

Features

This guide is designed to help you set up and install the R45C PFM to Analog Output Converter. For complete information on programming, performance, troubleshooting, dimensions, and accessories, please refer to the Instruction Manual at www.bannerengineering.com. Search for part number 234819 to view the Instruction Manual. Use of this document assumes familiarity with pertinent industry standards and practices.

Overview

The R45C PFM to Analog Output Converter connects to the PFM output of a sensor, and converts the PFM signal into an analog output.

Pulse Frequency Modulation (PFM) is a way to represent an analog measurement value from a sensor digitally, and the R45C-PF-xx translates that digital representation into an analog output signal.

- Voltage range is 0 V to 10 V
- Current range is 4 mA to 20 mA
- PFM signal input range is 100 Hz to 600 Hz

Status Indicators

The R45C PFM to Analog Output Converter has two amber LED indicators on both sides for connected sensor status and provides adequate indication visibility. There is also a green LED indicator on both sides of the converter, which signals the device's power status.

Status 1 LED – Amber	
Indication	Status
Solid On/Off	On: PFM is within valid range Off: PFM is outside of valid range, or no sensor is connected

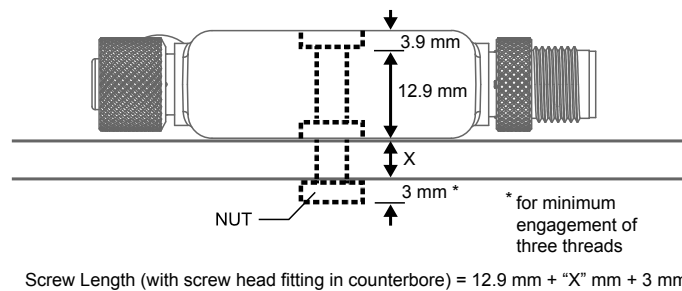
Status 2 LED – Amber	
Indication	Status
Solid On/Off	On: Analog output is within valid range Off: Analog output is outside of valid range, or no sensor is connected

Installation

Mechanical Installation

Install the R45C to allow access for functional checks, maintenance, and service or replacement. Do not install the R45C in such a way to allow for intentional defeat.

Fasteners must be of sufficient strength to guard against breakage. The use of permanent fasteners or locking hardware is recommended to prevent the loosening or displacement of the device. The mounting hole (4.5 mm) in the R45C accepts M4 (#8) hardware. See the figure below to help in determining the minimum screw length.



CAUTION: Do not overtighten the R45C's mounting screw during installation. Overtightening can affect the performance of the R45C.

Specifications

Supply Voltage

12 V DC to 30 V DC at 50 mA maximum

Supply Protection Circuitry

Protected against reverse polarity and transient voltages



Leakage Current Immunity

400 µA

Resolution

14 bits

Accuracy

0.5%

Indicators

- Green: Power LED
- Amber: Status 1 LED
- Amber: Status 2 LED

Connections

Integral male/female 5-pin M12 quick disconnect

Construction

- Coupling Material: Nickel-plated brass
- Connector Body: PVC translucent black

Vibration and Mechanical Shock

- Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 0.5 mm amplitude, 5 minutes sweep, 30 minutes dwell)
- Meets IEC 60068-2-27 requirements (Shock: 15G 11 ms duration, half sine wave)

Environmental Rating

- IP65, IP67, IP68
- NEMA/UL Type 1

Operating Conditions

- Temperature:** -40 °C to +70 °C (-40 °F to +158 °F)
- 90% at +70 °C maximum relative humidity (non-condensing)
- Storage Temperature:** -40 °C to +80 °C (-40 °F to +176 °F)

Required Overcurrent Protection



WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	1.0	30	0.5

Certifications



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1831 Diegem, BELGIUM



Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN



Product Identification



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