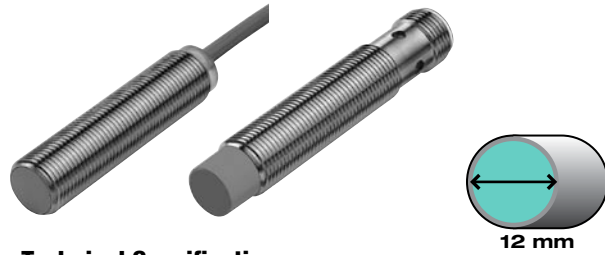


3- and 4-Wire DC 12 mm Diameter Inductive Sensors

- 2 to 10 mm sensing ranges
- 12 mm threaded barrels
- LED target indication
- Cable and Micro (M12) quick disconnect models



Technical Specifications

SUPPLY VOLTAGE	NBB/NBN/NEB Models	10-30 VDC
	NJ Models	10-60 VDC
LOAD CURRENT (I _L)	GM30 Models	150 mA max.
	All Other Models	200 mA max.
LEAKAGE CURRENT (OFF-STATE)	NBB/NBN/NJ Models	≤ 0.5 mA
	NEB/NEJ Models	≤ 0.1 mA
OUTPUT	Suffix E, E0	NPN normally open
	Suffix E2	PNP normally open
	Suffix E3	PNP normally closed
	Suffix A0	NPN normally open & normally closed
	Suffix A2	PNP normally open & normally closed
VOLTAGE DROP AT I _L (MAX.)	NBB/NBN/NJ Models	≤ 3 VDC
	NEB/NEJ Models	≤ 2 VDC
HYSTERESIS		3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION		Yes
REVERSE POLARITY PROTECTED		Yes
LED INDICATION		See dimension drawings
SENSING FACE MATERIAL		PBT
STANDARDS		EN 60947-5-2
ENVIRONMENTAL PROTECTION		IP67
AMBIENT TEMPERATURE		-13 °F to +158 °F (-25 °C to +70 °C)
APPROVALS		



See pages 803-854 for cordsets



See pages 865-872 for accessories

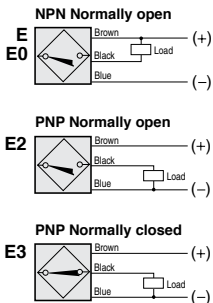
3-Wire and 4-Wire DC

Wiring Diagrams

3-Wire DC



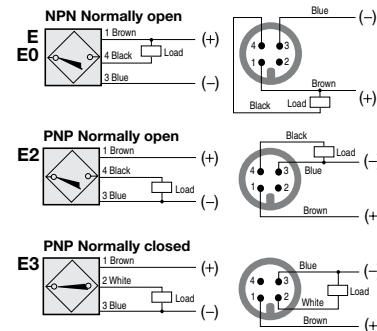
Cable Connection



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

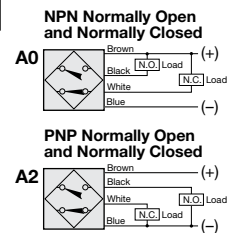
V1 Type



4-Wire DC



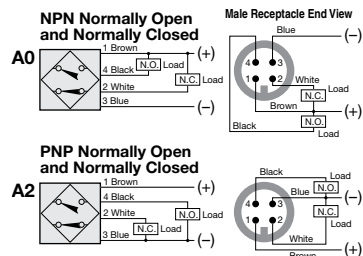
Cable Connection



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V1 Type



12 mm Diameter

2-Meter Cable Models

Dia. (mm)	Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Barrel Material*	Cable Jacket/Size	Dwg. No.
12	NJ2-12GM40-E2	2	Flush	PNP N.O.	3 kHz	SS	PUR/22 AWG	1
	NBB2-12GM50-E0	2	Flush	NPN N.O.	1.5 kHz	Ni-Brass	PVC/26 AWG	2
	NBB2-12GM50-E2	2	Flush	PNP N.O.	1.5 kHz	Ni-Brass	PVC/26 AWG	2
	NBB2-12GM60-A0	2	Flush	NPN N.O. & N.C.	1 kHz	Ni-Brass	PVC/26 AWG	3
	NBB2-12GM60-A2	2	Flush	PNP N.O. & N.C.	1 kHz	Ni-Brass	PVC/26 AWG	3
	NJ4-12GM40-E2	4	Nonflush	PNP N.O.	2 kHz	SS	PUR/22 AWG	4
	NBB4-12GM30-E2	4	Flush	PNP N.O.	1 kHz	Ni-Brass	PVC/26 AWG	5
	NBB4-12GM30-E3	4	Flush	PNP N.C.	1 kHz	Ni-Brass	PVC/26 AWG	5
	NBB4-12GM50-E0	4	Flush	NPN N.O.	1 kHz	Ni-Brass	PVC/26 AWG	6
	NBB4-12GM50-E2	4	Flush	PNP N.O.	1 kHz	Ni-Brass	PVC/26 AWG	6
	NBB4-12GM50-A0	4	Flush	NPN N.O. & N.C.	1.5 kHz	Ni-Brass	PVC/26 AWG	7
	NBB4-12GM50-A2	4	Flush	PNP N.O. & N.C.	1.5 kHz	Ni-Brass	PVC/26 AWG	7
	NBN4-12GM50-E0	4	Nonflush	NPN N.O.	1.2 kHz	Ni-Brass	PVC/26 AWG	8
	NBN4-12GM50-E2	4	Nonflush	PNP N.O.	1.2 kHz	Ni-Brass	PVC/26 AWG	8
	NBN4-12GM60-A0	4	Nonflush	NPN N.O. & N.C.	1 kHz	Ni-Brass	PVC/26 AWG	9
	NBN4-12GM60-A2	4	Nonflush	PNP N.O. & N.C.	1 kHz	Ni-Brass	PVC/26 AWG	9
	NEB6-12GM50-E2	6	Semi-flush	PNP N.O.	800 Hz	Ni-Brass	PVC/22 AWG	10
	NBN8-12GM50-E0	8	Nonflush	NPN N.O.	200 Hz	Ni-Brass	PVC/26 AWG	11
NBN8-12GM50-E2	8	Nonflush	PNP N.O.	200 Hz	Ni-Brass	PVC/26 AWG	11	
NBN8-12GM50-A0	8	Nonflush	NPN N.O. & N.C.	1.5 kHz	Ni-Brass	PVC/26 AWG	12	
NBN8-12GM50-A2	8	Nonflush	PNP N.O. & N.C.	1.5 kHz	Ni-Brass	PVC/26 AWG	12	



Inductive Cylindrical

3-Wire and 4-Wire DC

Micro (M12) Quick Disconnect Models

Dia. (mm)	Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Barrel Material*	Quick Disconnect	Dwg. No.
12	NJ2-12GM40-E2-V1	2	Flush	PNP N.O.	3 kHz	SS	M12 Micro	13
	NBB2-12GM50-E0-V1	2	Flush	NPN N.O.	1.5 kHz	Ni-Brass	M12 Micro	14
	NBB2-12GM50-E2-V1	2	Flush	PNP N.O.	1.5 kHz	Ni-Brass	M12 Micro	14
	NBB2-12GM60-A0-V1	2	Flush	NPN N.O. & N.C.	1 kHz	Ni-Brass	M12 Micro	15
	NBB2-12GM60-A2-V1	2	Flush	PNP N.O. & N.C.	1 kHz	Ni-Brass	M12 Micro	15
	NJ4-12GM40-E-V1	4	Nonflush	NPN N.O.	2 kHz	SS	M12 Micro	16
	NJ4-12GM40-E2-V1	4	Nonflush	PNP N.O.	2 kHz	SS	M12 Micro	16
	NBB4-12GM30-E2-V1	4	Flush	PNP N.O.	1 kHz	Ni-Brass	M12 Micro	17
	NBB4-12GM30-E3-V1	4	Flush	PNP N.C.	1 kHz	Ni-Brass	M12 Micro	17
	NBB4-12GM50-E0-V1	4	Flush	NPN N.O.	1 kHz	Ni-Brass	M12 Micro	18
	NBB4-12GM50-E2-V1	4	Flush	PNP N.O.	1 kHz	Ni-Brass	M12 Micro	18
	NBB4-12GM50-A0-V1	4	Flush	NPN N.O. & N.C.	1.5 kHz	Ni-Brass	M12 Micro	19
	NBB4-12GM50-A2-V1	4	Flush	PNP N.O. & N.C.	1.5 kHz	Ni-Brass	M12 Micro	19
	NBN4-12GM50-E0-V1	4	Nonflush	NPN N.O.	1.2 kHz	Ni-Brass	M12 Micro	20
	NBN4-12GM50-E2-V1	4	Nonflush	PNP N.O.	1.2 kHz	Ni-Brass	M12 Micro	20
	NBN4-12GM35-A0-V1	4	Nonflush	NPN N.O. & N.C.	800 Hz	Ni-Brass	M12 Micro	21
	NBN4-12GM35-A2-V1	4	Nonflush	PNP N.O. & N.C.	800 Hz	Ni-Brass	M12 Micro	21
	NBN4-12GM60-A0-V1	4	Nonflush	NPN N.O. & N.C.	1 kHz	Ni-Brass	M12 Micro	22
	NBN4-12GM60-A2-V1	4	Nonflush	PNP N.O. & N.C.	1 kHz	Ni-Brass	M12 Micro	22
	NEB6-12GM50-E2-V1	6	Semi-flush	PNP N.O.	800 Hz	Ni-Brass	M12 Micro	23
	NBN8-12GM50-E0-V1	8	Nonflush	NPN N.O.	200 Hz	Ni-Brass	M12 Micro	24
	NBN8-12GM50-E2-V1	8	Nonflush	PNP N.O.	200 Hz	Ni-Brass	M12 Micro	24
	NBN8-12GM50-A0-V1	8	Nonflush	NPN N.O. & N.C.	1.5 kHz	Ni-Brass	M12 Micro	25
	NBN8-12GM50-A2-V1	8	Nonflush	PNP N.O. & N.C.	1.5 kHz	Ni-Brass	M12 Micro	25
	NEN10-12GM50-E2-V1	10	Nonflush	PNP N.O.	400 Hz	Ni-Brass	M12 Micro	26



CONTINUED

*SS = stainless steel, Ni-Brass = nickel-plated brass

12 mm Diameter

Look for these logos in the drawings to identify our X-Series extended range and Half Pint short-barrel sensors



X-Series™
Sensing range 25-240% beyond "traditional" inductive sensors



Half Pint
Short-barrel cylindrical sensors for space-critical applications

Inductive Cylindrical

3-Wire and 4-Wire DC

Drawing No. 1
NJ2-12GM40-E2 [PNP N.O.]

2 mm Sensing Range

Drawing No. 2
NBB2-12GM50-E0 [NPN N.O.]
NBB2-12GM50-E2 [PNP N.O.]

2 mm Sensing Range

Drawing No. 3
NBB2-12GM60-A0 [NPN N.O. & N.C.]
NBB2-12GM60-A2 [PNP N.O. & N.C.]

2 mm Sensing Range

Drawing No. 4
NJ4-12GM40-E2 [PNP N.O.]

4 mm Sensing Range

Drawing No. 5
NBB4-12GM30-E2 [PNP N.O.]
NBB4-12GM30-E3 [PNP N.C.]

4 mm Sensing Range

Drawing No. 6
NBB4-12GM50-E0 [NPN N.O.]
NBB4-12GM50-E2 [PNP N.O.]

4 mm Sensing Range

Drawing No. 7
NBB4-12GM50-A0 [NPN N.O. & N.C.]
NBB4-12GM50-A2 [PNP N.O. & N.C.]

4 mm Sensing Range

Drawing No. 8
NBN4-12GM50-E0 [NPN N.O.]
NBN4-12GM50-E2 [PNP N.O.]

4 mm Sensing Range

Drawing No. 9
NBN4-12GM60-A0 [NPN N.O. & N.C.]
NBN4-12GM60-A2 [PNP N.O. & N.C.]

4 mm Sensing Range

Drawing No. 10
NEB6-12GM50-E2 [PNP N.O.]

6 mm Sensing Range

Drawing No. 11
NBN8-12GM50-E0 [NPN N.O.]
NBN8-12GM50-E2 [PNP N.O.]

8 mm Sensing Range

Drawing No. 12
NBN8-12GM50-A0 [NPN N.O. & N.C.]
NBN8-12GM50-A2 [PNP N.O. & N.C.]

8 mm Sensing Range

Drawing No. 13
NJ2-12GM40-E2-V1 [PNP N.O.]

2 mm Sensing Range

Drawing No. 14
NBB2-12GM50-E0-V1 [NPN N.O.]
NBB2-12GM50-E2-V1 [PNP N.O.]

2 mm Sensing Range

Drawing No. 15
NBB2-12GM60-A0-V1 [NPN N.O. & N.C.]
NBB2-12GM60-A2-V1 [PNP N.O. & N.C.]

2 mm Sensing Range

Drawing No. 16
NJ4-12GM40-E-V1 [NPN N.O.]
NJ4-12GM40-E2-V1 [PNP N.O.]

4 mm Sensing Range

12 mm Diameter



See pages 803-854 for cordsets



See pages 865-872 for accessories

Inductive Cylindrical

3-Wire and 4-Wire DC

Drawing No. 17

NBB4-12GM30-E2-V1 [PNP N.O.]
NBB4-12GM30-E3-V1 [PNP N.C.]

4 mm Sensing Range

Drawing No. 18

NBB4-12GM50-E0-V1 [NPN N.O.]
NBB4-12GM50-E2-V1 [PNP N.O.]

4 mm Sensing Range

Drawing No. 19

NBB4-12GM50-A0-V1 [NPN N.O. & N.C.]
NBB4-12GM50-A2-V1 [PNP N.O. & N.C.]

4 mm Sensing Range

Drawing No. 20

NBN4-12GM50-E0-V1 [NPN N.O.]
NBN4-12GM50-E2-V1 [PNP N.O.]

4 mm Sensing Range

Drawing No. 21

NBN4-12GM35-A0-V1 [NPN N.O. & N.C.]
NBN4-12GM35-A2-V1 [PNP N.O. & N.C.]

4 mm Sensing Range

Drawing No. 22

NBN4-12GM60-A0-V1 [NPN N.O. & N.C.]
NBN4-12GM60-A2-V1 [PNP N.O. & N.C.]

4 mm Sensing Range

Drawing No. 23

NEB6-12GM50-E2-V1 [PNP N.O.]

6 mm Sensing Range

Drawing No. 24

NBN8-12GM50-E0-V1 [NPN N.O.]
NBN8-12GM50-E2-V1 [PNP N.O.]

8 mm Sensing Range

Drawing No. 25

NBN8-12GM50-A0-V1 [NPN N.O. & N.C.]
NBN8-12GM50-A2-V1 [PNP N.O. & N.C.]

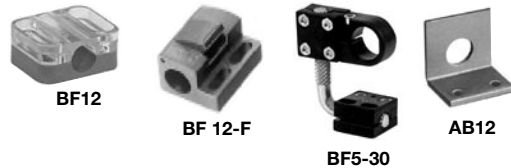
8 mm Sensing Range

Drawing No. 26

NEN10-12GM50-E2-V1 [PNP N.O.]

10 mm Sensing Range

Recommended Accessories



Mounting Brackets

Model	Description
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

See pages 865-872 for complete accessory listing.