

RCCBs - Residual current circuit breakers EFI

Features of residual current circuit breakers EFI

→ Quality seal for tested reliability

→ Rated conditional short-circuit current : 10 kA

→ AC - pure sinus residual current,
 → A - AC + pulsating direct current
 → B - AC + A + smooth direct current + high frequency (1kHz)
 → B+ - AC + A + smooth direct current + high frequency (20kHz)

→ Real contact position indication for easier contact status identification

→ Test button enables user to check residual functionality

→ Various quality marks

→ RCCBs can be supplied with single phase and three phase busbars

→ The terminals accept not only wires but also time saving busbars

→ Supply is possible both from top and bottom terminals



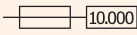




Residual current circuit breakers can be used in TN-S, TN-CS, TT and IT network systems, or with other words, in all systems where neutral and protective conductors are separated. Residual current circuit breakers EFI are used for protection against indirect contact (fault protection) and direct contact (additional protection) of parts under voltage. In the case of protection against indirect contact (fault protection) you can use residual current protective devices with a rated residual current of $I_{\Delta n} \leq 300\text{mA}$. Residual current protective devices with a rated residual current of $I_{\Delta n} \leq 30\text{mA}$ fulfil the conditions for protection against direct contact (additional protection). For protection against fire, according to DIN VDE 0100-482 and IEC 60364-4-482, all cables and conductors in TN and TT systems must be protected by means of residual current protective devices with rated residual current of $I_{\Delta n} \leq 300\text{mA}$. In applications where resistive faults can cause a fire (radiant ceiling heating with panel heating elements), the rated residual current must be $I_{\Delta n} = 30\text{mA}$.



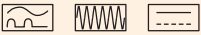
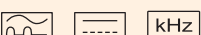
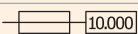



Types

- AC Type: they are sensitive to alternating (sinusoidal) AC residual currents.
- A Type: they are sensitive to alternating (sinusoidal) AC residual currents and pulsating DC residual currents.
- B Type: they are sensitive to alternating (sinusoidal) AC residual currents, pulsating DC residual currents and smooth DC residual currents. Tripping values are defined up to 1kHz.
- B+ Type: they are sensitive to alternating (sinusoidal) AC residual currents, pulsating DC residual currents and smooth DC residual currents. Tripping values are defined up to 20kHz and they are below 420mA.

Classification regarding break time

- Instantaneous: max. break time 40ms (Inst.)
- G/KV-Short time delay: time delayed min. 10ms and max. 40ms (G/KV)
- S-Selective: time delayed min. 40ms and max. 150ms (S)

| EFI 2 (2M) | | Type AC | Type A | | |
|---|---|---------|--------|------|---|
| | | Inst. | Inst. | G/KV | S |
|  | For alternating residual current | ✓ | ✓ | ✓ | ✓ |
|  | For alternating and pulsating direct residual current | | ✓ | ✓ | ✓ |
|  | Short-circuit capacity with back-up fuse | ✓ | ✓ | ✓ | ✓ |
|  | Lower temperature limit of application -25°C | ✓ | ✓ | ✓ | ✓ |
|  | VDE 0664, part 1 (up to 80 A) | | ✓ | | ✓ |
|  | Short time delayed (10 - 40 ms) | | | ✓ | |
|  | Selective (time delayed 40 -150 ms) | | | | ✓ |

| EFI 4 (4M) | | Type AC | Type A | | | | Type B | | | Type B+ | | |
|---|--|---------|--------|------|---|-------|--------|---|-------|---------|---|--|
| | | Inst. | Inst. | G/KV | S | Inst. | G/KV | S | Inst. | G/KV | S | |
|  | For alternating residual current | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
|  | For alternating and pulsating direct residual current | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
|  | For alternating, pulsating direct and smooth DC residual current (up to 1kHz) | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
|  | For alternating, pulsating direct and smooth DC residual current (up to 20kHz) | | | | | | | | ✓ | ✓ | ✓ | |
|  | Short-circuit capacity with back-up fuse | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
|  | Lower temperature limit of application -25°C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
|  | VDE 0664, part 1 (up to 80 A) | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ | |
|  | Short time delayed (10 - 40 ms) | | | ✓ | | | ✓ | | | ✓ | | |
|  | Selective (time delayed 40 -150 ms) | | | | ✓ | | | ✓ | | | ✓ | |

Use of AC, A, and B type of RCCB's in case of different fault conditions

| | | | AC | A | B, B+ | |
|------------|---|----------------------|----|---|-------|---|
| Connection | | | | | | |
| | | Normal mains current | | | | |
| 1 | Single phase L N PE | | | ✓ | ✓ | ✓ |
| 2 | Phase control L N PE | | | ✓ | ✓ | ✓ |
| 3 | Burst control L N PE | | | ✓ | ✓ | ✓ |
| 4 | Single phase rectifier L N PE | | | | ✓ | ✓ |
| 5 | Two-pulse bridge L N PE | | | | ✓ | ✓ |
| 6 | Two-pulse bridge, half controlled L N PE | | | | ✓ | ✓ |
| 7 | Two-pulse bridge between phases L ₁ L ₂ N PE | | | | ✓ | ✓ |
| 8 | Single phase with smoothing L N PE | | | | | ✓ |
| 9 | Three-phase star L ₁ L ₂ L ₃ N PE | | | | | ✓ |
| 10 | Six-pulse bridge between phases L ₁ L ₂ N PE | | | | | ✓ |

A and AC type residual current circuit breaker EFI-2

Rated residual current **0,03 - 0,5 A**
 Rated current **16 - 80 A**
 Type **A, AC**



16 - 80 A



100 A

EFI-2 Type A, EFI-2 Type AC

| I _n [A] | I _{Δn} [A] | Number of poles | Code No. A | | | Code No. AC | Weight [g] | Packaging [pcs] |
|--------------------|---------------------|-----------------|---------------|-----------------------|-------------|-------------|------------|-----------------|
| | | | Instantaneous | G/MV-Short time delay | S-Selective | | | |
| 16 | 0,03 | 2 | 002062521 | - | - | 002062121 | 197 | 1/54 |
| 25 | 0,03 | 2 | 002062522 | 002062727 | - | 002062122 | 197 | 1/54 |
| 40 | 0,03 | 2 | 002062523 | 002062728 | - | 002062123 | 197 | 1/54 |
| 63 | 0,03 | 2 | 002062524 | 002062729 | - | 002062124 | 206 | 1/54 |
| 80 | 0,03 | 2 | 002062525 | - | - | 002062125 | 208 | 1/54 |
| 100 | 0,03 | 2 | 002062530 | - | - | 002062531 | 244 | 1/54 |
| 16 | 0,1 | 2 | 002063521 | - | - | 002063121 | 193 | 1/54 |
| 25 | 0,1 | 2 | 002063522 | 002063727 | 002063732 | 002063122 | 193 | 1/54 |
| 40 | 0,1 | 2 | 002063523 | 002063728 | 002063733 | 002063123 | 193 | 1/54 |
| 63 | 0,1 | 2 | 002063524 | 002063729 | 002063734 | 002063124 | 196 | 1/54 |
| 80 | 0,1 | 2 | 002063525 | - | - | 002063125 | 198 | 1/54 |
| 100 | 0,1 | 2 | 002062532 | - | - | 002062533 | 230 | 1/54 |
| 16 | 0,3 | 2 | 002064521 | - | - | 002064121 | 198 | 1/54 |
| 25 | 0,3 | 2 | 002064522 | 002064727 | 002064732 | 002064122 | 198 | 1/54 |
| 40 | 0,3 | 2 | 002064523 | 002064728 | 002064733 | 002064123 | 198 | 1/54 |
| 63 | 0,3 | 2 | 002064524 | 002064729 | 002064734 | 002064124 | 204 | 1/54 |
| 80 | 0,3 | 2 | 002064525 | - | - | 002064125 | 208 | 1/54 |
| 100 | 0,3 | 2 | 002062534 | - | - | 002062535 | 230 | 1/54 |
| 16 | 0,5 | 2 | 002065521 | - | - | 002065121 | 198 | 1/54 |
| 25 | 0,5 | 2 | 002065522 | - | - | 002065122 | 198 | 1/54 |
| 40 | 0,5 | 2 | 002065523 | - | - | 002065123 | 198 | 1/54 |
| 63 | 0,5 | 2 | 002065524 | - | - | 002065124 | 204 | 1/54 |
| 80 | 0,5 | 2 | 002065525 | - | - | 002065125 | 208 | 1/54 |

A and AC type residual current circuit breaker EFI-4

Rated residual current **0,03 - 0,5 A**
 Rated current **16 - 80 A**
 Type **A, AC**



16 - 80 A



100 A

EFI-4 Type A, EFI-4 Type AC

| I _n [A] | I _{Δn} [A] | Number of poles | Code No. A | | | Code No. AC | Weight [g] | Packaging [pcs] |
|--------------------|---------------------|-----------------|---------------|-----------------------|-------------|-------------|------------|-----------------|
| | | | Instantaneous | G/MV-Short time delay | S-Selective | | | |
| 16 | 0,03 | 4 | 002062541 | - | - | 002062141 | 328 | 1/27 |
| 25 | 0,03 | 4 | 002062542 | 002062747 | - | 002062142 | 328 | 1/27 |
| 40 | 0,03 | 4 | 002062543 | 002062748 | - | 002062143 | 328 | 1/27 |
| 63 | 0,03 | 4 | 002062544 | 002062749 | - | 002062144 | 350 | 1/27 |
| 80 | 0,03 | 4 | 002062545 | - | - | 002062145 | 385 | 1/27 |
| 100 | 0,03 | 4 | 002062150 | - | - | 002062151 | 407 | 1/27 |
| 16 | 0,1 | 4 | 002063541 | - | - | 002063141 | 320 | 1/27 |
| 25 | 0,1 | 4 | 002063542 | 002063747 | 002063752 | 002063142 | 320 | 1/27 |
| 40 | 0,1 | 4 | 002063543 | 002063748 | 002063753 | 002063143 | 320 | 1/27 |
| 63 | 0,1 | 4 | 002063544 | 002063749 | 002063754 | 002063144 | 338 | 1/27 |
| 80 | 0,1 | 4 | 002063545 | - | - | 002063145 | 380 | 1/27 |
| 100 | 0,1 | 4 | 002062152 | - | - | 002062153 | 407 | 1/27 |
| 16 | 0,3 | 4 | 002064541 | - | - | 002064141 | 320 | 1/27 |
| 25 | 0,3 | 4 | 002064542 | 002064747 | 002064752 | 002064142 | 320 | 1/27 |
| 40 | 0,3 | 4 | 002064543 | 002064748 | 002064753 | 002064143 | 320 | 1/27 |
| 63 | 0,3 | 4 | 002064544 | 002064749 | 002064754 | 002064144 | 338 | 1/27 |
| 80 | 0,3 | 4 | 002064545 | - | - | 002064145 | 380 | 1/27 |
| 100 | 0,3 | 4 | 002062154 | - | - | 002062155 | 372 | 1/27 |
| 16 | 0,5 | 4 | 002065541 | - | - | 002065141 | 320 | 1/27 |
| 25 | 0,5 | 4 | 002065542 | - | - | 002065142 | 320 | 1/27 |
| 40 | 0,5 | 4 | 002065543 | - | - | 002065143 | 320 | 1/27 |
| 63 | 0,5 | 4 | 002065544 | - | - | 002065144 | 338 | 1/27 |
| 80 | 0,5 | 4 | 002065545 | - | - | 002065145 | 380 | 1/27 |

* Version with N-pole on the left side is also available.

Features and advantages of UNIVERSAL CURRENT SENSITIVE RCCBs B type and B+ type

APPLICATION

- Fault protection (protection against indirect contact of live parts)
- Additional protection (protection in case of direct contact of live parts, $I_{\Delta n} \leq 30\text{mA}$)
- Fire Protection (for locations exposed to fire hazard)

Residual current sensitivity – UNIVERSAL

AC pure sinus residual current, 50/60Hz

A sinus and pulsating direct current, 50/60Hz

B AC + A + smooth direct current + high frequency (1 kHz)

B+ AC + A + smooth direct current + high frequency (20kHz)

Basic types

according to rated values:

4p B $I_n = 25\text{A}, 40\text{A}, 63\text{A}, I_{\Delta n} = 30\text{mA}, 100\text{mA}, 300\text{mA}$

4p B+ $I_n = 25\text{A}, 40\text{A}, 63\text{A}, I_{\Delta n} = 30\text{mA}, 100\text{mA}, 300\text{mA}$

according to breaking times:

4p B, B+ instantaneous, short time delayed (G/KV), selective (S)

according to the number of poles:

4p, 2p

Standards

IEC/EN 61008-1 basic standard for RCCB's AC and A type

IEC/EN 62423 additional requirements for type B

VDE 0664-400 B+ VDE standard for B+ requirements (20kHz)

Mode of operation

Pure a.c. and pulsating d.c. type residual current sensitivity, A voltage independent

Smooth d.c. current sensitivity: B, B+ voltage dependent

Minimum operating voltage: 50V

Typical applications

Which are vulnerable to smooth d.c. residual currents:

- Frequency converters,
- Photovoltaic systems, a.c side,
- Charging stations for electric vehicles,
- Variable speed machine tools,
- UPS, computer data centres
- Elevator controls,
- Cranes of all kinds
- Electronic equipment on construction sites,
- Test set-ups in laboratories,
- Installation in general where we can expect d.c. smooth direct residual currents, etc.

B type residual current circuit breaker EFI-4 B Instantaneous

New!

Rated residual current **0,03 - 0,3 A** Rated current **25 - 63 A** Type **B (Instantaneous)**



| EFI-4 B Instantaneous | | | | | |
|-----------------------|--------------------|-----------------|-----------|------------|-----------------|
| I_n [A] | $I_{\Delta n}$ [A] | Number of poles | Code No | Weight [g] | Packaging [pcs] |
| 25 | 0,03 | 4 | 002062642 | 335 | 1/27 |
| 40 | 0,03 | 4 | 002062643 | 335 | 1/27 |
| 63 | 0,03 | 4 | 002062644 | 340 | 1/27 |
| 25 | 0,1 | 4 | 002063642 | 335 | 1/27 |
| 40 | 0,1 | 4 | 002063643 | 335 | 1/27 |
| 63 | 0,1 | 4 | 002063644 | 340 | 1/27 |
| 25 | 0,3 | 4 | 002064642 | 335 | 1/27 |
| 40 | 0,3 | 4 | 002064643 | 335 | 1/27 |
| 63 | 0,3 | 4 | 002064644 | 340 | 1/27 |

B+ type residual current circuit breaker EFI-4 B+ Instantaneous

New!

Rated residual current **0,03 - 0,3 A** Rated current **25 - 63 A** Type **B+ (Instantaneous)**



| EFI-4 B+ Instantaneous | | | | | |
|------------------------|--------------------|-----------------|-----------|------------|-----------------|
| I_n [A] | $I_{\Delta n}$ [A] | Number of poles | Code No | Weight [g] | Packaging [pcs] |
| 25 | 0,03 | 4 | 002062647 | 335 | 1/27 |
| 40 | 0,03 | 4 | 002062648 | 335 | 1/27 |
| 63 | 0,03 | 4 | 002062649 | 340 | 1/27 |
| 25 | 0,1 | 4 | 002063647 | 335 | 1/27 |
| 40 | 0,1 | 4 | 002063648 | 335 | 1/27 |
| 63 | 0,1 | 4 | 002063649 | 340 | 1/27 |
| 25 | 0,3 | 4 | 002064647 | 335 | 1/27 |
| 40 | 0,3 | 4 | 002064648 | 335 | 1/27 |
| 63 | 0,3 | 4 | 002064649 | 340 | 1/27 |

B type residual current circuit breaker EFI-4 B G/KV-Short time delay

New!

Rated residual current **0,03 - 0,3 A** Rated current **25 - 63 A** Type **B (G/KV-Short time delay)**



| EFI-4 B G/KV-Short time delay | | | | | |
|-------------------------------|--------------------|-----------------|-----------|------------|-----------------|
| I_n [A] | $I_{\Delta n}$ [A] | Number of poles | Code No | Weight [g] | Packaging [pcs] |
| 25 | 0,03 | 4 | 002062652 | 340 | 1/27 |
| 40 | 0,03 | 4 | 002062653 | 340 | 1/27 |
| 63 | 0,03 | 4 | 002062654 | 345 | 1/27 |
| 25 | 0,1 | 4 | 002063652 | 340 | 1/27 |
| 40 | 0,1 | 4 | 002063653 | 340 | 1/27 |
| 63 | 0,1 | 4 | 002063654 | 345 | 1/27 |
| 25 | 0,3 | 4 | 002064652 | 340 | 1/27 |
| 40 | 0,3 | 4 | 002064653 | 340 | 1/27 |
| 63 | 0,3 | 4 | 002064654 | 345 | 1/27 |

Residual current circuit breakers

B type residual current circuit breaker EFI-4 B S-Selective

New!

| | | |
|--|-----------------------------------|--------------------------------|
| Rated residual current 0,1 - 0,3 A | Rated current 25 - 63 A | Type B (S-Selective) |
|--|-----------------------------------|--------------------------------|

EFI-4 B S-Selective

| I_n [A] | $I_{\Delta n}$ [A] | Number of poles | Code No | Weight [g] | Packaging [pcs] |
|--------------|-----------------------|--------------------|-----------|---------------|--------------------|
| 25 | 0,1 | 4 | 002063662 | 340 | 1/27 |
| 40 | 0,1 | 4 | 002063663 | 340 | 1/27 |
| 63 | 0,1 | 4 | 002063664 | 345 | 1/27 |
| 25 | 0,3 | 4 | 002064662 | 335 | 1/27 |
| 40 | 0,3 | 4 | 002064663 | 335 | 1/27 |
| 63 | 0,3 | 4 | 002064664 | 340 | 1/27 |


Accessories for residual current circuit breakers EFI (16 - 80 A)

The PS EFI is fixed to EFI series switches. The width of the device is 9 mm, other dimensions are in compliance with EFI switches. The auxiliary switch PS EFI is used for the remote signalling of the state of contact's condition (closed/open) of EFI switches. During fitting, the EFI must be switched off. PS EFI and DA EFI can not be mounted both together, because both can only be mounted on the right side of EFI.

Auxiliary Switch PS EFI

| Type | Contact | Code No. | Weight [g] | Packaging [pcs] |
|-------------|---------------------|-----------|---------------|--------------------|
| PS EFI - MD | b-contact/a-contact | 002069001 | 50 | 1/12 |
| PS EFI - 2M | 2 x b-contact | 002069002 | 50 | 1/12 |
| PS EFI - 2D | 2 x a-contact | 002069003 | 50 | 1/12 |

a - contact = make contact (NO)

b - contact = break contact (NC)

Sealing piece EFI-2

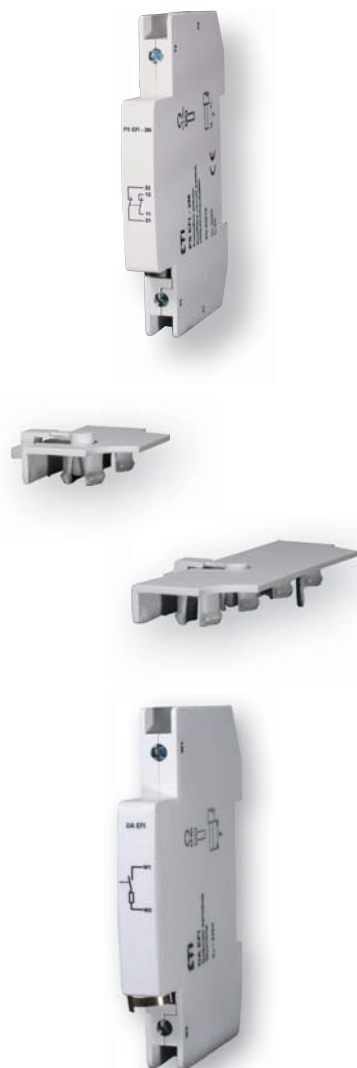
| Code No. | Weight [g] | Packaging [pcs] |
|-----------|---------------|--------------------|
| 002069011 | 2 | 2 |

Sealing piece EFI-4

| Code No. | Weight [g] | Packaging [pcs] |
|-----------|---------------|--------------------|
| 002069012 | 3 | 2 |

Shunt trip release DA EFI

| Type | Code No. | Weight [g] | Packaging [pcs] |
|--------|-----------|---------------|--------------------|
| DA EFI | 002069004 | 45 | 1/12 |



RCBOs - Residual current circuit breakers with integral overcurrent protection KZS

Advantages of residual current circuit breakers with integral overcurrent protection KZS - 1M

→ Combining the features of miniature circuit breaker and a residual current circuit breaker, functionally dependent on line voltage (minimum supply voltage 90V)

→ Real contact position indication for easier identification, whether RCBO is in ON or OFF position



→ Energy limiting class 3: highest energy limiting performance for optimal protection of cable insulation and maximally reducing risk of fire and other damage

→ 1-module housing (18 mm), with switched neutral line



→ Clearly marked terminals to ensure appropriate connection

→ In case of overcurrent or differential current, the button moves to the "trip" (middle) position. In case of manual turn off, the button moves to the "off" (lowest) position.

→ Version with operating temperature down to -35°C also available



→ Added protection against any pulsating DC component that can be generated from electrical appliances



→ Sealing possibility

→ All necessary technical and installation information can be found on the front and side of the device



→ The terminals accept not only wires but also time saving busbars



→ Advanced method of mounting enables an easy removal of single RCBO without disconnecting other units from the busbar

Residual current circuit breakers with integral overcurrent protection

Residual current circuit breaker with integral overcurrent protection KZS - 1M

| | | | |
|---|--------------------------------|--|--|
| Rated short-circuit capacity 6 kA | Rated current 6-25 A | Tripping characteristic B, C | Rated residual current 0,01 - 0,03 - 0,1 A |
|---|--------------------------------|--|--|

**Recommended for use in installations with high level of additional protection required (bathrooms, hospitals, kindergartens etc).
Used for fault and additional protection.**

Description - KZS - 1M is a residual current circuit breaker with integral over-current protection, functionally dependent on line voltage.

KZS - 1M (Supply from the bottom)

| I _n [A] | I _{Δn} [A] | Type A | | Type AC | | Weight [g] | Packaging [pcs] |
|-----------------------|------------------------|------------|------------|------------|------------|---------------|--------------------|
| | | Code No. B | Code No. C | Code No. B | Code No. C | | |
| 6 | 0,01 | 002175411 | 002175421 | 002175611 | 002175621 | 115 | 1/12 |
| 10 | 0,01 | 002175412 | 002175422 | 002175612 | 002175622 | | |
| 13 | 0,01 | 002175413 | 002175423 | 002175613 | 002175623 | | |
| 16 | 0,01 | 002175414 | 002175424 | 002175614 | 002175624 | | |
| 20 | 0,01 | 002175415 | 002175425 | 002175615 | 002175625 | | |
| 25 | 0,01 | 002175416 | 002175426 | 002175616 | 002175626 | | |
| 6 | 0,03 | 002175201 | 002175221 | - | - | 115 | 1/12 |
| 10 | 0,03 | 002175202 | 002175222 | - | - | | |
| 13 | 0,03 | 002175203 | 002175223 | - | - | | |
| 16 | 0,03 | 002175204 | 002175224 | - | - | | |
| 20 | 0,03 | 002175205 | 002175225 | - | - | | |
| 25 | 0,03 | 002175206 | 002175226 | - | - | | |
| 6 | 0,1 | 002175431 | 002175441 | 002175631 | 002175681 | 115 | 1/12 |
| 10 | 0,1 | 002175432 | 002175442 | 002175632 | 002175682 | | |
| 13 | 0,1 | 002175433 | 002175443 | 002175633 | 002175683 | | |
| 16 | 0,1 | 002175434 | 002175444 | 002175634 | 002175684 | | |
| 20 | 0,1 | 002175435 | 002175445 | 002175635 | 002175685 | | |
| 25 | 0,1 | 002175436 | 002175446 | 002175636 | 002175686 | | |


KZS - 1M SUP (Supply from the top)

| I _n [A] | I _{Δn} [A] | Type A | | Weight [g] | Packaging [pcs] |
|-----------------------|------------------------|------------|------------|---------------|--------------------|
| | | Code No. B | Code No. C | | |
| 6 | 0,01 | 002175811 | 002175851 | 115 | 1/12 |
| 10 | 0,01 | 002175812 | 002175852 | | |
| 13 | 0,01 | 002175813 | 002175853 | | |
| 16 | 0,01 | 002175814 | 002175854 | | |
| 20 | 0,01 | 002175815 | 002175855 | | |
| 25 | 0,01 | 002175816 | 002175856 | | |
| 6 | 0,03 | 002175701 | 002175721 | 115 | 1/12 |
| 10 | 0,03 | 002175702 | 002175722 | | |
| 13 | 0,03 | 002175703 | 002175723 | | |
| 16 | 0,03 | 002175704 | 002175724 | | |
| 20 | 0,03 | 002175705 | 002175725 | | |
| 25 | 0,03 | 002175706 | 002175726 | | |
| 6 | 0,1 | 002175831 | 002175871 | 115 | 1/12 |
| 10 | 0,1 | 002175832 | 002175872 | | |
| 13 | 0,1 | 002175833 | 002175873 | | |
| 16 | 0,1 | 002175834 | 002175874 | | |
| 20 | 0,1 | 002175835 | 002175875 | | |
| 25 | 0,1 | 002175836 | 002175876 | | |


KZS - 1M LT (Supply from the bottom)

| I _n [A] | I _{Δn} [A] | Type A | | Weight [g] | Packaging [pcs] |
|-----------------------|------------------------|------------|------------|---------------|--------------------|
| | | Code No. B | Code No. C | | |
| 6 | 0,03 | 002175291 | 002175301 | 115 | 1/12 |
| 10 | 0,03 | 002175292 | 002175302 | 115 | 1/12 |
| 13 | 0,03 | 002175293 | 002175303 | 115 | 1/12 |
| 16 | 0,03 | 002175294 | 002175304 | 115 | 1/12 |
| 20 | 0,03 | 002175295 | 002175305 | 115 | 1/12 |
| 25 | 0,03 | 002175296 | 002175306 | 115 | 1/12 |

LT-suitable for temperatures down to -35°C

Residual current circuit breaker with integral overcurrent protection KZS-2M

Rated short-circuit capacity
10 kA

Rated current
6 - 40 A

Tripping characteristic
B, C

Rated residual current
0,01 - 0,5 A

Description: KZS (KZS-2M, KZS-4M) is a residual current circuit breaker combining the features of a miniature circuit breaker and a residual current circuit breaker and is functionally independent on line voltage. Used primarily in circuits with an increased requirements regarding touch voltage such as circuits of portable appliances, in kindergartens, schools, hospitals etc.



| KZS-2M $I_{\Delta n} = 10 \text{ mA}$ | | | | |
|---------------------------------------|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | | |
| 6 | 002173211 | 002173231 | 225 | 1/54 |
| 10 | 002173212 | 002173232 | 225 | 1/54 |
| 13 | 002173213 | 002173233 | 225 | 1/54 |
| 16 | 002173214 | 002173234 | 225 | 1/54 |
| 20 | 002173215 | 002173235 | 225 | 1/54 |
| 25 | 002173216 | 002173236 | 225 | 1/54 |
| 32 | 002173217 | 002173237 | 225 | 1/54 |
| 40 | 002173218 | 002173238 | 225 | 1/54 |

| KZS-2M $I_{\Delta n} = 30 \text{ mA}$ | | | | | | |
|---------------------------------------|------------|------------|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Type AC | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | Code No. B | Code No. C | | |
| 6 | 002173201 | 002173221 | 002173101 | 002173121 | 225 | 1/54 |
| 10 | 002173202 | 002173222 | 002173102 | 002173122 | 225 | 1/54 |
| 13 | 002173203 | 002173223 | 002173103 | 002173123 | 225 | 1/54 |
| 16 | 002173204 | 002173224 | 002173104 | 002173124 | 225 | 1/54 |
| 20 | 002173205 | 002173225 | 002173105 | 002173125 | 225 | 1/54 |
| 25 | 002173206 | 002173226 | 002173106 | 002173126 | 225 | 1/54 |
| 32 | 002173207 | 002173227 | 002173107 | 002173127 | 225 | 1/54 |
| 40 | 002173208 | 002173228 | 002173108 | 002173128 | 225 | 1/54 |

| KZS-2M $I_{\Delta n} = 100 \text{ mA}$ | | | | |
|--|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | | |
| 6 | 002173701 | 002173721 | 225 | 1/54 |
| 10 | 002173702 | 002173722 | 225 | 1/54 |
| 13 | 002173703 | 002173723 | 225 | 1/54 |
| 16 | 002173704 | 002173724 | 225 | 1/54 |
| 20 | 002173705 | 002173725 | 225 | 1/54 |
| 25 | 002173706 | 002173726 | 225 | 1/54 |
| 32 | 002173707 | 002173727 | 225 | 1/54 |
| 40 | 002173708 | 002173728 | 225 | 1/54 |

| KZS-2M $I_{\Delta n} = 300 \text{ mA}$ | | | | | | |
|--|------------|------------|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Type AC | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | Code No. B | Code No. C | | |
| 6 | 002173401 | 002173421 | 002173301 | 002173321 | 225 | 1/54 |
| 10 | 002173402 | 002173422 | 002173302 | 002173322 | 225 | 1/54 |
| 13 | 002173403 | 002173423 | 002173303 | 002173323 | 225 | 1/54 |
| 16 | 002173404 | 002173424 | 002173304 | 002173324 | 225 | 1/54 |
| 20 | 002173405 | 002173425 | 002173305 | 002173325 | 225 | 1/54 |
| 25 | 002173406 | 002173426 | 002173306 | 002173326 | 225 | 1/54 |
| 32 | 002173407 | 002173427 | 002173307 | 002173327 | 225 | 1/54 |
| 40 | 002173408 | 002173428 | 002173308 | 002173328 | 225 | 1/54 |

Residual current circuit breakers with integral overcurrent protection

| KZS-2M $I_{\Delta n} = 500 \text{ mA}$ | | | | |
|--|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | | |
| 6 | 002173901 | 002173921 | 225 | 1/54 |
| 10 | 002173902 | 002173922 | 225 | 1/54 |
| 13 | 002173903 | 002173923 | 225 | 1/54 |
| 16 | 002173904 | 002173924 | 225 | 1/54 |
| 20 | 002173905 | 002173925 | 225 | 1/54 |
| 25 | 002173906 | 002173926 | 225 | 1/54 |
| 32 | 002173907 | 002173927 | 225 | 1/54 |
| 40 | 002173908 | 002173928 | 225 | 1/54 |

Residual current circuit breaker with integral overcurrent protection KZS-2M 2p

| | | | |
|--|----------------------------------|--|---|
| Rated short-circuit capacity 10 kA | Rated current 6 - 25 A | Tripping characteristic B, C | Rated residual current 0,03 A |
|--|----------------------------------|--|---|

New!

| KZS-2M 2p $I_{\Delta n} = 30 \text{ mA}$ | | | | |
|--|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | | |
| 6 | 002172501 | 002172521 | 210 | 1/54 |
| 10 | 002172502 | 002172522 | 210 | 1/54 |
| 13 | 002172503 | 002172523 | 210 | 1/54 |
| 15 | 002172504 | 002172524 | 210 | 1/54 |
| 16 | 002172505 | 002172525 | 210 | 1/54 |
| 20 | 002172506 | 002172526 | 210 | 1/54 |
| 25 | 002172507 | 002172527 | 210 | 1/54 |



Residual current circuit breaker with integral overcurrent protection with LED status signalisation KZS 2M2p EDI

| | | | |
|--|----------------------------------|--|---|
| Rated short-circuit capacity 10 kA | Rated current 6 - 25 A | Tripping characteristic B, C | Rated residual current 0,03 A |
|--|----------------------------------|--|---|

| KZS-2M 2p EDI $I_{\Delta n} = 30 \text{ mA}$ | | | | |
|--|------------|------------|---------------|--------------------|
| I_n [A] | Type A | | Weight [g] | Packaging [pcs] |
| | Code No. B | Code No. C | | |
| 6 | 002172401 | 002172411 | 205 | 1/54 |
| 10 | 002172402 | 002172412 | 205 | 1/54 |
| 13 | 002172403 | 002172413 | 205 | 1/54 |
| 15 | 002172404 | 002172414 | 205 | 1/54 |
| 16 | 002172406 | 002172416 | 205 | 1/54 |
| 20 | 002172407 | 002172417 | 205 | 1/54 |
| 25 | 002172408 | 002172418 | 205 | 1/54 |

