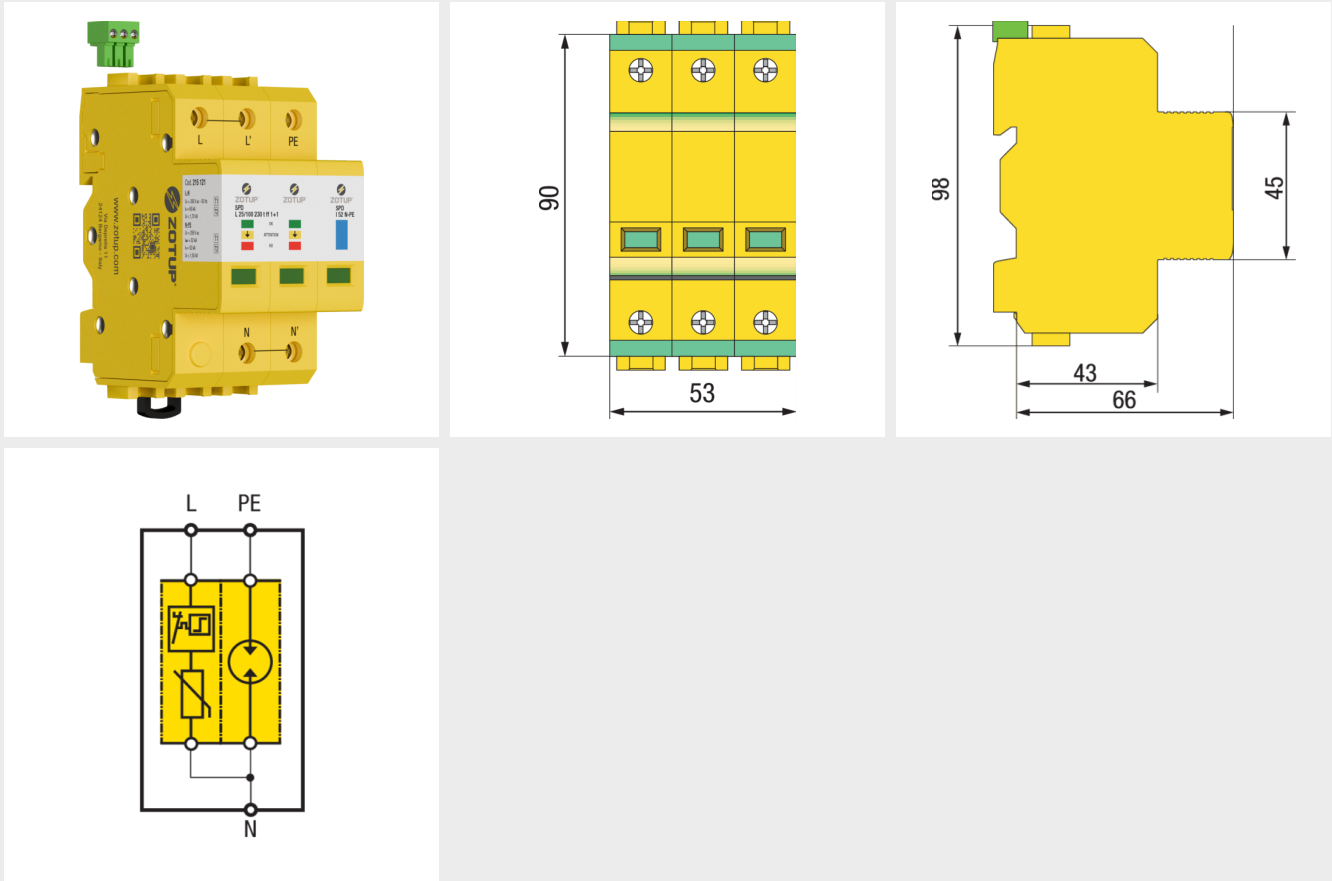


SPDs FOR LOW VOLTAGE ALTERNATING CURRENT (AC) APPLICATION



ZOTUPLIMITER | L 25/100 230 t ff 1+1

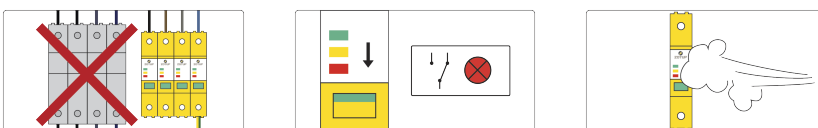


Technical Data

L 25/100 230 t ff 1+1 is a ready to install assembly of a voltage limiting and a voltage switching SPD providing three modes of protection, typically installed in single-phase 230 V TT-systems where connection type CT2 (1+1) is required according to HD 60364-5-534, e.g. in the Main Distribution Board (MDB).

Features and benefits

- Impulse test classification: Test class I and II according to IEC 61643-11 Ed. 1 (2011-03) and Type 1 and 2 according to EN 61643-11 (2012-10);
- Backup protection is not required with an upstream CB ≤ 160 A or up to an Isccr ≤ 5 kA rms;
- Three colour Status Indicator with progressive indication of remaining performance.





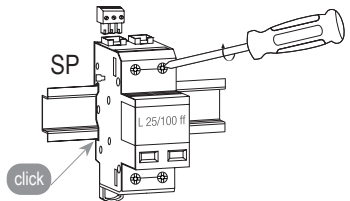
Dati tecnici / Technical data

Tensione nominale / Nominal voltage	Un	230 / 400 V ac
Max. regolazione della tensione / Max. voltage regulation		10 %
Tensione massima continuativa / Max. continuous operating voltage	Uc	335 V ac
Tensione max continuativa N-PE / Max. continuous operating voltage N-PE	Uc	255 V ac
Tipo / Test class (acc. To IEC 61643-11 Ed. 1.0 2011-03)		T1 and T2
Nessun fusibile / No fuse	CB (max. 4,50 x 10 ⁵ A ² s) / Isccr	≤ 160 A / ≤ 5 kA
Corrente impulsiva / Impulse discharge current (10/350)	Iimp	25 kA
Corrente impulsiva / Impulse discharge current (10/350)	N-PE 3+1 / 1+1	Iimp 100 kA / 52 kA
Corrente nominale di scarica / Nominal discharge current (8/20)	In	60 kA
Corrente nominale di scarica / Nominal discharge current (8/20)	N-PE 3+1 / 1+1	In 100 kA / 52 kA
Corrente max. di scarica / Max. discharge current (8/20)	I _{max}	100 kA
Corrente max. di scarica / Max. discharge current (8/20)	N-PE 3+1 / 1+1	I _{max} 150 kA / 70 kA
Livello di protezione a In / Voltage protection level at In	SP / MP	Up ≤ 1,40 kV / ≤ 1,70 kV
Livello di protezione / Voltage protection level	N-PE 3+1 / 1+1	Up ≤ 1,50 kV
Caratteristica di guasto in caso di TOV / Behaviour of failure in case of TOV: tenuta (W) / withstand (W)	TT L-N	Ut 440 V / 120 min (W)
	TT N-PE	Ut 1.200 V / 200 ms (W)
	TN L-(PE)N	Ut 440 V / 120 min (W)
Max. Corrente del carico con morsetti separati / Max. load Current with separated terminals	IL	125 A
Grado di protezione involucro (incassato) / Enclosure protection degree (built-in)	IP	20
Numero di porte / Number of ports		1
Corrente residua / Residual current	TT / TN I _{PE}	≤ 5 μA / ≤ 1,3 mA
Collocazione / Location		interno / indoor
Temperatura di esercizio / Operating temperature range	T	-40 °C ... +80 °C
Umidità / Humidity		5 % ... 95 %
Metodo di montaggio / Method of mounting		Guida DIN / DIN rail
Dimensioni / Dimensions		H 90 x L 66 x W 35 mm (2TE)

Sezione conduttori di collegamento / Cables section

CONDUTTORI/CABLES	SEZIONE / SECTION (Cu)
S ₁	*
S ₂	Pari a S ₁ , con/Equal to S ₁ , with min 16-max 35 mm ²
S ₃	Pari a S ₁ , con/Equal to S ₁ , with min 16-max 35 mm ²

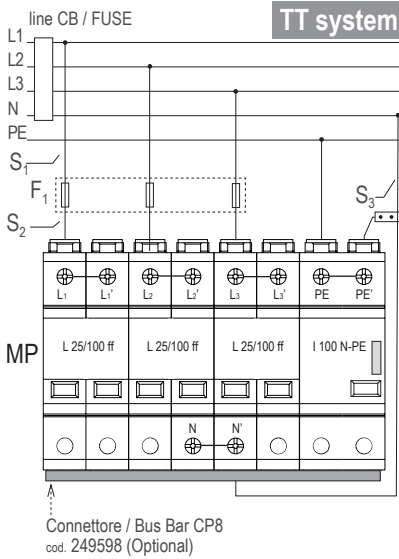
* Definizione della sezione di competenza del costruttore del quadro elettrico o del progettista.
* To be defined by the designer of the electrical plant.



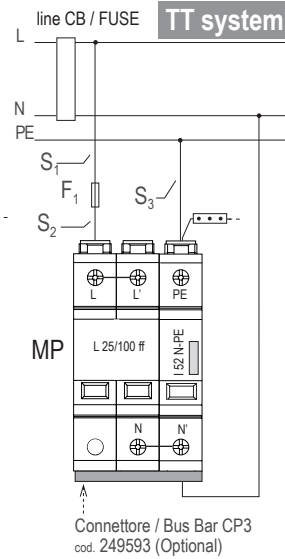
4,5 Nm Cacciavite a stella Cruciform drive

Tutte le viti devono essere serrate
All the screws have to be secured

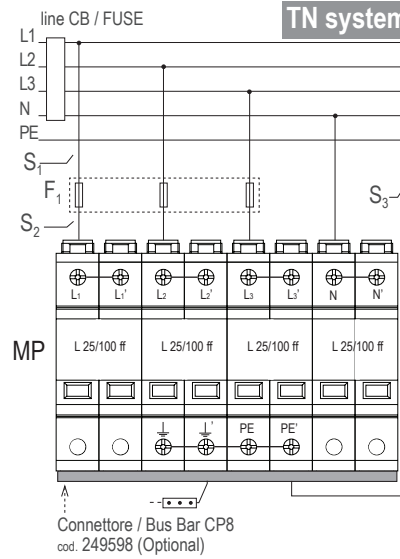
Schema/Connect. 3+1



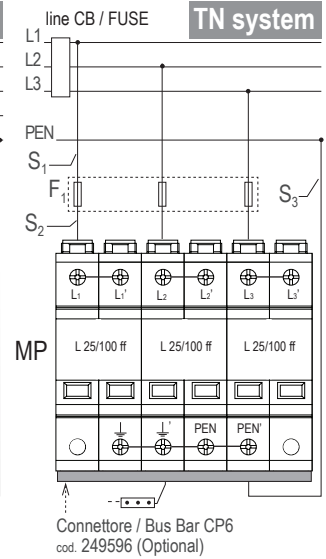
Schema/Connect. 1+1



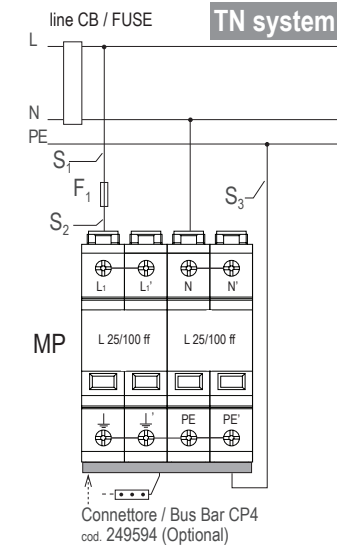
Schema/Connect. 4+0



Schema/Connect. 3+0



Schema/Connect. 2+0



SP - polo singolo / single pole
MP - multipolare / multipoles

Interruttore* / Fusibile di linea - Upper stream CB* / FUSE****

-	I _{sccr} ≤ 5 kA		F ₁ NON RICHIESTO F ₁ NOT REQUIRED
CB ≤ 160 A *	I _{sccr} ≤ 50 kA		
FUSE ≤ 160 A **	I _{sccr} ≤ 100 kA		
FUSE ≤ 250 A **	I _{sccr} ≤ 50 kA		
-	I _{sccr} > 5 kA		F ₁ 125 / 160 / 250 A gG RICHIESTO REQUIRED
CB > 160 A	I _{sccr} ≤ 50 kA		
FUSE > 160 A gG	I _{sccr} ≤ 100 kA		
FUSE > 250 A gG	I _{sccr} ≤ 50 kA		

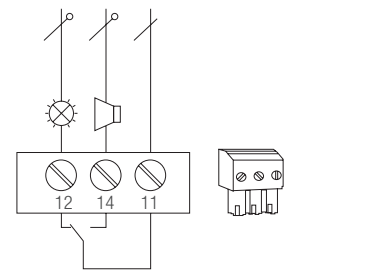
* Interruttore CB con corrente max. di 160 A: ABB modello XT2 L 160 TMA3.
* CB with max. current of 160 A: ABB model XT2 L 160 TMA3.
** Fusibili consigliati ETI NV, caratteristica gG, tensione nominale 500 V, potere di interruzione 120 kA.
** ETI NV fuse recommended, characteristics gG, rated AC voltage 500 V, breaking capacity 120 kA.
*** Con fusibile 125 A gG I_{imp} = 10 kA e I_{max} = 40 kA.
*** Con fusibile 160 A gG I_{imp} = 13 kA e I_{max} = 70 kA.
*** With fuse 125 A gG I_{imp} = 10 kA e I_{max} = 40 kA.
*** With fuse 160 A gG I_{imp} = 13 kA e I_{max} = 70 kA.

Indicatore progressivo di prestazioni / Status indicator

	GREEN		SPD OK
	FULL YELLOW		SPD Attention! · Sostituzione raccomandata · Replace recommended
	RED / BLACK		SPD KO · Sostituire! · Replace!

Nessuna particolare distanza deve essere rispettata tra l'SPD e qualsiasi superficie metallica connessa a terra.
No distance is required from the SPD to any earthed conductive surface.

Contatto di segn. remota / Remote signalling contact



AC: 250 V / 0,5 A
DC: 250 V / 0,1 A
125 V / 0,2 A
75 V / 0,5 A

max. 1,5 mm²

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Informazioni di sicurezza

IT

L'allacciamento ed il montaggio dell'apparecchiatura possono essere effettuati solo da personale qualificato.

Sono da osservare le prescrizioni e le disposizioni di sicurezza internazionali (IEC 60364-5-53) e nazionali (CEI 64-8 Ed. 8).

Prima del montaggio, controllare che l'apparecchiatura non presenti danneggiamenti all'esterno.

Nel caso in cui dovesse essere constatato un danneggiamento o un altro difetto, non montare l'apparecchiatura.

L'impiego dell'apparecchiatura è consentito esclusivamente in presenza delle condizioni menzionate ed indicate in queste istruzioni di montaggio. In caso di installazione dell'apparecchiatura in condizioni di impianto differenti da quelle presentate, l'apparecchiatura e l'impianto elettrico possono subire gravi danni. Interventi o modifiche all'apparecchiatura comportano la perdita del diritto di garanzia.

Safety Instructions

GB

The device may be connected and installed by an electrically skilled person. International standards and safety regulations must be observed (see IEC 60364-5-53).

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 it can be destroyed by loads exceeding the values stated.

Operating or tampering with the device invalidates the warranty.

Sicherheitshinweise

DE

Der Anschluss und die Montage des Gerätes darf nur durch eine Elektrofachkraft erfolgen. Die nationalen Vorschriften und Sicherheitsbestimmungen 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 gezeigten Bedingungen zulässig. Bei Belastungen, die über den ausgewiesenen Werten liegen, können das Gerät sowie die daran angeschlossenen elektrischen Betriebsmittel zerstört werden. Eingriffe und Veränderungen am Gerät führen zum Erlöschen des Gewährleistungsanspruches.

Consignes de sécurité

FR

Montage et branchement de l'appareil à faire effectuer exclusivement par un électricien qualifié. Respecter les normes et les prescriptions de sécurité en vigueur localement (IEC 60364-5-53). 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.

Indicaciones de seguridad

ES

La conexión y el montaje del aparato sólo deben ser realizados por un electricista especializado.

Deben observarse las normativas y disposiciones de seguridad nacionales (IEC 60364-5-53).

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.

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).

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.

Veiligheidsvoorschriften

NL

Aansluiting en montage van het apparaat mogen enkel door een erkend electricien uitgevoerd worden. De nationale voorschriften en veiligheidsbepalingen dienen opgevolgd te worden (IEC 60364-5-53).

Voor de montage dient het apparaat op uitwendige schade nagekeken te worden. Indien schade of een andere fout vastgesteld wordt, mag het apparaat niet gemonteerd worden. Het gebruik van het apparaat is alleen toegelaten binnen het kader van de in deze montagehandleiding opgenoemde en getoonde omstandigheden. Bij belastingen die hoger liggen dan de getoonde 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.

Sikkerhedshenvisninger

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 a flederen for uøvedige skader. Hvis der konstateres skader eller andre mangler må, aflederen ikke monteres. Aflederen må kun monteres og anvendes i overensstemmelse med denne montagevejledning. 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.

Säkerhetsföreskrifter

SE

Apparaten får endast anslutas och monteras av behörig elektriker. Nationella föreskrifter och säkerhetsbestämmelser måste beaktas (IEC 60364-5-53). 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 drifenheter förstöras. Ingrepp i och förändringar av apparaten leder till att alla garantianspråk bortfaller.

Turvaohjeet

FI

Tämän laitteen liittämisen saa suorittaa vain sähköalan ammattimies. Maakohtaisia määräyksiä jäturvallisuusmääräyksiä on noudatettava (IEC 60364-5-53). Kone on tarkastettava ennen asennusta mahdollisten ulkoisten vaurioiden varalta. Todettaessa vaurio tai muu puute, ei laitetta saa asentaa. Koneen käyttö on sallittua vain näissä asennusohjeissa mainituissa ja osoitetuissa olosuhteissa. Laitte sekä siihen liitetyt sähkökäyttövälineet saattavat vaurioitua kuormituksilla, jotka ylittävät annetut arvot. Kajoaminen laitteeseen ja muutokset siinä johtavat takuuvaatimuksen mitätöitymiseen.

ZOTUPLIMITER | L 25/100 230 t ff 1+1

Code		215 121
Nominal voltage	Un	230 V ac
Modes of protection		3
Maximum continuous operating voltage (L-N)	Uc	335 V ac
Maximum continuous operating voltage (N-PE)	Uc	255 V ac
Test class according to IEC 61643-11 ed. 1 (2011-03)		I e II
Type according to EN 61643-11 (2012-10)		T1 e T2
Pulse current (10/350 µs) (L-N)	Iimp	25 kA
Impulse discharge current (10/350 µs) (N-PE)	Iimp	52 kA
Charge (L-N)	Q	12,5 As
Charge (N-PE)	Q	26 As
Nominal discharge current (8/20 µs) (L-N)	In	60 kA
Nominal discharge current (8/20 µs) (N-PE)	In	52 kA
Maximum discharge current (8/20 µs) (L-N)	I _{max}	100 kA
Maximum discharge current (8/20 µs) (N-PE)	I _{max}	70 kA
Voltage protection level (L-N) at a discharge current of: 1 kA	Up	≤ 0,75 kV
Voltage protection level (L-N) at a discharge current of: 5 kA	Up	≤ 0,85 kV
Voltage protection level (L-N) at a discharge current of: 13 kA	Up	≤ 1,10 kV
Voltage protection level (L-N) at a discharge current of: 25 kA	Up	≤ 1,25 kV
Voltage protection level (L-N) at a discharge current of: 60 kA	Up	≤ 1,70 kV
Voltage protection level (L-PE) at a discharge current of: 1 kA	Up	≤ 1,50 kV
Voltage protection level (L-PE) at a discharge current of: 5 kA	Up	≤ 1,50 kV
Voltage protection level (L-PE) at a discharge current of: 13 kA	Up	≤ 1,50 kV
Voltage protection level (L-PE) at a discharge current of: 25 kA	Up	≤ 1,50 kV
Voltage protection level (L-PE) at a discharge current of: 60 kA	Up	≤ 1,70 kV
Voltage protection level (N-PE)	Up	≤ 1,50 kV
Response time (L-N / N-PE)	t _a	≤ 25 ns / ≤ 100 ns
Behavior in case of end of life (L-N)		OCM (open-circuit mode)
Behaviour of failure mode in case of temporary overvoltages (TOV): L-N	Ut	440 V / 120 min (W) 1200 V
Behaviour of failure mode in case of temporary overvoltages (TOV): N-PE	Ut	1200 V / 200 ms (W)
Short circuit current rating without backup protection (internal disconnecter)	I _{sc}	5 kA eff
Short circuit current rating with max. backup protection fuse		50 kA eff
Max. Back-up protection with up-stream CB with a max. let-through energy of (max. prospective short circuit current depends on the CB breaking capability).		160 A (max. 4,50 x 10 ⁵ A ² s)
Max. Back-up protection with FUSE at prospective short circuit currents of		250 A gG (> 5 ÷ 50 kA eff) 160/125/100 A gG* (> 5 ÷ 100 kA eff)
Max. overcurrent protection for through-wiring (for V-connection)		125 A gG
Rated load current (for V-connection)	IL	125 A
Follow current interrupt rating (L-N)	I _{fi}	NFC No Follow Current®
Behaviour of failure mode in case of Temporary OverVoltage (N-PE)	I _{fi}	100 A eff
Status indicator (indication of disconnecter operation)		3 colours with progressive performance indication / 2 colour for N-PE
Operating temperature range / Humidity		-40 ... +80 °C (extended) / 5% ... 95%
Terminal - Conductor size (double clamps for V-connection)		4-35 mm ² flexible / 4-50 mm ² semi rigid
Mounting		indoor, 35 x 7,5 mm top hat DIN rail IEC/EN 60715
Case material / Flammability grade		BMC / V-0 according to UL 94
Pollution degree / Degree of protection	PD / IP	3 / 20 (built-in)

Code		215 121
Approximate weight		550 g
Dimension: width		53 mm (3 modules)
Remote reporting contact		potential-free changeover contact
Terminal - conductor size for remote signal contact		max. 1,5 mm ² flexible
Switching capacity remote signal contact		ac: 250 V / 0,5 A - dc: 125 V / 0,2 A; 75 V / 0,5 A
Certification / Quality Mark		CB, STC issued by OVE / KEMA-KEUR