

ALTERNATING CURRENT

INDUCTIVE

PROXIMITY SENSORS

AC, 2-wire



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Purpose and areas of application

The presented inductive proximity sensors serve to commutate 2-wire alternating current electric circuits. They act on the basis of induction - if a metal piece is brought to the active surface, the output switches over - the electric circuit opens or shuts. Lack of physical contact between object and inductive proximity sensors ensures their high reliability and long-lasting exploitation. They are used for automatic transfer lines, metalworking machines, textile, wood working, packaging and other machines. They find place in solving automation problems, especially in conditions of: high quantity of dust, moisture, lubricants and oils, under vibrations and prolonged regime of working.

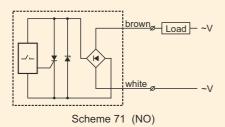
Technical parameters

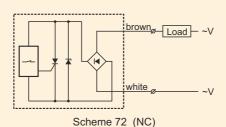
Supply voltage, Us

Residual voltage, *Ures*Load current, *Iout*Current consumption, *Is*Operating temperature range, *Tamb*Hysteresis, *h*Output
Degree of protection of the sensors
Joining - cable "LIYY" (grey)

90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20... 50 Vac / 40...60 Hz (U3) 4.4 Vac 10...300 mA 1.5 mA -25...+70°C 4...15% Thyristor IP67 (IEC144) 2x0.5 mm², L=2 m

Schemes of connection





Output characteristic /residual voltage/

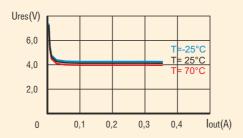




fig.1

The presented inductive proximity sensor M12 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - metallic
Features:

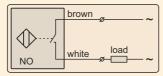
No protection of the output from overcurrent and short circuit.

3.5 mm 4...15% 90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20 ... 50 Vac / 40...60 Hz (U3) 4.4 Vac 10...300 mA 1.5 mA 20 Hz -25°...+70° C IP67 (IEC144) Thyristor LED 2x0.5 mm², L=2 m, PVC

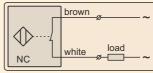
M12x1, L=56 mm CuZn (Ni plated)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
M1-12.71.U1	90240 VAC	NO	71
M1-12.72.U1	90240 VAC	NC	72
M1-12.71.U2	40100 VAC	NO	71
M1-12.72.U2	40100 VAC	NC	72
M1-12.71.U3	2050 VAC	NO	71
M1-12.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



fig.1

The presented inductive proximity sensor M12 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

No protection of the output from overcurrent and short circuit.

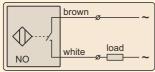
5.0 mm 4...15% 90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20 ... 50 Vac / 40...60 Hz (U3) 4.4 Vac 10...300 mA 1.5 mA 20 Hz -25°...+70° C IP67 (IEC144) Thyristor LED 2x0.5 mm², L=2 m, PVC

M12x1. L=56 mm

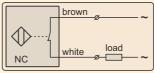
PVC

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P1-12.71.U1	90240 VAC	NO	71
P1-12.72.U1	90240 VAC	NC	72
P1-12.71.U2	40100 VAC	NO	71
P1-12.72.U2	40100 VAC	NC	72
P1-12.71.U3	2050 VAC	NO	71
P1-12.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



fig.1

The presented inductive proximity sensor M14 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - metallic
Features:

No protection of the output from overcurrent and short circuit.

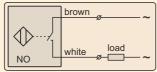
3.5 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20 ... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED
2x0.5 mm², L=2 m, PVC

M14x1. L=56 mm

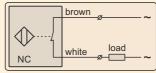
CuZn (Ni plated)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
M1-14.71.U1	90240 VAC	NO	71
M1-14.72.U1	90240 VAC	NC	72
M1-14.71.U2	40100 VAC	NO	71
M1-14.72.U2	40100 VAC	NC	72
M1-14.71.U3	2050 VAC	NO	71
M1-14.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



fig.1

The presented inductive proximity sensor M14 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

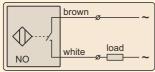
No protection of the output from overcurrent and short circuit.

5.5 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20 ... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED
2x0.5 mm², L=2 m, PVC
M14x1. L=56 mm

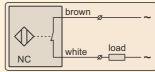
Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P1-14.71.U1	90240 VAC	NO	71
P1-14.72.U1	90240 VAC	NC	72
P1-14.71.U2	40100 VAC	NO	71
P1-14.72.U2	40100 VAC	NC	72
P1-14.71.U3	2050 VAC	NO	71
P1-14.72.U3	2050 VAC	NC	72

Schemes of connection



Scheme 71



PVC

Scheme 72



fig.1

The presented inductive proximity sensor M18 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - metallic
Features:

No protection of the output from overcurrent and short circuit.

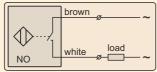
5.0 mm 4...15% 90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20 ... 50 Vac / 40...60 Hz (U3) 4.4 Vac 10...300 mA 1.5 mA 20 Hz -25°...+70° C IP67 (IEC144) Thyristor LED 2x0.5 mm², L=2 m, PVC

M18x1. L=59 mm

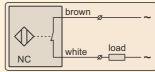
CuZn (Ni plated)

Type parameters

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	Туре	Supply voltage	Output function	Scheme of connection
Г	M1-18.71.U1	90240 VAC	NO	71
	M1-18.72.U1	90240 VAC	NC	72
	M1-18.71.U2	40100 VAC	NO	71
	M1-18.72.U2	40100 VAC	NC	72
	M1-18.71.U3	2050 VAC	NO	71
	M1-18.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



fig.1

The presented inductive proximity sensor M18 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

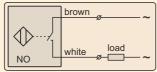
No protection of the output from overcurrent and short circuit.

8.0 mm 4...15% 90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20 ... 50 Vac / 40...60 Hz (U3) 4.4 Vac 10...300 mA 1.5 mA 20 Hz -25°...+70° C IP67 (IEC144) Thyristor

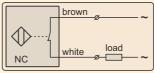
LED 2x0.5 mm², L=2 m, PVC M18x1, L=59 mm PVC

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P1-18.71.U1	90240 VAC	NO	71
P1-18.72.U1	90240 VAC	NC	72
P1-18.71.U2	40100 VAC	NO	71
P1-18.72.U2	40100 VAC	NC	72
P1-18.71.U3	2050 VAC	NO	71
P1-18.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



fig.1

The presented inductive proximity sensor M22 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - metallic
Features:

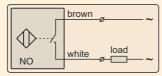
No protection of the output from overcurrent and short circuit.

6.5 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED

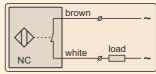
2x0.5 mm², L=2 m, PVC M22x1, L=59 mm CuZn (Ni plated)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
M1-22.71.U1	90240 VAC	NO	71
M1-22.72.U1	90240 VAC	NC	72
M1-22.71.U2	40100 VAC	NO	71
M1-22.72.U2	40100 VAC	NC	72
M1-22.71.U3	2050 VAC	NO	71
M1-22.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



fig.1

The presented inductive proximity sensor M22 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

No protection of the output from overcurrent and short circuit.

4.4 Vac 10...300 mA 1.5 mA 20 Hz -25°...+70° C IP67 (IEC144) Thyristor LED

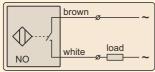
10.0 mm 4...15%

2x0.5 mm², L=2 m, PVC M22x1, L=59 mm PVC

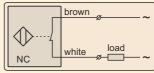
90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20 ... 50 Vac / 40...60 Hz (U3)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P1-22.71.U1	90240 VAC	NO	71
P1-22.72.U1	90240 VAC	NC	72
P1-22.71.U2	40100 VAC	NO	71
P1-22.72.U2	40100 VAC	NC	72
P1-22.71.U3	2050 VAC	NO	71
P1-22.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



The presented inductive proximity sensor M30 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - metallic
Features:

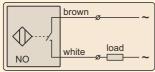
No protection of the output from overcurrent and short circuit.

9.5 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED
2x0.5 mm², L=2 m, PVC
M30x1.5, L=61 mm

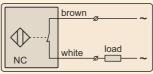
Al (aluminum)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
M1-30.71.U1	90240 VAC	NO	71
M1-30.72.U1	90240 VAC	NC	72
M1-30.71.U2	40100 VAC	NO	71
M1-30.72.U2	40100 VAC	NC	72
M1-30.71.U3	2050 VAC	NO	71
M1-30.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



The presented inductive proximity sensor M30 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

No protection of the output from overcurrent and short circuit.

14.0 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20 ... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED

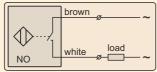
2x0.5 mm², L=2 m, PVC

M30x1.5. L=61 mm

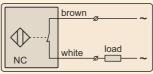
PVC

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P1-30.71.U1	90240 VAC	NO	71
P1-30.72.U1	90240 VAC	NC	72
P1-30.71.U2	40100 VAC	NO	71
P1-30.72.U2	40100 VAC	NC	72
P1-30.71.U3	2050 VAC	NO	71
P1-30.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



The presented inductive proximity sensor M40 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - metallic
Features:

No protection of the output from overcurrent and short circuit.

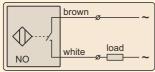
14.0 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20 ... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED
2x0.5 mm², L=2 m, PVC

M40x1.5. L=55 mm

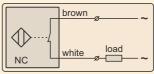
Al (aluminum)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
M1-40.71.U1	90240 VAC	NO	71
M1-40.72.U1	90240 VAC	NC	72
M1-40.71.U2	40100 VAC	NO	71
M1-40.72.U2	40100 VAC	NC	72
M1-40.71.U3	2050 VAC	NO	71
M1-40.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



The presented inductive proximity sensor M40 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

No protection of the output from overcurrent and short circuit.

24.0 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20 ... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED

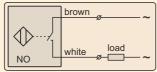
2x0.5 mm², L=2 m, PVC

M40x1.5. L=55 mm

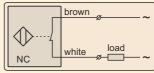
PVC

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P1-40.71.U1	90240 VAC	NO	71
P1-40.72.U1	90240 VAC	NC	72
P1-40.71.U2	40100 VAC	NO	71
P1-40.72.U2	40100 VAC	NC	72
P1-40.71.U3	2050 VAC	NO	71
P1-40.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72



The presented inductive proximity sensor P3-40 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

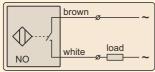
No protection of the output from overcurrent and short circuit.

4.0 mm
4...15%
90...240 Vac / 40...60 Hz (U1)
40...100 Vac / 40...60 Hz (U2)
20 ... 50 Vac / 40...60 Hz (U3)
4.4 Vac
10...300 mA
1.5 mA
20 Hz
-25°...+70° C
IP67 (IEC144)
Thyristor
LED
2x0.5 mm², L=2 m, PVC
26x12x40 mm

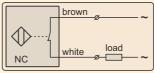
Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P3-40.71.U1	90240 VAC	NO	71
P3-40.72.U1	90240 VAC	NC	72
P3-40.71.U2	40100 VAC	NO	71
P3-40.72.U2	40100 VAC	NC	72
P3-40.71.U3	2050 VAC	NO	71
P3-40.72.U3	2050 VAC	NC	72

Schemes of connection



Scheme 71



PVC

Scheme 72



fig.1

The presented inductive proximity sensor P3-60 serves to switch 2-wire alternating current circuits. Its output is switched when passing metal objects in front of its active part. The inductive proximity sensor is resistant to moisture and dust. It has a long service life thanks to the non-contact switching of the electrical circuit in which it is connected.

Technical parameters

Operating distance, Sn Hysteresis, *h* Supply voltage, *Us*

Residual voltage, *Ures*Load current (max), *lout*Current consumption, *Is*Switching frequency (max), *fo*Operating temperature range, *Tamb*Degree of protection of the sensors
Output element
Light output indicator
Joining - cable
Overall dimensions
Housing - plastic
Features:

No protection of the output from overcurrent and short circuit.

12.5 mm 4...15%

90...240 Vac / 40...60 Hz (U1) 40...100 Vac / 40...60 Hz (U2) 20 ... 50 Vac / 40...60 Hz (U3) 4.4 Vac

10...300 mA 1.5 mA

20 Hz

-25°...+70° C IP67 (IEC144)

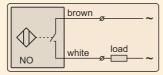
Thyristor LED

2x0.5 mm², L=2 m, PVC

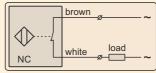
60x30x15 mm PA6 (polyamide)

Type parameters

Туре	Supply voltage	Output function	Scheme of connection
P3-60.71.U1	90240 VAC	NO	71
P3-60.72.U1	90240 VAC	NC	72
P3-60.71.U2	40100 VAC	NO	71
P3-60.72.U2	40100 VAC	NC	72
P3-60.71.U3	2050 VAC	NO	71
P3-60.72.U3	2050 VAC	NC	72



Scheme 71



Scheme 72

