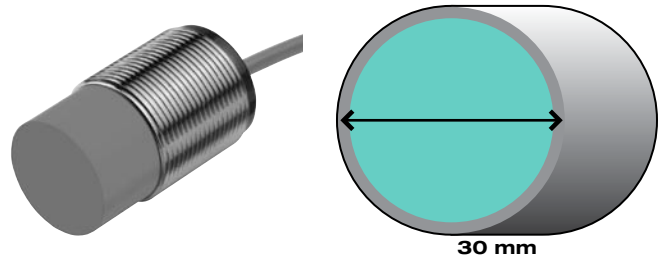


2-Wire AC & AC/DC 30 mm Diameter Inductive Sensors

- 10 to 25 mm sensing ranges
- 30 mm threaded barrels
- LED power and output indication
- Cable and quick disconnect models



Technical Specifications

| | | |
|---------------------------------------|---------------|--------------------------------------|
| SUPPLY VOLTAGE | Suffix WS, WO | 20-250 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 | 4-500 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.) | | ≤ 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



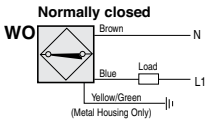
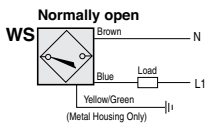
See pages 865-872 for accessories

Wiring Diagrams

2-Wire AC



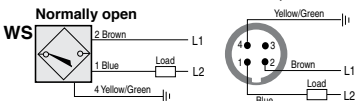
Cable Connection



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

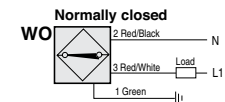
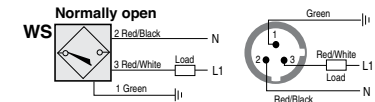
V11 Type



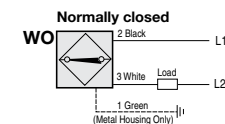
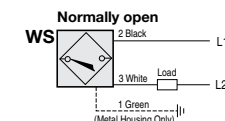
Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V12 Type



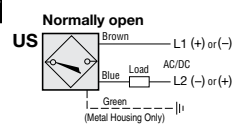
V93 Type



2-Wire AC/DC



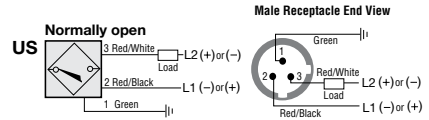
Cable Connection



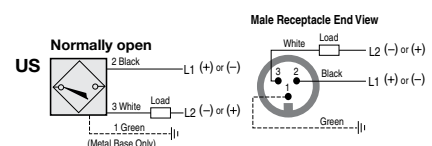
Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V12 Type



V93 Type



30 mm Diameter

2-Meter Cable Models

| Dia. (mm) | Model Number | Range (mm) | Mounting | Electrical Output | Switching Frequency | Barrel Material† | Cable Jacket/Size | Dwg. No. |
|-------------------|-------------------|------------|---------------|-------------------|---------------------|------------------|-------------------|----------|
| 30 | NBB10-30GM50-WS ⚡ | 10 | Flush | Normally open | 25 Hz | Ni-Brass | PVC/#22 AWG | 1 |
| | NBB10-30GM50-WO ⚡ | 10 | Flush | Normally closed | 25 Hz | Ni-Brass | PVC/#22 AWG | 1 |
| | NBB10-30GK-WS | 10 | Flush | Normally open | 25 Hz | Ni-Brass | PVC/#22 AWG | 2 |
| | NBB10-30GK-WO | 10 | Flush | Normally closed | 25 Hz | Ni-Brass | PVC/#22 AWG | 2 |
| | NBB15-30GM50-WS ⚡ | 15 | Semiflush | Normally open | 20 Hz | Ni-Brass | PVC/#22 AWG | 3 |
| | NBB15-30GM50-WO ⚡ | 15 | Semiflush | Normally closed | 20 Hz | Ni-Brass | PVC/#22 AWG | 3 |
| | NBB15-30GK-WS | 15 | Semiflush | Normally open | 25 Hz | Ni-Brass | PVC/#22 AWG | 4 |
| | NBB15-30GK-WO | 15 | Semiflush | Normally closed | 25 Hz | Ni-Brass | PVC/#22 AWG | 4 |
| | NBB15-30GM50-US ⚡ | 15 | Flush | Normally open | 30 Hz | Ni-Brass | PUR/#20 AWG | 5 |
| NBN25-30GM50-US ⚡ | 25 | Nonflush | Normally open | 30 Hz | Ni-Brass | PUR/#20 AWG | 6 | |



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. |
|-----------|-----------------------|------------|-----------|-------------------|---------------------|------------------|------------------|----------|
| 30 | NBB10-30GM50-WS-V12 ⚡ | 10 | Flush | Normally open | 20 Hz | Ni-Brass | 1/2"-20 Micro AC | 7 |
| | NBB10-30GM50-WO-V12 ⚡ | 10 | Flush | Normally closed | 20 Hz | Ni-Brass | 1/2"-20 Micro AC | 7 |
| | NBB15-30GM50-WS-V12 ⚡ | 15 | Semiflush | Normally open | 25 Hz | Ni-Brass | 1/2"-20 Micro AC | 8 |
| | NBB15-30GM50-WO-V12 | 15 | Semiflush | Normally closed | 20 Hz | Ni-Brass | 1/2"-20 Micro AC | 8 |
| | NBB15-30GM50-US-V12 ⚡ | 15 | Semiflush | Normally open | 30 Hz | Ni-Brass | 1/2"-20 Micro AC | 9 |
| | NBN25-30GM50-US-V12 ⚡ | 25 | Nonflush | Normally open | 30 Hz | Ni-Brass | 1/2"-20 Micro AC | 10 |



Mini AC/DC (7/8"-16) Quick Disconnect Models

| Dia. (mm) | Model Number | Range (mm) | Mounting | Electrical Output | Switching Frequency | Barrel Material† | Quick Disconnect | Dwg. No. |
|-----------|-----------------------|------------|-----------|-------------------|---------------------|------------------|------------------|----------|
| 30 | NBB10-30GM50-WS-V93 ⚡ | 10 | Flush | Normally open | 25 Hz | Ni-Brass | 7/8"-16 Mini AC | 11 |
| | NBB10-30GM50-WO-V93 | 10 | Flush | Normally closed | 25 Hz | Ni-Brass | 7/8"-16 Mini AC | 11 |
| | NBB15-30GM50-WS-V93 ⚡ | 15 | Semiflush | Normally open | 20 Hz | Ni-Brass | 7/8"-16 Mini AC | 12 |
| | NBB15-30GM50-WO-V93 | 15 | Semiflush | Normally closed | 20 Hz | Ni-Brass | 7/8"-16 Mini AC | 12 |
| | NBB15-30GM50-US-V93 ⚡ | 15 | Flush | Normally open | 30 Hz | Ni-Brass | 7/8"-16 Mini AC | 13 |
| | NBN25-30GM50-US-V93 ⚡ | 25 | Nonflush | Normally open | 30 Hz | Ni-Brass | 7/8"-16 Mini AC | 14 |



Terminal Connection Models

| Dia. (mm) | Model Number | Range (mm) | Mounting | Electrical Output | Switching Frequency | Barrel Material | Electrical Connection | Dwg. No. |
|-----------|------------------|------------|----------|-------------------|---------------------|-----------------|-----------------------|----------|
| 30 | NBB10-30GKK-WS • | 10 | Flush | Normally open | 20 Hz | PBT | Terminal housing | 15 |
| | NBB10-30GKK-WO | 10 | Flush | Normally closed | 20 Hz | PBT | Terminal housing | 15 |
| | NBB15-30GKK-WS | 15 | Flush | Normally open | 20 Hz | PBT | Terminal housing | 16 |
| | NBB15-30GKK-WO | 15 | Flush | Normally closed | 20 Hz | PBT | Terminal housing | 16 |

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

Note: See relay output models on pages 179-183 for other AC sensor options.

Inductive Cylindrical

2-Wire AC & AC/DC

CONTINUED

30 mm Diameter

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

Inductive Cylindrical

2-Wire
AC &
AC/DC

Drawing No. 1
NBB10-30GM50-WS [N.O.]
NBB10-30GM50-WO [N.C.]

LEDs:
Yellow: Output Status
Green: Power

50
36 across the flats
5 thickness
M30 x 1.5

10 mm Sensing Range

Drawing No. 2
NBB10-30GK-WS [N.O.]
NBB10-30GK-WO [N.C.]

80
60
36 across the flats
5 thickness
M30 x 1.5

15 mm Sensing Range

Drawing No. 3
NBB15-30GM50-WS [N.O.]
NBB15-30GM50-WO [N.C.]

X SERIES

LEDs:
Yellow: Output Status
Green: Power

50
36 across the flats
5 thickness
M30 x 1.5

15 mm Sensing Range

Drawing No. 4
NBB15-30GK-WS [N.O.]
NBB15-30GK-WO [N.C.]

X SERIES

80
60
36 across the flats
5 thickness
M30 x 1.5

25 mm Sensing Range

Drawing No. 5
NBB15-30GM50-US [N.O.]

LEDs:
Green: Power
Yellow: Output Status

51
39.8
34.8
36 across the flats
5 thickness
M30 x 1.5

15 mm Sensing Range

Drawing No. 6
NBN25-30GM50-US [N.O.]

X SERIES

LEDs:
Green: Power
Yellow: Output Status

51
39.8
34.8
18
36 across the flats
5 thickness
Ø 27.8
M30 x 1.5
Metal-free zone

25 mm Sensing Range

Drawing No. 7
NBB10-30GM50-WS-V12 [N.O.]
NBB10-30GM50-WO-V12 [N.C.]

LEDs:
Yellow: Output Status
Green: Power

60
40
36 across the flats
5 thickness
M30 x 1.5

10 mm Sensing Range

Drawing No. 8
NBB15-30GM50-WS-V12 [N.O.]
NBB15-30GM50-WO-V12 [N.C.]

X SERIES

LEDs:
Yellow: Output Status
Green: Power

60
50
40
36 across the flats
5 thickness
M30 x 1.5

15 mm Sensing Range

Drawing No. 9
NBB15-30GM50-US-V12 [N.O.]

X SERIES

LEDs:
Green: Power
Yellow: Output Status

60
50
38.8
34.8
36 across the flats
5 thickness
M30 x 1.5

15 mm Sensing Range

Drawing No. 10
NBN25-30GM50-US-V12 [N.O.]

X SERIES

LEDs:
Green: Power
Yellow: Output Status

60
50
38.8
34.8
18
36 across the flats
5 thickness
Ø 27.8
M30 x 1.5
Metal-free zone

25 mm Sensing Range

Drawing No. 11
NBB10-30GM50-WS-V93 [N.O.]
NBB10-30GM50-WO-V93 [N.C.]

LEDs:
Yellow: Output Status
Green: Power

65
50
40
36 across the flats
5 thickness
M30 x 1.5

10 mm Sensing Range

Drawing No. 12
NBB15-30GM50-WS-V93 [N.O.]
NBB15-30GM50-WO-V93 [N.C.]

X SERIES

LEDs:
Yellow: Output Status
Green: Power

65
50
40
36 across the flats
5 thickness
M30 x 1.5

15 mm Sensing Range

30 mm Diameter

Inductive Cylindrical

2-Wire AC & AC/DC

Drawing No. 13
NBB15-30GM50-US-V93 [N.O.]

LEDs
 Green: Power
 Yellow: Output Status

15 mm Sensing Range

Drawing No. 14
NBN25-30GM50-US-V93 [N.O.]

LEDs
 Green: Power
 Yellow: Output Status

25 mm Sensing Range

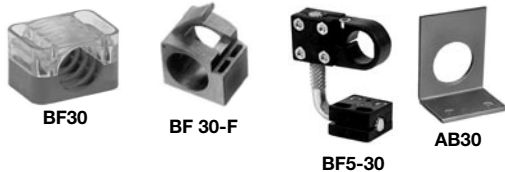
Drawing No. 15
NBB10-30GKK-WS [N.O.]
NBB10-30GKK-WO [N.C.]

10 mm Sensing Range

Drawing No. 16
NBB15-30GKK-WS [N.O.]
NBB15-30GKK-WO [N.C.]

15 mm Sensing Range

Recommended Accessories



Mounting Brackets

| Model | Description |
|---------|---------------------------|
| 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 |

See pages 865-872 for complete accessory listing.



Mini Cordsets

| Straight "Mini AC/DC" (7/8"-16) | |
|---------------------------------|--------------------------|
| Model | Description |
| V93-G-YE2M-STOOW | 2 m length, STOOW jacket |
| V93-G-YE4M-STOOW | 4 m length, STOOW jacket |

| Right Angle "Mini AC/DC" (7/8"-16) | |
|------------------------------------|--------------------------|
| Model | Description |
| V93-W-YE2M-STOOW | 2 m length, STOOW jacket |
| V93-W-YE4M-STOOW | 4 m length, STOOW jacket |



Micro AC Cordsets

| Straight "Micro" (M12) | |
|------------------------|------------------------|
| Model | Description |
| V11B-G-YE2M-PVC | 2 m length, PVC jacket |
| V11B-G-YE4M-PVC | 4 m length, PVC jacket |

| Right Angle "Micro" (M12) | |
|---------------------------|------------------------|
| Model | Description |
| V11B-W-YE2M-PVC | 2 m length, PVC jacket |
| V11B-W-YE4M-PVC | 4 m length, PVC jacket |

| Straight "Micro" (1/2"-20) | |
|----------------------------|------------------------|
| Model | Description |
| V12-G-YE2M-PVC | 2 m length, PVC jacket |
| V12-G-YE5M-PVC | 5 m length, PVC jacket |

| Right Angle "Micro" (1/2"-20) | |
|-------------------------------|------------------------|
| Model | Description |
| V12-W-YE2M-PVC | 2 m length, PVC jacket |
| V12-W-YE5M-PVC | 5 m length, PVC jacket |

See pages 803-854 for complete cordset listing.