
CATALOG

OT Disconnectors 1600...4000 A, DC-20

High performance, compact solution



- **Reliable in all conditions**
- **Easy to install**
- **Safety and protection**

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Disconnectors 1600 to 4000 Amperes for DC-20 applications

High performance, compact solution

ABB offers disconnectors suitable for diverse DC-20 applications such as energy storage systems (ESS), large disconnectors for inverters onboard marine vehicles and in photovoltaic installations.

Innovations like energy storage increase interest and consumers, which combined with more competition, make them more attractive. For example, marine electric propulsion systems and commercial marine energy storage solutions are rapidly increasing. In these applications large amounts of energy are needed, either stored or distributed, and disconnectors are needed to perform safe maintenance on these systems.



Reliable in extreme conditions

OT disconnectors are suitable for demanding conditions and are virtually maintenance-free across their entire lifespan

- Up to 1500 Vdc
- Utilization category DC-20B
- High DC-short circuit ratings, despite their compact size
- 1600 A up to 4000 A applications
- Coordination with fuses and circuit breakers



Easy to install

Easy and cost-efficient installation, maintenance, and use, through modular design and smaller dimensions.

- 2- and 4- pole versions
- 3 different connection types
- Common accessories with other ABB switches



Safety and protection

The disconnectors come equipped with a comprehensive range of inbuilt safety features. The handles can be padlocked to prevent unwanted operation.



Technical data

Switch ratings, IEC

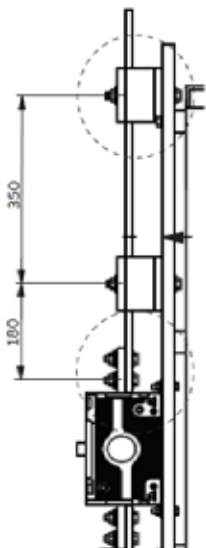
OT1600

| Switch types | | | OT1600E02-135 | OT1600E04-135, OT1600E22-135 | OT1600E04-135 | OT1600E22-135 |
|--|--|-------------------|---------------|---------------------------------|---------------|---------------|
| | Number of poles | | 2 | 4 | 4 | 4 |
| | Connection type | | 1 | 2 | 3 | 3 |
| | DC-20B rating, 1500 V | A | 1600 | 1600 | 2500 | 2500 |
| | AC-20B rating, 1000 V | A | 1600 | 1600 | 2500 | 2500 |
| Rated short-time withstand current, I _{cw} 0.3 s | Support distance 150 mm (with busbars) | kA | 50 | 50 | 65 | 65 |
| | Support distance 400 mm (with cables) | kA | 36 | 36 | 50 | 50 |
| Max. Let-through Peak Current when protected with Fuses or Circuit Breaker | Support distance 150 mm (with busbars) | kA | 110 | 110 (*120) | 140 | 176 |
| | Support distance 400 mm (with cables) | kA | 76 | 76 | 105 | 105 |
| Max. Let-through Energy when protected with Fuses or Circuit Breaker | Support distance 150 mm (with busbars) | MA ² s | 88 | 88 (*154) | 210 | 339 |
| | Support distance 400 mm (with cables) | MA ² s | 43 | 43 | 115 | 115 |

*) Busbars supported on both sides of the switch contact terminals

OT2500

| Switch types | | | OT2500E02-135 | OT2500E04-135, OT2500E22-135 | OT2500E04-135, OT2500E22-135 |
|--|--|-------------------|---------------|---------------------------------|---------------------------------|
| | Number of poles | | 2 | 4 | 4 |
| | Connection type | | 1 | 2 | 3 |
| | DC-20B rating, 1500 V | A | 2500 | 2500 | 4000 |
| | AC-20B rating, 1000 V | A | 2500 | 2500 | 4000 |
| Rated short-time withstand current, I _{cw} 0.3 s | Support distance 180 mm (with busbars) | kA | 80 | 80 | 100 |
| Max. Let-through Peak Current when protected with Fuses or Circuit Breaker | Support distance 180 mm (with busbars) | kA | 176 | 176 | 220 |
| Max. Let-through Energy when protected with Fuses or Circuit Breaker | Support distance 180 mm (with busbars) | MA ² s | 363 | 363 | 616 |



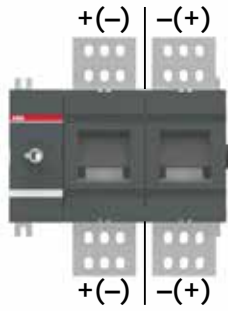
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Busbar support distances

Technical data

Connection types

Connection type 1

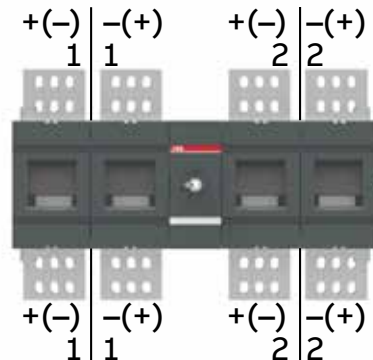
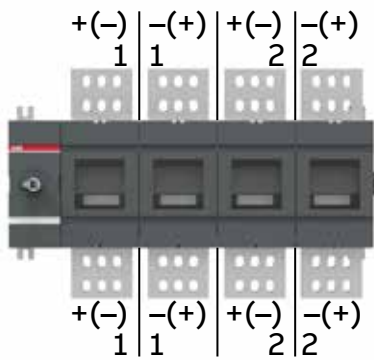
OT1600...2500E02-135



Connection type 2

OT1600...2500E04-135

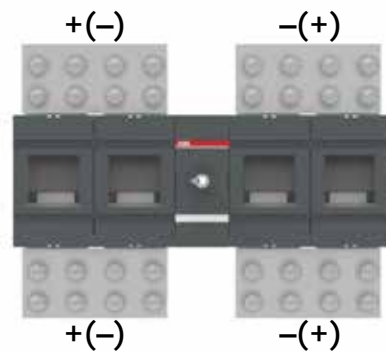
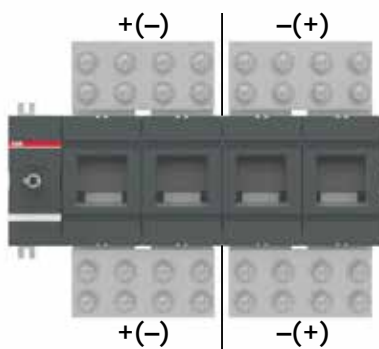
OT1600...2500E22-135



Connection type 3

OT1600...2500E04-135

OT1600...2500E22-135



Ordering information

Front operated manual disconnectors



OT1600E22P-135

OT1600_ , with external pistol handle and shaft

Including terminal bolt kit, a black ON-OFF plastic pistol handle and shaft as standard. The handle is IP65 protected and padlockable in OFF position. The door is interlocked when the handle is in ON position, and when it is padlocked in OFF position.

| Number of poles | Rated operational current DC-20B, Connection type 1 and type 2 | Rated operational current DC-20B, Connection type 3 | Product type | Order number | Weight/ unit |
|-----------------|--|---|----------------|-----------------|--------------|
| | | | | | kg |
| 2 | 1600 A | - | OT1600E02P-135 | 1SCA159246R1001 | 13.2 |
| 4 | 1600 A | 2500 A | OT1600E04P-135 | 1SCA159252R1001 | 22.9 |
| 4 | 1600 A | 2500 A | OT1600E22P-135 | 1SCA159249R1001 | 22.9 |



OT1600E22K-135

OT1600_ , with direct mount handle

Including terminal bolt kit, a black ON-OFF direct mount plastic pistol handle as standard. The operating handle is padlockable in the OFF position.

| Number of poles | Rated operational current DC-20B, Connection type 1 and type 2 | Rated operational current DC-20B, Connection type 3 | Product type | Order number | Weight/ unit |
|-----------------|--|---|----------------|-----------------|--------------|
| | | | | | kg |
| 2 | 1600 A | - | OT1600E02K-135 | 1SCA159245R1001 | 13.2 |
| 4 | 1600 A | 2500 A | OT1600E04K-135 | 1SCA159251R1001 | 22.9 |
| 4 | 1600 A | 2500 A | OT1600E22K-135 | 1SCA159248R1001 | 22.9 |

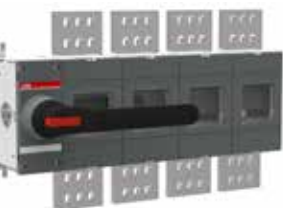


OT2500E02P-135

OT2500_ , with external pistol handle and shaft

Including terminal bolt kit, a black ON-OFF plastic pistol handle and shaft as standard. The handle is IP65 protected and padlockable in OFF position. The door is interlocked when handle is in ON position, and when it's padlocked in OFF position.

| Number of poles | Rated operational current DC-20B, Connection type 1 and type 2 | Rated operational current DC-20B, Connection type 3 | Product type | Order number | Weight/ unit |
|-----------------|--|---|----------------|-----------------|--------------|
| | | | | | kg |
| 2 | 2500 A | - | OT2500E02P-135 | 1SCA160394R1001 | 17.2 |
| 4 | 2500 A | 4000 A | OT2500E04P-135 | 1SCA160397R1001 | 33.3 |
| 4 | 2500 A | 4000 A | OT2500E22P-135 | 1SCA160400R1001 | 33.3 |



OT2500E04K-135

OT2500_ , with direct mount handle

Including terminal bolt kit, a black ON-OFF direct mount plastic pistol handle as standard. The operating handle is padlockable in the OFF position.

| Number of poles | Rated operational current DC-20B, Connection type 1 and type 2 | Rated operational current DC-20B, Connection type 3 | Product type | Order number | Weight/ unit |
|-----------------|--|---|----------------|-----------------|--------------|
| | | | | | kg |
| 2 | 2500 A | - | OT2500E02K-135 | 1SCA160393R1001 | 17.2 |
| 4 | 2500 A | 4000 A | OT2500E04K-135 | 1SCA160396R1001 | 33.3 |
| 4 | 2500 A | 4000 A | OT2500E22K-135 | 1SCA160399R1001 | 33.3 |

Ordering information

Accessories



OTDCKIT1250B11

Parallel connection bar kit

Used for connection type 3.

| Suitable for switches | Product type | Order number | Pcs/ Pack | Weight/ unit kg |
|-----------------------|----------------|-----------------|--------------|-----------------------|
| OT1600E04, OT1600E22 | OTDCKIT1250B11 | 1SCA143479R1001 | 2 | 1.12 |
| OT2500E04, OT2500E22 | OTKIT2500B11 | 1SCA160501R1001 | 4 | 11 |



OXP12X250

Shafts for pistol handles

| Shaft length mm | Mounting depth mm | Type | Order number | Weight/ unit kg |
|--------------------|----------------------|-----------|-----------------|-----------------------|
| 250 | 221...350 | OXP12X250 | 1SCA022325R6980 | 0.28 |
| 280 | 251...380 | OXP12X280 | 1SCA022137R5140 | 0.30 |
| 325 | 296...425 | OXP12X325 | 1SCA022042R5810 | 0.36 |
| 395 | 366...495 | OXP12X395 | 1SCA022042R5990 | 0.43 |
| 465 | 436...565 | OXP12X465 | 1SCA022042R6020 | 0.51 |
| 535 | 506...635 | OXP12X535 | 1SCA022042R6110 | 0.59 |



OA1G10

Auxiliary contacts

Contact numbering according to EN50013. The ordering numbers are for one piece. Delivery batch 10 pcs. Mounting under the mechanism cover max. 4 test indication contacts + 6 test contacts and 2 early operation test contacts can be mounted. The test contacts work as standard auxiliary contacts.

| Suitable for disconnecter | Function | Type | Order number | Weight/ unit kg |
|---------------------------|----------|--------|-----------------|-----------------------|
| | 1NO | OA1G10 | 1SCA022353R4970 | 0.03 |
| OT1600E_, OT2500E_ | 1NC | OA3G01 | 1SCA022456R7410 | 0.03 |

Ordering information

Accessories



OTS1600G1S

Terminal shrouds

Single pole, snap-on mounting IP3X shrouds in grey color.

| Suitable for disconnector | Size | Type | Order number | Units/ type pcs | Weight/ unit kg |
|---------------------------|-------|--------------|-----------------|-----------------------|-----------------------|
| OT1600E_ | Short | OTS1600G1S | 1SCA102667R1001 | 1 | 0.12 |
| | Long | OTS1600G1L | 1SCA106134R1001 | 1 | 0.20 |
| | Short | OTS1600G1S/4 | 1SCA022871R9860 | 4 | 0.50 |
| | Long | OTS1600G1L/4 | 1SCA022871R9780 | 4 | 0.80 |
| OT2500E_ | Short | OTS2500G1S | 1SCA108810R1001 | 1 | 0.16 |
| | Long | OTS2500G1L | 1SCA108816R1001 | 1 | 0.26 |
| | Short | OTS2500G1S/4 | 1SCA107271R1001 | 4 | 0.70 |
| | Long | OTS2500G1L/4 | 1SCA107262R1001 | 4 | 1.30 |



OTB1600/6

Phase separators

Grey plastic phase barrier for increasing the clearance between the phases without using terminal shrouds.

| Suitable for disconnector | Type | Order number | Units/ type pcs | Weight/ unit kg |
|---------------------------|-----------|-----------------|-----------------------|-----------------------|
| OT1600E_, OT2500E_ | OTB1600/6 | 1SCA102667R1001 | 6 | 0.50 |



OZXB3/1

Terminal clamp sets for Al- and Cu-cables

| Suitable for disconnector | Cable cross section mm ² | Type | Order number | Units/ type pcs | Weight/ unit kg |
|---------------------------|--|----------|-----------------|-----------------------|-----------------------|
| OT1600E_, OT2500E_ | 95...185 | OZXB3/1 | 1SCA022136R8100 | 1 | 0.13 |
| | 2x(95...185) | OZXB4/1 | 1SCA022194R0890 | 1 | 0.60 |
| | 120...300 | OZXB5/1 | 1SCA022194R1010 | 1 | 0.80 |
| | 2x(120...300) | OZXB6/1 | 1SCA022194R1270 | 1 | 1.00 |
| | 120...240 | OZXB7L/1 | 1SCA022194R1600 | 1 | 0.39 |

Ordering information

Accessories

Mechanical and electrical interlock kit



OTZT4A

The disconnecter can be mechanically interlocked in the OFF-position using padlocks. The diameter of the lock bail can be max. 8 mm. By installing a coil inside the mechanical interlocking unit, the disconnecter can be electrically interlocked in OFF-position or in both ON and OFF-position. The electrical interlock works using the "closed circuit principle": when the control voltage is not applied to the coil, the disconnecter with type-A mechanical interlock cannot be operated to ON-position, and with type-L mechanical interlock the disconnecter cannot be operated to ON- or OFF-position.

| Suitable for disconnecter | Mechanical interlock function | Type | Order number | Units/type pcs | Weight/unit kg |
|---------------------------|-------------------------------|--------|-----------------|----------------|----------------|
| OT1600E_, OT2500E_ | OFF | OTZT4A | 1SCA106526R1001 | 1 | 1.15 |
| | ON and OFF | OTZT4L | 1SCA106531R1001 | 1 | 1.15 |



PDAL2/230AC50HZ

| Suitable for mechanical interlock | Coil operational voltage | Type | Order number | Units/type pcs | Weight/unit kg |
|-----------------------------------|--------------------------|-----------------|-----------------|----------------|----------------|
| OTZT_ | 24 VDC | PDAL2/24DC | 1SCA106542R1001 | 1 | 0.15 |
| | 48 VDC | PDAL2/48DC | 1SCA107103R1001 | 1 | 0.15 |
| | 110 VDC | PDAL2/110DC | 1SCA107105R1001 | 1 | 0.15 |
| | 220 VDC | PDAL2/220DC | 1SCA112503R1001 | 1 | 0.15 |
| | 120 VAC / 60Hz | PDAL2/120AC60HZ | 1SCA111353R1001 | 1 | 0.15 |
| | 230 VAC / 50Hz | PDAL2/230AC50HZ | 1SCA107102R1001 | 1 | 0.15 |
| | 240 VAC / 50Hz | PDAL2/240AC60HZ | 1SCA111356R1001 | 1 | 0.15 |

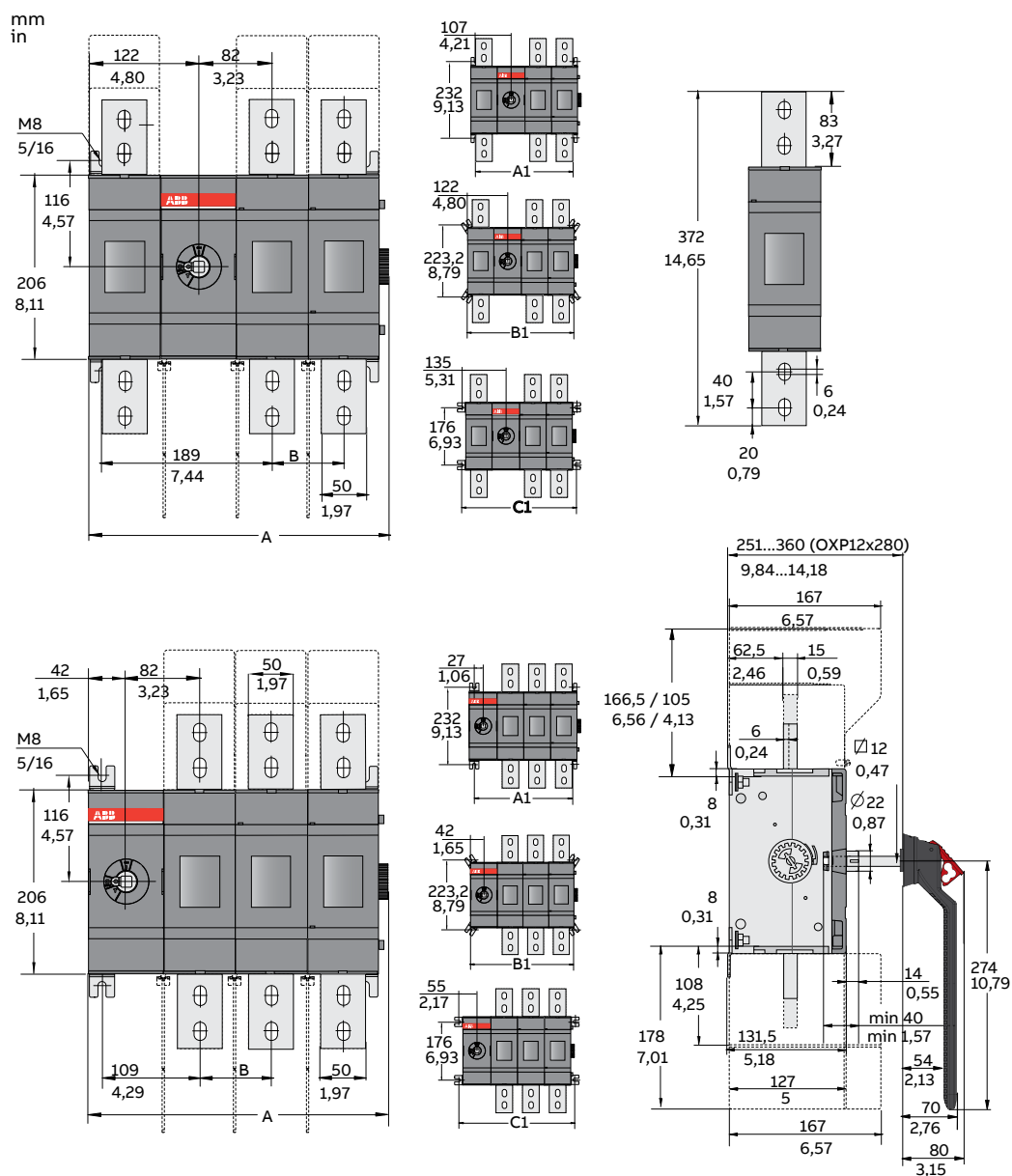
Technical data for the coil

| | |
|-------------------------------|--------------------------------|
| Operating voltage | $U = 0.8 \dots 1.1 \times U_n$ |
| Operating ambient temperature | -40°C ... +65°C |
| Power consumption | DC 9 VA |
| | AC 6.5 W |

Dimension drawings

Manual disconnectors

Front operated disconnectors OT1600, base mounting, IEC



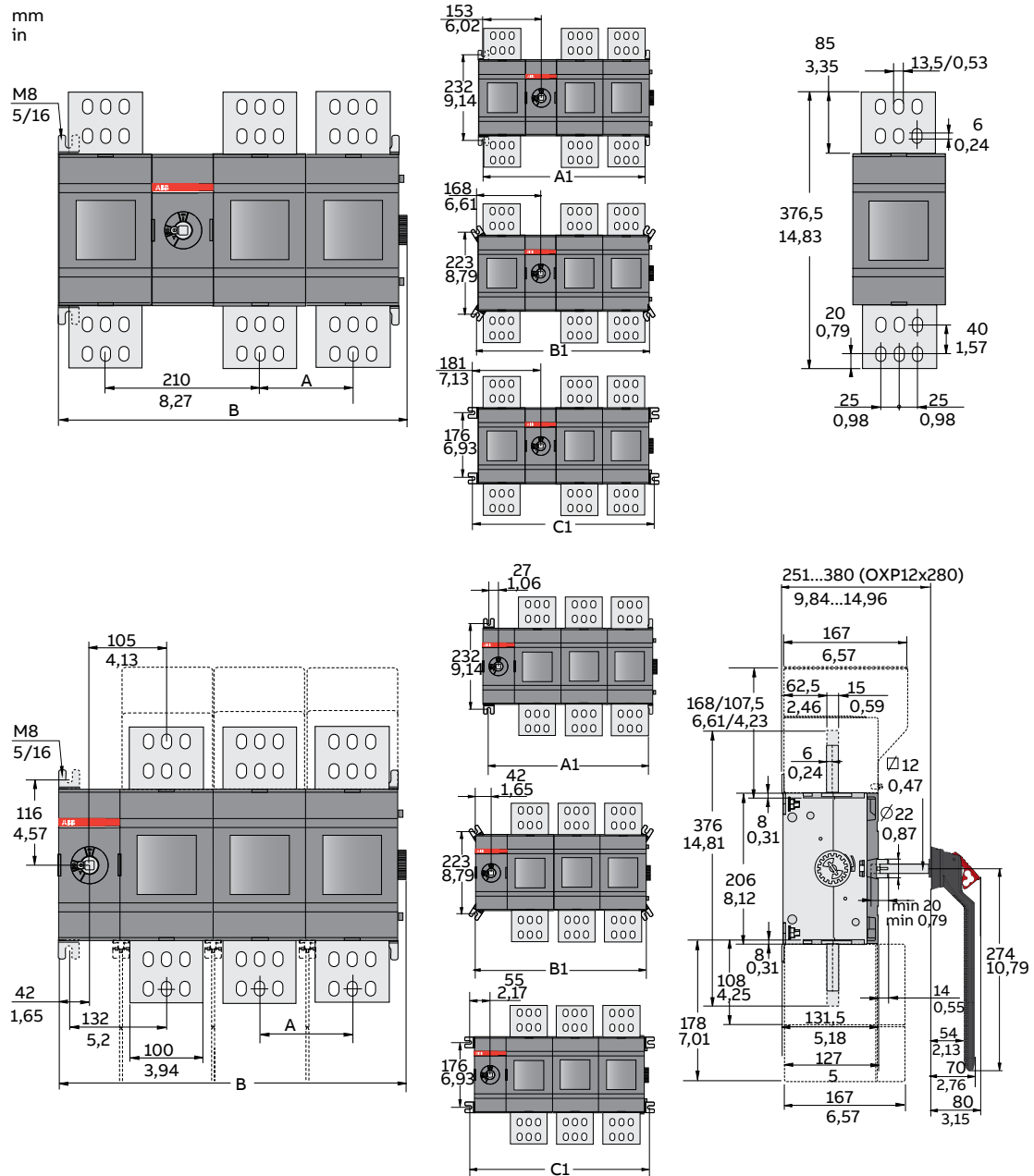
OT1600E_-135

| mm/in | 02 | 04 | 22 |
|-------|--------------|--------------|--------------|
| A | 254.50/10.02 | 414.50/16.32 | 414.50/16.32 |
| B | 80/3.15 | 80/3.15 | 80/3.15 |
| A1 | 214/8.43 | 374/14.72 | 374/14.72 |
| B1 | 244/9.61 | 404/15.91 | 404/15.91 |
| C1 | 270/10.63 | 430/16.93 | 430/16.93 |

Dimension drawings

Manual disconnectors

Front operated disconnectors OT2500, base mounting, IEC



OT2500E_-135

| mm/in | 02 | 04 | 22 |
|-------|-------------|-------------|-------------|
| A | 126/4.96 | 126/4.96 | 126/4.96 |
| B | 346.5/13.64 | 598.5/23.56 | 598.5/23.56 |
| A1 | 306/12.05 | 558/21.97 | 558/21.97 |
| B1 | 336/13.23 | 588/23.15 | 588/23.15 |
| C1 | 362/14.25 | 614/24.17 | 614/24.17 |

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