

# Photoelectrics Diffuse-reflective Types ED 5502/5506

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- Range: 200 or 600 mm
- Adjustable sensitivity
- Modulated, infrared light
- Rated operational voltage: 10 to 30 VDC
- Output: DC 200 mA, NPN or PNP
- Make and break switching function, LED indication
- High immunity to ambient light
- Photoelectric, inductive and capacitive flat pack series in PC housing, IP 67
- Cable or M12 plug versions



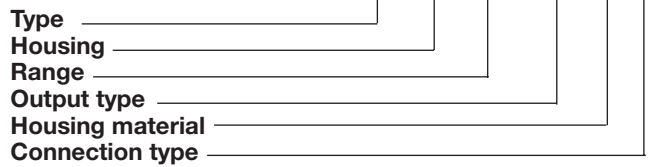
## Product Description

Diffuse-reflective photoelectric with sensing distance up to 600 mm. Easily adjustable sensitivity with 270° potentiometer. LED indication for output ON. Flat pack housing

size (W x H x D) 35 x 55 x 15 mm made in polycarbonate. Easy mounting with only two M3.5 screws. Ideal for use in conveying and material handling applications

## Ordering Key

**ED 55 06 NPA P-1**



## Type Selection

Housing diameter W x H x D	Rated operating dist. (S <sub>n</sub> )	Ordering no. NPN/cable Make & break swit.	Ordering no. NPN/plug Make & break swit.	Ordering no. PNP/cable Make & break swit.	Ordering no. PNP/plug Make & break swit.
35 x 55 x 15	200 mm 600 mm	<b>ED 5502 NPAP</b> <b>ED 5506 NPAP</b>	<b>ED 5502 NPAP-1</b> <b>ED 5506 NPAP-1</b>	<b>ED 5502 PPAP</b> <b>ED 5506 PPAP</b>	<b>ED 5502 PPAP-1</b> <b>ED 5506 PPAP-1</b>

## Specifications

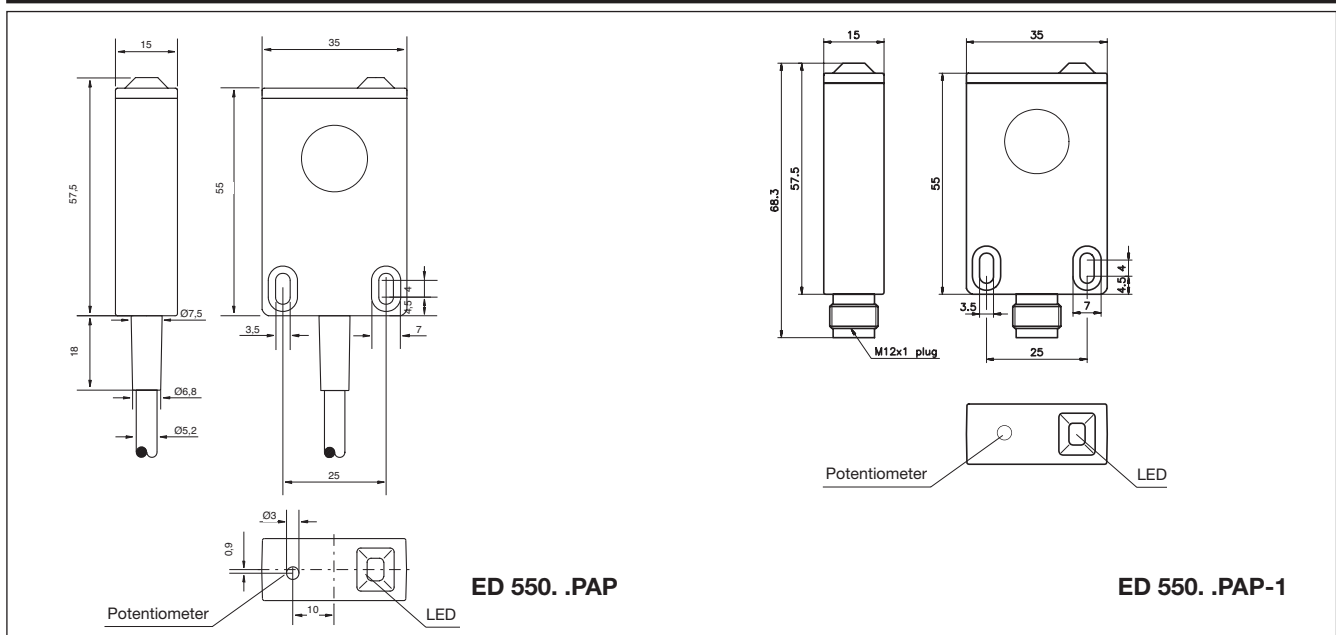
<b>Rated operating dist. (S<sub>n</sub>)</b>	<b>ED 5502</b> Up to 200 mm <b>ED 5506</b> Up to 600 mm Reference target: Kodak test card R27, white, 90% reflectivity <b>ED 5502</b> 100 x 100 mm <b>ED 5506</b> 200 x 200 mm	<b>Protection</b>	Reverse polarity, short-circuit, transients
<b>Adjustable range</b>	<b>ED 5502</b> 50 to 200 mm <b>ED 5506</b> 150 to 600 mm	<b>Transient voltage</b>	Max. 1 kV/0.5 J
<b>Temperature drift</b>	0.5%/°C	<b>Sensitivity</b>	Adjustable, 270° turn potentiometer
<b>Hysteresis (H)</b> (Differential travel)	< 20%	<b>Light source</b> <b>Light type</b>	GaAlAs LED, 880 nm Infrared, modulated, synchronized
<b>Rated operational volt. (U<sub>B</sub>)</b>	10 to 30 VDC (ripple included)	<b>Sensing angle</b> <b>Ambient light</b>	± 25° at 1/2 range Max. 10,000 lux
<b>Ripple (U<sub>rip</sub>)</b>	≤ 10%	<b>Operating frequency (f)</b>	<b>ED 5502</b> 500 Hz, light/dark ratio 1:2 <b>ED 5506</b> 100 Hz, light/dark ratio 1:2
<b>Output current</b> Continuous (I <sub>a</sub> ) Short-time (I) Max. load capacity	≤ 200 mA 200 mA 100 nF	<b>Response time</b> OFF-ON (t <sub>ON</sub> ) ON-OFF (t <sub>OFF</sub> )	<b>ED 5502</b> ≤ 0.67 ms <b>ED 5506</b> ≤ 4 ms <b>ED 5502</b> ≤ 1.33 ms <b>ED 5506</b> ≤ 6 ms
<b>No load supply current (I<sub>o</sub>)</b>	≤ 30 mA,	<b>Power ON delay (t<sub>v</sub>)</b>	Typ. 100 ms
<b>Min. load current (I<sub>m</sub>)</b>	0.5 mA	<b>Indication</b> Output ON	LED, yellow (indicates the present of a target or object)
<b>OFF-state current (I<sub>i</sub>)</b>	≤ 100 μA	<b>Environment</b>	
<b>Voltage drop (U<sub>d</sub>)</b>	≤ 2.5 V	Overvoltage category Pollution degree Degree of protection	III (IEC 60664/664A; 60947-1) 3 (IEC 60664/664A; 60947-1) IP 67 (IEC 60529; 60947-1)



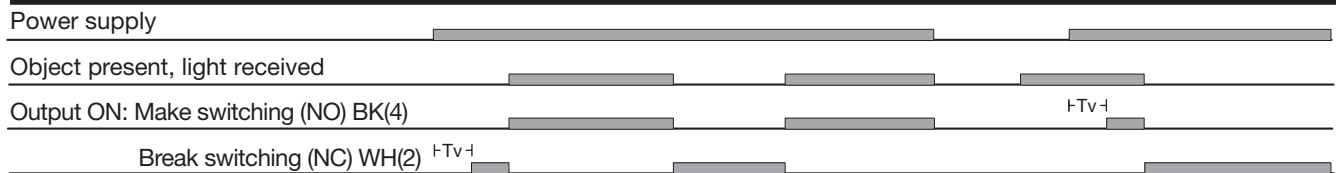
## Specifications (cont.)

<b>Temperature</b> Operating Storage	-20° to +60°C (-4° to +140°F) -30° to +70°C (-22° to +158°F)	<b>Connection</b> Cable	Grey, 2 m, oilproof PVC, 4 x 0.34 mm <sup>2</sup>
<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	<b>Note:</b> Plug (-1)	Other cable lengths on request M12, CONH1A-.. serie
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)	<b>Weight</b>	125 g cable version 40 g plug version
<b>Dielectric voltage</b>	500 VAC (rms)	<b>CE-marking</b>	Yes
<b>Housing material</b>	Polycarbonate, black		

## Dimensions



## Operation Diagram



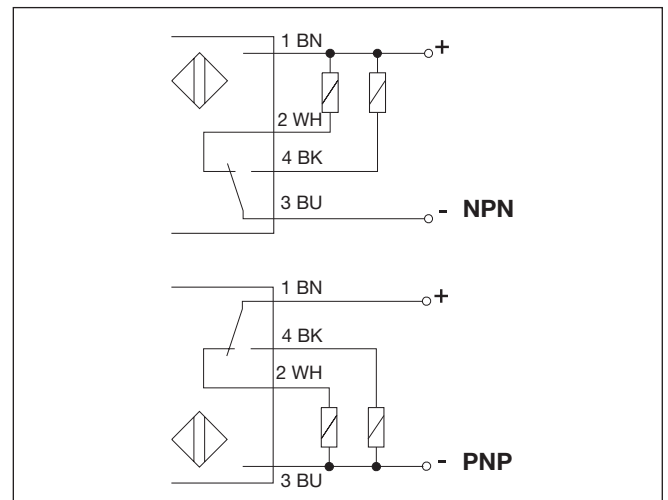
## Installation Hints

<p>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</p>	<p>Relief of cable strain</p> <p>Incorrect</p> <p>Correct</p> <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p> <p>A proximity switch should not serve as mechanical stop</p>	<p>Switch mounted on mobile carrier</p> <p>Any repetitive flexing of the cable should be avoided</p>
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## Truth Table

	Make switching		Break switching	
	No	Yes	No	Yes
Object present	No	Yes	No	Yes
DC types				
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active
Output NPN	High	Low	Low	High
Output PNP	Low	High	High	Low

## Wiring Diagrams



## Accessories

- Connector type CON.1A../CON.14NF.. series

## Delivery Contents

- Photoelectric switch: ED 550. ....
- Screw driver
- Packaging: plastic bag