

# Combined MCB/RCD (RCBO) 3+N, AMPARO 6kA, B 40A, 30mA, Typ A

Neutralconductor on the right side, Product category A, Type undelayed, Product standard EN 61009-1:2012 + A1:2014 + A2:2014 + A11:2015 + A12:2016, EN 61009-2-1:1994 + A11:1998, IEC 61009-1, IEC 61009-2-1



## Schrack Info

- Double lift terminals on the lower side
- Back terminal protection for safe connection
- Terminal cross-section: 1 - 25mm<sup>2</sup>
- Switch position indicator

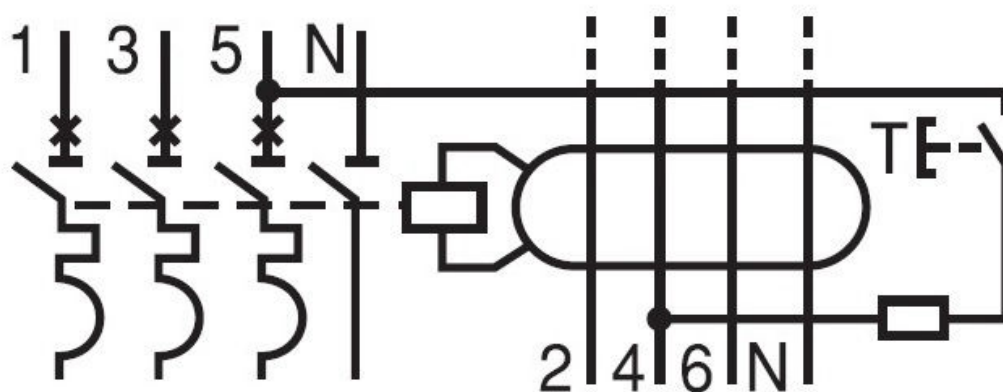
## Technical Data

|                                     |                           |
|-------------------------------------|---------------------------|
| Standard                            | IEC 61009-1<br>EN 61009-1 |
| Product category                    | A                         |
| Type                                | undelayed                 |
| Rated sensitivity I $\Delta$ n (mA) | 30                        |
| Tripping characteristics            | B                         |
| Rated current (A)                   | 40                        |
| Amperage (A)                        | 40                        |

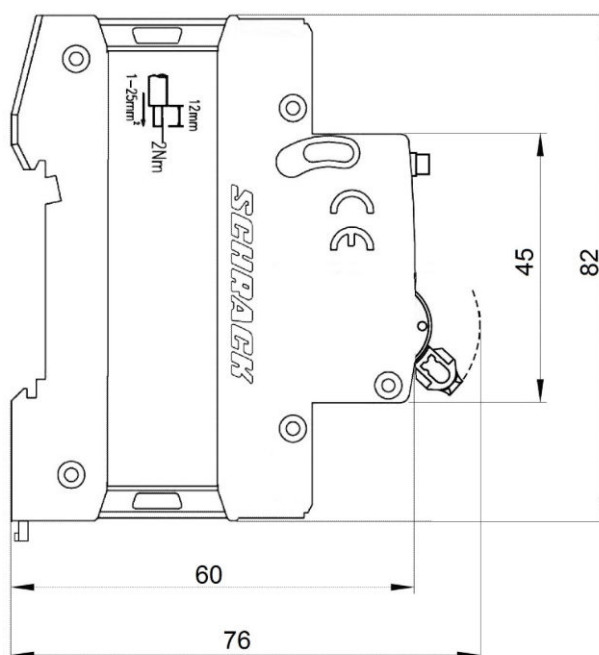
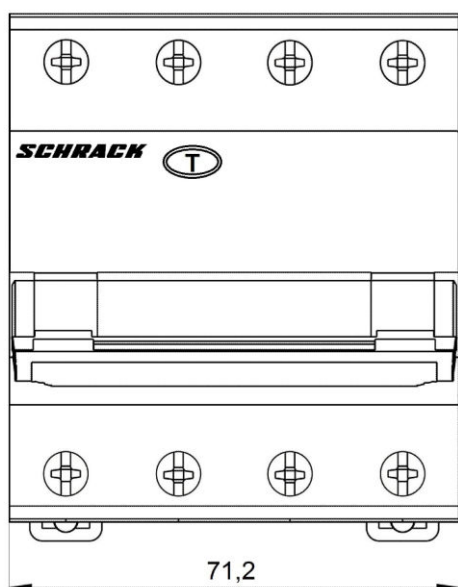
## Technical Data - continued

|                                                            |                                                                  |
|------------------------------------------------------------|------------------------------------------------------------------|
| Poles                                                      | 3+N                                                              |
| Rated voltage                                              | 230/400 V AC                                                     |
| Rated frequency (Hz)                                       | 50/ 60                                                           |
| Energy limiting class                                      | 3                                                                |
| Breaking capacity I <sub>m</sub> (A)                       | 3000                                                             |
| Short circuit withstand                                    | 6 kA                                                             |
| Rated breaking capacity (kA)                               | 6                                                                |
| Rated impulse withstand voltage U <sub>imp</sub>           | 4kV                                                              |
| Dielectric test voltage at ind. Frequency (V)              | 2000                                                             |
| Insulation voltage                                         | 500 V                                                            |
| Max. permissible back-up fuse against short circuit (A gG) | 63                                                               |
| Trigger time undelayed                                     | ≤0,1 s                                                           |
| Power loss (W)                                             | 24,02                                                            |
| Pollution degree                                           | 2                                                                |
| Lifetime, electric                                         | 2000 Operations                                                  |
| Lifespan, mechanical                                       | 10000 Operations                                                 |
| Contact setting display                                    | Yes                                                              |
| IP Rating                                                  | IP20                                                             |
| Terminal cross section (mm²)                               | 1-25                                                             |
| Clamp size for busbar                                      | 10 mm²                                                           |
| Conductor material                                         | Copper                                                           |
| Torque                                                     | 2 Nm                                                             |
| Infeed                                                     | two-sided                                                        |
| Terminal type                                              | Double function clamp / pin and fork busbar                      |
| Reference temperature (°C)                                 | 30                                                               |
| Ambient temperature Open (°C)                              | -25°C bis +60                                                    |
| Mounting                                                   | On DIN rail according to EN 60715 (35mm) via quick mounting clip |
| Optional Accessories                                       | AM900099--;BSB90121--;BSB90122--                                 |
| Series                                                     | AMPARO                                                           |

## Circuit diagram

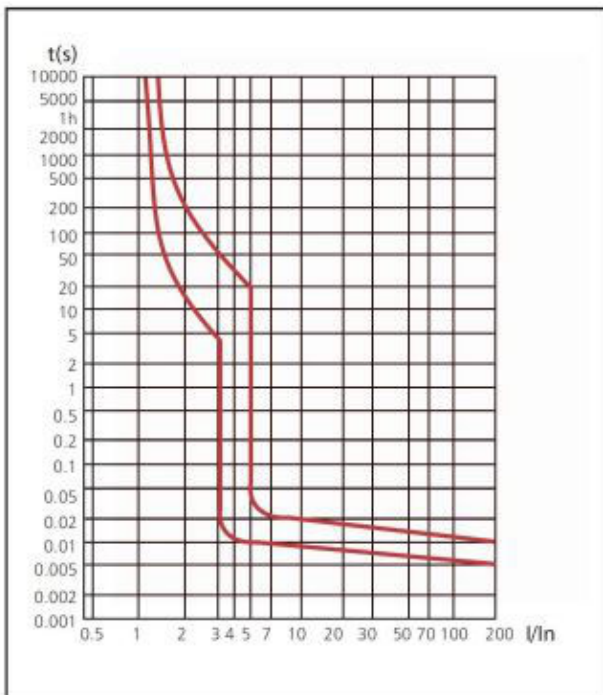


## Dimensions



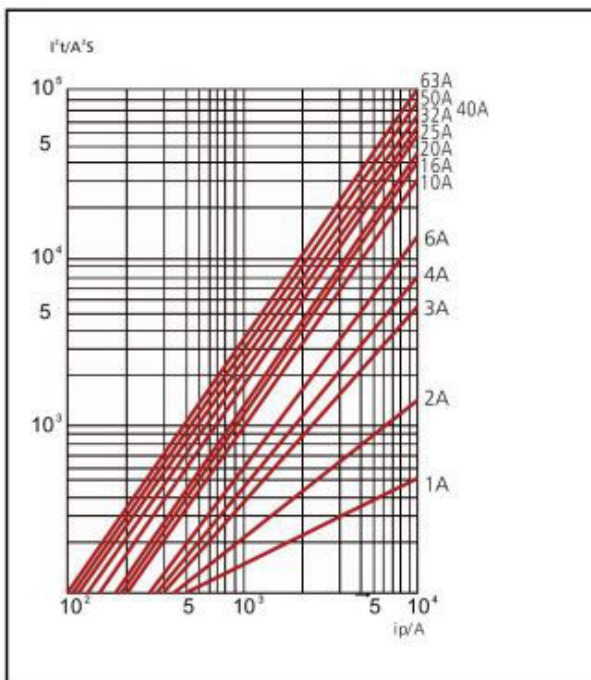
## Tripping characteristic according to IEC 60898

Kennlinie B



## Let-through energy characteristic

Durchlassenergie  $I^2t$



## Tripping characteristic



## Influence of the ambient temperature on the thermal tripping behavior

| $I_n$ [A] | Ambient Temperature $T$ [°C] |       |      |       |           |       |      |       |      |
|-----------|------------------------------|-------|------|-------|-----------|-------|------|-------|------|
|           | -10°C                        | 0°C   | 10°C | 20°C  | 30°C      | 40°C  | 50°C | 60°C  | 70°C |
| <b>6</b>  | 7.2                          | 6.9   | 6.6  | 6.3   | <b>6</b>  | 5.7   | 5.4  | 5.1   | 4.8  |
| <b>10</b> | 12                           | 11.5  | 11   | 10.5  | <b>10</b> | 9.5   | 9    | 8.5   | 8    |
| <b>13</b> | 15.6                         | 14.95 | 14.3 | 13.65 | <b>13</b> | 12.35 | 11.7 | 11.05 | 10.4 |
| <b>16</b> | 19.2                         | 18.4  | 17.6 | 16.8  | <b>16</b> | 15.2  | 14.4 | 13.6  | 12.8 |
| <b>20</b> | 24                           | 23    | 22   | 21    | <b>20</b> | 19    | 18   | 17    | 16   |
| <b>25</b> | 30                           | 28.8  | 27.5 | 26.3  | <b>25</b> | 23.8  | 22.5 | 21.3  | 20   |
| <b>32</b> | 38.4                         | 36.8  | 35.2 | 33.6  | <b>32</b> | 30.4  | 28.8 | 27.2  | 25.6 |
| <b>40</b> | 48                           | 46    | 44   | 42    | <b>40</b> | 38    | 36   | 34    | 32   |

## Short-circuit selectivity to NH fuses with characteristic curve gG/gL

Short-circuit selectivity **Characteristic B** of fuse insert

|           | NH-00 gL/gG |        |        |        |        |        |        |        |      |
|-----------|-------------|--------|--------|--------|--------|--------|--------|--------|------|
| $I_n$ [A] | 20          | 25     | 36     | 50     | 63     | 80     | 100    | 125    | 160  |
| 6         | 0.5 kA      | 0.8 kA | 1.9 kA | 2.5 kA | 4.5 kA | 5 kA   | 6 kA   | 6 kA   | 6 kA |
| 10        |             | 0.7 kA | 1.4 kA | 2.2 kA | 3.2 kA | 3.6 kA | 6 kA   | 6 kA   | 6 kA |
| 16        |             |        | 1.2 kA | 1.8 kA | 2.6 kA | 3 kA   | 5.6 kA | 6 kA   | 6 kA |
| 20        |             |        |        | 1.5 kA | 2.2 kA | 2.5 kA | 4.6 kA | 6 kA   | 6 kA |
| 25        |             |        |        | 1.3 kA | 2 kA   | 2.2 kA | 4.1 kA | 5.5 kA | 6 kA |

Short-circuit selectivity **Characteristic C** of fuse insert

|           | NH-00 gL/gG |        |        |        |        |        |        |        |      |
|-----------|-------------|--------|--------|--------|--------|--------|--------|--------|------|
| $I_n$ [A] | 20          | 25     | 36     | 50     | 63     | 80     | 100    | 125    | 160  |
| 6         | 0.5 kA      | 0.8 kA | 1.9 kA | 2.5 kA | 4.5 kA | 5 kA   | 6 kA   | 6 kA   | 6 kA |
| 10        |             | 0.7 kA | 1.4 kA | 2.2 kA | 3.2 kA | 3.6 kA | 6 kA   | 6 kA   | 6 kA |
| 16        |             |        | 1.2 kA | 1.8 kA | 2.6 kA | 3 kA   | 5.6 kA | 6 kA   | 6 kA |
| 20        |             |        |        | 1.5 kA | 2.2 kA | 2.5 kA | 4.6 kA | 6 kA   | 6 kA |
| 25        |             |        |        | 1.3 kA | 2 kA   | 2.2 kA | 4.1 kA | 5.5 kA | 6 kA |

## Short-circuit selectivity to circuit breaker size 1

Short-circuit selectivity **Kennlinie B** of fuse insert

|           | MC1    |        |        |        |      |
|-----------|--------|--------|--------|--------|------|
| $I_n$ [A] | 40     | 50     | 63     | 80     | 100  |
| 6         | 1.2 kA | 2 kA   | 2.5 kA | 3 kA   | 5 kA |
| 10        | 1.2 kA | 1.5 kA | 2 kA   | 2 kA   | 4 kA |
| 16        | 1 kA   | 1.2 kA | 1.5 kA | 2 kA   | 3 kA |
| 20        | 0.8 kA | 1.2 kA | 1.5 kA | 1.5 kA | 3 kA |
| 25        | 0.7 kA | 1.2 kA | 1.5 kA | 1.5 kA | 3 kA |

Short-circuit selectivity **Kennlinie C** of fuse insert

|           | MC1    |        |        |        |      |
|-----------|--------|--------|--------|--------|------|
| $I_n$ [A] | 40     | 50     | 63     | 80     | 100  |
| 6         | 1.2 kA | 2 kA   | 2.5 kA | 3 kA   | 5 kA |
| 10        | 1.2 kA | 1.5 kA | 2 kA   | 2 kA   | 4 kA |
| 16        | 1 kA   | 1.2 kA | 1.5 kA | 2 kA   | 3 kA |
| 20        | 0.8 kA | 1.2 kA | 1.5 kA | 1.5 kA | 3 kA |
| 25        | 0.7 kA | 1.2 kA | 1.5 kA | 1.5 kA | 3 kA |

## Short-circuit selectivity to circuit breaker size 2

Short-circuit selectivity **Kennlinie B** to circuit breaker

|           | MC2    |        |        |        |      |
|-----------|--------|--------|--------|--------|------|
| $I_n$ [A] | 40     | 50     | 63     | 80     | 100  |
| <b>6</b>  | 1.2 kA | 1.5 kA | 2.5 kA | 3 kA   | 6 kA |
| <b>10</b> | 1 kA   | 1.5 kA | 2.5 kA | 3 kA   | 6 kA |
| <b>13</b> | 1 kA   | 1.2 kA | 2 kA   | 3 kA   | 6 kA |
| <b>16</b> | 1 kA   | 1.2 kA | 1.5 kA | 2.5 kA | 6 kA |
| <b>20</b> | 1 kA   | 1.2 kA | 1.5 kA | 2 kA   | 6 kA |
| <b>25</b> | 0.8 kA | 1 kA   | 1.5 kA | 2 kA   | 6 kA |

Short-circuit selectivity **Kennlinie C** to circuit breaker

|           | MC2    |        |        |        |      |
|-----------|--------|--------|--------|--------|------|
| $I_n$ [A] | 40     | 50     | 63     | 80     | 100  |
| <b>6</b>  | 1.2 kA | 1.5 kA | 2.5 kA | 3 kA   | 6 kA |
| <b>10</b> | 1 kA   | 1.5 kA | 2.5 kA | 3 kA   | 6 kA |
| <b>13</b> | 1 kA   | 1.2 kA | 2 kA   | 3 kA   | 6 kA |
| <b>16</b> | 1 kA   | 1.2 kA | 1.5 kA | 2.5 kA | 6 kA |
| <b>20</b> | 1 kA   | 1.2 kA | 1.5 kA | 1.5 kA | 6 kA |
| <b>25</b> | 0.8 kA | 1 kA   | 1.5 kA | 2 kA   | 6 kA |

## Number of possible wires

| Cross-section<br>[mm <sup>2</sup> ] | Number of rigid single wire conductors |   |   |   |   |   |
|-------------------------------------|----------------------------------------|---|---|---|---|---|
|                                     | 1                                      | 2 | 3 | 4 | 5 | 6 |
| 1                                   | +                                      | + | + | + | + | + |
| 1.5                                 | +                                      | + | + | + | + | + |
| 2.5                                 | +                                      | + | + | - | - | - |
| 4                                   | +                                      | + | + | - | - | - |
| 6                                   | +                                      | + | + | - | - | - |

| Cross-section<br>[mm <sup>2</sup> ] | Number of rigid multi wire conductors |   |   |   |   |   |
|-------------------------------------|---------------------------------------|---|---|---|---|---|
|                                     | 1                                     | 2 | 3 | 4 | 5 | 6 |
| 10                                  | +                                     | + | - | - | - | - |
| 16                                  | +                                     | - | - | - | - | - |
| 25                                  | +                                     | - | - | - | - | - |

| Cross-section<br>[mm <sup>2</sup> ] | Number of flexible single wire conductors (without ferrule) |   |   |   |   |   |
|-------------------------------------|-------------------------------------------------------------|---|---|---|---|---|
|                                     | 1                                                           | 2 | 3 | 4 | 5 | 6 |
| 1                                   | +                                                           | + | + | + | + | + |
| 1.5                                 | +                                                           | + | + | + | + | + |
| 2.5                                 | +                                                           | + | + | + | - | - |
| 4                                   | +                                                           | + | + | - | - | - |
| 6                                   | +                                                           | + | - | - | - | - |
| 10                                  | +                                                           | + | - | - | - | - |
| 16                                  | +                                                           | - | - | - | - | - |
| 25                                  | +                                                           | - | - | - | - | - |

| Cross-section<br>[mm <sup>2</sup> ] | Number of flexible single wire conductors (with ferrule) |   |   |   |   |   |
|-------------------------------------|----------------------------------------------------------|---|---|---|---|---|
|                                     | 1                                                        | 2 | 3 | 4 | 5 | 6 |
| 1                                   | +                                                        | - | - | - | - | - |
| 1.5                                 | +                                                        | - | - | - | - | - |
| 2.5                                 | +                                                        | - | - | - | - | - |
| 4                                   | +                                                        | - | - | - | - | - |
| 6                                   | +                                                        | - | - | - | - | - |
| 10                                  | +                                                        | - | - | - | - | - |
| 16                                  | +                                                        | - | - | - | - | - |
| 25                                  | -                                                        | - | - | - | - | - |

## Article Table

| DESCRIPTION                                                                                                                                                                                                                                                                 | COPPER WEIGHT (kg/km) | Order No. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------|
| Combined MCB/RCD (RCBO) 3+N, AMPARO 6kA, B 40A, 30mA, Typ A<br>Neutralconductor on the right side, Product category A, Type undelayed, Product standard EN 61009-1:2012 + A1:2014 + A2:2014 + A11:2015 + A12:2016, EN 61009-2-1:1994 + A11:1998, IEC 61009-1, IEC 61009-2-1 |                       | AK668840  |
| <b>Optional Accessories</b>                                                                                                                                                                                                                                                 |                       |           |
| Auxiliary Contact 1CO, series AMPARO snap-on<br>Product category AM6, Product standard EN 60947-5-1:2017                                                                                                                                                                    |                       | AM900099  |
| Busbar fork 4-pole, L1/L2/L3/N, 10mm <sup>2</sup> , 1m<br>Not possible to break off, shortenable on both sides, TE=17.8mm                                                                                                                                                   | 695                   | BSB90121  |
| Busbar fork 4-pole, L1/L2/L3/N, 16mm <sup>2</sup> , 1m<br>Not possible to break off, shortenable on both sides, TE=17.8mm                                                                                                                                                   | 825                   | BSB90122  |