HRT 96 Diffuse reflection light scanner with background suppression



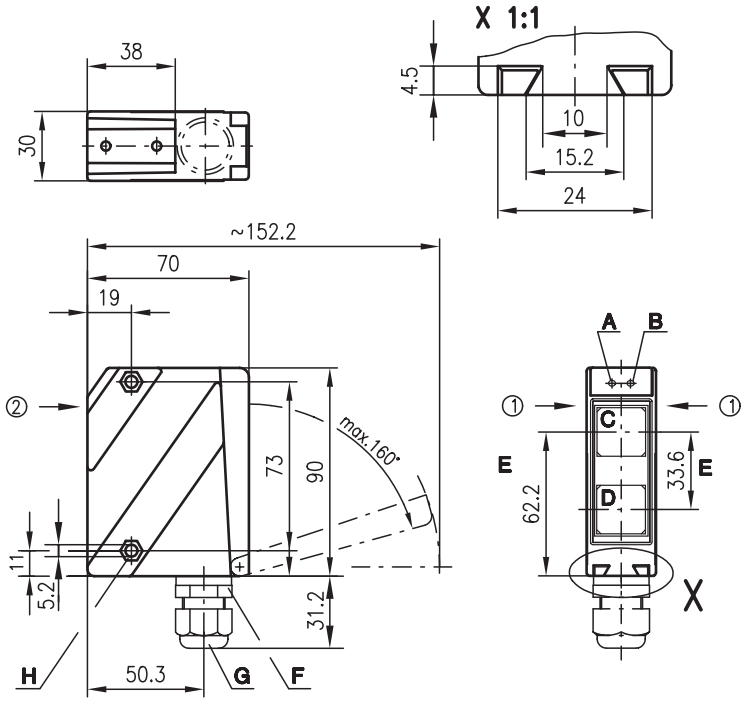
100 … 1800mm
100 … 1200mm

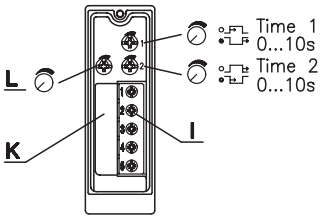
10 - 30 V DC

HF A²LS

- Scanner with adjustable background suppression in visible red light or infrared light
- Robust metal housing with glass cover or plastic housing, protection class IP 67/ IP 69K for industrial application
- Complementary outputs, scanning range adjustment and delay before start-up for optimal adaptation to the application
- Connection via M12 connector or terminal compartment
- Multiple options with switching delays, activation input and optics heating for use at low temperatures

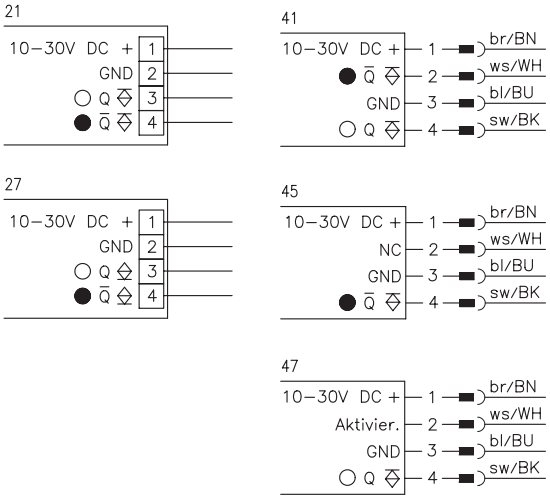
Dimensioned drawing





A Indicator diode green
B Indicator diode yellow
C Transmitter
D Receiver
E Optical axis
F Device plug M12x1
G Screwed cable gland M16x1.5 for Ø 5 … 10mm
H Countersinking for SK nut M5, 4.2 deep
I Connection terminals
K Cable entry
L Scanning range adjustment
Preferred entry direction for objects ① + ②

Electrical connection



IEC 60947... IEC 60947... IP 69K IP 67

Accessories:

(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors (KD …)
- Ready-made cables (K-D …)

We reserve the right to make changes • 96_d01e.fm

Specifications

	Infrared light	Red light
Optical data		
Typ. scanning range limit (white 90%) [1]	100 … 1800mm	100 … 1200mm
Scanning range [2]	see tables	see tables
Adjustment range	150 … 1200mm	100 … 800mm
Light source	LED (modulated light)	LED (modulated light)
Wavelength	880nm	660nm
Timing		
Switching frequency	300Hz	
Response time	1.67ms	
Delay before start-up	≤ 200ms	
Electrical data		
Operating voltage U_B	10 … 30VDC (incl. residual ripple)	
Residual ripple	≤ 15% of U_B	
Bias current	≤ 35mA, ≤ 75mA with optics heating	
Switching output	PNP transistor	
Function characteristics	light or dark switching (reversible)	
Signal voltage high/low	≥ (U_B-2V)/≤ 2V	
Output current	max. 100mA	
Indicators		
LED green	ready	
LED yellow	reflection	
Mechanical data	**Metal housing**	
Housing	diecast zinc	
Optics cover	glass	
Weight	380g	
Connection type	terminals or M12 connector	
Environmental data		
Ambient temp. (operation/storage)	-20°C … +60°C/-40°C … +70°C	
Protective circuit [3]	1, 2, 3, 4	
VDE safety class [4]	II, all-insulated	
Protection class	IP 67, IP 69K [5]	
LED class	1 (acc. to EN 60825-1)	
Standards applied	IEC 60947-5-2	
Options		
Optics heating	for temperature changes, prevents fogging	
Low temperature	to -35°C	
Switching delay (slow oper./release)	0 … 10s (separately adjustable)	
Activation input activ		
Transmitter active/not active	≥ 8V/≤ 2V	
Activation/disable delay	≤ 0.5ms	
Input resistance	47KΩ ± 10%	

1) Typ. scanning range limit: max. attainable range without performance reserve
2) Scanning range: recommended range with performance reserve
3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
4) Rating voltage 250VAC
5) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

Remarks

- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the material surface.
- The diffuse reflection light scanner is also available with integrated AS-i chip for direct connection to the AS-i system.

Order guide

Selection table Equipment ↓		Order code →	**HRT 96M/P-1630-800-41** Part No. 500 80047	**HRT 96M/P-1636-800-41** Part No. 500 32127	**HRT 96M/P-1640-800-21** Part No. 500 25124	**HRT 96M/P-1640-800-41** Part No. 500 25126	**HRT 96M/P-1635-800-45** Part No. 501 04142	**HRT 96M/P-1610-1200-21** Part No. 500 25116	**HRT 96M/P-1610-1200-41** Part No. 500 25118	**HRT 96M/P-1620-1200-21** Part No. 500 25114	**HRT 96M/P-1620-1200-41** Part No. 500 61102	**HRT 96M/N-1606-1200-27** Part No. 500 40358
Light source	red light (800mm)		●	●	●	●	●					
	infrared light (1200mm)							●	●	●	●	●
Connection	terminals				●			●		●		●
	M12 connector		●	●		●	●		●		●	
Features	optics heating/low temp.			●						●	●	●
	switching delay				●	●		●	●	●	●	
	activation input											
	NPN switching output											●
	for AS-i I/O coupling modules						●					

Tables

Red light

1	100	800	1200
2	100	770	1140
3	100	730	1050

Infrared light

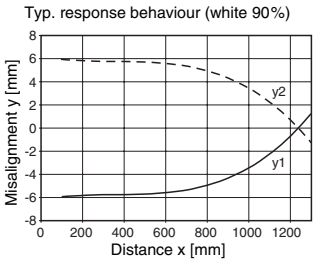
1	100	1200	1800
2	100	1100	1600
3	100	1000	1350

1	white 90%
2	grey 18%
3	black 6%

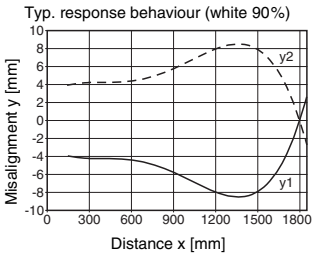
Scanning range [mm]
Typ. scanning range limit [mm]

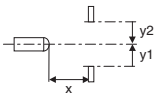
Diagrams

Red light

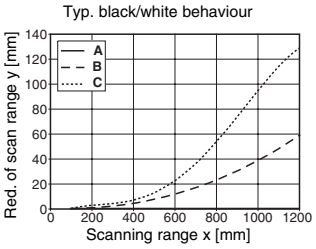


Infrared light

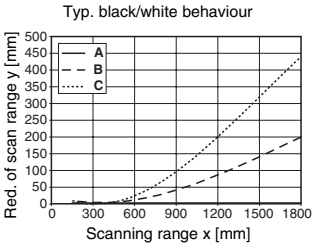




Red light



Infrared light



A white 90%
B grey 18%
C black 6%

