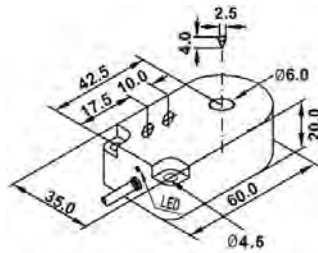
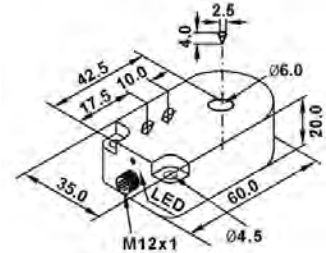


Features

- 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)



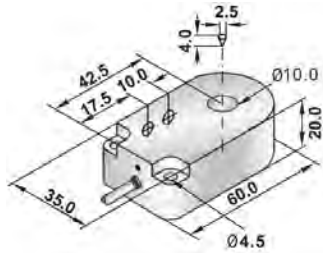
(Unit: mm)



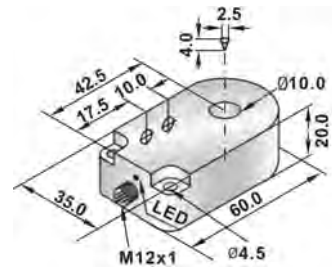
	Non-shielded	Non-shielded
NPN-NO	L1SF06C20A	L1SF06C20H
NPN-NC	L1SF06D20A	L1SF06D20H
PNP-NO	L1SF06A20A	L1SF06A20H
PNP-NC	L1SF06B20A	L1SF06B20H
NPN-NO+NC	L1SF06F20A	L1SF06F20H
PNP-NO+NC	L1SF06E20A	L1SF06E20H
General Data		
Inside diameter	Ø6mm	Ø6mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing 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

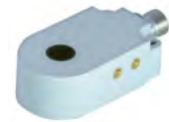
- Ø10mm inside diameter
- Sn=20mm, Non-shielded
- PBT housing case
- NPN, PNP Output
- NO, NC, NO+NC Function
- Short circuit protection
- Overload protection
- Reverse polarity protection
- Cable version
- M12 connector version
- IP67 Protection



(Unit: mm)



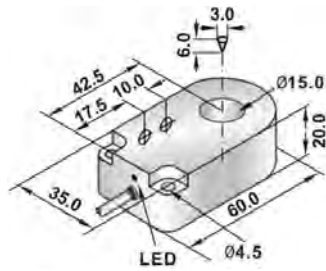
(Unit: mm)



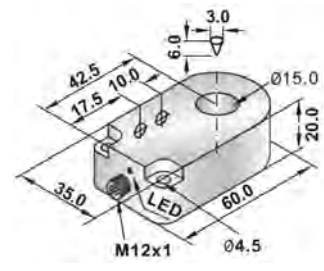
	Non-shielded	Non-shielded
NPN-NO	L1SF10C20A	L1SF10C20H
NPN-NC	L1SF10D20A	L1SF10D20H
PNP-NO	L1SF10A20A	L1SF10A20H
PNP-NC	L1SF10B20A	L1SF10B20H
NPN-NO+NC	L1SF10F20A	L1SF10F20H
PNP-NO+NC	L1SF10E20A	L1SF10E20H
General Data		
Inside diameter	Ø10mm	Ø10mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing 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)

CE

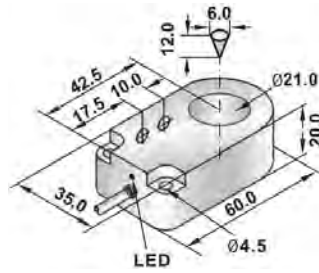


	Non-shielded	Non-shielded
NPN-NO	L1SF15C20A	L1SF15C20H
NPN-NC	L1SF15D20A	L1SF15D20H
PNP-NO	L1SF15A20A	L1SF15A20H
PNP-NC	L1SF15B20A	L1SF15B20H
NPN-NO+NC	L1SF15F20A	L1SF15F20H
PNP-NO+NC	L1SF15E20A	L1SF15E20H
General Data		
Inside diameter	Ø15mm	Ø15mm
Installation type	Non-Shielded	Non-Shielded
Min. sensing 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

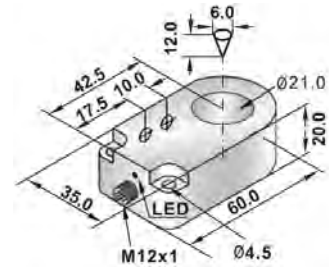
Features

- 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

CE



(Unit: mm)



(Unit: mm)



Non-shielded

NPN-NO	L1SF21C20A
NPN-NC	L1SF21D20A
PNP-NO	L1SF21A20A
PNP-NC	L1SF21B20A
NPN-NO+NC	L1SF21F20A
PNP-NO+NC	L1SF21E20A

Non-shielded

L1SF21C20H
L1SF21D20H
L1SF21A20H
L1SF21B20H
L1SF21F20H
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

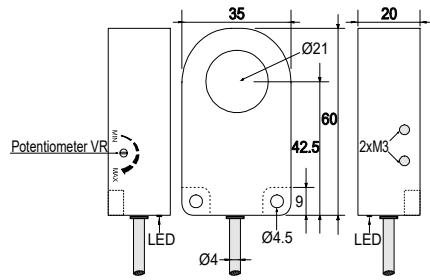
Rated operating voltage	24VDC	24VDC
Repeated accuracy	±2%	±2%
Ripple	<10%	<10%
No load current	10mA	10mA
Max. Load current	200mA	200mA
Leakage current	<0.01mA	<0.01mA
Voltage drop	<1.5VDC	<1.5VDC
Switching frequency	2000Hz	2000Hz
Response time	/	/
Rated insulation voltage	75VDC	75VDC
Operating temperature	-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

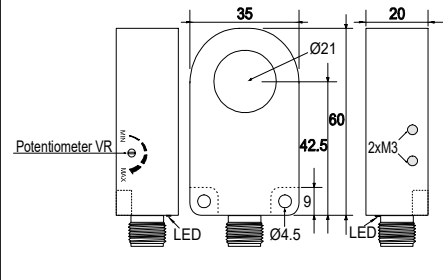
Sensing surface material	PBT	PBT
Protection	IP67	IP67
Shock rating	Shock, half-sinus, 30gn, 11ms	Shock, half-sinus, 30gn, 11ms
Vibration rating	55Hz, 1mm ampl., 3x30min.	55Hz, 1mm ampl., 3x30min.
EMC	IEC 60947-5-2	IEC 60947-5-2
Accessory	/	/
Connection	2m PVC cable (Ø4 3/4x0.15mm ²)	Euro-Style(4Pin M12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

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	C1SF21C20A	C1SF21C20H
NPN-NC	C1SF21D20A	C1SF21D20H
PNP-NO	C1SF21A20A	C1SF21A20H
PNP-NC	C1SF21B20A	C1SF21B20H
NPN-NO+NC	C1SF21F20A	C1SF21F20H
PNP-NO+NC	C1SF21E20A	C1SF21E20H
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