



RM Cores

Series/Type: RM 6

The following products presented in this data sheet are being withdrawn.

| Ordering Code | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|-----------------|--------------------|--------------------|----------------------|----------------|
| B65808N1005D002 | B65808N1006D002 | 2003-08-08 | 2004-02-29 | 2004-08-31 |
| B65659F0001X101 | B65659F0001X023 | 2004-01-23 | | |
| B65821C1008T002 | B65821C1008T001 | 2003-08-08 | 2004-02-29 | 2004-08-31 |
| B65807C0000R026 | B65807C0000R048 | 2002-08-02 | 2002-12-31 | 2003-03-31 |
| B65807J0000Y042 | B65807J0000Y066 | 2002-08-02 | 2002-12-31 | 2003-03-31 |
| B65808K1006D002 | B65808N1006D002 | 2003-08-08 | 2004-02-29 | 2004-08-31 |

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RM 6
Core
B65807

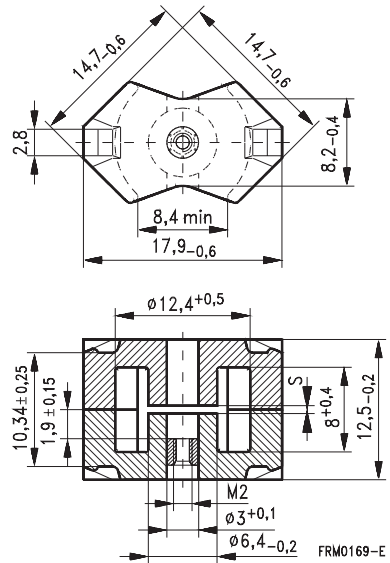
- In accordance with IEC 60431
- Core without center hole for transformer applications
- RM cores are supplied in sets

Magnetic characteristics (per set)

| | with center hole | without center hole | |
|--------------|------------------|---------------------|------------------|
| $\Sigma l/A$ | 0,86 | 0,78 | mm ⁻¹ |
| l_e | 26,9 | 28,6 | mm |
| A_e | 31,3 | 36,6 | mm ² |
| A_{min} | — | 31 | mm ² |
| V_e | 840 | 1 050 | mm ³ |

Approx. weight (per set)

| m | 4,9 | 5,3 | g |
|-----|-----|-----|---|
| | | | |


Gapped

| Material | A_L value nH | s approx. mm | μ_e | Ordering code ¹⁾ -J without center hole -N with threaded sleeve -C with center hole |
|----------|-------------------|----------------------|---------|---|
| K1 | $40 \pm 3 \%$ | 0,80 | 27,4 | B65807-+40-A1 |
| M33 | $63 \pm 3 \%$ | 0,60 | 43,2 | B65807-+63-A33 |
| | $100 \pm 3 \%$ | 0,38 | 68,5 | B65807-+100-A33 |
| N48 | $160 \pm 3 \%$ | 0,22 | 110 | B65807-+160-A48 |
| | $250 \pm 3 \%$ | 0,12 | 171 | B65807-+250-A48 |
| | $315 \pm 3 \%$ | 0,08 | 216 | B65807-+315-A48 |
| | $400 \pm 3 \%$ | 0,05 | 274 | B65807-+400-A48 |
| N41 | $250 \pm 3 \%$ | 0,17 | 155 | B65807-J250-A41 |

1) Replace the + by the code letter "C" or "N" for the required version. Standard version is "C".

Ungapped

| Material | A_L value nH | μ_e | A_{L1min} nH | P_V W/set | Ordering code -C with center hole -J w/o center hole |
|-------------------|-------------------|---------|-------------------|-------------------------------------|--|
| N26 | 2200 + 30/- 20 % | 1500 | | | B65807-C-R26 |
| N30 | 4300 + 30/- 20 % | 2670 | | | B65807-J-R30 |
| T57 ¹⁾ | 3500 + 30/- 20 % | 2180 | | | B65807-J-R57 |
| T38 | 8600 + 40/- 30 % | 5340 | | | B65807-J-Y38 |
| T42 | 12300 + 40/- 30 % | 7630 | | | B65807-J-Y42 |
| N49 | 1700 + 30/- 20 % | 1060 | 960 | < 0,15 (50 mT, 500 kHz, 100 °C) | B65807-J-R49 |
| N87 | 2400 + 30/- 20 % | 1490 | 1450 | < 0,51 (200 mT, 100 kHz, 100 °C) | B65807-J-R87 |
| N97 ¹⁾ | 2400 + 30/- 20 % | 1490 | 1450 | < 0,39 (200 mT, 100 kHz, 100 °C) | B65807-J-R97 |
| N41 | 3100 + 30/- 20 % | 1920 | 1450 | < 0,16 (200 mT, 25 kHz, 100 °C) | B65807-J-R41 |

1) Preliminary data

Coil former, squared pins

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: H \geq max. operating temperature 180 °C), color code black

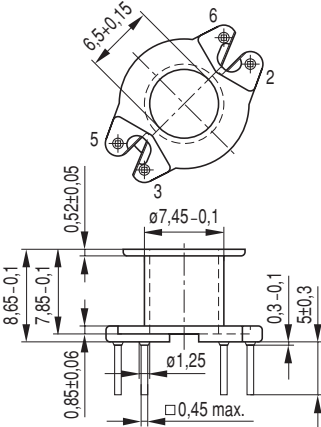
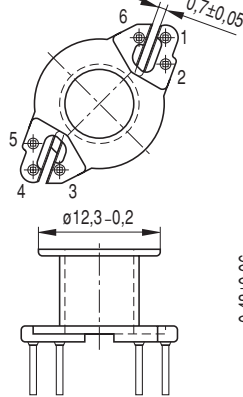
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

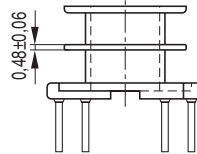
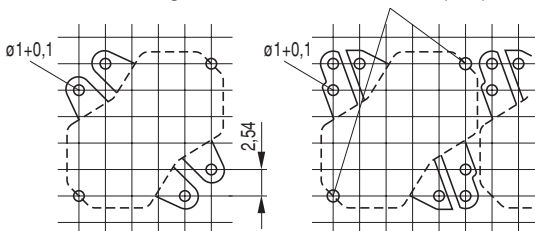
Winding: see "Processing Notes", page 153

For matching clamp and insulating washers see page 210.

| Sections | A_N mm ² | l_N mm | A_R value $\mu\Omega$ | Pins | Ordering code |
|----------|--------------------------|-------------|----------------------------|------------------|--|
| 1 | 15 | 30 | 69 | 4 5 6 6 | B65808-N1004-D1 B65808-N1005-D1 B65808-N1006-D1 B65808-W1006-D1 |
| 2 | 14 | 30 | 73 | 5 6 | B65808-N1005-D2 B65808-N1006-D2 |

4 pins

5 + 6 pins


Pin 4 is omitted
in 5-pin version


Hole arrangement
View in mounting direction


FRM0267.4

50°±10°

Coil former, pins squared in the start-of-winding area

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085:

H \geq max. operating temperature 180 °C), color code blue

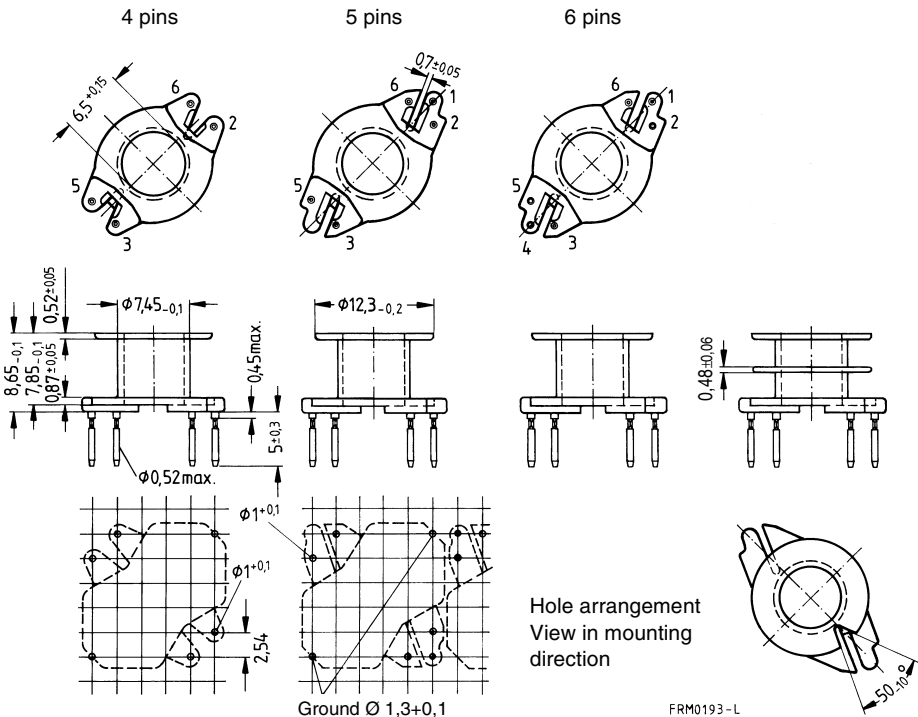
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see "Processing Notes", page 153

For matching clamp and insulating washers see page 210.

| Sections | A_N mm ² | l_N mm | A_R value $\mu\Omega$ | Pins | Ordering code |
|----------|--------------------------|-------------|----------------------------|------|-----------------|
| 1 | 15 | 30 | 69 | 4 | B65808-K1004-D1 |
| | | | | 5 | B65808-K1005-D1 |
| | | | | 6 | B65808-K1006-D1 |
| 2 | 14 | 30 | 73 | 4 | B65808-K1004-D2 |
| | | | | 6 | B65808-K1006-D2 |



Coil former for SMPS transformers with line isolation

The creepage distances and clearances are designed such that the coil former is suitable for use in SMPS transformers with line isolation.

- Closed center flange with external wire guide
- Pins squared in the start-of-winding area
- Optimized for use with automatic winding machines

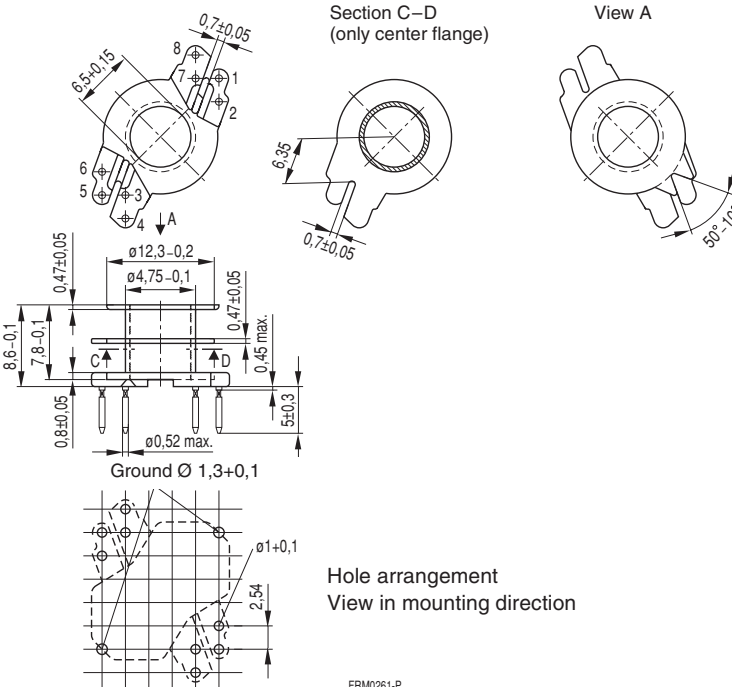
Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085:
F \triangleq max. operating temperature 155 °C), color code green

Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see "Processing Notes", page 153

| Sections | A_N mm ² | l_N mm | A_R value $\mu\Omega$ | Pins | Ordering code |
|----------|--------------------------|-------------|----------------------------|------|-----------------|
| 2 | 14 | 30 | 73 | 8 | B65808-X1108-D2 |



Coil former for power applications with angled pins

Optimized for automatic winding

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:

 $F \triangleq$ max. operating temperature 155 °C), color code black

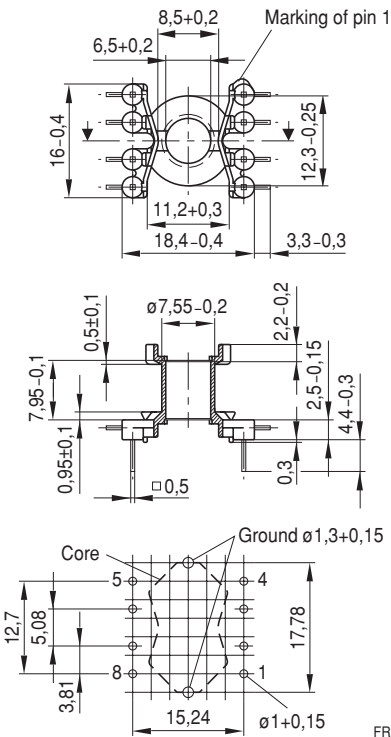
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see "Processing Notes", page 153

For matching clamp and insulating washer 1 see page 210

| Sections | A_N mm ² | l_N mm | A_R value $\mu\Omega$ | Pins | Ordering code |
|----------|--------------------------|-------------|----------------------------|------|-----------------|
| 1 | 15 | 30 | 69 | 8 | B65808-E1508-T1 |


 Hole arrangement
View in mounting direction

FRM0298-Y

Coil former for power applications with straight pins

Optimized for automatic winding

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:

 $H \triangleq$ max. operating temperature 180 °C), color code black

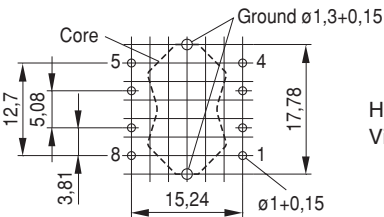
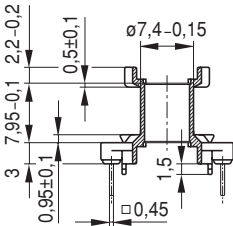
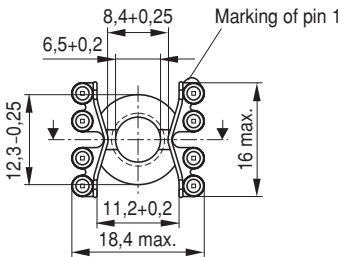
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see "Processing Notes", page 153

For matching clamp and insulating washer 1 see page 210

| Sections | A_N mm ² | l_N mm | A_R value $\mu\Omega$ | Pins | Ordering code |
|----------|--------------------------|-------------|----------------------------|------|-----------------|
| 1 | 15 | 30 | 69 | 8 | B65808-W1508-T1 |


 Hole arrangement
View in mounting direction

FRM0299-7

Clamp

- With ground terminal, made of stainless spring steel (tinned), 0,435 mm thick
- Solderability to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s
- Also available as strip clamp on reels

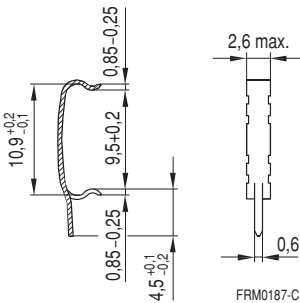
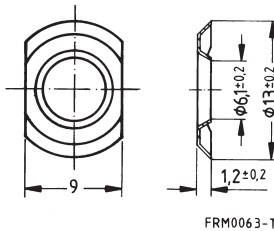
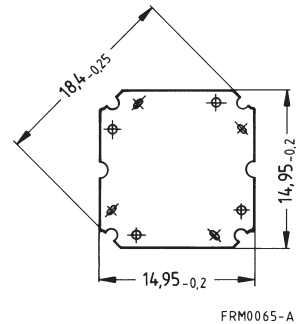
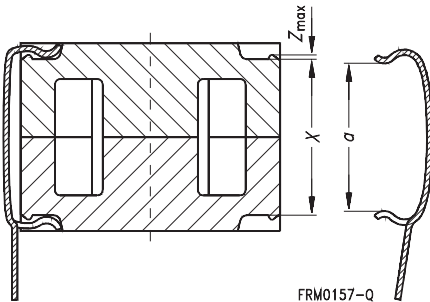
Insulating washer 1 between core and coil former

- For tolerance compensation and for insulation
- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E \triangleq 120 °C), 0,08 mm thick

Insulating washer 2 for double-clad PCBs

- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E \triangleq 120 °C), 0,3 mm thick

| | Ordering code |
|---|---------------|
| Clamp (ordering code per piece, 2 are required) | B65808-A2203 |
| Insulating washer 1 (reel packing, PU = 1 reel) | B65808-A5000 |
| Insulating washer 2 (bulk) | B65808-C2005 |

Clamp

Insulating washer 1

Insulating washer 2

Clamping forces for RM 6


F_{\min} : Extension of clamp from a to $a_2 = X_{\min}$
 F_{\max} : Extension of clamp from a to $a_1 = X_{\max}$

| | | |
|------------------------------|------------|------|
| Clamp opening a (mm) | 9,5 + 0,2 | |
| Core nose Z_{\max} (mm) | 0,22 | |
| Height of core pair X (mm) | X_{\min} | 10,1 |
| | X_{\max} | 10,6 |
| Clamping force F (N) | F_{\min} | 7 |
| | F_{\max} | 50 |



SMD coil former with gullwing terminals

Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:
F \triangleq max. operating temperature 155 °C), color code black

Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 350 °C, 1 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s
permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

Winding: see "Processing Notes", page 160

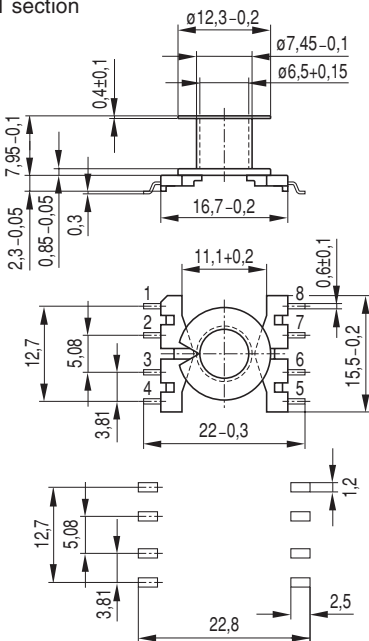
Clamp

- Without ground terminal, made of stainless spring steel, 0,435 mm thick
- Also available as strip clamp (each carton containing 2 reels) on request

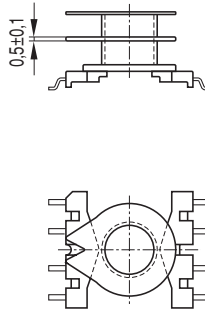
| Sections | A _N mm ² | l _N mm | A _R value μΩ | Terminals | Ordering code |
|----------|---|----------------------|----------------------------|-----------|-----------------|
| 1 | 16,2 | 31 | 66 | 8 | B65821-C1008-T1 |
| 2 | 15,2 | 31 | 69 | 8 | B65821-C1008-T2 |
| Clamp | (ordering code per piece, 2 are required) | | | | B65808-J2204 |

Coil former

1 section



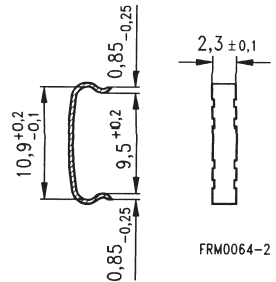
2 sections



Recommended
PCB layout

FRM0238-Q

Clamp



FRM0064-2

SMD

SMD coil former with J terminals

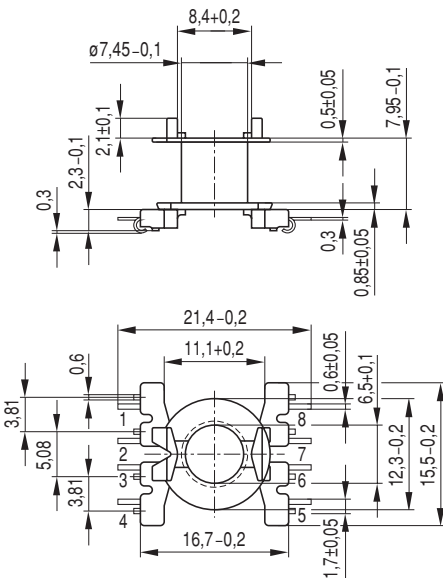
- Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:
 $F \triangleq$ max. operating temperature 155 °C), color code black
- Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 350 °C, 1 s
- Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s
 permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s
- Winding: see "Processing Notes", page 160

Clamp

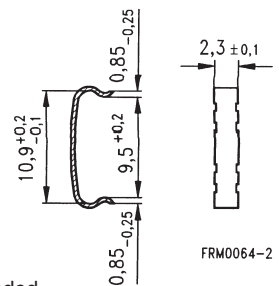
- Without ground terminal, made of stainless spring steel, 0,435 mm thick
- Also available as strip clamp (each carton containing 2 reels) on request

| Sections | A _N mm ² | l _N mm | A _R value μΩ | Terminals | Ordering code |
|----------|---|----------------------|----------------------------|-----------|-----------------|
| 1 | 16,2 | 31 | 66 | 8 | B65821-J1008-T1 |
| Clamp | (ordering code per piece, 2 are required) | | | | B65808-J2204 |

Coil former

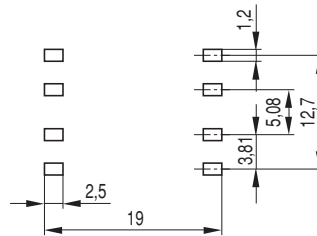


Clamp



FRM0064-2

Recommended PCB layout



FRM0239-Y

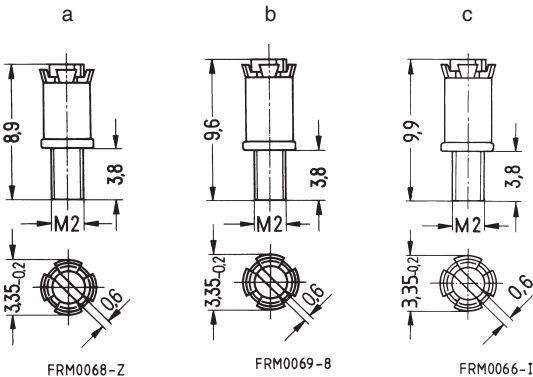
| | |
|--------------------|---------------|
| RM 6 | B65659 |
| Accessories | B63399 |

Adjusting screw

- Tube core with thread and core brake made of GFR polyterephthalate
- Plastic **adjusting screwdriver** (not shown)
- Plastic **handle** for adjusting screwdriver (not shown)

| Core RM 6 | | Adjusting screw | | | | Min. adjusting range % | Ordering code |
|------------------------------|-------------------------|-----------------|-------------------------|----------|------------|------------------------|----------------|
| Material | A _L value nH | Fig. | Tube core Ø × length mm | Material | Color code | | |
| K 1 | 40 | a | 2,62 × 3,7 | Si 1 | white | 15 | B65659-F1-X101 |
| M 33 | 63 | a | 2,62 × 3,7 | Si 1 | white | 17 | B65659-F1-X101 |
| | 100 | c | 2,82 × 4,4 | Si 1 | brown | 16 | B65659-F4-X101 |
| N 48 | 160 | a | 2,62 × 3,7 | K 1 | green | 17 | B65659-F1-X1 |
| | 250 | a | 2,62 × 3,7 | N 22 | red | 11 | B65659-F1-X23 |
| | 315 | b | 2,75 × 4,4 | N 22 | black | 13 | B65659-F3-X23 |
| | 400 | c | 2,82 × 4,4 | N 22 | yellow | 11 | B65659-F4-X23 |
| Adjusting screwdriver | | | | | | | B63399-B4 |
| Handle | | | | | | | B63399-B5 |

Adjusting screws



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