

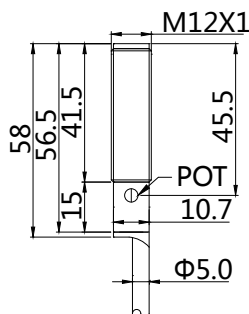


**Features :**

- Diffuse type,DC4-wire discrete output;
- Cable & connector versions;
- M12\*1mm,plastic/Brass ,nickel-plated housing;
- VDE safety class:III;
- Ingress protection:IP66

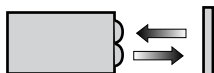


**Dimensioned drawing**



**Background suppression**

Diffuse type sensors



Diffuse reflection type photoelectric sensor principle and the principle of mirror reflection type photoelectric sensor is the same, but it doesn't take reflective lenses. The light emitted by the transmitter directly sends back receiver by the analyte. Receiver estimates detection of objects reflected back to the light rays, the positioning of objects is not very strict. When object under test enters into effective light rays area, output state changes. The detection range depends on object under test size, shape, color and surface properties.

**Model No.**

Housing material	PBT	Brass, nickel-plated
NPN Light/Dark-on	FM12-T02N-P31P2	FM12-T02N-C31P2
PNP Light/Dark-on	FM12-T02P-P31P2	FM12-T02P-C31P2

**Technical data**

<b>Electrical data</b>	Operating voltage	10-30V DC
	Switching frequency	500Hz
	Light type	Infrared light 880nm
	Response time	<2ms
	Load current	≤150mA
	Power-up delay	<300ms
	Adjustment	Single-turn potentiometer
<b>Environment</b>	Light immunity	<5000Lux.
	Ambient temperature	-25...55°C
	Ambient humidity	35-85%
<b>Mechanical data</b>	Housing material	Brass, nickel-plated/PBT
	Lens material	PMMA
	Operating indicator	Yellow
<b>Electrical connection</b>	Connectors	PVC cable/2m; 4*0.25mm <sup>2</sup>
<b>Accessories</b>	Accessories	NO
		(to be ordered separately)

**Wiring**



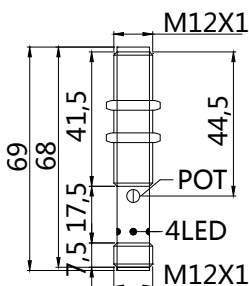


**Features :**

- Diffuse type,DC4-wire discrete output;
- Cable & connector versions;
- M12\*1mm,plastic/Brass ,nickel-plated housing;
- VDE safety class:III;
- Ingress protection:IP66



**Dimensioned drawing**

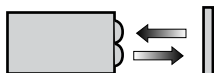


**Model No.**

Housing material	PBT	Brass, nickel-plated
NPN Light/Dark-on	FM12-T02N-P31S12	FM12-T02N-C31S12
PNP Light/Dark-on	FM12-T02P-P31S12	FM12-T02P-C31S12

**Background suppression**

Diffuse type sensors

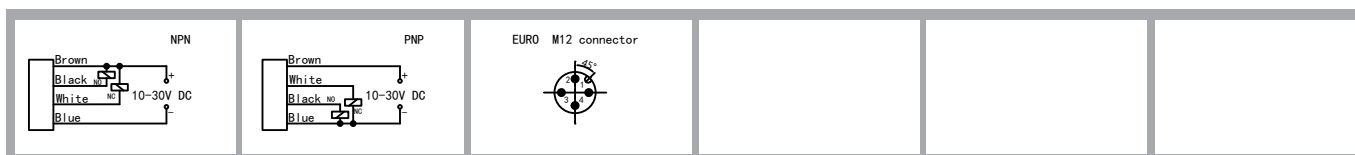


Diffuse reflection type photoelectric sensor principle and the principle of mirror reflection type photoelectric sensor is the same, but it doesn't take reflective lenses. The light emitted by the transmitter directly sends back receiver by the analyte. Receiver estimates detection of objects reflected back to the light rays, the positioning of objects is not very strict. When object under test enters into effective light rays area, output state changes. The detection range depends on object under test size, shape, color and surface properties.

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	Power-up delay	<300ms
	Adjustment	Single-turn potentiometer
<b>Environment</b>	Light immunity	<5000Lux.
	Ambient temperature	-25...55°C
	Ambient humidity	35-85%
<b>Mechanical data</b>	Housing material	Brass, nickel-plated/PBT
	Lens material	PMMA
	Operating indicator	Yellow
<b>Electrical connection</b>	Connectors	M12 connector
<b>Accessories</b>	Accessories	B12-4GV2/B12-4WV2 (to be ordered separately)

**Wiring**



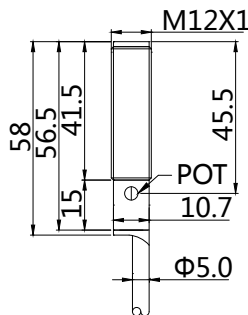


**Features :**

- Retro-reflective,DC4-wire discrete output;
- Cable & connector versions;
- M12\*1mm,plastic/Brass ,nickel-plated housing;
- VDE safety class:III;
- Ingress protection:IP66



**Dimensioned drawing**

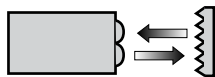


**Model No.**

Housing material	PBT	Brass, nickel-plated
NPN Light/Dark-on	FM12-R2N-P31P2	FM12-R2N-C31P2
PNP Light/Dark-on	FM12-R2P-P31P2	FM12-R2P-C31P2

**Background suppression**

**Retro-reflective sensors**



Retro-reflective sensor put transmitter and receiver encapsulated into same shell, in the opposite install aspect, the light emitted by the reflector is reflected through the reflector back to the receiver.

When the beam is occlusion, generate a switch changes.

**Technical data**

<b>Electrical data</b>	Operating voltage	10-30V DC
	Switching frequency	500Hz
	Light type	Infrared light 880nm
	Response time	<2ms
	Load current	≤150mA
	Power-up delay	<300ms
	Adjustment	Single-turn potentiometer
<b>Environment</b>	Blind distance	<20cm
	Light immunity	<5000Lux.
	Ambient temperature	-25...55°C
<b>Mechanical data</b>	Ambient humidity	35-85%
	Housing material	Brass, nickel-plated/PBT
	Lens material	PMMA
<b>Electrical connection</b>	Operating indicator	Yellow
	Connectors	PVC cable/2m;4*0.25mm <sup>2</sup>
<b>Accessories</b>	Accessories	FR-Q51
	(to be ordered separately)	

**Wiring**



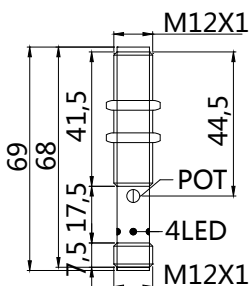


**Features :**

- Retro-reflective,DC4-wire discrete output;
- Cable & connector versions;
- M12\*1mm,plastic/Brass ,nickel-plated housing;
- VDE safety class:III;
- Ingress protection:IP66



**Dimensioned drawing**



**Model No.**

Housing material	PBT	Brass, nickel-plated
NPN Light/Dark-on	FM12-R2N-P31S12	FM12-R2N-C31S12
PNP Light/Dark-on	FM12-R2P-P31S12	FM12-R2P-C31S12

**Background suppression**

**Retro-reflective sensors**



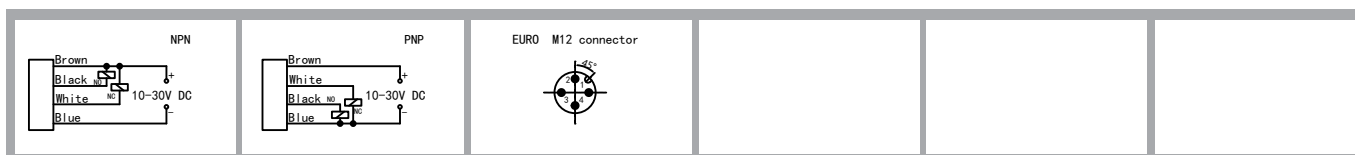
Retro-reflective sensor put transmitter and receiver encapsulated into same shell, in the opposite install aspect, the light emitted by the reflector is reflected through the reflector back to the receiver.

When the beam is occluded, generate a switch change.

**Technical data**

<b>Electrical data</b>	Operating voltage	10-30V DC
	Switching frequency	500Hz
	Light type	Infrared light 880nm
	Response time	<2ms
	Load current	≤150mA
	Power-up delay	<300ms
	Adjustment	Single-turn potentiometer
<b>Environment</b>	Blind distance	<20cm
	Light immunity	<5000Lux.
	Ambient temperature	-25...55°C
<b>Mechanical data</b>	Ambient humidity	35-85%
	Housing material	Brass, nickel-plated/PBT
	Lens material	PMMA
<b>Electrical connection</b>	Operating indicator	Yellow
	Connectors	M12 connector
<b>Accessories</b>	Accessories	B12-4GV2/B12-4WV2/FR-Q51
		(to be ordered separately)

**Wiring**



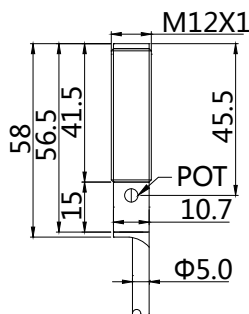


**Features :**

- Through-beam,Emitter/receiver set,DC3-wire discrete output;
- Cable & connector versions;
- M12\*1mm,plastic/Brass ,nickel-plated housing;
- VDE safety class:III;
- Ingress protection:IP66



**Dimensioned drawing**



**Background suppression**

**Through-beam sensors**



Through-beam photoelectric sensors has independent transmitters and receivers,structure two are separated from each other,the emitter(E)directly transmitted to the receiver(R).At the time of installation,must be bothaligned establish light path. No matter any objectblocking the light,the voltage of the receiver drops,switch changes.

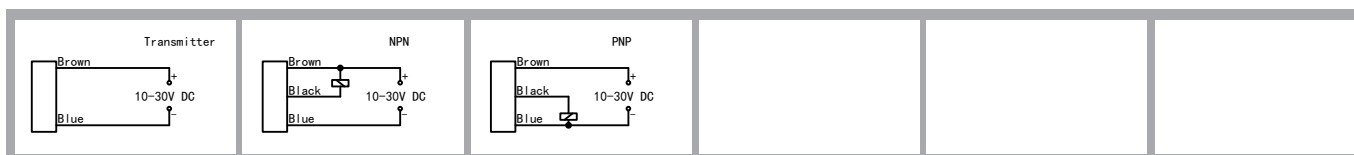
**Model No.**

Housing material	PBT	Brass, nickel-plated
Transmitter	FM12-L52D-P51P2	FM12-L52D-C51P2
NPN Dark-on	FM12-L52N-P11P2	FM12-L52N-C11P2
NPN Light-on	FM12-L52N-P21P2	FM12-L52N-C21P2
PNP Dark-on	FM12-L52P-P11P2	FM12-L52P-C11P2
PNP Light-on	FM12-L52P-P21P2	FM12-L52P-C21P2

**Technical data**

<b>Electrical data</b>	Operating voltage	10-30V DC
	Switching frequency	500Hz
	Light type	Infrared light 880nm
	Response time	<2ms
	Load current	≤150mA
	Power-up delay	<300ms
	Adjustment	Single-turn potentiometer
<b>Environment</b>	Light immunity	<5000Lux.
	Ambient temperature	-25...55°C
	Ambient humidity	35-85%
<b>Mechanical data</b>	Housing material	Brass,nickel-plated/PBT
	Lens material	PMMA
	Operating indicator	Yellow
<b>Electrical connection</b>	Connectors	PVC cable/2m;3*0.35mm <sup>2</sup>
<b>Accessories</b>	Accessories	NO
		(to be ordered separately)

**Wiring**



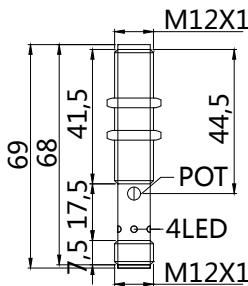


#### Features :

- Through-beam,Emitter/receiver set,DC3-wire discrete output;
- Cable & connector versions;
- M12\*1mm,plastic/Brass ,nickel-plated housing;
- VDE safety class:III;
- Ingress protection:IP66



#### Dimensioned drawing



#### Background suppression

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Through-beam photoelectric sensors has independent transmitters and receivers,structure two are separated from each other,the emitter(E)directly transmitted to the receiver(R).At the time of installation,must be bothaligned establish light path. No matter any objectblocking the light,the voltage of the receiver drops,switch changes.

#### Model No.

Housing material	PBT	Brass, nickel-plated
Transmitter	FM12-L52D-P51S12	FM12-L52D-C51S12
NPN Dark-on	FM12-L52N-P11S12	FM12-L52N-C11S12
NPN Light-on	FM12-L52N-P21S12	FM12-L52N-C21S12
PNP Dark-on	FM12-L52P-P11S12	FM12-L52P-C11S12
PNP Light-on	FM12-L52P-P21S12	FM12-L52P-C21S12

#### Technical data

<b>Electrical data</b>	Operating voltage	10-30V DC
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<b>Mechanical data</b>	Housing material	Brass,nickel-plated/PBT
	Lens material	PMMA
	Operating indicator	Yellow
<b>Electrical connection</b>	Connectors	M12 connector
	<b>Accessories</b>	Accessories

#### Wiring

