"ESA Control" Ltd

ALTERNATING CURRENT

INDUCTIVE

PROXIMITY SENSORS

with connector

AC, 2-wire

Bulgaria
5300 Gabrovo
3, Stancionna str.
Tel./fax: +359 66 860543
E-mail: office@esa-control.com
Site: http://www.esa-control.com

Inductive proximity sensors for alternating current with connector, 2-wire

AC

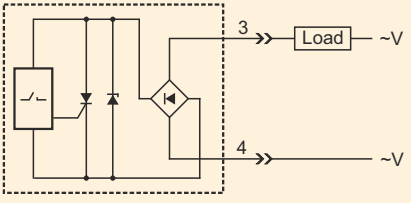
Purpose and areas of application

The presented inductive proximity sensors ending with a connector 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.

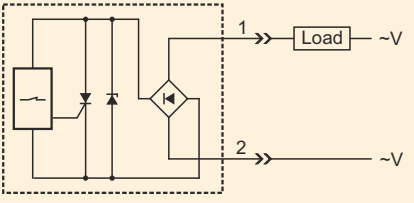
Technical parameters

Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20… 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current, *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Operating temperature range, *Tamb*	-25…+70°C
Hysteresis, *h*	4...15%
Output element	Thyristor
Degree of protection of the sensors	IP67 (IEC144)
Joining	M12 connector, 4-pins

Schemes of connection

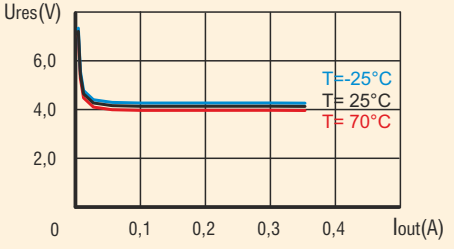


Scheme 71 (NO)



Scheme 72 (NC)

Output characteristic /residual voltage/



M12 two-wire inductive proximity sensor with connector for alternating current, shielded type

M1-12/C

fig.1

Operating principle

The presented M12 inductive proximity sensor with connector 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	3.5 mm
Hysteresis, *h*	4...15%
Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20 … 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current (max), *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Switching frequency (max), *fo*	20 Hz
Operating temperature range, *Tamb*	-25°…+70° C
Degree of protection of the sensors	IP67 (IEC144)
Output element	Thyristor
Light output indicator	LED
Joining	M12 connector, 4-pins
Overall dimensions	M12x1, L=60 mm
Housing - metallic	CuZn (Ni plated)

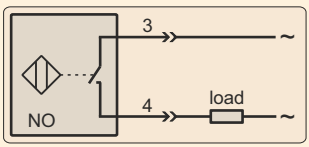
Features:

No protection of the output from overcurrent and short circuit.

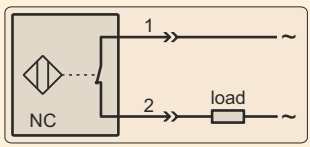
Type parameters

Type	Supply voltage	Output function	Scheme of connection
M1-12.71.CU1	90...240 VAC	NO	71C
M1-12.72.CU1	90...240 VAC	NC	72C
M1-12.71.CU2	40...100 VAC	NO	71C
M1-12.72.CU2	40...100 VAC	NC	72C
M1-12.71.CU3	20...50 VAC	NO	71C
M1-12.72.CU3	20...50 VAC	NC	72C

Schemes of connection



Scheme 71C



Scheme 72C

M18 two-wire inductive proximity sensor with connector for alternating current, shielded type

M1-18/C

fig.1

Operating principle

The presented M18 inductive proximity sensor with connector 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	5.0 mm
Hysteresis, *h*	4...15%
Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20 … 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current (max), *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Switching frequency (max), *fo*	20 Hz
Operating temperature range, *Tamb*	-25°…+70° C
Degree of protection of the sensors	IP67 (IEC144)
Output element	Thyristor
Light output indicator	LED
Joining	M12 connector, 4-pins
Overall dimensions	M18x1, L=60 mm
Housing - metallic	CuZn (Ni plated)

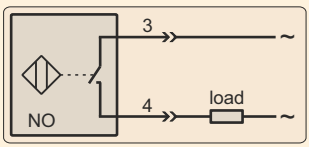
Features:

No protection of the output from overcurrent and short circuit.

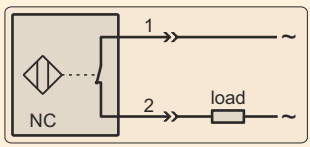
Type parameters

Type	Supply voltage	Output function	Scheme of connection
M1-18.71.CU1	90...240 VAC	NO	71C
M1-18.72.CU1	90...240 VAC	NC	72C
M1-18.71.CU2	40...100 VAC	NO	71C
M1-18.72.CU2	40...100 VAC	NC	72C
M1-18.71.CU3	20...50 VAC	NO	71C
M1-18.72.CU3	20...50 VAC	NC	72C

Schemes of connection



Scheme 71C



Scheme 72C

M18 two-wire inductive proximity sensor with connector for alternating current, unshielded type

P1-18/C

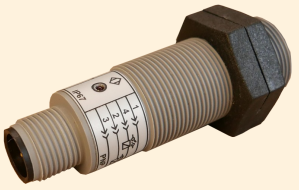


fig.1

Operating principle

The presented M18 inductive proximity sensor with connector 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	8.0 mm
Hysteresis, *h*	4...15%
Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20 … 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current (max), *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Switching frequency (max), *fo*	20 Hz
Operating temperature range, *Tamb*	-25°…+70° C
Degree of protection of the sensors	IP67 (IEC144)
Output element	Thyristor
Light output indicator	LED
Joining	M12 connector, 4-pins
Overall dimensions	M18x1, L=60 mm
Housing - plastic	PVC

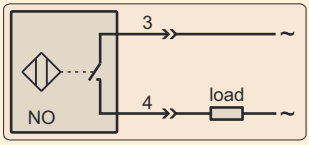
Features:

No protection of the output from overcurrent and short circuit.

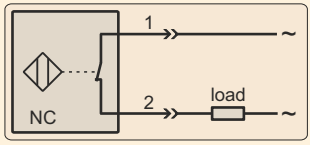
Type parameters

Type	Supply voltage	Output function	Scheme of connection
P1-18.71.CU1	90...240 VAC	NO	71C
P1-18.72.CU1	90...240 VAC	NC	72C
P1-18.71.CU2	40...100 VAC	NO	71C
P1-18.72.CU2	40...100 VAC	NC	72C
P1-18.71.CU3	20...50 VAC	NO	71C
P1-18.72.CU3	20...50 VAC	NC	72C

Schemes of connection



Scheme 71C



Scheme 72C

M30 two-wire inductive proximity sensor with connector for alternating current, shielded type

M1-30/C

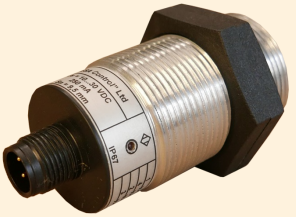


fig.1

Operating principle

The presented M30 inductive proximity sensor with connector 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	9.5 mm
Hysteresis, *h*	4...15%
Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20 … 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current (max), *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Switching frequency (max), *fo*	20 Hz
Operating temperature range, *Tamb*	-25°…+70° C
Degree of protection of the sensors	IP67 (IEC144)
Output element	Thyristor
Light output indicator	LED
Joining	M12 connector, 4-pins
Overall dimensions	M30x1.5, L=64 mm
Housing - metallic	Al (aluminum)

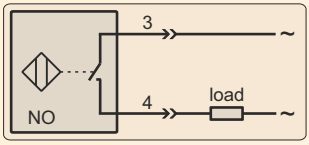
Features:

No protection of the output from overcurrent and short circuit.

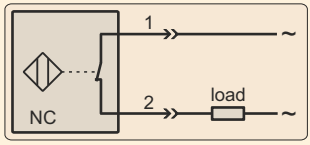
Type parameters

Type	Supply voltage	Output function	Scheme of connection
M1-30.71.CU1	90...240 VAC	NO	71C
M1-30.72.CU1	90...240 VAC	NC	72C
M1-30.71.CU2	40...100 VAC	NO	71C
M1-30.72.CU2	40...100 VAC	NC	72C
M1-30.71.CU3	20...50 VAC	NO	71C
M1-30.72.CU3	20...50 VAC	NC	72C

Schemes of connection



Scheme 71C



Scheme 72C

M30 two-wire inductive proximity sensor with connector for alternating current, unshielded type

P1-30/C

fig.1

Operating principle

The presented M30 inductive proximity sensor with connector 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	14.0 mm
Hysteresis, *h*	4...15%
Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20 … 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current (max), *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Switching frequency (max), *fo*	20 Hz
Operating temperature range, *Tamb*	-25°…+70° C
Degree of protection of the sensors	IP67 (IEC144)
Output element	Thyristor
Light output indicator	LED
Joining	M12 connector, 4-pins
Overall dimensions	M30x1.5, L=64 mm
Housing - plastic	PVC

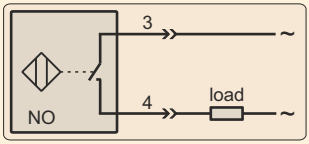
Features:

No protection of the output from overcurrent and short circuit.

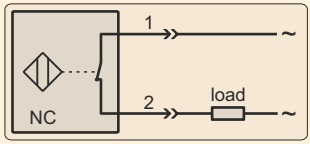
Type parameters

Type	Supply voltage	Output function	Scheme of connection
P1-30.71.CU1	90...240 VAC	NO	71C
P1-30.72.CU1	90...240 VAC	NC	72C
P1-30.71.CU2	40...100 VAC	NO	71C
P1-30.72.CU2	40...100 VAC	NC	72C
P1-30.71.CU3	20...50 VAC	NO	71C
P1-30.72.CU3	20...50 VAC	NC	72C

Schemes of connection



Scheme 71C



Scheme 72C

P3-60 two-wire inductive proximity sensor with connector for alternating current, unshielded type

P3-60/C

fig.1

Operating principle

The presented P3-60 inductive proximity sensor with connector 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

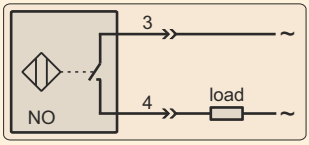
Operating distance, Sn	12.5 mm
Hysteresis, *h*	4...15%
Supply voltage, *Us*	90…240 Vac / 40...60 Hz (U1) 40…100 Vac / 40...60 Hz (U2) 20 … 50 Vac / 40...60 Hz (U3)
Residual voltage, *Ures*	4.4 Vac
Load current (max), *Iout*	10...300 mA
Current consumption, *Is*	1.5 mA
Switching frequency (max), *fo*	20 Hz
Operating temperature range, *Tamb*	-25°…+70° C
Degree of protection of the sensors	IP67 (IEC144)
Output element	Thyristor
Light output indicator	LED
Joining	M12 connector, 4-pins
Overall dimensions	72x30x15 mm
Housing - plastic	PA6 (polyamide)
Features:	

No protection of the output from overcurrent and short circuit.

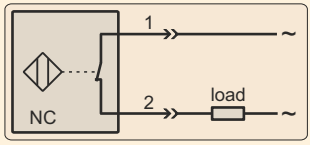
Type parameters

Type	Supply voltage	Output function	Scheme of connection
P3-60.71.CU1	90...240 VAC	NO	71C
P3-60.72.CU1	90...240 VAC	NC	72C
P3-60.71.CU2	40...100 VAC	NO	71C
P3-60.72.CU2	40...100 VAC	NC	72C
P3-60.71.CU3	20...50 VAC	NO	71C
P3-60.72.CU3	20...50 VAC	NC	72C

Schemes of connection

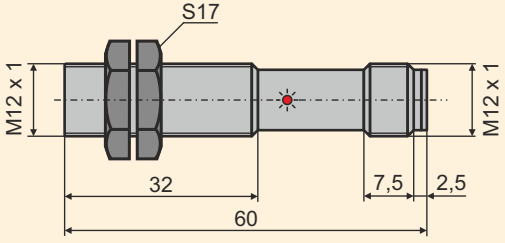


Scheme 71C

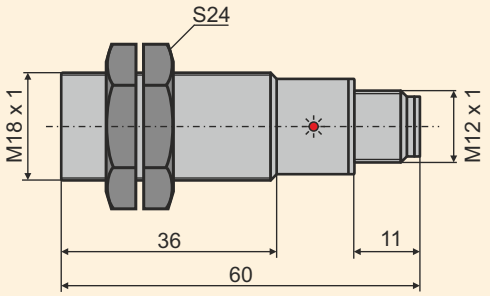


Scheme 72C

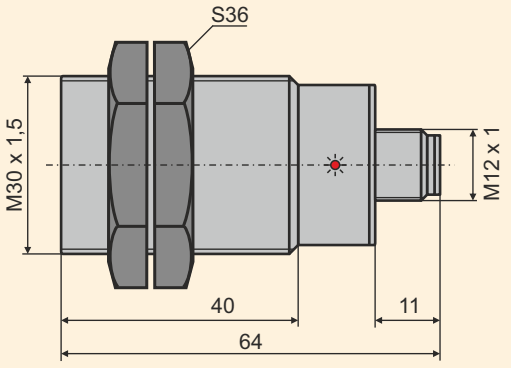
M12C



M18C



M30C



P3-60C