

1) Operating voltage, 2) Optical axis



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
Reference receiver	BOS 6K...-LE10...
Series	6K
Style	Square Connection 90°

### 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

### Display/Operation

Display	LED green: Power
---------	------------------

### Electrical connection

Connection	Connector, M8x1-Male, 3-pin
Polarity reversal protected	yes
Protection against device mix-ups	yes

### Electrical data

No-load current $I_0$ max. at $U_e$	30 mA
Operating voltage $U_b$	10...30 VDC
Rated operating voltage $U_e$ DC	24 V
Ripple max. (% of $U_e$ )	12 %

### Material

Housing material	ABS
Material sensing surface	PMMA

### Mechanical data

Dimension	12 x 41 x 21.6 mm
Mounting	Screw M3

### Optical features

Average power $P_0$ max.	390 $\mu$ W
Beam characteristic	Divergent
Laser class per IEC 60825-1	1
Light spot size	14 x 14 mm at 20 m
Light type	Laser red light
Principle of optical operation	Through-beam sensor (Emitter)
Pulse duration $t$ max.	2.0 $\mu$ s
Pulse frequency	13.3 kHz
Pulse power $P_p$ max.	4.2 mW
Wave length	650 nm

Range/Distance

Range

0...18 m

Rated operating distance  $S_n$

18 m Adjustable

## Remarks

When using as a UL product the ambient temperature  $T_a$  max. must not exceed 50°C.

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.

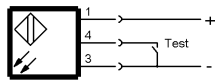
For additional information, refer to user's guide.

Order accessories separately.

## Connector Drawings



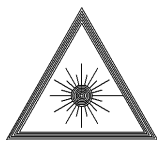
## Wiring Diagrams



## Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1