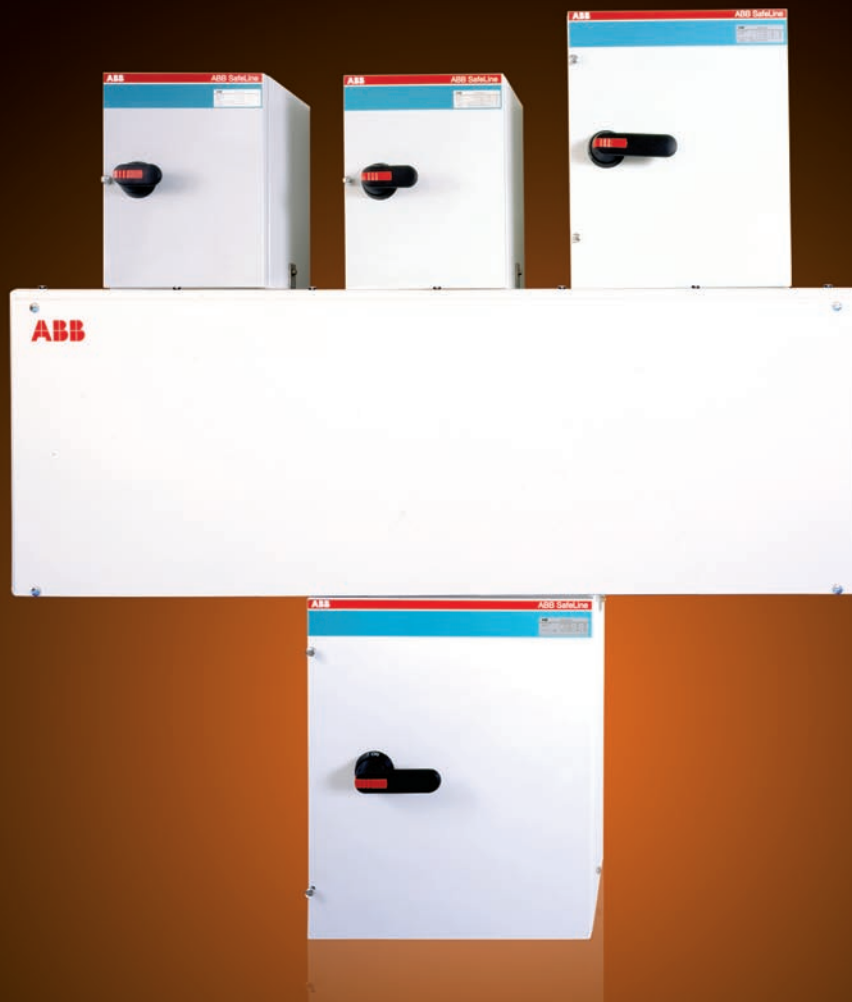




Technical Brochure

## Enclosure

- Busbar Chamber System (BBS)
- Enclosed Switch-disconnectors (LSB)
- Enclosed Fuse Switches (FSB)

Power and productivity  
for a better world™



# Busbar Chamber System (BBS)

## Technical Specification

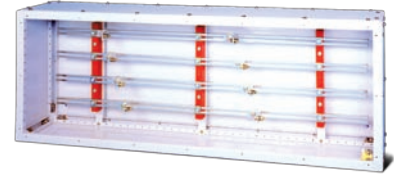
ABB "BBS Busbar Chamber Systems" is made of 1.5mm or 2mm steel plate finished with impact-resistant stove textured grey epoxy powder coating to RAL7032 (standard) or RAL7035 and other alternative colours on request.

The BBS Busbar Chamber is a three phase four wire (Full Neutral) system and suitable to future extension at both side.

All Busbars provided are hard drawn, high conductivity, electro tin-plated copper to BS1432. The busbars are 10mm in thickness. Two parallel busbars are used per phase for 400A or above. The casing of the busbar chamber is part of the earthing as tested (standard production).

ABB "BBS Busbar Chamber Systems" are designed, manufactured and tested in the IEC60439 Part 2, BSEN60439 Part 2 :

- **Rated insulation voltage** : up to 1000VAC and 6kV impulse voltage
- **Rated Current** : 400A, 630A, 800A  
(higher current rating can be available on request)
- **Rated operating frequency** : 50Hz / 60Hz
- **Dielectric Power frequency Test** : 2500VAC for 60 sec (standard)  
3500VAC for 60 sec (on request)
- **Temperature rise test** : in compliance to BSEN60439-1
- **Degree of Protection** : IP41
- **Short circuit test** : 84kA peak / 40kA 1 sec for 800A  
40kA Rated fused for 400A



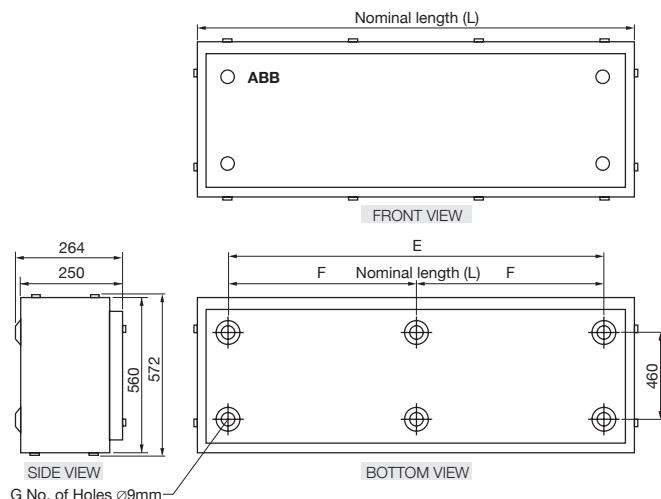
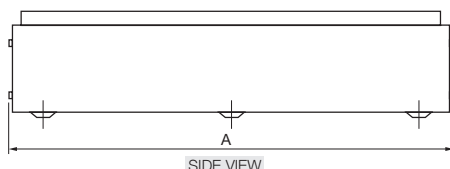
### Dimension (mm)

These are produced in 400A, 630A and 800A ratings and in 7 nominal lengths as below.

| Type     | Description         | Nominal Length (L) | A (mm) | E (mm) | F (mm) | G (No. of Holes) |
|----------|---------------------|--------------------|--------|--------|--------|------------------|
| BBS 400A | 400A Busbar Chamber | 570                | 582    | 520    | -      | 4                |
|          |                     | 760                | 772    | 660    | -      | 4                |
| BBS 630A | 630A Busbar Chamber | 950                | 962    | 850    | -      | 4                |
|          |                     | 1140               | 1152   | 1040   | -      | 4                |
| BBS 800A | 800A Busbar Chamber | 1330               | 1342   | 1230   | -      | 4                |
|          |                     | 1520               | 1532   | 1420   | 710    | 6                |
|          |                     | 1710               | 1722   | 1610   | 805    | 6                |

### Tee Off Cable Connector

| Type     | Rating |
|----------|--------|
| CCS 250A | 250A   |
| CCS 400A | 400A   |
| CCS 630A | 630A   |
| CCS 800A | 800A   |

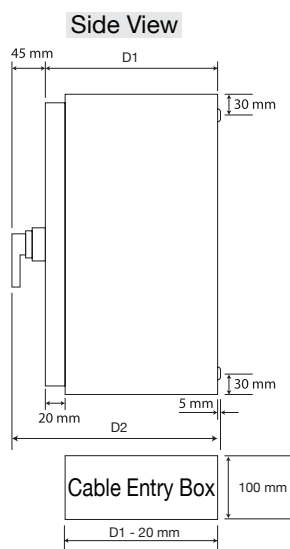
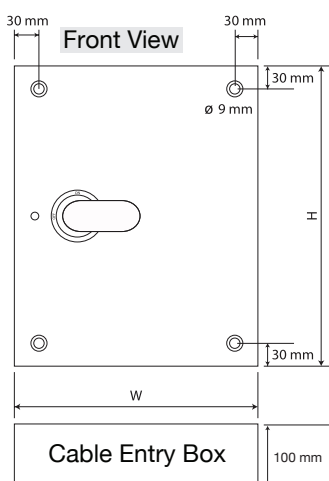


# Enclosed Switch-disconnectors and Fuse Switches

## Technical Specifications



(4 × Ø DIA Fixing Holes)



Standard : IEC 60947 - 1, 3

Degree of Protection : IP41 (IP54 on request)

Offer ample wiring space and easy installation

High quality electro-galvanised steel with epoxy powder coating

### Enclosed Switch-disconnectors (LSB)

| Type                                     |                     | Rated Operational Current (A) |                   | Dimensions (W x H x D) mm |     |     |     |   |
|------------------------------------------|---------------------|-------------------------------|-------------------|---------------------------|-----|-----|-----|---|
| 3 Poles<br>(with removable neutral link) | 4 Poles             | AC-22A up to 500V             | AC-23A up to 415V | W                         | H   | D1  | D2  | Ø |
| LSB-OT63F-3P(IP41)                       | LSB-OT63F-4P(IP41)  | 63                            | 45                | 140                       | 200 | 100 | 145 | 9 |
| LSB-OT80F-3P(IP41)                       | LSB-OT80F-4P(IP41)  | 80                            | 75                |                           |     |     |     |   |
| LSB-OT160-3P(IP41)                       | LSB-OT160-4P(IP41)  | 160                           | 135               |                           |     |     |     |   |
| LSB-OT200-3P(IP41)                       | LSB-OT200-4P(IP41)  | 200                           | 200               | 300                       | 400 | 200 | 245 |   |
| LSB-OT250-3P(IP41)                       | LSB-OT250-4P(IP41)  | 250                           | 250               |                           |     |     |     |   |
| LSB-OT315-3P(IP41)                       | LSB-OT315-4P(IP41)  | 315                           | 315               |                           |     |     |     |   |
| LSB-OT400-3P(IP41)                       | LSB-OT400-4P(IP41)  | 400                           | 400               |                           |     |     |     |   |
| LSB-OT630-3P(IP41)                       | LSB-OT630-4P(IP41)  | 630                           | 630               | 500                       | 600 | 250 | 295 |   |
| LSB-OT800-3P(IP41)                       | LSB-OT800-4P(IP41)  | 800                           | 800               |                           |     |     |     |   |
| LSB-OT1000-3P(IP41)                      | LSB-OT1000-4P(IP41) | 1000                          | 800               | 600                       | 800 | 300 | 380 |   |

### Enclosed Fuse Switches (FSB)

| Type                                     |                     | Rated Operational Current (A) |                   | Dimensions (W x H x D) mm |     |     |     |   |
|------------------------------------------|---------------------|-------------------------------|-------------------|---------------------------|-----|-----|-----|---|
| 3 Poles<br>(with removable neutral link) | 4 Poles             | AC-22A up to 500V             | AC-23A up to 500V | W                         | H   | D1  | D2  | Ø |
| FSB-OS32G-3P(IP41)                       | FSB-OS32G-4P(IP41)  | 32                            | 32                |                           |     |     |     | 9 |
| FSB-OS63G-3P(IP41)                       | FSB-OS63G-4P(IP41)  | 63                            | 63                | 350                       | 300 | 200 | 245 |   |
| FSB-OS100G-3P(IP41)                      | FSB-OS100G-4P(IP41) | 100                           | 100               |                           |     |     |     |   |
| FSB-OS160G-3P(IP41)                      | FSB-OS160G-4P(IP41) | 160                           | 160               |                           |     |     |     |   |
| FSB-OS200-3P(IP41)                       | FSB-OS200-4P(IP41)  | 200                           | 200               | 400                       | 500 | 250 | 295 |   |
| FSB-OS250-3P(IP41)                       | FSB-OS250-4P(IP41)  | 250                           | 250               |                           |     |     |     |   |
| FSB-OS315-3P(IP41)                       | FSB-OS315-4P(IP41)  | 315                           | 315               | 500                       | 600 | 250 | 295 |   |
| FSB-OS400-3P(IP41)                       | FSB-OS400-4P(IP41)  | 400                           | 400               |                           |     |     |     |   |
| FSB-OS630-3P(IP41)                       | FSB-OS630-4P(IP41)  | 630                           | 630               | 600                       | 800 | 300 | 345 |   |
| FSB-OS800-3P(IP41)                       | FSB-OS800-4P(IP41)  | 800                           | 800               |                           |     |     |     |   |

# Enclosed Switch-disconnectors (LSB)

## Technical Data for Switch-disconnectors (OT)

The switch-disconnector series comply with the major international standards and have a comprehensive range of approvals.

Tested according to IEC60947-1 and 3

- Switch-disconnectors
- Motor circuit switches
- Main switches
- Local safety switches
- Special switches
- Busbar couplers



| Type                                                                                |                    |           |    | OT63F         | OT80F         | OT160E  |
|-------------------------------------------------------------------------------------|--------------------|-----------|----|---------------|---------------|---------|
| Switch Disconnecter                                                                 | 3 pole             |           |    | OT63F3        | OT80F3        | OT160E3 |
|                                                                                     | 4 pole             |           |    | OT63F4N2      | OT80F4N2      | OT160E4 |
| Rated insulation voltage and<br>Rated operational voltage AC-20 and DC-20           |                    |           |    |               |               |         |
|                                                                                     | Pollution degree 3 | V         |    | 750           | 750           | 1000    |
| Rated thermal current and Rated<br>operational current AC-20 / DC-20 (ambient 40°C) |                    |           |    |               |               |         |
|                                                                                     | In open air        | A         |    | 63            | 80            | 200     |
|                                                                                     | In enclosure       | A         |    | 63            | 80            | 160     |
| Rated operational current                                                           | AC-21A             | <415 V    | A  | 63            | 80            | 200     |
|                                                                                     |                    | <500 V    | A  | 63            | 80            | 200     |
|                                                                                     |                    | <690 V    | A  | 63            | 80            | 160     |
|                                                                                     | AC-22A             | <415 V    | A  | 63            | 80            | 200     |
|                                                                                     |                    | <500 V    | A  | 63            | 80            | 200     |
|                                                                                     |                    | <690 V    | A  | 63            | 80            | 160     |
|                                                                                     | AC-23A             | <415 V    | A  | 63            | 75            | 135     |
|                                                                                     |                    | <500 V    | A  | 45            | 58            | 125     |
|                                                                                     |                    | <690 V    | A  | 20            | 20            | 80      |
|                                                                                     | AC-23              | 220-240 V | kW | 11            | 22            | 45      |
|                                                                                     |                    | 400/415 V | kW | 22            | 37            | 75      |
|                                                                                     |                    | 500/690 V | kW | 22/15         | 37/18.5       | 75/75   |
| Rated breaking capacity in category AC-23                                           | <415 V             | A         |    | 360           | 640           | 1080    |
|                                                                                     | <500 V             | A         |    | 360           | 464           | 1000    |
|                                                                                     | <690 V             | A         |    | 160           | 160           | 640     |
| Rated conditional short-circuit current I <sub>cw</sub> (r.m.s.)                    |                    | kA/A      |    | 50/80, 100/80 | 50/80, 100/80 | 100/250 |
| Rated short-time withstand current (r.m.s.)                                         | 690 V, 1s          | kA        |    | 1             | 1.5           | -       |
|                                                                                     | 1000 V, 1s         | kA        |    | -             | -             | 8       |
| Rated short circuit making capacity I <sub>cw</sub> (peak)                          | <690 V             | kA        |    | 1.4           | 2.1           | -       |
|                                                                                     | <1000 V            | kA        |    | -             | -             | 30      |
| Cable Size (cu-wire size suitable for terminal clamps)                              |                    | mm        |    | 1.5-35        | 1.5-35        | 10-70   |
| Terminal bolt size                                                                  |                    |           |    | -             | -             | -       |

1) The value is 92 kA for 4-pole switch-disconnectors

2) Acc. to IEC60947-1, § 6.1.1

|  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |           |           |                    |
|--|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|-----------|--------------------|
|  |  |  |  |  |           |           |                    |
|  | OT200E                                                                            | OT250E                                                                            | OT315E                                                                              | OT400E                                                                              | OT630E    | OT800E    | OT1000E            |
|  | OT200E03P                                                                         | OT250E03P                                                                         | OT315E03P                                                                           | OT400E03P                                                                           | OT630E03P | OT800E03P | OT1000E12P         |
|  | OT200E04P                                                                         | OT250E04P                                                                         | OT315E04P                                                                           | OT400E04P                                                                           | OT630E04P | OT800E04P | OT1000E22P         |
|  | 1000                                                                              | 1000                                                                              | 1000                                                                                | 1000                                                                                | 1000      | 1000      | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000 <sup>2)</sup> |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000 <sup>2)</sup> |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                                                                                 | 630       | 800       | 1000               |
|  | 60                                                                                | 75                                                                                | 100                                                                                 | 132                                                                                 | 200       | 250       | -                  |
|  | 110                                                                               | 140/145                                                                           | 160/180                                                                             | 220/230                                                                             | 355       | 450       | 560                |
|  | 132/200                                                                           | 170/250                                                                           | 220/315                                                                             | 280/400                                                                             | 400/630   | 560/800   | 710/1000           |
|  | 1600                                                                              | 2000                                                                              | 2520                                                                                | 3200                                                                                | 5040      | 6400      | 10000              |
|  | 1600                                                                              | 2000                                                                              | 2520                                                                                | 3200                                                                                | 5040      | 6400      | 10000              |
|  | 1600                                                                              | 2000                                                                              | 2520                                                                                | 3200                                                                                | 5040      | 6400      | 10000              |
|  | 100/315                                                                           |                                                                                   | 100/450                                                                             |                                                                                     | 100/1000  |           | 80/1250, 100/1250  |
|  | -                                                                                 |                                                                                   | -                                                                                   |                                                                                     | -         |           | 50                 |
|  | 8                                                                                 |                                                                                   | 15                                                                                  |                                                                                     | 20        |           | -                  |
|  | -                                                                                 |                                                                                   | -                                                                                   |                                                                                     | -         |           | 110 <sup>1)</sup>  |
|  | 30                                                                                |                                                                                   | 65                                                                                  |                                                                                     | 80        |           | -                  |
|  | -                                                                                 |                                                                                   | -                                                                                   |                                                                                     | -         |           | -                  |
|  | M8x25                                                                             |                                                                                   | M10x30                                                                              |                                                                                     | M12x40    |           | M12x50             |



# Enclosed Fuse Switches (FSB)

## Technical Data for Fuse Switches (OS)

Fuse Switches range from 32A to 800A, 690 V

Tested according to IEC60947-1 and 3

- Main switches
- Motor circuit switches
- Isolator switches
- Local safety switches
- Special switches



| Type                                                                                                                                                                                                                                                 |                            |     | OS32                | OS63                | OS100               | OS160        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----|---------------------|---------------------|---------------------|--------------|
| Fuse Switches                                                                                                                                                                                                                                        | 3 pole                     |     | OS32GB03P           | OS63GB03P           | OS100GB03P          | OS160GB03P   |
|                                                                                                                                                                                                                                                      | 4 pole                     |     | OS32GB04N1P         | OS63GB04N1P         | OS100GB04N1P        | OS160GB04N1P |
| Rated insulation voltage and Rated operational voltage AC-20 and DC-20                                                                                                                                                                               | Pollution degree 3 V       |     | 1000                | 1000                | 1000                | 1000         |
| Dielectric strength                                                                                                                                                                                                                                  | 50Hz 1min                  | kV  | 10                  | 10                  | 10                  | 10           |
| Rated impulse with standard voltage                                                                                                                                                                                                                  |                            | kV  | 12                  | 12                  | 8                   | 8            |
| Rated thermal current in ambient 35°C and temporarily 40°C/max. fuse power dissipation <sup>1)</sup>                                                                                                                                                 | In open air                | A/W | 32/7.5              | 63/7.5              | 100/12              | 160/12       |
|                                                                                                                                                                                                                                                      | In enclosure <sup>2)</sup> | A/W | 32/7.5              | 63/7.5              | 100/12              | 160/12       |
| Rated operational current<br>AC-21A / AC-22A / AC-23A                                                                                                                                                                                                | <500 V                     | A   | 32/32/32            | 63/63/63            | 100/100/100         | 160/160/160  |
|                                                                                                                                                                                                                                                      | 690 V                      | A   | 32/32/32            | 63/63/63            | 100/100/100         | 160/160/160  |
| Rated breaking capacity in category AC-23                                                                                                                                                                                                            | ≤690 V                     | A   | 504                 | 504                 | 1280                | 1280         |
| Rated conditional short-circuit current I <sub>p</sub> (r.m.s.) and corresponding max. allowed cut-off current I <sub>c</sub> .<br>The cut-off currents I <sub>c</sub> refers to values listed by manufacturers (single phase test acc. to IEC60269) | 80kA, 415 V                | kA  | 13.5                | 13.5                | 23.5                | 23.5         |
|                                                                                                                                                                                                                                                      | 100kA, 500 V               | kA  | 12.5                | 12.5                | 25.5                | 25.5         |
|                                                                                                                                                                                                                                                      | 80kA, 690 V                | kA  | 11.5                | 11.5                | 20.5                | 20.5         |
| Rated operational power, AC-23A <sup>1)</sup>                                                                                                                                                                                                        | 230 V                      | kW  | 7.5                 | 18.5                | 30                  | 45           |
| The kW-ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors                                                                                                                                                                 | 400 V                      | kW  | 15                  | 30                  | 55                  | 75           |
|                                                                                                                                                                                                                                                      | 415 V                      | kW  | 15                  | 30                  | 55                  | 75           |
|                                                                                                                                                                                                                                                      | 500 V                      | kW  | 18.5                | 37                  | 55                  | 90           |
|                                                                                                                                                                                                                                                      | 690 V                      | kW  | 22                  | 55                  | 90                  | 132          |
| Fuse Type, IEC 60269-2-1                                                                                                                                                                                                                             |                            |     |                     |                     |                     |              |
| Size of fuse link bolts                                                                                                                                                                                                                              |                            |     | A2-A3 <sup>1)</sup> | A2-A3 <sup>1)</sup> | A2-A4 <sup>2)</sup> | A2-A4        |
| Distance of fuse link bolts                                                                                                                                                                                                                          | mm                         |     | M5/73               | M5/73               | M5/73, M8/94        | M5/73, M8/94 |

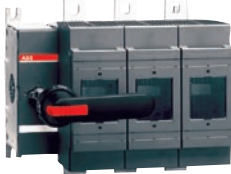
Remark : Some fuse links limit these figures further. Starting current characteristics must be considered separately.

1) Max fuse body diameter : 22mm

2) Max fuse body diameter : 32mm

3) Max fuse body diameter : 52mm

4) Max fuse body diameter : 62mm

|  |                                                                                   |                                                                                   |                                                                                     |                     |              |              |
|--|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|--------------|--------------|
|  |  |  |  |                     |              |              |
|  | <b>OS200</b>                                                                      | <b>OS250</b>                                                                      | <b>OS315</b>                                                                        | <b>OS400</b>        | <b>OS630</b> | <b>OS800</b> |
|  | OS200B03P                                                                         | OS250B03P                                                                         | OS315B03P                                                                           | OS400B03P           | OS630B03P    | OS800B03P    |
|  | OS200B04N2P                                                                       | OS250B04N2P                                                                       | OS315B04N2P                                                                         | OS400B04N2P         | OS630B04N2P  | OS800B04N2P  |
|  | 1000                                                                              | 1000                                                                              | 1000                                                                                | 1000                | 1000         | 1000         |
|  | 10                                                                                | 10                                                                                | 10                                                                                  | 10                  | 10           | 10           |
|  | 12                                                                                | 12                                                                                | 12                                                                                  | 12                  | 12           | 12           |
|  | 200/17                                                                            | 250/23                                                                            | 315/32                                                                              | 400/45              | 630/60       | 800/65       |
|  | 200/15                                                                            | 250/20                                                                            | 315/32                                                                              | 400/30              | 570/50       | 720/55       |
|  | 200/200/200                                                                       | 250/250/250                                                                       | 315/315/315                                                                         | 400/400/400         | 630/630/630  | 800/800/800  |
|  | 200/200/200                                                                       | 250/250/250                                                                       | 315/315/315                                                                         | 400/400/400         | 630/630/630  | 800/800/800  |
|  | 1600                                                                              | 2000                                                                              | 3200                                                                                | 3200                | 6400         | 6400         |
|  | 35                                                                                | 40.5                                                                              | -                                                                                   | 59                  | 77           | 77           |
|  | 37.5                                                                              | 37.5                                                                              | -                                                                                   | 63.5                | 83           | 83           |
|  | 28                                                                                | 28                                                                                | 48                                                                                  | 48                  | 55           | 55           |
|  | 60                                                                                | 75                                                                                | 100                                                                                 | 132                 | 200          | 250          |
|  | 110                                                                               | 140                                                                               | 160                                                                                 | 220                 | 355          | 450          |
|  | 110                                                                               | 145                                                                               | 180                                                                                 | 230                 | 355          | 450          |
|  | 132                                                                               | 170                                                                               | 220                                                                                 | 280                 | 450          | 560          |
|  | 200                                                                               | 250                                                                               | 315                                                                                 | 400                 | 630          | 710          |
|  | B1-B2                                                                             | B1-B3 <sup>3)</sup>                                                               | B1-B4 <sup>4)</sup>                                                                 | B1-B4 <sup>4)</sup> | C1-C2        | C1-C3        |
|  | M6/111                                                                            | M8/111                                                                            | M8/111                                                                              | M8/111              | M10/133, 184 | M10/133, 184 |

# Contact us

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