



## **LANBAO SENSOR** complete solution for the sensors

Established in 1998, Shanghai Lanbao Sensing Technology Co., Ltd. is a leading industrial automation products supplier in China. Our main businesses are industrial sensors R&D, production, sales and application, providing customers with standard and individual products and systems. Lanbao industrial sensors covers over 30 series, 3000 specifications, main products are inductive sensors, photoelectric sensors, capacitive sensors and pressure sensors. Lanbao has been making continuous breakthrough in new technology and new material application, which laid the foundation of its leading position in sensing technology.

Lanbao is an ISO9001:2008 quality management system and EU RoHS environmental directives implemented enterprise. Our series products are with CE, UL and CCC certification. The strict test in function, quality, reliability and production feasibility at the design stage of each product and the strict quality management in production ensure excellent quality products.

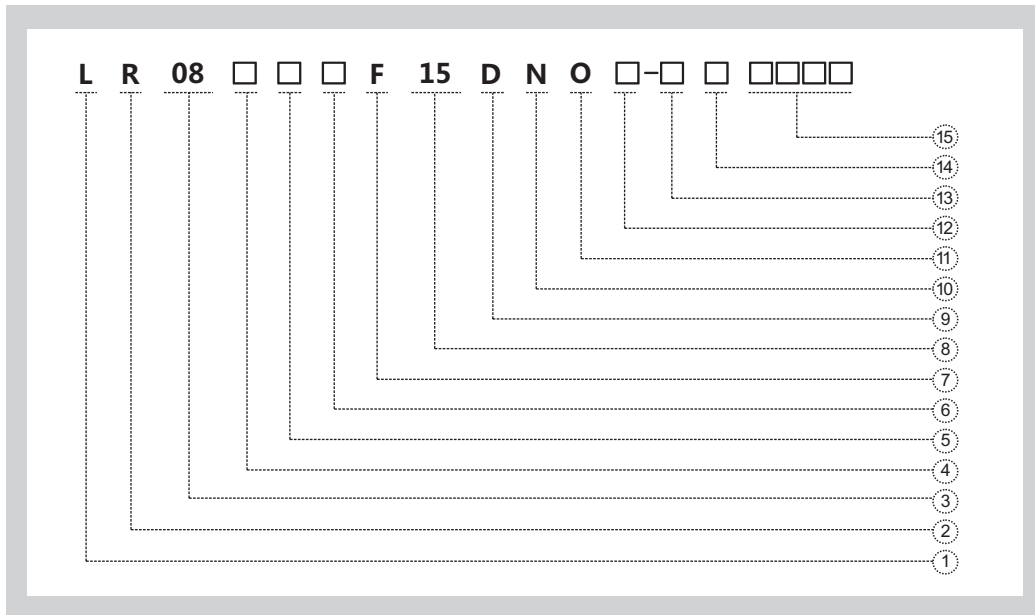
Focus on innovation, quality, service and global market, Lanbao insists on creating maximal value for customers.

## Standard function inductive sensors

- Non-contact detecting way effectively avoids abrasion, safe and reliable.
- Built-in ASIC ensures quick response, high frequency, stable performance.
- Complete range of specification:
  - Smooth cylinder series:  $\phi 4$  to  $\phi 34$ mm;
  - threaded cylinder series :M5 to M30mm;
  - rectangular series: 7\*7mm to 80\*80mm.



## Naming rules



### 1. Type Code

L:Inductive

### 2. Shape Code

R:Cylindrical  
E:Rectangular

### 3. Size Code

Number:Housing diameter  
e.g. 08:M8

### 4. Shape Code

Q:Smooth Cylindrical  
V:Angle Column  
Z:Combination  
H:Ring-shaped  
U:U-shaped  
X:Semi-thread

### 5. Housing Material

N/A:Copper  
S:Plastic  
G:Stainless Steel  
V:Aluminium

### 6. Housing Length

A:Short  
B:Standard  
C:Long

### 7. Mounting

N:Non-flush(nf)  
F:Flush(f)

### 8. Sensing Distance

02:2mm  
04:4mm  
10:10mm

### 9. Supply Voltage

A:20...250VAC  
B:90...250VAC  
C:380VAC  
D:10...30VDC  
E:10...60VDC  
F:8.2VDC  
G:5...60VDC  
L:15...30VDC  
H:20...30VDC  
I:10...40VDC  
J:5VDC  
S:20...250VAC/DC  
T:12...24VDC

### 10. Output Way

B:AC/DC 2 wires  
L:DC 2 wires  
T:AC 2 wires  
P:PNP  
N:NPN  
E:NPN/PNP  
F:NPN+PNP  
K:Relay

### 11. Output Status

A:NO/NC Reversible  
B:NO/NC Optional  
Cable Optional;Potentiometer optional  
O:NO  
C:NC  
R:NO+NC  
IU:Voltage+Current  
(0...10V,0...20mA)  
U:Voltage(0...10V)  
I:Current(0...20mA)  
I4:Current(4...20mA)

### 12. By Sensor Function

N/A:Standard function  
M:Analogue  
N:NAMUR  
W:High Temperature Resistant(-25°C...120°C)  
W1:Low Temperature Resistant(-40°C...70°C)  
W2:High Temperature Resistant(-25°C...100°C)  
B:High Pressure Resistant  
T:Speed  
Z:Self-Diagnosis  
Y:Extended Sensing Distance  
G:High Frequency  
Q:Metal Sensing Face  
A:Welding-immune  
K:EMI  
F:Detect Iron Object  
NF:Detect Non-Iron Object  
J:Rotation Speed

### 13. Cable Length

N/A:2m  
3M:3m

### 14. Connection

N/A:2M cable  
E1:M8 connector (3 pins)  
E2:M12 connector (4 pins)  
E3:M8 connector (4 pins)  
E4:M12 trapezoid connector (4 pins)  
E5:M12 connector (5 pins)  
D:Terminal

### 15. Special Requirement

In 4 Digits

## Wiring diagram

DC 2 Wires	Lead wire	M8 Connector	M12 Connector	Terminal connect
<b>NO</b>				
<b>NC</b>				

DC 3 Wires	Lead wire	M8 Connector	M12 Connector	Terminal connect
<b>NPN NO</b>				
<b>NPN NC</b>				
<b>PNP NO</b>				
<b>PNP NC</b>				

DC 4 Wires	Lead wire	M12 Connector	Terminal connect
<b>NPN NO+NC</b>			
<b>PNP NO+NC</b>			

AC 2 Wires	Lead wire	M12 Connector	Terminal connect
<b>SCR NO</b>			
<b>SCR NC</b>			

# Inductive sensors

AC/DC 2 Wires	Lead wire	M12 Connector	Terminal connect
<b>NO</b>			
<b>NC</b>			
<b>NO/NC</b>			

NAMUR	Lead wire	M8 Connector	M12 Connector	Terminal connect

Analog output	Lead wire	M12 Connector	Terminal connect
<b>3 Wires Voltage output</b>			
<b>3 Wires Current output</b>			
<b>4 Wires Voltage/current output</b>			

## Remarks

Connector	M8 Connector	M12 Connector

# Inductive sensors

## Wide voltage

metal type

P.149

Model	Output	Supply Voltage	Mounting	Sensing Distance	Specifications	Housing Material	Connection
DC 3/4 Wires							P149
LR12	DC 3 Wires	DC10-60V	f/nf	2mm,4mm	M12*1*40	Nickel-copper alloy	Cable
LR12	DC 3 Wires	DC10-60V	f/nf	2mm,4mm	M12*1*40	Nickel-copper alloy	M12 Connector
LR18	DC 3 Wires	DC10-60V	f/nf	5mm,8mm	M18*1*40	Nickel-copper alloy	Cable
LR18	DC 3 Wires	DC10-60V	f/nf	5mm,8mm	M18*1*40	Nickel-copper alloy	M12 Connector
LR30	DC 3 Wires	DC10-60V	f/nf	10mm,15mm	M30*1.5*40	Nickel-copper alloy	Cable
LR30	DC 3 Wires	DC10-60V	f/nf	10mm,15mm	M30*1.5*40	Nickel-copper alloy	M12 Connector
DC 2 Wires							P152
LR12	DC 2 Wires	DC10-60V	f/nf	2mm,4mm	M12*1*43	Nickel-copper alloy	Cable
LR12	DC 2 Wires	DC10-60V	f/nf	2mm,4mm	M12*1*46	Nickel-copper alloy	M12 Connector
LR18	DC 2 Wires	DC10-60V	f/nf	5mm,8mm	M18*1*43	Nickel-copper alloy	Cable
LR18	DC 2 Wires	DC10-60V	f/nf	5mm,8mm	M18*1*46	Nickel-copper alloy	M12 Connector
LR30	DC 2 Wires	DC10-60V	f/nf	10mm,15mm	M30*1.5*43	Nickel-copper alloy	Cable
LR30	DC 2 Wires	DC10-60V	f/nf	10mm,15mm	M30*1.5*46	Nickel-copper alloy	M12 Connector

## Wide voltage

combined type

P.155

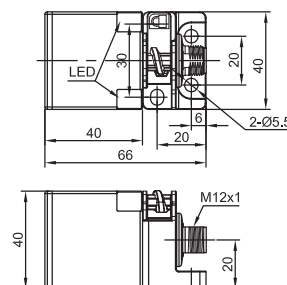
Model	Output	Supply Voltage	Mounting	Sensing Distance	Specifications	Housing Material	Connection
DC 3/4 Wires							P155
LE40SZ	DC 3/4 Wires	DC10-60V	f/nf	15mm,20mm	40*40*66	PBT	M12 Connector
LE40XZ	DC 3/4 Wires	DC10-60V	f/nf	15mm,20mm	40*40*120	PBT	Terminal connect
LE40XZ	DC 3/4 Wires	DC10-60V	f/nf	15mm,20mm	40*40*120	PBT	M12 Connector
LE80XZ	DC 3/4 Wires	DC10-60V	f/nf	40mm,50mm	80*80*40	PBT	Terminal connect
LE80XZ	DC 3/4 Wires	DC10-60V	f/nf	40mm,50mm	80*80*40	PBT	M12 Connector
DC 2 Wires							P.158
LE40SZ	DC 2 Wires	DC10-60V	f/nf	15mm,20mm	40*40*66	PBT	M12 Connector
LE40XZ	DC 2 Wires	DC10-60V	f/nf	15mm,20mm	40*40*120	PBT	Terminal connect
LE40XZ	DC 2 Wires	DC10-60V	f/nf	15mm,20mm	40*40*120	PBT	M12 Connector
LE80XZ	DC 2 Wires	DC10-60V	f/nf	40mm,50mm	80*80*40	PBT	Terminal connect
LE80XZ	DC 2 Wires	DC10-60V	f/nf	40mm,50mm	80*80*40	PBT	M12 Connector

Item Code	LE40SZ	
Mounting	● Flush	◐ Non-flush
Sensing distance	15mm	20mm



Output	NPN NO	LE40SZSF15ENO-E2	LE40SZSN20ENO-E2
	NPN NC	LE40SZSF15ENC-E2	LE40SZSN20ENC-E2
	NPN NO+NC	LE40SZSF15ENR-E2	LE40SZSN20ENR-E2
Output	PNP NO	LE40SZSF15EPO-E2	LE40SZSN20EPO-E2
	PNP NC	LE40SZSF15EPC-E2	LE40SZSN20EPC-E2
	PNP NO+NC	LE40SZSF15EPR-E2	LE40SZSN20EPR-E2

Technical Parameter	
Supply voltage	10..60 VDC
Switch point drift	< ±10% Sr
Load current	<200mA
Voltage drop	< 2.5V
Consumption current	<10mA
Hysteresis	1...20%
Repeat accuracy	<3%
Frequency	500Hz
Output indicator	Yellow LED
Polarity protection	yes
Dielectric strength	1000V/AC 50/60Hz 60s
Short-circuit protection	yes
Ambient temperature	-25...+70°C
Ambient moisture	35...95%
Protection degree	IP67
Housing material	PBT
Connection	M12 Connector
Certification	CE

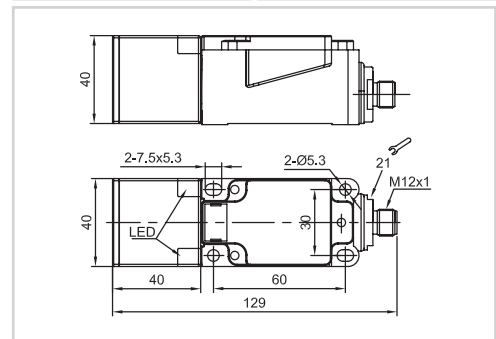
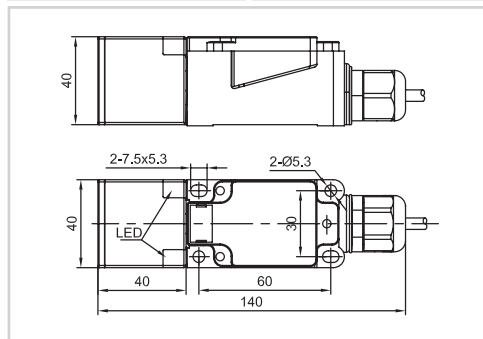


Item Code	LE40XZ		LE40XZ	
Mounting	● Flush	◐ Non-flush	● Flush	◐ Non-flush
Sensing distance	15mm	20mm	15mm	20mm



Output	NPN NO	LE40XZSF15ENO-D	LE40XZSN20ENO-D	LE40XZSF15ENO-E2	LE40XZSN20ENO-E2
	NPN NC	LE40XZSF15ENC-D	LE40XZSN20ENC-D	LE40XZSF15ENC-E2	LE40XZSN20ENC-E2
	NPN NO+NC	LE40XZSF15ENR-D	LE40XZSN20ENR-D	LE40XZSF15ENR-E2	LE40XZSN20ENR-E2
Output	PNP NO	LE40XZSF15EPO-D	LE40XZSN20EPO-D	LE40XZSF15EPO-E2	LE40XZSN20EPO-E2
	PNP NC	LE40XZSF15EPC-D	LE40XZSN20EPC-D	LE40XZSF15EPC-E2	LE40XZSN20EPC-E2
	PNP NO+NC	LE40XZSF15EPR-D	LE40XZSN20EPR-D	LE40XZSF15EPR-E2	LE40XZSN20EPR-E2

Technical Parameter				
Supply voltage	10...60 VDC	10...60 VDC	10...60 VDC	10...60 VDC
Switch point drift	< ±10% Sr	< ±10% Sr	< ±10% Sr	< ±10% Sr
Load current	<200mA	<200mA	<200mA	<200mA
Voltage drop	< 2.5V	< 2.5V	< 2.5V	< 2.5V
Consumption current	<10mA	<10mA	<10mA	<10mA
Hysteresis	1...20%	1...20%	1...20%	1...20%
Repeat accuracy	<3%	<3%	<3%	<3%
Frequency	500Hz	300Hz	500Hz	300Hz
Output indicator	Yellow LED	Yellow LED	Yellow LED	Yellow LED
Polarity protection	yes	yes	yes	yes
Dielectric strength	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s
Short-circuit protection	yes	yes	yes	yes
Ambient temperature	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Ambient moisture	35...95%	35...95%	35...95%	35...95%
Protection degree	IP67	IP67	IP67	IP67
Housing material	PBT	PBT	PBT	PBT
Connection	Terminal connect	Terminal connect	M12 Connector	M12 Connector
Certification	CE	CE	CE	CE





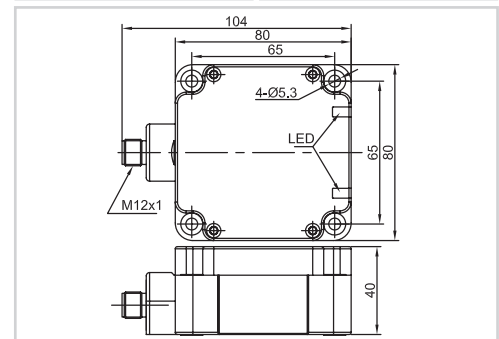
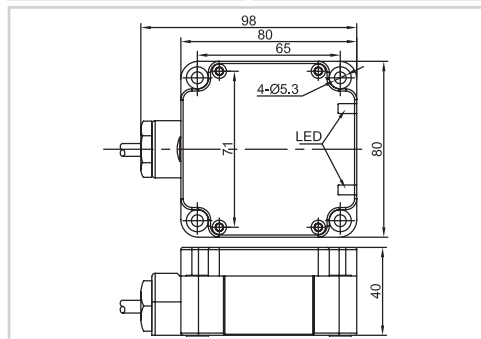
Item Code	LE80XZ		LE80XZ	
Mounting	● Flush	◐ Non-flush	● Flush	◐ Non-flush
Sensing distance	40mm	50mm	40mm	50mm



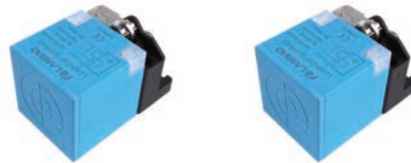
Output	NPN NO	LE80XZSF40ENO-D	LE80XZSN50ENO-D	LE80XZSF40ENO-E2	LE80XZSN50ENO-E2
	NPN NC	LE80XZSF40ENC-D	LE80XZSN50ENC-D	LE80XZSF40ENC-E2	LE80XZSN50ENC-E2
	NPN NO+NC	LE80XZSF40ENR-D	LE80XZSN50ENR-D	LE80XZSF40ENR-E2	LE80XZSN50ENR-E2
Output	PNP NO	LE80XZSF40EPO-D	LE80XZSN50EPO-D	LE80XZSF40EPO-E2	LE80XZSN50EPO-E2
	PNP NC	LE80XZSF40EPC-D	LE80XZSN50EPC-D	LE80XZSF40EPC-E2	LE80XZSN50EPC-E2
	PNP NO+NC	LE80XZSF40EPR-D	LE80XZSN50EPR-D	LE80XZSF40EPR-E2	LE80XZSN50EPR-E2

### Technical Parameter

Supply voltage	10...60 VDC	10...60 VDC	10...60 VDC	10...60 VDC
Switch point drift	< ±10% Sr	< ±10% Sr	< ±10% Sr	< ±10% Sr
Load current	< 200mA	< 200mA	< 200mA	< 200mA
Voltage drop	< 2.5V	< 2.5V	< 2.5V	< 2.5V
Consumption current	< 10mA	< 10mA	< 10mA	< 10mA
Hysteresis	1...20%	1...20%	1...20%	1...20%
Repeat accuracy	< 3%	< 3%	< 3%	< 3%
Frequency	100Hz	50Hz	100Hz	50Hz
Output indicator	Yellow LED	Yellow LED	Yellow LED	Yellow LED
Polarity protection	yes	yes	yes	yes
Dielectric strength	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s
Short-circuit protection	yes	yes	yes	yes
Ambient temperature	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Ambient moisture	35...95%	35...95%	35...95%	35...95%
Protection degree	IP67	IP67	IP67	IP67
Housing material	PBT	PBT	PBT	PBT
Connection	Terminal connect	Terminal connect	M12 Connector	M12 Connector
Certification	CE	CE	CE	CE

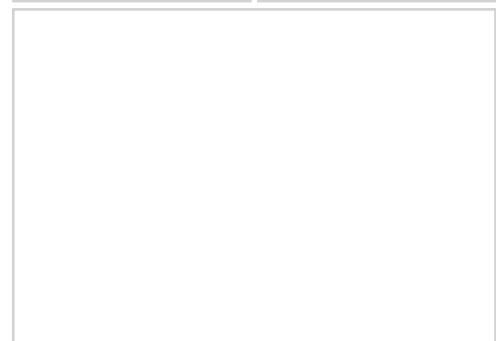
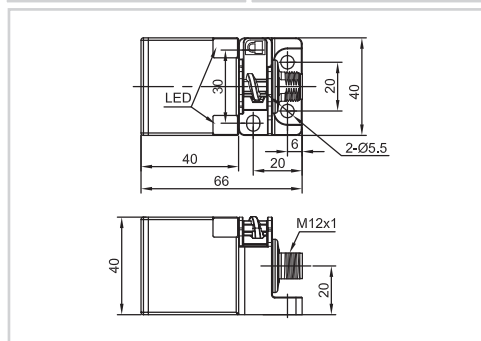






Item Code	LE40SZ			
Mounting	● Flush	◐ Non-flush		
Sensing distance	15mm	20mm		



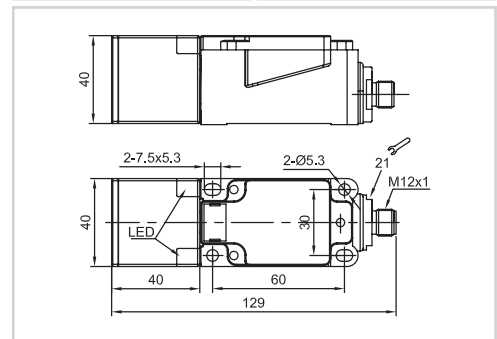
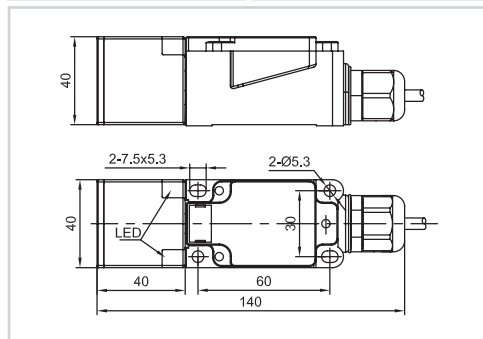
Output	DC 2 Wires NO	LE40SZSF15ELO-E2	LE40SZSN20ELO-E2		
	DC 2 Wires NC	LE40SZSF15ELC-E2	LE40SZSN20ELC-E2		

Technical Parameter					
Supply voltage		10...60 VDC	10...60 VDC		
Switch point drift		< ±10% Sr	< ±10% Sr		
Load current		<100mA	<100mA		
Voltage drop		< 6V	< 6V		
Leakage current		<1mA	<1mA		
Hysteresis		1...20%	1...20%		
Repeat accuracy		<3%	<3%		
Frequency		500Hz	300Hz		
Output indicator		Yellow LED	Yellow LED		
Polarity protection		yes	yes		
Dielectric strength		1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s		
Short-circuit protection		yes	yes		
Ambient temperature		-25...+70°C	-25...+70°C		
Ambient moisture		35...95%	35...95%		
Protection degree		IP67	IP67		
Housing material		PBT	PBT		
Connection		M12 Connector	M12 Connector		
Certification		CE	CE		



Item Code		LE40XZ		LE40XZ	
Mounting		● Flush	◐ Non-flush	● Flush	◐ Non-flush
Sensing distance		15mm	20mm	15mm	20mm
					
Output	DC 2 Wires NO	LE40XZSF15ELO-D	LE40XZSN20ELO-D	LE40XZSF15ELO-E2	LE40XZSN20ELO-E2
	DC 2 Wires NC	LE40XZSF15ELC-D	LE40XZSN20ELC-D	LE40XZSF15ELC-E2	LE40XZSN20ELC-E2

Technical Parameter				
Supply voltage	10...60 VDC	10...60 VDC	10...60 VDC	10...60 VDC
Switch point drift	< ±10% Sr	< ±10% Sr	< ±10% Sr	< ±10% Sr
Load current	<100mA	<100mA	<100mA	<100mA
Voltage drop	<6V	<6V	<6V	<6V
Leakage current	<1mA	<1mA	<1mA	<1mA
Hysteresis	1...20%	1...20%	1...20%	1...20%
Repeat accuracy	<3%	<3%	<3%	<3%
Frequency	500Hz	300Hz	500Hz	300Hz
Output indicator	Yellow LED	Yellow LED	Yellow LED	Yellow LED
Polarity protection	yes	yes	yes	yes
Dielectric strength	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s
Short-circuit protection	yes	yes	yes	yes
Ambient temperature	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Ambient moisture	35...95%	35...95%	35...95%	35...95%
Protection degree	IP67	IP67	IP67	IP67
Housing material	PBT	PBT	PBT	PBT
Connection	Terminal connect	Terminal connect	M12 Connector	M12 Connector
Certification	CE	CE	CE	CE



Item Code	LE80XZ		LE80XZ	
Mounting	● Flush	◐ Non-flush	● Flush	◐ Non-flush
Sensing distance	40mm	50mm	40mm	50mm



Output	DC 2 Wires NO	LE80XZSF40ELO-D	LE80XZSN50ELO-D	LE80XZSF40ELO-E2	LE80XZSN50ELO-E2
	DC 2 Wires NC	LE80XZSF40ELC-D	LE80XZSN50ELC-D	LE80XZSF40ELC-E2	LE80XZSN50ELC-E2

### Technical Parameter

Supply voltage	10...60 VDC	10...60 VDC	10...60 VDC	10...60 VDC
Switch point drift	< ±10% Sr	< ±10% Sr	< ±10% Sr	< ±10% Sr
Load current	<100mA	<100mA	<100mA	<100mA
Voltage drop	<6V	<6V	<6V	<6V
Leakage current	<1mA	<1mA	<1mA	<1mA
Hysteresis	1...20%	1...20%	1...20%	1...20%
Repeat accuracy	<3%	<3%	<3%	<3%
Frequency	80Hz	40Hz	80Hz	40Hz
Output indicator	Yellow LED	Yellow LED	Yellow LED	Yellow LED
Polarity protection	yes	yes	yes	yes
Dielectric strength	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s
Short-circuit protection	yes	yes	yes	yes
Ambient temperature	-25...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Ambient moisture	35...95%	35...95%	35...95%	35...95%
Protection degree	IP67	IP67	IP67	IP67
Housing material	PBT	PBT	PBT	PBT
Connection	Terminal connect	Terminal connect	M12 Connector	M12 Connector
Certification	CE	CE	CE	CE

