

# PA03 Pulse Amplifier & CA03 Carrier Amplifier

## Description

Economical signal conditioners by Flow Technology are designed for use with turbine flowmeters. The model CA03, when used with a modulated carrier (RF) pickoff, generates a carrier frequency which 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 PA03 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 1 mile (1.6 km).

## Features

- Enhances turbine flowmeter performance
- Conditions modulated carrier or magnetic pickoffs
- Long range transmission (over 1 mile/1.6 km)
- 10 volts pulse output, frequency proportional to flow rate
- Remote mounted or integral with flowmeter
- Reverse voltage protected
- Lightweight polypropylene, NEMA 4X or explosion-proof enclosures
- DC-powered



**CA03**  
Carrier Amplifier

## Specifications

### PA03

#### Input \*\*

Frequency Range	0 to 10 kHz
Impedance	> 5 k ohm differential
Sensitivity	10 mV p-p @ 5 VDC power 20 mV p-p @ 30 VDC power

#### Output

Type	BJT collector output with internal pull-up, 10V Zener limiter
Impedance	1.2 k ohm pull-up
Level	Pulse output 0–5 volts at 5 VDC power, 0–10 volts at 10–32 VDC power

#### Power

< 30 mA at 5–32 VDC

### CA03

#### Input \*\*

Frequency Range	5–3500 Hz
Oscillator Frequency	Approximately 45 kHz

#### Output

Type	BJT collector output with internal pull-up, 10V Zener limiter
Impedance	1.2 k ohm pull-up
Level	Pulse output 0–10 volts at 22–32 VDC power, 0–8 volts for 11–22 VDC power

#### Power

< 30 mA at 11–32 VDC

### PA03 & CA03

#### Temperature

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

#### Connections

##### Optional

Terminal Barrier Strip  
Universal display mounted integral  
(see Universal Display data bulletin for specifications)

## Model Numbering System

□ **A** **0** **3** - □ - □ - **0** **0** **0** **0** □ □

### Basic Model No.

PA03 = Magnetic  
CA03 = RF Carrier

### Power Source

3 = 5-32 VDC (PA03)  
3 = 22-32 VDC (CA03)  
4 = 11-22 VDC (CA03)

### Signal Input

A = Magnetic (PA03)  
C = RF Carrier (CA03)  
D = Other RF Carrier\* (CA03)

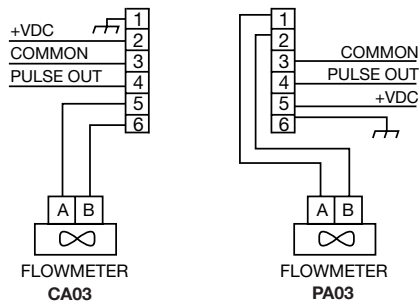
### Signal Output (no options)

0000 = 0-10 V p-p pluse

### Enclosure Options

- 1 = No Enclosure
- 3 = Polypropylene (PA03 only)
- 9 = Class I, Division 1, Groups A, B, C & D
- B6 = NEMA 4X with 1/2" Conduit Hubs
- B7 = NEMA 4X with MS Connectors
- BA = NEMA 4X with MS Connectors and Display
- BC = NEMA 4X with 1/2" Conduit Hubs and Display

## Wiring Diagram

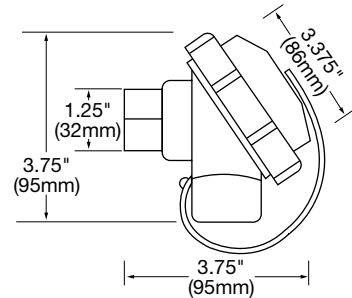


\* For use with RF pickoffs that have 330 μH coils.

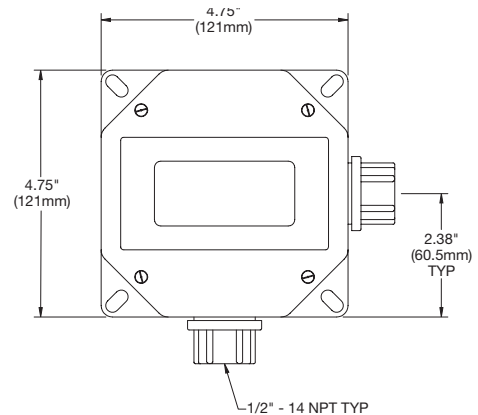
\*\* Input specifications are transducer and signal level dependant.  
Specifications given are for typical transducers and are not guaranteed for all transducers or meters.

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

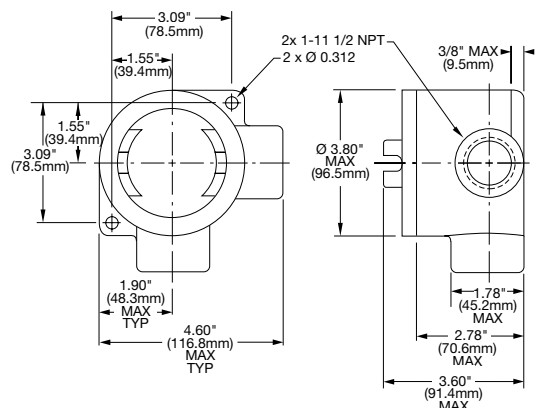
## Enclosure Options



**3 = POLYPROPYLENE  
(PA03 Only)**



**B6 = NEMA 4X  
(Shown with Universal Display)**



**9 = CLASS I, DIV. 1,  
GROUPS A, B, C & D**

Local Representative:



8930 S. Beck Avenue, Suite 107, Tempe, Arizona 85284 USA  
Tel: (480) 240-3400 • Fax: (480) 240-3401 • Toll Free: 1-800-528-4225  
E-mail: ftimarket@ftimeters.com • Web: www.ftimeters.com

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