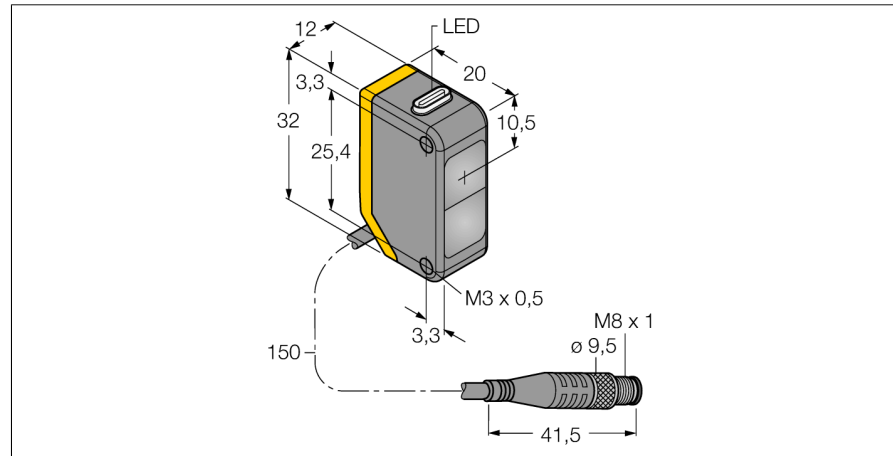
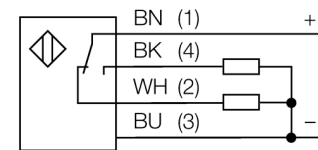


**Photoelectric sensor**  
**diffuse mode sensor with fixed-field background suppression**  
**Q20PFF50Q**



- Cable with male end, PVC, M8 x 1, 4-pin, 150 mm
- Protection class IP67
- LED all-round visible
- Operating voltage: 10...30 VDC
- PNP switching output, changeover

**Wiring diagram**



<b>Type code</b>	Q20PFF50Q
Ident no.	3078217
<b>Operating mode</b>	diffuse mode sensor with fixed-field background suppression
Light type	red
Wavelength	660 nm
Range	0...50 mm
Ambient temperature	-20...+60 °C
<b>Operating voltage</b>	10...30VDC
Residual ripple	< 10 % U <sub>s</sub>
DC rated operational current	≤ 100 mA
No-load current I <sub>0</sub>	≤ 18 mA
Reverse polarity protection	yes
Output function	changover contact, PNP
Switching frequency	≤ 600 Hz
Readiness delay	≤ 100 ms
<b>Design</b>	rectangular, Q20
Dimensions	20 x 12 x 32 mm
Housing material	plastic, ABS
Lens	plastic, acrylic
Connection	cable with connector, PVC, M8 x 1
Cable length	0.15 m
Protection class	IP67
<b>Power-on indication</b>	LED green
Switching state	LED yellow
Error indication	LED green flashing
Excess gain indication	LED yellow flashing

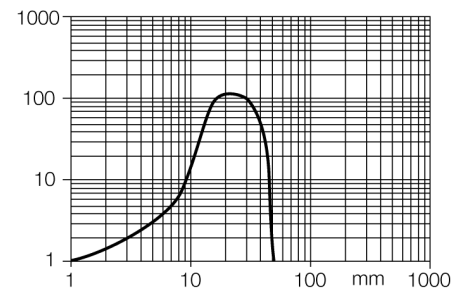
**Functional principle**

Diffuse mode sensors with background suppression operate with a single emitter and several receiver elements. The target position and the photoelectric structure of the sensor determine which receiver element gets the most light. The sensor electronics determine whether the reflecting object is within or outside the measuring range. These sensors come with a fixed cut-off point.

**Excess gain curve**

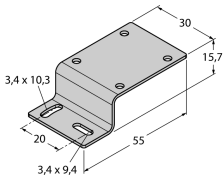
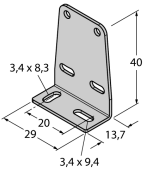
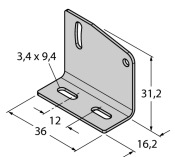
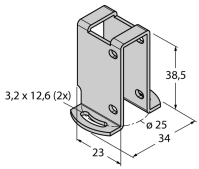
Excess gain in relation to the distance

**Excess gain curve**

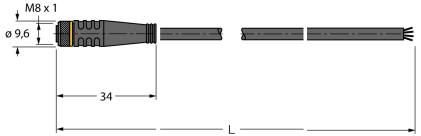


**Photoelectric sensor  
diffuse mode sensor with fixed-field background suppression  
Q20PFF50Q**

**Accessories**

Type code	Ident no.	Description	Dimension drawing
SMBQ20H	3079041	Mounting bracket, stainless steel, horizontally mounted, for Q20	
SMBQ20L	3079040	Mounting bracket, stainless steel, rectangular, for Q20	
SMBQ20LV	3079042	Mounting bracket, stainless steel, rectangular, for Q20	
SMBQ20U	3079043	Protective housing, stainless steel, for Q20	

**Wiring accessories**

Type code	Ident no.	Description	Dimension drawing
PKG4M-2/TEL	6625061	Connection cable, female M8, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>	

**Photoelectric sensor  
diffuse mode sensor with fixed-field background suppression  
Q20PFF50Q**

**Wiring accessories**

Type code	Ident no.	Description	Dimension drawing
PKW4M-2/TEL	6625067	Connection cable, female M8, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>	
PKG4S-2/TEL	6627370	Connection cable, female Ø 8 mm, straight, 4-pin, snap-on type, cable length: 2 m; sheath material: PVC, sheath color: black, cULus approved, RoHS conform, protection class IP67	
PKW4S-2/TEL	6627373	Connection cable, female Ø 8 mm, straight, 4-pin, snap-on type, cable length: 2 m; sheath material: PVC, sheath color: black, cULus approved, RoHS conform, protection class IP67	