Linear Drive Accessories

ø 16-80 mm Proximity Sensors

OSP
— ORIGA
— SYSTEM
— PLUS

For electrical sensing of the carrier position, e.g. at the end positions, proximity sensors may be fitted.

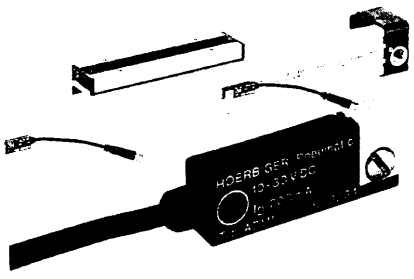
Position sensing is contactless and is based on magnets fitted as standard to the carrier. A yellow LED indicates operating status.

Piston, speed and switching distance affect signal duration and should be considered in conjunction with the minimum reaction time of ancillary control equipment.

$$\text{Min. reaction time} = \frac{\text{Switching distance}}{\text{Piston speed}}$$

Characteristics to VDI 3292

Characteristics	Symbol	Unit	Description	
Electrical Characteristics			**Type RS**	**Type IS**
Operating voltage	U_B	V	10-230 AC/DC (NO) 10-70 AC/DC (NC)	10-30 DC
Connection			Two wire	Three wire
Switching function			Normally open (NO) Normally closed (NC)	PNP NPN
Max. permanent switching current	I_{Dmax}	mA	200	200
Max. switching capacity		VA (W)	6 VA	6 W
Residual voltage at I_{Lmax}		V	<3	<2
Max. current consumption		mA	-	10
Status indicator			LED, yellow	
Switching time		ms	On: 1 Off: 2	On: 0,5
Switch-off delay		ms	-	ca. 20
Max. switching frequency		Hz	200	-
Pole reversal			LED does not work	-
Pole reversal protection			-	Built in
Short circuit protection			-	Built in
Switchable capacity		µF	-	≤0,15
Switching distance		mm	ca. 15	ca. 15
Hysteresis		mm	ca. 8	ca. 3
Mechanical Characteristics				
Housing			Makrolon, grey	
Insulation class			F to VDE 0580	
Connection			Cable, LIFYY, PVC, black, 5 m long	3-pole connector, cable length 100mm
Cable cross section (highly flexible)		mm^2	2 x 0,14	3 x 0,14
Cable (highly flexible)			PVC, black	
Wire colours			Brown AC/DC+ white, signal output	Pin 1 = +, brown Pin 2 = 0V, blue Pin 3 = Signal black or white
Permissible minimum bending radius of cable fixed		mm	≥20	
moving		mm	≥70	
Switching point accuracy		mm	±0,1	
Temperature range	ϑ_{min} ϑ_{max}	°C °C	-10 +75	
Service life Switching cycles			3×10^6 up to 6×10^6	Theoretically unlimited
Electrical protection		IP	67 to DIN 40005	
Shock resistance		m/s^2	100 (contact switches)	500
Vibration resistance (amplitude ≤ 1 mm)		Hz	10	55
Weight (mass)		kg	0,12	



For linear drives see 1.10.002E, 1.20.002E, 1.30.002E

Data Sheet No. 1.45.100E-1

HOERBIGER
ORIGA

Type RS

In the type RS contact is made by a mechanical **reed switch** encapsulated in glass.
Direct connection with 2-pole cable, 5m long, open ended.

Type IS

In the type IS contact is made by an **electronic inductive switch** – without bounce or wear and protected from pole reversal. The output is short circuit proof and insensitive to shocks and vibrations. Connection is by 3-pole connector for easy disconnection. Fitted with connection cable 100 mm long with connector and supplied with a 5 m cable with connector at one end and the other end open.

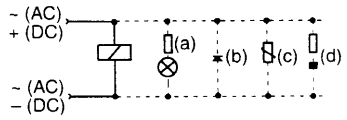
Proximity Sensors RS and IS

Electrical Service Life
Protective Measures
Magnetic switches are sensitive to excessive currents and inductions. With high switching frequencies and inductive loads such as relays, solenoid valves or lifting magnets, service life will be greatly reduced.

With **resistive and capacitative loads** with high switch-on current, such as light bulbs, a protective resistor should be fitted. This also applies to long cable lengths and voltages over 100 V.

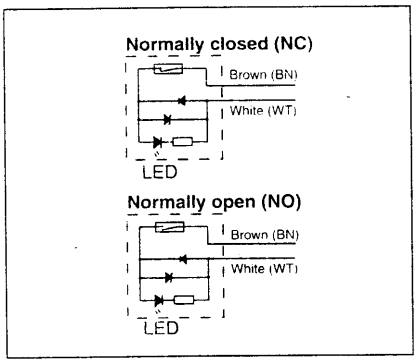
In the switching of inductive loads such as relays, solenoid valves and lifting magnets, voltage peaks (transients) are generated which must be suppressed by protective diodes, RC loops or varistors.

Connection Examples
Load with protective circuits
(a) Protective resistor for light bulb
(b) Freewheel diode on inductivity
(c) Varistor on inductivity
(d) RC element on inductivity

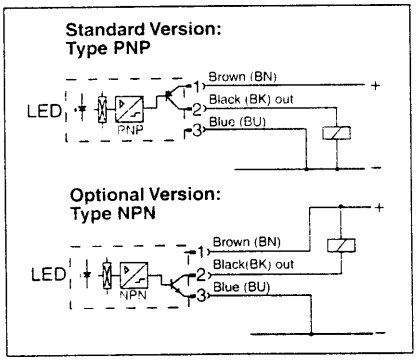


For the type IS, external protective circuits are not normally needed.

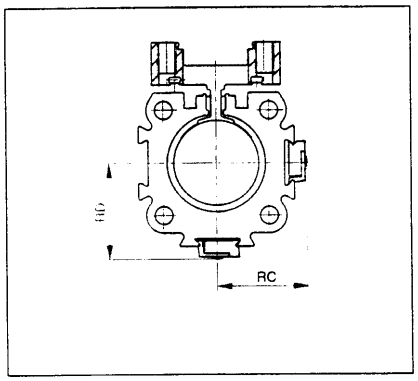
Electrical Connection, Type RS



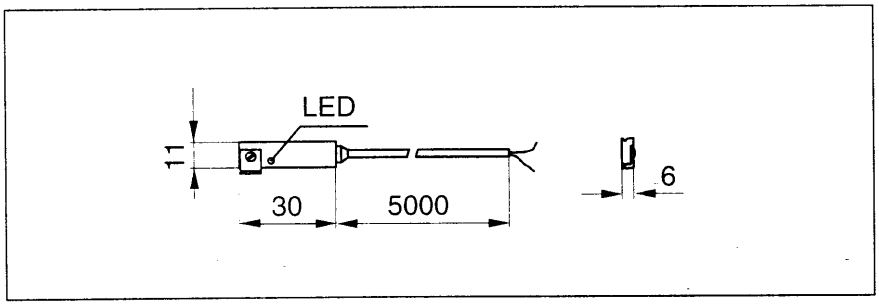
Electrical Connection, Type IS



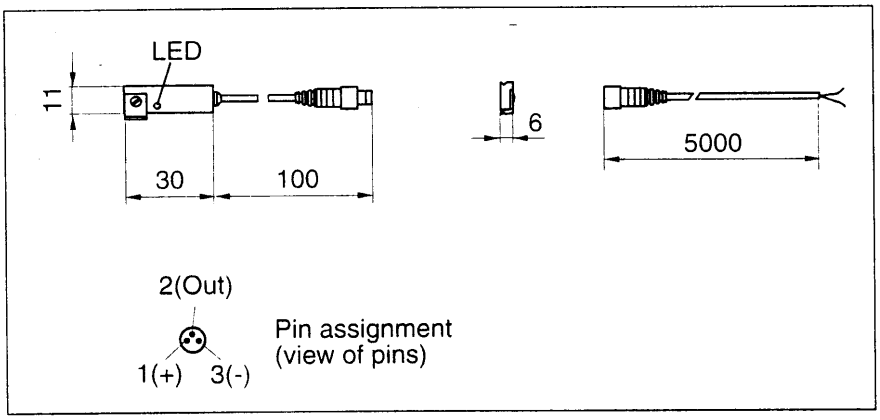
Dimensions



Dimensions (mm) – Type RS



Dimensions (mm) – Type IS



Dimension Table (mm) and Order Instructions

Series	Dimensions RC	Dimensions RD	Order No. RS Normally open	Order No. RS Normally closed	Order No. IS PNP	Order No. IS NPN
OSP-16	20	20.5	10602	10606	10750	10751
OSP-25	25	27				
OSP-32	31	34				
OSP-40	36	39				
OSP-50	43	48				
OSP-63	53	59				
OSP-80	66	72				