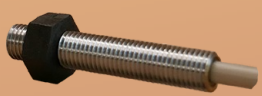
"ESA Control" Ltd

THRU-BEAM

PHOTOELECTRIC SENSORS

for direct current

DC



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M8 thru-beam photoelectric sensor for direct current

OBM1-08

fig.1

Application and operating principle

The presented M8 photoelectric thru-beam sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

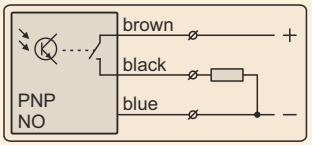
Technical parameters

Operating distance, *Sn*	0...1 m
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*	17 mA (10mA / T + 7mA / R)
Switching frequency (max), *fo*	300 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...10'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm² L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	3x0.25 mm² L=2 m, PVC
Overall dimensions	M8x1, L=46 mm
Housing - metallic	CuZn (Ni plated)
Full protection to 40V: Protection from improper inclusion, overcurrent and short-circuit at the output.	

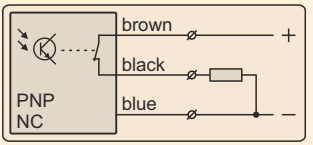
Type parameters

Type	Output function	Scheme of connection
OBM1-08.11.FK	PNP / NO	11
OBM1-08.12.FK	PNP / NC	12
OBM1-08.21.FK	NPN / NO	21
OBM1-08.22.FK	NPN / NC	22
OBM1-08.63.F	Transmitter	63

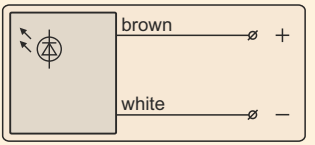
Schemes of connection



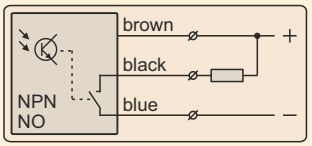
Scheme 11



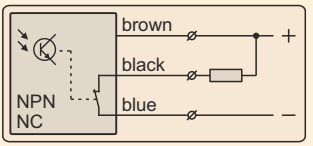
Scheme 12



Scheme 63



Scheme 21



Scheme 22

M12 thru-beam photoelectric sensor for direct current

OBP1-12

fig.1

Application and operating principle

The presented M12 photoelectric thru-beam sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

Technical parameters

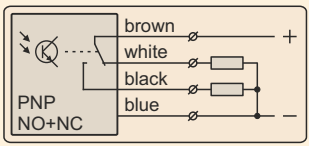
Operating distance, *Sn*	0...5 m
Supply voltage, *Us*	9…36VDC (Ripple ±10 %)
Residual voltage (max), *Ures*	0,8 V (I = 250 mA)
Load current (max), *Iout*	250 mA
Protection of output (scanning), *Iprot*	350 mA (25ºC)
Current consumption, *Is*	18 mA (11mA / T + 7mA / R)
Switching frequency (max), *fo*	250 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...10'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm². L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	4x0.25 mm². L=2 m, PVC
Overall dimensions	M12x1, L=56 mm
Housing - plastic	PVC

Full protection to 40V:
Protection from improper inclusion, overcurrent and short-circuit at the outputs.

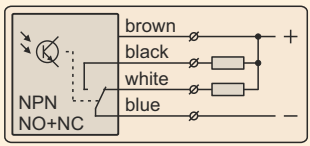
Type parameters

Type	Output function	Scheme of connection
OBP1-12.10.FK	PNP / NO+NC	10
OBP1-12.20.FK	NPN / NO+NC	20
OBP1-12.63.F	Transmitter	63

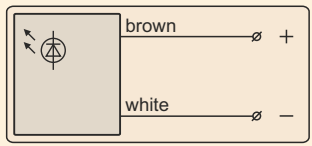
Schemes of connection



Scheme 10



Scheme 20



Scheme 63

M18 thru-beam photoelectric sensor for direct current

OBP1-18

fig.1

Application and operating principle

The presented M18 photoelectric thru-beam sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

Technical parameters

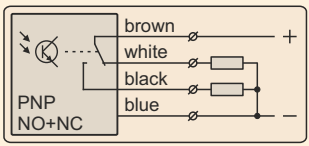
Operating distance, *Sn*	0...10 m
Supply voltage, *Us*	10…30 VDC (Ripple ±10 %)
Residual voltage (max), *Ures*	0,8 V (I = 250 mA)
Load current (max), *Iout*	250 mA
Protection of output (scanning), *Iprot*	350 mA (25ºC)
Current consumption, *Is*	28 mA (16mA / T + 12mA / R)
Switching frequency (max), *fo*	250 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...10'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm², L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	4x0.25 mm², L=2 m, PVC
Overall dimensions	M18x1, L=65 mm
Housing - plastic	PVC

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

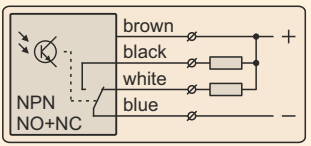
Type parameters

Type	Output function	Scheme of connection
OBP1-18.10.FK	PNP / NO+NC	10
OBP1-18.20.FK	NPN / NO+NC	20
OBP1-18.63.F	Transmitter	63

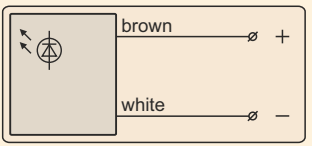
Schemes of connection



Scheme 10



Scheme 20



Scheme 63

M18 thru-beam photoelectric sensor for direct current

OBP1-18/L

fig.1

Application and operating principle

The presented M18/L thru-beam photoelectric sensor is used for operation in a wide range of ambient light - from dark to direct sunlight without changing its sensitivity and operating distance (Sn). Can be used indoors and outdoors. It is designed for switching direct current electrical circuits. The sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

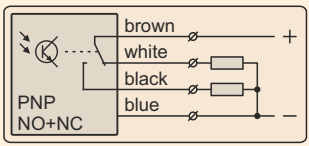
Technical parameters

Operating distance, *Sn*	0...20 m
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*	25 mA (16mA / T + 9mA / R)
Switching frequency (max), *fo*	250 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...180'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm², L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	4x0.25 mm², L=2 m, PVC
Overall dimensions	M18x1, L=65 mm
Housing - plastic	PVC
Full protection to 40V: Protection from improper inclusion, overcurrent and short-circuit at the outputs.	

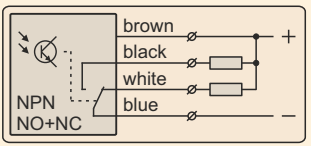
Type parameters

Type	Output function	Scheme of connection
OBP1-18.10.FKL	PNP / NO+NC	10
OBP1-18.20.FKL	NPN / NO+NC	20
OBP1-18.63.F	Transmitter	63

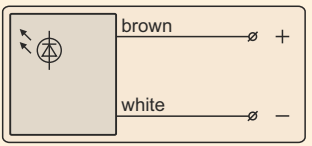
Schemes of connection



Scheme 10



Scheme 20



Scheme 63

OBP3-60 thru-beam photoelectric sensor for direct current

OBP3-60

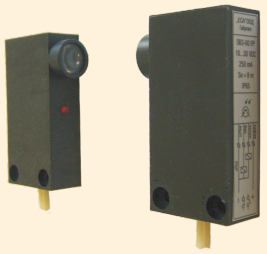


fig.1

Application and operating principle

The presented OBP3-60 photoelectric thru-beam sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

Technical parameters

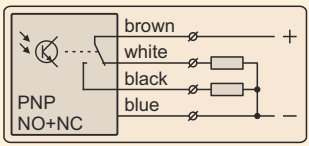
Operating distance, *Sn*	0...10 m
Supply voltage, *Us*	10…30 VDC (Ripple ±10 %)
Residual voltage (max), *Ures*	0,8 V (I = 250 mA)
Load current (max), *Iout*	250 mA
Protection of output (scanning), *Iprot*	350 mA (25ºC)
Current consumption, *Is*	28 mA (16mA / T + 12mA / R)
Switching frequency (max), *fo*	250 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...10'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm², L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	4x0.25 mm², L=2 m, PVC
Overall dimensions	60x36x15 mm
Housing - plastic	PA6 (Polyamide)

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

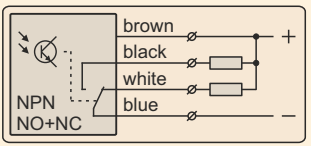
Type parameters

Type	Output function	Scheme of connection
OBP3-60.10.FK	PNP / NO+NC	10
OBP3-60.20.FK	NPN / NO+NC	20
OBP3-60.63.F	Transmitter	63

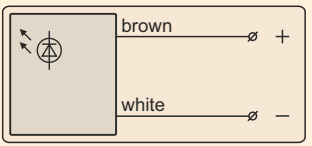
Schemes of connection



Scheme 10



Scheme 20



Scheme 63

OBP3-60 thru-beam photoelectric sensor for direct current

OBP3-60/L

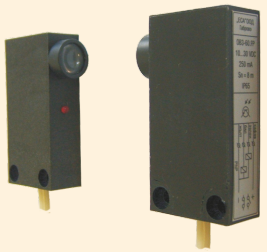


fig.1

Application and operating principle

The presented OBP3-60/L thru-beam photoelectric sensor is used for operation in a wide range of ambient light - from dark to direct sunlight without changing its sensitivity and operating distance (Sn). Can be used indoors and outdoors. It is designed for switching direct current electrical circuits. The sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

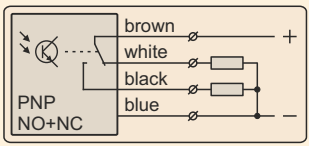
Technical parameters

Operating distance, *Sn*	0...20 m
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*	25 mA (16mA / T + 9mA / R)
Switching frequency (max), *fo*	250 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...180'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm², L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	4x0.25 mm², L=2 m, PVC
Overall dimensions	60x36x15 mm
Housing - plastic	PA6 (Polyamide)
Full protection to 40V: Protection from improper inclusion, overcurrent and short-circuit at the outputs.	

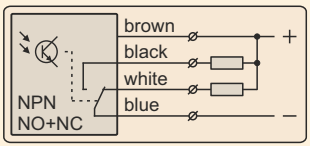
Type parameters

Type	Output function	Scheme of connection
OBP3-60.10.FKL	PNP / NO+NC	10
OBP3-60.20.FKL	NPN / NO+NC	20
OBP3-60.63.F	Transmitter	63

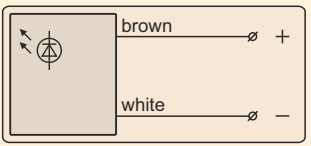
Schemes of connection



Scheme 10



Scheme 20



Scheme 63

M30 thru-beam photoelectric sensor for direct current

OBP1-30/L

fig.1

Application and operating principle

The presented M30/L thru-beam photoelectric sensor is used for operation in a wide range of ambient light - from dark to direct sunlight without changing its sensitivity and operating distance (Sn). Can be used indoors and outdoors. It is designed for switching direct current electrical circuits. The sensor is a system of two housings - transmitter and receiver, located opposite each other. They are interconnected by a modulated infrared light beam. When an object passes between the emitter and the receiver, the light beam is interrupted and the output of the receiver is switched from one state to another. The receiver output indicator lights up when the receiver output is active.

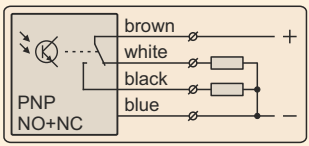
Technical parameters

Operating distance, *Sn*	0...50 m
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*	27 mA (18mA / T + 9mA / R)
Switching frequency (max), *fo*	100 Hz
Spectrum area of operating	850…950 nm
Operating ambient illumination	0...180'000 Lx
Operating temperature range, *Tamb*	-25º…+70ºC
Degree of protection	IP65
Output light indicator	LED
Joining - cable “LIYY” (grey) - transmitter	2x0.25 mm², L=2 m, PVC
Joining - cable “LIYY” (grey) - receiver	4x0.25 mm², L=2 m, PVC
Overall dimensions	M30x1.5, L=80 mm
Housing - plastic	PVC
Full protection to 40V:	
Protection from improper inclusion, overcurrent and short-circuit at the outputs.	

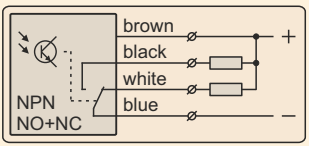
Type parameters

Type	Output function	Scheme of connection
OBP1-30.10.FKL	PNP / NO+NC	10
OBP1-30.20.FKL	NPN / NO+NC	20
OBP1-30.63.F	Transmitter	63

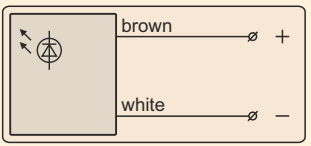
Schemes of connection



Scheme 10

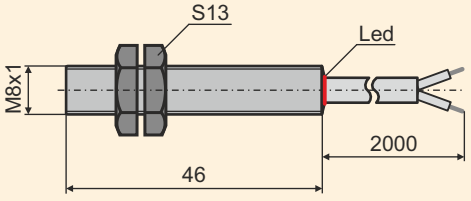


Scheme 20

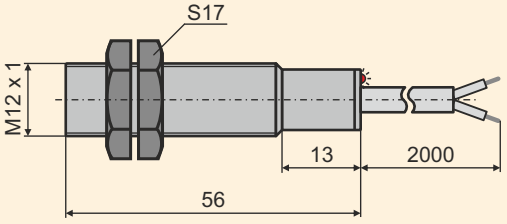


Scheme 63

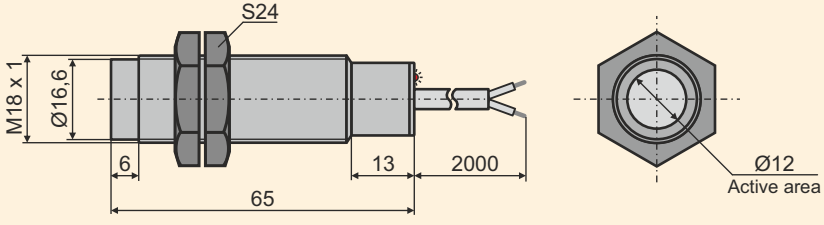
M8



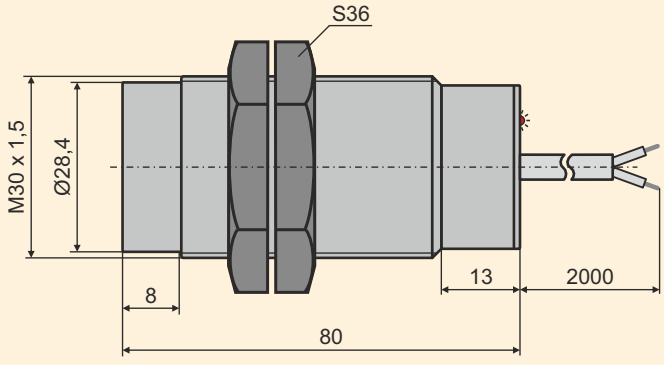
M12



M18



M30



OBP3-60