



Cylindrical Weld Immune Sensors

Weld Immune Cylindrical

3-Wire DC 144-146

See pages 153-160 for our weld immune Pile Driver all-metal cylindrical sensor product line.

PILE DRIVER

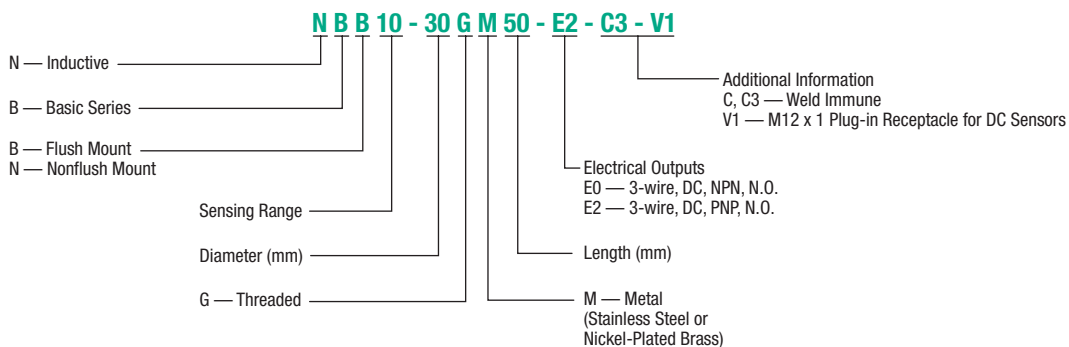
Pepperl+Fuchs' basic series offers reliable, cost-effective metal sensing. All models offer full immunity to both weld fields and weld slag. This sensor family has been the standard sensor for the automotive welding industry for many years. These sensors have a model designation "NBB & NBN....".

They are available in 3-wire DC models in either flush mount or nonflush mount versions. Connection is through a (Micro) connector (V1).

Product Features

- Reliable, cost-effective sensing
- PTFE-coated brass barrel
- Dual color 4-way LEDs
- Some models with coated sensing face

Model Number Key



3-Wire DC Cylindrical Weld Immune Sensors

- 2 to 15 mm sensing ranges
- PTFE-coated barrels
- Ceramic-coated sensing face models (C3)
- LED target indication



Technical Specifications

SUPPLY VOLTAGE	10-30 VDC
LOAD CURRENT (I _L)	200 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 0.5 mA
OUTPUT	Suffix E0 NPN normally open Suffix E2 PNP normally open
VOLTAGE DROP AT I _L (MAX.)	≤ 3 VDC
HYSTERESIS	3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTED	Yes
LED INDICATION	See dimension drawings
SENSING FACE MATERIAL	PTFE-coated PPS (C) or Ceramic (C3)
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	IP67
AMBIENT TEMPERATURE	-14°F to +158°F (-25°C to +70°C)
APPROVALS	CE UL US SP US



See pages 827-874 for cordsets



See pages 885-892 for accessories

Wiring Diagrams

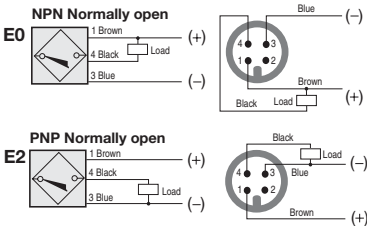
3-Wire DC



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V1 Type



Cylindrical Weld Immune Sensors

Micro (M12) Quick Disconnect Models

Dia. (mm)	Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Weld Immunity	Barrel Material	Dwg. No.
12	NBB2-12GM50-E0-C-V1	2	Flush	NPN N.O.	1.5 kHz	200 mT	PTFE-coated brass	1
	NBB2-12GM50-E2-C3-V1	2	Flush	PNP N.O.	1.5 kHz	200 mT	PTFE-coated brass	1
	NBN4-12GM50-E2-C-V1	4	Nonflush	PNP N.O.	1.2 kHz	200 mT	PTFE-coated brass	2
18	NBB5-18GM50-E0-C-V1	5	Flush	NPN N.O.	800 Hz	150 mT	PTFE-coated brass	3
	NBB5-18GM50-E2-C3-V1	5	Flush	PNP N.O.	800 Hz	150 mT	PTFE-coated brass	3
	NBN8-18GM50-E2-C-V1	8	Nonflush	PNP N.O.	500 Hz	150 mT	PTFE-coated brass	4
30	NBB10-30GM50-E0-C-V1	10	Flush	NPN N.O.	10 Hz	100 mT	PTFE-coated brass	5
	NBB10-30GM50-E2-C3-V1	10	Flush	PNP N.O.	10 Hz	100 mT	PTFE-coated brass	5
	NBN15-30GM50-E2-C-V1	15	Nonflush	PNP N.O.	10 Hz	100 mT	PTFE-coated brass	6

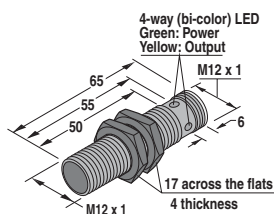


Weld Immune Cylindrical

3-Wire DC

Drawing No. 1

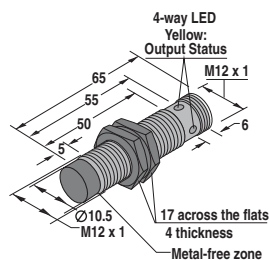
NBB2-12GM50-E0-C-V1 [NPN N.O.]
NBB2-12GM50-E2-C3-V1 [PNP N.O.]



2 mm Sensing Range

Drawing No. 2

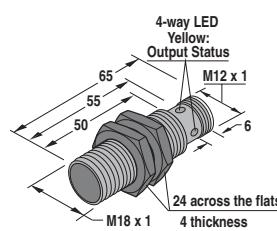
NBN4-12GM50-E2-C-V1 [PNP N.O.]



4 mm Sensing Range

Drawing No. 3

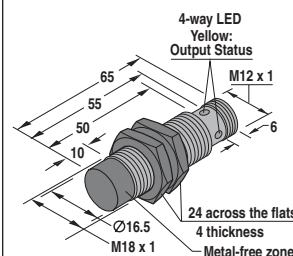
NBB5-18GM50-E0-C-V1 [NPN N.O.]
NBB5-18GM50-E2-C3-V1 [PNP N.O.]



5 mm Sensing Range

Drawing No. 4

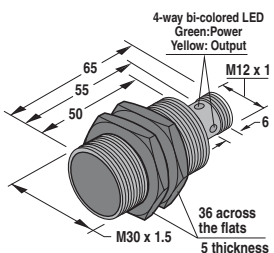
NBN8-18GM50-E2-C-V1 [PNP N.O.]



8 mm Sensing Range

Drawing No. 5

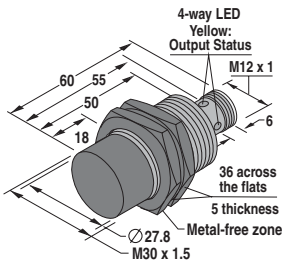
NBB10-30GM50-E0-C-V1 [NPN N.O.]
NBB10-30GM50-E2-C3-V1 [PNP N.O.]



10 mm Sensing Range

Drawing No. 6

NBN15-30GM50-E2-C-V1 [PNP N.O.]



15 mm Sensing Range

Cylindrical Weld Immune Sensors

Recommended Accessories



BF12
BF18
BF30



BF 12-F
BF 18-F
BF 30-F



BF5-30



AB12
AB18
AB30

Mounting Brackets

Dia.	Model	Description
12	BF12	12 mm clamp bracket
	BF 12-F	12 mm snap lever bracket
	BF5-30	5-30 mm universal bracket
	AB12	12 mm right angle bracket

Dia.	Model	Description
18	BF18	18 mm clamp bracket
	BF 18-F	18 mm snap lever bracket
	BF5-30	5-30 mm universal bracket
	AB18	18 mm right angle bracket

Dia.	Model	Description
30	BF30	30 mm clamp bracket
	BF 30-F	30 mm snap lever bracket
	BF5-30	5-30 mm universal bracket
	AB30	30 mm right angle bracket



Micro Cordsets

Straight "Micro" (M12)	
Model	Description
V1-G-YE2M-PVC	2 m length, PVC jacket
V1-G-YE5M-PVC	5 m length, PVC jacket
V1-G-YE2M-PUR	2 m length, PUR jacket
V1-G-YE5M-PUR	5 m length, PUR jacket

Right Angle "Micro" (M12)	
Model	Description
V1-W-YE2M-PVC	2 m length, PVC jacket
V1-W-YE5M-PVC	5 m length, PVC jacket
V1-W-YE2M-PUR	2 m length, PUR jacket
V1-W-YE5M-PUR	5 m length, PUR jacket

See pages 827-874 for complete cordset listing.

See pages 885-892 for complete accessory listing.