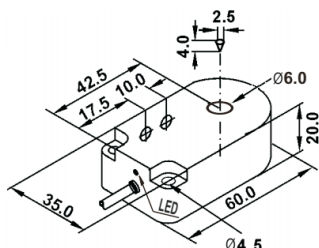


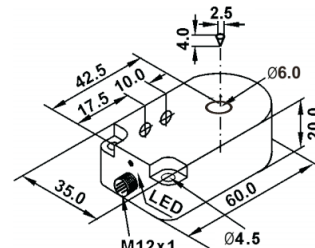


Features

- Ø6mm inside diameter
- Sn=20mm, Non-shielded
- PBT housing case
- NPN, PNP Output
- NO, NC, NO+NC Function
- Short circuit protection
- Overload protection
- Reverse polarity protection
- Cable version
- M12 connector version
- IP67 Protection



(Unit: mm)



(Unit: mm)



	Non-shielded	Non-shielded
NPN-NO	L1SF06C20A	L1SF06C20H
NPN-NC	L1SF06D20A	L1SF06D20H
PNP-NO	L1SF06A20A	L1SF06A20H
PNP-NC	L1SF06B20A	L1SF06B20H
NPN-NO+NC	L1SF06F20A	L1SF06F20H
PNP-NO+NC	L1SF06E20A	L1SF06E20H

General Data

Inside diameter	Ø6mm	Ø6mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing target	D=2.5mm,L=4mm	D=2.5mm,L=4mm
Max. part speed	/	/
Max. fall speed	/	/
Effective sensing distance (Sr: mm)	90 ... 110% of Sn	90 ... 110% of Sn
Hysteresis	<15%	<15%
Housing material	PBT	PBT
Operating voltage	10 ... 30VDC(55VDC can also be customized)	10 ... 30VDC(55VDC can also be customized)

Electrical Data

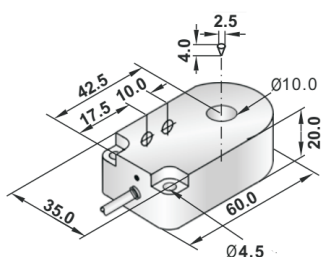
Rated operating voltage	24VDC	24VDC
Repeated accuracy	±2%	±2%
Ripple	<10%	<10%
No load current	10mA	10mA
Max. Load current	200mA	200mA
Leakage current	<0.01mA	<0.01mA
Voltage drop	<1.5VDC	<1.5VDC
Switching frequency	2000Hz	2000Hz
Response time	/	/
Rated insulation voltage	75VDC	75VDC
Operating temperature	-25°C ... +70°C	-25°C ... +70°C
Storage temperature	-40°C ... +80°C	-40°C ... +80°C
Temperature drift	<10%	<10%
Power indicator	No	No
Function indicator	Yellow LED	Yellow LED
Reverse polarity protection	Yes	Yes
Short-circuit protection	Yes	Yes
Overload trip point	220mA	220mA
Correction factors	/	/

Mechanical Data

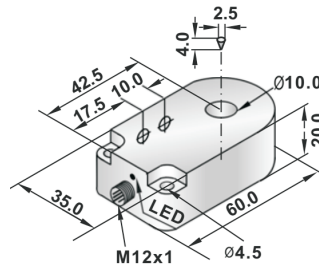
Sensing surface material	PBT	PBT
Protection	IP67	IP67
Shock rating	Shock, half-sinus, 30gn, 11ms	Shock, half-sinus, 30gn, 11ms
Vibration rating	55Hz, 1mm ampl., 3x30min.	55Hz, 1mm ampl., 3x30min.
EMC	IEC 60947-5-2	IEC 60947-5-2
Accessory	/	/
Connection	2m PVC cable (Ø4 3/4x0.15mm ²)	Euro-Style(4Pin M12 connector)
Weight	Approx. 97g	Approx. 47g

Features

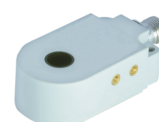
- Ø10mm inside diameter
- Sn=20mm, Non-shielded
- PBT housing case
- NPN, PNP Output
- NO, NC, NO+NC Function
- Short circuit protection
- Overload protection
- Reverse polarity protection
- Cable version
- M12 connector version
- IP67 Protection



(Unit: mm)



(Unit: mm)



Non-shielded

Non-shielded

NPN-NO	L1SF10C20A	L1SF10C20H
NPN-NC	L1SF10D20A	L1SF10D20H
PNP-NO	L1SF10A20A	L1SF10A20H
PNP-NC	L1SF10B20A	L1SF10B20H
NPN-NO+NC	L1SF10F20A	L1SF10F20H
PNP-NO+NC	L1SF10E20A	L1SF10E20H

General Data

Inside diameter	Ø10mm	Ø10mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing target	D=2.5mm,L=4mm	D=2.5mm,L=4mm
Max. part speed	/	/
Max. fall speed	/	/
Effective sensing distance (Sr: mm)	90 ... 110% of Sn	90 ... 110% of Sn
Hysteresis	<15%	<15%
Housing material	PBT	PBT
Operating voltage	10 ... 30VDC(55VDC can also be customized)	10 ... 30VDC(55VDC can also be customized)

Electrical Data

Rated operating voltage	24VDC	24VDC
Repeated accuracy	±2%	±2%
Ripple	<10%	<10%
No load current	10mA	10mA
Max. Load current	200mA	200mA
Leakage current	<0.01mA	<0.01mA
Voltage drop	<1.5VDC	<1.5VDC
Switching frequency	2000Hz	2000Hz
Response time	/	/
Rated insulation voltage	75VDC	75VDC
Operating temperature	-25°C ... +70°C	-25°C ... +70°C
Storage temperature	-40°C ... +80°C	-40°C ... +80°C
Temperature drift		<10%
Power indicator	No	No
Function indicator	Yellow LED	Yellow LED
Reverse polarity protection	Yes	Yes
Short-circuit protection	Yes	Yes
Overload trip point	220mA	220mA
Correction factors	/	/

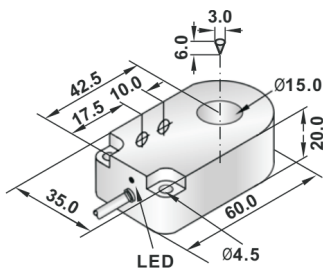
Mechanical Data

Sensing surface material	PBT	PBT
Protection	IP67	IP67
Shock rating	Shock, half-sinus, 30gn, 11ms	Shock, half-sinus, 30gn, 11ms
Vibration rating	55Hz, 1mm ampl., 3x30min.	55Hz, 1mm ampl., 3x30min.
EMC	IEC 60947-5-2	IEC 60947-5-2
Accessory	/	/
Connection	2m PVC cable (Ø4 3/4x0.15mm ²)	Euro-Style(4Pin M12 connector)
Weight	Approx. 97g	Approx. 47g

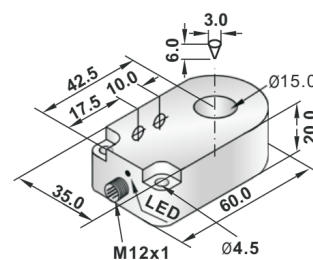


Features

- Ø15mm inside diameter
- Sn=20mm, Non-shielded
- PBT housing case
- NPN, PNP Output
- NO, NC, NO+NC Function
- Short circuit protection
- Overload protection
- Reverse polarity protection
- Cable version
- M12 connector version
- IP67 Protection



(Unit: mm)



(Unit: mm)



Non-shielded

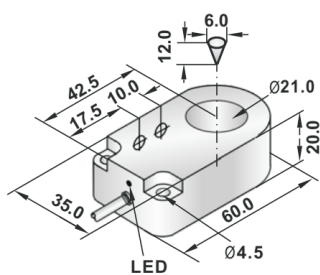
Non-shielded

NPN-NO	L1SF15C20A	L1SF15C20H
NPN-NC	L1SF15D20A	L1SF15D20H
PNP-NO	L1SF15A20A	L1SF15A20H
PNP-NC	L1SF15B20A	L1SF15B20H
NPN-NO+NC	L1SF15F20A	L1SF15F20H
PNP-NO+NC	L1SF15E20A	L1SF15E20H

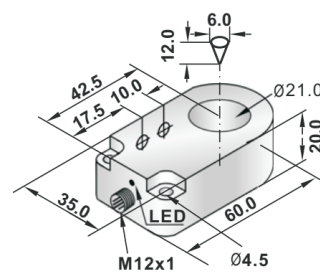
General Data		
Inside diameter	Ø15mm	Ø15mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing target	D=3mm,L=6mm	D=3mm,L=6mm
Max. part speed	/	/
Max. fall speed	/	/
Effective sensing distance (Sr: mm)	90 ... 110% of Sn	90 ... 110% of Sn
Hysteresis	<15%	<15%
Housing material	PBT	PBT
Operating voltage	10 ... 30VDC(55VDC can also be customized)	10 ... 30VDC(55VDC can also be customized)
Electrical Data		
Rated operating voltage	24VDC	24VDC
Repeated accuracy	±2%	±2%
Ripple	<10%	<10%
No load current	10mA	10mA
Max. Load current	200mA	200mA
Leakage current	<0.01mA	<0.01mA
Voltage drop	<1.5VDC	<1.5VDC
Switching frequency	2000Hz	2000Hz
Response time	/	/
Rated insulation voltage	75VDC	75VDC
Operating temperature	-25°C ... +70°C	-25°C ... +70°C
Storage temperature	-40°C ... +80°C	-40°C ... +80°C
Temperature drift	<10%	<10%
Power indicator	No	No
Function indicator	Yellow LED	Yellow LED
Reverse polarity protection	Yes	Yes
Short-circuit protection	Yes	Yes
Overload trip point	220mA	220mA
Correction factors	/	/
Mechanical Data		
Sensing surface material	PBT	PBT
Protection	IP67	IP67
Shock rating	Shock, half-sinus, 30gn, 11ms	Shock, half-sinus, 30gn, 11ms
Vibration rating	55Hz, 1mm ampl., 3x30min.	55Hz, 1mm ampl., 3x30min.
EMC	IEC 60947-5-2	IEC 60947-5-2
Accessory	/	/
Connection	2m PVC cable (Ø4 3/4x0.15mm ²)	Euro-Style(4Pin M12 connector)
Weight	Approx. 97g	Approx. 47g

Features

- Ø21mm inside diameter
- Sn=20mm, Non-shielded
- PBT housing case
- NPN, PNP Output
- NO, NC, NO+NC Function
- Short circuit protection
- Overload protection
- Reverse polarity protection
- Cable version
- M12 connector version
- IP67 Protection



(Unit: mm)



(Unit: mm)



	Non-shielded	Non-shielded
NPN-NO	L1SF21C20A	L1SF21C20H
NPN-NC	L1SF21D20A	L1SF21D20H
PNP-NO	L1SF21A20A	L1SF21A20H
PNP-NC	L1SF21B20A	L1SF21B20H
NPN-NO+NC	L1SF21F20A	L1SF21F20H
PNP-NO+NC	L1SF21E20A	L1SF21E20H

General Data

Inside diameter	Ø21mm	Ø21mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing target	D=6mm, L=12mm	D=6mm, L=12mm
Max. part speed	/	/
Max. fall speed	/	/
Effective sensing distance (Sr: mm)	90 ... 110% of Sn	90 ... 110% of Sn
Hysteresis	<15%	<15%
Housing material	PBT	PBT
Operating voltage	10 ... 30VDC(55VDC can also be customized)	10 ... 30VDC(55VDC can also be customized)

Electrical Data

Rated operating voltage	24VDC	24VDC
Repeated accuracy	±2%	±2%
Ripple	<10%	<10%
No load current	10mA	10mA
Max. Load current	200mA	200mA
Leakage current	<0.01mA	<0.01mA
Voltage drop	<1.5VDC	<1.5VDC
Switching frequency	2000Hz	2000Hz
Response time	/	/
Rated insulation voltage	75VDC	75VDC
Operating temperature	-25°C ... +70°C	-25°C ... +70°C
Storage temperature	-40°C ... +80°C	-40°C ... +80°C
Temperature drift	<10%	<10%
Power indicator	No	No
Function indicator	Yellow LED	Yellow LED
Reverse polarity protection	Yes	Yes
Short-circuit protection	Yes	Yes
Overload trip point	220mA	220mA
Correction factors	/	/

Mechanical Data

Sensing surface material	PBT	PBT
Protection	IP67	IP67
Shock rating	Shock, half-sinus, 30gn, 11ms	Shock, half-sinus, 30gn, 11ms
Vibration rating	55Hz, 1mm ampl., 3x30min.	55Hz, 1mm ampl., 3x30min.
EMC	IEC 60947-5-2	IEC 60947-5-2
Accessory	/	/
Connection	2m PVC cable (Ø4 3/4x0.15mm ²)	Euro-Style(4Pin M12 connector)
Weight	Approx. 97g	Approx. 47g