

DATA SHEET: COMBINED RCD/MCB DEVICES BO, 2-POLE



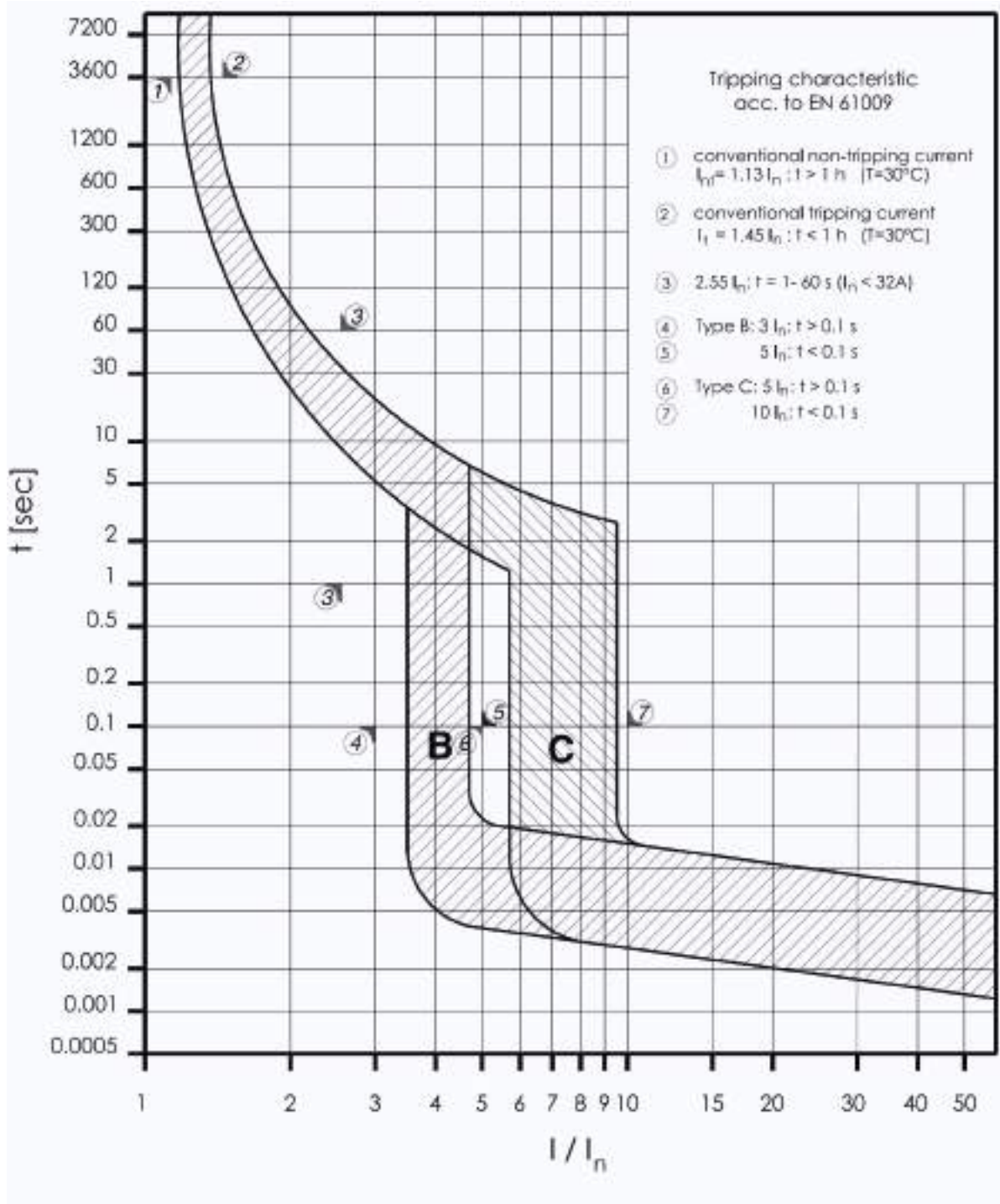
SCHRACK-INFO

- Combined RCD/MCB device
- Type-A: Protects against special forms of residual pulsating DC which have not been smoothed
- Line voltage-independent tripping
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Twin-purpose terminal (lift/open-mouthed) above and below
- Guide for secure terminal connection
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Compatible with standard busbar
- Comprehensive range of accessories suitable for subsequent installation

TECHNICAL DATA

| | | |
|---|--------------------------------------|---|
| Design according to | | IEC/EN 61009 |
| Current test marks as printed onto the device | | |
| Tripping | line voltage-independent | instantaneous 250A (8/20 μ s) surge current-proof |
| Rated voltage U _e | | 230/400 V; 50 Hz |
| Operational voltage range | | 196-253 V |
| Rated tripping current I Δ_n | | 30, 100, 300 mA |
| Rated non-tripping current I Δ_{no} | | 0.5 I Δ_n |
| Sensitivity | | AC and pulsating DC |
| Selectivity class | | 3 |
| Rated breaking capacity | | BOx6 6kA, BOx1 10kA |
| Rated current | | 6 - 40 A |
| Rated peak withstand voltage | | U _{imp} 4 kV (1.2/50 μ s) |
| Characteristic | | B, C |
| Maximum back-up fuse (short circuit) | | 100 A gl (>10 kA) |
| Endurance | electrical comp. mechanical comp. | \geq 4.000 operating cycles \geq 20.000 operating cycles |
| MECHANICAL | | |
| Frame size | | 45 mm |
| Device height | | 80 mm |
| Device width | | 35 mm (2 SU) |
| Mounting | | 3-position DIN rail clip, permits removal from existing busbar system |
| Upper and lower terminals | | open mouthed/lift terminals |
| Terminal protection | | finger and hand touch safe, VBG4, ÖVE-EN 6 |
| Terminal capacity | | 1 - 25 mm ² |
| Busbar thickness | | 0.8 - 2 mm |
| Degree of protection switch | | IP20 |
| Degree of protection, built-in | | IP40 |
| Tripping temperature | | -25°C to +40°C |
| Resistance to climatic conditions | | acc. to IEC/EN 61009 |

TRIPPING CHARACTERISTIC, CHARACTERISTICS B AND C



/// INFLUENCE OF AMBIENT TEMPERATURE ON LOAD CARRYING CAPACITY OF BO21....., BO61.... AND BO71....

- o Values = max. allowed current in Ampere at the specific temperature
- o Temperature factor (%/K) = 0,5

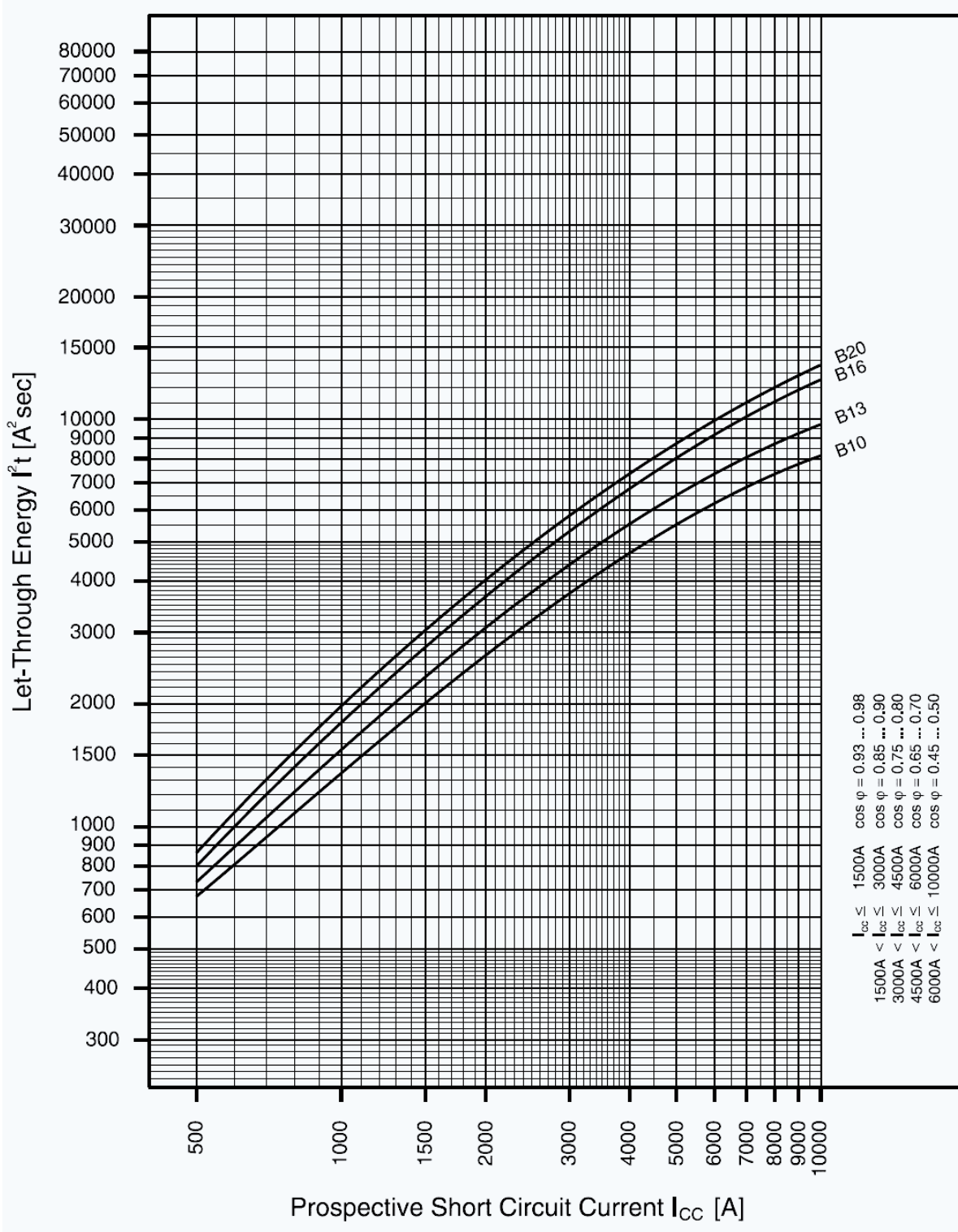
| Ambient temperature / °C | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|-----------|------|
| In (A) | -40 | -30 | -25 | -20 | -10 | 0 | 10 | 20 | 30 | 40 |
| 6 | 8,1 | 7,8 | 7,7 | 7,5 | 7,2 | 6,9 | 6,6 | 6,3 | 6 | 5,7 |
| 10 | 13,5 | 13 | 12,8 | 12,5 | 12 | 11,5 | 11 | 10,5 | 10 | 9,5 |
| 13 | 17,6 | 16,9 | 16,6 | 16,3 | 15,6 | 15 | 14,3 | 13,7 | 13 | 12,4 |
| 16 | 21,6 | 20,8 | 20,4 | 20 | 19,2 | 18,4 | 17,6 | 16,8 | 16 | 15,2 |
| 20 | 27 | 26 | 25,5 | 25 | 24 | 23 | 22 | 21 | 20 | 19 |

/// INFLUENCE OF AMBIENT TEMPERATURE ON LOAD CARRYING CAPACITY OF BO66....., BO67....

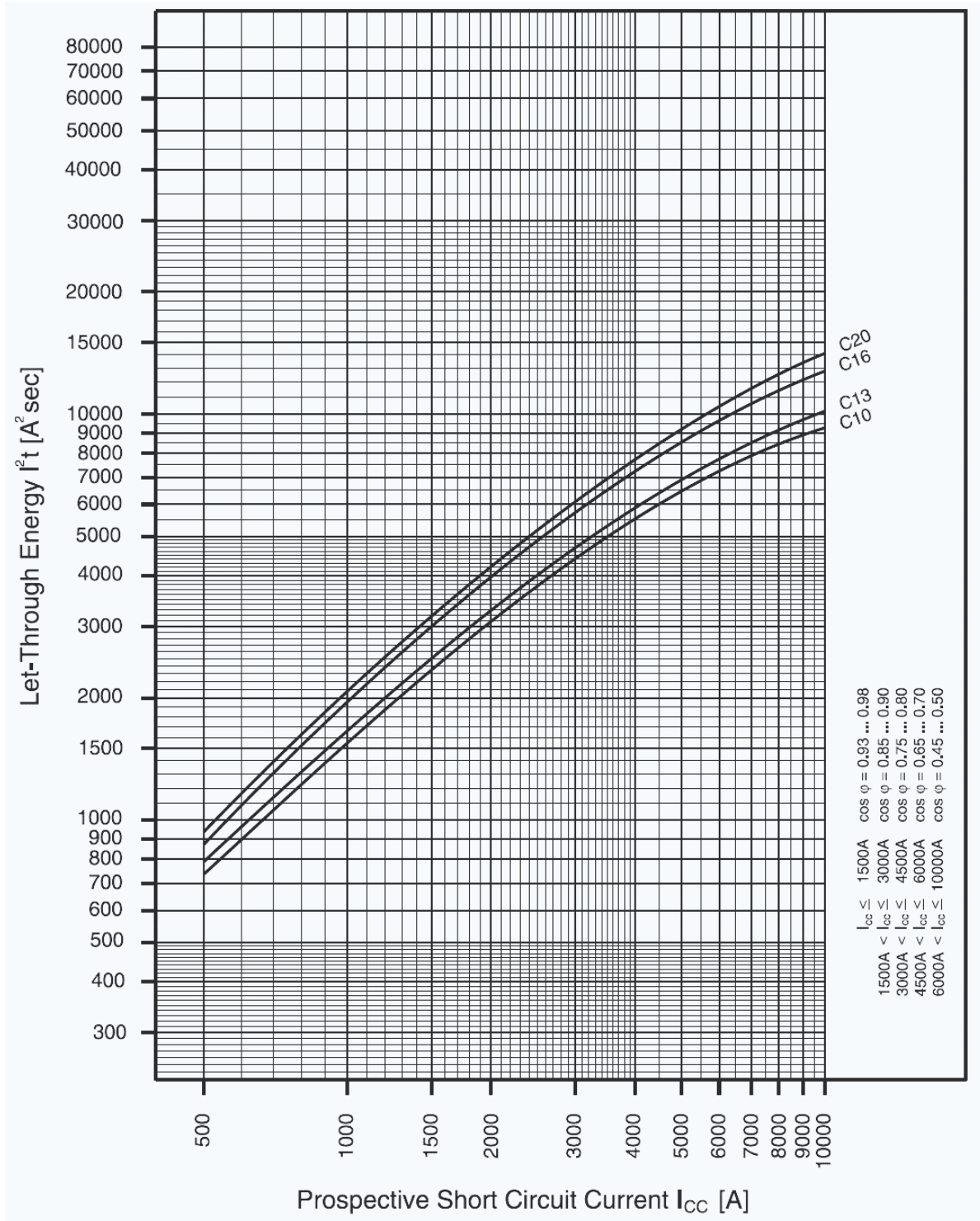
- o Values = max. allowed current in Ampere at the specific temperature
- o Temperature factor (%/K) = 0,5

| Ambient temperature / °C | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|-----------|------|
| In (A) | -40 | -30 | -25 | -20 | -10 | 0 | 10 | 20 | 30 | 40 |
| 6 | 8,1 | 7,8 | 7,7 | 7,5 | 7,2 | 6,9 | 6,6 | 6,3 | 6 | 5,7 |
| 10 | 13,5 | 13 | 12,8 | 12,5 | 12 | 11,5 | 11 | 10,5 | 10 | 9,5 |
| 13 | 17,6 | 16,9 | 16,6 | 16,3 | 15,6 | 15 | 14,3 | 13,7 | 13 | 12,4 |
| 16 | 21,6 | 20,8 | 20,4 | 20 | 19,2 | 18,4 | 17,6 | 16,8 | 16 | 15,2 |
| 20 | 27 | 26 | 25,5 | 25 | 24 | 23 | 22 | 21 | 20 | 19 |
| 25 | 33,8 | 32,5 | 31,9 | 31,3 | 30 | 28,8 | 27,5 | 26,3 | 25 | 23,8 |
| 32 | 43,2 | 41,6 | 40,8 | 40 | 38,4 | 36,8 | 35,2 | 33,6 | 32 | 30,4 |
| 40 | 54 | 52 | 51 | 50 | 48 | 46 | 44 | 42 | 40 | 38 |

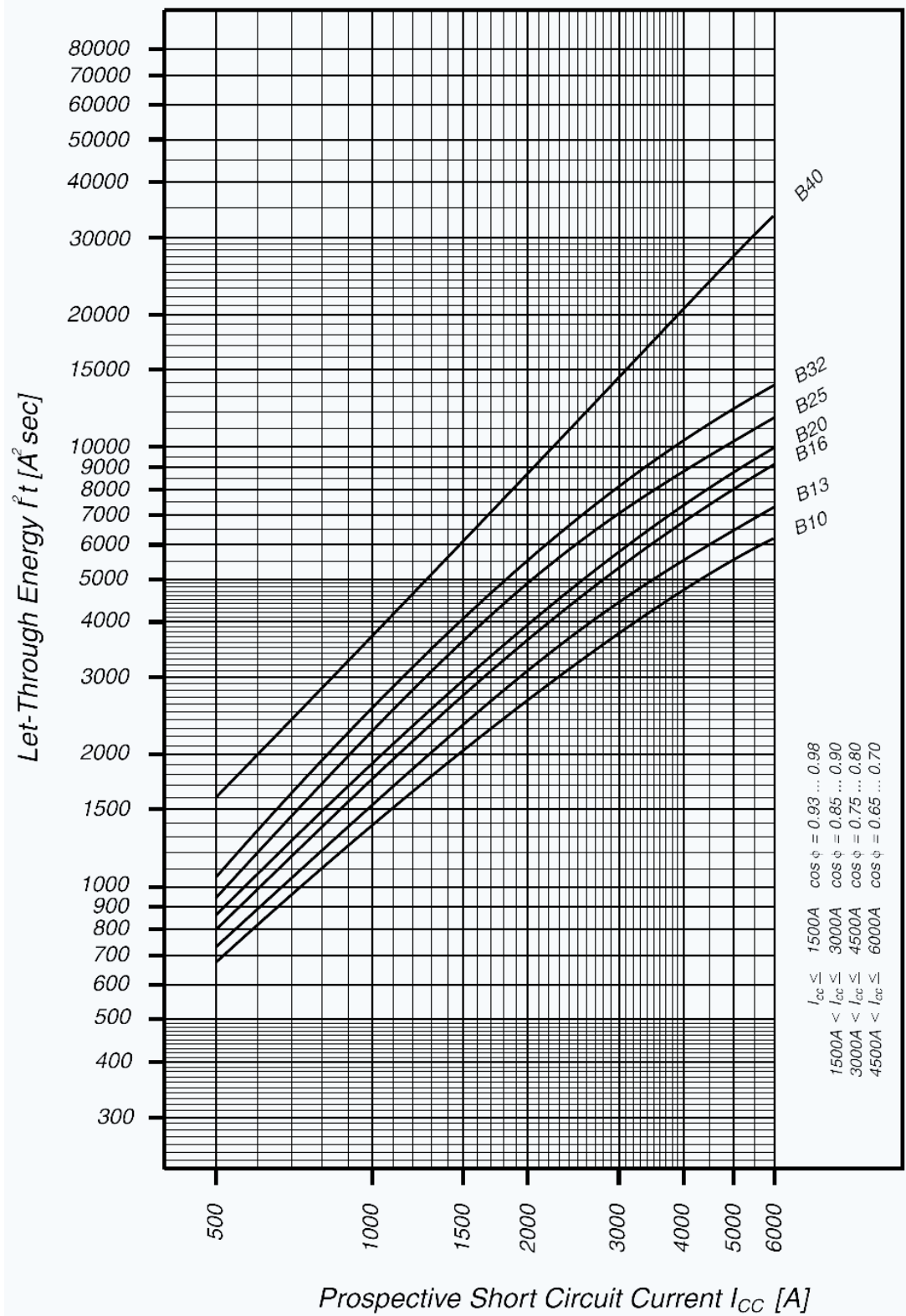
LET-THROUGH ENERGY, CHARACTERISTIC B, 2-POLE
OF BO21....., BO61.... AND BO71....



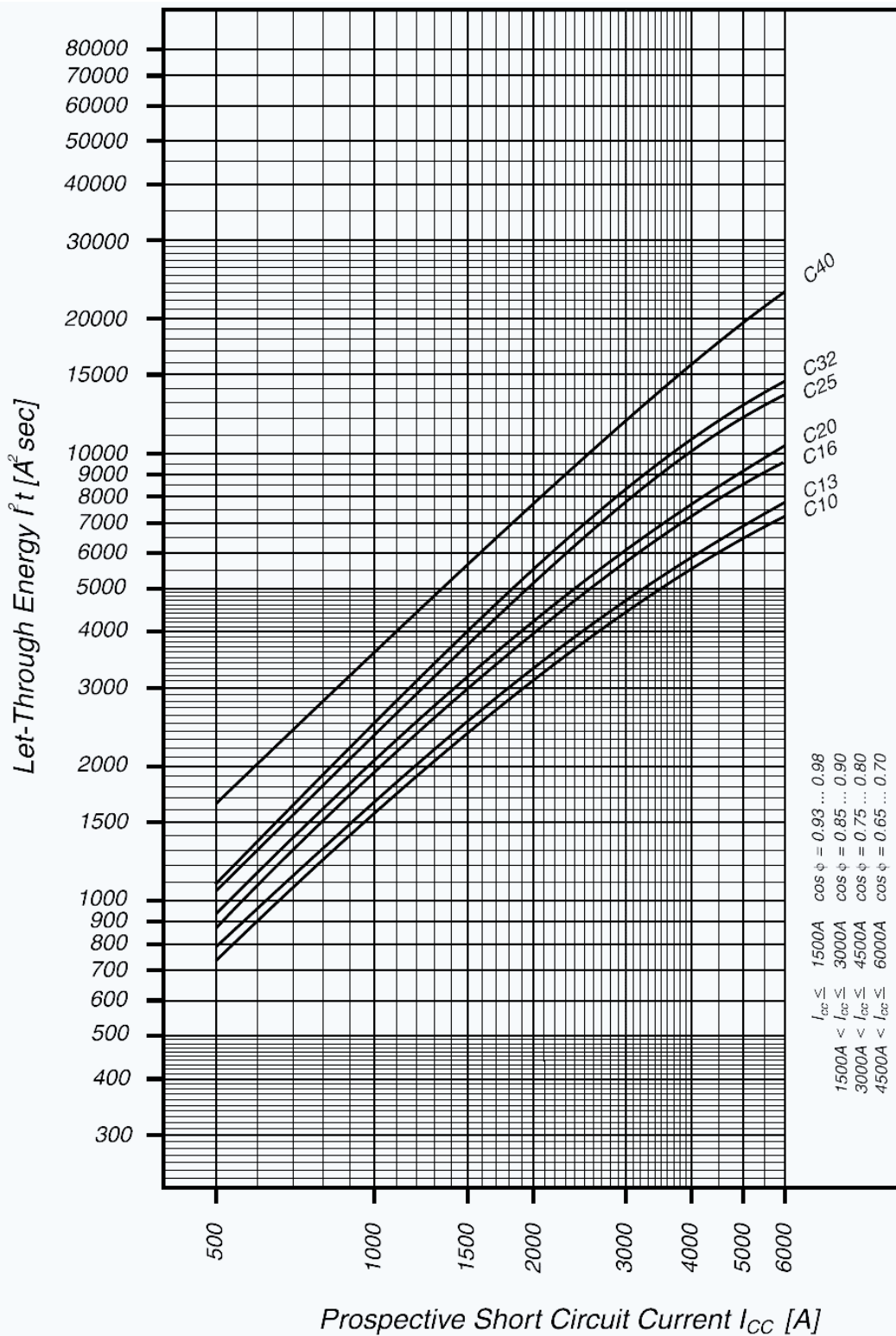
LET-THROUGH ENERGY, CHARACTERISTIC C, 2-POLE
OF BO21....., BO61.... AND BO71....



LET-THROUGH ENERGY, CHARACTERISTIC B, 2-POLE OF BO66.... AND BO67....



LET-THROUGH ENERGY, CHARACTERISTIC C, 2-POLE
OF BO66.... AND BO67....



SHORT CIRCUIT SELECTIVITY

SHORT CIRCUIT SELECTIVITY OF BO21....., BO61..... AND BO71..... TOWARDS D0 / D / NH00

**Short circuit selectivity of BO21....., BO61..... and BO71..... towards fuse link D01, D02, D03; Operating class gG;
Rated voltage: AC 400 V/DC 250 V**

Short circuit currents in kA, Rated currents of fuses in A

| BO.1.... | fuse link D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V | | | | | | | | | | |
|----------|---|------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | 16 | 20 | 25 | 32 | 35 | 40 | 50 | 63 | 80 | 100 | |
| B10 | <0,5 | 0,5 | 0,9 | 2 | 2,3 | 3,7 | 8 | 10 | 10 | 10 | |
| B13 | <0,5 | 0,5 | 0,8 | 1,7 | 1,9 | 3 | 6 | 10 | 10 | 10 | |
| B16 | n.s. | 0,5 | 0,7 | 1,5 | 1,7 | 2,4 | 4,4 | 6,8 | 10 | 10 | |
| B20 | n.s. | n.s. | 0,7 | 1,4 | 1,5 | 2,2 | 3,9 | 6 | 9,2 | 10 | |
| C10 | <0,5 | 0,5 | 0,8 | 1,7 | 1,9 | 3 | 6,1 | 10 | 10 | 10 | |
| C13 | <0,5 | 0,5 | 0,7 | 1,6 | 1,8 | 2,8 | 5,5 | 9,5 | 10 | 10 | |
| C16 | n.s. | <0,5 | 0,7 | 1,3 | 1,5 | 2,2 | 4 | 6,2 | 10 | 10 | |
| C20 | n.s. | n.s. | 0,6 | 1,3 | 1,4 | 2,1 | 3,7 | 5,6 | 8,5 | 10 | |

n.s. no selectivity

**Short circuit selectivity of BO21....., BO61..... and BO71..... towards fuse link DII, DIII, DIV; Operating class gG;
Rated voltage: AC 500 V/DC 500 V**

Short circuit currents in kA, Rated currents of fuses in A

| BO.1.... | fuse link DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V | | | | | | | | | | |
|----------|--|------|-----|-----|-----|-----|-----|-----|-----|--|--|
| | 16 | 20 | 25 | 32 | 35 | 50 | 63 | 80 | 100 | | |
| B10 | <0,5 | 0,5 | 0,9 | 1,8 | 2,9 | 5,6 | 10 | 10 | 10 | | |
| B13 | <0,5 | 0,5 | 0,8 | 1,5 | 2,4 | 4,5 | 10 | 10 | 10 | | |
| B16 | n.s. | 0,5 | 0,8 | 1,3 | 2 | 3,4 | 8 | 10 | 10 | | |
| B20 | n.s. | n.s. | 0,7 | 1,3 | 1,9 | 3,1 | 7,1 | 10 | 10 | | |
| C10 | <0,5 | 0,5 | 0,8 | 1,5 | 2,4 | 4,4 | 10 | 10 | 10 | | |
| C13 | <0,5 | 0,5 | 0,8 | 1,4 | 2,3 | 4,2 | 10 | 10 | 10 | | |
| C16 | n.s. | <0,5 | 0,7 | 1,2 | 1,9 | 3,2 | 7,6 | 10 | 10 | | |
| C20 | n.s. | n.s. | 0,7 | 1,2 | 1,8 | 2,9 | 6,5 | 9,7 | 10 | | |

n.s. no selectivity

**Short circuit selectivity of BO21....., BO61..... and BO71..... towards fuse link NH 000, 00; Operating class gG;
Rated voltage: AC 500 V/DC 250 V**

Short circuit currents in kA, Rated currents of fuses in A

| BO.1.... | fuse link NH 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V | | | | | | | | | | | | |
|----------|--|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | 16 | 20 | 25 | 32 | 35 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | |
| B10 | <0,5 | <0,5 | 0,8 | 1,5 | 2,3 | 3,2 | 5,7 | 9,1 | 10 | 10 | 10 | 10 | |
| B13 | <0,5 | <0,5 | 0,8 | 1,3 | 1,9 | 2,7 | 4,4 | 6,5 | 10 | 10 | 10 | 10 | |
| B16 | n.s. | <0,5 | 0,7 | 1,1 | 1,6 | 2,2 | 3,4 | 4,8 | 8 | 10 | 10 | 10 | |
| B20 | n.s. | n.s. | 0,6 | 1 | 1,4 | 2 | 3,1 | 4,3 | 7 | 10 | 10 | 10 | |
| C10 | <0,5 | <0,5 | 0,7 | 1,3 | 1,9 | 2,7 | 4,5 | 6,9 | 10 | 10 | 10 | 10 | |
| C13 | <0,5 | <0,5 | 0,7 | 1,2 | 1,8 | 2,5 | 4,1 | 6,1 | 10 | 10 | 10 | 10 | |
| C16 | n.s. | <0,5 | 0,6 | 1 | 1,5 | 2 | 3,1 | 4,4 | 7,5 | 10 | 10 | 10 | |
| C20 | n.s. | n.s. | 0,6 | 0,9 | 1,4 | 1,9 | 2,9 | 4,1 | 6,5 | 10 | 10 | 10 | |

n.s. no selectivity

SHORT CIRCUIT SELECTIVITY OF BO66.... AND BO67.... TOWARDS D0 / D / NH00

**Short circuit selectivity of BO66.... and BO67.... towards fuse link D01, D02, D03; Operating class gG;
Rated voltage: AC 400 V/DC 250**

Short circuit currents in kA, Rated currents of fuses in A

| BO.6.... | fuse link D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V | | | | | | | | | |
|----------|---|------|------|------|------|-----|-----|-----|-----|-----|
| | 16 | 20 | 25 | 32 | 35 | 40 | 50 | 63 | 80 | 100 |
| B10 | <0,5 | 0,5 | 0,9 | 2 | 2,3 | 3,7 | 6 | 6 | 6 | 6 |
| B13 | <0,5 | 0,5 | 0,8 | 1,7 | 1,9 | 3 | 6 | 6 | 6 | 6 |
| B16 | n.s. | 0,5 | 0,7 | 1,5 | 1,7 | 2,4 | 4,4 | 6 | 6 | 6 |
| B20 | n.s. | n.s. | 0,7 | 1,4 | 1,5 | 2,2 | 4 | 6 | 6 | 6 |
| B25 | n.s. | n.s. | n.s. | 1,2 | 1,3 | 1,8 | 3,1 | 4,7 | 6 | 6 |
| B32 | n.s. | n.s. | n.s. | n.s. | 1,2 | 1,7 | 2,7 | 3,8 | 5,5 | 6 |
| B40 | n.s. | n.s. | n.s. | n.s. | n.s. | 1,3 | 1,7 | 2,2 | 2,7 | 4,2 |
| C10 | <0,5 | 0,5 | 0,8 | 1,7 | 1,9 | 3 | 6 | 6 | 6 | 6 |
| C13 | <0,5 | 0,5 | 0,7 | 1,6 | 1,8 | 2,8 | 5,5 | 6 | 6 | 6 |
| C16 | n.s. | <0,5 | 0,7 | 1,3 | 1,5 | 2,2 | 4 | 6 | 6 | 6 |
| C20 | n.s. | n.s. | 0,6 | 1,3 | 1,4 | 2,1 | 3,7 | 5,6 | 6 | 6 |
| C25 | n.s. | n.s. | n.s. | 1,1 | 1,3 | 1,8 | 2,8 | 3,9 | 5,6 | 6 |
| C32 | n.s. | n.s. | n.s. | n.s. | 1,2 | 1,7 | 2,6 | 3,6 | 5,1 | 6 |
| C40 | n.s. | n.s. | n.s. | n.s. | n.s. | 1,3 | 1,9 | 3,3 | 3,2 | 5,8 |

n.s. no selectivity

**Short circuit selectivity of BO66.... and BO67.... towards fuse link DII, DIII, DIV; Operating class gG;
Rated voltage: AC 500 V/DC 500 V**

Short circuit currents in kA, Rated currents of fuses in A

| BO.6.... | fuse link DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V | | | | | | | | | |
|----------|--|------|------|------|------|-----|-----|-----|-----|---|
| | 16 | 20 | 25 | 32 | 35 | 50 | 63 | 80 | 100 | |
| B10 | <0,5 | 0,5 | 0,9 | 1,8 | 2,9 | 5,6 | 6 | 6 | 6 | 6 |
| B13 | <0,5 | 0,5 | 0,8 | 1,5 | 2,4 | 4,5 | 6 | 6 | 6 | 6 |
| B16 | n.s. | 0,5 | 0,8 | 1,3 | 2 | 3,4 | 6 | 6 | 6 | 6 |
| B20 | n.s. | n.s. | 0,7 | 1,3 | 1,9 | 3,1 | 6 | 6 | 6 | 6 |
| B25 | n.s. | n.s. | n.s. | 1,1 | 1,5 | 2,4 | 5,5 | 6 | 6 | 6 |
| B32 | n.s. | n.s. | n.s. | n.s. | 1,4 | 2,1 | 4,3 | 6 | 6 | 6 |
| B40 | n.s. | n.s. | n.s. | n.s. | n.s. | 1,4 | 2,4 | 2,9 | 5,1 | 6 |
| C10 | <0,5 | 0,5 | 0,8 | 1,5 | 2,4 | 4,4 | 6 | 6 | 6 | 6 |
| C13 | <0,5 | 0,5 | 0,8 | 1,4 | 2,3 | 4,2 | 6 | 6 | 6 | 6 |
| C16 | n.s. | <0,5 | 0,7 | 1,2 | 1,9 | 3,2 | 6 | 6 | 6 | 6 |
| C20 | n.s. | n.s. | 0,7 | 1,2 | 1,8 | 2,9 | 6 | 6 | 6 | 6 |
| C25 | n.s. | n.s. | n.s. | 1,1 | 1,5 | 2,3 | 4,4 | 6 | 6 | 6 |
| C32 | n.s. | n.s. | n.s. | n.s. | 1,4 | 2,2 | 4,1 | 5,6 | 6 | 6 |
| C40 | n.s. | n.s. | n.s. | n.s. | n.s. | 1,6 | 2,8 | 3,6 | 6 | 6 |

n.s. no selectivity

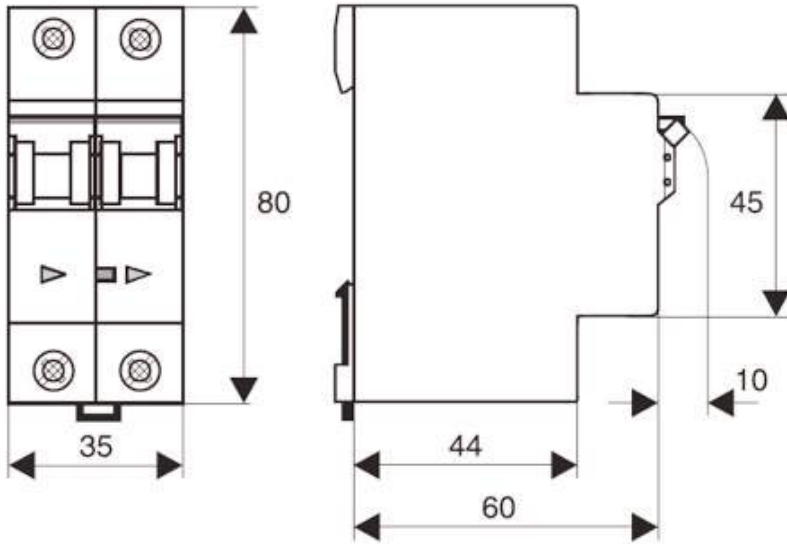
**Short circuit selectivity of BO66.... and BO67.... towards fuse link NH 000, 00; Operating class gG;
Rated voltage: AC 500 V/DC 250 V**

Short circuit currents in kA, Rated currents of fuses in A

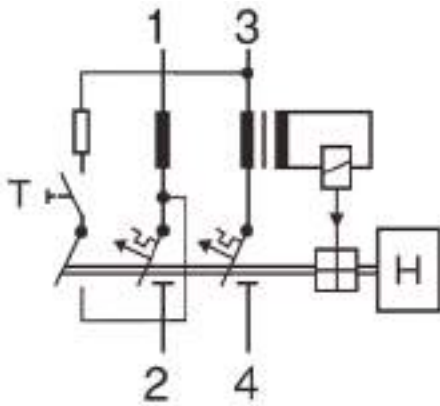
| BO.6.... | fuse link NH 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V | | | | | | | | | | | |
|----------|--|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| | 16 | 20 | 25 | 32 | 35 | 40 | 50 | 63 | 80 | 100 | 125 | 160 |
| B10 | <0,5 | <0,5 | 0,8 | 1,5 | 2,3 | 3,2 | 5,7 | 6 | 6 | 6 | 6 | 6 |
| B13 | <0,5 | <0,5 | 0,8 | 1,3 | 1,9 | 2,7 | 4,4 | 6 | 6 | 6 | 6 | 6 |
| B16 | n.s. | <0,5 | 0,7 | 1,1 | 1,6 | 2,2 | 3,4 | 4,8 | 6 | 6 | 6 | 6 |
| B20 | n.s. | n.s. | 0,6 | 1 | 1,4 | 2 | 3,1 | 4,3 | 6 | 6 | 6 | 6 |
| B25 | n.s. | n.s. | n.s. | 0,9 | 1,2 | 1,6 | 2,4 | 3,4 | 5,5 | 6 | 6 | 6 |
| B32 | n.s. | n.s. | n.s. | n.s. | 1,1 | 1,4 | 2,1 | 2,9 | 4,3 | 6 | 6 | 6 |
| B40 | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | 1,4 | 1,9 | 2,8 | 4,1 | 6 | 6 |
| C10 | <0,5 | <0,5 | 0,7 | 1,3 | 1,9 | 2,7 | 4,5 | 6 | 6 | 6 | 6 | 6 |
| C13 | <0,5 | <0,5 | 0,7 | 1,2 | 1,8 | 2,5 | 4,1 | 6 | 6 | 6 | 6 | 6 |
| C16 | n.s. | <0,5 | 0,6 | 1 | 1,5 | 2 | 3,1 | 4,4 | 6 | 6 | 6 | 6 |
| C20 | n.s. | n.s. | 0,6 | 0,9 | 1,4 | 1,9 | 2,9 | 4,1 | 6 | 6 | 6 | 6 |
| C25 | n.s. | n.s. | n.s. | 0,9 | 1,2 | 1,6 | 2,3 | 3 | 4,6 | 6 | 6 | 6 |
| C32 | n.s. | n.s. | n.s. | n.s. | 1,1 | 1,5 | 2,1 | 2,8 | 4,3 | 6 | 6 | 6 |
| C40 | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | 1,5 | 2,1 | 3,1 | 5,4 | 6 | 6 |

n.s. no selectivity

▀ DIMENSIONS



▀ WIRING DIAGRAM



■ TYP A, 30 mA RATED RESIDUAL CURRENT

| TYPE | CHARATERISTIC / RATED CURRENT / NUMBER OF POLES / RATED RESIDUAL CURRENT / TYPE | ORDER NO. |
|----------------------------|---|------------|
| RCBO B10/2 30mA Typ A 10kA | B /10A / 2 / 30mA / Typ A | BO618210-- |
| RCBO B13/2 30mA Typ A 10kA | B /13A / 2 / 30mA / Typ A | BO618213-- |
| RCBO B16/2 30mA Typ A 10kA | B /16A / 2 / 30mA / Typ A | BO618216-- |
| RCBO B20/2 30mA Typ A 10kA | B /20A / 2 / 30mA / Typ A | BO618220-- |
| RCBO B25/2 30mA Typ A 6kA | B /25A / 2 / 30mA / Typ A | BO668225-- |
| RCBO B32/2 30mA Typ A 6kA | B /32A / 2 / 30mA / Typ A | BO668232-- |
| RCBO B40/2 30mA Typ A 6kA | B /40A / 2 / 30mA / Typ A | BO668240-- |
| RCBO C10/2 30mA Typ A 10kA | C /10A / 2 / 30mA / Typ A | BO617210-- |
| RCBO C13/2 30mA Typ A 10kA | C /13A / 2 / 30mA / Typ A | BO617213-- |
| RCBO C16/2 30mA Typ A 10kA | C /16A / 2 / 30mA / Typ A | BO617216-- |
| RCBO C20/2 30mA Typ A 10kA | C /20A / 2 / 30mA / Typ A | BO617220-- |
| RCBO C25/2 30mA Typ A 6kA | C /25A / 2 / 30mA / Typ A | BO667225-- |
| RCBO C32/2 30mA Typ A 6kA | C /32A / 2 / 30mA / Typ A | BO667232-- |
| RCBO C40/2 30mA Typ A 6kA | C /40A / 2 / 30mA / Typ A | BO667240-- |

■ TYP A, 100 mA RATED RESIDUAL CURRENT

| TYPE | CHARATERISTIC / RATED CURRENT / NUMBER OF POLES / RATED RESIDUAL CURRENT / TYPE | ORDER NO. |
|-----------------------------|---|------------|
| RCBO B10/2 100mA Typ A 10kA | B /10A / 2 / 100mA Typ A | BO718210-- |
| RCBO B13/2 100mA Typ A 10kA | B /13A / 2 / 100mA Typ A | BO718213-- |
| RCBO B16/2 100mA Typ A 10kA | B /16A / 2 / 100mA Typ A | BO718216-- |
| RCBO B20/2 100mA Typ A 10kA | B /20A / 2 / 100mA Typ A | BO718220-- |
| RCBO B25/2 100mA Typ A 6kA | B /25A / 2 / 100mA Typ A | BO768225-- |
| RCBO B32/2 100mA Typ A 6kA | B /32A / 2 / 100mA Typ A | BO768232-- |
| RCBO B40/2 100mA Typ A 6kA | B /40A / 2 / 100mA Typ A | BO768240-- |
| RCBO C10/2 100mA Typ A 10kA | C /10A / 2 / 100mA Typ A | BO717210-- |
| RCBO C13/2 100mA Typ A 10kA | C /13A / 2 / 100mA Typ A | BO717213-- |
| RCBO C16/2 100mA Typ A 10kA | C /16A / 2 / 100mA Typ A | BO717216-- |
| RCBO C20/2 100mA Typ A 10kA | C /20A / 2 / 100mA Typ A | BO717220-- |
| RCBO C25/2 100mA Typ A 6kA | C /25A / 2 / 100mA Typ A | BO767225-- |
| RCBO C32/2 100mA Typ A 6kA | C /32A / 2 / 100mA Typ A | BO767232-- |
| RCBO C40/2 100mA Typ A 6kA | C /40A / 2 / 100mA Typ A | BO767240-- |