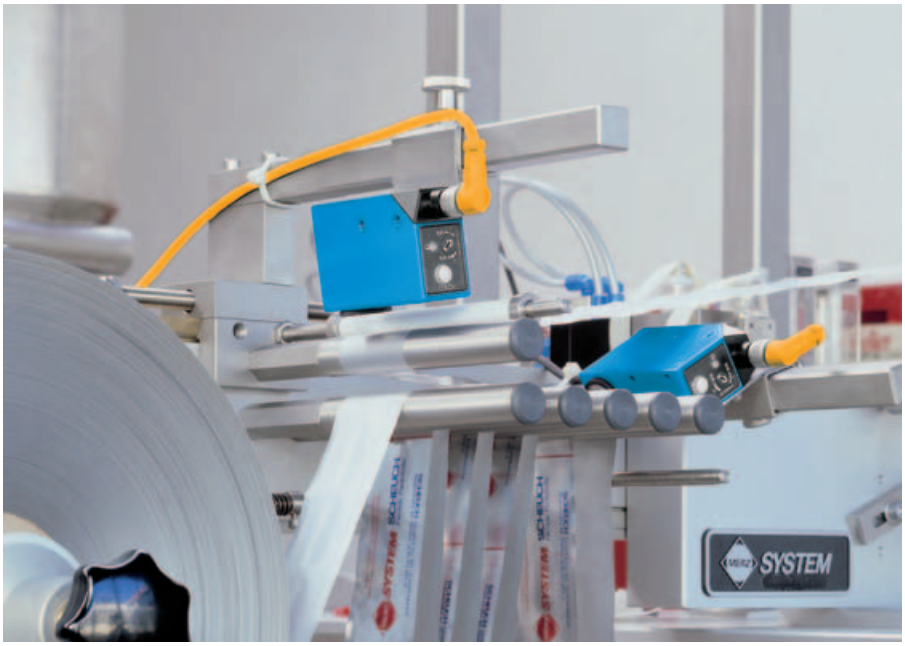

Contrast scanner with dynamic Teach-in

The KT 5G-2P/N___3 provides a high degree of user-friendly operation and detection reliability. This is the result of the dynamic Teach-in procedure in connection with the automatic light transmitter selection.

You can set the optimum switching threshold without stopping the machine, either using the push button on the equipment or an external impulse via the control wire. The equipment selects the light source between the red, blue and green transmission LED automatically, which achieves the respectively best contrast and consequently the highest possible detection reliability.

Especially in applications with a high throughput performance, e.g., packaging machines and fill lines, these features contribute to economical system operation because they are interruption-free. The same applies to highly flexible production processes where it is necessary to adapt contrast scanners fast and inexpensively.

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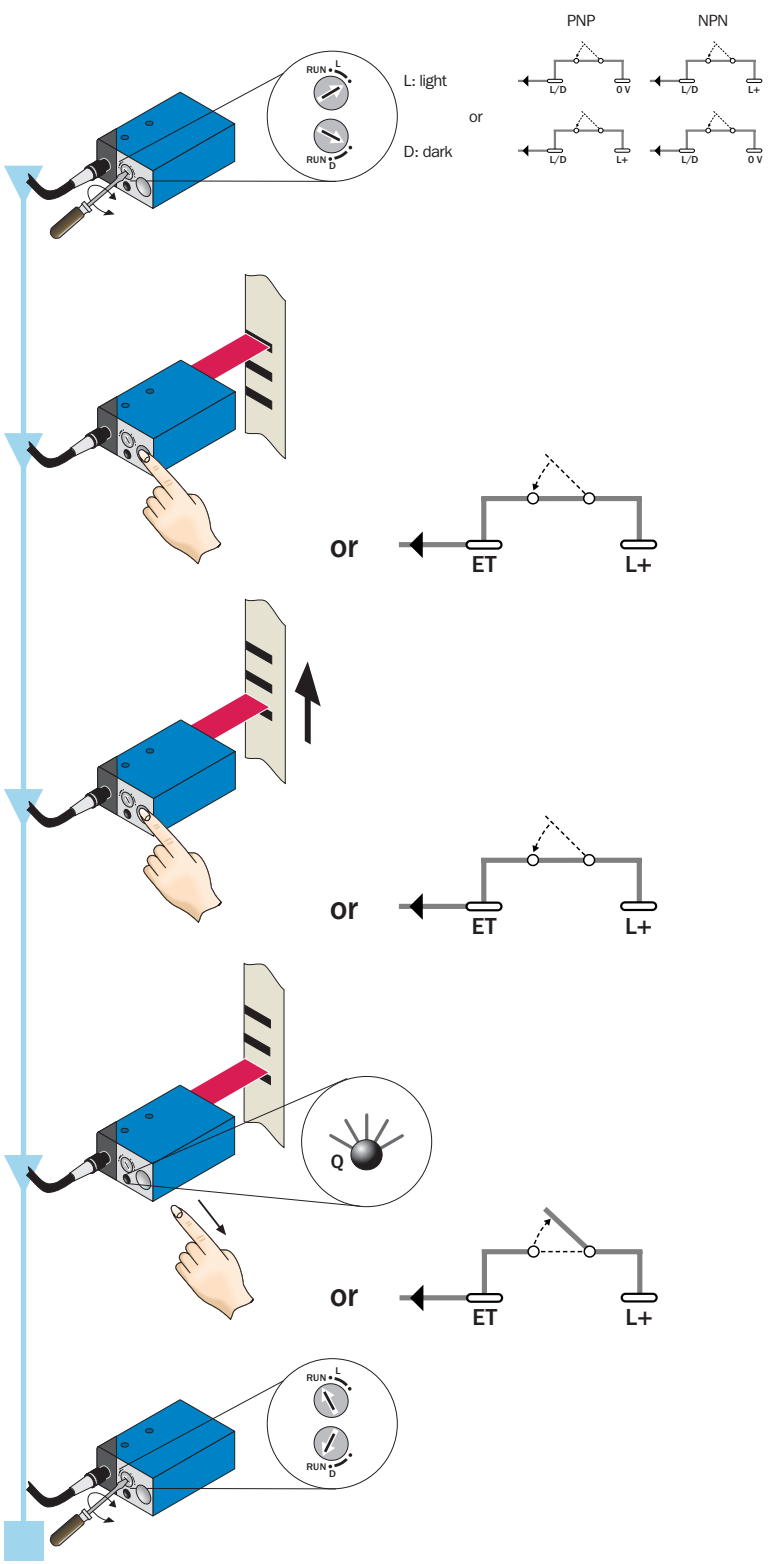
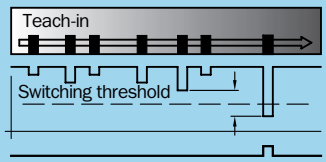
Teach-in: setting switching threshold



Status

- The switching threshold is set automatically in the middle between the reception signals from the background and mark.
- The optimum transmission light was selected automatically.



Notes

- At least one repetition length must pass through the light spot with the material to be scanned.
- The material speed during Teach-in procedures is min. 25 mm/s and max. 300 mm/s.
- The Teach-in button can be locked against unintentional activation with “Run”.
  A Teach-in procedure can be triggered when the switch setting is not defined.

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Scanning distance 10/20 mm

Contrast scanners

- Dynamic Teach-in
- Automatic light transmission selector, red, blue and green
- Teach-in: button on unit or via control cable
- L/D adjustable on unit or via control cable
- Switching frequency 10 000/s

CE UL

Accessories

Cables and connectors

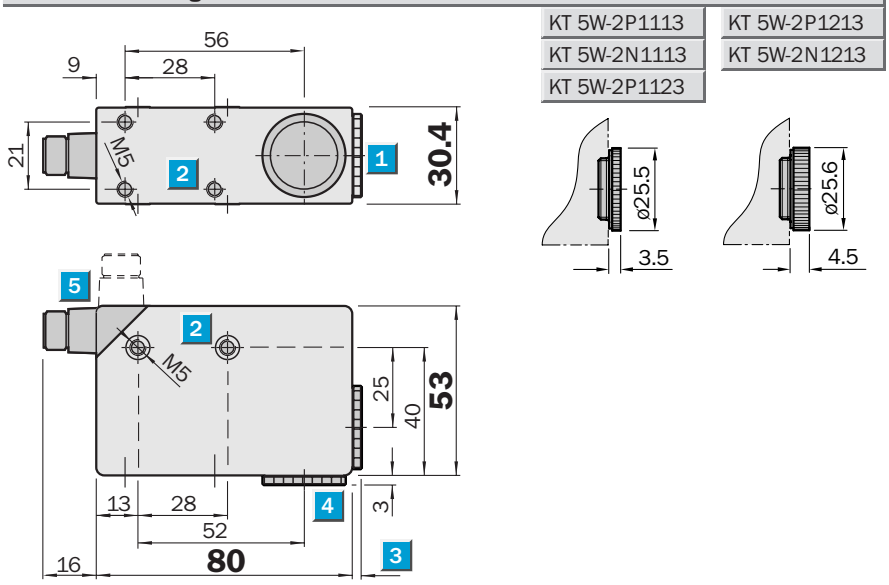
Mounting systems

Lens

Dimensional drawing

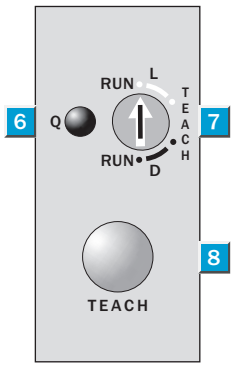
KT 5W-2P1113
KT 5W-2N1113
KT 5W-2P1123

KT 5W-2P1213
KT 5W-2N1213



Adjustments possible

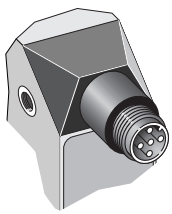
All types



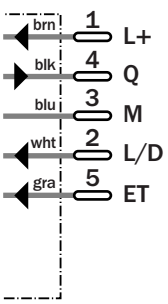
1 Lens (light transmission), can be replaced by item 4
2 M5 mounting holes, 5.5 mm deep
3 See dimensional drawing of lens
4 Blind screw, can be replaced by item 1
5 5-pin, M12 x 1 plug (rotatable through 90°)
6 Function signal indicator (yellow)
7 L/D pre-selection switch
8 Teach-in button

Connection type

All types



5-pin, M12 x 1



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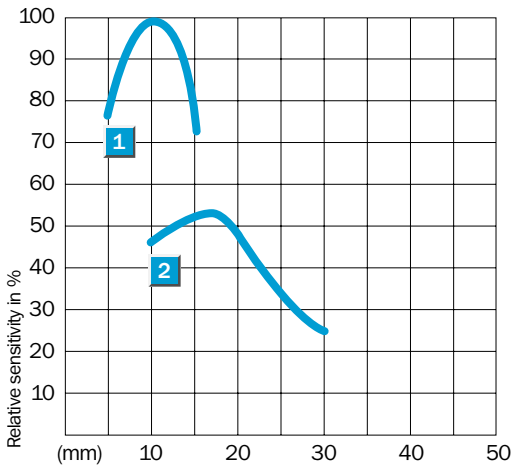
Technical data	KT 5W-2	P1113	P1123	P1213	N1113	N1213
Scanning distance	10 ± 3 mm	■	■		■	
from front edge of lens	20 ± 3 mm			■		■
Light spot dimensions	1.2 x 4.2 mm	■	■		■	
	1.5 x 5.5 mm			■		■
Light source[1]; light type;	LED; red, blue, green;	■	■	■	■	■
Wavelength (nm)	640, 525, 470	■	■	■	■	■
Supply voltage V_S	10... 30 V DC[2]	■	■	■	■	■
Residual ripple[3]	< 5 V_{PP}	■	■	■	■	■
Current consumption[4]	< 80 mA	■	■	■	■	■
Switching outputs	PNP: HIGH = V_S – < 2 V/LOW = 0 V	■	■	■		
	NPN: HIGH = V_S /LOW = < 2 V				■	■
Output current I_A max.	100 mA short-circuit protected	■	■	■	■	■
Switching frequency	To 10 000/s	■	■	■	■	■
Response time[5]; switching frequency[6]	50 µs; 10 000/s	■	■	■	■	■
Time delay	No timing element	■		■	■	■
	Deactivation delay, ... 20 ms		■			
Teach-in input ET	PNP: Teach > 10 V...< V_S	■	■	■		
	Run 0 V or unswitched	■	■	■		
	NPN: Teach 0 V				■	■
	Run V_S or unswitched				■	■
Retention time	25 ms non-volatile memory	■	■	■	■	■
L/D input, light-/dark-switching	PNP: dark = > 10 V...< V_S	■	■	■		
	light = 0 V or unswitched	■	■	■		
	NPN: dark = 0 V				■	■
	light = V_S or unswitched				■	■
Connection type	Plug M12, 5-pin	■	■	■	■	■
VDE protection class[7]	⧈	■	■	■	■	■
Enclosure rating	IP 67	■	■	■	■	■
Circuit protection[8]	A, B, C	■	■	■	■	■
Ambient temperature T_A	Operation –10 ... +55 °C	■	■	■	■	■
	Storage –25 ... +75 °C	■	■	■	■	■
Shock load	To IEC 68	■	■	■	■	■
Weight	Approx. 400 g	■	■	■	■	■
Housing	Cast zinc	■	■	■	■	■

1) Average service life 100,000 h at T_A = + 25 °C
2) Limit values
3) May not exceed or fall short of V_S tolerances
4) Without load
5) Signal transit time with resistive load
6) With light/dark ratio 1:1
7) Reference voltage 32 V DC
8) A = V_S connections reverse-polarity protected
B = Outputs short-circuit protected
C = Interference pulse suppression

Scanning distance

1	Scanning distance with lens 211	10 mm
2	Scanning distance with lens 212	20 mm



Order information

Preferred type *)	Order no.
KT 5W-2P1113	1 016 629
KT 5W-2P1123	1 017 810
KT 5W-2P1213	1 016 715
KT 5W-2N1113	1 016 630
KT 5W-2N1213	1 016 716

*) Further types on request

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