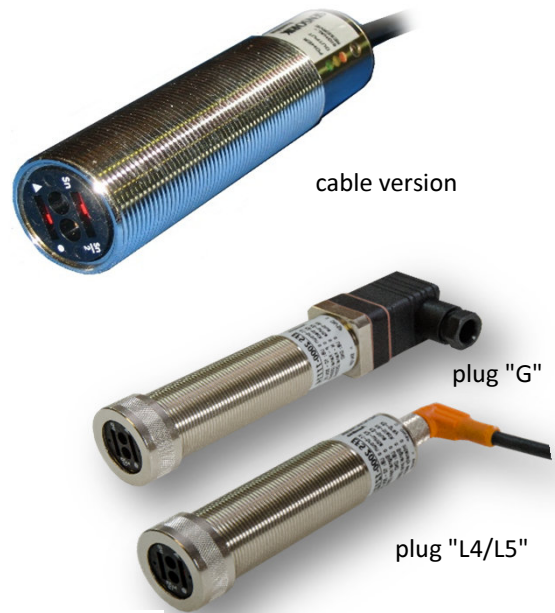
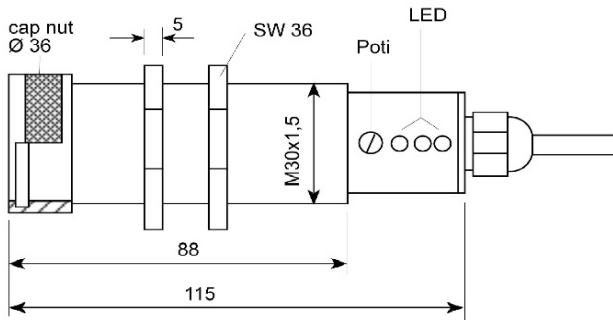


# EFS 2000- . . . .

# Reflective light sensor - standard

Universal Reflective Light Sensor; useable with or without optical fibre

## Dimensions



- universally applicable: for reflectance or (fibre optic) light barrier applications
- high light energy for long range / high function-reserve
- high robustness
- broad model range

EFS 2000 -		1	1	1	1	1
Product key		Light	Function	Sensor head	Output	Connection
	1	infrared	100 Hz	optical fibre	pn+npn	cable PUR
	2	red	100 Hz, +S <sub>n</sub> <sup>1</sup>	pol.-filter <sup>2</sup>	pn+npn+FR <sup>3</sup>	plug M12/4
	3	green	1kHz	infrared filter	ONSP <sup>4</sup>	plug M12/5
	4		-	-	SNOP <sup>4</sup>	G-plug
	5		-	-	KSQM <sup>5</sup>	-
	6		-	wide beam 40°	analog (3-8 V)	-
	7		KSQM <sup>4</sup>	wide beam 67°		KSQM <sup>5</sup>

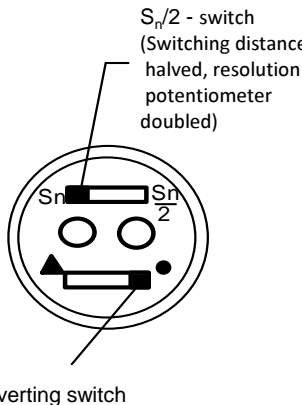
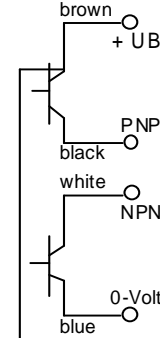
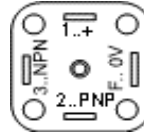

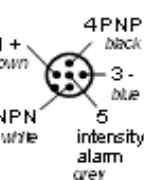
1 ... increased switching distance (S<sub>n</sub>)  
 2 ... polarisation filter  
 3 ... FR = add. function-reserve output  
 4 ... to be specified for versions without invert switch  
 5 ... KSQM = customer specific version

Sensing range S <sub>n</sub> <sup>1,2,3</sup> (mm)	100 Hz S <sub>n</sub> / +S <sub>n</sub>	1 kHz	5 kHz	wide beam 40°	wide beam 67°
direct (without optical fibre)	2.500 / 3.500	2.000	1.000	1.500	500
with optical fibre	1.500 / 1.900	1.300	700		

1 ... measurement standard: polystyrene plate 400 \* 400 mm  
 2 ... maximum values for IR variants; adjustment by potentiometer or front swith (50%)  
 3 ... hysteresis 10%

Reflective Light Sensor in M30-cylinder; useable with or without optical fibre

Electrical Data	
Power	10 - 30 VDC
Ripple	max. 10 %
Reverse voltage protection	built in
Current consumption idle mode	max. 45 mA
Current consumption switch mode	max. 47 mA
Output current	200 mA
Short circuit protection	built in
Voltage indicator	LED green
Switch mode indicator	LED yellow
Function reserve indicator	LED red
Switching distance	depending on configuration (refer to table)
Switching frequency	100 Hz / 1 kHz (depending on spec. type)
Readiness hold-up	2,5 / 0,5 / 0,1 ms (depending on spec. type)
Tolerance against extraneous light	not affected (acc. EN 60947-5-2)
Output	pnp+npn / pnp+npn+FR / ONSP / SNOP (depending on spec. type)
Connection	cable PUR 3m / M12 plug L4/L5 / G-plug (depending on spec. type)
Physical Data	
Light	infrared / red / green (depending on spec. type)
Aperture	16° / 40° / 67° (depending on spec. type)
Housing	M30x1,5 mm; brass nickel-plated
Protection	IP 65
Mass	330 g
Ambient temperature	-10 °C...+ 60 °C

Front switch	Connection scheme		
	Cable versions	Plug versions	Output change over
 <p>S<sub>n</sub>/2 - switch (Switching distance halved, resolution potentiometer doubled)</p> <p>Inverting switch</p>	 <p>Optional: Intensity alarm</p>	<p>"G"</p>  <p>"L4"</p>  <p>"L5"</p> 	<p>▲ (SN/DP)      ● (ON/SP)</p> 