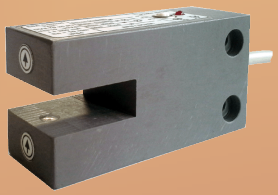
"ESA Control" Ltd

FORK TYPE

PHOTOELECTRIC SENSORS

for direct current

DC



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M18 fork type photoelectric sensor for direct current (DC)

OVM1-18

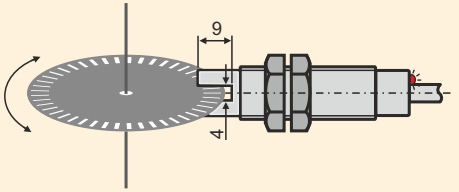


fig.1

Application and operating principle

The presented fork type photoelectric sensor serves to switch direct current circuits. The principle of operation consists in the emitting and the receiving an unmodulated (constant) light ray in the infrared area of the spectrum. When an object passes through the sensor slot, the light ray is interrupted and the sensor output switches from one state to another. The sensor has a good resolution (0,5 mm) and is used to measure the revolutions of shafts and other rotating objects. When there is an object in the sensor slot, the output indicator lights up.

Technical parameters

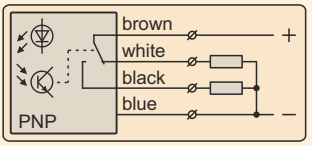
Operating distance (slotted width), *Sn*	4 mm
Supply voltage, *Us*	11…30 VDC (Ripple ±10 %)
Residual voltage (max), *Ures*	0,8 V (I = 250 mA)
Load current (max), *Iout*	250 mA
Protection of output (scanning), *Iprot*	350 mA (25ºC)
Current consumption, *Is*	10 mA
Switching frequency (max), *fo*	10 kHz
Spectrum area of operating	850…950 nm
Operating ambient illumination	3'000 Lx
Operating temperature range, *Tamb*	-10º…+50ºC
Degree of protection	IP65
Light output indicator	LED
Connection cable	4x0,25 mm^2, L=2 m
Overall dimensions	M18x1, L=60 mm
Housing - metallic	CuZn (Ni plated)

Protection from reverse inclusion of the supply voltage.
Protection of the outputs from overcurrent and short circuit.

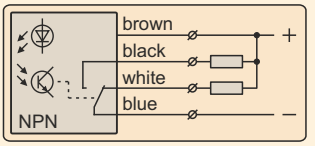
Type parameters

Type	Output function	Scheme of connection
OVM1-18.10.FK	PNP / NO+NC	10
OVM1-18.20.FK	NPN / NO+NC	20

Schemes of connection



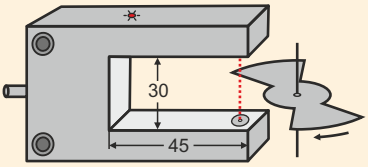
Scheme 10



Scheme 20

Fork type photoelectric sensor for direct current (DC)

OVP4-75



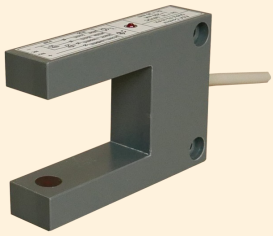


fig.1

Application and operating principle

The presented fork type photoelectric sensor serves to switch direct current circuits. The principle of operation consists in the emitting and the receiving an unmodulated (constant) light ray in the infrared area of the spectrum. When an object passes through the sensor slot, the light ray is interrupted and the sensor output switches from one state to another. The sensor has a good resolution (1,0 mm) and is used to measure the revolutions of shafts and other rotating objects. When there is an object in the sensor slot, the output indicator lights up.

Technical parameters

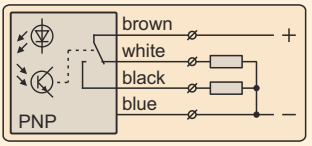
Operating distance (slotted width), *Sn*	30 mm
Supply voltage, *Us*	11…30 VDC (Ripple ±10 %)
Residual voltage (max), *Ures*	0,8 V (I = 250 mA)
Load current (max), *Iout*	250 mA
Protection of output (scanning), *Iprot*	350 mA (25ºC)
Current consumption, *Is*	18 mA
Switching frequency (max), *fo*	200 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	3'000 Lx
Operating temperature range, *Tamb*	-10º…+50ºC
Degree of protection	IP65
Light output indicator	LED
Connection cable	4x0,25 mm^2, L=2 m
Overall dimensions	75x18x52 mm
Housing - plastic	PVC

Protection from reverse inclusion of the supply voltage.
Protection of the outputs from overcurrent and short circuit.

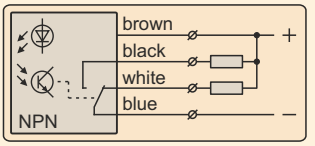
Type parameters

Type	Output function	Scheme of connection
OVP4-75.10.FK	PNP / NO+NC	10
OVP4-75.20.FK	NPN / NO+NC	20

Schemes of connection



Scheme 10



Scheme 20

Fork type photoelectric sensor for direct current for labeling machines (DC)

OVP4-70

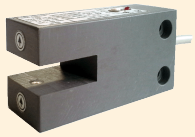


fig.1

Application and operating principle

The OVP4-70 fork type photoelectric sensor consists of a transmitter and a receiver located in one housing. The principle of operation consists in the emitting and the receiving a modulated light ray in the visible area of the spectrum. The sensor is used in labelling machines for positioning and counting of labels located on a transparent or translucent carrier tape. The distance between the labels should not be less than 1mm. The sensor can register labels moving at speeds of up to 200 pcs./sec. The sensor output indicator lights up when there is no label in the slot between the transmitter and the receiver.

Technical parameters

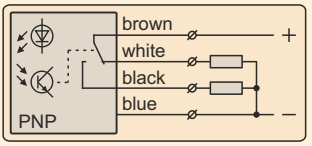
Operating distance (slotted width), *Sn*	10 mm
Supply voltage, *Us*	9…36 VDC (Ripple ±10 %)
Residual voltage (max), *Ures*	0,8 V (I = 250 mA)
Load current (max), *Iout*	250 mA
Protection of output (scanning), *Iprot*	350 mA (25ºC)
Current consumption, *Is*	10 mA
Switching frequency (max), *fo*	200 Hz
Spectrum area of operating	640 nm (red light)
Operating ambient illumination	3'000 Lx
Operating temperature range, *Tamb*	-10º…+50ºC
Degree of protection	IP54
Light output indicator	LED
Connection cable	4x0,25 mm^2, L=2 m
Overall dimensions	70x24x35 mm
Housing - plastic	PVC

Full protection to 40V:
Protection against incorrect connection of cables, current overload and short-circuit at the outputs.

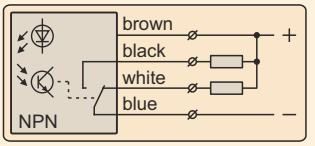
Type parameters

Type	Output function	Scheme of connection
OVP4-70.10.RKT	PNP / NO+NC	10
OVP4-70.20.RKT	NPN / NO+NC	20

Schemes of connection



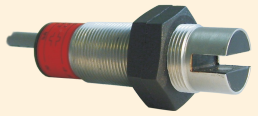
Scheme 10



Scheme 20

M18 fork type photoelectric sensor with two dephased outputs (DC)

OVM1-18



Application and operating principle

The OV1-18.24.F photoelectric fork type sensor has two output signals A and B, which are shifted on phase of 90° (at raster of the observed object 0,5mm). It is used as a sensor to measure the angular and linear displacements, as well as to determine the direction of rotation of shafts or linearly moving objects. The principle of operation consists in the emitting and the receiving an unmodulated (constant) light ray in the infrared area of the spectrum. The sensor has a good resolution (0.5 mm). The output indicators of the signals A and B light up when there is no object in the working gap.

Technical parameters

Operating distance (slotted width), *Sn*	4 mm
Supply voltage, *Us*	8...30 Vdc (Ripple ±10 %)
Residual voltage, *Ures*	0,45 V (I = 20 mA)
Load current (max), *Iout*	100 mA
Current consumption, *Is*	25 mA
Outputs	A and B (res. 5,6K to Us)
Outputs A and B shifted on phases	90º electr. (at raster 0,5 mm)
Operating frequency (max), *fo*	10 kHz
Fall time and Rise time, *tf* / *tr*	0,1µs / 1,0µs
Spectrum area of operating	850…950 nm
Operating ambient illumination (max)	3'000 Lx
Operating temperature range, *Tamb*	-10º…+50ºC
Degree of protection	IP65
Indication of outputs A and B	2 x LED
Connection cable	4x0,25 mm^2 + shield, L=2 m
Overall dimensions	M18x1, L=60 mm
Housing - metallic	CuZn (Ni plated)

Illustration and overall dimensions

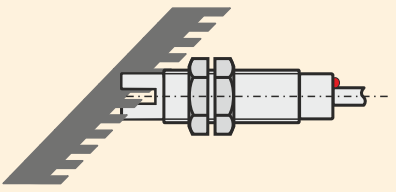


fig.1

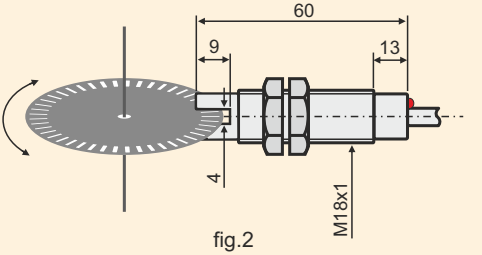
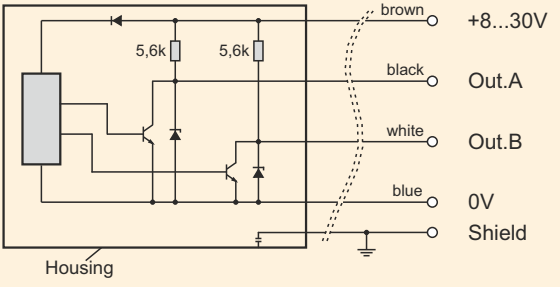
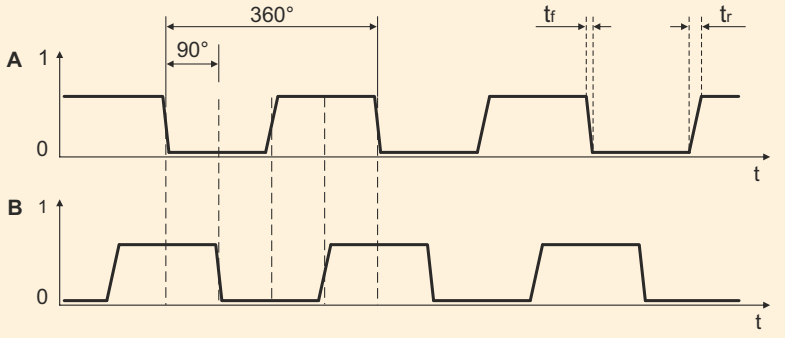


fig.2

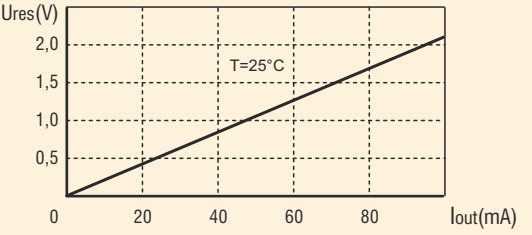
Scheme of connection



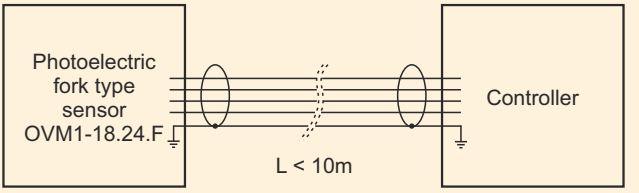
Time diagram of output signals

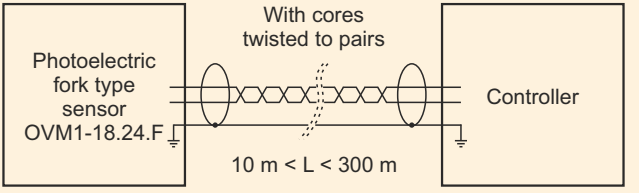


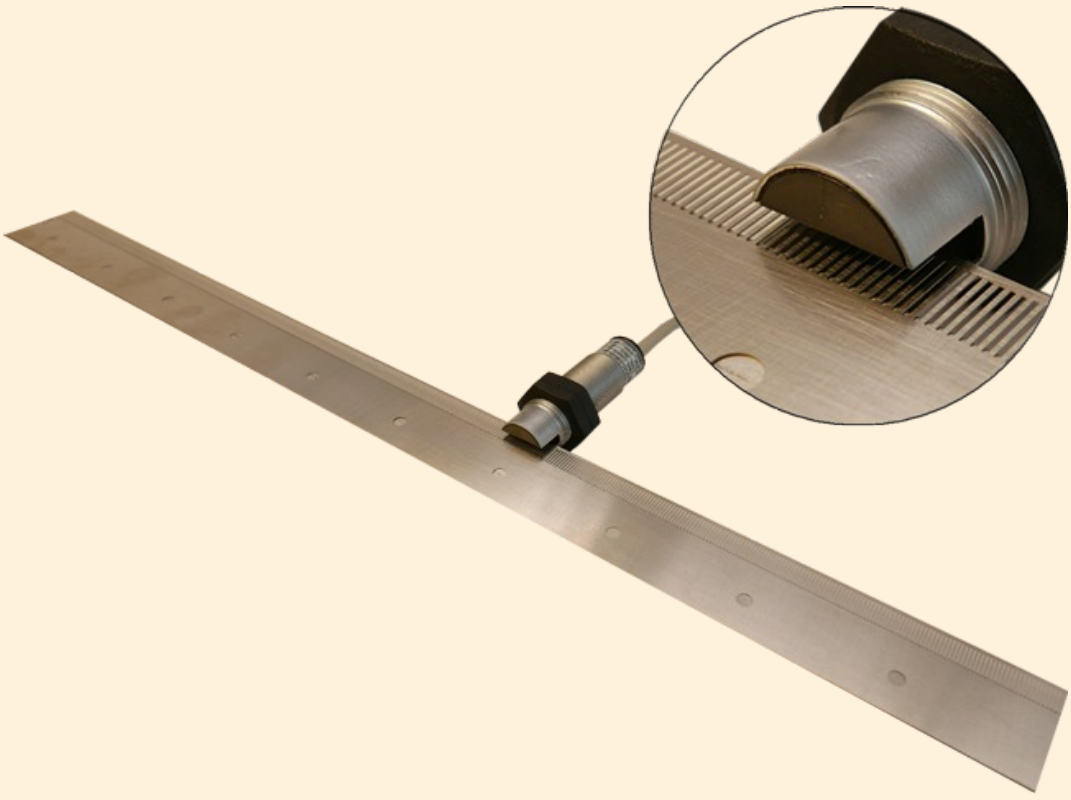
Output characteristics (Residual voltage)

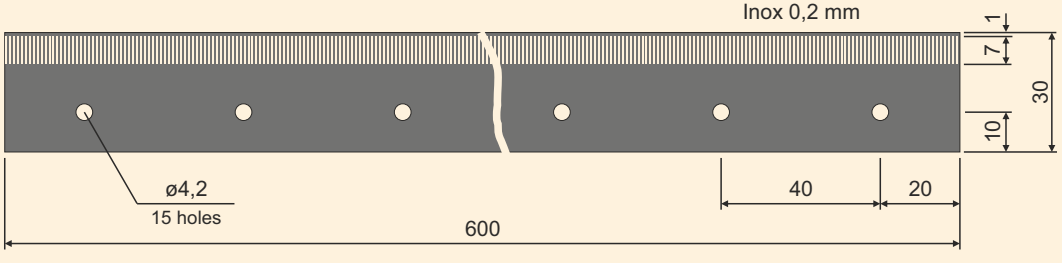


Connection with controller

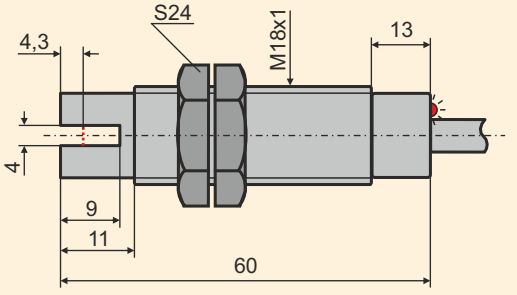




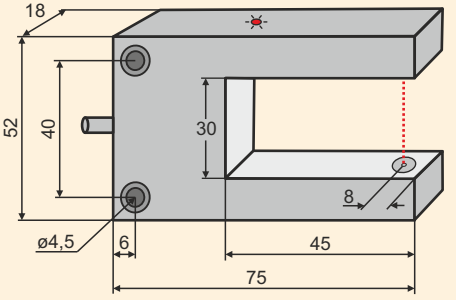



Inox 0,2 mm
1
7
30
10
ø4,2
15 holes
40
20
600

OVM1-18



OVP4-75



OVP4-70