



Photoelectric sensors  
W34, Through-beam photoelectric sensor

WS/WE34-B440



**Model Name** > [WS/WE34-B440](#)  
**Part No.** > [1019255](#)



*Illustration may differ*

**At a glance**

- High operating reserve at a long range
- Switch selectable PNP or NPN output and light/dark switching
- Versions with DC voltage (10...30V) or universal AC/DC voltage (12 ... 240 V DC / 24 ... 240 V AC)
- Optional test input, adjustable ON and OFF time delays, alarm output
- M12 or terminal chamber connection: 90° rotatable
- UL approval

**Your benefits**

- High operating reserve at a long range minimizes downtime
- Alarm output provides early warning that maintenance may be needed
- Test input allows users to validate that the sensor is operating as expected
- The sensor cover protects configuration components against environmental hazards
- Adjustable time delay, alarm output, test input, and universal AC/DC voltage provide additional flexibility and reduce the number of part numbers needed



**Features**

Sensor/detection principle:	Through-beam photoelectric sensor
Dimensions (W x H x D):	27 mm x 92 mm x 70 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 60 m
Sensing range:	0 m ... 60 m
Type of light:	Visible red light
Light source:	LED <sup>1)</sup>
Wave length:	660 nm
Sensitivity adjustment:	Potentiometer
Time type:	Time delay off, Switch on delay, Adjustable
Delay time:	Adjustable via time delay selector switch: 0.5 ... 10 s
Light spot size (distance):	Ø 700 mm (50 m)

<sup>1)</sup> Average service life 100,000 h at Ta = +25 °C

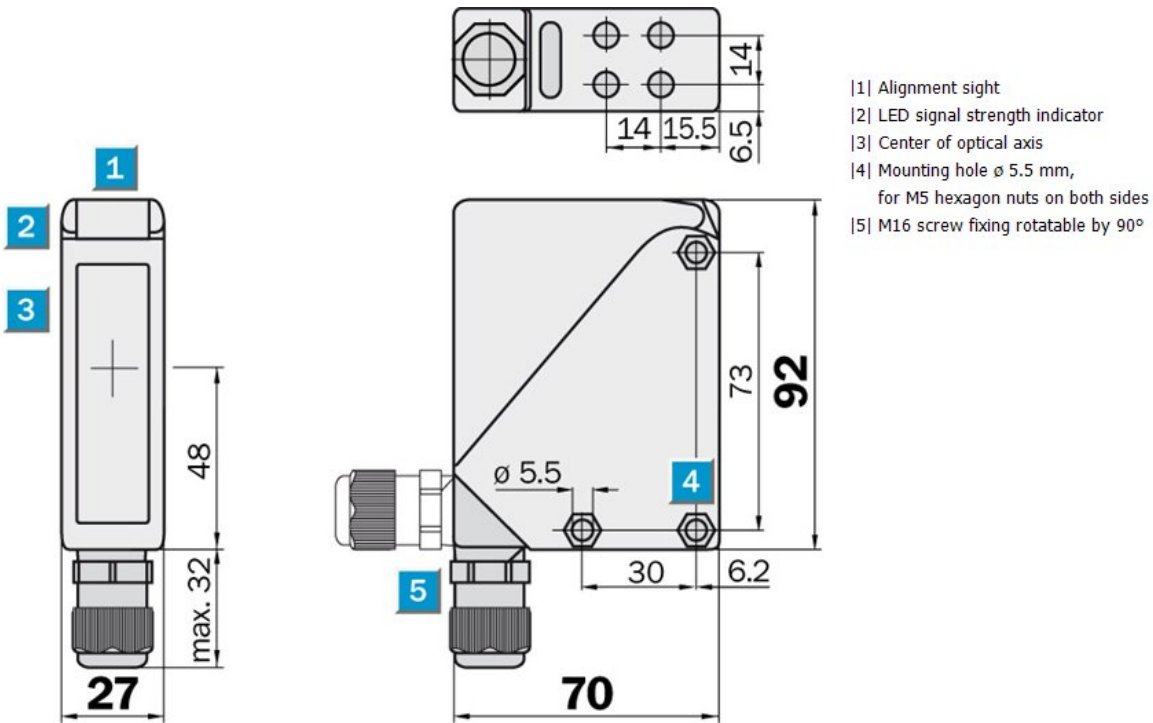
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	< 5 Vpp <sup>2)</sup>

Power consumption, sender:	50 mA
Power consumption, receiver:	40 mA
Output type:	NPN, PNP
Switching mode:	Dark-switching, Light switching
Switching mode selector:	Selectable via light/dark selector, Selectable via PNP/NPN selector
Output current I <sub>max</sub> :	100 mA
Response time:	≤ 500 μs <sup>3)</sup>
Switching frequency:	1,000 Hz <sup>4)</sup>
Angle of dispersion:	Ca. 1 °
Angle of reception:	Ca. 2.5 °
Connection type:	Connector M12, 4-pin <sup>5)</sup>
Circuit protection:::	A, C, D <sup>6) 7) 8)</sup>
Protection class:	II <sup>9)</sup>
Weight:	280 g
Special device:	-
Housing material:	ABS, Plastic
Enclosure rating:	IP 67
Test input sender off:	TE to 0 V
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File-No.:	UL No. NRKH.E181493 & cUL No. NRKH7.E181493
Part number of individual components:	Receiver, WE34-B440, 2022812, Sender, WS34-D440, 2022820

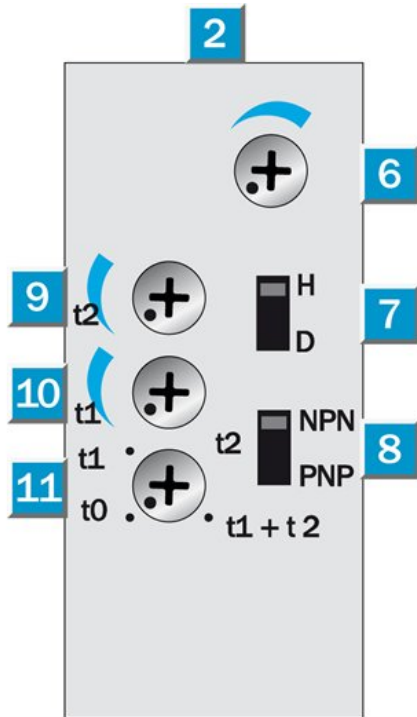
<sup>1)</sup> Limit values    <sup>2)</sup> May not exceed or fall short of  $V_S$     <sup>3)</sup> Signal transit time with resistive load    <sup>4)</sup> With light/dark ratio 1:1    <sup>5)</sup> Connection rotatable by 90°    <sup>6)</sup> A =  $V_S$   
connections reverse-polarity protected    <sup>7)</sup> C = interference suppression    <sup>8)</sup> D = outputs overcurrent and short-circuit protected    <sup>9)</sup> Reference voltage 50 V DC

**Dimensional drawing**



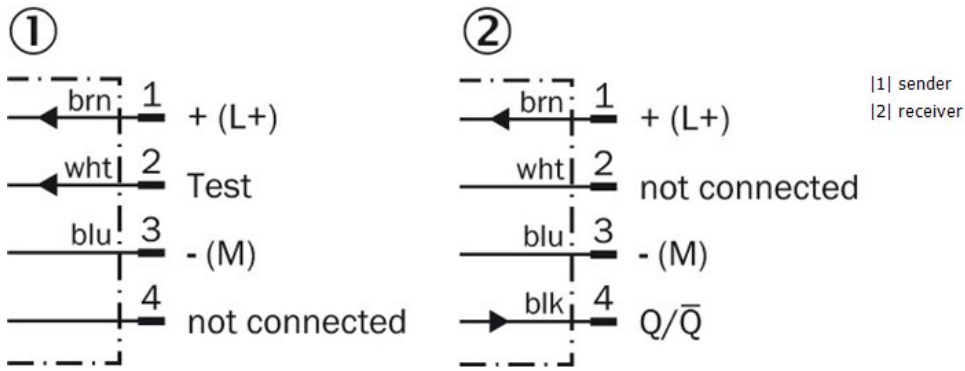
- |1| Alignment sight
- |2| LED signal strength indicator
- |3| Center of optical axis
- |4| Mounting hole  $\varnothing 5.5$  mm, for M5 hexagon nuts on both sides
- |5| M16 screw fixing rotatable by 90°

**Adjustments possible**

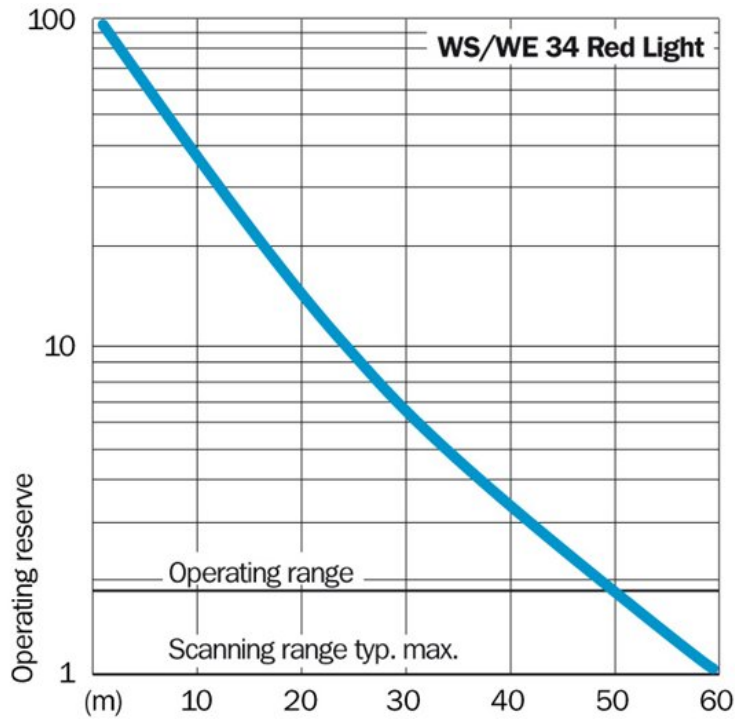


- |2| LED signal strength indicator
- |6| Sensitivity adjustment
- |7| Light/dark selector
- |8| NPN/ PNP selector
- |9| Time control  $t_2$ =OFF-delay
- |10| Time control  $t_1$ =ON-delay
- |11| Status indicator

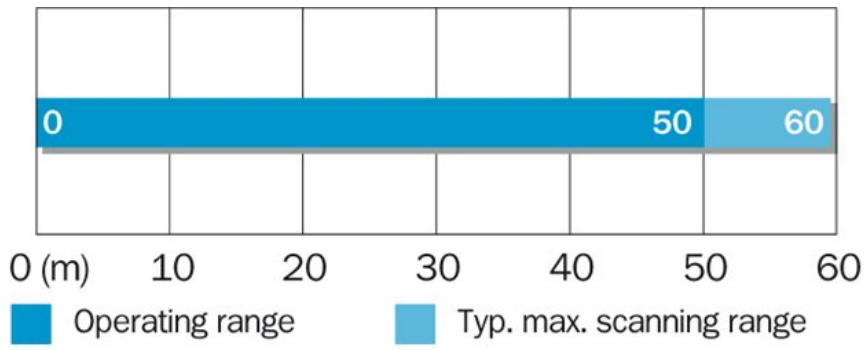
Connection diagram



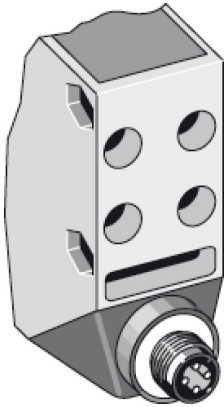
Characteristic curve



### Sensing range diagram



### Connection type



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