

## Contents

|  |      |
|--|------|
| Miniature Circuit Breakers (MCB's) ..... | 3-2  |
| Protecta Type B Pan Assemblies .....     | 3-12 |
| High Performance MCB's.....              | 3-14 |
| Residual Current Devices .....           | 3-19 |
| RCBO's .....                             | 3-21 |
| Residual Current Relays .....            | 3-23 |
| Switch Disconnectors .....               | 3-24 |
| Installation Contactors.....             | 3-25 |
| Latching Relays.....                     | 3-26 |
| Pushbuttons & Indicator Lamps .....      | 3-27 |
| Time Switches .....                      | 3-28 |
| Power Failure Signalling Lamps.....      | 3-29 |
| Bell Transformers .....                  | 3-30 |
| Twilight Switches .....                  | 3-31 |
| Smisline.....                            | 3-32 |
| Surge Protection.....                    | 3-36 |
| Technical Details.....                   | 3-44 |
| Dimensions.....                          | 3-46 |



[Return to main index](#)

# System ProM Overview

## Breaking capacities

### Short circuit rupturing capacity

Switching sequence acc. to DIN VDE 0641 part 11, EN 60898, IEC 898

Ratings with AC in kA / cos φ, with DC in kA / T ms

| Range     | Tripping characteristic | Rated current | AC                         |                 | 2/3 phase<br>230V~<br>133/230V~<br>kA/cos | 400V~<br>230/400V~<br>kA/cos | DC <sup>1)</sup><br>Single Pole<br>up to 60V<br>kA/T ms | Max. Back-up Protection |                                    | Max. Short-circuit rupturing capacity of the range |       |        |       |      |  |      |      |            |
|-----------|-------------------------|---------------|----------------------------|-----------------|---|------------------------------|---|-------------------------|------------------------------------|--|-------|--------|-------|------|--|------|------|------------|
|           |                         |               | 1-Phase<br>133V~<br>kA/cos | 230V~<br>kA/cos |   |                              |   | fuse                    | Main circuit breaker <sup>2)</sup> |  |       |        |       |      |  |      |      |            |
| S260-B    | 6                       | 10/0.5        | 6/0.7                      | 10/0.5          | 6/0.7                                     | 10/4                         |   | 63A                     | 100A                               | 6000<br>3  |       |        |       |      |  |      |      |            |
|           | 10...20                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 25...32                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 40                      |               |                            |                 |   |                              |   | 125A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 50...63                 |               |                            |                 |   |                              |   | 160A                    | 100A                               |  |       |        |       |      |  |      |      |            |
| S260-C, D | 0.5...2                 | Unlimited     |                            |                 |   |                              |   | not necessary           |                                    | unlimited  |       |        |       |      |  |      |      |            |
|           | 3...4                   | 10/0.5        | 6/0.7                      | 10/0.5          | 6/0.7                                     | 10/4                         |   | 20A                     | -                                  | 6000<br>3  |       |        |       |      |  |      |      |            |
|           | 6                       |               |                            |                 |   |                              |   | 40A                     | -                                  |  |       |        |       |      |  |      |      |            |
|           | 8                       |               |                            |                 |   |                              |   | 63A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 10...20                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 25...32                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 40                      |               |                            |                 |   |                              |   | 125A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 50...63                 |               |                            |                 |   |                              |   | 160A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | S270-B                  |               |                            |                 |   |                              |   | 6                       | 10/0.5                             |  | 6/0.7 | 10/0.5 | 6/0.7 | 10/4 |  | 63A  | 100A | 10000<br>3 |
|           |                         |               |                            |                 |   |                              |   | 10...20                 |                                    |  |       |        |       |      |  | 80A  | 100A |            |
| 25...32   |                         |               |                            |                 |   |                              |   | 100A                    |                                    |  |       |        |       |      |  | 100A |      |            |
| 40        |                         | 125A          | 100A                       |                 |   |                              |   |                         |                                    |  |       |        |       |      |  |      |      |            |
| 50...63   |                         | 160A          | 100A                       |                 |   |                              |   |                         |                                    |  |       |        |       |      |  |      |      |            |
| S270-C    | 0.5...2                 | Unlimited     |                            |                 |   |                              |   | not necessary           |                                    | unlimited  |       |        |       |      |  |      |      |            |
|           | 3...4                   | 10/0.5        | 10/0.5                     | 10/0.5          | 10/0.5                                    | 10/4                         |   | 20A                     | -                                  | 10000<br>3   |       |        |       |      |  |      |      |            |
|           | 6                       |               |                            |                 |   |                              |   | 40A                     | -                                  |  |       |        |       |      |  |      |      |            |
|           | 8                       |               |                            |                 |   |                              |   | 63A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 10...20                 |               |                            |                 |   |                              |   | 80A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 25...32                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 40                      |               |                            |                 |   |                              |   | 125A                    | 100A                               |  |       |        |       |      |  |      |      |            |
| 50...63   | 160A                    |               |                            |                 |   |                              |   | 100A                    |                                    |  |       |        |       |      |  |      |      |            |
| S270-K    | 0.5...2                 | Unlimited     |                            |                 |   |                              |   | not necessary           |                                    | unlimited  |       |        |       |      |  |      |      |            |
|           | 3                       | 10/0.5        | 6/0.7                      | 10/0.5          | 6/0.7                                     | 10/4                         |   | 20A                     | -                                  | 6000   |       |        |       |      |  |      |      |            |
|           | 4                       |               |                            |                 |   |                              |   | 25A                     | -                                  |  |       |        |       |      |  |      |      |            |
|           | 6...10                  |               |                            |                 |   |                              |   | 63A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 16...20                 |               |                            |                 |   |                              |   | 80A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 25...32                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 40                      |               |                            |                 |   |                              |   | 125A                    | 100A                               |  |       |        |       |      |  |      |      |            |
| 50...63   | 160A                    |               |                            |                 |   |                              |   | 100A                    |                                    |  |       |        |       |      |  |      |      |            |
| S270-Z    | 0.5...2                 | Unlimited     |                            |                 |   |                              |   | not necessary           |                                    | unlimited  |       |        |       |      |  |      |      |            |
|           | 3...4                   | 10/0.5        | 6/0.7                      | 10/0.5          | 6/0.7                                     | 10/4                         |   | 20A                     | -                                  | 6000   |       |        |       |      |  |      |      |            |
|           | 6                       |               |                            |                 |   |                              |   | 35A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 8                       |               |                            |                 |   |                              |   | 40A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 10...16                 |               |                            |                 |   |                              |   | 63A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 20...25                 |               |                            |                 |   |                              |   | 80A                     | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 32...40                 |               |                            |                 |   |                              |   | 100A                    | 100A                               |  |       |        |       |      |  |      |      |            |
|           | 50...63                 |               |                            |                 |   |                              |   | 125A                    | 100A                               |  |       |        |       |      |  |      |      |            |

Return to main index

# System ProM Overview

## Breaking capacities

### Short circuit rupturing capacity

Switching sequence acc. to DINVDE 0641 part 11, EN 60898, IEC 898  
Ratings with AC in kA / cos φ, with DC in kA / T ms

| Range      | Tripping characteristic | AC                           |                   |   |                                | DC <sup>1)</sup><br>Single Pole<br>up to 60V $\overline{\text{---}}$ | Max. Back-up Protection |                                    | Max. Short-circuit rupturing capacity of the range |
|------------|-------------------------|------------------------------|-------------------|---|--------------------------------|--|-------------------------|------------------------------------|--|
|            |                         | 1-Phase<br>133V~<br>kA/cos φ | 230V~<br>kA/cos φ | 2/3 phase<br>230V~<br>133/230V~<br>kA/cos φ | 400V~<br>230/400V~<br>kA/cos φ |  | fuse                    | Main circuit breaker <sup>2)</sup> |  |
| S280-B     | 6                       | 15/0.25                      | 10/0.5            | 15/0.25                                     | 10/0.5                         | 10/4   | 63 A                    | 100 A                              | up to<br>25000                                     |
|            | 10...13                 | 25/0.25                      | 25/0.25           | 25/0.25                                     | 25/0.25                        |  | 15/4                    | 80 A                               |  |
|            | 16...25                 |                              |                   |   |                                | 100 A  |                         | 100 A                              |  |
|            | 32...40                 | 20/0.25                      | 15/0.25           | 20/0.25                                     | 15/0.25                        | 125 A  | 100 A                   |                                    |  |
|            | 50...63                 | 15/0.25                      | 10/0.25           | 15/0.25                                     | 10/0.5                         | 10/4   | 160 A                   | 100 A                              |  |
| S280-C     | 0.5...2                 | Unlimited                    |                   |   |                                | not necessary  |                         | unlimited                          |  |
|            | 3, 4                    | 15/0.25                      | 10/0.5            | 15/0.25                                     | 10/0.5                         | 10/4   | 35 A                    | -                                  | up to<br>25000                                     |
|            | 6, 8                    |                              |                   |   |                                |  | 63 A                    | 100 A                              |  |
|            | 10, 13                  | 80 A                         | 100 A             |   |                                |  |                         |                                    |  |
|            | 16...25                 | 25/0.25                      | 25/0.25           | 25/0.25                                     | 25/0.25                        | 15/4   | 100 A                   | 100 A                              |  |
|            | 32...40                 | 20/0.25                      | 15/0.25           | 20/0.25                                     | 15/0.25                        | 125 A  | 100 A                   |                                    |  |
|            | 50...63                 | 15/0.25                      | 10/0.5            | 15/0.25                                     | 10/0.5                         | 10/4   | 160 A                   | 100 A                              |  |
| S280-K,Z,D | 0.2...2 <sup>3)</sup>   | Unlimited                    |                   |   |                                | not necessary  |                         | unlimited                          |  |
|            | 3                       | 15/0.25                      | 10/0.5            | 15/0.25                                     | 10/0.5                         | 10/4   | 25 A                    | -                                  | up to<br>25000                                     |
|            | 4                       |                              |                   |   |                                |  | 35 A                    | -                                  |  |
|            | 6                       |                              |                   |   |                                |  | 63 A                    | 100 A                              |  |
|            | 8                       |                              |                   |   |                                |  | 80 A                    | 100 A                              |  |
|            | 10...20                 | 25/0.25                      | 25/0.25           | 25/0.25                                     | 25/0.25                        |  | 15/4                    | 100 A                              |  |
|            | 25...32                 | 20/0.25                      | 15/0.25           | 20/0.25                                     | 15/0.25                        | 15/4   | 125 A                   | 100 A                              |  |
|            | 40...63                 | 15/0.25                      | 10/0.5            | 15/0.25                                     | 10/0.5                         | 10/4   | 160 A                   | 100 A                              |  |

1) In symmetrical earth-ground AC networks 2 pole MCB's (two poles in series) are applicable up to 100V  $\overline{\text{---}}$ . In this case the rated rupturing capacity is one step higher than the 1 pole version. Direction of connection is optional.

2) The max. back-up protection is only required if the prospective short circuit current may exceed the short circuit rupturing capacity of the MCB.

3) K from 0.2 A, Z from 0.5 A rated current.

### Short Circuit rupturing capacity

Switching sequence according to DINVDE 0660 Part 101, IEC 947.

For the short circuit rupturing capacities listed the time constant  $T = L/R$  15 ms is valid in the case of DC.

In the case of AC for 10kA; cos φ 0.6 – for 8 and 6kA: cos φ 0.8 and for 2kA: cos φ 0.9.

| S280 UC                      | 1 pole                               |                              |                              | 2/4 pole                             |                              |                              |                              | Max. fuse <sup>4)</sup><br>for back-up protection:<br>operating class<br>gI (DINVDE<br>0636/IEC269) |
|------------------------------|--------------------------------------|------------------------------|------------------------------|--------------------------------------|------------------------------|------------------------------|------------------------------|---|
| For DC                       | up to<br>60V $\overline{\text{---}}$ | 100V $\overline{\text{---}}$ | 220V $\overline{\text{---}}$ | up to<br>60V $\overline{\text{---}}$ | 110V $\overline{\text{---}}$ | 220V $\overline{\text{---}}$ | 440V $\overline{\text{---}}$ |   |
| For AC                       | up to<br>60V ~                       | 127V ~                       | 240V ~                       | up to<br>60V ~                       | 127V ~                       | 240V ~                       | 415V ~                       |   |
| B6 ...25 A                   | 10kA                                 | 10kA                         | 6kA                          | 10kA                                 | 10kA                         | 10kA                         | 6kA                          | 100A  |
| K, Z 0.2...2 A <sup>5)</sup> | unlimited                            | unlimited                    | unlimited                    | unlimited                            | unlimited                    | unlimited                    | unlimited                    | not necessary   |
| K, Z 3...4 A                 | 10kA                                 | 10kA                         | 6kA                          | 10kA                                 | 10kA                         | 10kA                         | 6kA                          | 35A   |
| K, Z 6...8 A                 | 10kA                                 | 10kA                         | 6kA                          | 10kA                                 | 10kA                         | 10kA                         | 6kA                          | 63A   |
| K, Z 10...32 A               | 10kA                                 | 10kA                         | 6kA                          | 10kA                                 | 10kA                         | 10kA                         | 6kA                          | 100A  |
| K, Z 40...63 A               | 6kA                                  | 6kA                          | 4.5kA                        | 10kA                                 | 6kA                          | 6kA                          | 4.5kA                        | 125A  |

4) Back-up protection is only necessary when, at the point of installation the maximum rated short circuit rupturing capacity is expected to be exceeded

5) Z 0.5A...2A

[Return to main index](#)

## System proM

### Miniature Circuit Breakers B, C, and D trip curves.

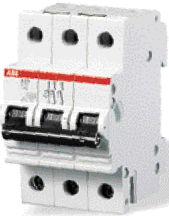
BS EN 60898. Ratings 0.5 to 100A.

#### Description, Installation and Task

- Current limiting MCB's with undelayed magnetic and delayed thermal trips, with fixed setting. Metal framed trip-free switching mechanism.
- For installation in ABBProtecta Final Distribution Boards, Pan Assemblies or on symmetrical DIN rail.
- Protection and control of electrical wires, cables and appliances in the case of overcurrent due to overloads and short circuits.

#### Technical Data

- Current ratings 0.5 to 100A at 30 degrees C to BS EN 60898.
- Rated voltage 230 - 400V AC
- Maximum operating voltage 440V AC, single pole 60V DC, double pole 110V DC.
- Minimum operating voltage 12V AC/DC.
- Breaking capacity: BS EN 60898 - S270B & C 10kA, S260D 6kA, S280B & C 6kA.
- Mechanical service life: 20,000 operations
- Cable capacity: 25mm<sup>2</sup> up to 40A, 35mm<sup>2</sup> for 50 and 63A, 50mm<sup>2</sup> for 80 & 100A.
- Tightening torque: 2Nm up to 63A, 2.5Nm for 80 & 100A.
- Ambient temperature: -25°C to +55°C.
- Weight per pole: 0.125g up to 40A, 0.145g for 50 & 63A, 0.160 for 80 & 100A.
- Dimensions: see page 3/46
- Accessories: see page 3/10, 3/11
- Add on earth leakage: see page 3/20



[Return to main index](#)

# System proM

## Miniature Circuit Breakers B, C, and D trip curves.

BS EN 60898. Ratings 0.5 to 100A.

### Type B (3-5 In) BS EN 60898.

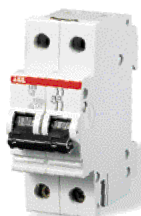
Small inrush or switching surges, heating loads, tungsten lighting



| Rated Current (A) | Breaking Capacity | Single Pole | Double Pole | Triple Pole | Four Pole |
|-------------------|-------------------|-------------|-------------|-------------|-----------|
| 6                 | 10kA              | S271B6      | S272B6      | S273B6      | S274B6    |
| 10                | 10kA              | S271B10     | S272B10     | S273B10     | S274B10   |
| 13                | 10kA              | S271B13     | S272B13     | S273B13     | S274B13   |
| 16                | 10kA              | S271B16     | S272B16     | S273B16     | S274B16   |
| 20                | 10kA              | S271B20     | S272B20     | S273B20     | S274B20   |
| 25                | 10kA              | S271B25     | S272B25     | S273B25     | S274B25   |
| 32                | 10kA              | S271B32     | S272B32     | S273B32     | S274B32   |
| 40                | 10kA              | S271B40     | S272B40     | S273B40     | S274B40   |
| 50                | 10kA              | S271B50     | S272B50     | S273B50     | S274B50   |
| 63                | 10kA              | S271B63     | S272B63     | S273B63     | S274B63   |
| 80                | 6kA               | S281B80     | S282B80     | S283B80     | S284B80   |
| 100               | 6kA               | S281B100    | S282B100    | S283B100    | S284B100  |

### Type C (5-10 In) BS EN 60898.

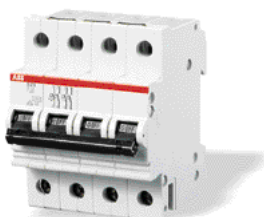
Moderate switching surges for short durations



| Rated Current (A) | Breaking Capacity | Single Pole | Double Pole | Triple Pole | Four Pole |
|-------------------|-------------------|-------------|-------------|-------------|-----------|
| 0.5               | 10kA              | S271C0.5    | S272C0.5    | S273C0.5    | S274C0.5  |
| 1                 | 10kA              | S271C1      | S272C1      | S273C1      | S274C1    |
| 2                 | 10kA              | S271C2      | S272C2      | S273C2      | S274C2    |
| 3                 | 10kA              | S271C3      | S272C3      | S273C3      | S274C3    |
| 4                 | 10kA              | S271C4      | S272C4      | S273C4      | S274C4    |
| 6                 | 10kA              | S271C6      | S272C6      | S273C6      | S274C6    |
| 10                | 10kA              | S271C10     | S272C10     | S273C10     | S274C10   |
| 13                | 10kA              | S271C13     | S272C13     | S273C13     | S274C13   |
| 16                | 10kA              | S271C16     | S272C16     | S273C16     | S274C16   |
| 20                | 10kA              | S271C20     | S272C20     | S273C20     | S274C20   |
| 25                | 10kA              | S271C25     | S272C25     | S273C25     | S274C25   |
| 32                | 10kA              | S271C32     | S272C32     | S273C32     | S274C32   |
| 40                | 10kA              | S271C40     | S272C40     | S273C40     | S274C40   |
| 50                | 10kA              | S271C50     | S272C50     | S273C50     | S274C50   |
| 63                | 10kA              | S271C63     | S272C63     | S273C63     | S274C63   |
| 80                | 6kA               | S281C80     | S282C80     | S283C80     | S284C80   |
| 100               | 6kA               | S281C100    | S282C100    | S283C100    | S284C100  |

### Type D (10-14 In) BS EN 60898.

High inrush applications



| Rated Current (A) | Breaking Capacity | Single Pole | Double Pole | Triple Pole | Four Pole |
|-------------------|-------------------|-------------|-------------|-------------|-----------|
| 0.5               | 6kA               | S261D0.5    | S262D0.5    | S263D0.5    | S264D0.5  |
| 1                 | 6kA               | S261D1      | S262D1      | S263D1      | S264D1    |
| 2                 | 6kA               | S261D2      | S262D2      | S263D2      | S264D2    |
| 3                 | 6kA               | S261D3      | S262D3      | S263D3      | S264D3    |
| 4                 | 6kA               | S261D4      | S262D4      | S263D4      | S264D4    |
| 6                 | 6kA               | S261D6      | S262D6      | S263D6      | S264D6    |
| 10                | 6kA               | S261D10     | S262D10     | S263D10     | S264D10   |
| 13                | 6kA               | S261D13     | S262D13     | S263D13     | S264D13   |
| 16                | 6kA               | S261D16     | S262D16     | S263D16     | S264D16   |
| 20                | 6kA               | S261D20     | S262D20     | S263D20     | S264D20   |
| 25                | 6kA               | S261D25     | S262D25     | S263D25     | S264D25   |
| 32                | 6kA               | S261D32     | S262D32     | S263D32     | S264D32   |
| 40                | 6kA               | S261D40     | S262D40     | S263D40     | S264D40   |
| 50                | 6kA               | S261D50     | S262D50     | S263D50     | S264D50   |
| 63                | 6kA               | S261D63     | S262D63     | S263D63     | S264D63   |

[Return to main index](#)

# System proM

## Miniature Circuit Breakers K tripping curve.

BS EN 60947-2. UL 1077 File No E76126, CSA C22.2 No 235, Report No LR98793-9. ( 277/480 V ).  
Ratings 0.2 to 63A.

### Description

The K characteristic - the optimal solution for the safe protection of motors.

Motor protection can be achieved by the selection of the MCB with the correct rated current corresponding to the motor data. The electro-magnetic trip is set in such a way that the motor starting current does not lead to tripping. As a result cable sizes can be reduced and more importantly contactors can be used up to their AC3 rating without the need for additional thermal overload protection.

### Technical Data

- Current ratings 0.2 to 63A at 20°C to BSEN 60947-2
- Rated voltage 230 - 400V AC
- Maximum operating voltage 440VAC, single pole 60V DC, double pole 110V DC
- Minimum operating voltage 12VAC/DC
- Breaking capacity: BSEN 60947-2 – S270K 6kA, S280K 0.2 - 8A 10kA, 10 to 20A 25kA, 25 to 32A 15kA, 40 to 63A 10kA.
- Mechanical service life: 20,000 operations.
- Cable capacity: S270K 25mm<sup>2</sup> up to 40A, 35mm<sup>2</sup> for 50 and 63A, S280K 35mm<sup>2</sup>.
- Tightening torque: 2Nm up to 63A
- Ambient temperature: -25°C to +55°C
- Weight per pole: 0.125g up to 40A, 0.145g for 50 & 63A.
- Accessories: see page 3/10, 3/11
- Add on earth leakage: see page 3/20

### Selection rule: (ratings for DOL motors)

The rated current of the K MCB has to be below or equal the rated current of the motor and above the working current of the motor.

| Standard Motor KW | [A] at 380 V | [A] at 400V | [In] K-MCB |
|-------------------|--------------|-------------|------------|
| 0,06              | 0,22         | 0,2         | 0,2        |
| 0,09              | 0,33         | 0,3         | 0,3        |
| 0,12              | 0,42         | 0,4         | 0,3        |
| 0,18              | 0,64         | 0,6         | 0,5        |
| 0,25              | 0,88         | 0,74        | 0,75/0,5   |
| 0,37              | 1,22         | 1,1         | 1          |
| 0,55              | 1,5          | 1,4         | 1          |
| 0,75              | 2            | 2           | 1,6/2,0    |
| 1,1               | 2,6          | 2,5         | 2          |
| 1,5               | 3,5          | 3,5         | 3          |
| 2,2               | 5            | 5           | 4          |
| 3                 | 6,6          | 6,5         | 6          |
| 4                 | 8,5          | 8,1         | 8          |
| 5,5               | 11,5         | 11          | 10         |
| 7,5               | 15,5         | 14,5        | 16/10      |
| 11                | 22           | 21          | 20         |
| 15                | 30           | 28          | 25         |
| 18,5              | 37           | 35          | 32         |
| 22                | 44           | 40          | 40         |
| 30                | 60           | 55          | 50         |
| 37                | 72           | 66          | 63         |

[Return to main index](#)

# System proM

## Miniature Circuit Breakers K tripping curve.

BS EN 60947-2. UL 1077 File No E76126, CSA C22.2 No 235, Report No LR98793-9. ( 277/480 V ).

Ratings 0.2 to 63A.

### Type S270K (8-12 In) BS EN 60947-2.

Protection of motors, transformers, lamps and cable.

| Rated Current (A) | Breaking Capacity | Single Pole | Double Pole | Triple Pole | Four Pole |
|-------------------|-------------------|-------------|-------------|-------------|-----------|
| 0.5               | 6kA               | S271K0.5    | S272K0.5    | S273K0.5    | S274K0.5  |
| 1                 | 6kA               | S271K1      | S272K1      | S273K1      | S274K1    |
| 1.6               | 6kA               | S271K1.6    | S272K1.6    | S273K1.6    | S274K1.6  |
| 2                 | 6kA               | S271K2      | S272K2      | S273K2      | S274K2    |
| 3                 | 6kA               | S271K3      | S272K3      | S273K3      | S274K3    |
| 4                 | 6kA               | S271K4      | S272K4      | S273K4      | S274K4    |
| 6                 | 6kA               | S271K6      | S272K6      | S273K6      | S274K6    |
| 8                 | 6kA               | S271K8      | S272K8      | S273K8      | S274K8    |
| 10                | 6kA               | S271K10     | S272K10     | S273K10     | S274K10   |
| 16                | 6kA               | S271K16     | S272K16     | S273K16     | S274K16   |
| 20                | 6kA               | S271K20     | S272K20     | S273K20     | S274K20   |
| 25                | 6kA               | S271K25     | S272K25     | S273K25     | S274K25   |
| 32                | 6kA               | S271K32     | S272K32     | S273K32     | S274K32   |
| 40                | 6kA               | S271K40     | S272K40     | S273K40     | S274K40   |
| 50                | 6kA               | S271K50     | S272K50     | S273K50     | S274K50   |
| 63                | 6kA               | S271K63     | S272K63     | S273K63     | S274K63   |

### Type S280K (8-14 In) BS EN 60947-2.

Protection of motors, transformers, lamps and cable.

| Rated Current (A) | Breaking Capacity | Single Pole | Double Pole | Triple Pole | Four Pole |
|-------------------|-------------------|-------------|-------------|-------------|-----------|
| 0.2               | 10kA              | S281K0.2    | S282K0.2    | S283K0.2    | S284K0.2  |
| 0.3               | 10kA              | S281K0.3    | S282K0.3    | S283K0.3    | S284K0.3  |
| 0.5               | 10kA              | S281K0.5    | S282K0.5    | S283K0.5    | S284K0.5  |
| 0.75              | 10kA              | S281K0.75   | S282K0.75   | S283K0.75   | S284K0.75 |
| 1                 | 10kA              | S281K1      | S282K1      | S283K1      | S284K1    |
| 1.6               | 10kA              | S281K1.6    | S282K1.6    | S283K1.6    | S284K1.6  |
| 2                 | 10kA              | S281K2      | S282K2      | S283K2      | S284K2    |
| 3                 | 10kA              | S281K3      | S282K3      | S283K3      | S284K3    |
| 4                 | 10kA              | S281K4      | S282K4      | S283K4      | S284K4    |
| 6                 | 10kA              | S281K6      | S282K6      | S283K6      | S284K6    |
| 8                 | 10kA              | S281K8      | S282K8      | S283K8      | S284K8    |
| 10                | 25kA              | S281K10     | S282K10     | S283K10     | S284K10   |
| 13                | 25kA              | S281K13     | S282K13     | S283K13     | S284K13   |
| 16                | 25kA              | S281K16     | S282K16     | S283K16     | S284K16   |
| 20                | 25kA              | S281K20     | S282K20     | S283K20     | S284K20   |
| 25                | 15kA              | S281K25     | S282K25     | S283K25     | S284K25   |
| 32                | 15kA              | S281K32     | S282K32     | S283K32     | S284K32   |
| 40                | 10kA              | S281K40     | S282K40     | S283K40     | S284K40   |
| 50                | 10kA              | S281K50     | S282K50     | S283K50     | S284K50   |
| 63                | 10kA              | S281K63     | S282K63     | S283K63     | S284K63   |

[Return to main index](#)

## System proM

### Miniature Circuit Breakers UC range (Universal Current).

BS EN 60947-2. UL 1077, File No E76126, CSA C22.2 No 235, Report No LR98793-9.  
Ratings 0.5 to 63A.

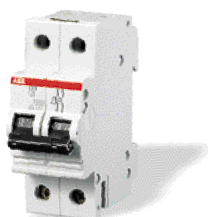
#### Description

The S280UC MCB's can be used up to 220V DC for single pole (17.5mm) or up to 440V DC for double pole (35mm) with series connection of 2 poles. This enhanced DC performance is in addition to the AC performance.

They differ from the standard devices in that they are fitted with a permanent magnet which assists in the forced extinguishing of the arc. It is therefore important that care is taken to observe the correct polarity and current flow direction when connecting these breakers.

#### Technical Data

- Current ratings 0.5 to 63A at 20°C to BSEN 60947-2
- Rated voltage 230 - 400V AC
- Maximum operating voltage 440V AC, single pole 220V DC, double pole 440VDC.
- Minimum operating voltage 12V AC/DC
- Breaking capacity: BS EN 60947-2 – 280UC 0.5 to 32A 6kA, 40 to 63A 4.5kA.
- Mechanical service life: 20,000 operations.
- Cable capacity: S280UC35mm<sup>2</sup>
- Tightening torque: 2Nm up to 63A
- Ambient temperature: -25°C to + 55°C
- Weight per pole: 0.125g up to 40A, 0.145g for 50 & 63A.
- Accessories: see page 3/10, 3/11



[Return to main index](#)



# System proM

## Miniature Circuit Breakers UC range (Universal Current).

BS EN 60947-2. UL 1077, File No E76126, CSA C22.2 No 235, Report No LR98793-9.

Ratings 0.5 to 63A.

### Type S280UCK (10-14 In) BS EN 60947-2.

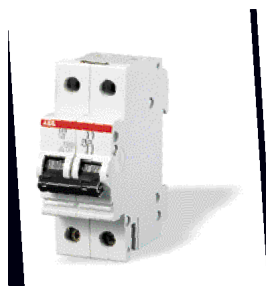
Protection of motors, transformers, lamps and cable.



| Rated Current InA | Breaking Capacity | Single Pole | Double Pole |
|-------------------|-------------------|-------------|-------------|
| 0.5               | 6kA               | S281UCK0.5  | S282UCK0.5  |
| 0.75              | 6kA               | S281UCK0.75 | S282UCK0.75 |
| 1                 | 6kA               | S281UCK1    | S282UCK1    |
| 1.6               | 6kA               | S281UCK1.6  | S282UCK1.6  |
| 2                 | 6kA               | S281UCK2    | S282UCK2    |
| 3                 | 6kA               | S281UCK3    | S282UCK3    |
| 4                 | 6kA               | S281UCK4    | S282UCK4    |
| 6                 | 6kA               | S281UCK6    | S282UCK6    |
| 8                 | 6kA               | S281UCK8    | S282UCK8    |
| 10                | 6kA               | S281UCK10   | S282UCK10   |
| 16                | 6kA               | S281UCK16   | S282UCK16   |
| 20                | 6kA               | S281UCK20   | S282UCK20   |
| 25                | 6kA               | S281UCK25   | S282UCK25   |
| 32                | 6kA               | S281UCK32   | S282UCK32   |
| 40                | 4.5kA             | S281UCK40   | S282UCK40   |
| 50                | 4.5kA             | S281UCK50   | S282UCK50   |
| 63                | 4.5kA             | S281UCK63   | S282UCK63   |

### Type S280UCZ (2-3 In) BS EN 60947-2.

Protection of semiconductor devices and voltage transformer circuits



| Rated Current InA | Breaking Capacity | Single Pole | Double Pole |
|-------------------|-------------------|-------------|-------------|
| 0.5               | 6kA               | S281UCZ0.5  | S282UCZ0.5  |
| 0.75              | 6kA               | S281UCZ0.75 | S282UCZ0.75 |
| 1                 | 6kA               | S281UCZ1    | S282UCZ1    |
| 1.6               | 6kA               | S281UCZ1.6  | S282UCZ1.6  |
| 2                 | 6kA               | S281UCZ2    | S282UCZ2    |
| 3                 | 6kA               | S281UCZ3    | S282UCZ3    |
| 4                 | 6kA               | S281UCZ4    | S282UCZ4    |
| 6                 | 6kA               | S281UCZ6    | S282UCZ6    |
| 8                 | 6kA               | S281UCZ8    | S282UCZ8    |
| 10                | 6kA               | S281UCZ10   | S282UCZ10   |
| 16                | 6kA               | S281UCZ16   | S282UCZ16   |
| 20                | 6kA               | S281UCZ20   | S282UCZ20   |
| 25                | 6kA               | S281UCZ25   | S282UCZ25   |
| 32                | 6kA               | S281UCZ32   | S282UCZ32   |
| 40                | 4.5kA             | S281UCZ40   | S282UCZ40   |
| 50                | 4.5kA             | S281UCZ50   | S282UCZ50   |
| 63                | 4.5kA             | S281UCZ63   | S282UCZ63   |

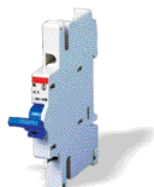
[Return to main index](#)

# System proM

## S 260-270-280 series accessories

### Electrical Auxiliaries and Accessories

| Description                           | Weight Kg | Order Code |
|---------------------------------------|-----------|------------|
| <b>Auxiliary contact</b>              |           |            |
| 1 NO + 1 NC                           | 0.040     | S2-H11     |
| 2 NO                                  | 0.040     | S2-H20     |
| 2 NC                                  | 0.040     | S2-H02     |
| 2 NO + 1 NC                           | 0.050     | S2-H21     |
| 1 NO + 2 NC                           | 0.050     | S2-H12     |
| 3 NO                                  | 0.050     | S2-H30     |
| 3 NC                                  | 0.050     | S2-H03     |
| <b>Signal Contact</b>                 |           |            |
| Signal Contact                        | 0.050     | S2-S       |
| Signal and changeover Contact         | 0.050     | S2-S/H     |
| <b>Undervoltage Release</b>           |           |            |
| 12V DC                                | 0.070     | S2-BM1     |
| 24V AC/DC                             | 0.070     | S2-BM2     |
| 48V AC/DC                             | 0.070     | S2-BM3     |
| 110V AC/DC                            | 0.070     | S2-BM4     |
| 220-240V AC / 220V DC                 | 0.070     | S2-BM5     |
| 380V AC                               | 0.070     | S2-BM6     |
| <b>Shunt Trip</b>                     |           |            |
| 12.....60V AC/DC                      | 0.145     | S2-A1      |
| 110.....415V AC                       | 0.145     | S2-A2      |
| 110.....250VDC                        |           |            |
| <b>Hand operated neutral</b>          |           |            |
| 40A Rated Mounted on R/H side of MCB  | 0.060     | S2-NT      |
| <b>Padlock device</b>                 |           |            |
| 3mm padlock adapter                   | 0.004     | SA1        |
| 6mm padlock adapter                   | 0.004     | SA1E       |
| Padlock with 2 keys                   | 0.02      | SA2        |
| <b>Label carrier (set 100 pieces)</b> |           |            |
| Label carrier (set 100 pieces)        | 0.1       | ST         |
| <b>Label set (300 pieces)</b>         |           |            |
| Label set (300 pieces)                | 0.1       | ST-E       |



[Return to main index](#)

# System proM

## S 260-270-280 series Busbars



### Busbars

| Cross section<br>mm <sup>2</sup> | length<br>mm | Poles<br>No. | Weight<br>Kg | Order Code  |
|----------------------------------|--------------|--------------|--------------|-------------|
| For single pole MCB's            |              |              |              |             |
| 12*                              | 988          | 56 x 1       | 0.073        | SZ-KS1/56   |
| 16                               | 1007         | 56 x 1       | 0.300        | SZ-KS18/56N |
| 36*                              | 988          | 56 x 1       | 0.330        | SZ-VB45.32  |

\* Uninsulated

### For double pole MCB's

|    |      |        |       |               |
|----|------|--------|-------|---------------|
| 16 | 1035 | 29 x 2 | 0.534 | SZ-PSB56N (3) |
|----|------|--------|-------|---------------|

### For triple pole MCB's

|    |      |        |       |               |
|----|------|--------|-------|---------------|
| 16 | 1065 | 20 x 3 | 0.700 | SZ-PSB12N (6) |
|----|------|--------|-------|---------------|

### For four pole MCB's

|    |      |        |       |               |
|----|------|--------|-------|---------------|
| 16 | 1058 | 15 x 4 | 0.884 | SZ-PSB64N (4) |
|----|------|--------|-------|---------------|

### Busbars with aux. contact H... or combined signal contact S/H

| Cross section<br>mm <sup>2</sup> | length<br>mm | Poles<br>No. | Weight<br>Kg | Order Code |
|----------------------------------|--------------|--------------|--------------|------------|
| For single pole MCB's            |              |              |              |            |
| 16                               | 1020         | 39 x 1       | 0.283        | SZ-KS4/39N |

### For double pole MCB's

|    |      |        |       |               |
|----|------|--------|-------|---------------|
| 16 | 1044 | 24 x 2 | 0.650 | SZ-PSB92N (3) |
|----|------|--------|-------|---------------|

### For triple pole MCB's

|    |     |        |       |               |
|----|-----|--------|-------|---------------|
| 16 | 980 | 16 x 3 | 0.632 | SZ-PSB52N (3) |
|----|-----|--------|-------|---------------|

### Insulated end caps

|     | Weight | Order Code |
|-----|--------|------------|
| (3) | 0.001  | PSB-END3   |
| (4) | 0.001  | PSB-END4   |
| (6) | 0.001  | PSB-END6   |

### Cover for unused busbar ways

|                       | Weight | Order Code |
|-----------------------|--------|------------|
| 5 ways                | 0.003  | SZ-BSK     |
| 5 ways SZ-PSB12N only | 0.003  | SZ-BSK5    |



[Return to main index](#)

# Protecta

## Protecta Type B Pan Assemblies



### Technical Details

- Designed and manufactured to BSEN 60439-3
- Rated voltage 400V AC
- Busbar rating 250A
- Supplied with Earth and Shrouded Neutral Bars
- Cable capacity Earth and Neutral Bars 25mm<sup>2</sup>
- Finished in RAL7035

### TP&N Pan Assemblies

| No. of outgoing TP&Nways | Weight Kg | Order Code |
|--------------------------|-----------|------------|
| 4                        | 3.5       | EPB304PA   |
| 6                        | 4.3       | EPB306PA   |
| 8                        | 5.1       | EPB308PA   |
| 12                       | 6.4       | EPB312PA   |
| 16                       | 8.2       | EPB316PA   |
| 20                       | 10.2      | EPB320PA   |
| 24                       | 12        | EPB324PA   |

### Incomers

| Description  | Rating      | Sensitivity (mA) | Order Code   |
|--|-------------|------------------|--------------|
| 35mm <sup>2</sup> terminal block (requires 3)          |             |                  | SZ-ESK       |
| 70mm <sup>2</sup> cable block                          |             |                  | EPBKIT4      |
| 120mm <sup>2</sup> cable block                         |             |                  | EPBKIT3      |
| Switch disconnecter                                    | 100A 3 pole |                  | E273/100rt   |
| Switch disconnecter                                    | 125A 3 pole |                  | E273/125rt   |
| RCCB   | 63A 4 pole  | 30               | F364-63/0.03 |
| RCCB   | 63A 4 pole  | 100              | F364-63/0.1  |
| RCCB   | 63A 4 pole  | 300              | F364-63/0.3  |
| RCCB time delay  | 63A 4 pole  | 300              | F394-63/0.3  |
| Non Auto TPMCCB  | 250A 3 pole |                  | 1SDA051327R1 |
| Front cable connection kit for above MCCB (requires 2) |             |                  | 1SDA051482R1 |

### Incomer Connection Kits

| Description                       | Order Code   |
|-----------------------------------|--------------|
| RCCB connection kit               | EPBKIT2      |
| Non-auto 250A MCCB connection kit | EPBKIT1 - T3 |
| Single phase kit                  | EPBKIT6      |

| Description                          | Order Code |
|--------------------------------------|------------|
| Unused way busbar cover (strip of 5) | SZ-BSK     |

Not suitable for the S500, S290 and S951 MCB's

For Protecta Final Distribution Boards please refer to:  
ABB Installer Products Catalogue number 1TXD000001P0201

[Return to main index](#)

---

# Notes

---

A large grid of red lines for taking notes, consisting of 20 columns and 30 rows of small squares.

[Return to main index](#)

## S500 range

High Performance Miniature circuit breakers S500 B,C & D trip curves.  
BS EN 60898. Ratings 6 to 63A.

### Description

The ever increasing demand for energy is resulting in continually increasing short circuit currents in low voltage electrical networks. This places high demands on the protective switchgear with regard to safety, reliability and breaking capacity.

The High Performance MCB S500 satisfies these requirements by virtue of its special technical features. It is provided with a thermal and/or electromagnetic release to protect circuits, motors, equipment and systems from the results of overload and short circuit currents.

| <b>S 500</b>  |   |  |                                 |
|---|---|--|---------------------------------|
| <b>Standards</b>  |   | EN 60898, IEC 947-2, UL 1077, GE conformity,<br>CAN/CSA-C22.2 N235-M89 |                                 |
| Poles   |   | 1P, 2P, 3P, 4P   |                                 |
| Rated current I <sub>n</sub>                                  | [A]   | 6 to 63  |                                 |
| Rated voltage U <sub>e</sub>                                  | [V]   | 690  |                                 |
| Rated breaking capacity<br>acc. to IEC 898                    | I <sub>cn</sub>                                       | [kA]   | 25                              |
|   | service I <sub>cs</sub>                               | [kA]   | 12.5                            |
| Rated breaking capacity<br>acc. to IEC 947-2 - 230/400V       | ultimate I <sub>cu</sub>                              | [kA]   | 50                              |
|   | service I <sub>cs</sub>                               | [kA]   | 25                              |
| Rated breaking capacity<br>acc. to IEC 947-2 - 440V           | ultimate I <sub>cu</sub>                              | [kA]   | 30                              |
|   | service I <sub>cs</sub>                               | [kA]   | 22                              |
| Rated breaking capacity<br>acc. to IEC 947-2 - 500V           | ultimate I <sub>cu</sub>                              | [kA]   | 15                              |
|   | service I <sub>cs</sub>                               | [kA]   | 11                              |
| Rated breaking capacity<br>acc. to IEC 947-2 - 690V           | ultimate I <sub>cu</sub>                              | [kA]   | 6                               |
|   | service I <sub>cs</sub>                               | [kA]   | 3                               |
| Rated breaking capacity<br>acc. to UL 1077 and CSA - 240V     | I <sub>cc</sub>                                       | [kA]   | 30 (up to 25A); 18 (25 to 63 A) |
| Rated breaking capacity<br>acc. to UL 1077 and CSA - 277/480V | I <sub>cc</sub>                                       | [kA]   | 14                              |
| Rated breaking capacity<br>acc. to UL 1077 and CSA - 600V     | I <sub>cc</sub>                                       | [kA]   | 6                               |
| Thermomagnetic release<br>characteristics                     | B: 3 I <sub>n</sub> I <sub>m</sub> 5 I <sub>n</sub>   |  | •                               |
|   | C: 5 I <sub>n</sub> I <sub>m</sub> 10 I <sub>n</sub>  |  | •                               |
|   | D: 10 I <sub>n</sub> I <sub>m</sub> 20 I <sub>n</sub> |  | •                               |
| Reference temperature   | [°C]  | 30°C   |                                 |
| Rated frequency   |   | 16 2/3 ... 60 Hz   |                                 |
| Tropicalization   |   | DIN 50016  |                                 |
| Current limitation at I <sub>cc</sub> 30 kA                   |   | I <sub>p</sub> < 8000A   |                                 |
| Total short-circuit breaking time                             |   | max. 2.5 ms at I <sub>cc</sub> 30 kA                                   |                                 |
| Mechanical life   |   | 20000  |                                 |
| Protection degree   |   | IP20   |                                 |
| Ambient temperature (with daily average +35°C)                | [°C]  | -25...+55  |                                 |
| Mounting  |   | on DIN rail EN 50022 (35mm) by means of rapid fixing device            |                                 |
| Line connection   |   | top/bottom   |                                 |
| Terminal size upper/lower per cable                           | [mm <sup>2</sup> ]                                    | 25/25  |                                 |

for further technical details please refer to S500 technical catalogue number 10139/A

[Return to main index](#)

## S500 Range

High Performance Miniature circuit breakers S500 B,C & D trip curves.  
BS EN 60898. Ratings 6 to 63A.

### Type S500B (3-5 In) BS EN 60898.

Small inrush or switching surges,  
heating loads, tungsten lighting.

| Rated Current [A] | 1-pole   | 2-pole   | 3-pole   | 4-pole   |
|-------------------|----------|----------|----------|----------|
| 6                 | S501-B6  | S502-B6  | S503-B6  | S504-B6  |
| 10                | S501-B10 | S502-B10 | S503-B10 | S504-B10 |
| 13                | S501-B13 | S502-B13 | S503-B13 | S504-B13 |
| 16                | S501-B16 | S502-B16 | S503-B16 | S504-B16 |
| 20                | S501-B20 | S502-B20 | S503-B20 | S504-B20 |
| 25                | S501-B25 | S502-B25 | S503-B25 | S504-B25 |
| 32                | S501-B32 | S502-B32 | S503-B32 | S504-B32 |
| 40                | S501-B40 | S502-B40 | S503-B40 | S504-B40 |
| 50                | S501-B50 | S502-B50 | S503-B50 | S504-B50 |
| 63                | S501-B63 | S502-B63 | S503-B63 | S504-B63 |

### Type S500C (5-10 In) BS EN 60898.

Moderate switching surges for  
short durations.

| Rated Current [A] | 1-pole   | 2-pole   | 3-pole   | 4-pole   |
|-------------------|----------|----------|----------|----------|
| 6                 | S501-C6  | S502-C6  | S503-C6  | S504-C6  |
| 10                | S501-C10 | S502-C10 | S503-C10 | S504-C10 |
| 13                | S501-C13 | S502-C13 | S503-C13 | S504-C13 |
| 16                | S501-C16 | S502-C16 | S503-C16 | S504-C16 |
| 20                | S501-C20 | S502-C20 | S503-C20 | S504-C20 |
| 25                | S501-C25 | S502-C25 | S503-C25 | S504-C25 |
| 32                | S501-C32 | S502-C32 | S503-C32 | S504-C32 |
| 40                | S501-C40 | S502-C40 | S503-C40 | S504-C40 |
| 50                | S501-C50 | S502-C50 | S503-C50 | S504-C50 |
| 63                | S501-C63 | S502-C63 | S503-C63 | S504-C63 |

### Type S500D (10-14 In) BS EN 60898.

High inrush applications.

| Rated Current [A] | 1-pole   | 2-pole   | 3-pole   | 4-pole   |
|-------------------|----------|----------|----------|----------|
| 10                | S501-D10 | S502-D10 | S503-D10 | S504-D10 |
| 13                | S501-D13 | S502-D13 | S503-D13 | S504-D13 |
| 16                | S501-D16 | S502-D16 | S503-D16 | S504-D16 |
| 20                | S501-D20 | S502-D20 | S503-D20 | S504-D20 |
| 25                | S501-D25 | S502-D25 | S503-D25 | S504-D25 |
| 32                | S501-D32 | S502-D32 | S503-D32 | S504-D32 |
| 40                | S501-D40 | S502-D40 | S503-D40 | S504-D40 |
| 50                | S501-D50 | S502-D50 | S503-D50 | S504-D50 |
| 63                | S501-D63 | S502-D63 | S503-D63 | S504-D63 |

[Return to main index](#)

## S500K Range

High Performance Miniature Circuit Breakers S500 K trip curve.

BS EN 60947. Ratings 0.15 to 45A.

### Type S500K (8-14 In) BS EN 60947.

Protection of motors, transformers lamps and cable.



| Adjustment Range (A) | 1-pole    | 2-pole    | 3-pole    |
|----------------------|-----------|-----------|-----------|
| 0.1 - 0.15           | S501K0.15 | S502K0.15 | S503K0.15 |
| 0.14 - 0.21          | S501K0.21 | S502K0.21 | S503K0.21 |
| 0.2 - 0.3            | S501K0.3  | S502K0.3  | S503K0.3  |
| 0.28 - 0.42          | S501K0.42 | S502K0.42 | S503K0.42 |
| 0.38 - 0.58          | S501K0.58 | S502K0.58 | S503K0.58 |
| 0.53 - 0.8           | S501K0.8  | S502K0.8  | S503K0.8  |
| 0.73 - 1.1           | S501K1.1  | S502K1.1  | S503K1.1  |
| 1 - 1.5              | S501K1.5  | S502K01.5 | S503K1.5  |
| 1.4 - 2.1            | S501K2.1  | S502K2.1  | S503K2.1  |
| 2 - 3                | S501K3    | S502K3    | S503K3    |
| 2.8 - 4.2            | S501K4.2  | S502K4.2  | S503K4.2  |
| 3.8 - 5.8            | S501K5.8  | S502K5.8  | S503K5.8  |
| 5.3 - 8              | S501K8    | S502K8    | S503K8    |
| 7.3 - 11             | S501K11   | S502K11   | S503K11   |
| 10 - 15              | S501K15   | S502K15   | S503K15   |
| 14 - 20              | S501K20   | S502K20   | S503K20   |
| 18 - 26              | S501K26   | S502K26   | S503K26   |
| 23 - 32              | S501K32   | S502K32   | S503K32   |
| 29 - 37              | S501K37   | S502K37   | S503K37   |
| 34 - 41              | S501K41   | S502K41   | S503K41   |
| 28 - 45              | S501K45   | S502K45   | S503K45   |

### Accessories

| Description                                | Order Code |
|--|------------|
| Auxiliary contact 1no/1nc                  | S500-H11   |
| Auxiliary contact 2no                      | S500-H20   |
| Signal contact 1no/1nc                     | S500-S11   |
| Signal contact 2no                         | S500-S20   |
| Padlock adaptor                            | S500-SA    |
| Rotary drive 1 to 3 pole                   | S500-RD3   |
| Rotary drive 4 to 6 pole                   | S500-RD4   |
| Undervoltage release 24, 110, 230, 400V AC | UA *       |
| Undervoltage release 24, 110, 230, 400VDC  | UA *       |
| Shunt trip 24, 110, 230, 400V AC/DC        | AL *       |

\*When ordering shunt or undervoltage trips please add suffix and voltage to the S500 reference number as these devices have to be factory fitted.

For starter co-ordination tables please request S500 catalogue 10107/B

[Return to main index](#)



# System proM

## Single pole & Switched Neutral Miniature circuit breakers S951N.

### C trip curves. BS EN 60898. Ratings 2 to 40A.

#### Description

SPSN Miniature Circuit Breakers in a single module width. Ideal for applications where regulations require the neutral to be switched such as Petrol Stations and Caravan Sites etc.

#### Technical Details

- Current ratings 2 to 40 A at 30 degrees C to BS EN 60898
- Rated voltage 230V AC
- Maximum operating voltage 250VAC.
- Minimum operating voltage 12 VAC/DC
- Breaking capacity: BS EN 60898 - 6kA.
- Space saving
- All poles disconnected in event of a fault
- Mechanical service life: 20,000 operations.
- Cable capacity: 16mm<sup>2</sup> upper and lower terminals.
- Weight: 110g
- Ambient temperature: -25 to +55°C

#### Type S951NC (5-10 In) BS EN 60898.

Single pole & switched neutral miniature circuit breakers



| Current (A) | Weight (kg) | Order Code |
|-------------|-------------|------------|
| 2           | 0.110       | S951NC2    |
| 4           | 0.110       | S951NC4    |
| 6           | 0.110       | S951NC6    |
| 10          | 0.110       | S951NC10   |
| 16          | 0.110       | S951NC16   |
| 20          | 0.110       | S951NC20   |
| 25          | 0.110       | S951NC25   |
| 32          | 0.110       | S951NC32   |
| 40          | 0.110       | S951NC40   |

[Return to main index](#)

# System proM

## Residual Current Devices

BSEN 61008 Ratings 16 to 100A.

### Description

- ABB residual current devices have a measuring system consisting of a summation transformer with a permanent magnet tripping device, operating without the need of an auxiliary supply, to open a circuit automatically if an earth leakage fault occurs between phase and earth greater or equal to its rated sensitivity in mA.
- Provision of earth leakage, switching and isolation functionality to electrical circuits.
- Same form and design as the S2 MCB range, allowing easy interconnection with busbar blocks and common mounting in distribution panels.
- Suitable for symmetrical DIN rail or panel mounting.

### Technical Data

- Specification to BSEN 61008: F360, F660 Class AC, F370 and F390 Class A
- Rated Voltage: Two pole 230V AC, Four pole 230/400V AC.
- Maximum operating voltage: Rated voltage + 10%.
- Test button range: 100V AC up to 264VAC
- Frequency: 50 to 60 Hz.
- Cable capacity: 25mm<sup>2</sup> up to 63A, 50mm<sup>2</sup> for 80 and 100A
- Life expectancy: at least 5,000 operations.
- Maximum tightening torque: 3Nm.
- Ambient temperature: -25°C to +55°C
- Maximum weights: 2pole 0.365kg, 4 pole 0.49kg.
- Dimensions: see page 3-46

### Two Pole F362 & F662. Class AC.

| Current (A) | Sensitivity  |               |              |              |
|-------------|--------------|---------------|--------------|--------------|
|             | 10mA         | 30mA          | 100mA        | 300mA        |
| 16          | F362-16/0.01 | -             | -            | -            |
| 25          | -            | F362-25/0.03  | F362-25/0.1  | F362-25/0.3  |
| 40          | -            | F362-40/0.03  | F362-40/0.1  | F362-40/0.3  |
| 63          | -            | F362-63/0.03  | F362-63/0.1  | F362-63/0.3  |
| 80          | -            | F662-80/0.03  | F662-80/0.1  | F662-80/0.3  |
| 100         | -            | F662-100/0.03 | F662-100/0.1 | F662-100/0.3 |



### Four Pole F364 & F664. Class AC.

| Current (A) | Sensitivity   |              |              |
|-------------|---------------|--------------|--------------|
|             | 30mA          | 100mA        | 300mA        |
| 25          | F364-25/0.03  | F364-25/0.1  | F364-25/0.3  |
| 40          | F364-40/0.03  | F364-40/0.1  | F364-40/0.3  |
| 63          | F364-63/0.03  | F364-63/0.1  | F364-63/0.3  |
| 80          | F664-80/0.03  | F664-80/0.1  | F664-80/0.3  |
| 100         | F664-100/0.03 | F664-100/0.1 | F664-100/0.3 |



### Two Pole F372 & F392. Class A (pulsating DC sensitive)

| Current (A)     | Sensitivity  |             |             |
|-----------------|--------------|-------------|-------------|
|                 | 30mA         | 100mA       | 300mA       |
| 25              | F372-25/0.03 | F372-25/0.1 | F372-25/0.3 |
| 40              | F372-40/0.03 | F372-40/0.1 | F372-40/0.3 |
| 63              | F372-63/0.03 | F372-63/0.1 | F372-63/0.3 |
| 63 time delayed | -            | -           | F392-63/0.3 |



### Four Pole F374 & F394. Class A (pulsating DC sensitive)

| Current (A)     | Sensitivity  |             |             |
|-----------------|--------------|-------------|-------------|
|                 | 30mA         | 100mA       | 300mA       |
| 25              | F374-25/0.03 | F374-25/0.1 | F374-25/0.3 |
| 40              | F374-40/0.03 | F374-40/0.1 | F374-40/0.3 |
| 63              | F374-63/0.03 | F374-63/0.1 | F374-63/0.3 |
| 63 time delayed | -            | F394-63/0.1 | F394-63/0.3 |



[Return to main index](#)

# System proM

## Add on Residual Current Blocks DDA60 series

Ratings to 63A. BSEN 61009 when connected to MCB

### Application

DDA60 blocks attach to the right hand side of any multipole S260, S270 or S280 MCB to form an RCBO in compliance to BS EN 61009. This standard defines that it shall be possible to assemble the RCBO on site only once, and that any subsequent disassembly shall leave permanent visible damage.

The assembly of the block provides a high level of earth fault protection in addition to the short circuit and overload protection provided by the MCB to which it is coupled.

The assembled RCBO is suitable for mounting on DINrail or into a wide range of DIN enclosures.

### Technical Data

- Standard BS EN 61009 when coupled to an MCB. Class AC device.
- Rated voltage 230 - 400V AC.
- Maximum operating voltage 440V AC.
- Minimum operating voltage 195V AC.
- Frequency 50/60Hz
- Mechanical life: 20,000 operations.
- Cable capacity: 25mm<sup>2</sup> up to 63A
- Weight: two pole 0.21g, three pole 0.27g, four pole 0.33g.



### DDA60 blocks. BS EN 61009.

Residual current blocks

| Current (A)    | Sensitivity   |              |              |
|----------------|---------------|--------------|--------------|
|                | 30mA          | 100mA        | 300mA        |
| Two Pole 63A   | DDA62-63/0.03 | DDA62-63/0.1 | DDA62-63/0.3 |
| Three Pole 63A | DDA63-63/0.03 | -            | DDA63-63/0.3 |
| Four Pole 63A  | DDA64-63/0.03 | -            | DDA64-63/0.3 |

[Return to main index](#)

# System proM

## Single pole and Solid Neutral RCBO DS271 series

Ratings 6 to 32A. BS EN 61009-2-2. Class AC

### Application

To provide protection against earth leakage faults, short circuits and overloads in residential, commercial and industrial electrical distribution systems.

Suitable for installation on DIN rail, Housemaster Consumer Units and Protecta Final Distribution Boards and Pan Assemblies.

### Technical Data

- BS EN 61009-2-2 Class AC device.
- Current ratings 6 to 32A.
- Rated voltage 230V AC.
- Breaking capacity 10kA to BSEN 60898
- Maximum service voltage 253VAC.
- Minimum service voltage 195V AC.
- Service life at least 5,000 switching cycles.
- Lockable in On or Off position.
- Supplied with 800mm flying neutral and functional earth leads.
- Outgoing cable size 10mm<sup>2</sup>
- Weight 0.125g



### DS271 blocks. BS EN 61009.

Single module width RCBO 17.5mm

| Current (A) | Sensitivity | Type B<br>(3-5 In) | Type C<br>(5-10 In) |
|-------------|-------------|--------------------|---------------------|
| 6           | 30mA        | DS271AC-B6/0.03    | DS271AC-C6/0.03     |
| 10          | 30mA        | DS271AC-B10/0.03   | DS271AC-C10/0.03    |
| 16          | 30mA        | DS271AC-B16/0.03   | DS271AC-C16/0.03    |
| 20          | 30mA        | DS271AC-B20/0.03   | DS271AC-C20/0.03    |
| 25          | 30mA        | DS271AC-B25/0.03   | DS271AC-C25/0.03    |
| 32          | 30mA        | DS271AC-B32/0.03   | DS271AC-C32/0.03    |

Devices of 10mA sensitivity available on request.

[Return to main index](#)

# System proM

## Single pole and switched neutral RCBO DS651 & DS671 series Ratings 6 to 40A. BS EN 61009

### Application

To provide protection against earth leakage faults, short circuits and overloads in residential, commercial and industrial electrical distribution systems.

Ideal for applications where regulations require the neutral to be switched such as Petrol Stations and Caravan Sites etc.

Suitable for mounting on DIN rail, in ABB Protecta Distribution Boards or in a wide range of DIN enclosures

### Technical Data

- BSEN 61009. Class AC devices
- Current ratings 6 to 40A.
- Rated voltage 230/400V AC
- Breaking capacity: DS651 - 6kA, DS671 - 10kA to BS EN 61009.
- Maximum service voltage 440V AC.
- Minimum operating voltage 110VAC.
- Frequency 50 / 60 Hz
- Life expectancy 10,000 electrical and 20,000 mechanical operations.
- Lockable in On or Off position.
- Weight 0.280g
- DS651 and DS671 RCBO are compatible with the S2 family accessories i.e. auxiliary contacts, shunt trips, signal contacts etc. see page 3/10



### DS651 & DS671 RCBO. BS EN 61009.

Type C Curve (5-10 In)

| Current (A) | Sensitivity | 6 kA          | 10 kA         |
|-------------|-------------|---------------|---------------|
| 6           | 30mA        | DS651C6/0.03  | DS671C6/0.03  |
| 10          | 30mA        | DS651C10/0.03 | DS671C10/0.03 |
| 16          | 30mA        | DS651C16/0.03 | DS671C16/0.03 |
| 20          | 30mA        | DS651C20/0.03 | DS671C20/0.03 |
| 25          | 30mA        | DS651C25/0.03 | DS671C25/0.03 |
| 32          | 30mA        | DS651C32/0.03 | DS671C32/0.03 |
| 40          | 30mA        | DS651C40/0.03 |               |
| 16          | 10mA        | DS651C16/0.01 |               |

[Return to main index](#)

# System proM

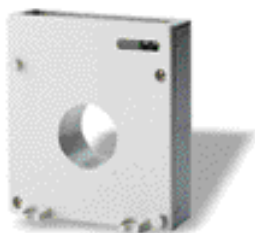
## RD2 residual current monitors

### Application

Residual current monitors (RCMS) with external transformer can detect leakage currents. Through minidips you can set sensitivity and time delay.

### Technical Characteristics

|                       |       |  |
|-----------------------|-------|--|
| Standard              |       | IEC62020   |
| Operating voltage     | [V]   | 110 to 400a.c.; 48 to 110d.c.  |
| Frequency             | [Hz]  | 50 to 60   |
| Sensitivity settings  | [I n] | 0.03; 0.1; 0.3; 0.5; 1; 2A   |
| Time delay settings   | [s]   | 0.05 (fast); 0.3; 0.5; 1; 2; 5   |
| Contact capacity      | [A]   | 10 at 250V a.c. (ohmic)  |
| Contact type          |       | change over  |
| Operating temperature | [°C]  | -5...+40   |
| Power consumption     | [W]   | 0.8 at 110V a.c.; 1.8 at 230V a.c.;<br>6.8 at 400V a.c.<br>0.2 at 48V d.c.; 1 at 110V d.c. |
| Number of modules     | [No]  | 2  |



### Description

| Description                                    | Order Code |
|--|------------|
| Residual current monitor                       | RD2        |
| Toroidal transformer Ø 35mm                    | TR35       |
| Toroidal transformer Ø 60mm                    | TR60       |
| Toroidal transformer Ø 80mm                    | TR80       |
| Toroidal transformer Ø 110mm                   | TR110      |
| Toroidal transformer Ø 210mm                   | TR210      |
| Toroidal transformer Ø 210mm (opening version) | TR210/A    |
| Modular toroidal transformer Ø 29mm            | TRM        |

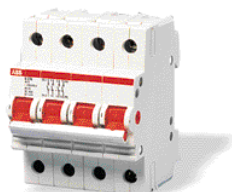
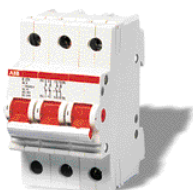
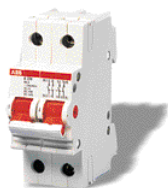
[Return to main index](#)

# System proM

## E 240 - E 270 switch disconnectors

### Technical Details

|                                    |      |  |
|------------------------------------|------|--|
| Rated Voltage U                    | [V]  | a.c. 230/400   |
| Rated current I                    | [A]  | 63....125  |
| Rated frequency                    | [Hz] | 50/60  |
| Rated short-time withstand current | [A]  | 20 times I <sub>n</sub> x 1 second                           |
| Utilization category               |      | AC22 (E240);<br>AC23 (E270, 63....100A)<br>AC22 (E270, 125A) |
| Modules                            | [No] | 2, 3, 4  |
| Standards                          |      | BS EN 60947-3  |
| Approvals                          |      | E272-4 63A:<br>VDE, SEV;<br>E273 63A:<br>VDE, SEV,<br>DEMKO. |



|                                  | Order Code |
|----------------------------------|------------|
| Double Pole switch disconnectors |            |
| 63A Rated current (2 module)     | E242/63rt  |
| 100A rated current (2 module)    | E272/100rt |
| 125A rated current (2 module)    | E272/125rt |
| Triple Pole switch disconnectors |            |
| 63A Rated current (3 module)     | E243/63rt  |
| 100A rated current (3 module)    | E273/100rt |
| 125A rated current (3 module)    | E273/125rt |
| Four Pole switch disconnectors   |            |
| 63A Rated current (4 module)     | E244/63rt  |
| 100A rated current (4 module)    | E274/100rt |
| 125A rated current (4 module)    | E274/125rt |

[Return to main index](#)

# System proM

## Installation Contactor ESB series

Ratings to 63A.

### ESB series contactors

For loads to be automatically controlled through high number of operations; i.e. building automation, controlling of small pumps, ventilations, heating systems, lighting systems, and so on.

This series consists of various models differing in the number of contacts, rated current and control circuit voltage.

| Technical Data              | ESB 20            | ESB24             | ESB40             | ESB63             |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|
| Rated Voltage $U_n$         | 230VAC            | 400VAC            | 400V AC           | 400VAC            |
| Rated current $I_n$ in AC1  | 20A               | 24A               | 40A               | 63A               |
| Rated power in AC3          | 230V              | 1.3kW             | 2.2kW             | 5.5kW             |
|                             | 400V              | -                 | 4kW               | 11kW              |
| Rated frequency             | 50/60Hz           | 40/450Hz          | 40/450Hz          | 40/450Hz          |
| Control circuit voltage (V) | a.c. 24, 110, 230 | a.c./d.c. 24, 230 | a.c./d.c. 24, 230 | a.c./d.c. 24, 230 |
| Electrical operations       | 1 million         | 1 million         | 1 million         | 1 million         |
| Mechanical operations       | in AC1            | 150,000           | 130,000           | 150,000           |
|                             | in AC3            | 150,000           | 500,000           | 170,000           |
| Power consumption           | 1W per pole       | 1.2W per pole     | 3W per pole       | 6W per pole       |
| Modules                     | 1                 | 2                 | 3                 | 3                 |
| Standards                   | IEC60947-4-1      | IEC 60947-4-1     | IEC60947-4-1      | IEC 60947-4-1     |
|                             | IEC 61095         | IEC 61095         | IEC 61095         | IEC 61095         |



#### ESB 20 (20A) Contactors.

|  | Order Code   |
|--|--------------|
| Control circuit voltage 24V a.c. - 1NO + 1NC contacts  | ESB20-11/24  |
| Control circuit voltage 110V a.c. - 1NO + 1NC contacts | ESB20-11/110 |
| Control circuit voltage 230V a.c. - 1NO + 1NC contacts | ESB20-11/230 |

|  |               |
|--|---------------|
| Control circuit voltage 110V a.c. - 2NC contacts | ESB 20-02/110 |
| Control circuit voltage 230V a.c. - 2NC contacts | ESB 20-02/230 |

|  |               |
|--|---------------|
| Control circuit voltage 24V a.c. - 2NO contacts  | ESB 20-20/24  |
| Control circuit voltage 110V a.c. - 2NO contacts | ESB 20-20/110 |
| Control circuit voltage 230V a.c. - 2NO contacts | ESB 20-20/230 |

#### ESB 24 (24A) Contactors.

|   | Order Code   |
|---|--------------|
| Control circuit voltage 24V a.c./d.c. - 4NO contacts  | ESB24-40/24  |
| Control circuit voltage 230V a.c./d.c. - 4NO contacts | ESB24-40/230 |

#### ESB 40 (40A) Contactors.

|   | Order Code   |
|---|--------------|
| Control circuit voltage 24V a.c./d.c. - 4NO contacts  | ESB40-40/24  |
| Control circuit voltage 230V a.c./d.c. - 4NO contacts | ESB40-40/230 |

#### ESB 63 (63A) Contactors.

|   | Order Code   |
|---|--------------|
| Control circuit voltage 24V a.c./d.c. - 4NO contacts  | ESB63-40/24  |
| Control circuit voltage 230V a.c./d.c. - 4NO contacts | ESB63-40/230 |

### Auxiliary Elements / Accessories

Available for ESB 24/40/63

|                               | Order Code    |
|-------------------------------|---------------|
| 2NO contacts                  | EH04-20       |
| 1NO + 1NC contacts            | EH04-11       |
| Spacer                        | ESB-DIS       |
| Terminal Covers for ESB 24    | ESB-PLK 24    |
| Terminal Covers for ESB 40/63 | ESB-PLK 40/63 |

[Return to main index](#)



# System proM

## Latching relays E250 series

Ratings to 16A.

### Application

Electro-magnetic latching relays allow contact switching for each impulse sent to coil using normally open pushbuttons. Ideal for lamp controlling from different positions, they are available in various versions according to pick-up voltage and to contact positions. They also allow manual operation on the product and contact position indicator (visual on the product).

### Technical Data

|                                  |      |   |
|----------------------------------|------|---|
| Rated Voltage $U_n$              | [V]  | a.c. 400 / 250  |
| Rated Current $I_n$              | [A]  | 10 / 16   |
| Rated Frequency                  | [Hz] | 50 / 60   |
| Contact Capacity                 | [W]  | 2300 (incandescent lamps)<br>1300 (power factor uncorrected fluorescent lamps $\cos \phi=0.6$ )<br>500 (power factor corrected fluorescent lamps in parallel) |
| Minimum value of control impulse | [mA] | 50  |
| Circuit voltage                  | [V]  | 8, 12, 24, 230  |
| Electric operations              | [No] | 100,000   |
| Mechanic operations              | [No] | 1 million   |
| Power consumption                | [W]  | 2 (1 and 2 contacts);   |
| Modules                          | [No] | 1   |
| Standards                        |      | IEC/EN 60669-2  |
| Approvals                        |      | DEMKO, NEMKO, SEMKO, SEV, FI  |

### E250 latching relays.

With 1 and 2 contacts

| Description                                 | Order Code |
|---|------------|
| relay with 1 contact - 8V a.c.              | E251-8V    |
| relay with 1 contact - 12V a.c.             | E251-12V   |
| relay with 1 contact - 24V a.c.             | E251-24V   |
| relay with 1 contact - 230V a.c.            | E251-230V  |
| relay with 2 contacts - 8V a.c.             | E252-8V    |
| relay with 2 contacts - 12V a.c.            | E252-12V   |
| relay with 2 contacts - 24V a.c.            | E252-24V   |
| relay with 2 contacts - 230V a.c.           | E252-230V  |
| relay with 1NC + 1NO contact - 8V a.c.      | E256-8V    |
| relay with 1NC + 1NO contact - 12V a.c.     | E256-12V   |
| relay with 1NC + 1NO contact - 24V a.c.     | E256-24V   |
| relay with 1NC + 1NO contact - 230V a.c.    | E256-230V  |
| relay with 2 sequential contact - 8V a.c.   | E255-8V    |
| relay with 2 sequential contact - 12V a.c.  | E255-12V   |
| relay with 2 sequential contact - 24V a.c.  | E255-24V   |
| relay with 2 sequential contact - 230V a.c. | E255-230V  |



[Return to main index](#)

# System proM

## Pushbuttons and indicator lamps E220 series

Ratings to 16A.

### Application

The pushbuttons are used for remote control in every kind of electrical installation (public, tertiary, industrial).

The indicator lamps signal any event in every kind of electric installation (public, tertiary, industrial).

### Technical Data

|                     |      |                                    |
|---------------------|------|------------------------------------|
| Rated voltage $U_n$ | [V]  | a.c. 250                           |
| Rated current $I_n$ | [A]  | 16                                 |
| Rated frequency     | [Hz] | 50 / 60                            |
| Power consumption   | [W]  | 0.96 ... 1.50                      |
| Modules             | [No] | 1                                  |
| Standards           |      | IEC/EN 60669-1<br>IEC/EN 60947-5-1 |



### E225 pushbuttons.

| Description                               | Order Code |
|---|------------|
| Grey pushbutton with contacts 1NO + 1NC   | E225-11B   |
| Red pushbutton with contacts 1NO + 1NC    | E225-11C   |
| Green pushbutton with contacts 1NO + 1NC  | E225-11D   |
| Yellow pushbutton with contacts 1NO + 1NC | E225-11E   |
| Black pushbutton with contacts 1NO + 1NC  | E225-11F   |
| Blue pushbutton with contacts 1NO + 1NC   | E225-11G   |



### E227 Illuminated pushbuttons.

| Description  | Order Code |
|--|------------|
| Transparent illuminated pushbutton with contacts 1NO + 1NC | E227-11B   |
| Red illuminated pushbutton with contacts 1NO + 1NC         | E227-11C   |
| Green illuminated pushbutton with contacts 1NO + 1NC       | E227-11D   |
| Yellow illuminated pushbutton with contacts 1NO + 1NC      | E227-11E   |
| Blue illuminated pushbutton with contacts 1NO + 1NC        | E227-11G   |



### E229 Indicator lamps.

| Description                                    | Order Code |
|--|------------|
| Transparent indicator lamp with 220V a.c. bulb | E229-B     |
| Red indicator lamp with 220V a.c. bulb         | E229-C     |
| Green indicator lamp with 220V a.c. bulb       | E229-D     |
| Yellow indicator lamp with 220V a.c. bulb      | E229-E     |
| Blue indicator lamp with 220V a.c. bulb        | E229-G     |

[Return to main index](#)

# System proM

## Time switches ETS & DTS series

### Application

To control circuit opening and closing according to scheduled planning. The time switches can be set on permanent ON-OFF, available both daily and weekly programmes. Suitable for mounting on DINrail, in ABB Housemaster Consumer unit or DINenclosures.

### ETS Time switches.

Electro-Mechanical

| Description  | Order Code |
|--|------------|
| daily programme without standby battery - 3 modules      | ETS-1      |
| daily programme with standby battery (200h) - 3 modules  | ETS-1/R    |
| weekly programme with standby battery (200h) - 3 modules | ETS-7/R    |

### Technical Data

|                                  |      |                               |
|----------------------------------|------|-------------------------------|
| Rated Voltage $U_n$              | [V]  | a.c. 230 +/- 10%              |
| Rated contact capacity $I_n$     | [A]  | 16 cos $\phi$ =1              |
|                                  |      | 4 cos $\phi$ =0.6             |
| Rated frequency                  | [Hz] | 50 / 60                       |
| Min. spread between two commands |      | 15 min (daily programme)      |
|                                  |      | 2 hours (weekly programme)    |
| Max. number of command per cycle | [No] | 96 (daily programme)          |
|                                  |      | 84 (weekly programme)         |
| Operating accuracy               |      | 1s / 24h                      |
| Life cycle                       | [No] | 10 years or 50,000 insertions |
| Operating temperature            | [°C] | -10...+45                     |
| Power consumption                | [W]  | 0.5                           |
| Modules                          | [No] | 1-3                           |
| Standards                        |      | IEC 60669-1, EN 60730-1       |



### Application

The range includes single/multichannel daily/weekly programme switches. These are functionally more sophisticated and control several loads or independent groups of loads requiring different time controls with an unique time reference. The EEPROM memory of DTS series devices eliminates the risk of erasing configured programme, regardless the duration of any voltage failure.

### DTS Time switches.

Digital time switches

| Description   | Order Code |
|---|------------|
| daily programme time switch with standby battery (3years), 1 channel                        | DTS 1/1    |
| daily/weekly programme time switch with standby battery (3years), 1 channel                 | DTS 7/1    |
| daily/weekly programme time switch with standby battery (3years), 2 channels                | DTS 7/2    |
| daily/weekly programme time switch with standby battery (3years), 2 channels + pulse output | DTS 7/2 I  |
| daily/weekly programme time switch with standby battery (150h), 3 channels                  | DTS 7/3    |

### Technical Data

|                              |                    |   |
|------------------------------|--------------------|---|
| Rated Voltage $U_n$          | [V]                | a.c. 230                                  |
| Rated contact capacity $I_n$ | [A]                | 16 cos $\phi$ =1                          |
|                              |                    | 2.5 cos $\phi$ =0.6                       |
| Rated frequency              | [Hz]               | 50 / 60                                   |
| Operating accuracy           |                    | $\pm$ 2.5s / 24h                          |
| Max. Switching               | [Fr <sup>2</sup> ] | 12 (daily programme - 1 channel)          |
|                              |                    | 28 (weekly programme - 1 channel)         |
|                              |                    | 42 (weekly programme - 2 channels)        |
|                              |                    | 322 (daily/weekly programme - 3 channels) |
| Power consumption            | [W]                | 5   |
| Modules                      | [No]               | 2, 6 (3 channels)                         |
| Standards                    |                    | IEC/EN 60730-1                            |



[Return to main index](#)

# System proM

## Power failure signalling lamps LE

### Application

The built-in battery allows the charging of the lamp when the device is connected to network voltage. It automatically switches on when the voltage fails allowing an easy and safe operation within the consumer unit or the switchboard it is installed in. A green led signals the standard operation and a red led indicates the device OFF for battery saving.

### Technical Characteristics

|                      |         |  |
|----------------------|---------|--|
| Rated voltage Un     | [V]     | a.c. 230   |
| Rated Frequency      | [Hz]    | 50/60  |
| Power consumption    | [W]     | 10   |
| Number of modules    | [No]    | 2  |
| Max. recharge cycles | [No]    | 500  |
| Indications          |         | Green led = standard operation<br>Red led = lamp OFF |
| Standby battery      | [min]   | 45   |
| Lighting level       | [lumen] | 20   |



### LE Power failure signalling lamp.

#### Description

Power failure signalling lamp

#### Order Code

LE-230

[Return to main index](#)

# System proM

## Bell transformers TM series

### Application

These transformers are for feeding bells (discontinuous use) and have very low secondary safety voltage.

### Technical Characteristics

|                            |      |  |
|----------------------------|------|--|
| Standards                  |      | EN 61558-1/2-8                                       |
| Primary Rated voltage Un   | [V]  | a.c. 230   |
| Secondary Rated voltage Un | [V]  | 4, 8, 12, 24   |
| Rated Frequency            | [Hz] | 50   |
| Power consumption          | [VA] | 8, 10, 15, 16, 24, 30, 40<br>(discontinuous service) |
| Power consumption          | [W]  | 1...4  |
| Number of modules          | [No] | 2, 3   |

### TM Bell transformers.



| Description                       | Order Code |
|-----------------------------------|------------|
| sec. 4-8-12V (10VA discontinuous) | TM10/12    |
| sec. 12-24V (10VA discontinuous)  | TM10/24    |
| sec. 4-8-12V (15VA discontinuous) | TM15/12    |
| sec. 12-24V (15VA discontinuous)  | TM15/24    |
| sec. 4-8-12V (30VA discontinuous) | TM30/12    |
| sec. 12-24V (30VA discontinuous)  | TM30/24    |
| sec. 4-8-12V (40VA discontinuous) | TM40/12    |
| sec. 12-24V (40VA discontinuous)  | TM40/24    |

[Return to main index](#)

# System proM

## Twilight switches TWS-1 series

### Application

To switch-on and/or switch-off operating illuminating devices at preset level of ambient lighting. Used in combination with sensor detecting if lighting level is higher or lower than preset threshold.

### Technical Characteristics

|  |       |   |
|--|-------|---|
| Standards  |       | IEC 60669-1, EN 61000-3-2                       |
| Rated voltage Un                                 | [V]   | a.c. 230  |
| Rated contact capacity In                        | [A]   | 16 (ohmic)                                      |
|  |       | 25 (inductive load cos=0.6)                     |
|  | [W]   | 1000 (power factor corrected fluorescent lamps) |
| Rated Frequency                                  | [Hz]  | 50/60   |
| Adjustment range                                 | [Lux] | 2...300   |
| Hysteresis                                       | [%]   | 1.3 (of present value)                          |
| Delay  | [s]   |   |
| Switch-on  |       | +50   |
| Switch-off                                       |       | +50   |
| Max. distance between twilight switch and sensor | [m]   | 100   |
| Twilight switch operating time                   | [°C]  | -20...+55                                       |
| Sensor operating time                            | [°C]  | -30...+70                                       |
| Power consumption                                | [W]   | 5   |
| Number of modules                                | [No]  | 2   |



### TWS Twilight switches.

| Description                 | Order Code |
|-----------------------------|------------|
| Twilight switch with sensor | TWS-1      |
| Sensor (as spare part)      | LS-1       |

[Return to main index](#)

The Idea

5 state-of-the-art protection devices of identical design are simply plugged onto a busbar system.

No need for an elaborate power supply and connection work.

In addition to the saving in time and costs, a further advantage of the system is that it permits fast and easy replacement of the devices.

If corresponding spare capacity is planned, subsequent expansion is achieved by simply plugging the additional devices onto the busbar

Combination Module

Using a combination module, you can configure a variety of devices. For instance a motor protection circuit-breaker together with a contactor can be arranged to form one single unit.

Various Power Supply Options

You can supply power, for example, via a residual current circuit-breaker. The busbars can be interrupted by means of isolators so that residual current devices can be configured in groups.

The Trick with the Click

Devices are simply plugged onto the system without the need for any auxiliary adapters. Correction and expansion work couldn't be easier.



Freedom in Concept and Arrangement

Smisline gives you freedom of choice: Mixed-pole arrangements are accommodated with ease.



Vertical Equipment Layout

With a vertical layout you can save even more space as this arrangement renders outgoing terminals unnecessary. The outgoing cables are connected directly to the devices.



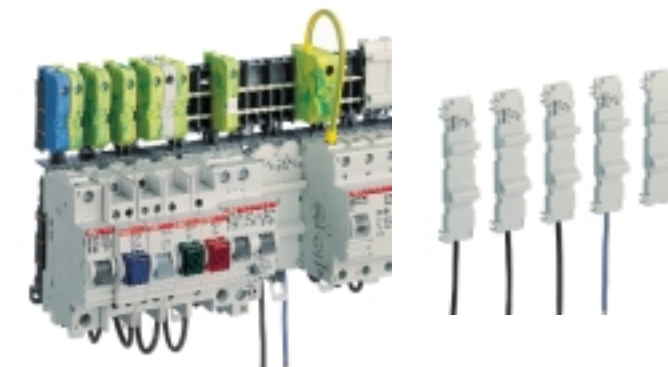
Shock-hazard Protection

All busbars can be covered with shock-hazard protection covers. This makes the entire system touch-proof.



Signalling

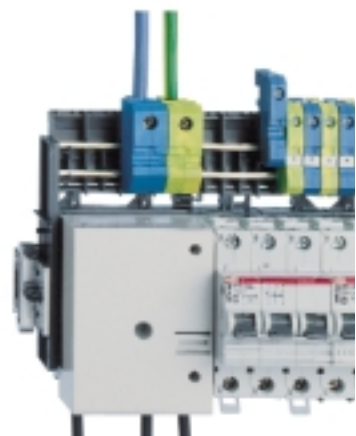
Signal and auxiliary contacts are available for all devices. They can be powered directly by the use of two auxiliary busbars within the socket base.



DIN Rail Products

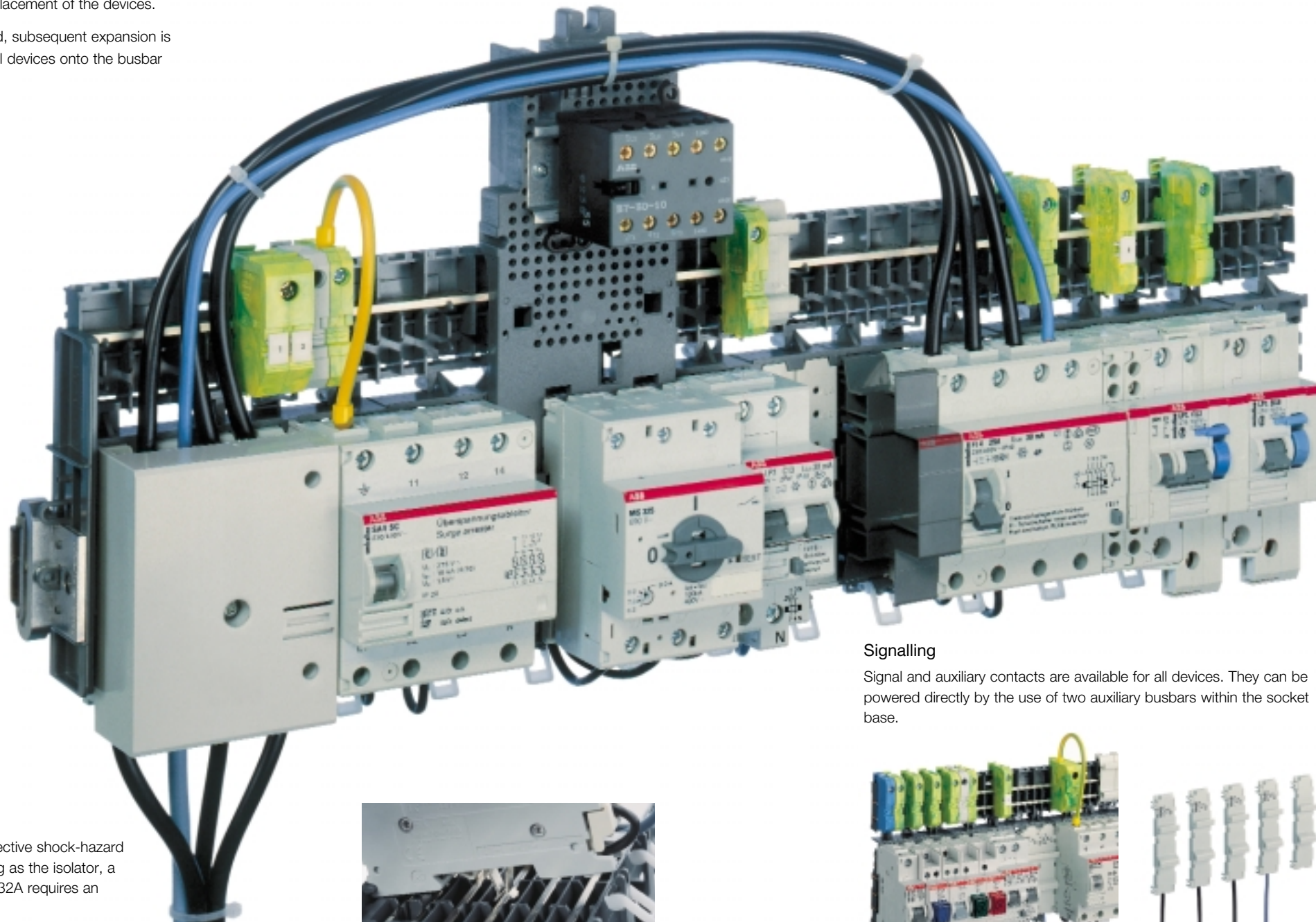
Thanks to the DIN rail adapter, a variety of devices can be integrated into the system.

3



Compact Design

Smisline saves space while providing effective shock-hazard protection. With the outer N-terminal acting as the isolator, a single-pole outgoing circuit L/N/PE up to 32A requires an overall width of just 18mm.



Flexible, Fast, Ideal

Any changes in configuration are carried out quickly, and additional devices are simply plugged on for expansion.



3

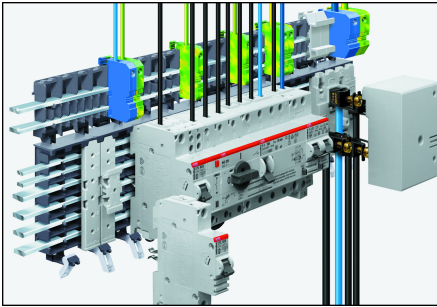
Return to main index

---

# Smisline

## Fields of Application: Advantages and Benefits

---



### ABB Smisline flexible distribution system

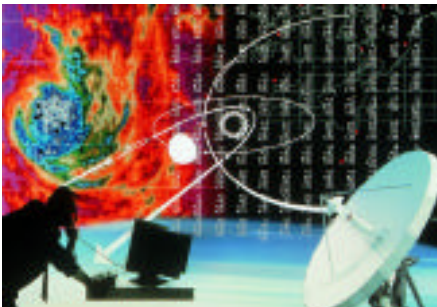
The ABB Smisline system is a unique concept allowing maximum flexibility in a "plug-in" final distribution system. The assembly consists of a base and busbar system onto which can be "plugged" MCB's, RCD's, RCBO's and Isolators with a complete range of add-on accessories.

For full technical details please request the Smisline catalogue 20165/C, or ask for an ABB sales engineer to demonstrate the Smisline benefits to you.



### Industrial Buildings

- High Degree of system availability
- Combination module as complete motor starter unit
- Clear allocation of devices and terminals



### Telecommunications

- Interchangeability of devices
- Overvoltage-protected systems
- Specifically targeted device and circuit protection



### Shopping Centres

- Quick change configuration
- Clearly arranged RC protection structure
- Mixed-pole devices can be placed in any position



### EDP and Radio Installations

- Central installation monitoring
- Flexible adaptation to building requirements
- Permanent current availability

[Return to main index](#)



---

# Smisline

## Fields of Application: Advantages and Benefits

---



### Airports

- High Degree of system availability
- Short realization time
- Cost-effective adaptation



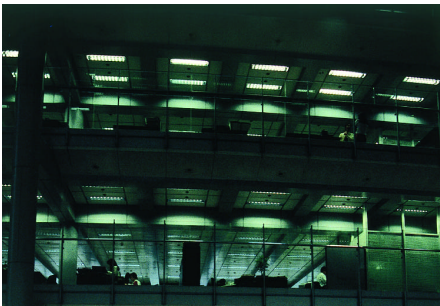
### Hospitals, Clinics

- High Degree of safety and reliability for maintenance/service
- Residual current signalling device for monitoring
- Permanent current availability



### Banks, Insurance Companies

- Various power supply options
- Clearly arranged RC protection structure
- System modifications can be carried out quickly



### Office Buildings

- Flexibility in lighting and air conditioning systems
- Expansion options
- Flexibility for system modifications



### Traffic

- Short time delayed residual current circuit-breakers for long cables
- Overvoltage-protection system
- Fast replacement of combination module as complete motor starter unit

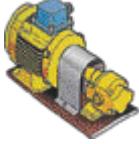


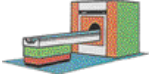
[Return to main index](#)

# Surge Protection

## Optical Monitoring Block

### Surge Protection

### Surge Protection

|                                   | Electrotechnical equipment  | Electrical equipment containing little sensitive electronics                      | Sensitive electronic equipment  | Highly sensitive electronic equipment   |
|-----------------------------------|---|---|---|---|
| Type of equipment to be protected |  |  |  |  |
| Protection Level up               | from 1.8 to 2.5kV   | from 1.5 to 1.8kV   | from 1 to 1.5kV   | from 0.5 to 1 kV  |

#### Determine Exposure Level

The Exposure level is defined by the number of lightning strikes per km<sup>2</sup> (Ng) in the concerned area or by the keraunic level (Nk) of this zone (how many times thunder is heard in one year).

Ng and/or Nk are data that regional meteorological offices can give you.

The mean Nk value for Europe is 25.

Empirically, one can estimate the  $Ng = 0.10 \times Nk$ , i.e. a mean Ng value of 2.50 for Europe.

Refer to the following tables for product selection

#### Characteristics

|   |                             |
|---|-----------------------------|
| For use on 230/400V networks  | single phase                |
| Max. number of 17.7mm modules monitored/Type of arresters           | 15 / PU - PM                |
| Emitter current consumption at 230V in watch state                  | < 10mA                      |
| Receiver current consumption at 230V in watch state                 | < 10mA                      |
| Teleindication contact data   | SPDT                        |
| - min. voltage / min. current                                       | 6V DC / 10mA                |
| - max. voltage (50Hz) / max. current (50Hz)                         | 250V / 5A                   |
| Optical link visualization  | LED on emitter and receiver |
| Fault Visualisation (one of the arresters reserved or disconnected) | red indication on receiver  |
| Terminal wire capacity  | 2.5mm <sup>2</sup> solid    |
| Recommended circuit-breaking device                                 | 2A fuse                     |
| Operating temperature   | -20°C to +40°C              |
| Storage temperature   | -40°C to +70°C              |

#### Selection

| Body Colour | Type     | Order Code      |
|-------------|----------|-----------------|
| ● Grey      | OVR S1GN | 2CTB813815R0000 |

### BOS 230



[Return to main index](#)

# Surge Protection

## Single-pole lightning arresters 15kA

**Slightly Exposed Area:**  
**Imax 15kA**  
**Ng 0.5**

| Equipment Type              | Up     | Value of the equipment to be protected (in US \$) |             |  |
|-----------------------------|--------|---|-------------|--|
|                             |        | 2,000   | 20,000      |  |
| Electrotechnical            | 2.5 kV | optional  |             |  |
| Electronic little sensitive | 1.8 kV |   |             |  |
| Electronic sensitive        | 1.0 kV |   | recommended |  |
| Electronic highly sensitive | 0.5 kV |   |             |  |

### Characteristics

|  |  |
|--|--|
| For use on IT or TN-C networks                 | 230V / 400V  |
| Max discharge current (once) 8/20 wave form    | 15kA   |
| Max. continuous operating voltage Uc           | 250V / 440V  |
| Nominal discharge current (20 times) 8/20 wave | 5kA  |
| Protection level Up                            | 1.2kV / 1.8kV  |
| Internal short circuit withstand current Icc   | 10kA   |
| Continuous operating current                   | < 1mA  |
| Follow current                                 | none   |
| Built-in thermal disconnection                 | yes  |
| Reserve system                                 | none   |
| Visualization of arrester status               | yes  |
| Terminal wire gauge (stranded/solid)           | Ph/N: 16/25mm <sup>2</sup> - Ground 35/50mm <sup>2</sup> |
| Operating temperature                          | -20°C to +40°C   |
| Storage temperature                            | -40°C to +70°C   |

### Surge Protection Single-pole lightning arresters 15kA

### Selection

| Body Colour                 | Information                                    | Type          | Order Code      |
|-----------------------------|--|---------------|-----------------|
| <input type="radio"/> White | Single-pole lightning arresters non pluggable  | OVR 15-440    | 2CTB813811R0400 |
| <input type="radio"/> White | Single-pole lightning arresters                | OVR 15-440P   | 2CTB813851R1200 |
| <input type="radio"/> White | Single-pole lightning arresters remote control | OVR 15-440PTS | 2CTB813851R0600 |
| <input type="radio"/> White | Replacement cartridges                         | OVR 15-440C   | 2CTB813854R0600 |

### Surge Protection Double-pole lightning arresters 15kA

### Selection

| Body Colour                 | Information                                    | Type            | Order Code      |
|-----------------------------|--|-----------------|-----------------|
| <input type="radio"/> White | Double-pole lightning arresters non pluggable  | OVRNI 15-275    | 2CTB813812R0400 |
| <input type="radio"/> White | Double-pole lightning arresters                | OVRNI 15-275P   | 2CTB813852R1200 |
| <input type="radio"/> White | Double-pole lightning arresters remote control | OVRNI 15-275PTS | 2CTB813852R0600 |
| <input type="radio"/> White | Replacement cartridges                         | OVRNI 15-275C   | 2CTB813854R1200 |
| <input type="radio"/> White | Neutral cartridges                             | OVRNI 15-275NC  | 2CTB813854R0000 |

[Return to main index](#)

# Surge Protection

## 15kA Lightning Arresters

### Surge Protection Four-pole lightning arresters 15kA



### Selection

| Body Colour                 | Information                                  | Type            | Order Code      |
|-----------------------------|--|-----------------|-----------------|
| <input type="radio"/> White | Four-pole lightning arresters non pluggable  | OVRN3-15-275    | 2CTB813813R0400 |
| <input type="radio"/> White | Four-pole lightning arresters pluggable      | OVRN3-15-275P   | 2CTB813853R1200 |
| <input type="radio"/> White | Four-pole lightning arresters remote control | OVRN3-15-275PTS | 2CTB813853R0600 |
| <input type="radio"/> White | Replacement cartridges                       | OVR 15-275C     | 2CTB813854R1200 |
| <input type="radio"/> White | Neutral cartridges                           | OVR 65NC        | 2CTB813854R0000 |

[Return to main index](#)

# Surge Protection

## 40kA Protection Information

**Exposed Area:**  
**I<sub>max</sub> 40kA**  
**0.5 < Ng 1**

| Equipment Type              | Up     | Value of the equipment to be protected (in US \$) |             |        |
|-----------------------------|--------|---|-------------|--------|
|                             |        | 2,000   | 20,000      |        |
| Electrotechnical            | 2.5 kV | optional  |             |        |
| Electronic little sensitive | 1.8 kV |   | recommended |        |
| Electronic sensitive        | 1.0 kV |   |             |        |
| Electronic highly sensitive | 0.5 kV |   |             | highly |

**Exposed to very exposed Area:**  
**I<sub>max</sub> 40kA**  
**1 < Ng 1.3**  
**I<sub>max</sub> 65kA**  
**1.3 < Ng 1.5**

| Equipment Type              | Up     | Value of the equipment to be protected (in US \$) |             |        |
|-----------------------------|--------|---|-------------|--------|
|                             |        | 2,000   | 20,000      |        |
| Electrotechnical            | 2.5 kV |   | recommended |        |
| Electronic little sensitive | 1.8 kV |   |             |        |
| Electronic sensitive        | 1.0 kV |   |             | highly |
| Electronic highly sensitive | 0.5 kV |   |             |        |

### Characteristics

|  |                      |
|--|----------------------|
| For use on IT or TN-C networks                           | 230V / 400V          |
| Max discharge current (once) 8/20 wave form              | 40kA                 |
| Max. continuous operating voltage U <sub>c</sub>         | 250V / 440V          |
| Nominal discharge current (20 times) 8/20 wave           | 15kA                 |
| Protection level Up                                      | 1.2kV (multipole)    |
| Internal short circuit withstand current I <sub>cc</sub> | 25kA                 |
| Continuous operating current                             | < 1mA                |
| Follow current   | none                 |
| Built-in thermal disconnection                           | yes                  |
| Reserve system   | none                 |
| Visualization of arrester status                         | yes                  |
| Terminal wire gauge (stranded/solid)                     | 16/25mm <sup>2</sup> |
| Operating temperature                                    | -20°C to +40°C       |
| Storage temperature                                      | -40°C to +70°C       |

[Return to main index](#)

# Surge Protection

## 40kA Lightning Arresters

### Surge Protection Single-pole lightning arresters 40kA



#### Selection

| Body Colour                 | Information                                    | Type          | Order Code      |
|-----------------------------|--|---------------|-----------------|
| <input type="radio"/> White | Single-pole lightning arresters non pluggable  | OVR 40-440    | 2CTB813811R0300 |
| <input type="radio"/> White | Single-pole lightning arresters pluggable      | OVR 40-440P   | 2CTB813851R1100 |
| <input type="radio"/> White | Single-pole lightning arresters remote control | OVR 40-440PTS | 2CTB813851R0500 |
| <input type="radio"/> White | Replacement cartridges                         | OVR 40-440C   | 2CTB813854R0400 |

### Surge Protection Double-pole lightning arresters 40kA



#### Selection

| Body Colour                 | Information                                    | Type            | Order Code      |
|-----------------------------|--|-----------------|-----------------|
| <input type="radio"/> White | Double-pole lightning arresters non pluggable  | OVRNI-40-275    | 2CTB813812R0300 |
| <input type="radio"/> White | Double-pole lightning arresters pluggable      | OVRNI-40-275P   | 2CTB813852R1100 |
| <input type="radio"/> White | Double-pole lightning arresters remote control | OVRNI-40-275PTS | 2CTB813852R0500 |
| <input type="radio"/> White | Replacement cartridges                         | OVR40-275C      | 2CTB813854R1000 |
| <input type="radio"/> White | Neutral cartridges                             | OVR 65NC        | 2CTB813854R0000 |

### Surge Protection Four-pole lightning arresters 40kA



#### Selection

| Body Colour                 | Information                                  | Type            | Order Code      |
|-----------------------------|--|-----------------|-----------------|
| <input type="radio"/> White | Four-pole lightning arresters non pluggable  | OVRN3-40-275    | 2CTB813813R0300 |
| <input type="radio"/> White | Four-pole lightning arresters pluggable      | OVRN3-40-275P   | 2CTB813853R1100 |
| <input type="radio"/> White | Four-pole lightning arresters remote control | OVRN3-40-275PTS | 2CTB813853R0500 |
| <input type="radio"/> White | Replacement cartridges                       | OVR40-275C      | 2CTB813854R1000 |
| <input type="radio"/> White | Neutral cartridges                           | OVR 65NC        | 2CTB813854R0000 |

[Return to main index](#)

# Surge Protection

## 65kA Protection Information

**Highly Exposed Area:**  
**Imax 65kA**  
**1.5 < Ng 2**

**Highly Exposed Area:**  
**Maximum Risk**  
**Imax 65kA**  
**2 < Ng 2.5**

| Equipment Type              | Up     | Value of the equipment to be protected (in US \$) |             |  |
|-----------------------------|--------|---|-------------|--|
|                             |        | 2,000   | 20,000      |  |
| Electrotechnical            | 2.5 kV |   | recommended |  |
| Electronic little sensitive | 1.8 kV |   |             |  |
| Electronic sensitive        | 1.0 kV |   | highly      |  |
| Electronic highly sensitive | 0.5 kV |   |             |  |

| Equipment Type              | Up     | Value of the equipment to be protected (in US \$) |        |  |
|-----------------------------|--------|---|--------|--|
|                             |        | 2,000   | 20,000 |  |
| Electrotechnical            | 2.5 kV | recommended                                       |        |  |
| Electronic little sensitive | 1.8 kV |   |        |  |
| Electronic sensitive        | 1.0 kV |   | highly |  |
| Electronic highly sensitive | 0.5 kV |   |        |  |

### Characteristics

|  |   |
|--|---|
| For use on IT or TN-C networks                 | 230V / 400V   |
| Max discharge current (once) 8/20 wave form    | 65kA  |
| Max. continuous operating voltage Uc           | 250V / 440V   |
| Nominal discharge current (20 times) 8/20 wave | 20kA  |
| Protection level Up                            | 1.5kV; 2kV  |
| Internal short circuit withstand current Icc   | 25kA  |
| Continuous operating current                   | < 1mA   |
| Follow current                                 | none  |
| Built-in thermal disconnection                 | yes   |
| Reserve system                                 | yes   |
| Visualization of arrester status               | yes   |
| Terminal wire gauge (stranded/solid)           | Ph/N:16/25mm <sup>2</sup> - Ground 35/50mm <sup>2</sup> |
| Operating temperature                          | -20°C to +40°C  |
| Storage temperature                            | -40°C to +70°C  |

Return to main index

# Surge Protection

## 65kA Lightning Arresters

### Surge Protection Single-pole lightning arresters 65kA



#### Selection

| Body Colour                 | Information                                    | Type           | Order Code      |
|-----------------------------|--|----------------|-----------------|
| <input type="radio"/> White | Single-pole lightning arresters non pluggable  | OVR 65-440S    | 2CTB813811R0100 |
| <input type="radio"/> White | Single-pole lightning arresters                | OVR 65-440SP   | 2CTB813851R0700 |
| <input type="radio"/> White | Single-pole lightning arresters remote control | OVR 65-440SPTS | 2CTB813851R0100 |
| <input type="radio"/> White | Replacement cartridges                         | OVR 65-440SC   | 2CTB813854R0100 |

### Surge Protection Double-pole lightning arresters 65kA



#### Selection

| Body Colour                 | Information                                    | Type             | Order Code      |
|-----------------------------|--|------------------|-----------------|
| <input type="radio"/> White | Double-pole lightning arresters non pluggable  | OVRNI-65-440S    | 2CTB813812R0100 |
| <input type="radio"/> White | Double-pole lightning arresters                | OVRNI-65-275SP   | 2CTB813852R0700 |
| <input type="radio"/> White | Double-pole lightning arresters remote control | OVRNI-65-275SPTS | 2CTB813852R0100 |
| <input type="radio"/> White | Replacement cartridges                         | OVR-65-275SC     | 2CTB813854R0700 |
| <input type="radio"/> White | Neutral cartridges                             | OVR-65NC         | 2CTB813854R0000 |

### Surge Protection Four-pole lightning arresters 65kA



#### Selection

| Body Colour                 | Information                                  | Type              | Order Code      |
|-----------------------------|--|-------------------|-----------------|
| <input type="radio"/> White | Four-pole lightning arresters non pluggable  | OVRN3-65-440S     | 2CTB813813R0100 |
| <input type="radio"/> White | Four-pole lightning arresters                | OVRN3-65-275SP    | 2CTB813853R0700 |
| <input type="radio"/> White | Four-pole lightning arresters remote control | OVRN3-65-275-SPTS | 2CTB813853R0100 |
| <input type="radio"/> White | Replacement cartridges                       | OVR-65-275SC      | 2CTB813854R0700 |
| <input type="radio"/> White | Neutral cartridges                           | OVR-65NC          | 2CTB813854R0000 |

[Return to main index](#)



---

# Notes

---

A large grid of red lines for taking notes, consisting of 20 columns and 30 rows of small squares.

[Return to main index](#)

# Technical Details

## Tripping Curves

| Tripping characteristic | B            | C            | D            |
|-------------------------|--------------|--------------|--------------|
| Standard                | IEC/EN 60898 | IEC/EN 60898 | IEC/EN 60898 |
| Rated current $I_n$     | 6...100A     | 0.5...100A   | 0.5...63A    |

### Thermal trip

#### Test currents:

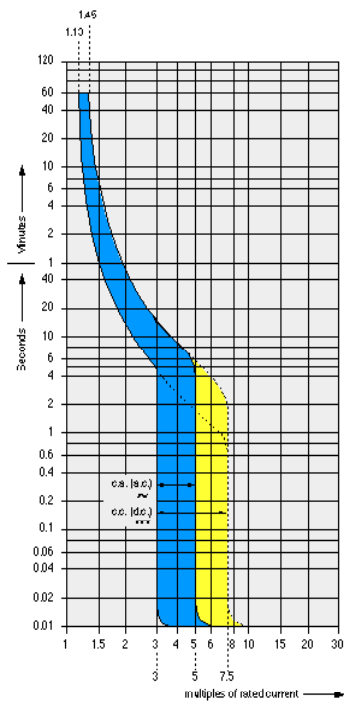
|                               |            |                  |              |
|-------------------------------|------------|------------------|--------------|
| non-tripping current $I_{nf}$ | 1.13 $I_n$ | 1.13 $I_n$       | 1.13 $I_n$   |
| non-tripping time             | >1h        | >1h (up to 63A)  | > 2h (> 63A) |
| tripping current $I_f$        | 1.45 $I_n$ | 1.45 $I_n$       | 1.45 $I_n$   |
| tripping time                 | < 1h       | < 1h (up to 63A) | < 2h (> 63A) |

### Electro-magnetic trip

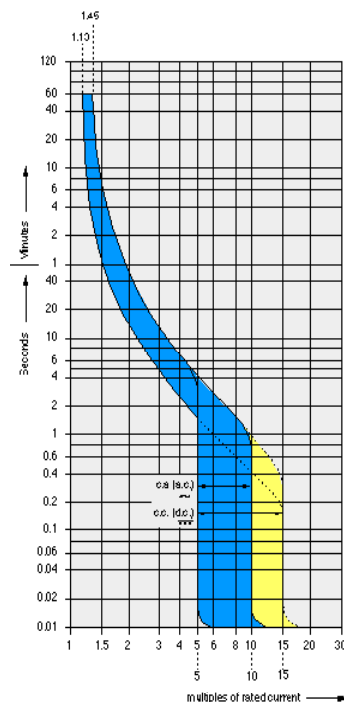
#### Test currents:

|                               |         |          |          |
|-------------------------------|---------|----------|----------|
| non-tripping current $I_{m1}$ | 3 $I_n$ | 5 $I_n$  | 10 $I_n$ |
| non-tripping time             | > 0.1s  | > 0.1s   | > 0.15s  |
| tripping current $I_{m2}$     | 5 $I_n$ | 10 $I_n$ | 20 $I_n$ |
| tripping time                 | < 0.1s  | < 0.1s   | < 0.15s  |

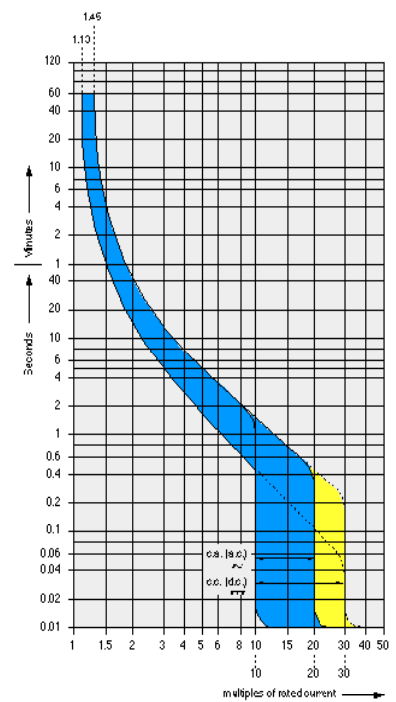
Characteristic B



Characteristic C



Characteristic D



[Return to main index](#)

# Technical Details

## Tripping Curves

### Characteristics K-Z selective

Tripping characteristics according to DIN VDE 0660. Rated currents from 0.5 to 63A, in 16 different values.

They are used to control and protect inductive circuits, power suppliers for semi-conductor electronic circuits and secondary measurement circuits, in the commercial and industrial sectors.

| Tripping characteristic | K           | Z           |
|-------------------------|-------------|-------------|
| Standard                | IEC/EN60947 | IEC/EN60947 |
| Rated current $I_n$     | 0.5...63A   | 0.5...63A   |

Thermal trip

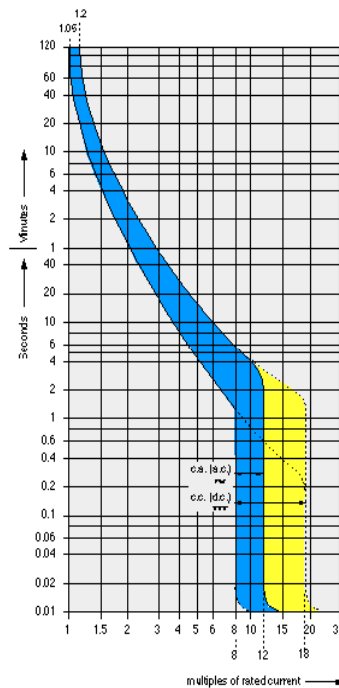
Test currents:

|                               |           |           |
|-------------------------------|-----------|-----------|
| non-tripping current $I_{nf}$ | $1.05I_n$ | $1.05I_n$ |
| non-tripping time             | >2h       | >2h       |
| tripping current $I_f$        | $1.2I_n$  | $1.2I_n$  |
| tripping time                 | < 2h      | < 2h      |

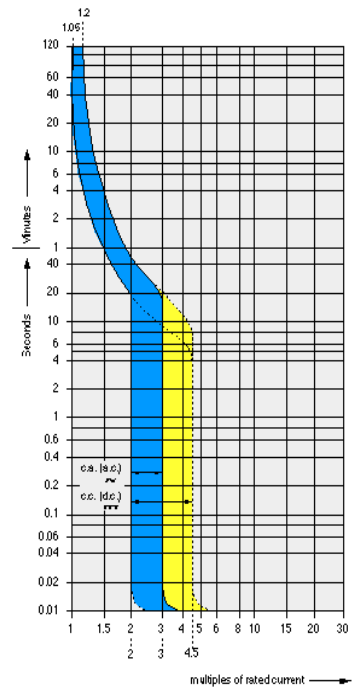
Electro-magnetic trip

|                               |         |        |
|-------------------------------|---------|--------|
| non-tripping current $I_{m1}$ | $8I_n$  | $2I_n$ |
| non-tripping time             | > 0.2s  | > 0.2s |
| tripping current $I_{m2}$     | $14I_n$ | $3I_n$ |
| tripping time                 | < 0.2s  | < 0.2s |

Characteristic K

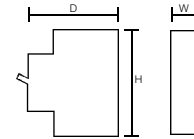


Characteristic Z



[Return to main index](#)

# Dimensions



| Type           | Extra Info | H    | W    | D    |
|----------------|------------|------|------|------|
| S270 - S280    | 1P         | 85   | 17.5 | 74   |
|                | 2P         | 85   | 35   | 74   |
|                | 3P         | 85   | 52.5 | 74   |
|                | 4P         | 85   | 70   | 74   |
| S2-H..         |            | 85   | 8.75 | 68   |
| S2-S - S2S/H   |            | 85   | 8.75 | 68   |
| S2-BM          |            | 85   | 17.5 | 68   |
| S500           | 1P         | 91   | 25   | 92   |
|                | 2P         | 91   | 50   | 92   |
|                | 3P         | 91   | 75   | 92   |
|                | 4P         | 91   | 100  | 92   |
| S951           |            | 83   | 17.8 | 68   |
| F360           | 2P         | 90   | 35   | 68   |
|                | 4P         | 90   | 70   | 68   |
| DDA60          | 2P         | 94   | 35   | 68   |
|                | 3P         | 94   | 70   | 68   |
|                | 4P         | 94   | 70   | 68   |
| DS651 - DS671  |            | 97   | 35   | 74   |
| RD2            |            | 85   | 35   | 64.8 |
| E240 - E270    | 2P         | 90   | 35   | 68   |
|                | 3P         | 90   | 52.5 | 68   |
|                | 4P         | 90   | 70   | 68   |
| ESB Contactors | ESB20      | 85   | 17.5 | 58   |
|                | ESB24      | 85   | 35   | 58   |
|                | ESB40      | 85   | 54   | 58   |
|                | ESB63      | 85   | 54   | 58   |
| E250           | 1P         | 85   | 17.5 | 58   |
|                | 2P         | 85   | 35   | 58   |
| E220           | 1P         | 85   | 17.5 | 68   |
| ETS            | 1P         | 85   | 17.5 | 58   |
|                | 3P         | 88.5 | 52.4 | 58   |
| DTS            | 2P         | 85   | 35   | 58   |
|                | 6P         | 82   | 105  | 53   |
| LE             |            | 85   | 35   | 58   |
| TM             | TM10 - 12  | 85   | 35   | 58   |
|                | TM30 - 40  | 85   | 52.5 | 58   |
| TWS            |            | 82   | 35   | 60   |
| OVR            | 1P         | 87   | 17.5 | 69   |
|                | 2P         | 87   | 35   | 69   |
|                | 4P         | 87   | 70   | 69   |

[Return to main index](#)