

# QS30LD W/30 Photoelectric Sensor – Diffuse Mode Sensor



### Technical data

ID no. $3070232$ Optical dataProximity switchFunctionProximity switchOperating modeDiffuseLight typeRedWavelength $650 \text{ nm}$ Laser class $\triangle$ 1Beam diameter2 mmRange $0400 \text{ mm}$ Electrical data $0 \text{perating voltage}$ Operating voltage $1030 \text{ VDC}$ Residual ripple< $10 \% \text{ U}_{ss}$ DC rated operational current< $150 \text{ mA}$ No-load current< $35 \text{ mA}$ Short-circuit protectionyesQutput functionNO contact, PNP/NPNSwitching frequency< $1 \text{ s}$ Po_time total< 1 s
FunctionProximity switchOperating modeDiffuseLight typeRedWavelength $650 \text{ nm}$ Laser class $\triangle$ 1Beam diameter2 mmRange $0400 \text{ mm}$ Electrical data $0400 \text{ mm}$ Operating voltage $1030 \text{ VDC}$ Residual ripple< $10 \% U_{ss}$ DC rated operational current< $150 \text{ mA}$ No-load current< $35 \text{ mA}$ Short-circuit protectionyesQutput functionNO contact, PNP/NPNSwitching frequency< $1000 \text{ Hz}$ Readiness delay< 1 s
NumberProductOperating modeDiffuseLight typeRedWavelength $650 \text{ nm}$ Laser class $\bigtriangleup$ 1Beam diameter2 mmRange $0400 \text{ mm}$ Electrical data $0 \text{ or } 30 \text{ VDC}$ Operating voltage $1030 \text{ VDC}$ Residual ripple $< 10 \% \text{ U}_{ss}$ DC rated operational current $\leq 150 \text{ mA}$ No-load current $\leq 35 \text{ mA}$ Short-circuit protectionyesReverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency $\leq 1 \text{ s}$
Light typeRedLight typeRedWavelength $650 \text{ nm}$ Laser class $\bigtriangleup$ 1Beam diameter2 mmRange $0400 \text{ mm}$ Electrical data $0400 \text{ mm}$ Operating voltage $1030 \text{ VDC}$ Residual ripple $< 10 \% \text{ U}_{ss}$ DC rated operational current $\leq 150 \text{ mA}$ No-load current $\leq 35 \text{ mA}$ Short-circuit protectionyesQutput functionNO contact, PNP/NPNSwitching frequency $\leq 1 \text{ s}$
HypeHypeWavelength650 nmLaser class $▲$ 1Beam diameter2 mmRange0400 mmElectrical data $0400 \text{ mm}$ Operating voltage1030 VDCResidual ripple< 10 % U <sub>ss</sub> DC rated operational current $\leq$ 150 mANo-load current $\leq$ 35 mAShort-circuit protectionyesReverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency $\leq$ 100 HzReadiness delay $\leq$ 1 s
Laser class $\blacktriangle$ 1Beam diameter2 mmRange0400 mmElectrical data0Operating voltage1030 VDCResidual ripple< 10 % Uss
Beam diameter2 mmRange $0400 \text{ mm}$ Range $0400 \text{ mm}$ Electrical data $0 \text{perating voltage}$ Operating voltage $1030 \text{ VDC}$ Residual ripple $< 10 \% \text{ U}_{ss}$ DC rated operational current $\leq 150 \text{ mA}$ No-load current $\leq 35 \text{ mA}$ Short-circuit protectionyesReverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency $\leq 1000 \text{ Hz}$ Readiness delay $\leq 1 \text{ s}$
Range $0400 \text{ mm}$ Electrical data $0$ Operating voltage $1030 \text{ VDC}$ Residual ripple $< 10 \% U_{ss}$ DC rated operational current $\leq 150 \text{ mA}$ No-load current $\leq 35 \text{ mA}$ Short-circuit protectionyesReverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency $\leq 1 \text{ s}$
Electrical data      Operating voltage    1030 VDC      Residual ripple    < 10 % U <sub>ss</sub> DC rated operational current    ≤ 150 mA      No-load current    ≤ 35 mA      Short-circuit protection    yes      Reverse polarity protection    yes      Output function    NO contact, PNP/NPN      Switching frequency    ≤ 1000 Hz      Readiness delay    ≤ 1 s
Operating voltage $1030$ VDCResidual ripple< $10 \% U_{ss}$ DC rated operational current $\leq 150$ mANo-load current $\leq 35$ mAShort-circuit protectionyesReverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency $\leq 1000$ HzReadiness delay $\leq 1 s$
Residual ripple< 10 % UssDC rated operational current $\leq$ 150 mANo-load current $\leq$ 35 mAShort-circuit protectionyesReverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency $\leq$ 1000 HzReadiness delay $\leq$ 1 s
DC rated operational current    ≤ 150 mA      No-load current    ≤ 35 mA      Short-circuit protection    yes      Reverse polarity protection    yes      Output function    NO contact, PNP/NPN      Switching frequency    ≤ 1000 Hz      Readiness delay    ≤ 1 s
No-load current    ≤ 35 mA      Short-circuit protection    yes      Reverse polarity protection    yes      Output function    NO contact, PNP/NPN      Switching frequency    ≤ 1000 Hz      Readiness delay    ≤ 1 s
Short-circuit protection  yes    Reverse polarity protection  yes    Output function  NO contact, PNP/NPN    Switching frequency  ≤ 1000 Hz    Readiness delay  ≤ 1 s
Reverse polarity protectionyesOutput functionNO contact, PNP/NPNSwitching frequency≤ 1000 HzReadiness delay≤ 1 s
Output functionNO contact, PNP/NPNSwitching frequency≤ 1000 HzReadiness delay≤ 1 s
Switching frequency  ≤ 1000 Hz    Readiness delay  ≤ 1 s
Readiness delay ≤ 1 s
Readiness delay ≤ 1000 ms
Response time typical  < 0.5 ms
Setting option Push Button Remote Teach
Mechanical data
Design Rectangular with thread, QS30
Dimensions      Ø 30 x 35 x 22 x 49 mm



## Features

Cable, PVC, 9 m

Protection class IP67

- LED all-round visible
- Teach button
- 8-segment bargraph
  Operating voltage: 10, 20 VDC
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light or dark operation

## Wiring diagram



## Functional principle

The emitter and receiver are incorporated in the same housing. The light reflection of the target is detected and causes the sensor to switch. Thus the switching distance largely depends on the reflectivity of the target.

#### Excess gain curve

Excess gain in relation to the distance



### Technical data

Housing material	Plastic, Thermoplastic material, Yellow
Lens	plastic, Acrylic
Electrical connection	Cable, 9 m, PVC
Number of cores	5
Core cross-section	0.5 mm <sup>2</sup>
Ambient temperature	-10+50 °C
Protection class	IP67
Special features	keep/defer
Power-on indication	LED, Green
Switching state	LED, Yellow
Error indication	LED, green, Flashing
Excess gain indication	LED, red, flashing
Tests/approvals	
MTTF	28 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE



### Accessories

## SMBQS30Y 56 33 Ø 3,3 M18 x 1 35 26,5

3002811 Protective housing, stainless steel, for QS30 series



3072741

Protective housing with safety glas panel, stainless steel, for QS30 series

SMB30A



3032723 Mounting bracket, rectangular, stainless steel, for sensors with 30mm thread SMBQS30L



3002809 Mounting bracket, stainless steel, for QS30 series



#### SMB30MM



#### 3027162

Mounting bracket, rectangular, stainless steel, for sensors with 30 mm thread, wide holes for accurate alignment





#### 3052521

Mounting bracket, PBT black, for sensors with 30 mm thread, rotatable