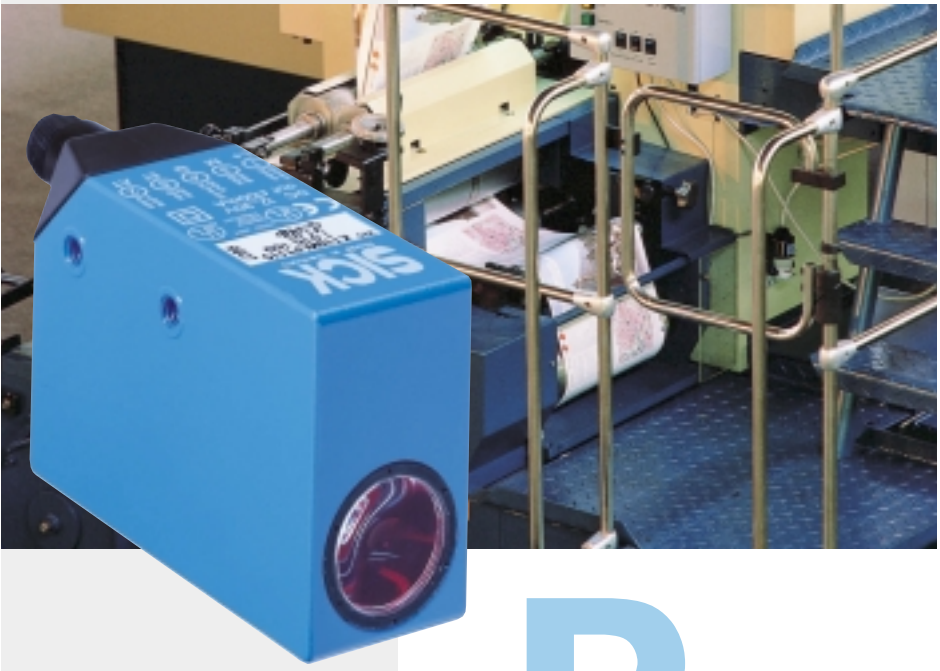
Contrast scanners for a variety of applications in the printing industry



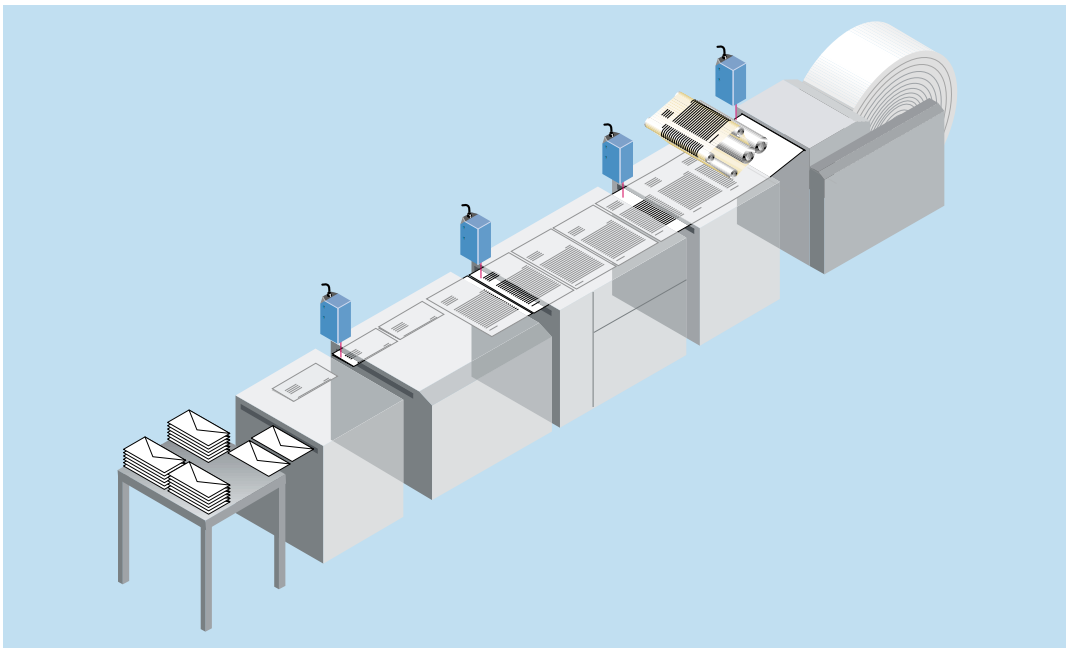
Precise detection, for example, of printing, folding or reference marks is a particular strong point of the KT 10 contrast scanner even on reflective materials (whereby the KT 10 may require tilting) at high detection speeds. The high speeds at which printing machines, continuous form systems and high-performance copiers operate are no problem for the KT 10 contrast scanner as it has been specially developed for these high-speed applications. With its clock frequency of 25 kHz, the KT 10 provides considerably greater performance reserves than other standard contrast scanners.

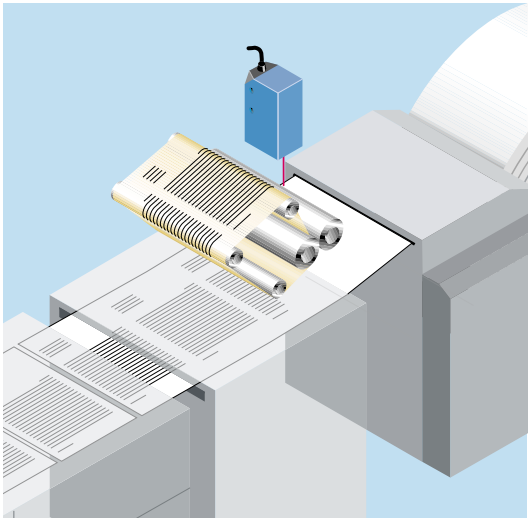
The light spot measuring just 0.8 x 4 mm allows precise switching and highly reproducible mark positioning. An adjustable release delay of 20 ms servers to lengthen the switching impulse. The operating scanning distance is 12.5 mm. Since the contrast scanner is available in versions with a perpendicular or vertical light spot, it can always be installed so as to ensure optimum detection results.

Three-colour light senders for difficult contrast conditions.

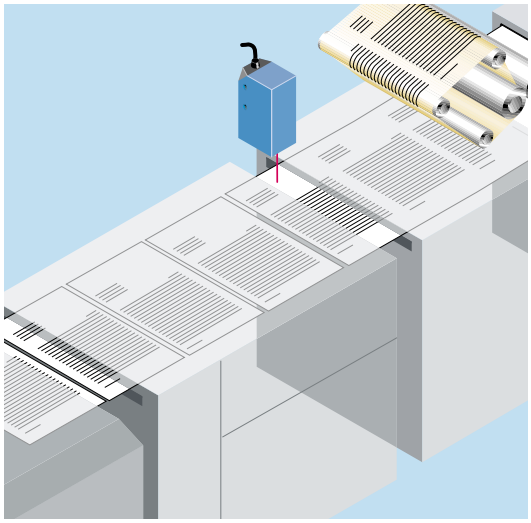
The KT 10 uses red, green and blue for the sender light source. Thus, unlike conventional scanners that may only operate with green or white light, the use of three light sources and the automatic selection of the optimal light source for the task in question, allows considerably more colour combinations to be processed: almost the entire colour spectrum. The scanner selects the best sender colour when a new object is to be detected.

► Precise detection of printing, folding and reference marks as well as high processing speed is a matter of course for the KT 10, as is the great reproducibility required in printing machines, high-performance copiers and in continuous form systems for printing, cutting, folding and inserting letters into envelopes. Of course, the KT 10 can also be used for other applications which place great demands on contrast detection.

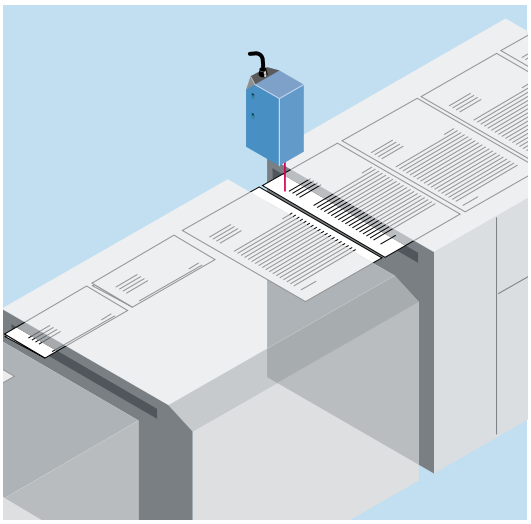




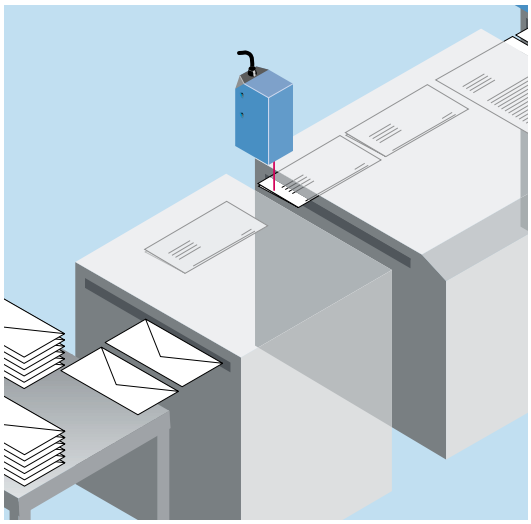
▲ Precise control of printing processes is made possible by the high contrast resolution of the KT 10.



▲ The high repeat accuracy of the KT 10 is required to ensure precise cutting.



▲ Folding processes can be controlled without any problem using the KT 10 even at extremely high processing speeds.



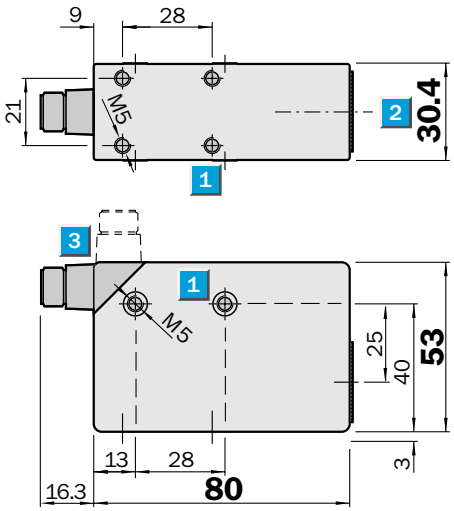
▲ Checking the presence of, for example, the address field when letters are put into envelopes, is no problem for the KT 10.

Scanning distance 12.5 mm

Contrast scanners

- 3 light emitters: red, blue, green. Optimum light emitter is selected automatically
- Programming by teach-in: manually or by cable
- Very narrow, precise light spot
- High geometrical resolution
- Switching frequency 25 kHz

Dimensional drawing



Teach-in

The switching threshold is set using the teach-in procedure, with either the ET teach-in cable or the teach-in button on the unit.

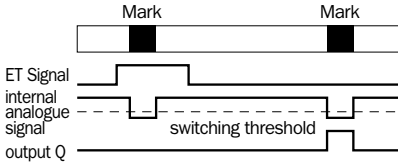
Procedure:

- Move program selector switch to position Q
- Shine light spot in front of the mark on template
- Activate and retain teach signal through teach button or ET cable
- Move the template with the mark through the light spot
- Deactivate teach signal
- The switching threshold has settled in the centre between the receive signals from background and mark and is saved in the non-volatile memory
- The optimum transmission light is selected automatically.

Note:

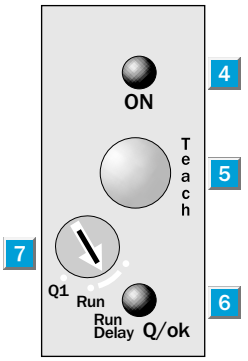
- For small marks the material speed during the teach-in procedure must not exceed 10 m / minute
- Teach-in one mark only.
- If the teach-in procedure is unsuccessful, the output switches at approx. 5 kHz and the LED signal flashes.

The receive signal was too low, too high (possibly through brightness) or the contrast differential was too low.



Adjustments possible

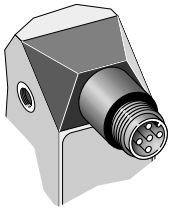
KT 10W-P 1115	KT 10W-P 2115
KT 10W-N 1115	KT 10W-N 2115



1 M 5 threaded mounting hole, 5.5 mm deep
2 Lens (light transmission)
3 5-pin, M 12 x 1 plug (rotatable)
4 Operating signal, green
5 Teach-in button
6 Function signal switching output indicator and teach-in, yellow
7 Program selector switch

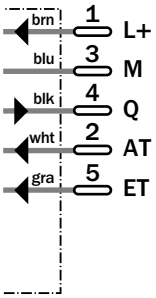
Connection type

KT 10W-P 1115	KT 10W-P 2115
KT 10W-N 1115	KT 10W-N 2115



Accessories	page
Cable receptacles	496

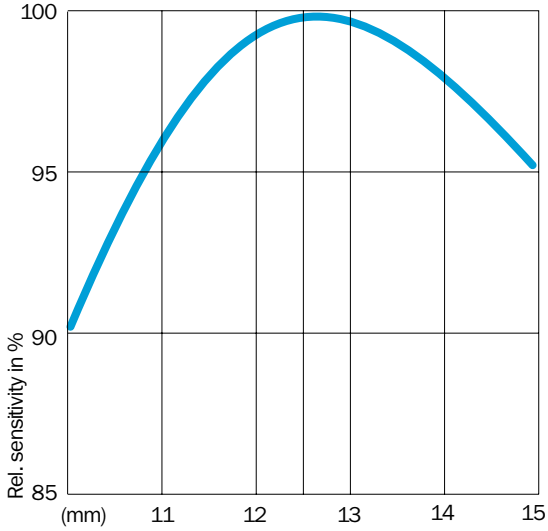
5-pin, M 12



Technical data		KT 10W-	P 1115	N 1115	P 2115	N 2115
Scanning distance,			■	■	■	■
from front edge of lens	12.5 mm/± 2 mm					
Light spot	0.8 x 4 mm		■	■	■	■
Light source[1], **light type**	LED, red, green, blue		■	■	■	■
Light spot direction	Longitudinal		■	■		
	Transverse				■	■
Supply voltage V_S	12…30 V DC[2]		■	■	■	■
(Tolerances)						
Ripple[3]	< 5 V		■	■	■	■
Current consumption[4]	< 150 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		■	■	■	■
Response time[5]	< 20 µs		■	■	■	■
Max. switching frequency[6]	25 kHz		■	■	■	■
Jitter	< 10 µs		■	■	■	■
Time delay (deactivate delay)	20 ms, adjustable		■	■	■	■
Teach-in input ET	PNP:	Teach > 10 V	■		■	
		Run < 2 V or unswitched				
	NPN:	Teach < 2 V		■		■
		Run > 10 V or unswitched				
Blanking input AT						
Blanked	PNP:	AT > 10 V	■		■	
Free running		AT < 2 V or unswitched	■		■	
	NPN:	AT < 2 V		■		■
		AT > 10 V or unswitched		■		■
Connection type	Plug M 12, 5-pin		■	■	■	■
VDE protection class[7]	⧈		■	■	■	■
Circuit protection[8]	A, B, C		■	■	■	■
Enclosure rating	IP 67		■	■	■	■
Ambient temperature T_A	Operation	– 10 °C…+ 60 °C	■	■	■	■
	Storage	– 25 °C…+ 75 °C	■	■	■	■
Shock load	To IEC 68		■	■	■	■
Weight	Approx. 400 g		■	■	■	■
Housing material	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 50 V DC
8) A = V_S connections reverse-polarity protected
B = Outputs Q and $\bar{Q}$ short-circuit protected
C = Interference pulse suppression

Scanning distance



Order information

Type	Part no.
KT 10W-P 1115	1 016 169
KT 10W-N 1115	1 016 192
KT 10W-P 2115	1 016 562
KT 10W-N 2115	1 016 649