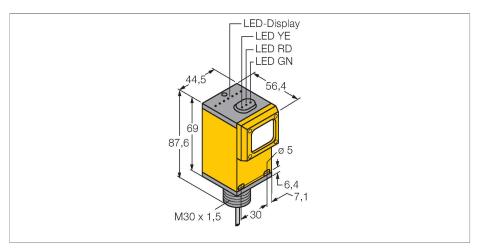


# Q45BW13D W/30 Photoelectric Sensor – Diffuse Mode Sensor



#### Technical data

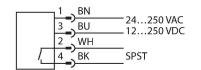
ID         3068842           Optical data         Function           Function         Proximity switch           Operating mode         Diffuse           Light type         IR           Wavelength         880 nm           Range         0450 mm           Electrical data         0450 mm           Operating voltage         12250 VDC           Operating voltage         24250 VAC           Output function         NO contact, Relay output           Switching frequency         ≤ 33 Hz           Readiness delay         ≤ 100 ms           Mechanical data         Design           Design         Rectangular, Q45           Dimensions         56.4 x 44.5 x 87.6 mm           Housing material         Plastic, PBT           Lens         plastic, Acrylic           Electrical connection         Cable, 2 m, PVC           Number of cores         4           Core cross-section         0.34 mm²           Ambient temperature         -25+55 °C           Protection class         IP67           Power-on indication         LED, Green           Switching state         LED, yellow           Error indication         LED, green	Туре	Q45BW13D W/30
Function Proximity switch  Operating mode Diffuse  Light type IR  Wavelength 880 nm  Range 0450 mm  Electrical data  Operating voltage 12250 VDC  Operating voltage 24250 VAC  Output function NO contact, Relay output  Switching frequency ≤ 33 Hz  Readiness delay ≤ 100 ms  Mechanical data  Design Rectangular, Q45  Dimensions 56.4 x 44.5 x 87.6 mm  Housing material Plastic, PBT  Lens plastic, Acrylic  Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	ID	3068842
Operating mode         Diffuse           Light type         IR           Wavelength         880 nm           Range         0450 mm           Electrical data         0perating voltage           Operating voltage         12250 VDC           Output function         NO contact, Relay output           Switching frequency         ≤ 33 Hz           Readiness delay         ≤ 100 ms           Mechanical data         Pesign           Design         Rectangular, Q45           Dimensions         56.4 x 44.5 x 87.6 mm           Housing material         Plastic, PBT           Lens         plastic, Acrylic           Electrical connection         Cable, 2 m, PVC           Number of cores         4           Core cross-section         0.34 mm²           Ambient temperature         -25+55 °C           Protection class         IP67           Power-on indication         LED, Green           Switching state         LED, Yellow	Optical data	
Light type         IR           Wavelength         880 nm           Range         0450 mm           Electrical data         0 contact, 80 VDC           Operating voltage         24250 VAC           Output function         NO contact, Relay output           Switching frequency         ≤ 33 Hz           Readiness delay         ≤ 100 ms           Mechanical data         Pesign           Design         Rectangular, Q45           Dimensions         56.4 x 44.5 x 87.6 mm           Housing material         Plastic, PBT           Lens         plastic, Acrylic           Electrical connection         Cable, 2 m, PVC           Number of cores         4           Core cross-section         0.34 mm²           Ambient temperature         -25+55 °C           Protection class         IP67           Power-on indication         LED, Green           Switching state         LED, Yellow	Function	Proximity switch
Wavelength         880 nm           Range         0450 mm           Electrical data         0450 mm           Operating voltage         12250 VDC           Operating voltage         24250 VAC           Output function         NO contact, Relay output           Switching frequency         ≤ 33 Hz           Readiness delay         ≤ 100 ms           Mechanical data         Design           Design         Rectangular, Q45           Dimensions         56.4 x 44.5 x 87.6 mm           Housing material         Plastic, PBT           Lens         plastic, Acrylic           Electrical connection         Cable, 2 m, PVC           Number of cores         4           Core cross-section         0.34 mm²           Ambient temperature         -25+55 °C           Protection class         IP67           Power-on indication         LED, Green           Switching state         LED, Yellow	Operating mode	Diffuse
Range 0450 mm  Electrical data Operating voltage 12250 VDC Operating voltage 24250 VAC Output function NO contact, Relay output Switching frequency ≤ 33 Hz Readiness delay ≤ 100 ms  Mechanical data Design Rectangular, Q45 Dimensions 56.4 x 44.5 x 87.6 mm  Housing material Plastic, PBT Lens plastic, Acrylic Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm² Ambient temperature -25+55 °C  Protection class IP67 Power-on indication LED, Green Switching state LED, Yellow	Light type	IR
Electrical data  Operating voltage  12250 VDC  Operating voltage  24250 VAC  Output function  NO contact, Relay output  Switching frequency  ≤ 33 Hz  Readiness delay  ≤ 100 ms  Mechanical data  Design  Rectangular, Q45  Dimensions  56.4 x 44.5 x 87.6 mm  Housing material  Plastic, PBT  Lens  plastic, Acrylic  Electrical connection  Cable, 2 m, PVC  Number of cores  4  Core cross-section  0.34 mm²  Ambient temperature  -25+55 °C  Protection class  IP67  Power-on indication  LED, Green  Switching state  LED, Yellow	Wavelength	880 nm
Operating voltage       12250 VDC         Operating voltage       24250 VAC         Output function       NO contact, Relay output         Switching frequency       ≤ 33 Hz         Readiness delay       ≤ 100 ms         Mechanical data       Rectangular, Q45         Dimensions       56.4 x 44.5 x 87.6 mm         Housing material       Plastic, PBT         Lens       plastic, Acrylic         Electrical connection       Cable, 2 m, PVC         Number of cores       4         Core cross-section       0.34 mm²         Ambient temperature       -25+55 °C         Protection class       IP67         Power-on indication       LED, Green         Switching state       LED, Yellow	Range	0450 mm
Operating voltage       24250 VAC         Output function       NO contact, Relay output         Switching frequency       ≤ 33 Hz         Readiness delay       ≤ 100 ms         Mechanical data       Pesign         Design       Rectangular, Q45         Dimensions       56.4 x 44.5 x 87.6 mm         Housing material       Plastic, PBT         Lens       plastic, Acrylic         Electrical connection       Cable, 2 m, PVC         Number of cores       4         Core cross-section       0.34 mm²         Ambient temperature       -25+55 °C         Protection class       IP67         Power-on indication       LED, Green         Switching state       LED, Yellow	Electrical data	
Output function       NO contact, Relay output         Switching frequency       ≤ 33 Hz         Readiness delay       ≤ 100 ms         Mechanical data	Operating voltage	12250 VDC
Switching frequency ≤ 33 Hz   Readiness delay ≤ 100 ms   Mechanical data Rectangular, Q45   Dimensions 56.4 x 44.5 x 87.6 mm   Housing material Plastic, PBT   Lens plastic, Acrylic   Electrical connection Cable, 2 m, PVC   Number of cores 4   Core cross-section 0.34 mm²   Ambient temperature -25+55 °C   Protection class IP67   Power-on indication LED, Green   Switching state LED, Yellow	Operating voltage	24250 VAC
Readiness delay ≤ 100 ms  Mechanical data  Design Rectangular, Q45  Dimensions 56.4 x 44.5 x 87.6 mm  Housing material Plastic, PBT  Lens plastic, Acrylic  Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Output function	NO contact, Relay output
Mechanical data  Design Rectangular, Q45  Dimensions 56.4 x 44.5 x 87.6 mm  Housing material Plastic, PBT  Lens plastic, Acrylic  Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Switching frequency	≤ 33 Hz
Design Rectangular, Q45  Dimensions 56.4 x 44.5 x 87.6 mm  Housing material Plastic, PBT  Lens plastic, Acrylic  Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Readiness delay	≤ 100 ms
Dimensions 56.4 x 44.5 x 87.6 mm  Housing material Plastic, PBT  Lens plastic, Acrylic  Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Mechanical data	
Housing material  Lens  plastic, Acrylic  Electrical connection  Cable, 2 m, PVC  Number of cores  4  Core cross-section  Ambient temperature  Protection class  IP67  Power-on indication  LED, Green  Switching state  Plastic, PBT  LED, Greylic  LED, Yellow	Design	Rectangular, Q45
Lens plastic, Acrylic  Electrical connection Cable, 2 m, PVC  Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Dimensions	56.4 x 44.5 x 87.6 mm
Electrical connection  Cable, 2 m, PVC  Number of cores  4  Core cross-section  0.34 mm²  Ambient temperature  -25+55 °C  Protection class  IP67  Power-on indication  LED, Green  Switching state  LED, Yellow	Housing material	Plastic, PBT
Number of cores 4  Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Lens	plastic, Acrylic
Core cross-section 0.34 mm²  Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Electrical connection	Cable, 2 m, PVC
Ambient temperature -25+55 °C  Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Number of cores	4
Protection class IP67  Power-on indication LED, Green  Switching state LED, Yellow	Core cross-section	0.34 mm²
Power-on indication LED, Green Switching state LED, Yellow	Ambient temperature	-25+55 °C
Switching state LED, Yellow	Protection class	IP67
	Power-on indication	LED, Green
Error indication LED, green	Switching state	LED, Yellow
	Error indication	LED, green



## **Features**

- Cable, PVC, 2 m
- ■Protection class IP67
- Sensitivity adjusted via potentiometer
- Operating voltage: 12...250 VDC or 24... 250 VAC
- Relay output, NO (SPST)
- Light or dark operation, adjusted via selector switch

#### Wiring diagram



## Functional principle

Like retroreflective sensors, diffuse mode sensors also contain emitter and receiver circuitry in the same housing. However, diffuse mode sensors do not detect the interruption of the light beam but the reflection of the object. An object is detected if it reflects sufficient light back to the receiver. The switching distance of diffuse mode sensors thus largely depends on the object's reflectivity. This type of sensor is especially suited for detection of transparent objects (diffuse mode sensor with or without background suppression or convergent mode sensors).

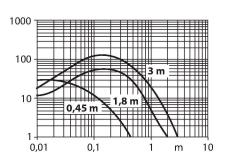
Excess gain curve

Excess gain in relation to distance

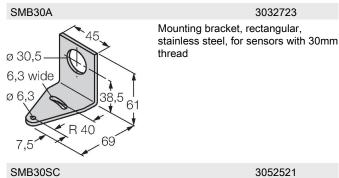


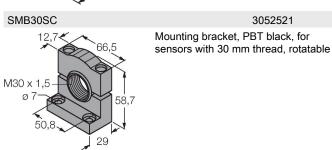
## Technical data

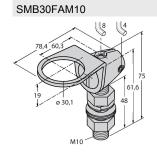
Excess gain indication	LED, red
Tests/approvals	
MTTF	67 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE, cURus, CSA



#### Accessories







3011185 Mounting bracket, stainless steel, for M10 x 1.5 thread, thread length 30 mm