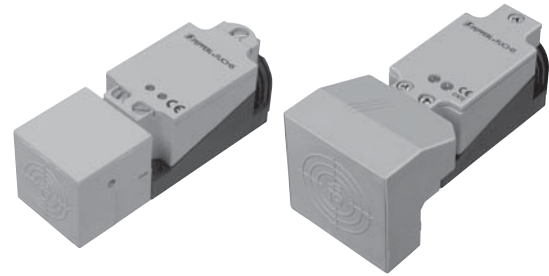


# Limit Switch Style Inductive Sensors

- 15 to 40 mm sensing ranges
- Limit switch style housing
- LED power and target indication
- Terminal connection wiring



See pages 885-892 for accessories



### Technical Specifications

SUPPLY VOLTAGE	5-60 VDC
LOAD CURRENT (I <sub>L</sub> )	200 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 1 mA
OUTPUT	Normally open or normally closed
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	≤ 5 V
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	-14°F to +158°F (-25°C to +70°C)
APPROVALS	CE, UL, SP

Terminal Connection Models							
Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NCN15-M1K-Z2	15	Nonflush	N.O or N.C.	150 Hz	PBT	Terminal housing	1
NCB15+U4+Z2	15	Flush	N.O or N.C.	400 Hz	PBT w/metal base	Terminal housing	2
NCN20+U4+Z2	20	Nonflush	N.O or N.C.	250 Hz	PBT w/metal base	Terminal housing	2
NCN30+U4+Z2	30	Nonflush	N.O or N.C.	150 Hz	PBT w/metal base	Terminal housing	2
NCN40+U4+Z2	40	Nonflush	N.O or N.C.	100 Hz	PBT w/metal base	Terminal housing	3

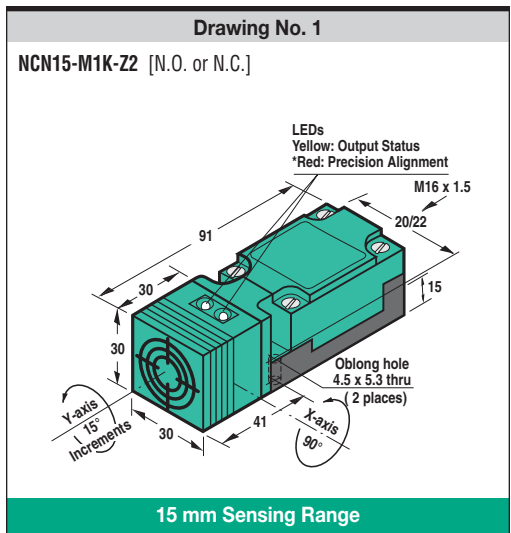
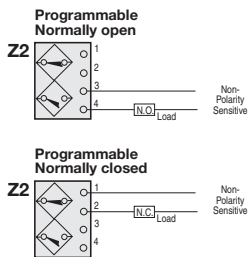
Consult factory for other connection options.

## Wiring Diagrams

### 2-Wire DC



#### Terminal Connection



\*Illuminates when the target is between 80-100% of the nominal sensing distance.

Inductive Surface Mount

2-Wire DC

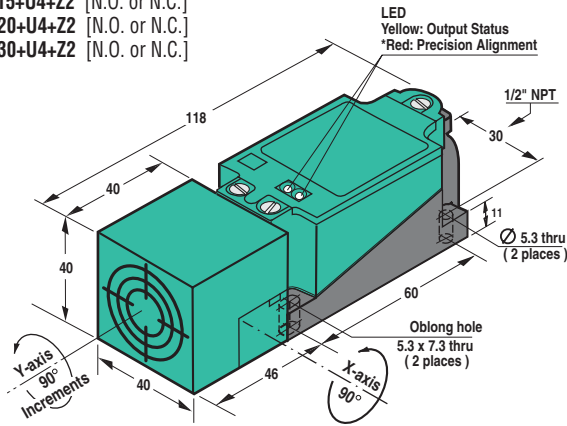
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### Limit Switch Style

Inductive Surface Mount

Drawing No. 2

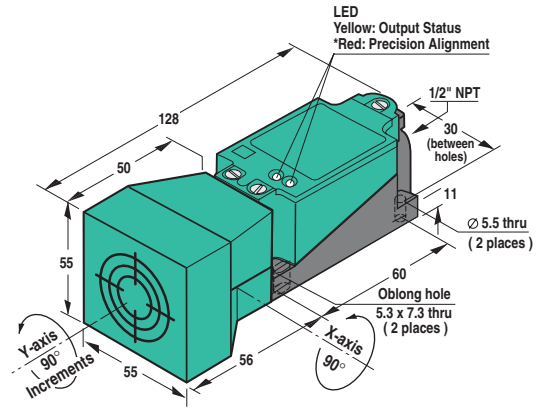
NCB15+U4+Z2 [N.O. or N.C.]  
 NCN20+U4+Z2 [N.O. or N.C.]  
 NCN30+U4+Z2 [N.O. or N.C.]



15, 20, and 30 mm Sensing Range

Drawing No. 3

NCN40+U4+Z2 [N.O. or N.C.]



40 mm Sensing Range

*\*Illuminates when the target is between 80-100% of the nominal sensing distance.*

### Recommended Accessories



MH4-2681 UNI



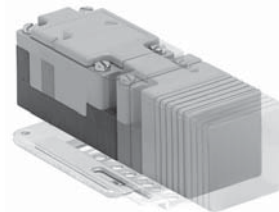
MH4-2057



OMH4-4950

#### Mounting Brackets

Model	Description
MH4-2681 UNI	Adjustable Unistrut® bracket
MH4-2057	Adjustable slide bracket
OMH4-4950	Rotating bracket for mini limit switch
MH4-3742	Adjustable bracket for mini limit switch



MH4-3742

See pages 885-892 for complete accessory listing.

# Limit Switch Style Inductive Sensors

- 15 to 40 mm sensing ranges
- Limit switch style housing
- LED power and target indication
- Terminal connection wiring



See pages 827-874 for cordsets

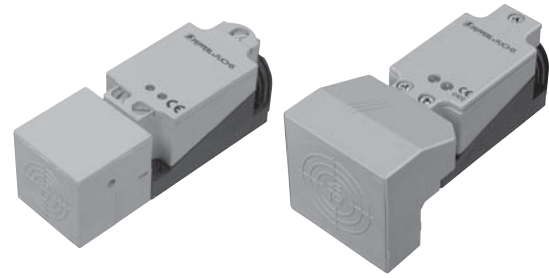


See pages 885-892 for accessories

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



### Technical Specifications

SUPPLY VOLTAGE	U4 and M1K Models	10-60 VDC
	M1 Model	10-30 VDC
LOAD CURRENT (I <sub>L</sub> )		200 mA max.
LEAKAGE CURRENT (OFF-STATE)		≤ 0.5 mA
OUTPUT	Suffix E	NPN normally open
	Suffix E2	PNP normally open
	Suffix E4	NPN normally open or normally closed
	Suffix E5	PNP normally open or normally closed
	Suffix A	NPN normally open & normally closed
	Suffix A2	PNP normally open & normally closed
VOLTAGE DROP AT I <sub>L</sub> (MAX.)		≤ 3 V
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		-14°F to +158°F (-25°C to +70°C)
APPROVALS		CE, UL, SP

Inductive Surface Mount

3-Wire and 4-Wire DC

### Terminal Connection Models

Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NCN15-M1K-E4	15	Nonflush	NPN N.O. or N.C.	500 Hz	PBT	Terminal housing	1
NCN15-M1K-E5	15	Nonflush	PNP N.O. or N.C.	500 Hz	PBT	Terminal housing	1
NJ15+U4+E	15	Flush	NPN N.O.	300 Hz	PBT w/metal base	Terminal housing	2
NJ15+U4+E2	15	Flush	PNP N.O.	300 Hz	PBT w/metal base	Terminal housing	2
NJ15+U4+A	15	Flush	NPN N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	2
NJ15+U4+A2	15	Flush	PNP N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	2
NJ20+U4+E	20	Flush	NPN N.O.	300 Hz	PBT w/metal base	Terminal housing	2
NJ20+U4+E2	20	Flush	PNP N.O.	300 Hz	PBT w/metal base	Terminal housing	2
NJ20+U4+A2	20	Flush	PNP N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	2
NJ30+U4+E	30	Nonflush	NPN N.O.	300 Hz	PBT w/metal base	Terminal housing	2
NJ30+U4+E2	30	Nonflush	PNP N.O.	300 Hz	PBT w/metal base	Terminal housing	2
NJ30+U4+A	30	Nonflush	NPN N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	2
NJ30+U4+A2	30	Nonflush	PNP N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	2
NJ40+U4+E	40	Nonflush	NPN N.O.	100 Hz	PBT w/metal base	Terminal housing	3
NJ40+U4+E2	40	Nonflush	PNP N.O.	100 Hz	PBT w/metal base	Terminal housing	3
NCN40+U4+E2	40	Nonflush	PNP N.O.	30 Hz	PBT w/metal base	Terminal housing	2
NJ40+U4+A	40	Nonflush	NPN N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	3
NJ40+U4+A2	40	Nonflush	PNP N.O. & N.C.	150 Hz	PBT w/metal base	Terminal housing	3
NCN40+U4+A2	40	Nonflush	PNP N.O. & N.C.	30 Hz	PBT w/metal base	Terminal housing	2

Consult factory for other connection options.

### Micro (M12) Quick Disconnect Models

Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NJ15-M1-E2-V1	15	Nonflush	PNP N.O.	500 Hz	PBT w/metal base	M12 Micro	4

CONTINUED

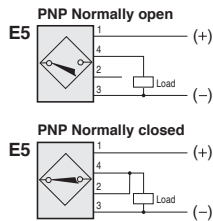
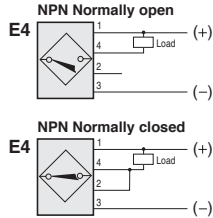
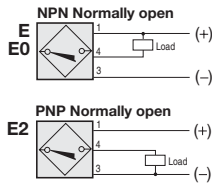
## Limit Switch Style

### Wiring Diagrams

#### 3-Wire DC



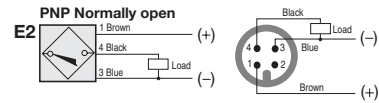
#### Terminal Connection



#### Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

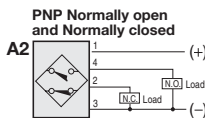
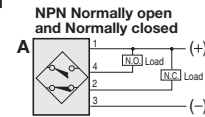
#### V1 Type



#### 4-Wire DC

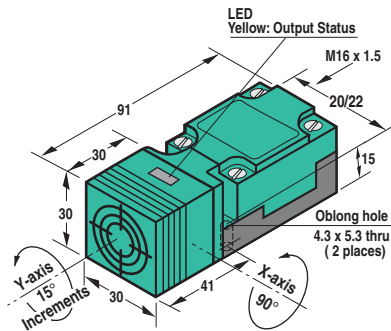


#### Terminal Connection



Drawing No. 1

NCN15-M1K-E4 [NPN N.O. or N.C.]  
 NCN15-M1K-E5 [PNP N.O. or N.C.]

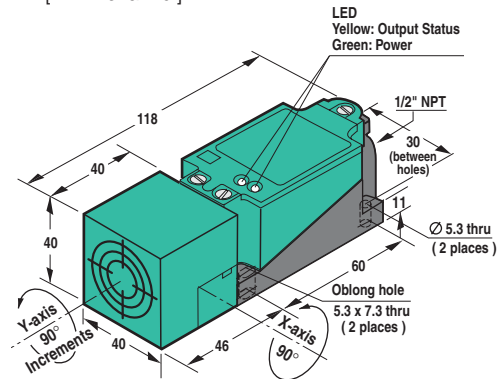


15 mm Sensing Range

Drawing No. 2

NJ15+U4+E [NPN N.O.]  
 NJ15+U4+E2 [PNP N.O.]  
 NJ15+U4+A [NPN N.O. & N.C.]  
 NJ15+U4+A2 [PNP N.O. & N.C.]  
 NJ20+U4+E [NPN N.O.]  
 NJ20+U4+E2 [PNP N.O.]  
 NJ20+U4+A2 [PNP N.O. & N.C.]

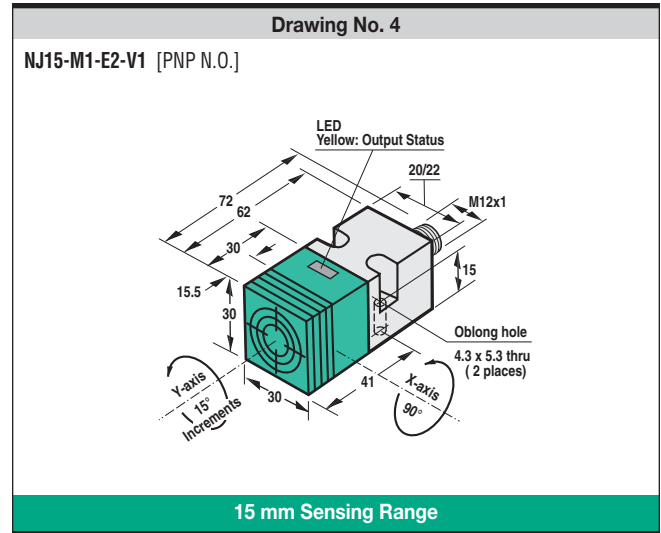
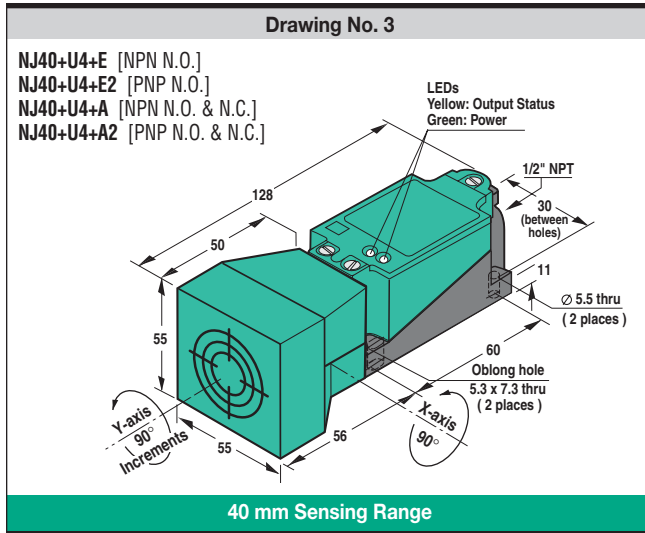
NJ30+U4+E [NPN N.O.]  
 NJ30+U4+E2 [PNP N.O.]  
 NJ30+U4+A [NPN N.O. & N.C.]  
 NJ30+U4+A2 [PNP N.O. & N.C.]  
 NCN40+U4+E2 [PNP N.O.]  
 NCN40+U4+A2 [PNP N.O. & N.C.]



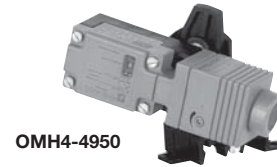
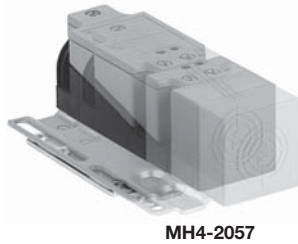
15, 20, 30, and 40 mm Sensing Range

3-Wire  
and  
4-Wire  
DC

Inductive Surface Mount



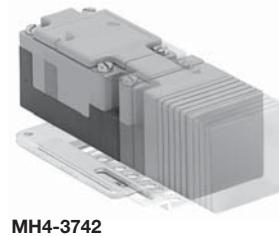
**Recommended Accessories**



**Mounting Brackets**

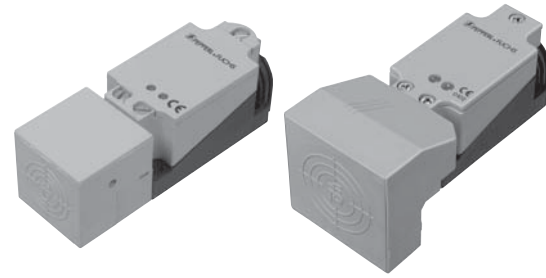
Model	Description
MH4-2681 UNI	Adjustable Unistrut® bracket
MH4-2057	Adjustable slide bracket
OMH4-4950	Rotating bracket for mini limit switch
MH4-3742	Adjustable bracket for mini limit switch

See pages 885-892 for complete accessory listing.



# Limit Switch Style Inductive Sensors

- 15 to 40 mm sensing ranges
- Limit switch style housing
- LED power and target indication
- Terminal connection wiring



### Technical Specifications

SUPPLY VOLTAGE	20-250 VAC
SUPPLY FREQUENCY	45-65 Hz
LOAD CURRENT (I <sub>L</sub> )	<i>NJ models</i> 500 mA max. <i>NBN models</i> 400 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 1.7 mA
OUTPUT	<i>Suffix WS</i> Normally open <i>Suffix W</i> Normally open or normally closed
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	≤ 5 V
INRUSH CURRENT	<i>NJ models</i> ≤ 4 A/20 ms <i>NBN models</i> ≤ 2.4 A/20 ms
HYSTERESIS	3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTED	No
LED INDICATION	See dimension drawings
SENSING FACE MATERIAL	PBT
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	IP67
AMBIENT TEMPERATURE	-14°F to +158°F (-25°C to +70°C)
APPROVALS	CE, UL, SP



See pages 827-874 for cordsets



See pages 885-892 for accessories

2-Wire AC

### Terminal Connection Models

Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NBN15-M1K-WS	15	Nonflush	N.O.	20 Hz	PBT	Terminal housing	1
NJ15+U4+W	15	Flush	N.O. or N.C.	25 Hz	PBT w/metal base	Terminal housing	2
NJ20+U4+W	20	Nonflush	N.O. or N.C.	20 Hz	PBT w/metal base	Terminal housing	2
NJ30+U4+W	30	Nonflush	N.O. or N.C.	20 Hz	PBT w/metal base	Terminal housing	2
NJ40+U4+W	40	Nonflush	N.O. or N.C.	20 Hz	PBT w/metal base	Terminal housing	3

Consult factory for other connection options.

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

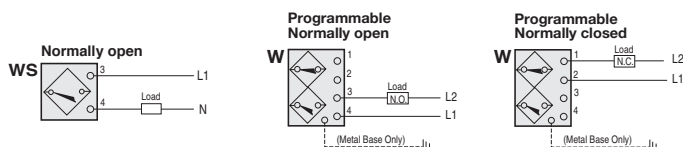
Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NBN15-M1-WS-BHM	15	Nonflush	N.O.	25 Hz	PBT w/metal base	7/8"-16 Mini AC	4

## Wiring Diagrams

### 2-Wire AC



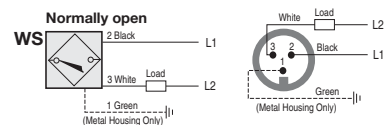
#### Terminal Connection

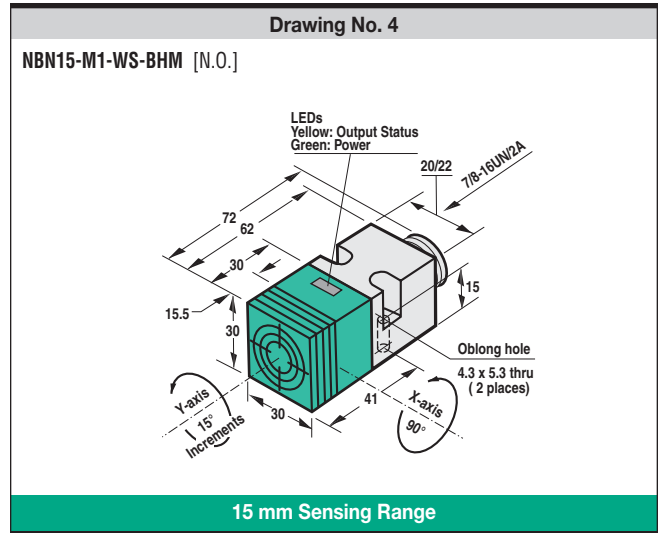
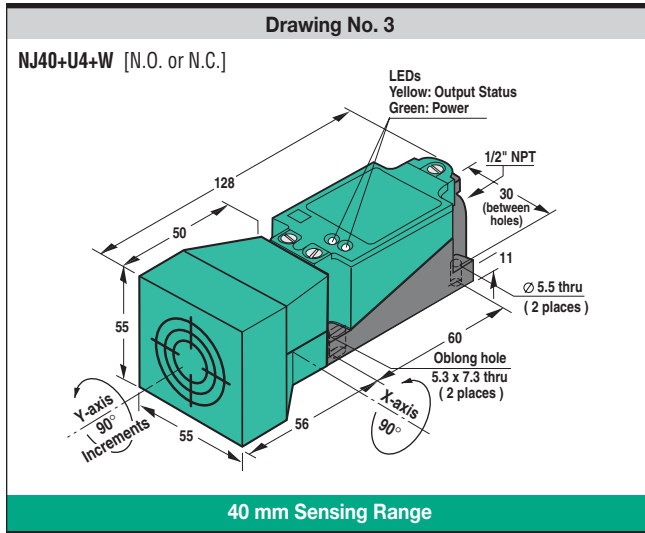
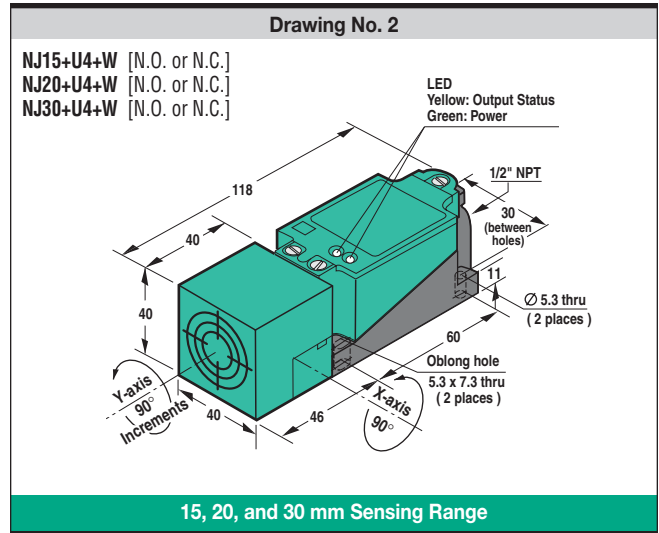
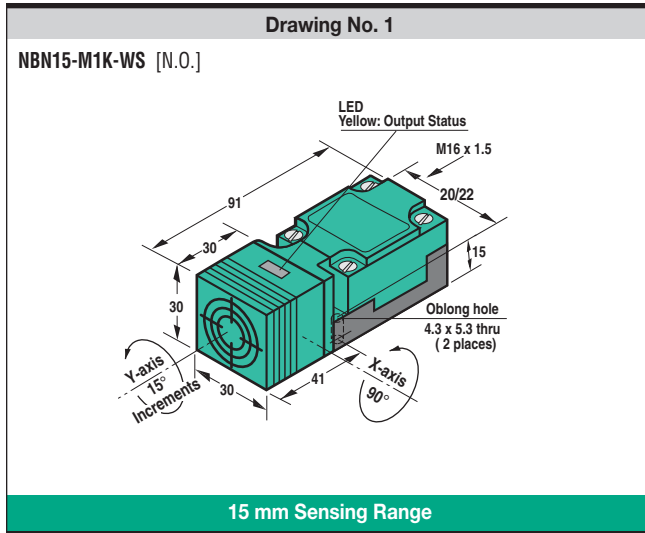


#### Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

#### BHM Type





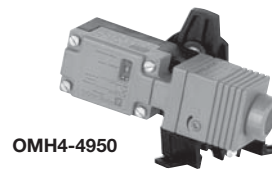
Recommended Accessories



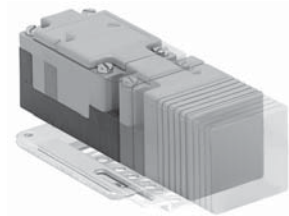
MH4-2681 UNI



MH4-2057



OMH4-4950



MH4-3742

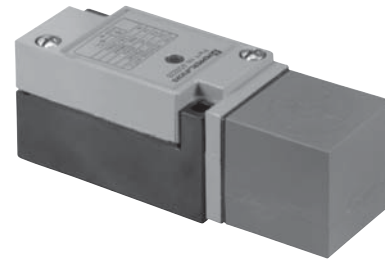
Mounting Brackets

Model	Description
MH4-2681 UNI	Adjustable Unistrut® bracket
MH4-2057	Adjustable slide bracket
OMH4-4950	Rotating bracket for mini limit switch
MH4-3742	Adjustable bracket for mini limit switch

See pages 885-892 for complete accessory listing.

### Limit Switch Style Inductive Sensors

- 15 mm sensing range
- Limit switch style housing
- LED target indication
- All-metal terminal housing



#### Technical Specifications

SUPPLY VOLTAGE	20-250 VAC
SUPPLY FREQUENCY	45-65 Hz
LOAD CURRENT (I <sub>L</sub> )	500 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 1.5 mA
OUTPUT	923 Series Normally open
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	≤ 8 V
INRUSH CURRENT	≤ 1.2 A/20 ms
HYSTERESIS	3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTED	No
LED INDICATION	See dimension drawings
SENSING FACE MATERIAL	Polyamide
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	IP67
AMBIENT TEMPERATURE	-14°F to +158°F (-25°C to +70°C)
APPROVALS	CE



See pages 885-892 for accessories

#### Terminal Connection Models

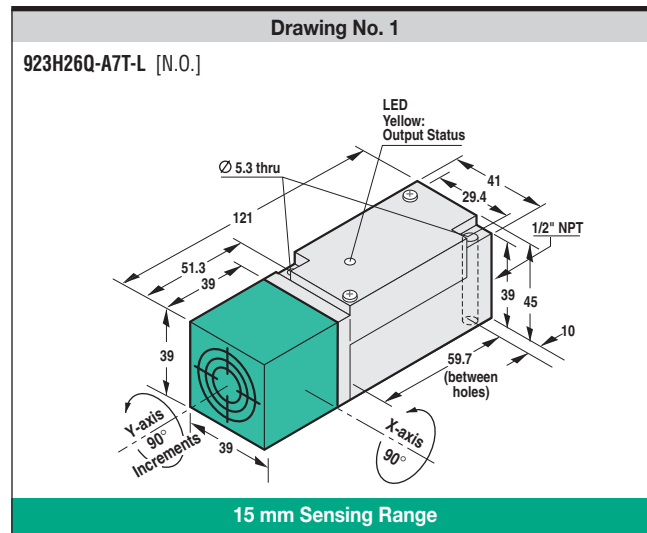
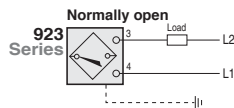
Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
923H26Q-A7T-L	15	Flush	N.O.	20 Hz	Polyamide/die-cast zinc	Terminal housing	1

#### Wiring Diagrams

##### 2-Wire AC



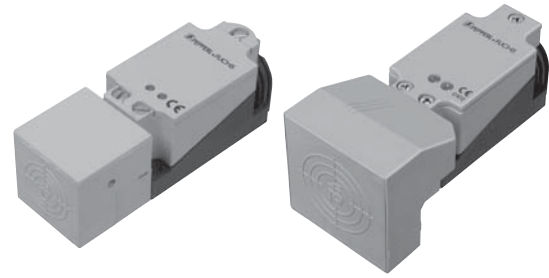
##### Terminal Connection





# Limit Switch Style Inductive Sensors

- 15 to 40 mm sensing ranges
- Limit switch style housing
- LED power and target indication
- Terminal connection wiring



### Technical Specifications

SUPPLY VOLTAGE	20-250 VAC
SUPPLY FREQUENCY	45-65 Hz
LOAD CURRENT (I <sub>L</sub> )	500 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 10 μA
OUTPUT	Normally open & normally closed
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	≤ 3 V
INRUSH CURRENT	≤ 4 A/20 ms
HYSTERESIS	3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTED	No
LED INDICATION	See dimension drawings
SENSING FACE MATERIAL	PBT
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	NBN/923 models: IP67 NJ models: IP68
AMBIENT TEMPERATURE	-14°F to +158°F (-25°C to +70°C)
APPROVALS	CE, UL, SB



See pages 885-892 for accessories

Inductive Surface Mount

4-Wire AC

### Terminal Connection Models

Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NJ15+U4+W4	15	Flush	N.O. & N.C.	25 Hz	PBT w/metal base	Terminal housing	1
NJ20+U4+W4	20	Nonflush	N.O. & N.C.	20 Hz	PBT w/metal base	Terminal housing	1
NJ30+U4+W4	30	Nonflush	N.O. & N.C.	25 Hz	PBT w/metal base	Terminal housing	1
NJ40+U4+W4	40	Nonflush	N.O. & N.C.	25 Hz	PBT w/metal base	Terminal housing	2

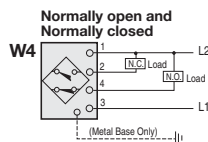
Consult factory for other connection options.

### Wiring Diagrams

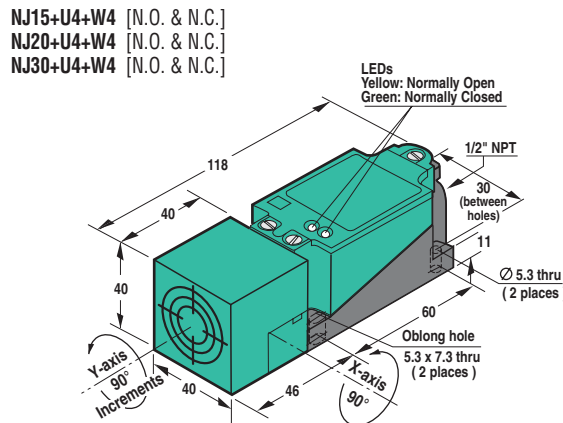
#### 4-Wire AC



#### Terminal Connection



Drawing No. 1



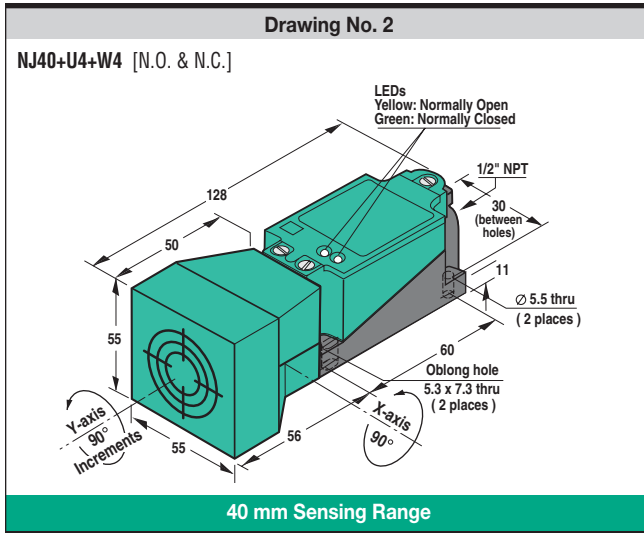
15, 20, and 30 mm Sensing Range

CONTINUED

### Limit Switch Style

Inductive Surface Mount

4-Wire  
AC



### Recommended Accessories



MH4-2681 UNI



MH4-2057

#### Mounting Brackets

Model	Description
MH4-2681 UNI	Adjustable Unistrut® bracket
MH4-2057	Adjustable slide bracket

See pages 885-892 for complete accessory listing.

# Limit Switch Style Inductive Sensors

- 20 to 40 mm sensing ranges
- Limit switch style housing
- LED power and target indication
- Terminal connection wiring
- Long-range (40 mm) NEN40 model



### Technical Specifications

SUPPLY VOLTAGE	20-250 VAC/20-300 VDC
LOAD CURRENT (I <sub>L</sub> )	400 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 1.7 mA
OUTPUT	Normally open or normally closed
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	≤ 7 V
INRUSH CURRENT	≤ 3 A/20 ms
HYSTERESIS	3-15% (5% typical)
SHORT CIRCUIT AND OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTED	Nonpolarity sensitive
LED INDICATION	See dimension drawings
SENSING FACE MATERIAL	PBT
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	IP68
AMBIENT TEMPERATURE	-14°F to +158°F (-25°C to +70°C)
APPROVALS	



See pages 885-892 for accessories

Inductive Surface Mount

### Terminal Connection Models

Model Number	Range (mm)	Mounting	Electrical Output	Switching Frequency	Housing Material	Electrical Connection	Dwg. No.
NCB20+U4+U	20	Flush	N.O. or N.C.	200 Hz VDC/30 Hz VAC	PBT w/metal base	Terminal housing	1
NEN40+U4+U	40	Nonflush	N.O. or N.C.	200 Hz VDC/30 Hz VAC	PBT w/metal base	Terminal housing	1

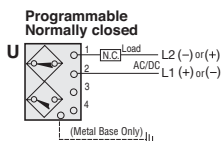
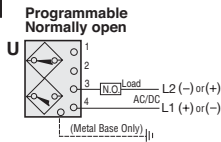
Consult factory for other connection options.

### Wiring Diagrams

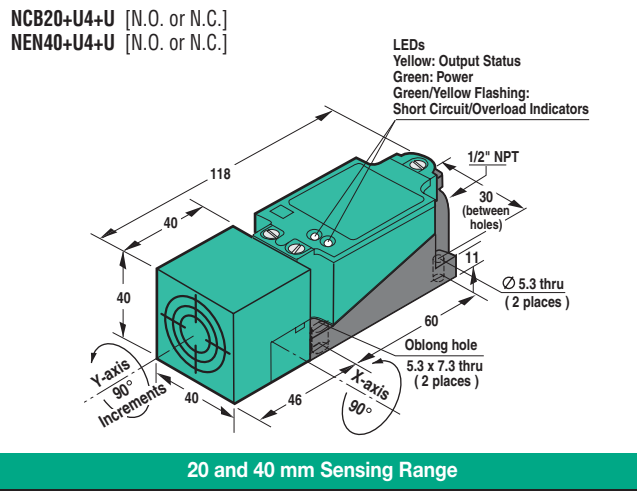
#### 2-Wire AC/DC



#### Terminal Connection



#### Drawing No. 1



2-Wire AC/DC