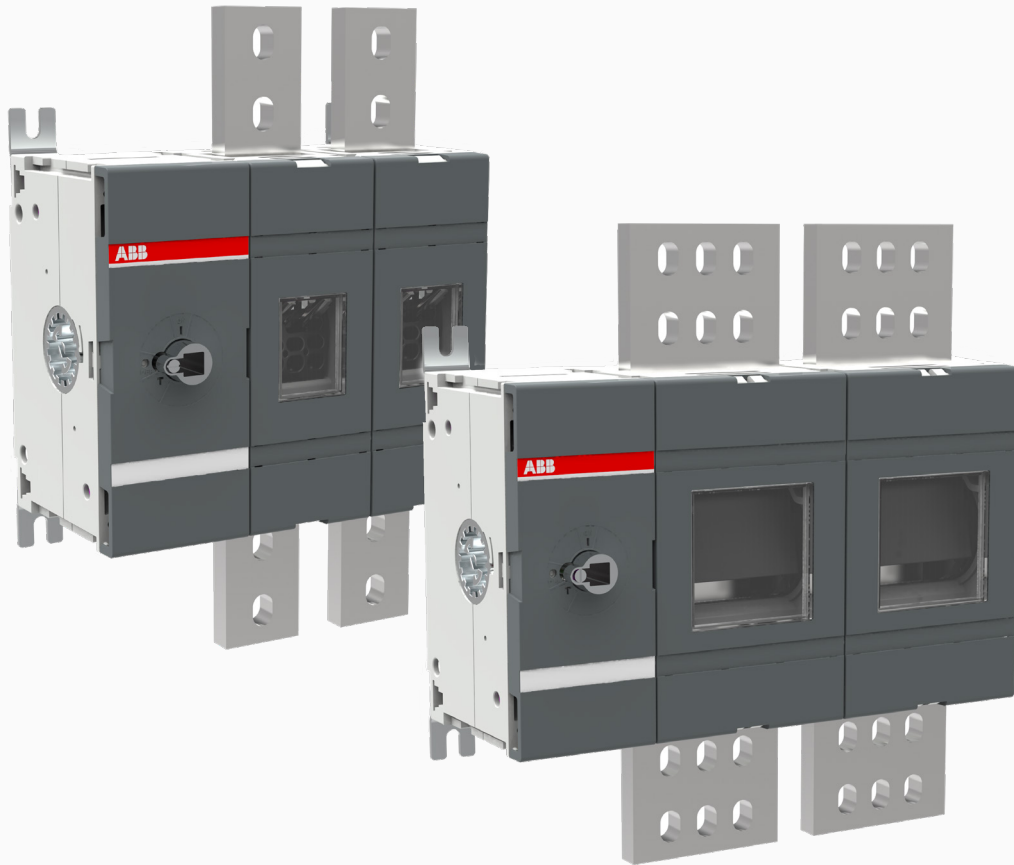


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CATALOG

# **OT(M) Disconnectors 1600...6000 A, DC-20**

High performance, compact solution



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



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# Disconnectors 1600 to 6000 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 6000 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

### Disconnecter ratings, IEC

#### OT(M)1600\_-135

Disconnecter types		OT1600E02-135 OTM1600E2M230V-135	OT1600E04-135, OT1600E22-135 OTM1600E4M230V-135	OT1600E04-135	OT1600E22-135
Number of poles		2	4	4	4
Number of circuits		1	2	1	1
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 <sub>cw</sub> 0.3 s	Support distance 150 mm (with busbars)	kA	50	50	65
	Support distance 400 mm (with cables)	kA	36	36	50
Max. Let-through Peak Current when protected with Fuses or Circuit Breaker	Support distance 150 mm (with busbars)	kA	110	110 (*120)	140
	Support distance 400 mm (with cables)	kA	76	76	105
Max. Let-through Energy when protected with Fuses or Circuit Breaker	Support distance 150 mm (with busbars)	MA <sup>2</sup> s	88	88 (*154)	210
	Support distance 400 mm (with cables)	MA <sup>2</sup> s	43	43	115

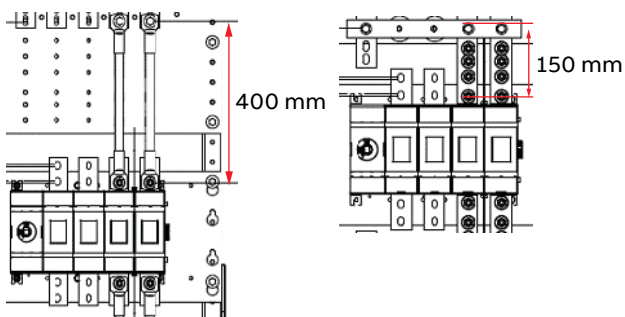
\*) Busbars supported on both sides of the switch contact terminals

#### OT(M)2500\_-135

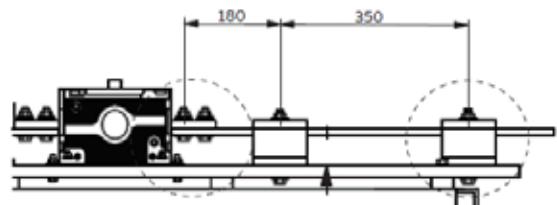
Disconnecter types		OT2500E02-135 OTM2500E2M230V-135	OT2500E04-135, OT2500E22-135 OTM2500E4M230V-135	OT2500E04-135, OT2500E22-135 OTM2500E4M230V-135
Number of poles		2	4	4
Number of circuits		1	2	1
Connection type		1	2	3
DC-20B rating, 1500 V	A	2500	2500	4000
AC-20B rating, 1000 V	A	2500	2500	4000
Rated short-time withstand current, I <sub>cw</sub> 0.3 s	Support distance 180 mm (with busbars)	kA	80	80
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 <sup>2</sup> s	363	363
				616

#### Busbar support distances

##### OT(M)1600E\_-135

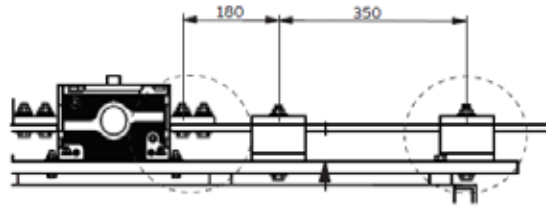


##### OT(M)2500E\_-135



**OT(M)3200\_-135**

Disconnecter types			<b>OT3200E02-135 OTM3200E2M230V-135</b>	<b>OT3200E04-135, OT3200E22-135 OTM3200E4M230V-135</b>	<b>OT3200E04-135, OT3200E22-135 OTM3200E4M230V-135</b>
	Number of poles		2	4	4
	Number of circuits		1	2	1
	Connection type		1	2	3
	DC-20B rating, 1500 V	A	3200	3200	6000
Rated short-time withstand current, I <sub>cw</sub> 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 <sup>2</sup> s	363	363	616

**OT(M)3200E\_-135**

## Technical data

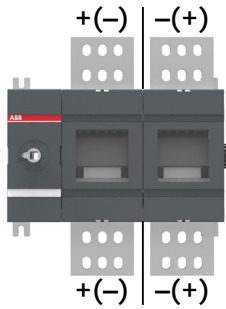
### Connection types

#### Single Circuit

##### Connection type 1

OT1600...3200E02-135

OTM1600...3200E2M230V-135



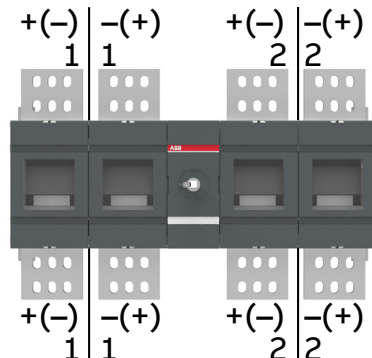
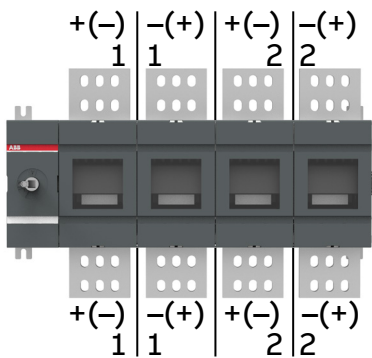
#### Double Circuit

##### Connection type 2

OT1600...3200E04-135

OT1600...3200E22-135

OTM1600...3200E4M230V-135



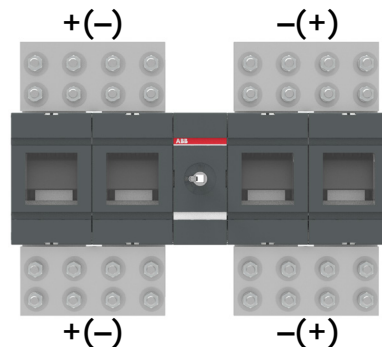
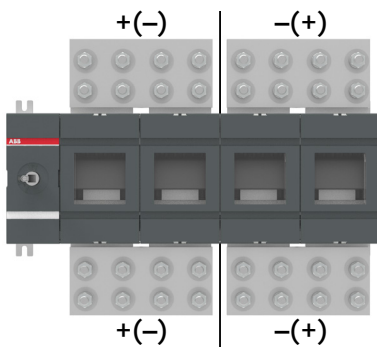
#### Single Circuit

##### Connection type 3

OT1600...3200E04-135

OT1600...3200E22-135

OTM1600...3200E4M230V-135





## Ordering information, IEC

### OT(M)\_{-135 -Series 1600...4000A



OT1600E02-135

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

Voltage [V DC]	Rated operational current [A]	Number of circuits	Connection type <sup>1)</sup>	Number of poles	Single package	Order code
	DC-20B				Type	
<b>Manual operated without handle and shaft</b>						
1500	1600	1	1	2	OT1600E02-135	1SCA159244R1001
1500	1600	2	2	4	OT1600E04-135	1SCA159250R1001
1500	2500	1	3	4	OT1600E04-135	1SCA159250R1001
1500	1600	2	2	4	OT1600E22-135	1SCA159247R1001
1500	2500	1	3	4	OT1600E22-135	1SCA159247R1001
1500	2500	1	1	2	OT2500E02-135	1SCA160392R1001
1500	2500	2	2	4	OT2500E04-135	1SCA160395R1001
1500	4000	1	3	4	OT2500E04-135	1SCA160395R1001
1500	2500	2	2	4	OT2500E22-135	1SCA160398R1001
1500	4000	1	3	4	OT2500E22-135	1SCA160398R1001
1500	3200	1	1	2	OT3200E02-135	1SCA163289R1001
1500	3200	2	2	4	OT3200E04-135	1SCA163290R1001
1500	6000	1	3	4	OT3200E04-135	1SCA163290R1001
1500	3200	2	2	4	OT3200E22-135	1SCA163291R1001
1500	6000	1	3	4	OT3200E22-135	1SCA163291R1001
<b>Manual operated with direct mounted handle</b>						
1500	1600	1	1	2	OT1600E02K-135	1SCA159245R1001
1500	1600	2	2	4	OT1600E04K-135	1SCA159251R1001
1500	2500	1	3	4	OT1600E04K-135	1SCA159251R1001
1500	1600	2	2	4	OT1600E22K-135	1SCA159248R1001
1500	2500	1	3	4	OT1600E22K-135	1SCA159248R1001
1500	2500	1	1	2	OT2500E02K-135	1SCA160393R1001
1500	2500	2	2	4	OT2500E04K-135	1SCA160396R1001
1500	4000	1	3	4	OT2500E04K-135	1SCA160396R1001
1500	2500	2	2	4	OT2500E22K-135	1SCA160399R1001
1500	4000	1	3	4	OT2500E22K-135	1SCA160399R1001
<b>Manual operated with pistol handle</b>						
1500	1600	1	1	2	OT1600E02P-135	1SCA159246R1001
1500	1600	2	2	4	OT1600E04P-135	1SCA159252R1001
1500	2500	1	3	4	OT1600E04P-135	1SCA159252R1001
1500	1600	2	2	4	OT1600E22P-135	1SCA159249R1001
1500	2500	1	3	4	OT1600E22P-135	1SCA159249R1001
1500	2500	1	1	2	OT2500E02P-135	1SCA160394R1001
1500	2500	2	2	4	OT2500E04P-135	1SCA160397R1001
1500	4000	1	3	4	OT2500E04P-135	1SCA160397R1001
1500	2500	2	2	4	OT2500E22P-135	1SCA160400R1001
1500	4000	1	3	4	OT2500E22P-135	1SCA160400R1001
<b>Motor operated, mechanism at the end of the switch</b>						
1500	1600	1	1	2	OTM1600E2M230V-135	1SCA162142R1001
1500	1600	2	2	4	OTM1600E4M230V-135	1SCA162702R1001
1500	1600	1	3	4	OTM1600E4M230V-135	1SCA162702R1001
1500	2500	1	1	2	OTM2500E2M230V-135	1SCA162703R1001
1500	2500	2	2	4	OTM2500E4M230V-135	1SCA162704R1001
1500	4000	1	3	4	OTM2500E4M230V-135	1SCA162704R1001
1500	3200	1	1	2	OTM3200E2M230V-135 <sup>(2)</sup>	1SCA163296R1001
1500	3200	2	2	4	OTM3200E4M230V-135	1SCA163294R1001
1500	6000	3	3	4	OTM3200E4M230V-135	1SCA163294R1001

1) Connection type 3 – connection bar kits OTDCKIT1250B11, OTKIT2500B11 & OTKIT3200B11 available as separate accessory installation mandatory.

Please see connection types in page 8.

You can find the dimensional drawings starting from page 13.

2) Coming available soon

## Ordering information

### Accessories



OTDCKIT1250B11

#### Parallel connection bar kit

Used for connection type 3. Connection bar kit available as a separate accessory.

Suitable for disconnectors	Product type	Order number	Pcs/ Pack
OT1600E04-135, OT1600E22-135, OTM1600E4M230V-135	OTDCKIT1250B11	1SCA143479R1001	2
OT2500E04-135, OT2500E22-135, OTM2500E4M230V-135	OTKIT2500B11	1SCA160501R1001	4
OT3200E04-135, OT3200E22-135, OTM3200E4M230V-135	OTKIT3200B11	1SCA162098R1001	4



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 disconnector	Function	Type	Order number	Weight/ unit kg
OT(M)1600...3200E_-135	1NO	OA1G10	1SCA022353R4970	0.03
	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
OT(M)1600E_-135	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
OT(M)2500E_-135	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

#### Phase separators

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



OTB1600/6

Suitable for disconnector	Type	Order number	Units/ type pcs	Weight/ unit kg
OT(M)1600...2500E_-135	OTB1600/6	1SCA102667R1001	6	0.50

#### Terminal clamp sets for Al- and Cu-cables



OZXB3/1

Suitable for disconnector	Cable cross section mm <sup>2</sup>	Type	Order number	Units/ type pcs	Weight/ unit kg
OT(M)1600...2500E_-135	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

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.



OTZT4A

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

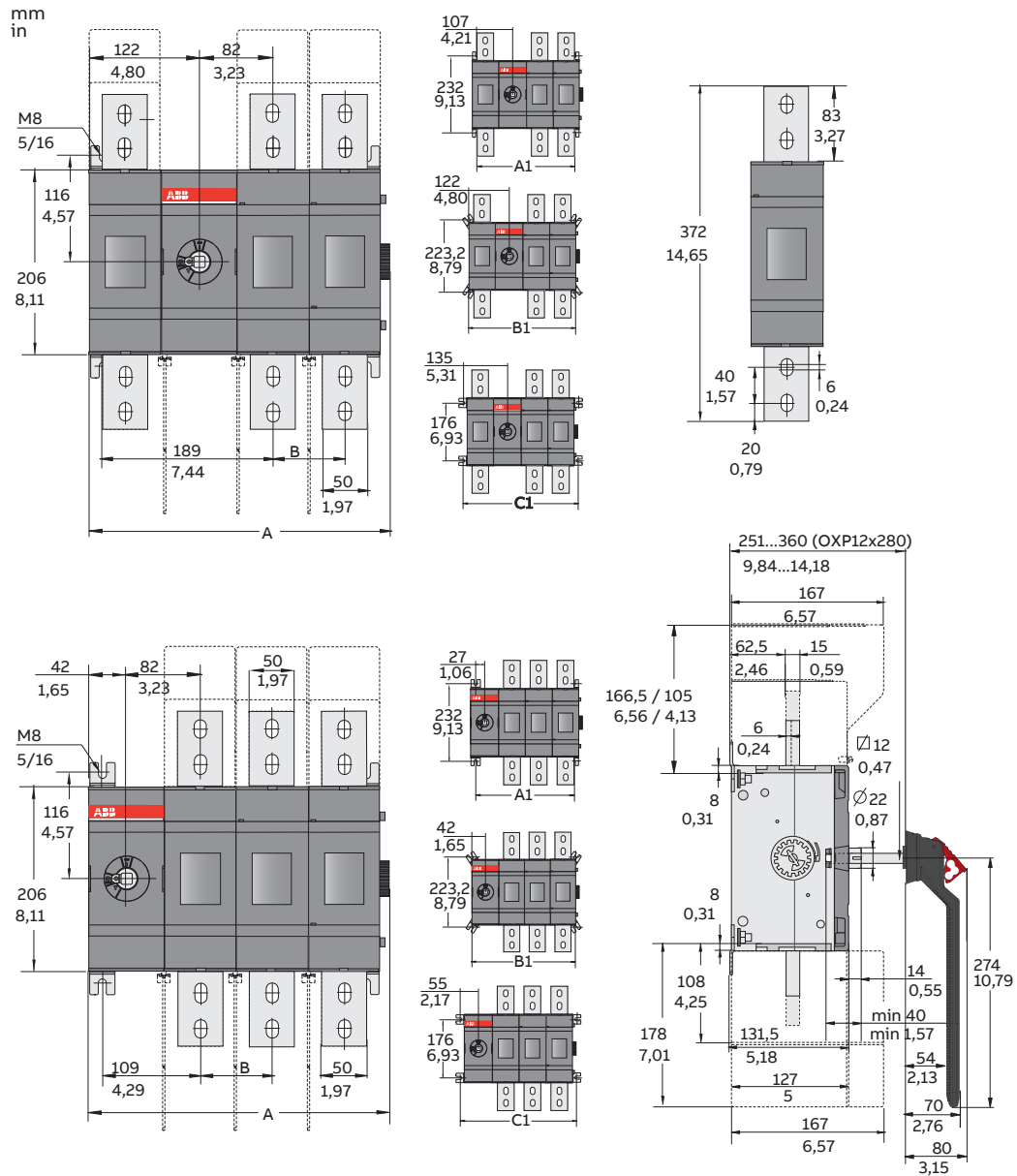
#### Technical data for the coil

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



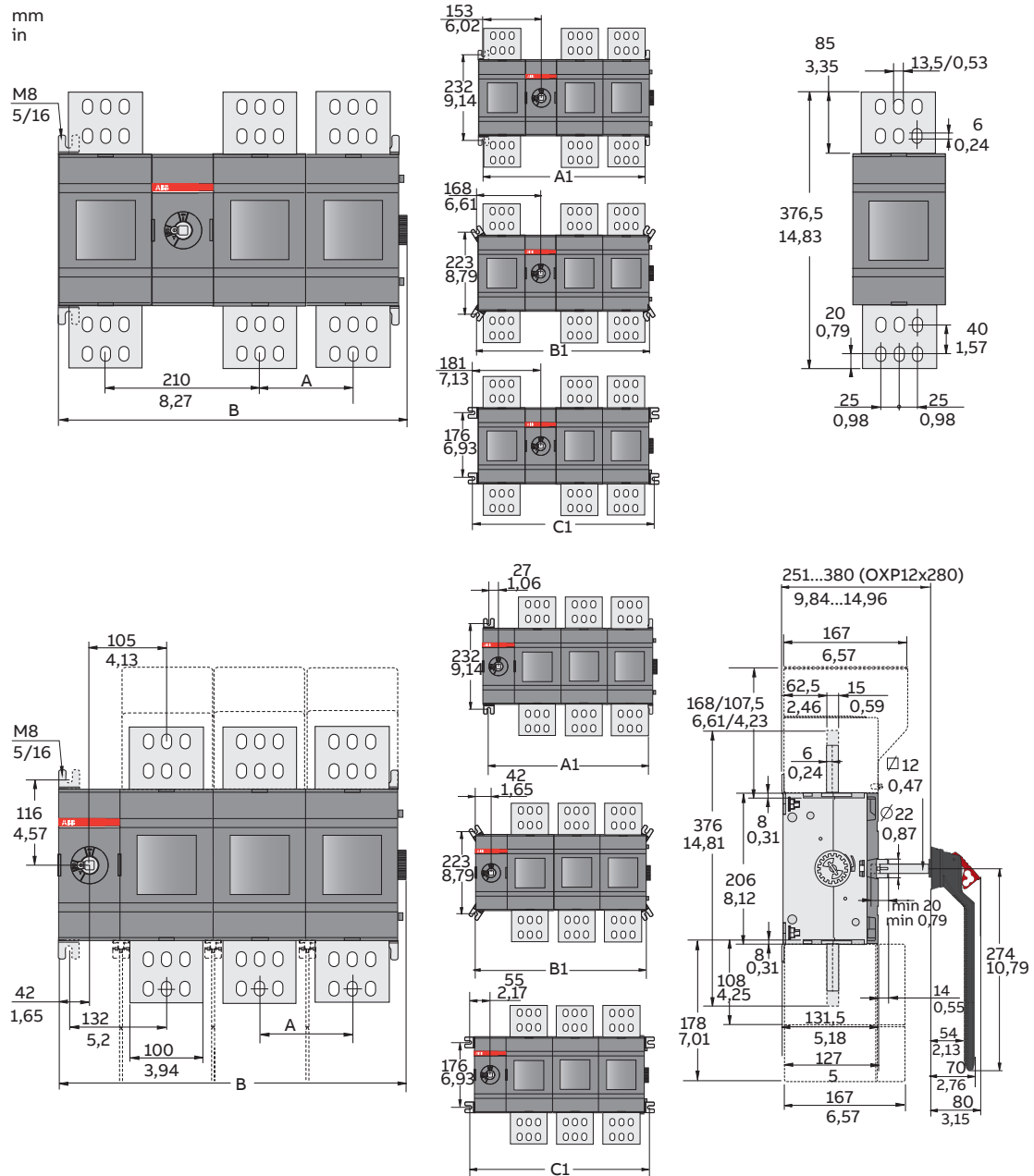
#### OT1600E\_-135

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

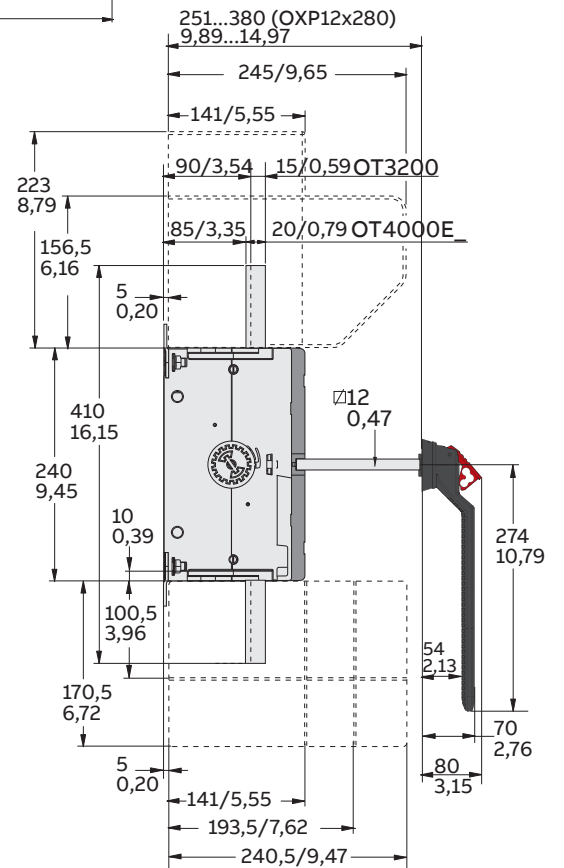
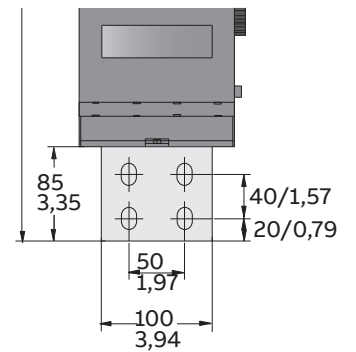
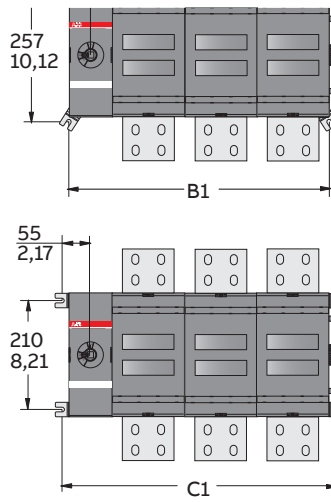
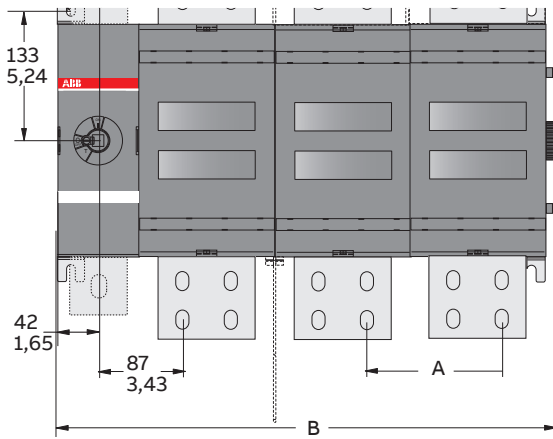
#### Front operated disconnectors OT2500, base mounting, IEC



#### 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

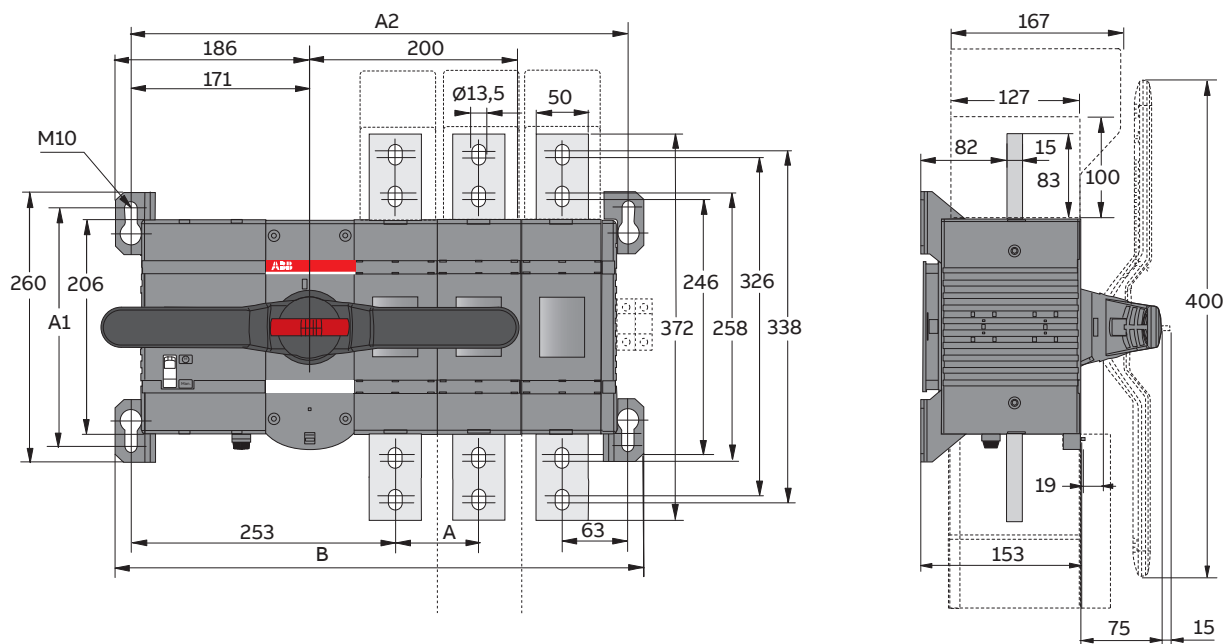
Front operated disconnectors OT3200, base mounting, IEC



OT3200E\_-135

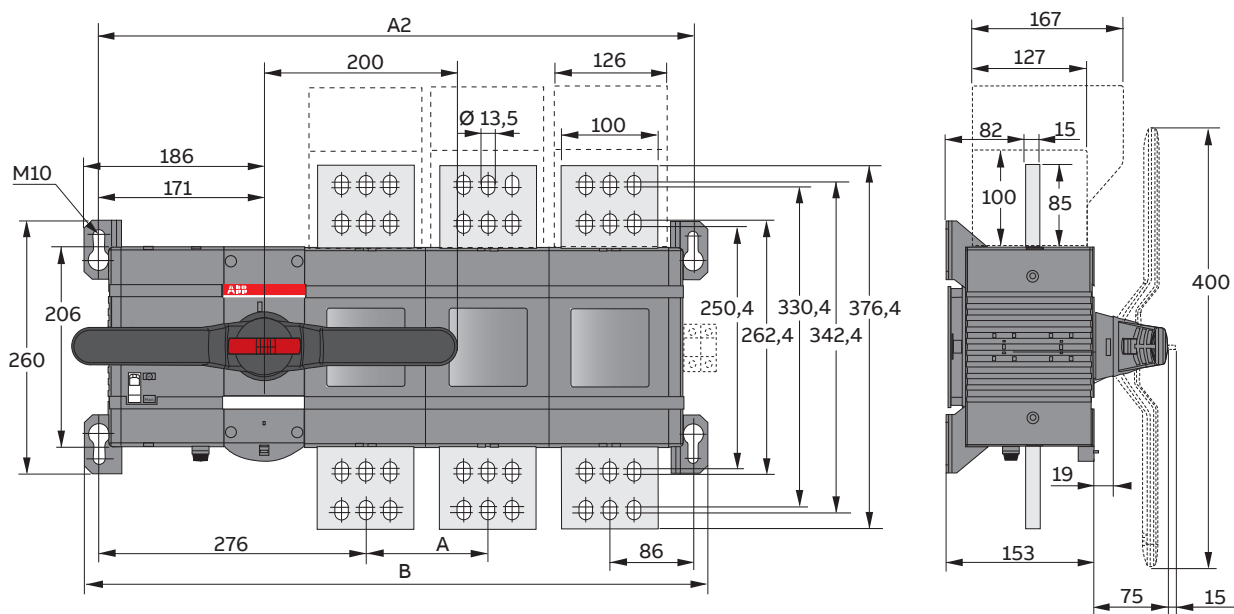
	02	04
A	140	140
B	374	654
A1	335	615
B1	364	644
C1	390	670

# OTM1600-2500E\_-135



OTM1600\_M-135

	E2	E4
A	80	80
A1	230	230
A2	396,5	556,5
B	426,5	586,5

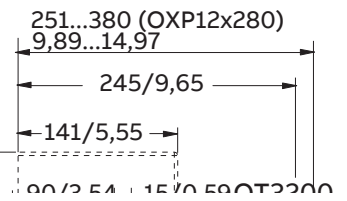
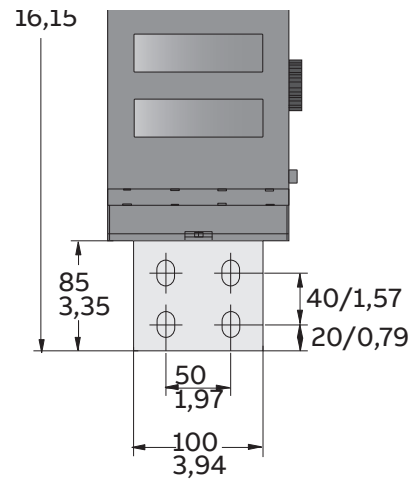
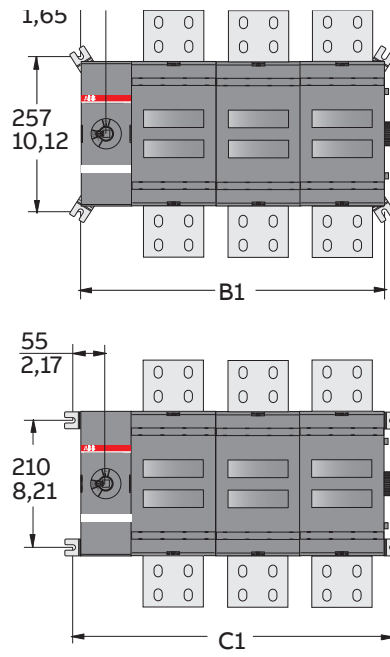
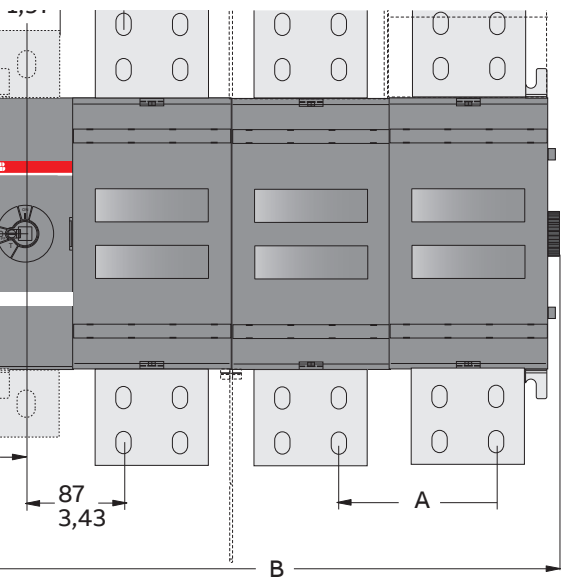


OTM2500\_M-135

	E2	E4
A	126	126
A1	230	230
A2	488,5	740,5
B	518,5	770,5



# OTM3200E\_-135



OTM3200\_-135

	E2	E4
A	140	140
A1	230	230
A2	516,5	796,5
B	546,5	826,5



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