



PHOTOELECTRIC SENSORS: SERIES 1180 & 1180W



- ✓ **Compact sensors** M18
- ✓ Models for **lateral sensing**
- ✓ Rugged **metal housing**
- ✓ **Accurate & speed-independent target detection**
- ✓ Diffuse sensors with **background suppression**
- ✓ **Shock & vibration resistant** due to fully vacuum-potted electronics
- ✓ **High system reserves** (excess gain)
- ✓ **Pre-failure warning** (pollution monitoring)
- ✓ **Easy adjustment** (due to visible red light)

TECHNICAL DATA

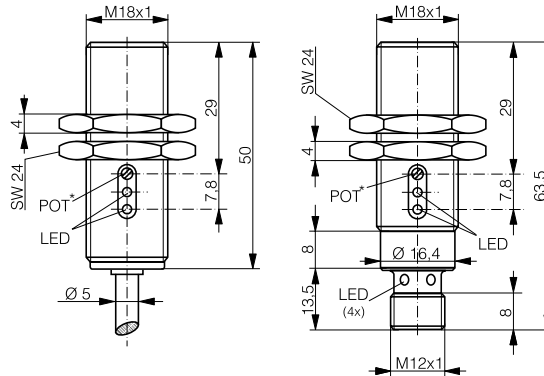
(according to IEC 60947-5-2)	
Housing material	Chrome-plated brass
Hysteresis	10 % typ.
Supply voltage range U_B	10 ... 36 VDC
Max. ripple content	20 %
Output current	≤ 200 mA
Output voltage drop	≤ 2.0 V at 200 mA
Max. switching frequency	1,000 Hz / 500 Hz (LH)
Switching time (\uparrow and \downarrow)	0.5 msec / 1 msec (LH)
Max. ambient light:	
halogen	5,000 Lux
sun	10,000 Lux
Ambient temperature range	-25 ... +55 °C
Degree of protection	IP 67
EMC protection:	
IEC 60947-5-2 (7.2.3.1)	1 kV
IEC 61000-4-2	Level 2
IEC 61000-4-3	Level 3
IEC 61000-4-4	Level 3
Short-circuit protection	Built-in
Polarity reversal protection	Built-in
Power-on reset	Built-in

Rugged compact M18 sensors in metal housings for axial or lateral sensing and accurate as well as speed-independent target detection. Diffuse sensors with background suppression. Shock and vibration, scratch and chemically resistant with high system reserves (excess gain). Pollution monitoring (green LED) in case of reduced system reserves prevents downtime caused by pollution. Easy adjustment due to visible red light. Particularly suited for rough industrial environments and where space is limited (1180W):

- ✓ **automation equipment**
- ✓ **stock & conveyor systems**
- ✓ **special machinery**
- ✓ **machine tool industry**
- ✓ **filling systems**
- ✓ **packaging machines**
- ✓ **woodworking machines**
- ✓ **logistics automation**
- ✓ **cigarette manufacturing**
- ✓ **palletizer & wrapping machines**
- ✓ **automotive industry**

HOUSING SIZE	M18	
SENSING RANGE	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION 120 mm	REFLEX SENSOR (POLARIZED) 2,000 mm

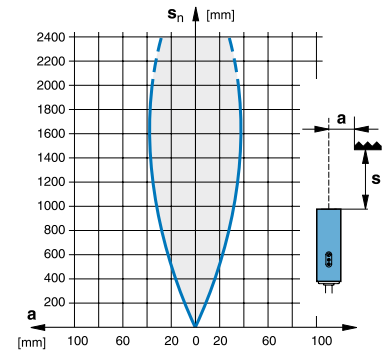
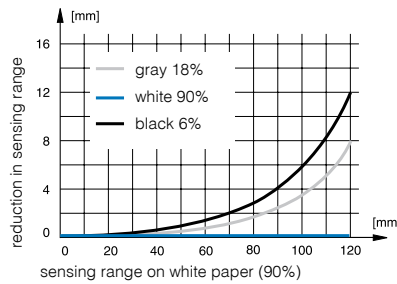
Dimensions:



*diffuse sensor with background suppression only



Response curves:



TECHNICAL DATA		
Sensing range (setting range)	120 mm (10 ... 120 mm)	2,000 mm
Standard target / reflector (page 197)	100 x 100 mm white	Reflector type 3
No-load supply current	≤ 25 mA	≤ 15 mA
Emitter	LED red 660 nm	LED red polarized 660 nm
Approvals	CE, UL, RoHS	CE, UL, RoHS
Weight (cable / connector model)	121 / 53 g	121 / 53 g

PART REFERENCES		
(bold: preferred types)		
NPN light-ON / cable	LHK-1180-301	---
NPN dark-ON / cable	---	LRK-1180-302
NPN light-ON / connector S12	LHS-1180-301	---
NPN dark-ON / connector S12	---	LRS-1180-302
PNP light-ON / cable	LHK-1180-303	---
PNP dark-ON / cable	---	LRK-1180-304
PNP light-ON / connector S12	LHS-1180-303	---
PNP dark-ON / connector S12	---	LRS-1180-304
Compatible connectors (page 268)	G, H	G, H
Wiring (pages 198-199)	Diagram 1	Diagram 1

HOUSING SIZE

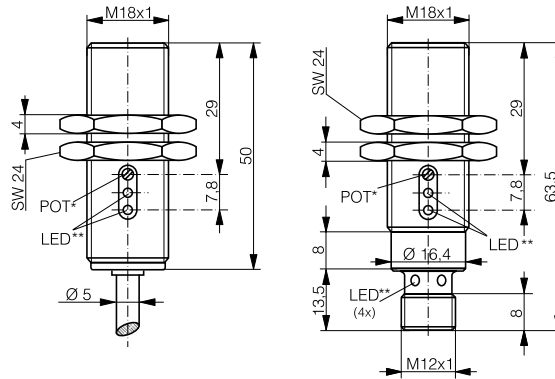
M18

SENSING RANGE

DIFFUSE SENSOR
600 mm

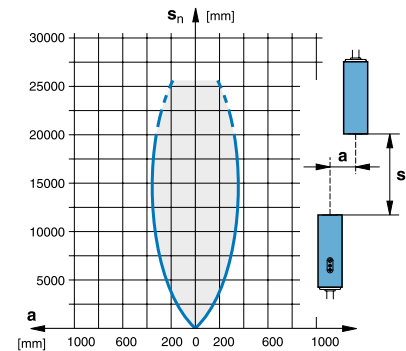
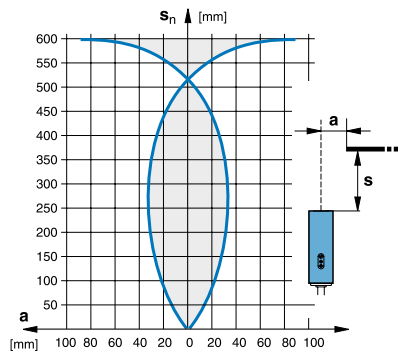
THROUGH-BEAM SENSOR
20,000 mm

Dimensions:



* diffuse sensor only
** receiver only

Response curves:



TECHNICAL DATA

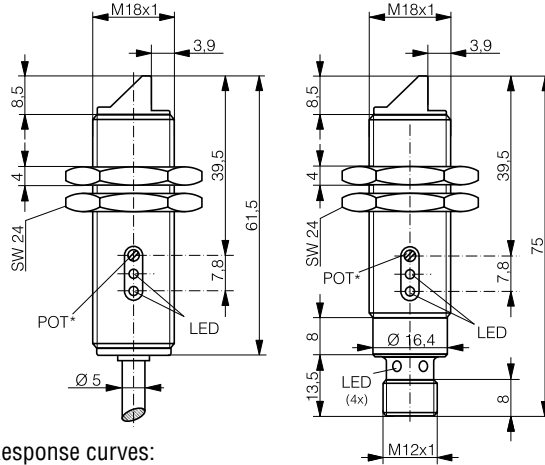
Sensing range (setting range)	600 mm (40 ... 600 mm)	20,000 mm
Standard target	200 x 200 mm white	---
No-load supply current	≤ 20 mA	≤ 10 mA (R) / ≤ 15 mA (E)
Emitter	LED red 660 nm	LED red 660 nm
Approvals	CE, UL, RoHS	CE, UL, RoHS
Weight (cable / connector model)	121 / 53 g	230 / 80 g (R and E)

PART REFERENCES

(bold: preferred types)		(R) receiver / (E) emitter
NPN changeover outputs / cable	LTK-1180-101	LLK-1180-001 (R) / LLK-1180-000 (E)
NPN light-ON + excess gain / cable	LTK-1180-102	LLK-1180-002 (R) / LLK-1180-000 (E)
NPN changeover outputs / S12	LTS-1180-101	LLS-1180-001 (R) / LLS-1180-000 (E)
NPN light-ON + excess gain / S12	LTS-1180-102	LLS-1180-002 (R) / LLS-1180-000 (E)
PNP changeover outputs / cable	LTK-1180-103	LLK-1180-003 (R) / LLK-1180-000 (E)
PNP light-ON + excess gain / cable	LTK-1180-104	LLK-1180-004 (R) / LLK-1180-000 (E)
PNP changeover outputs / S12	LTS-1180-103	LLS-1180-003 (R) / LLS-1180-000 (E)
PNP light-ON + excess gain / S12	LTS-1180-104	LLS-1180-004 (R) / LLS-1180-000 (E)
Compatible connectors (page 268)	M, N	M, N
Wiring (pages 198-199)	Diagram 2	Diagram 2 (R) / 4 (E)

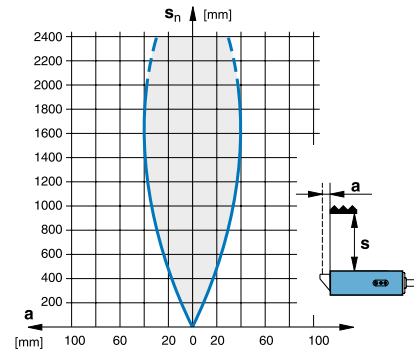
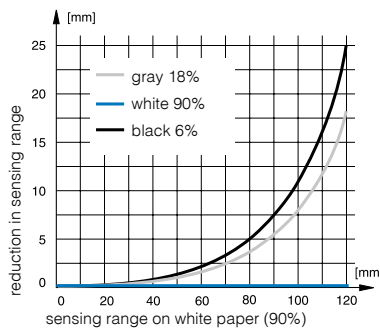
HOUSING SIZE	M18W	
SENSING RANGE	DIFFUSE SENSOR WITH BACKGROUND SUPPRESSION 120 mm	REFLEX SENSOR (POLARIZED) 2,000 mm

Dimensions:



*diffuse sensor with background suppression only

Response curves:



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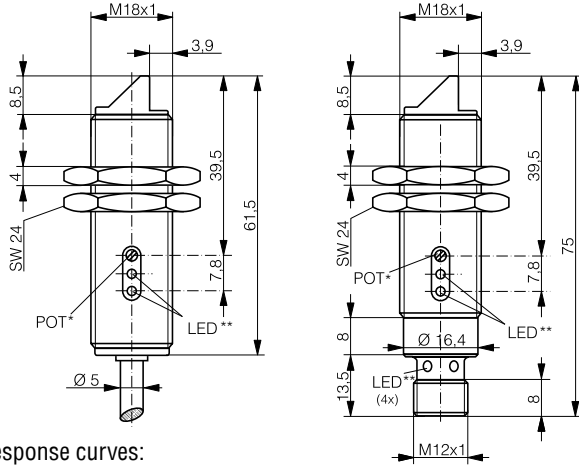
Sensing range (setting range)	120 mm (10 ... 120 mm)	2,000 mm
Standard target / reflector (page 197)	100 x 100 mm white	Reflector type 3
No-load supply current	≤ 25 mA	≤ 15 mA
Emitter	LED red 660 nm	LED red polarized 660 nm
Approvals	CE, UL, RoHS	CE, UL, RoHS
Weight (cable / connector model)	124 / 57 g	125 / 56 g

PART REFERENCES

(bold: preferred types)		
NPN light-ON / cable	LHK-1180W-301	---
NPN dark-ON / cable	---	LRK-1180W-302
NPN light-ON / connector S12	LHS-1180W-301	---
NPN dark-ON / connector S12	---	LRS-1180W-302
PNP light-ON / cable	LHK-1180W-303	---
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Compatible connectors (page 268)	G, H	G, H
Wiring (pages 198-199)	Diagram 1	Diagram 1

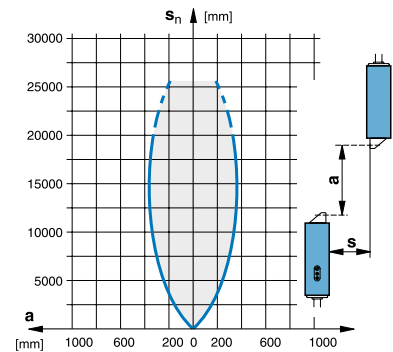
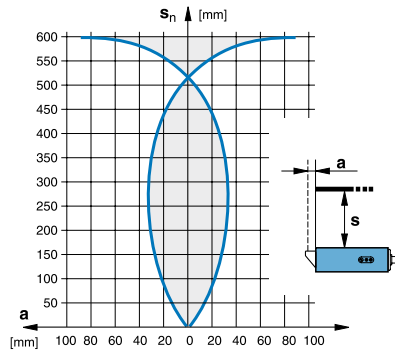
HOUSING SIZE	M18W	
SENSING RANGE	DIFFUSE SENSOR 600 mm	THROUGH-BEAM SENSOR 20,000 mm

Dimensions:



* diffuse sensor only
** receiver only

Response curves:



TECHNICAL DATA

Sensing range (setting range)	600 mm (40 ... 600 mm)	20,000 mm
Standard target	200 x 200 mm white	---
No-load supply current	≤ 20 mA	≤ 10 mA (R) / ≤ 15 mA (E)
Emitter	LED red 660 nm	LED red 660 nm
Approvals	CE, UL, RoHS	CE, UL, RoHS
Weight (cable / connector model)	123 / 56 g	248 / 114 g (R and E)

PART REFERENCES

(bold: preferred types)		(R) receiver / (E) emitter
NPN changeover outputs / cable	LTK-1180W-101	LLK-1180W-001 (R) / LLK-1180W-000 (E)
NPN light-ON + excess gain / cable	LTK-1180W-102	LLK-1180W-002 (R) / LLK-1180W-000 (E)
NPN changeover outputs / S12	LTS-1180W-101	LLS-1180W-001 (R) / LLS-1180W-000 (E)
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PNP changeover outputs / cable	LTK-1180W-103	LLK-1180W-003 (R) / LLK-1180W-000 (E)
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Compatible connectors (page 268)	M, N	M, N
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