

photoelectric switches

W 12 L-2: Laser photoelectric switches – long-sighted, certainly, and no need for extra safety precautions

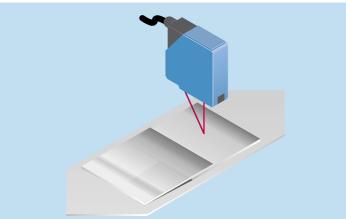


The W 12 L-2 series offers a complete range of photoelectric switches using innovative laser technology, contained in a rugged metal housing. Pulsed lasers are used to transmit light. Because they have in protection class 2, the machine operator does not need to take any extra safety or protective measures when using the sensors.

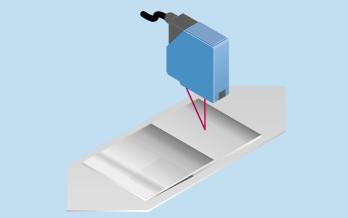
All the devices in this series are particularly "long-sighted": the WS/WE 12 L-2 through-beam photoelectric switch covers distances up to 80 m, while the WL 12 L-2 reflex photoelectric switch can reach up to 18 m. Their integrated polarisation filter makes it possible to reliably detect shiny surfaces. The WT 12 L-2 photoelectric proximity switch also covers a relatively long range: it is the right choice for scanning fixed distances of 20...50 mm, or offers precise background suppression that can be adjusted between 30 and 200 mm.

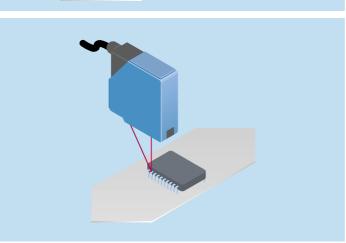
In addition to the scanning range, the small dimensions of the light spot generated on the object is a further advantage of laser technology. This makes it possible to detect even minute items of just 0.5 mm at maximum switching frequencies of 2,500/s.

W 12 L-2 laser photoelectric switches – the best solution for millimetre precision, or even smaller! ► The laser photoelectric proximity switch detects minimal differences in height, such as overlapping metal sheets, during continuous metal production processes.



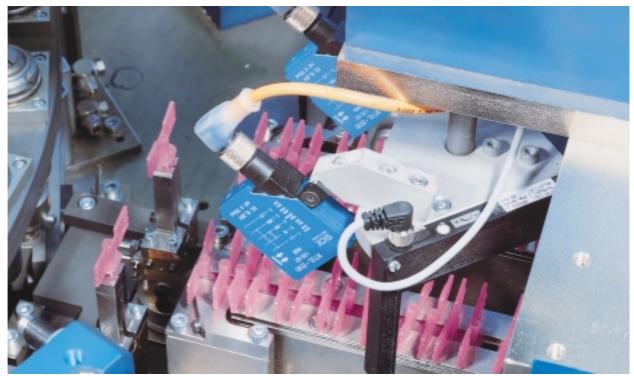
► The W 12 L-2 with laser technology detects the smallest electronic components with precision even at high switching frequencies.



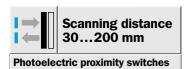




▼ Moulded sheet-metal parts used for the production of automobiles are detected with millimetre accuracy by WL 12 L-2 laser photoelectric



 \blacktriangle Thanks to their small light spot, laser sensors such as the WT 12 L-2 photoelectric proximity switch can also reliably detect the smallest objects such as packaging units in the pharmaceutical industry.



- Laser class 2
- 90° rotatable M 12 plug
- Adjustable and fixed background suppression



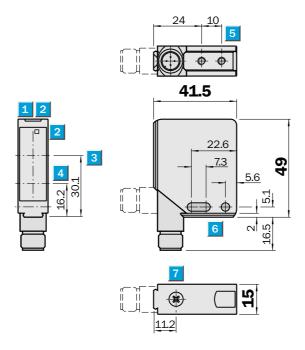




Laser class 2

page
496
510

Dimensional drawing



Adjustments possible

WT 12L-2B 510* WT 12L-2B 530 WT 12L-2B 540 WT 12L-2B 550



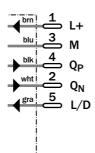
- 1 LED operating indicator, green
- 2 LED reception indicator, yellow
- 3 Optical axis, receiver
- 4 Optical axis, sender
- M 4 threaded mounting hole 4 mm deep
- 6 Mounting hole Ø 4.2 mm
- 7 Scanning distance control
 - * (not for fixed scanning distances)

Connection type

WT 12L-2B 510 WT 12L-2B 530 WT 12L-2B 540 WT 12L-2B 550



5-pin, M 12



	WT 12L-2	ROTO	B530	B540	Boon					
Normalis and State of the Control of	20 . 200 40 %									
Scanning distance, adjustable	30200 mm, 18 % remission									
	Focus 45 mm									
	Focus 80 mm									
	Focus 100 mm									
Scanning range, fixed, 6 % remission										
Light source ¹⁾	Laser 650 nm, pulsed									
ight spot diameter focal point	0.1 mm									
	0.2 mm									
Supply voltage V _S	1030 V DC ²⁾									
Ripple ³⁾	≤ 5 V _{SS}									
Current consumption ⁴⁾	≤ 55 mA									
Switching output Q _N and Q _P	PNP, NPN									
Signal voltage HIGH	$V_S - < 2 V, V_S$									
Signal voltage LOW ⁵⁾	0 V, ≤ 1.5 V									
Output current I _A max.	100 mA									
Operating mode	Light- or dark-switching ⁶⁾									
Control input L/D	0 V or open, light-switching									
Control input L/D	V _S , dark-switching									
Response time max. 7)	Typ. 200 μs									
Max. switching frequency ⁸⁾	2500/s									
Laser class	2 (IEC 825-1; EN 60825-1:97)									
VDE protection class ⁹⁾										
Enclosure rating	IP 67									
Circuit protection 10)	A, B, C									
Ambient temperature T _A	Operation - 10 °C+ 50 °C									
· a	Storage – 25 °C+ 75 °C									
Connection type	M 12 plug, 5-pin									
Weight	Approx. 130 g with plug									
1) Average service life 50.000 h	May not exceed or fall short of	6) Rever	sible via	control in	out L/D	10) A = V _c co	nnection	s reverse	oolarity

- 1) Average service life 50,000 h at $T_A = +25$ °C
- 2) Limit values

0 (mm)

40

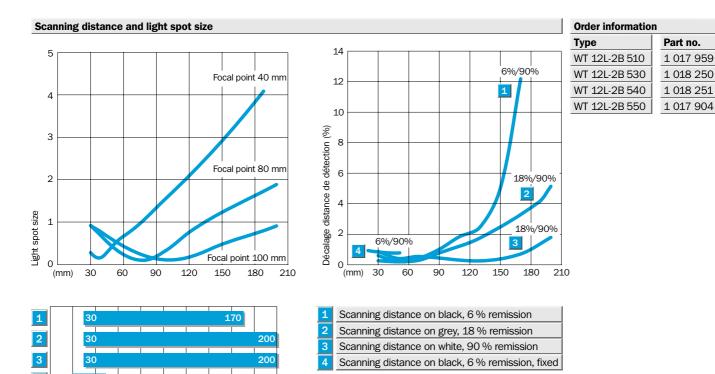
80

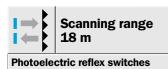
120

160

200

- 3) May not exceed or fall short of V_S tolerances
- 4) Without load
- 5) At $T_A = +25\,^{\circ}\text{C}$ and 100 mA output current
- 6) Reversible via control input L/D
- 7) Signal transit time with resistive load
- 8) At light/dark ratio 1:1
- 9) Reference voltage 50 V DC
- 10) $A = V_S$ connections reverse-polarity protected
 - $\mathsf{B} = \mathsf{Outputs} \ \mathsf{protected} \ \mathsf{against}$ short-circuiting
 - C = Interference pulse suppression





- Laser class 2
- Adjustable focus
- 90° rotatable M 12 plug

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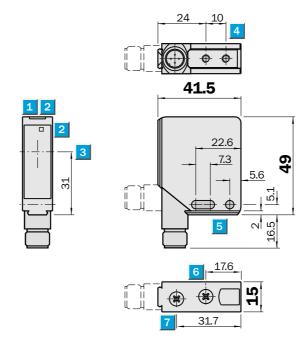




Laser class 2

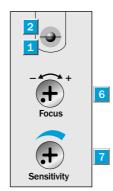
Accessories	page
Cable receptacles	496
Clamps	510
Mounting brackets	510
Reflectors	520

Dimensional drawing



Adjustments possible

WL 12L-2B 530 WL 12L-2B 520

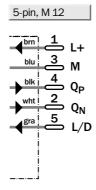


- 1 LED operating indicator, green
- 2 LED reception indicator, yellow
- Centre of optical axis
- 4 M4 threaded mounting hole 4 mm deep
- 5 Mounting hole Ø 4.2 mm
- Focal adjustment
- 7 Sensitivity adjustment

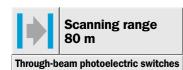
Connection type

WL 12L-2B 530 WL 12L-2B 520

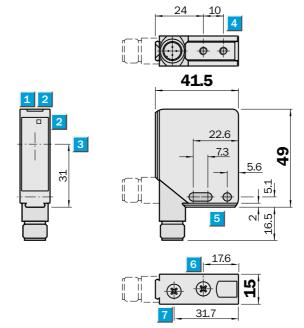




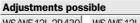
Technical data		WL 12L-2	B530 B520						
Scanning range,	18 m/PL 80 A	1							
max. typical/on reflector	15 m/PL 80 A								
Light source ¹⁾	Laser 650 nm, pulse	ed							
_ight spot diameter	min. 0.8 mm								
in focal range	300 mm to ∞	ĺ							
9	150 mm to 450 mm	<u> </u>							
Supply voltage V _S	1030 V DC ²⁾								
Ripple ³⁾	≤ 5 V _{SS}								
Current consumption ⁴⁾	≤ 55 mA								
Switching output Q _N and Q _P	PNP, NPN								
Signal voltage HIGH	$V_S - < 2.9 V, V_S$								
Signal voltage LOW ⁵⁾	0 V, ≤ 1.5 V								
Output current I _A max.	100 mA								
Operating mode	Light- or dark-switch								
Control input L/D	0 V or open, light-sw	ritching							
Control input L/D	V _S , dark-switching								
Response time max. ⁷⁾	Typ. 200 μs								
Max. switching frequency ⁸⁾	2500/s	0005 4 05							
Laser class	2 (IEC 825-1; EN 60	U825-1:97)							
VDE protection class ⁹⁾	ID C7								
Enclosure rating	IP 67								
Circuit protection 10)	A, B, C Operation – 10 °C.	. 50.00							
Ambient temperature T _A									
	Storage – 25 °C.	+ /5 0							
Connection type	M 10 plug E pip			1					
Connection type	M 12 plug, 5-pin	hlug							
Weight 1) Average service life 50,000 h at $T_A = +25 ^{\circ}\text{C}$	Approx. 130 g with p 3) May not exceed or form of the second seco	iall short of 6	s) Reversible via o ') Signal transit tir B) At light/dark ra D) Reference volta	me with resist			= V _S conne protected = Outputs short-circ	d protected a	erse-polarity against
Weight 1) Average service life 50,000 h	Approx. 130 g with p 3) May not exceed or form V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	iall short of 67 8	') Signal transit tir 3) At light/dark ra	me with resist	ive load	В	protected = Outputs short-circ	d protected a cuiting nce pulse s	
Weight 1) Average service life 50,000 h at $T_A = +25^{\circ}\text{C}$ 2) Limit values Scanning range and operating re-	Approx. 130 g with p 3) May not exceed or form V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	iall short of 67 8) Signal transit tir 8) At light/dark ra 9) Reference volta	me with resist itio 1:1 age 50 V DC	ive load	B :	protected = Outputs short-circ	d protected a cuiting nce pulse s	against
Weight 1) Average service life 50,000 h at $T_A = +25 ^{\circ}\text{C}$ 2) Limit values Scanning range and operating re-	Approx. 130 g with p 3) May not exceed or form of the second of the sec	fall short of 677 889 99 ent Reflector type	Operating	me with resist tio 1:1 age 50 V DC	ive load	C	protected = Outputs short-circ	d protected a cuiting nce pulse s	against
Weight 1) Average service life 50,000 h at T _A = +25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530	Approx. 130 g with p 3) May not exceed or fi V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	Reflector type PL 80 A	Operating O13.0 n	me with resist titio 1:1 age 50 V DC	ive load	B :	protected = Outputs short-circ	d protected a cuiting nce pulse s	against
Weight 1) Average service life 50,000 h at $T_A = +25 ^{\circ}\text{C}$ 2) Limit values Scanning range and operating rewards with the service of	Approx. 130 g with p 3) May not exceed or fi V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	Reflector type PL 80 A PL 50 A	Operating Omega Omega Operating Omega Om	me with resist titio 1:1 age 50 V DC range n	ive load	B C	protected = Outputs short-circ	d protected a cuiting nce pulse s	against
Weight 1) Average service life 50,000 h at $T_A = +25 ^{\circ}\text{C}$ 2) Limit values Scanning range and operating rewards with 12L-2 B530 1 0 13 2 0 12 3 0 12	Approx. 130 g with p 3) May not exceed or fi V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	Reflector type PL 80 A PL 50 A PL 40 A	Operating O12.0 n O12.0 n	me with resist tito 1:1 age 50 V DC	ive load	B C	protected = Outputs short-circ	d protected a cuiting nce pulse s	against
Weight 1) Average service life 50,000 h at $T_A = +25$ °C 2) Limit values Scanning range and operating rewards by the service of the serv	Approx. 130 g with p 3) May not exceed or fi V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	Reflector type 1 PL 80 A 2 PL 50 A 3 PL 40 A 4 P 250	Operating 012.0 n 012.0 n	me with resist tito 1:1 age 50 V DC	ive load	B C	protected Outputs Short-circ	d protected a cuiting nce pulse s	against
Weight 1) Average service life 50,000 h at $T_A = +25$ °C 2) Limit values Scanning range and operating reward WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10	Approx. 130 g with p 3) May not exceed or fi V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	Reflector type 1 PL 80 A PL 50 A 3 PL 40 A 4 P 250 5 PL 30 A	Operating	me with resist tito 1:1 age 50 V DC	ive load	B C	protected Outputs Short-circ	d protected a cuiting nee pulse s	against suppression VL 12L-2 B530
Weight 1) Average service life 50,000 h at T _A = + 25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5	Approx. 130 g with p 3) May not exceed or fi V _S tolerances 4) Without load 5) At T _A = + 25 °C and 100 mA output curre	Reflector type 1 PL80 A 2 PL50 A 3 PL40 A 4 P 250 5 PL30 A 6 PL20 A	Operating	me with resist tito 1:1 age 50 V DC range n n n	ive load	1000 100 100 100 100 100 100 100 100 10	operating range Operating range Scanning max. typ	d protected a suiting noce pulse s	against suppression
Weight 1) Average service life 50,000 h at $T_A = +25 ^{\circ}\text{C}$ 2) Limit values Scanning range and operating rewards with the service of	Approx. 130 g with p 3) May not exceed or find the following serve signs and signs with p 3) May not exceed or find the following serve signs with p 4) Without load 5) At T _A = +25 °C and 100 mA output currence serve	Reflector type 1 PL80 A 2 PL50 A 3 PL40 A 4 P 250 5 PL30 A 6 PL20 A 7 Reflective tape	Operating	me with resist tito 1:1 age 50 V DC range n n n	ive load	B C	operating range Scanning	d protected a suiting noce pulse s	against suppression
Weight L) Average service life 50,000 h at $T_A = +25$ °C 2) Limit values Scanning range and operating reward WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5	Approx. 130 g with p 3) May not exceed or find the following serve signs and signs with p 3) May not exceed or find the following serve signs with p 4) Without load 5) At T _A = +25 °C and 100 mA output currence serve	Reflector type 1 PL80 A 2 PL50 A 3 PL40 A 4 P 250 5 PL30 A 6 PL20 A	Operating	me with resist tito 1:1 age 50 V DC range n n n	ive load	1000 100 100 100 100 100 100 100 100 10	operating range Operating range Scanning max. typ	d protected a suiting noce pulse s	against suppression
Weight 1) Average service life 50,000 h at $T_A = +25 ^{\circ}\text{C}$ 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 (m) 5 10 18	Approx. 130 g with p 3) May not exceed or find the following serve signs and signs with p 3) May not exceed or find the following serve signs with p 4) Without load 5) At T _A = +25 °C and 100 mA output currence serve	Reflector type 1 PL 80 A PL 50 A PL 40 A P 250 PL 30 A PL 20 A Reflective tape «Diamond Grade	Operating	me with resist tito 1:1 age 50 V DC range n n n	ive load	1000 100 100 100 100 100 100 100 100 10	operating range Operating range Scanning max. typ	d protected a suiting noce pulse s	against suppression
Weight 1) Average service life 50,000 h at T _A = +25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 (m) 5 10 15 0 Operating range Sca	Approx. 130 g with p 3) May not exceed or five tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output currences	Reflector type 1 PL 80 A PL 50 A PL 40 A P 250 PL 30 A PL 20 A Reflective tape «Diamond Grade	Operating	me with resist tito 1:1 age 50 V DC range n n n	ive load Oberating reserve	1000 100 100 100 100 100 100 100 100 10	operating range Operating range Scanning max. typ	d protected a cuiting more pulse s	against suppression
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## A Property of the Control of the	Approx. 130 g with p 3) May not exceed or five tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output currences	Reflector type PL80 A PL50 A PL40 A P250 PL30 A PL20 A Reflective tape «Diamond Grade	Operating O12.0 m O12.0 m O12.0 m O2.0 m O	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 100000 100000 100000 100000 100000 100000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10	operating range Operating range Scanning max. typ	d protected a cuiting more pulse s	against suppression
Weight L) Average service life 50,000 h at T _A = + 25 °C 2) Limit values Scanning range and operating reward WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 0 15 0 0 10 0 0 10 WL 12L-2 B520 10	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1 PL 80 A 2 PL 50 A 3 PL 40 A 4 P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape «Diamond Grade	Operating O12.0 m O12.0 m O2.0 m O.	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 1000 1000 100	operating range Operating range Scanning max. typ	d protected a cuiting more pulse s	against suppression
Weight 1) Average service life 50,000 h at T _A = + 25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 (m) 5 10 15 0 Operating range Sca	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1 PL 80 A 2 PL 50 A 3 PL 40 A 4 P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape «Diamond Grade Reflector type 1 PL 80 A 2 PL 80 A 2 PL 50 A	Operating O12.0 m O12.0 m O2.0 m O.	me with resist tito 1:1 age 50 V DC	ive load Oberating reserve	1000 1000 100000 100000 100000 100000 100000 100000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10	operating range Operating range Scanning max. typ	d protected a cuiting more pulse s	against suppression
Weight 1) Average service life 50,000 h at T _A = + 25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 (m) 5 10 15 0 Operating range Sca WL 12L-2 B520 1 0 10 2 0 9 3 0 9	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1 PL 80 A PL 50 A 3 PL 40 A PL 20 A 7 Reflective tape «Diamond Grade Reflector type 1 PL 80 A PL 20 A 7 Reflective tape «Diamond Grade Reflector type 1 PL 80 A PL 50 A Reflector type 1 PL 80 A PL 50 A Reflector type	Operating 012.0 m 02.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n	ive load Oberating reserve	1000 1000 100000 100000 100000 100000 100000 100000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10	operating range Operating range Scanning max. typ	d protected a cuiting more pulse s	against suppression
Weight 1) Average service life 50,000 h at T _A = + 25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 (m) 5 10 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1	Operating O12.0 m O12.0 m O2.0 m O.	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 1000 1000 100	operating range Operating range Scanning max. typ	d protected a suiting noce pulse s	against suppression
Weight 1) Average service life 50,000 h at T _A = +25°C 2) Limit values Scanning range and operating re WL 12L-2 B530 1 0 13 2 0 12 3 0 12 4 0 12 5 0 10 6 0 7.5 7 0 2 0 (m) 5 10 19 0 Operating range Sca WL 12L-2 B520 1 0 10 2 0 9 3 0 9 4 0 9 5 0 8	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1	Operating 012.0 m 012.0 m 012.0 m 012.0 m 012.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 1000 1000 100	operating range Scanning Scanning	d protected a suiting noce pulse s	against suppression VL 12L-2 B530 VL 12L-2 B520 VL 12L-2 B520
Weight 1) Average service life 50,000 h at T _A = +25°C 2) Limit values Scanning range and operating re WL 12L-2 B530 1	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1	Operating 012.0 m 012.0 m 012.0 m 012.0 m 012.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 1000 1000 100	Operating range Scanning range, max, typics max, typi	d protected a suiting noce pulse suiting noce pulse suiting noce pulse suiting noce pulse suiting grange, and suiting noce pulse suiting noce puls	against suppression VL 12L-2 B530 VL 12L-2 B520 VL 12L-2 B520
Weight 1) Average service life 50,000 h at T _A = + 25 °C 2) Limit values Scanning range and operating re WL 12L-2 B530 1	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre 2serve 18 20 25 anning range, max. typical	Reflector type 1 PL 80 A 2 PL 50 A 3 PL 40 A 4 P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape «Diamond Grade Reflector type 1 PL 80 A 2 PL 50 A 3 PL 40 A 4 P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape	Operating 012.0 m 012.0 m 012.0 m 012.0 m 012.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 1000 1000 100	Operating range Scanning range,	d protected a suiting noce pulse s	against suppression VL 12L-2 B530 VL 12L-2 B520 VL 12L-2 B520
Weight 1) Average service life 50,000 h at T _A = +25°C 2) Limit values Scanning range and operating re WL 12L-2 B530 1	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve	Reflector type 1	Operating 012.0 m 012.0 m 012.0 m 012.0 m 012.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 100 100 100 10	Operating range Scanning range, max, typics max, typi	d protected a cuiting more pulse s	against suppression VL 12L-2 B530 VL 12L-2 B520 VL 12L-2 B520
Weight 1) Average service life 50,000 h at T _A = +25°C 2) Limit values Scanning range and operating re WL 12L-2 B530 1	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre 2serve 18 20 25 anning range, max. typical	Reflector type 1 PL 80 A PL 50 A 3 PL 40 A P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape «Diamond Grade Reflector type 1 PL 80 A PL 50 A 7 Reflective tape 4 P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape 4 P 250 8 PL 30 A 8 PL 40 A 9 PL 30 A 9 PL 30 A 9 PL 30 A 7 Reflective tape 4 Diamond Grade	Operating 012.0 m 012.0 m 012.0 m 012.0 m 012.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 100 100 100 10	Operating range Scanning range, max. typica 5	grange. 10 tion Par	against suppression VL 12L-2 B530 VL 12L-2 B520 VL 12L-2 B520
Weight 1) Average service life 50,000 h at T _A = +25°C 2) Limit values Scanning range and operating re WL 12L-2 B530 1	Approx. 130 g with p 3) May not exceed or f V _S tolerances 4) Without load 5) At T _A = +25 °C and 100 mA output curre eserve 18 15 20 25 anning range, max. typical	Reflector type 1 PL 80 A PL 50 A 3 PL 40 A P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape «Diamond Grade Reflector type 1 PL 80 A PL 50 A 7 Reflective tape 4 P 250 5 PL 30 A 6 PL 20 A 7 Reflective tape 4 P 250 8 PL 30 A 8 PL 40 A 9 PL 30 A 9 PL 30 A 9 PL 30 A 7 Reflective tape 4 Diamond Grade	Operating 012.0 m 012.0 m 012.0 m 012.0 m 012.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m 02.0 m	me with resist tito 1:1 age 50 V DC range n n n n	ive load Oberating reserve	1000 1000 1000 1000 1000 100 100 100 10	Operating range Scanning range, max. typica 5	grange. 10 tion Par 10	against suppression VL 12L-2 B530 VL 12L-2 B520 erating range = 11



- Laser class 2
- Adjustable focus and sensitivity
- 90° rotatable M 12 plug







Dimensional drawing

WS/WE 12L-2P430 WS/WE 12L-2P410 WS/WE 12L-2N430 WS/WE 12L-2N410

Sender WS

Receiver WE



- LED operating indicator (WS above only)
- LED reception indicator (WE)
- Centre of optical axis

3

- M 4 threaded mounting hole 4 mm deep
- Mounting drill hole Ø 4.2 mm
 - Focal adjustment (WS)
- Sensitivity adjustment (WE)

(€ □



Laser class 2

Connection type

WS/WE 12L-2P430 WS/WE 12L-2N430 WS/WE 12L-2P410 WS/WE 12L-2N410

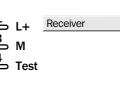


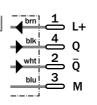
Accessories	page
Cable receptacles	496
Clamps	510
Mounting brackets	510



4-pin, M 12

Sender





Technical data	WS/WE 12L-2	P430	N430	P410	N410					
				1						
Scanning range, max. typical	80 m				1					
	10 m									
Recommended operating range	80 m				1					
	10 m									
Focus adjustable	300 mm∞				,					
	Fixed parallel light beam									
Light source ¹⁾	Laser 650 nm, pulsed									
Light spot diameter	150 mm at 60 m									
	1.0 mm at 1 m									
Supply voltage V _S	1030 V DC ²⁾									
Ripple ³⁾	≤ 5 V _{SS}									
Current consumption ⁴⁾	WS ≤ 45 mA, WE ≤ 15 mA									
Switching outputs Q and Q	PNP									
	NPN									
Signal voltage HIGH	$V_{S} - < 2.9 \text{ V}, V_{S}$									
Signal voltage LOW ⁵⁾	Approx. 0 V, ≤ 1.5 V									
Output current I _A max.	100 mA									
Response time max. ⁶⁾	Typ. 200 μs									
Max. switching frequency 7)	2500/s									
Input "TE" system test	V _S or open: sender active									
	0 V: sender inactive									
VDE protection class ⁸⁾										
Laser class	2 (IEC 825-1; EN 60825-1:97)									
Enclosure rating	IP 67									
Circuit protection ⁹⁾	A, B, C									
Ambient temperature T _A	Operation - 10 °C+ 50 °C									
	Storage – 25 °C+ 75 °C									
Connection type	M 12 plug, 4-pin									
Weight (WS + WE)	Approx. 260 g									
1) Average service life 50,000 h at T _A = + 25 °C 2) Limit values 3) May not exceed or fall short of V _S tolerances	 4) Without load 5) At T_A = +25 °C and 100 mA output current 6) Signal transit time with resistive load 7) At light/dark ratio 1:1 	8) Reference voltage 50 V DC 9) A = V _S connections reverse-polarity protected B = Outputs protected against short-circuiting C = Interference pulse suppression								

