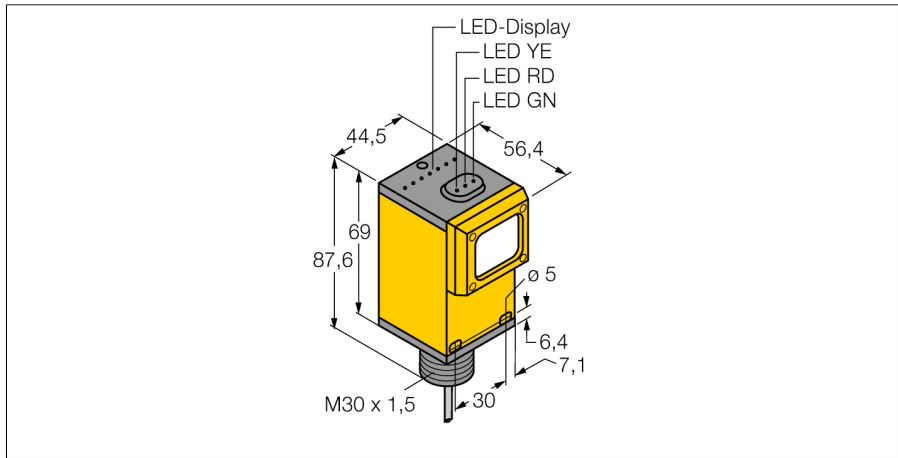
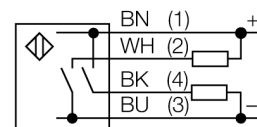


**Photoelectric sensor  
convergent mode sensor  
Q45BB6CV4**



- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjusted via potentiometer
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light or dark operation, adjusted via switch

**Wiring diagram**



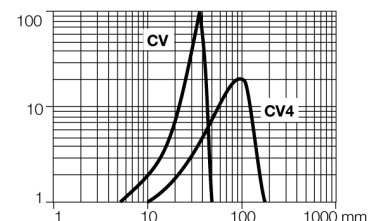
<b>Type code</b>	Q45BB6CV4
Ident no.	3036837
<b>Operating mode</b>	convergent mode sensor
Light type	red
Wavelength	680 nm
Focal distance	100 mm
Ambient temperature	-40...+70 °C
<b>Operating voltage</b>	10...30VDC
Residual ripple	< 10 % U <sub>s</sub>
No-load current I <sub>0</sub>	≤ 50 mA
Short-circuit protection	yes
Reverse polarity protection	yes
Output function	NO contact, PNP/NPN
Switching frequency	≤ 250 Hz
Readiness delay	≤ 100 ms
Overcurrent release	> 220 mA
<b>Design</b>	rectangular, Q45
Dimensions	56.4 x 44.5 x 87.6 mm
Housing material	plastic, PBT
Lens	plastic, acrylic
Connection	cable, PVC
Cable length	2 m
Cable cross section	4 x 0.34 mm <sup>2</sup>
Protection class	IP67
MTTF	67 years acc. to SN 29500 (Ed. 99) 40 °C
<b>Power-on indication</b>	LED green
Switching state	LED yellow
Error indication	LED green flashing
Excess gain indication	LED red

**Functional principle**

Convergent mode sensors are equipped with a lens in front of the emitter diode that produces a small and intense focal point at a defined distance from the sensor. Similar to diffuse mode sensors, the light reflected by the target is evaluated. Convergent mode sensors are ideal for detection of small targets or colour marks and edge guiding or positioning control of transparent materials. The targets must always be within the focal depth of the sensors. The focal depth is defined as the area in front of or behind the focal point within which the object can be detected. Based on the intense light concentration in the focal point, convergent mode sensors are capable of detecting targets with a low reflectivity.

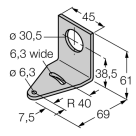
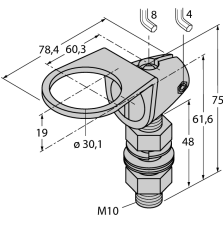
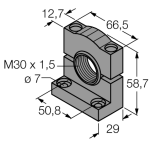
**Excess gain curve**

Excess gain in relation to the distance



**Photoelectric sensor  
convergent mode sensor  
Q45BB6CV4**

**Accessories**

Type code	Ident no.	Description	Dimension drawing
SMB30A	3032723	Mounting bracket, stainless steel, for sensors with 30 mm thread	 <p>Technical drawing of the SMB30A mounting bracket. Dimensions include: top width 45, hole diameter <math>\varnothing 30,5</math>, hole width 6,3, hole offset 6,3, hole depth 38,5, hole diameter <math>\varnothing 6,3</math>, hole offset 7,5, hole diameter <math>\varnothing 69</math>, and a radius R 40.</p>
SMB30FAM10	3011185	Mounting bracket, stainless steel, for M10 x 1.5 thread, thread length 30 mm	 <p>Technical drawing of the SMB30FAM10 mounting bracket. Dimensions include: top width 78,4, hole diameter <math>\varnothing 60,3</math>, hole offset 19, hole diameter <math>\varnothing 30,1</math>, hole offset 19, hole diameter <math>\varnothing 48</math>, hole offset 61,6, hole diameter <math>\varnothing 75</math>, and a thread of M10.</p>
SMB30SC	3052521	Mounting bracket, PBT black; for 30 mm thread; with 4 screws M5 x 0.8	 <p>Technical drawing of the SMB30SC mounting bracket. Dimensions include: top width 12,7, hole diameter <math>\varnothing 66,5</math>, hole offset 58,7, hole diameter <math>\varnothing 7</math>, hole offset 50,8, and a width of 29.</p>