

# CA04/PA04 Amplifiers

## Carrier and Pulse Amplifiers for Turbine Meters

### Description

Economical signal conditioners by Flow Technology are designed for use with turbine flowmeters. The model CA04, when used with a modulated carrier (RF) pickoff, generates a carrier frequency that is modulated by the rotating blades of a turbine rotor. This eliminates the effects of magnetic drag, greatly extending the range and linearity of small meters at low flow rates.

The model PA04 conditions the output of a standard magnetic pickoff by converting the low-level signal of the pickoff into clean pulse outputs.

Both signal conditioners may be used with a wide range of power supply voltages and produce output pulses proportional to the rotational rate of the turbine meter rotor. The output signals may be transmitted over wire lengths in excess of 1000 feet dependent upon the environmental conditions.

### Features

- Enhances turbine flowmeter performance
- Ideal for use with high temperature pickoffs
- Conditions modulated carrier or magnetic pickoffs
- Long range transmission (up to 1000 ft.)
- 10 volts pulse output, frequency proportional to flow rate
- Remote or integral mount with flowmeter
- Reverse voltage protected
- NEMA 4X or explosion-proof enclosures
- DC-powered
- RoHS approval



CA04 Carrier Amplifier

### Specifications

#### CA04 Carrier Amplifier

##### Input\*\*

Frequency Range	5 to 3500 Hz
Oscillator Frequency	Approximately 45 kHz

##### Output

Type	BJT collector output with internal pull-up, 10V Zener limiter
Impedance	1.2 k ohm or 750 ohm (11-22 VDC) pull-up
Level	Pulse output 0-10V at 19-32 VDC power, 0-8V at 11-22 VDC power < 30 mA at 11-32 VDC

##### Power

#### PA04 Carrier Amplifier

##### Input\*\*

Frequency Range	0 to 10k kHz
Impedance	> 5 k ohm differential
Sensitivity	4-10 mV p-p

##### Output

Type	MOSFET drain output with internal pull-up, 10V Zener limiter
Impedance	2.4 k ohm pull-up
Level	Pulse output 0-10V at 10-32 VDC power, 0-6V at 6 VDC power < 30 mA at 6-32 VDC

##### Power

#### CA04 & PA04

##### Temperature

Operating	-40 °F to 185 °F (-40 °C to 85 °C)
Storage	-67 °F to 257 °F (-55 °C to 125 °C)

##### Approvals

CE	Directive 2004/108/EC
RoHS	Directive 2011/65/EU



# Amplifiers

## Model Numbering

	A	0	4	-		-		-	0	0	0	0	
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Model Type	Code
Carrier	C
Magnetic	P

Power Source	Code
6 - 32 VDC (PA04)	3
19 - 32 VDC (CA04)	
11 - 22 VDC (CA04)	4

Signal Input	Code
Magnetic (PA04)	A
RF Carrier (CA04)	C
Other RF Carrier* (CA04)	D

Enclosure Type	Code
No Enclosure	-1
Class I, Div 1&2, Groups A, B, C & D Explosion Proof	-9
NEMA 4X with 1/2" Conduit Hubs	B6
Nema 4X with MS Connectors ***	B7

## Wiring Diagram

### CA04

6	CASE
5	DC SUPPLY
4	COMMON
3	PULSE OUT
2	XDCR
1	XDCR

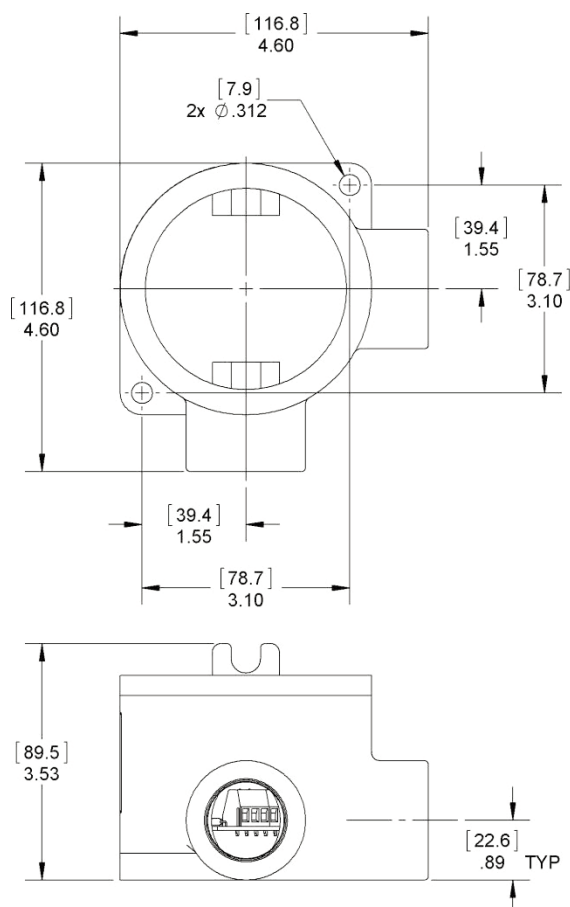
### PA04

6	CASE
5	DC SUPPLY
4	PULSE OUT
3	COMMON
2	XDCR
1	XDCR

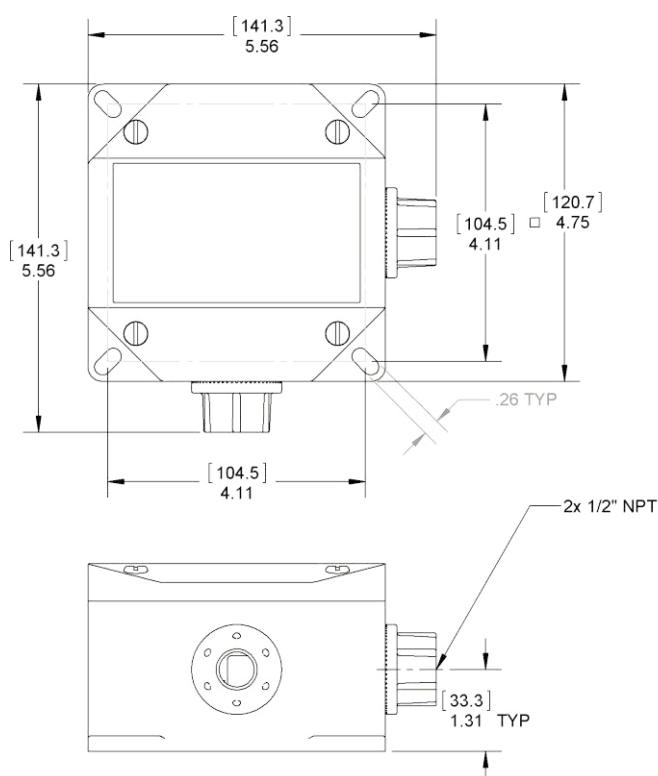
\* For use with RF pickoffs that have 330 uH coils.  
 \*\* Input specifications are transducer and signal level dependant. Specifications given are for typical transducers and are not guaranteed for all transducers or meters.  
 \*\*\* B7 Enclosure option is not RoHS compliant.

## Enclosure Options

### -9 Explosion Proof



### B6 Nema 4X



Specifications are for reference only and are subject to change without notice.



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