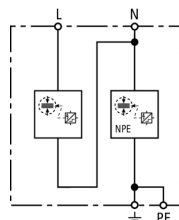


DSH TT 2P 255 (941 110)

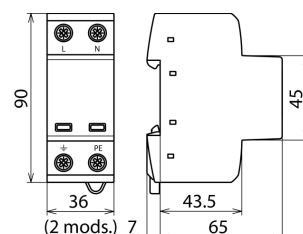
Application-optimised prewired spark-gap-based combined lightning current and surge arrester
Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
Capable of protecting terminal equipment



Figure without obligation



Basic circuit diagram DSH TT 2P 255



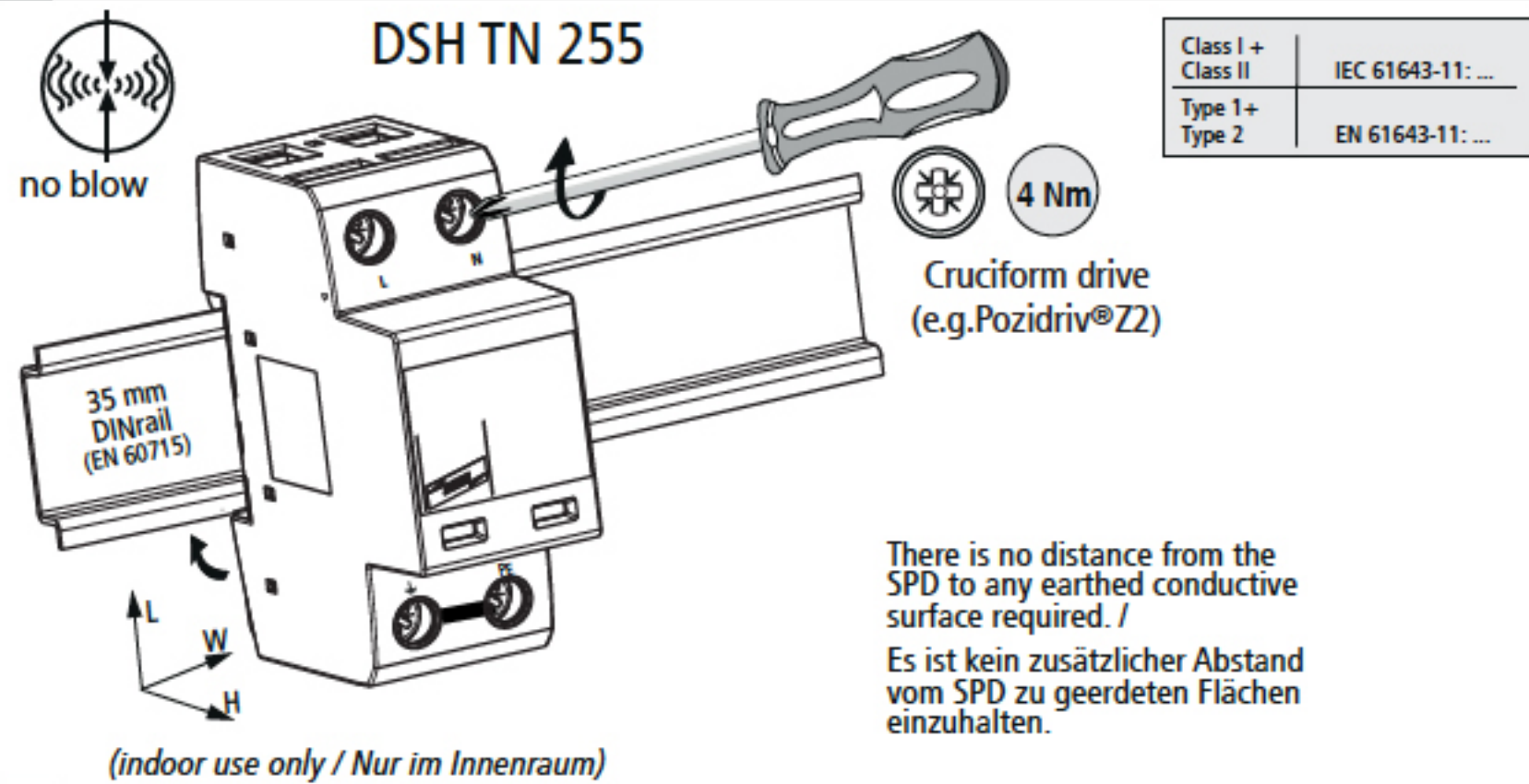
Dimension drawing DSH TT 2P 255

Application-optimised prewired combined lightning current and surge arrester for single-phase TT and TN-S systems ("1+1" circuit)

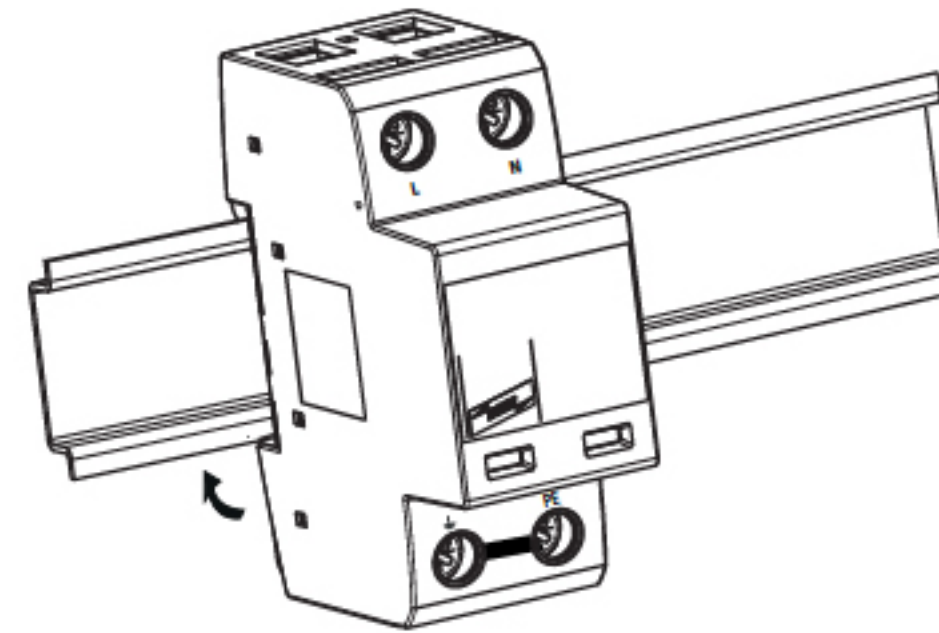
Type	DSH TT 2P 255
Part No.	941 110
SPD according to EN 61643-11 / IEC 61643-1	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 μ s) [L+N-PE] (I_{total})	25 kA
Specific energy [L+N-PE] (W/R)	156.25 kJ/ohms
Lightning impulse current (10/350 μ s) [L-N]/[N-PE] (I_{imp})	12.5 / 25 kA
Specific energy [L-N]/[N-PE] (W/R)	39.06 / 156.25 kJ/ohms
Nominal discharge current (8/20 μ s) [L-N]/[N-PE] (I_n)	12.5 / 25 kA
Voltage protection level [L-N]/[N-PE] (U_p)	≤ 1.5 / ≤ 1.5 kV
Follow current extinguishing capability [L-N]/[N-PE] (I_e)	10 kA _{rms} / 100 A _{rms}
Response time (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	160 A gL/gG
Temporary overvoltage (TOV) [L-N] (U_T)	440 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U_T)	1200 V / 200 ms
TOV characteristic	withstand
Operating temperature range (T_U)	-40 °C...+80 °C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L, N, PE, $\varnothing$) (min.)	1.5 mm ² solid/flexible
Cross-sectional area (L, N, PE, $\varnothing$) (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rails acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor
Degree of protection	IP 20
Capacity	2 module(s), DIN 43880
PU	1 pc(s)
Weight	275,000 g
Customs tariff number	85363030
GTIN	4013364137899

We reserve the right to introduce changes in performance, configuration and technology, dimensions, weights and materials in the course of technical progress. The figures are shown without obligation.

DEHNshield®



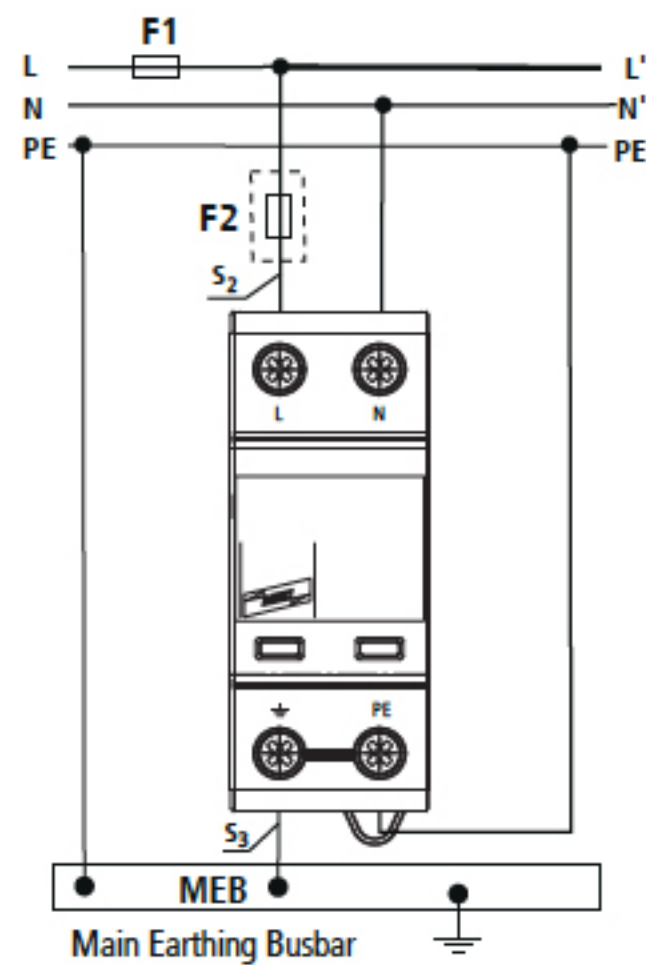
DSH TT 2P 255



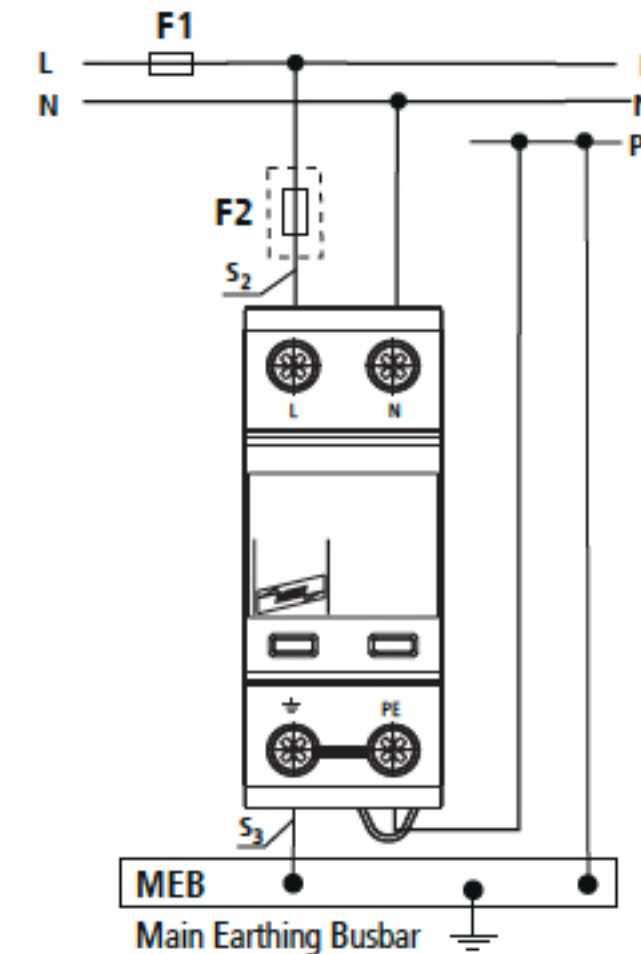
Technical data / Technische Daten

Typ	DSH TN 255	DSH TT 2P 255
U_N	230 V (50/60 Hz)	
U_C	255 V (50/60 Hz)	
I_{fi}	25 kA _{rms}	25 kA _{rms} (L⇒N) 100 A _{rms} (N⇒PE)
I_{SCCR}	25 kA _{rms}	
I_{imp} 10/350 µs	12,5 kA (L, N⇒PE)	12,5 kA (L⇒N); 25 kA (N⇒PE); 25 kA (L+N⇒PE);
max. $\varnothing$	160 A gL/gG	
θ	-40°C ... + 80°C	
humidity / Feuchte	5% ... 95%	
I_{PE}	<< 10 µA	
Ports	1	
IP Code	IP 20 (built in / eingebaut)	
L x W x H	90 mm x 36 mm x 72 mm	

TN



TT (1+1)

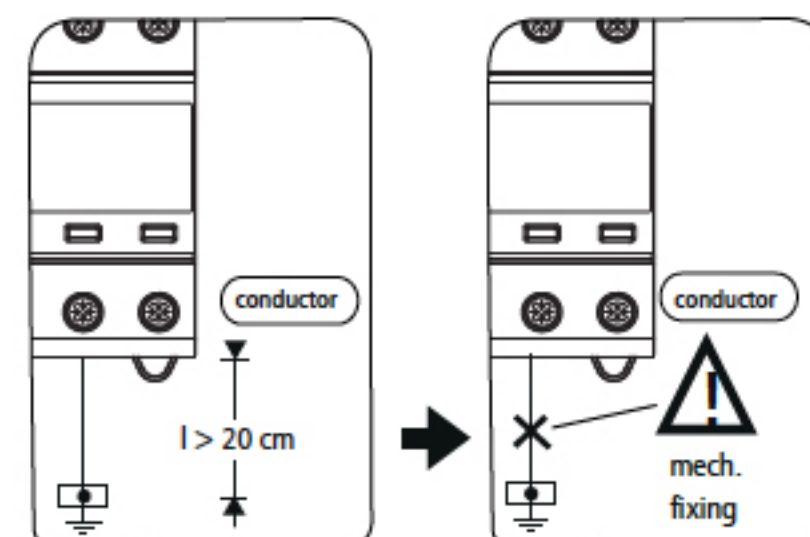


	12 mm	12 mm	12 mm
min. $\square$ L, N, PE $\downarrow$	1,5 mm ²		
max. $\square$ L, N, PE $\downarrow$	25 mm ²	35 mm ²	
$\triangle$	16 mm ² Cu	$\geq 15,5$ mm	

Backup fuse / Vorsicherung

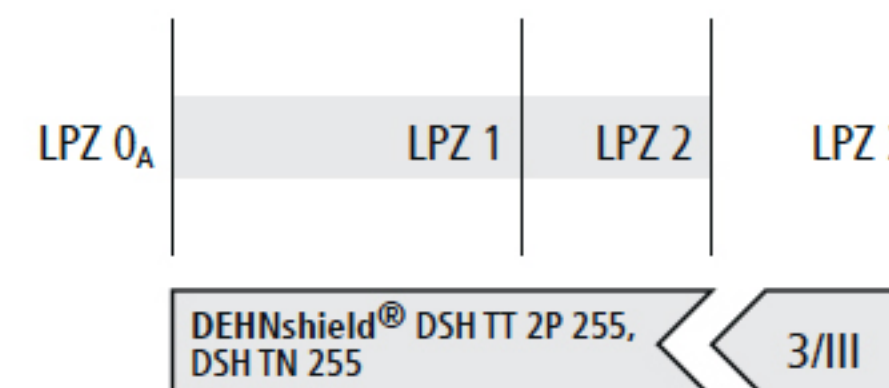
DEHNshield® DSH TT 2P 255, DSH TN 255		Fuse F1 A gL / gG	S ₂ / mm ²	S ₃ / mm ²	Fuse F2 A gL / gG
F1	F1 > 160 A gL / gG	25	10	16	---
	$\downarrow$	35	10	16	---
	F2 ≤ 160 A gL / gG	40	10	16	---
	$\downarrow$	50	10	16	---
	$\downarrow$	63	10	16	---
	$\downarrow$	80	10	16	---
	$\downarrow$	100	16	16	---
	$\downarrow$	125	16	16	---
	$\downarrow$	160	25	25	---
	$\downarrow$	>160	25	25	160

Mechanical fixing / Mechanische Befestigung



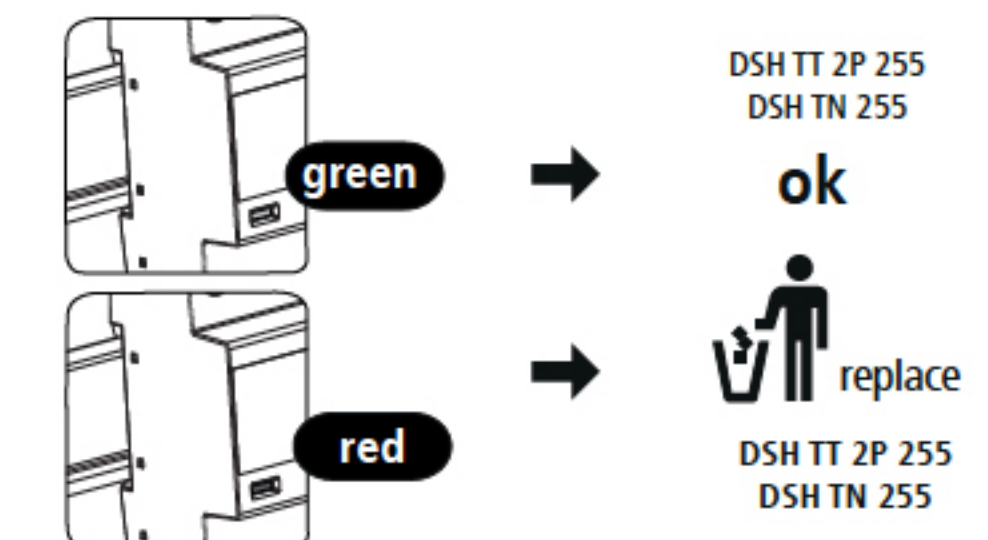
Coordination / Koordination

DIN VDE 0185-305-4
IEC 62305-4: ...



SPD Type 3
acc. to EN 61643-11: ...

Fig. 3 Fault indication / Defektanzeige



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protected by ISO 16016



Instruções de segurança

PT

A ligação e a montagem do aparelho apenas devem ser efectuadas por electricistas. Cumprir as normas nacionais e as disposições de segurança (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Antes da montagem, controlar se o aparelho apresenta danos exteriores. Não se pode proceder à montagem do aparelho, se for detectado um dano ou qualquer outro defeito. A utilização do aparelho só é permitida no âmbito das condições referidas e indicadas no presente manual de montagem. No caso de cargas superiores aos valores indicados, podem ser causados danos no aparelho, assim como nos meios de produção eléctricos ligados a este. As intervenções e as alterações no aparelho causam a perda do direito à garantia.

No caso de utilização de calhas polifásicas para ligar o aparelho de protecção contra sobretensão a outros aparelhos de montagem em série, é necessário considerar a carga eléctrica suportada pela calha polifásica na selecção da protecção prévia do condutor descarga.

Veiligheidsvoorschriften

NL

Aansluiting en montage van het apparaat mogen enkel door een erkend electricien uitgevoerd worden. De nationale voorschriften en veiligheid-bepalingen dienen opgevolgd te worden (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Voor de montage dient het apparaat op uitwendige schade nagekeken te worden. Indien schade of een andere fout vastge- steld wordt, mag het apparaat niet ge- monteerd worden. Het gebruik van het apparaat is alleen toegelaten binnen het kader van de in deze montagehandleiding opgenoemde en getoonde omstandigheden. Bij be- lastingen die hoger liggen dan de geto- onde waarden, kunnen zowel het apparaat als de aangesloten elektrische werktuigen beschadigd worden. Verkeerd gebruik en veranderingen aan het apparaat leiden tot het verlies van het recht op waarborg. Bij het gebruik van meerfasige strooms- taven voor de verbinding van het overspannings- beschermapparaat met andere inbouwap- paratuur is de toelaatbare stroombelasting van de meerfasige stroomstaaf in acht te nemen bij het kiezen van de afleider- installatie.

Special technical information referred to UL 1449 3rd edition:

1. Safety Instructions

The DEHNshield series SPD is to be installed only by a qualified personnel and to be done so in compliance with all local and National Electrical Code requirements. For proper system protection coordination with other SPD's must be considered; contact our application engineer for assistance if in doubt. Installation and connection to service must be done only when the system is de-energized. Its application is to be compliant with its rating and therefore must not be installed in a more severe environment subjecting it to higher voltages, currents or energy levels than for which its technical specifications provide. It is designed for indoor applications and must be placed in a suitable rated NEMA enclosure if the system is to be in a harsher environment. Opening or tampering with the thermoplastic enclosure may damage the effective operation of the SPD and is inadvisable and will void the warranty.

2. General Installation Instructions

Section 250 of the NEC and IEEE Green Book, Standard 142 should be consulted. Local electrical codes and/or the Canadian Electrical code have to be considered. System voltage: Make sure that the SPD is correctly rated for the system where the SPD should be applied. The maximum continuous operating voltage (MCOV) must not be exceeded. Mounting: Make sure that the SPD is installed as close as possible to the device to be protected. The conductor length for these connections must be kept as short and as straight as possible. The SPDs are to be mounted on the 35 mm DIN rail. The DIN rail is to be securely mounted to the back of the interior of the panel using ¼ inch bolts every 8 inches (200 mm). The SPDs can either be slid on the DIN rail from open end or put on the DIN rail by compressing the spring loaded clamping device on the lower back of each unit. The SPDs shall permit sufficient clearance for conductor power and signaling connections. Conductor Connections: Phase connections to the SPD and ground side connections from the SPD to the ground bus must be of the wire size indicated in the technical specifications. Insulation should be stripped back as described on the previous page. All conductor terminal screws shall be tightened to the torque indicated in the technical data. Grounding: Make sure that the grounding of the SPD is as short and straight as possible with the specified wire size according to the technical data. Use a local equipotential bonding bar if possible. For proper operation the SPD must be connected to a low impedance ground. Remote Contact Signaling: In case of a device with remote contact signaling make sure that the torque is as indicated in the technical data. Problem Diagnostics: If there should be any problem please contact your local DEHN representative.

Informazioni di sicurezza

IT

L'allacciamento ed il montaggio dell'appar- ecchiatura possono essere effettuati solo da personale qualificato. Sono da osservare le prescrizioni e le disposizioni di sicurezza nazionali (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Prima del montaggio, controllare che l'ap- parecchia- tura non presenti danneggia- menti all'esterno. Nel caso in cui dovesse essere constatato un danneggia- mento o un altro difetto, non montare l'apparec- chiatura. L'impiego dell'apparec- chiatura è consen- tito esclusivamente in presenza delle condizioni menzionate ed indicate in queste istruzioni sul montaggio. In caso di carico superiore ai valori dimostrati, l'apparecchia- tura e l' impianto elettrico collegatovi possono subire gravi danneggiamenti. Interventi o modifiche all'apparecchiatura comportano la perdita del diritto di garanzia. In caso di utilizzo di barre a pettine per più fasi per il collegamento del dispositivo di protezione contro le sovraten- sioni con altri dispositivi modulari, va osservato il carico di corrente consen- tito dalla barra a pettine stessa nella scelta del fusibile di protezione dello scaricatore.

Sikkerhedsanvisninger

DK

Tilslutning og montering af aflederen må kun udføres af en fagkyndig. Forskrifter og sikkerhedsbestemmelser skal overholdes. Se SB Afsnit 6, Del 5, Kap 53-534. Før monteringen kontrolleres aflederen for udvendige skader. Hvis der konstateres skader eller andre mangler, må aflederen ikke monteres. Aflederen må kun monteres og anvendes i overensstemmelse med denne montage vejledning. Ved belastninger der overskrider de anførte værdier, kan aflederen såvel som de tilsluttede installationer og apparater beskadiges. Åbning og indgreb i aflederen medfører bortfald af enhver garanti. Ved anvendelse af en - eller flerfasede sløjfeskinner til efterølgende apparater, skal der tages hensyn til den maksimale strømbelastning, ved valget af afleder forsikring.

Indicaciones de seguridad

ES

La conexión y el montaje del aparato sólo deben ser realizados por un electri- cista especializado. Deben observarse las normativas y disposiciones de seguridad nacionales (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Antes de iniciar el montaje, debe comprobarse que el aparato no presente daños externos. En caso de observar daños u otros defectos, no debe efectuarse el montaje del aparato. El empleo del aparato está limitado a las condiciones indicadas y mostradas en estas instrucciones de montaje. Si las cargas superan los valores indicados, puede dañar tanto el aparato como los medios de producción eléctricos conectados al mismo. La manipulación interior o la modificación del aparato invalidan el derecho de garantía. Al utilizar carriles multifase para conectar el aparato deflector de seguridad contra sobrecorriente con otros aparatos instalables de serie, debe tenerse en cuenta la carga eléctrica permisible del carril multifase al elegir el prefusible desviador.

Säkerhetsföreskrifter

SE

Apparaten får endast anslutas och monteras av behörig elektriker. Nationella föreskrifter och säkerhetsbestämmelser måste beaktas (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Kontrollera apparaten på yttre skador innan den monteras. Om skador eller andra brister föreligger, får apparaten inte monteras. Apparaten får endast användas under de villkor som nämns och åskådliggörs i denna monteringsanvisning. Vid belastningar som sträcker sig utöver nämnda värden, kan apparaten samt anslutna elektriska driftenheter förstöras. Ingrepp i och förändringar av apparaten leder till att alla garantianspråk bortfaller. Vid användning av flerfaskenor för att förbinda överspänningsskyddsenheten med andra seriemonteringsenheter skall man ta hänsyn till den tillåtna strömbelastningen för flerfassenkan när man väljer avledarförsäkring.

Consignes de sécurité

FR

Montage et branchement de l'appareil à faire effectuer exclusivement par un électricien qualifié. Respecter les normes et les prescrip- tions de sécurité en vigueur localement (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Avant montage, procéder à un contrôle visuel extérieur de l'appareil. Ne pas monter celui-ci en cas de dommage manifeste ou si tout autre défaut est présenté. La mise en œuvre de l'appareil n'est autorisée que pour la destination et aux conditions présentées et explicitées dans les présentes instructions de service. Des charges non comprises dans les plages de valeurs indiquées pourront abîmer l'appareil ainsi que les matériels électriques qui lui sont raccordés. Toute revendication en garantie sera exclue dans le cas d'une intervention sur l'appareil ou d'une transformation de celui-ci.

En cas d'utilisation de rails polyphasés pour raccorder l'appareil de protection contre les surtensions à d'autres appareils encastrés en série, il est nécessaire de tenir compte de la charge électrique admissible du rail polyphasé lors du choix du fusible primaire du paratonnerre.

Turvaohjeet

FI

Tämän laitteen liittäminen saa suorittaa vain sähköalanammattimies. Maakohtaisia määräyksiä ja turvallisuusmääräyksiä on noudatettava (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Kone on tarkastettava ennen asennusta mahdollisten ulkoisten vaurioiden varalta. Todettaes- sa vaurio tai muu puute, ei laitetta saa asentaa. Koneen käyttö on sallittua vain näissä asennusoh- jeissa mainituissa ja osoitetuissa olosuhteissa. Laitte sekä siihen liitettyt sähkökäyttövälineet saattavat vaurioitua kuormituksilla, jotka ylittävät annetut arvot. Kajoaminen laitteeseen ja muutokset siinä johtavat takuuvaatimuksen mitätöitymiseen. Kajoaminen laitteeseen ja muutokset siinä johtavat takuuvaatimuksen mitätöitymiseen. Käytettäessä monivaihekiskoja ylijännitesuojalait- teen liitoksessa muihin sarjaan asennettuihin laitteisiin, on vuotoesivaroketta valittaessa huomioitava monivaihekiskon sallittu virran kuormitus.

Safety Instructions

GB

The device may only be connected and installed by an electrically skilled person. National standards and safety regulations must be observed (see IEC 60364-5-53 (VDE 0100 Part 534:...)). The device must be checked for external damage before installation. If any damage or other faults are detected in this check, the device must not be installed. Its use is only permitted within the limits shown and stated in these installation instructions. The device and the equipment connected to can be destroyed by loads exceeding the values stated. Opening or tampering with the device invalidates the warranty. If polyphase busbars are used for con- necting the SPD to other DIN rail mounted devices, the maximum permissible current load of the poly- phase busbar has to be taken into account when choosing a suitable arrester backup fuse.

Υποδείξεις ασφαλείας

GR

Η σύνδεση και η συναρμολόγηση της συσκευής επιτρέπεται να διεξαχθούν μόνο από κάποιον/κάποια ηλεκτρολόγο. Πρέπει να τηρούνται οι εθνικές διατάξεις και οδηγίες ασφαλείας (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Πριν τη συναρμολόγηση η συσκευή πρέπει να ελεγχτεί για τυχόν εξωτερικές βλάβες. Δεν επιτρέπεται η συναρμολόγηση της συσκευής σε περίπτωση που εξακρβώσετε κάποια ζημιά ή άλλο ελάττωμα. Η χρήση της συσκευής επιτρέπεται μόνο στο πλαίσιο των όρων που αναφέρονται σ' αυτές τις οδηγίες συναρμολόγησης. Σε περίπτωση επιβαρύνσεων που υπερβαίνουν τις προδιαγραφμένες τιμές μπορεί να καταστραφούν η συσκευή και οι συνδεδεμένοι μ' αυτήν πόροι. Επιμβάσεις και μετατροπές στη συσκευή οδηγούν στην απώλεια των αξώσεων που απορρέουν από την εγγύηση. Όταν χρησιμοποιείτε πολυφασικές ράβδους για να συνδέσετε τη συσκευή προστασίας από υπερτάσεις με άλλες, εν σειρά εγκατεστημένες συσκευές, τότε, κατά την επιλογή της ασφάλειας διαφυγής στην είσοδο, πρέπει να τηρήσετε την μέγιστη τιμή αντοχής της πολυφασικής ράβδου στο ρεύμα.

Sicherheitshinweise

DE

Der Anschluss und die Montage des Gerätes darf nur durch eine Elektrofachkraft erfolgen. Die nationalen Vorschriften und Sicherheitsbestim- mungen sind zu beachten (siehe auch IEC 60364-5- 53 (VDE 0100 Teil 534:...)). Vor der Montage ist das Gerät auf äußere Beschädigung zu kontrollieren. Sollte eine Beschädigung oder ein sonstiger Mangel festgestellt werden, darf das Gerät nicht montiert werden. Der Einsatz des Gerätes ist nur im Rahmen der in dieser Einbauanleitung genannten und ge- zeigten Bedingungen zulässig. Bei Belastungen, die über den ausgewiesenen Werten liegen, können das Gerät sowie die daran angeschlossenen elektrischen Betriebs- mittel zerstört werden. Eingriffe und Veränderungen am Gerät führen zum Erlöschen des Gewährleistungsanspruches. Bei Verwendung von Mehrphasenschienen zur Verbindung des Überspannungsschutzgerätes mit anderen Reiheneinbaugeräten ist die zulässige Strombelastung der Mehr- phasenschiene bei Auswahl der Ableitvor- sicherung zu berücksichti- gen.

Wskazówki bezpieczeństwa

PL

Do połączenia i montażu upoważnieni są wyłą- cznie fachowcy elektrycy. Obowiązkiem jest przestrzeganie przepisów krajowych i bezpieczeństwa pracy (IEC 60364-5-53 (VDE 0100 Teil 534:...)). Przed przystąpieniem do montażu należy urządzenie skontrolować pod względem ewentualnych uszkodzeń zewnętrznych lub innych usterek. Eksploatacją urządzenia dozwolona jest wy- łącznie z uwzględnieniem podanych i opisanych warunków zawartych w instrukcji montażu. Obciążenia przekraczające wartoś ci podane w instrukcji mogą spowodować uszkodzenie samego urządzenia jak i pod łączonych układów elektrycznych. Manipulacja i zmiany przeprowadzane na urządzeniu grożą wygaszeniem prawą gwarancji. Przy zastosowaniu szyny wielofazowej dla połą- czenia urządzenia ochrony przepięciowej z innymi szeregowo wbudowanymi urządzeniami należy uwzględnić dopuszczalne obciążenie prądowe szyny przy wyborze bezpiecznika wstępnego dla odgromnika.

Type	DSH TT 2P 255			DSH TN 255		
Rated Voltage [V] (60 Hz)	230			230		
Mode	L-N	L-G	N-G	L-N	L-G	N-G
MCOV [V]	255	255	255	255	255	255
VPR [V]	1500	1800	1200	2500	1500	1500
In [kA]	10			10		
max. Ambient Temp.		+80°C				
Con- ductors	AWG		2-14 Cu Solid / Stranded			
	Torque		35-45 Lbs-in			
SPD classification		Type 4 SPD for SPD Type 2 application				