



BULLETIN 871C SMALL BARREL

INDUCTIVE PROXIMITY SENSOR

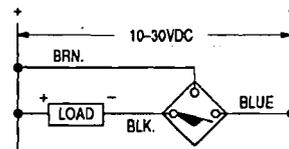
133-539(B)

SPECIFICATIONS (Typical)

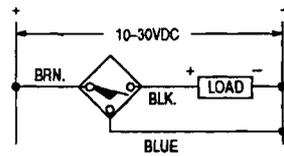
Load Current	3, 4mm < 100mA 5, 6.5, 8mm < 200mA
Supply Current	≤ 15mA
Leakage Current	≤ .1mA
Operating Voltage	10-30 VDC
Voltage Drop	≤ 2.5V
Repeatability	5%
Hysteresis	15%
Reverse Polarity	
Protection	YES (except 3mm, 4mm)
Enclosure	Cable NEMA 4, 13 / IP67 (IEC 529) QD: IP65 (IEC 529) (Nickel Plated Brass Barrel)
Cable	2 meter (6.5 ft.), 3 Conductor
Quick Disconnect	3 Pin, Nano Style
LED	Red or Yellow (Output Energized)
Temperature (Operating)	-25° C to + 70° C (-13° F to + 158° F)

WIRING DIAGRAMS

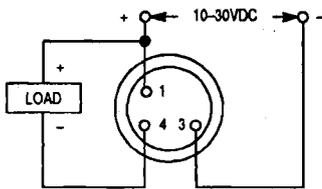
NPN (Sinking)



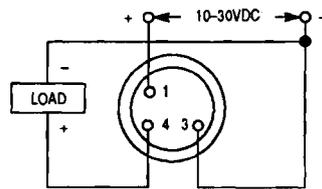
PNP (Sourcing)



NPN (Sinking)



PNP (Sourcing)



INSTALLATION INSTRUCTIONS



CAUTION; Solid state devices can be susceptible to radio frequency (RF) interference, depending on the frequency of the transmitting source. If RF transmitting equipment is to be used in the vicinity of the solid state devices, thorough testing should be performed to assure that the transmitter operation is restricted to a safe operating distance from the control equipment and wiring.

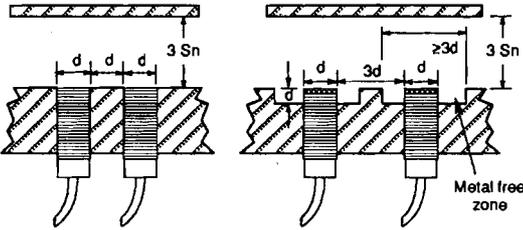


WARNING: Do not let METAL objects that are not to be sensed come within three times the sensing distance of this device. Unintended process activation may result in a hazardous condition.

IMPORTANT: Save these instructions for future use. For additional information and proper operating guidance, refer to the Allen-Bradley Proximity Catalog 871-1.2

EFFECTS OF NEARBY METAL SURFACES

Metals immediately opposite the sensing face should be no closer than three times the rated operating distance of the sensor.



Sensors embedded in metal
Shielded

Sensors not embedded in metal
Not shielded

S_n = rated operating distance

d = diameter of sensing surface

SENSING DISTANCE

The standard target is a square of mild steel (ST37), 1mm thick. The side of the square is equal to the diameter of the sensor. Targets smaller than standard size may shorten the sensing distance. Targets larger than standard may lengthen the sensing distance.

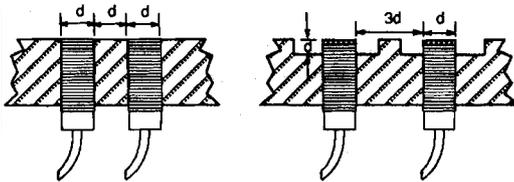
CORRECTION FACTORS

To determine the sensing distance for materials other than the standard mild steel, multiply the sensing distance by the factor given below:

Steel	1.0
Stainless Steel	0.7 to 0.8
Brass	0.4 to 0.5
Aluminum	0.3 to 0.4
Copper	0.3 to 0.4

SPACING BETWEEN SENSORS

When installing side by side, the minimum spacing distance should be maintained. When mounting face to face, use two times the diameter.



Shielded

Not shielded

Sensors embedded in metal

Sensors not embedded in metal

d = diameter of sensing surface

PARALLEL CONNECTED SWITCHES

To determine the maximum number of switches for an application, the sum of the maximum OFF-state currents of the switches connected in parallel must be less than the maximum OFF-state current of the load device. The load will be energized when the output of any proximity switch energizes. NOTE: Parallel operation of switches does not provide higher load current capability.