



1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter



IND. CONT. EQ
 77HA
 for use in the secondary of
 a class 2 source of supply



Basic features

Approval/Conformity	cULus CE EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	6K
Style	Square Connection 90°

Display/Operation

Adjuster	button
Display	Output function- LED yellow LED green: Power
Setting	Rated switching distance (Sn) Light-on/dark-on Teach mode Stand./Dyn./Obj.

Electrical connection

Connection	Connector, M8x1-Male, 4-pin
Polarity reversal protected	yes
Short-circuit protection	yes

Electrical data

Input function	Same function as button Key disable on/off
No-load current I_o max. at U_e	30 mA
Operating voltage U_b	10...30 VDC
Rated operating current I_e	100 mA
Rated operating voltage U_e DC	24 V
Ripple max. (% of U_e)	12 %
Switching frequency	1000 Hz
Turn-off delay t_{off} max.	0.5 ms
Turn-on delay t_{on} max.	0.5 ms
Voltage drop U_d max. at I_e	2.4 V

Environmental conditions

Ambient temperature	-20...60 °C
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.5 mm, 3x30 min
IP rating per DIN 40050	IP69K
Protection degree	IP67

Functional safety

MTTF (40 °C)	476 a
---------------------	-------

Material

Housing material	ABS
Material sensing surface	PMMA

Mechanical data

Dimension	12 x 41.5 x 21.6 mm
Mounting	Screw M3

Optical features

Ambient light max.	5000 Lux
Beam characteristic	Focus, typical at 60 mm
Light spot size	8 x 8 mm at focal point
Light type	LED, red light
Principle of optical operation	Diffuse sensor, triangulation
Special optical feature	Background suppression
Switching function, optical	Light/dark switching
Wave length	640 nm

Output/Interface

Switching output	PNP normally open/normally closed (NO/NC)
-------------------------	---

Range/Distance

Distance deviation 18 % max. (% of Sr)	5 %
Range	3...400 mm
Rated operating distance Sn	400 mm Adjustable

Remarks

When using as a UL product the ambient temperature Ta max. must not exceed 50°C.
 The sensor is functional again after the overload has been eliminated.
 Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.
 For additional information, refer to user's guide.
 Order accessories separately.
 Do not press key using a pointed tool.
 Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
 For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

Connector Drawings



Wiring Diagrams



Opto Symbols

