



Rotary Encoders Used in Fuel Pumps for Automotive Service Stations

APPLICATION NOTE



Model EN
Optical Rotary Encoder



Model AMS22B
Analog Non-Contacting
Rotary Position Sensor

INTRODUCTION

Fuel pumps use some type of metering system to accurately measure flow and dispensing of fuel. The metering system typically has some type of rotary position feedback sensor to measure flow rate. The preferred type of rotary sensor is non-contacting technology as the sensor is frequently being used and requires reliable measurement and a long deployment life.

The rotary sensor is typically mounted on the valve that measures the flow rate of fuel dispensed from in-ground storage tanks. The valve rotates the shaft of the rotary sensor sending a signal to the Central Processing Unit (CPU) with every full rotation of the shaft. The CPU then converts the shaft rotation to flow rate and displays the actual fuel dispensed on the digital front panel of the pump.

THE PROBLEM TO BE SOLVED

Fuel pump manufacturers are faced with the arduous task of finding reliable, long life, industrial grade rotary sensors to use in metering fuel flow in pumps. The rotary sensors must be able to withstand extreme temperatures and be resistant to external contaminants that may be encountered in normal service.

SOLUTION

Bourns offers rotary sensors with both magnetic (Hall effect) and optical technologies that are fit for use in this type of application. The Bourns® Model AMS22B is a Hall effect rotary sensor designed for use in hazardous environments, high humidity, and temperature extremes typically encountered in fuel pump applications. The standard analog output is available in single or dual output options for redundant system requirements. Other output options include PWM and SPI outputs. Cable and specified connector options are available as value-added options for ease of connection.

Bourns also offers a custom Model EN Optical Rotary Encoder with a robust seal suitable for use in fuel pump applications. The optical encoder is placed inside an external housing and potted with epoxy to seal the encoder against splashing water, fuel vapors and other contaminants. Currently Bourns offers three standard part numbers to meet your flow metering needs: ENA1D-494-L00100, ENZ1D-493-L00100 & ENZ1D-495-L00100.

ADDITIONAL RESOURCES

Utilizing magnetic or optical technologies, Bourns offers robust and reliable products fit for fuel dispensing applications. For more information, visit Bourns online at:

www.bourns.com

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