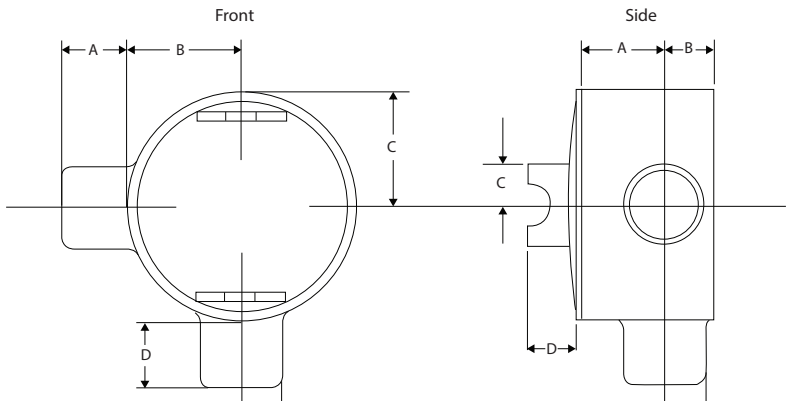
A	B	C	D
in. (mm)	in. (mm)	in. (mm)	in. (mm)
1.88 (47.75)	4.00 (101.60)	2.88 (73.15)	1.63 (41.40)

SCA-922 and SCA-923 Remote Assembly



A	B	C	D
in. (mm)	in. (mm)	in. (mm)	in. (mm)
5.12 (130.05)	3.75 (95.25)	1.25 (31.75)	2.35 (59.69)

106-255 Integral Assembly



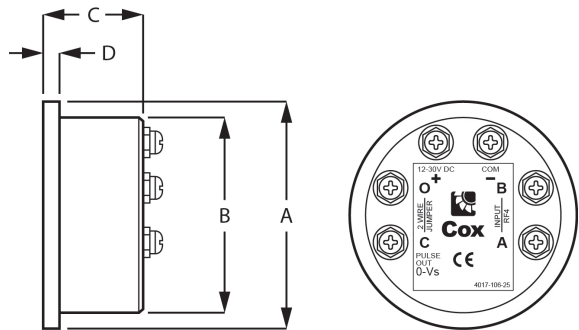
Front View

A	B	C	D	E
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
1.00 (25.40)	1.75 (44.45)	1.75 (44.5)	1.00 (25.40)	0.63 (16.00)

Side View

A	B	C	D	E
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
1.25 (31.75)	0.75 (19.05)	0.63 (16.00)	0.75 (19.05)	0.63 (16.00)

Module Only for 106-255 (PN 82S0414R0010)



A	B	C	D
in. (mm)	in. (mm)	in. (mm)	in. (mm)
2.50 (63.50)	2.15 (54.61)	1.10 (27.94)	0.18 (4.57)

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