

# Class II Modular Single and Multi-pole SPD 40kA per pole



<b>Category IEC / EN / VDE:</b>	<b>Class II / Type 2 / C</b>
<b>Location of use:</b>	<b>Sub-distribution boards</b>
<b>Protection modes:</b>	<b>L/N-PE, L-PEN, L-N, N-PE</b>
<b>Protective elements:</b>	<b>MOV and GDT</b>
<b>Surge discharge ratings:</b>	<b>I<sub>max</sub> up to 40kA</b>
<b>Safety:</b>	<b>TOV withstand for unlimited time</b>
<b>Internal protection:</b>	<b>Separate thermal disconnecter for each MOV</b>
<b>Complies with:</b>	<b>IEC/EN 61643-11</b>

## The new SAFETEC series of SPDs :

- › Are highly reliable - controlled disconnection, arc-quenching
- › Are safer - controlled behaviour even when surge ratings are exceeded
- › Have longer life - protection against ageing
- › Have up to 20 years warranty

## SAFETEC C(R) Series:

**SAFETEC C(R) 40**  
**SAFETUBE C 40**  
**SAFETEC C(R) 80 (2+0)**  
**SAFETEC C(R) 120 (3+0)**  
**SAFETEC C(R) 160 (4+0)**  
**SAFETEC C(R) 80 (1+1)**  
**SAFETEC C(R) 160 (3+1)**

The modular SAFETEC C(R) series is suitable for all type of connections.

Patented TC\* technology prevents catastrophic failures in case of TOV (temporary overvoltages).

All in one technology is a protection from overvoltages surges and transients. It has been developed to protect against partial direct and indirect lightning discharges and are intended to provide protection in zones O<sub>B</sub> - 2 per IEC 62305.



\*TC - Thermal control function

SAFETEC C(R)



- **Category IEC / EN / VDE:** Class II / Type 2 / C
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S, TN-C, IT, TT (only L-N)
- **Protection modes:** L/N - PE, L- PEN
- **Protective element:** MOV and GDT
- **Surge discharge rating:**  $I_{max}$  up to 40kA
- **Safety:** TOV withstand for unlimited time
- **Housing:** Modular design
- **Complies with:** IEC/EN 61643-11



Technical data

Type	SAFETEC C(R) yy/xxx						
	75	150	275	385	440	750	
<b>Electrical characteristics</b>							
Max. continuous operating voltage (AC/DC)	$U_c$	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V
Nominal discharge current (8/20)	$I_n$	10kA			20kA		12.5kA
Max. discharge current (8/20)	$I_{max}$	20kA			40kA		25kA
Protection level	$U_p$	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV
Residual voltage at 5kA (8/20)	$U_{res}$	< 0.6kV	< 0.7kV	< 1.1kV	< 1.3kV	< 1.6kV	< 2.2kV
Follow current	$I_{fi}$	NO					
Response time	$t_A$	< 25ns					
Thermal protection		YES					
Back-up fuse (if mains > 125A)		125A gL					
TOV withstand for unlimited time up to	$U_T$	110V	230V	440V	560V	690V	1100V
<b>Mechanical characteristics</b>							
Terminal screw torque		max. 3.0Nm					
Temperature range		- 40°C .... + 80°C					
Terminal cross section		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of disconnector operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1.5mm <sup>2</sup>					
Remote terminal torque		0.25Nm					

Ordering information

$U_c$	75	150	275	385	440	750
Ordering code SAFETEC C 20/75	516.612					
Ordering code SAFETEC CR 20/75 (with remote contacts)	516.613					
Ordering code SAFETEC C 40/xxx		516.001	516.003	516.614	516.005	
Ordering code SAFETEC CR 40/xxx (with remote contacts)		516.002	516.004	516.615	516.006	
Ordering code SAFETEC C 25/750						516.616
Ordering code SAFETEC CR 25/750 (with remote contacts)						516.617
Ordering code Module SAFETEC C(R) 20/75	516.648					
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039	
Ordering code Module SAFETEC C(R) 25/750						516.650

SAFETUBE C 40



- Category IEC / EN / VDE: Class II / Type 2 / C
- Location of use: Sub-distribution boards
- Network system: TT
- Protection modes: N - PE
- Protective element: GDT
- Surge discharge rating:  $I_{max} = 40kA$
- Housing: Modular design
- Complies with: IEC/EN 61643-11



Technical data

Type		SAFETUBE C 40/255
<b>Electrical characteristics</b>		
Max. continuous operating voltage (AC)	$U_C$	255V
Nominal discharge current (8/20)	$I_n$	20kA
Max. discharge current (8/20)	$I_{max}$	40kA
Protection level	$U_p$	< 1.5kV
Follow current	$I_{fi}$	100ARMS
Response time	$t_A$	25ns
<b>Mechanical characteristics</b>		
Terminal screw torque		max. 3.0Nm
Temperature range		- 40°C .... + 80°C
Terminal cross section		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		Thermoplastic; extinguishing degree UL 94 V-0

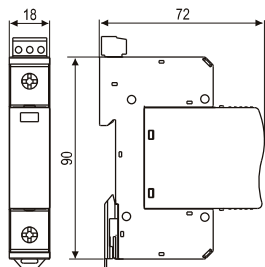
Ordering information

$I_{max}$	40
Ordering code SAFETUBE C 40/255	516.417
Ordering code Module SAFETUBE C 40/255	516.115

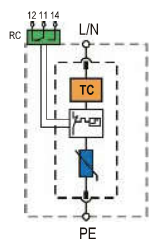
**Dimensions, Internal configuration, Weight and Packaging**

**SAFETEC C(R)**

**Dimensions**



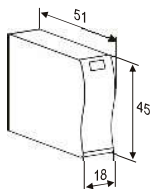
**Internal configuration**



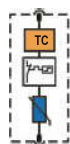
<b>SAFETEC C 20/75</b>	<b>75</b>			
Weight per unit	125g			
<b>SAFETEC C 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	140g	140g	148g	150g
<b>SAFETEC C 25/750</b>	<b>750</b>			
Weight per unit	156g			
<b>SAFETEC CR 20/75</b>	<b>75</b>			
Weight per unit	130g			
<b>SAFETEC CR 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	148g	148g	156g	158g
<b>SAFETEC CR 25/750</b>	<b>750</b>			
Weight per unit	164g			
Dimensions DIN 43880	1TE			
Packaging dimensions (single unit)	108 x 74 x 24mm			
Min. packaging quantity	12 pcs.			

**Module SAFETEC C(R)**

**Dimensions**



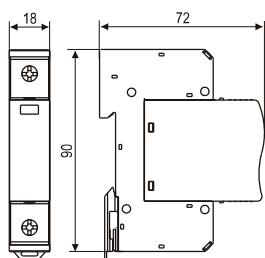
**Internal configuration**



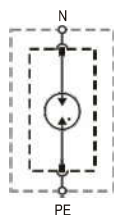
<b>Module SAFETEC C(R) 20/75</b>	<b>75</b>			
Weight per unit	58g			
<b>Module SAFETEC C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	62g	66g	72g	74g
<b>Module SAFETEC C(R) 25/750</b>	<b>750</b>			
Weight per unit	78g			
Packaging dimensions	219 x 62 x 47mm			
Min. packaging quantity	12 pcs.			

**SAFETUBE C 40/255**

**Dimensions**



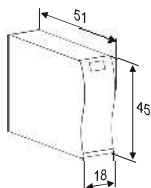
**Internal configuration**



<b>SAFETUBE C 40/255</b>	<b>255</b>			
Dimensions DIN 43880	1TE			
Weight per unit	118g			
Packaging dimensions (single unit)	108 x 74 x 24mm			
Min. packaging quantity	12 pcs.			

**Module SAFETUBE C 40/255**

**Dimensions**



**Internal configuration**



<b>Module SAFETUBE C 40/255</b>	<b>255</b>			
Weight per unit	34g			
Packaging dimensions	219 x 62 x 47mm			
Min. packaging quantity	12 pcs.			

## SAFETEC C(R) Series



- **Category IEC / EN / VDE:** Class II / Type 2 / C
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S, TN-C, IT
- **Protection modes:** L/N - PE, L - PEN
- **Protective element:** MOV and GDT
- **Surge discharge rating:**  $I_{max}$  up to 40kA
- **Safety:** TOV withstand for unlimited time
- **Housing:** Modular design
- **Complies with:** IEC/EN 61643-11



### Technical data

Type	SAFETEC C(R) yyy/xxx (2+0), (3+0), (4+0)						
	75	150	275	385	440	750	
<b>Electrical characteristics</b>							
Max. continuous operating voltage (AC/DC)	$U_C$	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V
Nominal discharge current (8/20)	$I_n$	10kA per pole			20kA per pole		12,5kA per pole
Max. discharge current (8/20)	$I_{max}$	20kA per pole			40kA per pole		25kA per pole
Protection level	$U_p$	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV
Residual voltage at 5kA (8/20)	$U_{res}$	< 0.6kV	< 0.7kV	< 1.1kV	< 1.3kV	< 1.6kV	< 2.2kV
Follow current	$I_{fi}$	NO					
Response time	$t_A$	< 25ns					
Thermal protection		YES					
Back-up fuse (if mains > 125A)		125A gL					
TOV withstand for unlimited time up to	$U_T$	110V	230V	440V	560V	690V	1100V
<b>Mechanical characteristics</b>							
Terminal screw torque		max. 3.0Nm					
Temperature range		- 40°C .... + 80°C					
Terminal cross section		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of disconnector operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1,5mm <sup>2</sup>					
Remote terminal torque		0.25Nm					

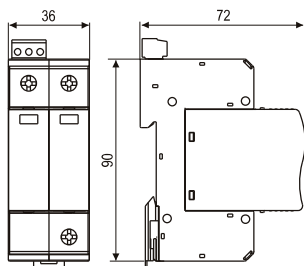
### Ordering information

$U_C$	75	150	275	385	440	750
Ordering code SAFETEC C 40/75 (2+0)	516.618					
Ordering code SAFETEC CR 40/75 (2+0) (with remote contacts)	516.619					
Ordering code SAFETEC C 80/xxx (2+0)		516.007	516.009	516.620	516.011	
Ordering code SAFETEC CR 80/xxx (2+0) (with remote contacts)		516.008	516.010	516.621	516.012	
Ordering code SAFETEC C 50/750 (2+0)						516.622
Ordering code SAFETEC CR 50/750 (2+0) (with remote contacts)						516.623
Ordering code SAFETEC C 60/75 (3+0)	516.630					
Ordering code SAFETEC CR 60/75 (3+0) (with remote contacts)	516.631					
Ordering code SAFETEC C 120/xxx (3+0)		516.019	516.021	516.632	516.023	
Ordering code SAFETEC CR 120/xxx (3+0) (with remote contacts)		516.020	516.022	516.633	516.024	
Ordering code SAFETEC C 75/750 (3+0)						516.634
Ordering code SAFETEC CR 75/750 (3+0) (with remote contacts)						516.635
Ordering code SAFETEC C 80/75 (4+0)	516.636					
Ordering code SAFETEC CR 80/75 (4+0) (with remote contacts)	516.637					
Ordering code SAFETEC C 160/xxx (4+0)		516.025	516.027	516.638	516.029	
Ordering code SAFETEC CR 160/xxx (4+0) (with remote contacts)		516.026	516.028	516.639	516.030	
Ordering code SAFETEC C 100/750 (4+0)						516.640
Ordering code SAFETEC CR 100/750 (4+0) (with remote contacts)						516.641

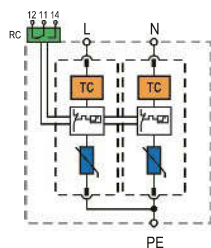
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) (2+0)

Dimensions



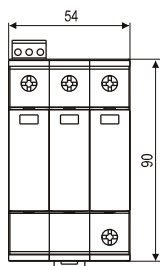
Internal configuration



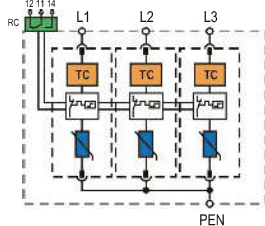
<b>SAFETEC C 40/75 (2+0)</b>	<b>75</b>
Weight per unit	250g
<b>SAFETEC C 80/xxx (2+0)</b>	<b>150 275 385 440</b>
Weight per unit	280g 281g 284g 286g
<b>SAFETEC C 50/750 (2+0)</b>	<b>750</b>
Weight per unit	288g
<b>SAFETEC CR 40/75 (2+0)</b>	<b>75</b>
Weight per unit	260g
<b>SAFETEC CR 80/xxx (2+0)</b>	<b>150 275 385 440</b>
Weight per unit	288g 289g 292g 294g
<b>SAFETEC CR 50/750 (2+0)</b>	<b>750</b>
Weight per unit	296g
Dimensions DIN 43880	2TE
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm
Min. packaging quantity	7 pcs.

SAFETEC C(R) (3+0)

Dimensions



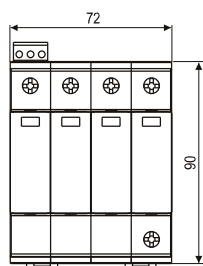
Internal configuration



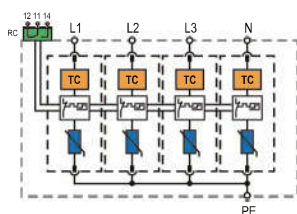
<b>SAFETEC C 60/75 (3+0)</b>	<b>75</b>
Weight per unit	375g
<b>SAFETEC C 120/xxx (3+0)</b>	<b>150 275 385 440</b>
Weight per unit	420g 422g 448g 450g
<b>SAFETEC C 75/750 (3+0)</b>	<b>750</b>
Weight per unit	468g
<b>SAFETEC CR 60/75 (3+0)</b>	<b>75</b>
Weight per unit	390g
<b>SAFETEC CR 120/xxx (3+0)</b>	<b>150 275 385 440</b>
Weight per unit	428g 430g 456g 458g
<b>SAFETEC CR 75/750 (3+0)</b>	<b>750</b>
Weight per unit	476g
Dimensions DIN 43880	3TE
Packaging dimensions (single unit)	109 x 76.5 x 60mm
Min. packaging quantity	5 pcs.

SAFETEC C(R) (4+0)

Dimensions



Internal configuration



<b>SAFETEC C 80/75 (4+0)</b>	<b>75</b>
Weight per unit	500g
<b>SAFETEC C 160/xxx (4+0)</b>	<b>150 275 385 440</b>
Weight per unit	560g 562g 595g 598g
<b>SAFETEC C 100/750x (4+0)</b>	<b>750</b>
Weight per unit	602g
<b>SAFETEC CR 80/75 (4+0)</b>	<b>75</b>
Weight per unit	520g
<b>SAFETEC CR 160/xxx (4+0)</b>	<b>150 275 385 440</b>
Weight per unit	568g 570g 603g 606g
<b>SAFETEC CR 100/750 (4+0)</b>	<b>750</b>
Weight per unit	610g
Dimensions DIN 43880	4TE
Packaging dimensions (single unit)	109 x 76.5 x 78mm
Min. packaging quantity	3 pcs.

## SAFETEC C(R) Series



- **Category IEC / EN / VDE:** Class II / Type 2 / C
- **Location of use:** Sub-distribution boards
- **Network system:** TT
- **Protection modes:** L-N, N-PE
- **Protective element:** MOV and GDT
- **Surge discharge rating:**  $I_{max}$  up to 40kA
- **Safety:** TOV withstand for unlimited time
- **Housing:** Modular design
- **Complies with:** IEC/EN 61643-11



### Technical data

Type	SAFETEC C(R) yyy/xxx (1+1), (3+1)						
	75	150	275	385	440	750	
<b>Electrical characteristics</b>							
Max. continuous operating voltage (AC/DC)	$U_c$ (L-N)	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V
	$U_c$ (N-PE)	255V					
Nominal discharge current (8/20)	$I_n$ (L-N/N-PE)	10kA/20kA		20kA/20kA		12.5kA/20kA	
Max. discharge current (8/20)	$I_{max}$ (L-N/N-PE)	20kA/40kA		40kA/40kA		25kA/40kA	
Protection level	$U_p$ (L-N)	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV
	$U_p$ (N-PE)	< 1.5kV					
Residual voltage at 5kA (8/20)	$U_{res}$ (L-N)	< 0.6kV	< 0.7kV	< 1.1kV	< 1.3kV	< 1.6kV	< 2.2kV
Follow current	$I_{fi}$ (N-PE)	100A <sub>ARMS</sub>					
Response time	$t_A$ (L-N/N-PE)	< 25ns					
Thermal protection		YES					
Back-up fuse (if mains > 125A)		125A gL					
TOV withstand for unlimited time up to	$U_T$	110V	230V	440V	560V	690V	1100V
<b>Mechanical characteristics</b>							
Terminal screw torque		max. 3.0Nm					
Temperature range		- 40°C .... + 80°C					
Terminal cross section		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of disconnector operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1.5mm <sup>2</sup>					
Remote terminal torque		0.25Nm					

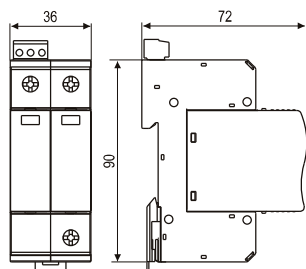
### Ordering information

$U_c$	75	150	275	385	440	750
Ordering code SAFETEC C 40/75 (1+1)	516.624					
Ordering code SAFETEC CR 40/75 (1+1) (with remote contacts)	516.625					
Ordering code SAFETEC C 80/xxx (1+1)		516.013	516.015	516.626	516.017	
Ordering code SAFETEC CR 80/xxx (1+1) (with remote contacts)		516.014	516.016	516.627	516.018	
Ordering code SAFETEC C 50/750 (1+1)						516.628
Ordering code SAFETEC CR 50/750 (1+1) (with remote contacts)						516.629
Ordering code SAFETEC C 80/75 (3+1)	516.642					
Ordering code SAFETEC CR 80/75 (3+1) (with remote contacts)	516.643					
Ordering code SAFETEC C 160/xxx (3+1)		516.031	516.033	516.644	516.035	
Ordering code SAFETEC CR 160/xxx (3+1) (with remote contacts)		516.032	516.034	516.645	516.036	
Ordering code SAFETEC C 100/750 (3+1)						516.646
Ordering code SAFETEC CR 100/750 (3+1) (with remote contacts)						516.647
Ordering code Module SAFETEC C(R) 20/75	516.648					
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039	
Ordering code Module SAFETEC C(R) 25/750						516.650
Ordering code Module SAFETUBE C 40/255				516.115		

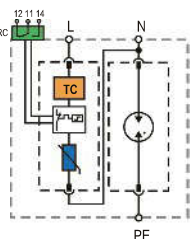
Dimensions, Internal configuration, Weight and Packaging

**SAFETEC C(R) (1+1)**

Dimensions



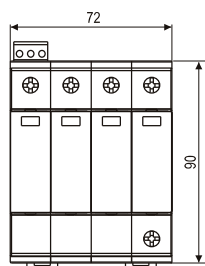
Internal configuration



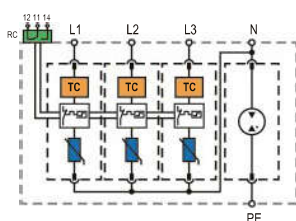
<b>SAFETEC C 40/75 (1+1)</b>	<b>75</b>			
Weight per unit	253g			
<b>SAFETEC C 80/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	258g	258g	265g	268g
<b>SAFETEC C 50/750 (1+1)</b>	<b>750</b>			
Weight per unit	271g			
<b>SAFETEC CR 40/75 (1+1)</b>	<b>75</b>			
Weight per unit	261g			
<b>SAFETEC CR 80/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	266g	266g	274g	276g
<b>SAFETEC CR 50/750 (1+1)</b>	<b>750</b>			
Weight per unit	279g			
Dimensions DIN 43880	2TE			
Packaging dimensions (single unit)	109 x 76,5 x 41,5mm			
Min. packaging quantity	7 pcs.			

**SAFETEC C(R) (3+1)**

Dimensions



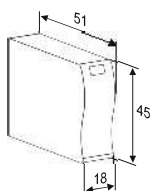
Internal configuration



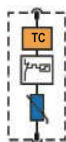
<b>SAFETEC C 80/75 (3+1)</b>	<b>75</b>			
Weight per unit	533g			
<b>SAFETEC C 160/xxx (3+1)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	538g	540g	565g	568g
<b>SAFETEC C 160/xxx (3+1)</b>	<b>750</b>			
Weight per unit	571g			
<b>SAFETEC CR 80/75 (3+1)</b>	<b>75</b>			
Weight per unit	541g			
<b>SAFETEC CR 160/xxx (3+1)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	546g	548g	574g	576g
<b>SAFETEC CR 160/xxx (3+1)</b>	<b>750</b>			
Weight per unit	579g			
Dimensions DIN 43880	4TE			
Packaging dimensions (single unit)	109 x 76,5 x 78mm			
Min. packaging quantity	3 pcs.			

**Module SAFETEC C(R)**

Dimensions



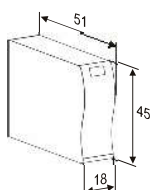
Internal configuration



<b>Module SAFETEC C(R) 20/75</b>	<b>75</b>			
Weight per unit	58g			
<b>Module SAFETEC C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Weight per unit	62g	66g	72g	74g
<b>Module SAFETEC C(R) 25/750</b>	<b>750</b>			
Weight per unit	78g			
Packaging dimensions	219 x 62 x 47mm			
Min. packaging quantity	12 pcs.			

**Module SAFETUBE C 40/255**

Dimensions



Internal configuration



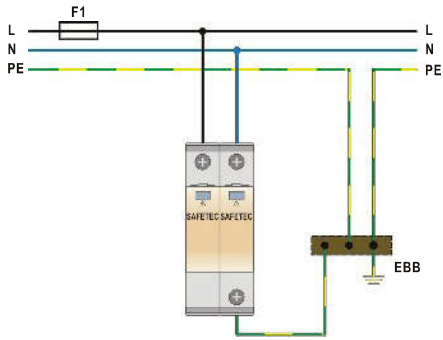
<b>Module SAFETUBE C 40/255</b>	<b>255</b>			
Weight per unit	34g			
Packaging dimensions	219 x 62 x 47mm			
Min. packaging quantity	12 pcs.			



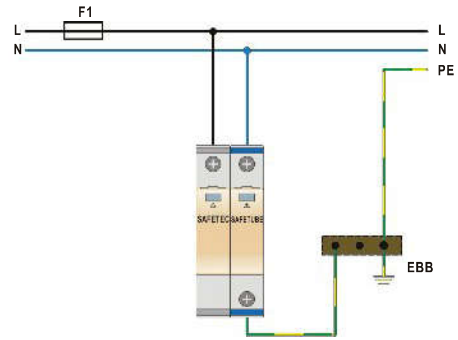
SAFETEC C(R) Series

Network connections

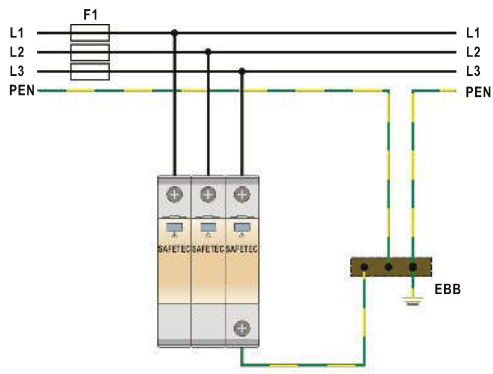
TN-S Network (Single-phase)



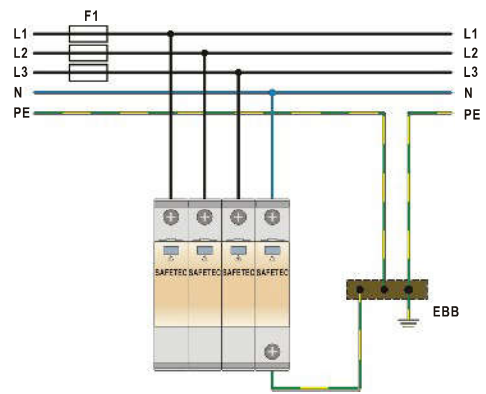
TT Network (Single-phase)



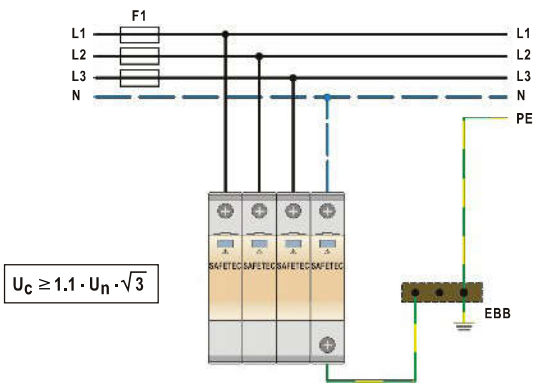
TN-C Network (Three-phase)



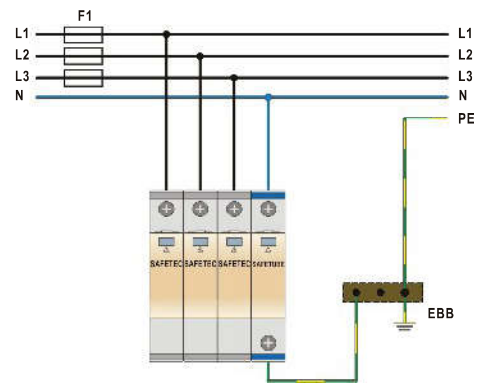
TN-S Network (Three-phase)



IT Network (Three-phase)



TT Network (Three-phase)



Back-up fuse

- $F1 > 125 \text{ A gL}$  →  $F2 = 125 \text{ A gL}$
- $F1 \leq 125 \text{ A gL}$  →  $F2$