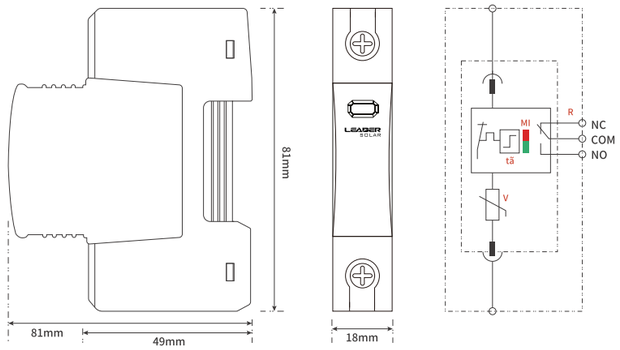
DC TYPE 1+2 LD-SPD-50KA-T1+T2



V	34S High Energy MOV
tā	Thermal Disconnection Device
R	Remote Signal
MI	Normal/Fault display

- Type1+2 DC surge protection device
- Impulse/maximum discharge current [Iimp/Imax]:9kA/50kA
- Varistor voltage limiting technology, low residual voltage design
- Pluggable design and internal thermal disconnection devices
- Operating /fault indication,optional remote signal
- Conform to IEC 61643-31,EN 61643-31,GB/T 18802.31

LD-SPD	–	XXKA	–	T1-T2	–	(R)
1		2		3		4

1 LEADER DC SPD
2 Maximum Discharge Current
3 Combined Type 1 and Type 2 SPD
4 Remote Signal(Optional)

TECHNOLOGY PARAMETER

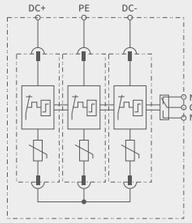
Ucpv		DC600	DC800	DC1000	DC1200	DC1500
Product Description		Type1+2 Surge Protection Device				
DC Maximum Continuous Operating Voltage	[Ucpv]	600Vdc	800Vdc	1000Vdc	1200Vdc	1500Vdc
Nominal Discharge Current[8/20μs]	[In]	20kA				
Maximum Discharge Current[8/20μs]	[Imax]	50kA				
Impulse Discharge Current[10/350μs]	[Iimp]	6.25kA	6.25kA	6.25kA	5kA	5kA
Total Discharge Current[10/350μs]	[Itotal]	12.5kA	12.5kA	12.5kA	10kA	6kA
Voltage Protection Level	[Up]	≤2.6kV	≤3.2kV	≤4.0kV	≤4.5kV	≤5.2kV
Short-circuit Current Rating	[Iscpv]	10kA				
Response Time	[ns]	≤25				
Thermal Disconnection Device		Insertion				
Max. Backup Fuse		125A gPV FUSE				

MECHANICAL DATA

Product Size	As photo
Wiring Method	Screw terminal 2.5-25mm2 [busbar wiring method can be used]
Normal/Fault Display	Green/Red
remote Signal	Optional
Maximum Remote Signal Load Voltage/current	250V/0.5A[AC],30V/3A[DC]
Maximum Cross-sectional Area Of Remote Signal Connection Line	15mm2
Installation	35mm din rail
Operating Temperature Range [℃]	-40to+85
Protection Level	IP20
Enclosure Material	Thermoplastic materials,conform to UL94-V0

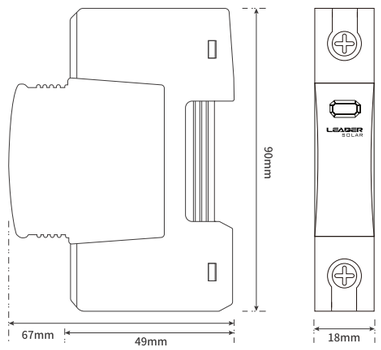
limp 6.25kA

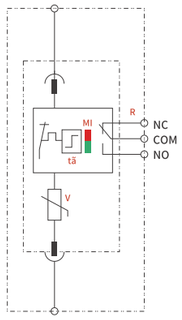
3+0



MODEL	Ucpv	PROTECTION	limp	limp TOTAL	VOLTAGE PROTECTION LEVEL [UP]	
					DC+ → PE	DC- → PE
LD-SPD3P-50KA-T1 +T2/3+0	600V	+/−→PE	6.25kA	12.5kA	≤2.6kV	≤2.6kV
LD-SPD3P-50KA-T1 +T2/3+0	800V	+/−→PE	6.25kA	12.5kA	≤3.2kV	≤3.2kV
LD-SPD3P-50KA-T1 +T2/3+0	1000V	+/−→PE	6.25kA	12.5kA	≤4.0kV	≤4.0kV
LD-SPD3P-50KA-T1+T2/3+0	1200V	+/−→PE	5kA	10kA	≤4.5kV	≤4.5kV
LD-SPD-50KA-T1+T2/3+0	1500V	+/−→PE	3kA	6kA	≤5.2kV	≤5.2kV

DC TYPE 2 LD-SPD-40KA





V	34S Normal MOV
tā	Thermal Disconnection Device
R	Remote Signal
MI	Normal/Fault display

- Type2 DC surge protection device
- Nominal/maximum discharge current:20kA/40kA
- Varistor voltage limiting technology, low residual voltage design
- Pluggable design and internal thermal disconnection devices
- Operating /fault indication,optional remote signal
- Conform to IEC 61643-31,EN 61643-31,GB/T 18802.31

LD-SPD	-	XXKA	-	(R)
1		2		3

1 LEADER DC SPD

2 Maximum Discharge Current

3 Remote Signal(Optional)

TECHNOLOGY PARAMETER

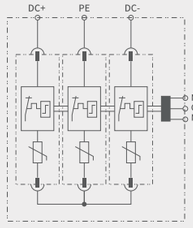
Ucpv		DC1000	DC1200	DC1200
Product Description		Type2 Surge Protection Device		
Dc Maximum Continuous Operating Voltage	[Ucpv]	1000Vdc	1200Vdc	1500Vdc
Nominal Discharge Current[8/20μs]	[In]	20kA		
Maximum Discharge Current[8/20μs]	[Imax]	40kA		
Voltage Protection Level	[Up]	≤4.0kV	≤4.5kV	≤5.2kV
short-circuit Current Rating	[Iscpv]	10kA		
Response Time	[ns]	≤25		
Thermal Disconnection Device		Insertion		
Max. Backup Fuse		63A gPV FUSE		

MECHANICAL DATA

Product Size		As photo
Wiring Method		Screw terminal 2.5-25mm2 [busbar wiring method can be used]
Normal/fault Display		Green/Red
Remote Signal		Optional
Maximum Remote Signal Load Voltage/current		250V/0.5A[AC],30V/3A[DC]
Maximum Cross-sectional Area Of Remote Signal Connection Line		15mm2
Installation		35mm din rail
Operating Temperature Range	[℃]	-40to+85
Protection Level		IP20
Enclosure Material		Thermoplastic materials,conform to UL94-V0

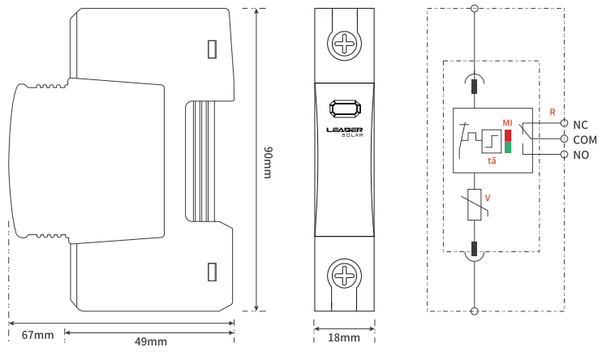
Imax 40kA

3+0



MODEL	Ucpv	PROTECTION MODE	In	Imax TOTAL	VOLTAGE PROTECTION LEVEL [UP]	
					DC+ → PE	DC- → PE
LD-SPD3P-40KA/3+0	1000	+/-→PE	20kA	80kA	≤4.0kV	≤4.0kV
LD-SPD3P-40KA/3+0	1200	+/-→PE	20kA	80kA	≤4.5kV	≤4.5kV
LD-SPD3P-40KA/3+0	1500	+/-→PE	20kA	80kA	≤5.2kV	≤5.2kV

DC TYPE 2 LD-SPD-20KA



V	34S High Energy MOV
tā	Thermal Disconnection Device
R	Remote Signal
MI	Normal/Fault display

- Type1+2 DC surge protection device
- Impulse/maximum discharge current [Iimp/Imax]:6.25kA/50kA
- Varistor voltage limiting technology, low residual voltage design
- Pluggable design and internal thermal disconnection devices
- Operating /fault indication,optional remote signal
- Conform to IEC 61643-31,EN 61643-31,GB/T 18802.31

LD-SPD	–	XXKA	–	(R)
1		2		3

1 LEADER DC SPD 2 Maximum Discharge Current
3 Remote Signal(Optional)

TECHNOLOGY PARAMETER

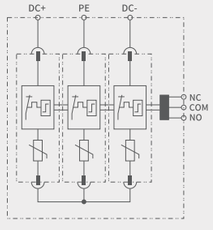
Ucpv		DC1000	DC1200	DC1500
Product Description		Type2 Surge Protection Device		
DC Maximum Continuous Operating Voltage	[Ucpv]	1000Vdc	1200Vdc	1500Vdc
Nominal Discharge Current[8/20μs]	[In]	10kA		
Maximum Discharge Current[8/20μs]	[Imax]	20kA		
Voltage Protection Level	[Up]	≤4.0kV	≤4.3kV	≤5.0kV
Short-circuit Current Rating	[Iscpv]	10kA		
Response Time	[ns]	≤25		
Thermal Disconnection Device		Insertion		
Max. Backup Fuse		32A gPV FUSE		

MECHANICAL DATA

Product Size	As photo
Wiring Method	Screw terminal 2.5-25mm2 [busbar wiring method can be used]
Normal/Fault Display	Green/Red
remote Signal	Optional
Maximum Remote Signal Load Voltage/current	250V/0.5A[AC],30V/3A[DC]
Maximum Cross-sectional Area Of Remote Signal Connection Line	15mm2
Installation	35mm din rail
Operating Temperature Range [℃]	-40to+85
Protection Level	IP20
Enclosure Material	Thermoplastic materials,conform to UL94-V0

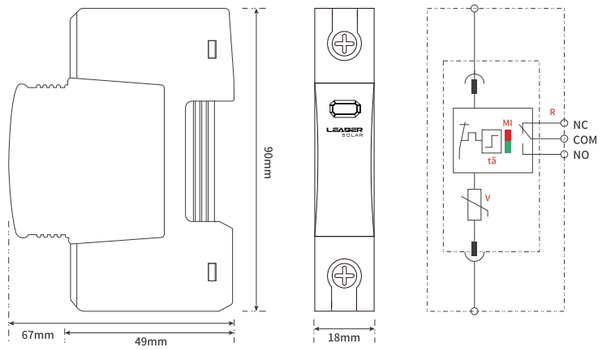
limp 20kA

3+0



MDAY MODEL	Ucpv	PROTECTION MODE	In	Iimp TOTAL	VOLTAGE PROTECTION LEVEL [UP]	
					DC+ → PE	DC- → PE
LD-SPD3P-40KA/3+0	1000	+/-→PE	10kA	40kA	≤4.0kV	≤4.0kV
LD-SPD3P-40KA/3+0	1200	+/-→PE	10kA	40kA	≤4.3kV	≤4.3kV
LD-SPD3P-40KA/3+0	1500	+/-→PE	10kA	40kA	≤5.0kV	≤5.0kV

DC TYPE 2 LD-SPD-40KA



V	34S Normal MOV
tā	Thermal Disconnection Device
R	Remote Signal
MI	Normal/Fault display

- Type2 DC surge protection device
- Nominal/maximum discharge current:20kA/40kA
- Varistor voltage limiting technology, low residual voltage design
- Pluggable design and internal thermal disconnection devices
- Operating /fault indication,optional remote signal
- Conform to IEC 61643-31,EN 61643-31,GB/T 18802.31

LD-SPD	–	XXKA	–	(R)
1		2		3

1 LEADER DC SPD 2 Maximum Discharge Current

3 Remote Signal(Optional)

TECHNOLOGY PARAMETER

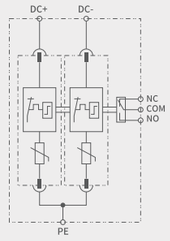
Ucpv		DC500	DC600	DC800	DC1000
Product Description		Type2 Surge Protection Device			
Dc Maximum Continuous Operating Voltage	[Ucpv]	500Vdc	600Vdc	800Vdc	1000Vdc
Nominal Discharge Current[8/20μs]	[In]	20kA			
Maximum Discharge Current[8/20μs]	[Imax]	40kA			
Voltage Protection Level	[Up]	≤2.2kV	≤2.6kV	≤3.2kV	≤4.0kV
short-circuit Current Rating	[Iscpv]	10kA			
Response Time	[ns]	≤25			
Thermal Disconnection Device		Insertion			
Max. Backup Fuse		63A gPV FUSE			

MECHANICAL DATA

Product Size		As photo
Wiring Method		Screw terminal 2.5-25mm2 [busbar wiring method can be used]
Normal/fault Display		Green/Red
Remote Signal		Optional
Maximum Remote Signal Load Voltage/current		250V/0.5A[AC],30V/3A[DC]
Maximum Cross-sectional Area Of Remote Signal Connection Line		15mm2
Installation		35mm din rail
Operating Temperature Range	[℃]	-40to+85
Protection Level		IP20
Enclosure Material		Thermoplastic materials,conform to UL94-V0

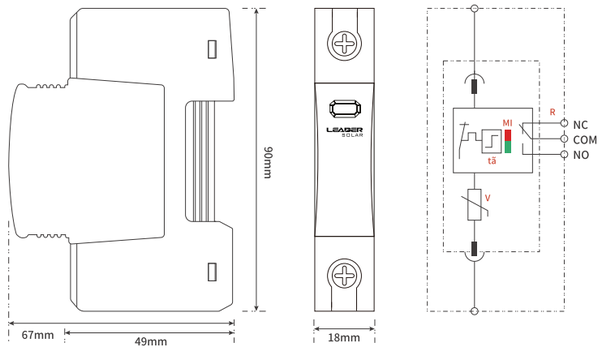
Imax 40kA

2+0



MODEL	Ucpv	PROTECTION MODE	In	Imax TOTAL	VOLTAGE PROTECTION LEVEL [UP]	
					DC+ → PE	DC- → PE
LD-SPD2P-40KA/2 +0	500	+/−→PE	20kA	80kA	≤2.2kV	≤2.2kV
LD-SPD2P-40KA/2 +0	600	+/−→PE	20kA	80kA	≤2.6kV	≤2.6kV
LD-SPD2P-40KA/2+0	800	+/−→PE	20kA	80kA	≤3.2kV	≤3.2kV
LD-SPD2P-40KA/2+0	1000	+/−→PE	20kA	80kA	≤4.0kV	≤4.0kV

DC TYPE 2 LD-SPD-20KA



V	34S Normal MOV
tā	Thermal Disconnection Device
R	Remote Signal
MI	Normal/Fault display

- Type2 DC surge protection device
- Nominal/maximum discharge current:20kA/40kA
- Varistor voltage limiting technology, low residual voltage design
- Pluggable design and internal thermal disconnection devices
- Operating /fault indication,optional remote signal
- Conform to IEC 61643-31,EN 61643-31,GB/T 18802.31

LD-SPD	-	XXKA	-	(R)
1		2		3

1 LEADER DC SPD
2 Maximum Discharge Current
3 Remote Signal(Optional)

TECHNOLOGY PARAMETER

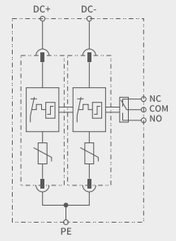
MDAY MODEL		DC500	DC600	DC800	DC1000
Product Description		Type2 Surge Protection Device			
Dc Maximum Continuous Operating Voltage	[Ucpv]	500Vdc	600Vdc	800Vdc	1000Vdc
Nominal Discharge Current[8/20μs]	[In]	10kA			
Maximum Discharge Current[8/20μs]	[Imax]	20kA			
Voltage Protection Level	[Up]	≤2.2kV	≤2.6kV	≤3.2kV	≤4.0kV
short-circuit Current Rating	[Iscpv]	10kA			
Response Time	[ns]	≤25			
Thermal Disconnection Device		Insertion			
Max. Backup Fuse		32A gPV FUSE			

MECHANICAL DATA

Product Size		As photo
Wiring Method		Screw terminal 2.5-25mm2 [busbar wiring method can be used]
Normal/fault Display		Green/Red
Remote Signal		Optional
Maximum Remote Signal Load Voltage/current		250V/0.5A[AC],30V/3A[DC]
Maximum Cross-sectional Area Of Remote Signal Connection Line		15mm2
Installation		35mm din rail
Operating Temperature Range	[℃]	-40to+85
Protection Level		IP20
Enclosure Material		Thermoplastic materials,conform to UL94-V0

Imax 20kA

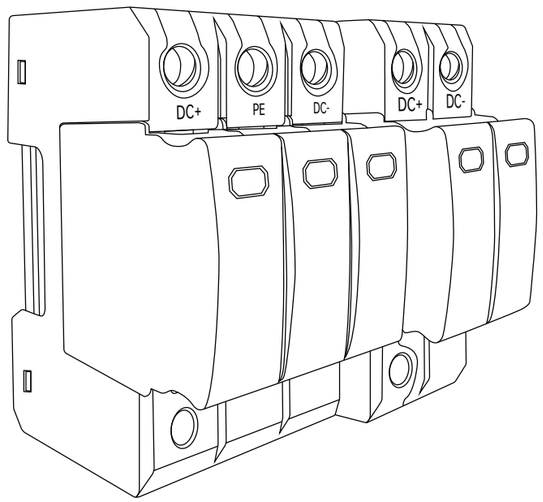
2+0



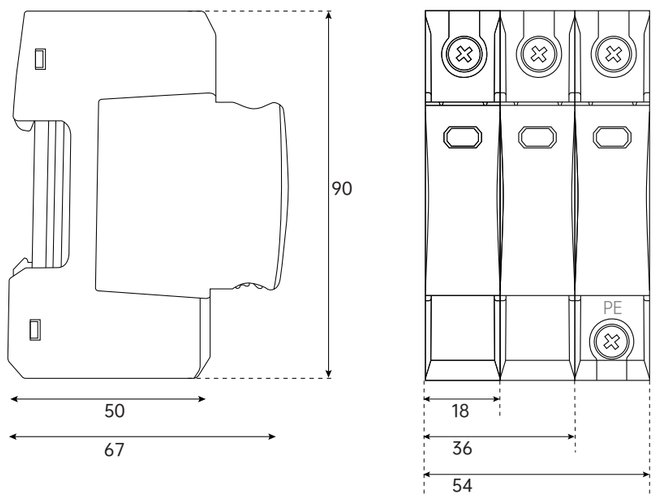
MDAY MODEL	Ucpv	PROTECTION MODE	In	Imax TOTAL	VOLTAGE PROTECTION LEVEL [UP]	
					DC+ → PE	DC- → PE
LD-SPD2P-20KA/2+0	500	+/-→PE	10kA	40kA	≤2.2kV	≤2.2kV
LD-SPD2P-20KA/2+0	600	+/-→PE	10kA	40kA	≤2.6kV	≤2.6kV
LD-SPD2P-20KA/2+0	800	+/-→PE	10kA	40kA	≤3.2kV	≤3.2kV
LD-SPD2P-20KA/2+0	1000	+/-→PE	10kA	40kA	≤4.0kV	≤4.0kV

BRIEF INSTALLATION INSTRUCTIONS

LEADER DC SYSTEM
SURGE PROTECTIVE DEVICE (SPD)



A Dimensions (mm)

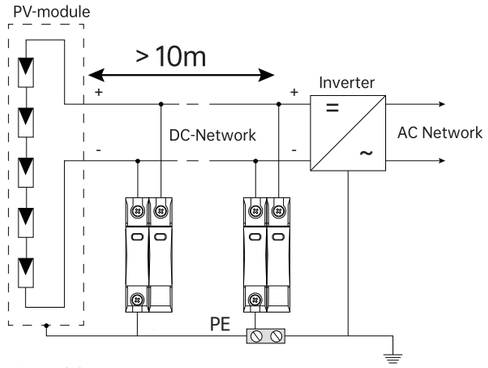


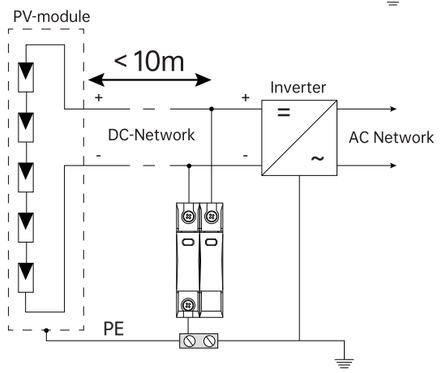
B Technical Data

Model	LD-SPD-50kA-T1	LD-SPD-40kA
UC	500-1000V DC	500-1500V DC
Voltage regulation	±10 %	±10 %
Iscpv	10A	10A
In (8/20 μs)	20kA	20 kA
Imax (8/20μs)	50kA	40 kA
Iimp (10/350μs)	6.25kA	/
Max. backup fuse (F1)	63 A gPV	63 A gPV
Max. backup SCB (F2)	3A	3A
Tu	- 40°C ... + 80°C	- 40°C ... + 80°C
IPE	1mA	1mA
IP Degree	IP20	IP20
LxWxH	90x72x67mm	90x72x67mm
	16mm 16mm 16mm	
min-max(☐ L,N,PE)	6mm²-35mm²	
Location	inner door	
Number of ports	One Port	
Humidity range	5%-95%	
Installation system	DC System	
Ics(backup SCB)	20kA	

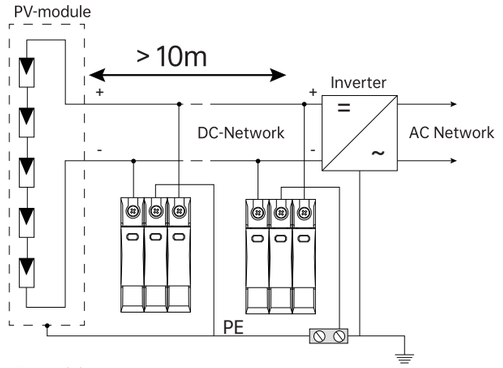
C Standard Wiring

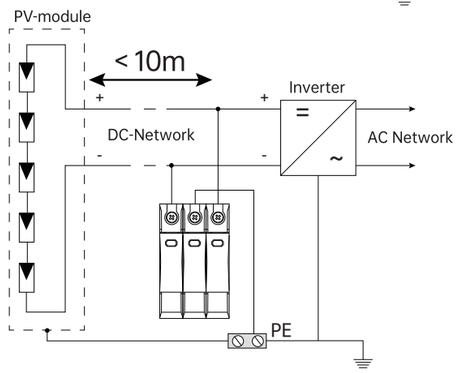
Configuration 1





Configuration 2,3or4





D Mounting And Demounting

IN

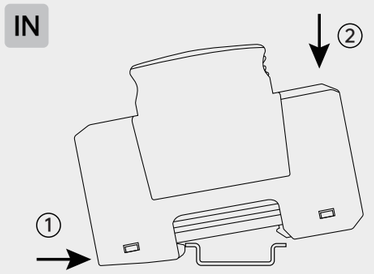


Abb. /Fig. B1

OFF

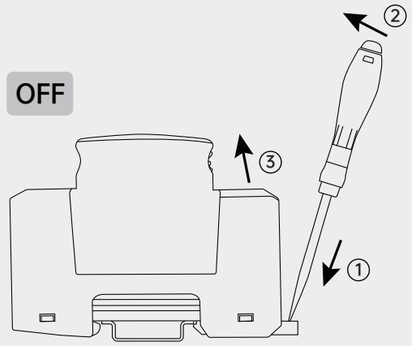
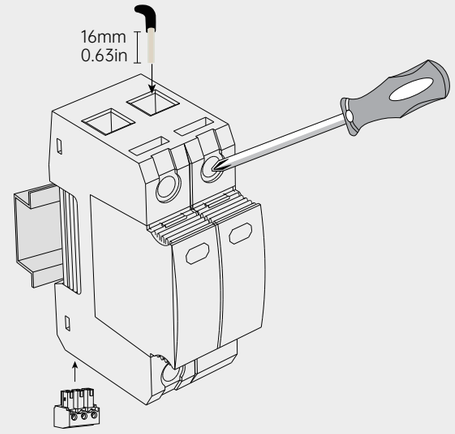
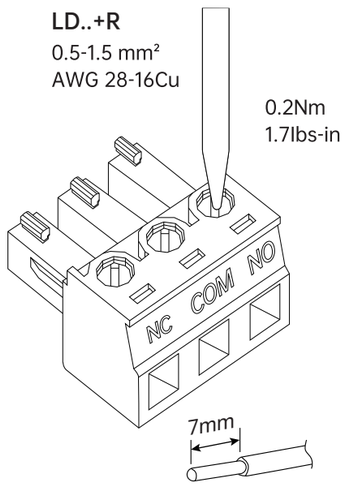


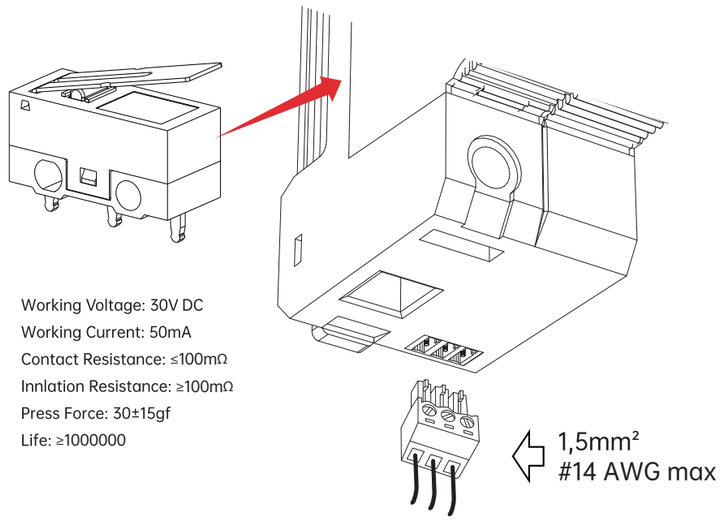
Abb. /Fig. B2



min-max ∅		
	2.5-35mm²	13-2AWG
	2.5-25mm²	13-4AWG

E monitoring and maintenance





Working Voltage: 30V DC
Working Current: 50mA
Contact Resistance: ≤100mΩ
Innlation Resistance: ≥100mΩ
Press Force: 30±15gf
Life: ≥1000000

1,5mm²
#14 AWG max

en Safety Instructions

The device must only be installed, put into operation and maintained byqualified electricians who are familiar with national and international lawsprovisions and Standards.

DANGER

Risk of electric shock !Before commencing work , disconnect the power supply to the device andsecure it against being switched on again.

WARNING

The device is an " open-type " device . The device must be installed in electrical equipment rooms or in closed enclosures (e.g. control cabinet) .

ATTENTION

The device must not be opened modified or converted.

The device must not be installed if it is damaged or other defects have beenidentified.

Intended Use

The LD series device is a combined lightning and surge protection device of type 1+2 / type 2. The device meets the local and national requirements of the National Electrical Code. The device protects consumer installations in the low-voltage range against lightning and surges, such as can occur as a result of an atmospheric discharge (thunderstorm) or switching operations.

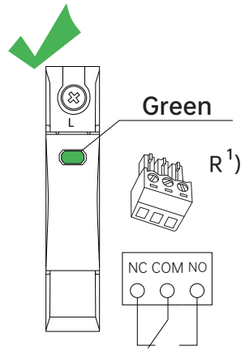
Mounting and demounting

- Clip the device on to a 35 mm DIN mounting rail (Fig. B1).
- Dismantle the device by releasing the clip-in foot using a screwdriver (Fig. B2).

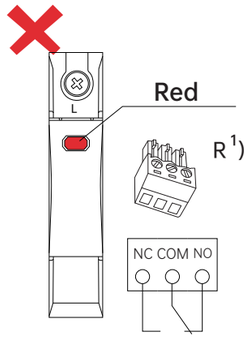
LEADER

F Remote contact wiring（option）

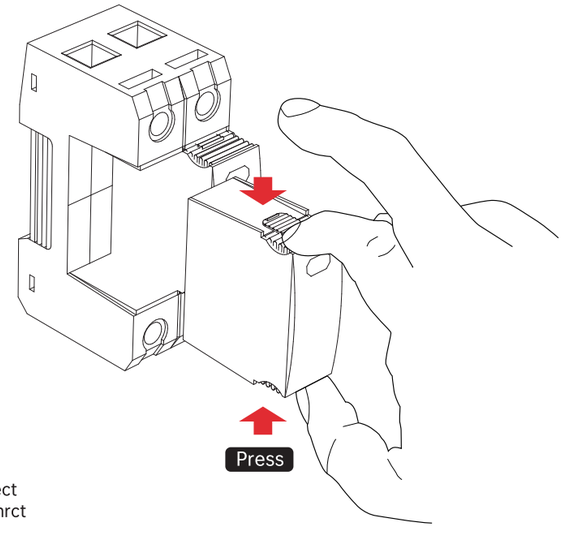
Renote Signal For
Disconnection Information



NC-COM Closed = SPD OK
NO-COM Open = SPD OK



NC-COM Open = SPD disconnect
NO-COM Closed = SPD disconnrct



Installation

The electrical system must be installed in accordance with the general rules of electrical engineering and by qualified specialists.

- Observe IEEE Greenbook standard 142.
- Observe local electrical codes.
- Install the surge protection device as close as possible to the device to be protected.
- Keep the cable lengths as short as possible.
- Observe the PE cabling specifications set out in IEC 61643-11 and DIN VDE 0100-534 (Fig. E).
- The PE connection of the device must be earthed via a copper cable with a crosssection of at least 6 mm² or a cable with an equivalent conductivity value.

The minimum distance between the device and an earthed, conductive mounting surface is 0 mm.

Functional description

The device has a protective function (see “Intended use”). The status of the protective function is indicated by the colour of the viewing window:
– green or yellow = OK, protective function is working
– red = defective, no protective function

ATTENTION

Risk of electric shock!
The surge arrester has no separating function. The device to be protected is still live even if the status indicator in the viewing window is red.

Maintenance

- Disconnect the surge protection device from the system before carrying out an insulation test.
- If the status indicator in the viewing window is red (Fig. C), replace the surge arrester.