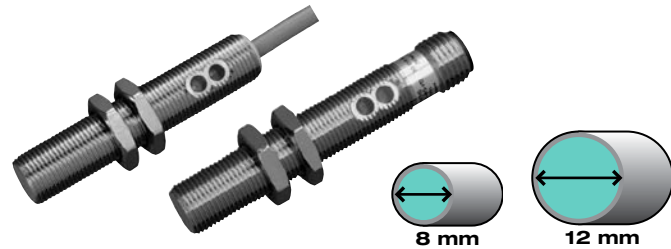


2-Wire AC & AC/DC 8 mm and 12 mm Diameter Inductive Sensors

- 1.5 to 8 mm sensing ranges
- 8 mm and 12 mm threaded barrels
- LED power and output indication
- Cable and quick disconnect models



Technical Specifications

SUPPLY VOLTAGE	Suffix WS, WO	20-150 VAC
	Suffix US	20-250 VAC/300 VDC
SUPPLY FREQUENCY		45-65 Hz
LOAD CURRENT (I _L)	Suffix WS, WO	5-200 mA max.
	Suffix US	8-200 mA max.
LEAKAGE CURRENT (OFF-STATE)	Suffix WS, WO	≤ 1.7 mA
	Suffix US	≤ 0.8 mA
OUTPUT	Suffix WS, US	Normally open
	Suffix WO	Normally closed
VOLTAGE DROP AT I _L (MAX.)	Suffix WS, WO	≤ 5 V
	Suffix US	≤ 8 V
INRUSH CURRENT		< 1.7 A/20 ms
HYSTERESIS		3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION	Suffix WS, WO	No
	Suffix US	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



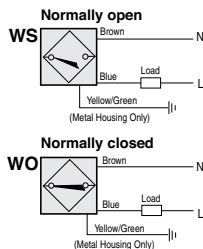
See pages
865-872 for
accessories

Wiring Diagrams

2-Wire AC



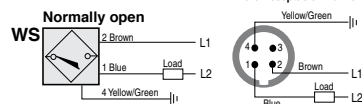
Cable Connection



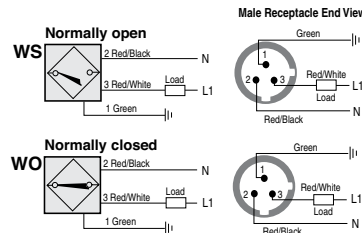
Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V11 Type



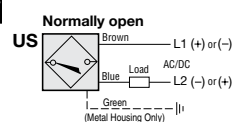
V12 Type



2-Wire AC/DC



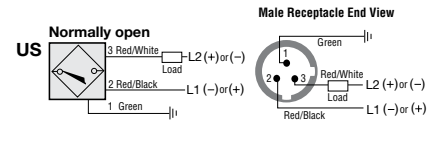
Cable Connection



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V12 Type



8 mm and 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.
8	NJ1.5-8GM40-WS	1.5	Flush	Normally open	25 Hz	SS	PVC/#22 AWG	1
	NJ1.5-8GM40-WO	1.5	Flush	Normally closed	25 Hz	SS	PVC/#22 AWG	1
12	NBB2-12GM60-WS	2	Flush	Normally open	25 Hz	Ni-Brass	PVC/#22 AWG	2
	NBB2-12GM60-WO	2	Flush	Normally closed	25 Hz	Ni-Brass	PVC/#22 AWG	2
	NBN4-12GM60-WS	4	Nonflush	Normally open	25 Hz	Ni-Brass	PVC/#22 AWG	3
	NBN4-12GM60-WO	4	Nonflush	Normally closed	25 Hz	Ni-Brass	PVC/#22 AWG	3
	NBB4-12GM75-US	4	Flush	Normally open	30 Hz	Ni-Brass	PUR/#22 AWG	4
	NBN8-12GM75-US	8	Nonflush	Normally open	30 Hz	Ni-Brass	PUR/#22 AWG	5



Micro AC (M12) Quick Disconnect Models

Dia. (mm)	Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Barrel Material*	Quick Disconnect	Dwg. No.
12	NBB2-12GM60-WS-V11	2	Flush	Normally open	25 Hz	Ni-Brass	M12 Micro AC	6
	NBN4-12GM60-WS-V11	4	Nonflush	Normally open	25 Hz	Ni-Brass	M12 Micro AC	7

Micro AC (1/2"-20) Quick Disconnect Models

Dia. (mm)	Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Barrel Material*	Quick Disconnect	Dwg. No.
12	NBB2-12GM60-WS-V12	2	Flush	Normally open	25 Hz	Ni-Brass	1/2"-20 Micro AC	8
	NBB2-12GM60-WO-V12	2	Flush	Normally closed	25 Hz	Ni-Brass	1/2"-20 Micro AC	8
	NBN4-12GM60-WS-V12	4	Nonflush	Normally open	25 Hz	Ni-Brass	1/2"-20 Micro AC	9
	NBN4-12GM60-WO-V12	4	Nonflush	Normally closed	25 Hz	Ni-Brass	1/2"-20 Micro AC	9
	NBB4-12GM65-US-V12	4	Flush	Normally open	30 Hz	Ni-Brass	1/2"-20 Micro AC	10
	NBN8-12GM65-US-V12	8	Nonflush	Normally open	30 Hz	Ni-Brass	1/2"-20 Micro AC	11



Inductive Cylindrical

2-Wire AC & AC/DC

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

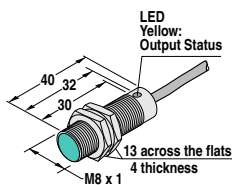
Look for this logo in the drawings to identify our X-Series extended range sensors



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

Drawing No. 1

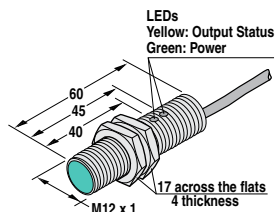
NJ1.5-8GM40-WS [N.O.]
NJ1.5-8GM40-WO [N.C.]



1.5 mm Sensing Range

Drawing No. 2

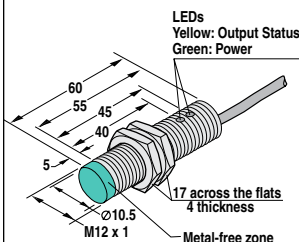
NBB2-12GM60-WS [N.O.]
NBB2-12GM60-WO [N.C.]



2 mm Sensing Range

Drawing No. 3

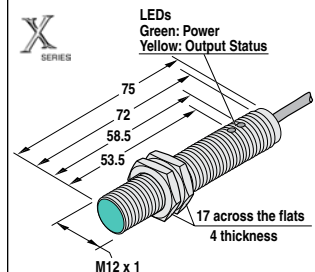
NBN4-12GM60-WS [N.O.]
NBN4-12GM60-WO [N.C.]



4 mm Sensing Range

Drawing No. 4

NBB4-12GM75-US [N.O.]



4 mm Sensing Range

CONTINUED

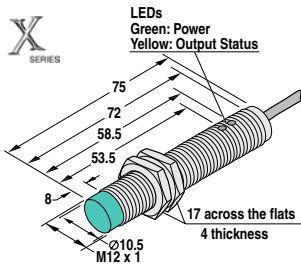
8 mm and 12 mm Diameter

Inductive Cylindrical

2-Wire
AC &
AC/DC

Drawing No. 5

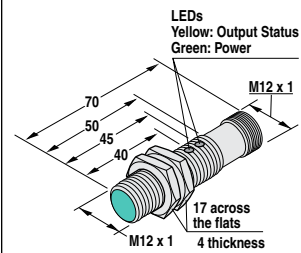
NBN8-12GM75-US [N.O.]



8 mm Sensing Range

Drawing No. 6

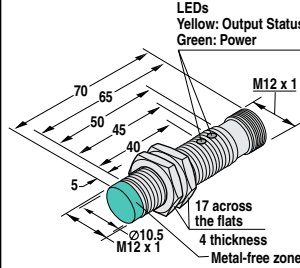
NBB2-12GM60-WS-V11 [N.O.]



2 mm Sensing Range

Drawing No. 7

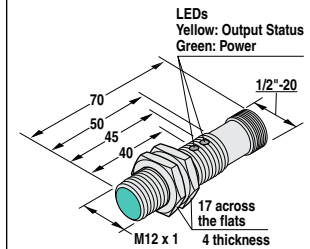
NBN4-12GM60-WS-V11 [N.O.]



4 mm Sensing Range

Drawing No. 8

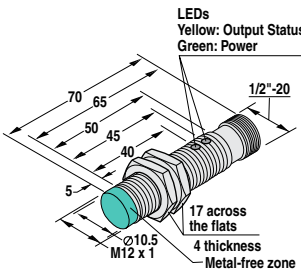
NBB2-12GM60-WS-V12 [N.O.]
NBB2-12GM60-WO-V12 [N.C.]



2 mm Sensing Range

Drawing No. 9

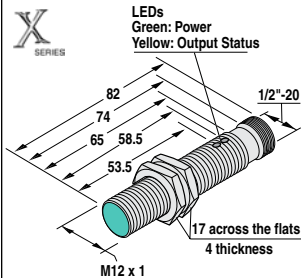
NBN4-12GM60-WS-V12 [N.O.]
NBN4-12GM60-WO-V12 [N.C.]



4 mm Sensing Range

Drawing No. 10

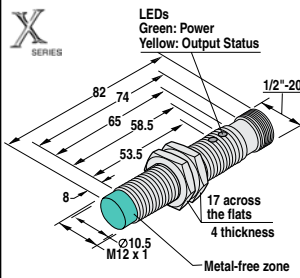
NBB4-12GM65-US-V12 [N.O.]



4 mm Sensing Range

Drawing No. 11

NBN8-12GM65-US-V12 [N.O.]



8 mm Sensing Range