RT 96 — Energetic diffuse reflection light scanners

30 … 700 mm
20 … 1200 mm

10 - 30 V DC

HF A²LS

- Robust metal housing with glass cover or plastic housing, protection class IP 67/ IP 69K for industrial application
- Sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Minimal short range
- Connection via M12 connector or terminal compartment
- Multiple options with warning output, activation input, switching delays and optics heating for use at low temperatures

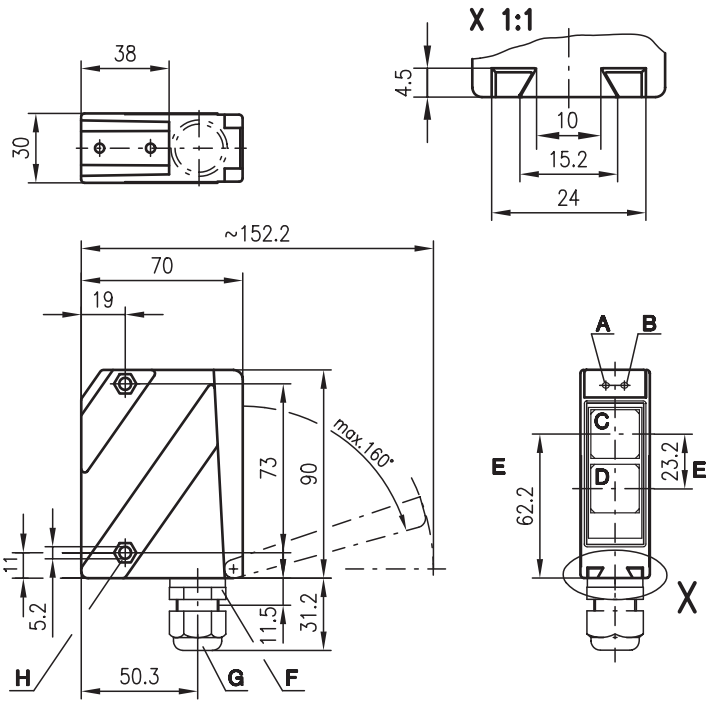
IEC 60947... IEC 60947... IP 69K IP 67

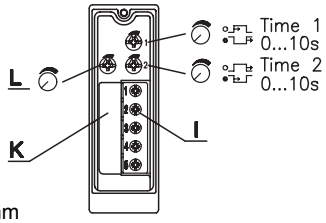
Accessories:

(available separately)

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

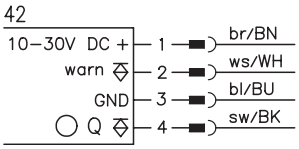
Dimensioned drawing





A Indicator diode green
B Indicator diode yellow
C Receiver
D Transmitter
E Optical axis
F Device plug M12
G Screwed cable gland M16x1.5 for Ø 5 … 10 mm
H Countersinking for SK nut M5, 4.2 deep
I Connection terminals
K Cable entry
L Sensitivity adjustment

Electrical connection



Specifications

	Infrared light	Red light
Optical data		
Typ. scanning range limit (white 90%) [1]	20 … 1200mm	30 … 700mm
Scanning range [2]	20 … 800mm	30 … 500mm
Adjustment range	0 … 100%	0 … 100%
Light source	LED (modulated light)	LED (modulated light)
Wavelength	880nm	660nm
Timing		
Switching frequency	1000Hz	
Response time	0.5ms	
Delay before start-up	≤ 200ms	
Electrical data		
Operating voltage U_B	10 … 30VDC (incl. residual ripple)	
Residual ripple	≤ 15% of U_B	
Bias current	≤ 40mA, ≤ 75mA with optics heating	
Switching output	PNP transistor	
Function characteristics	light switching	
Signal voltage high/low	≥ (U_B-2V)/≤ 2V	
Output current	max. 100mA	
Sensitivity	adjustable	
Indicators		
LED green	ready	
LED yellow	reflection	
LED yellow flashing	reflection, no performance reserve	
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		
Warning output autoControl warn	PNP transistor, 100mA, counting principle	
Optics heating	for temperature changes, prevents fogging	
Low temperature	to -35°C	
Switching delay (slow oper./release)	0 … 10s (separately adjustable)	

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

Order guide

Selection table Equipment ↓	Order code →	RT 96M/P-1374-500-42 Part No. 500 41596	RT 96M/P-1474-800-42 Part No. 500 41597				
Housing	metal	●	●				
	plastic						
Light source	red light (500mm)	●					
	infrared light (800mm)		●				
Connection	terminals						
	M12 connector	●	●				
Features	optics heating/low temp.						
	switching delay		●				
	warning output	●	●				
	short range (20mm)	●	●				
	NPN switching output						

Tables

Red light

1	30	500	700
2	65	320	430
3	90	200	370

Infrared light

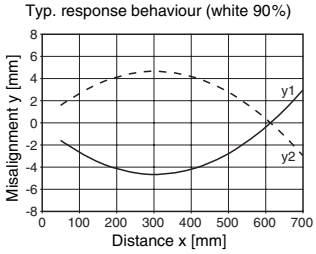
1	20	800	1200
2	60	420	950
3	80	290	570

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

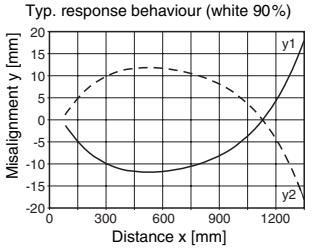
Scanning range [mm]
Typ. scanning range limit [mm]

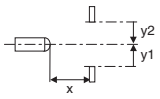
Diagrams

Red light



Infrared light





Remarks

- The upper and lower scanning range limit varies depending on the reflection properties of the material surface.
- **Short range**
  objects are detected down to a minimum distance of 20mm.