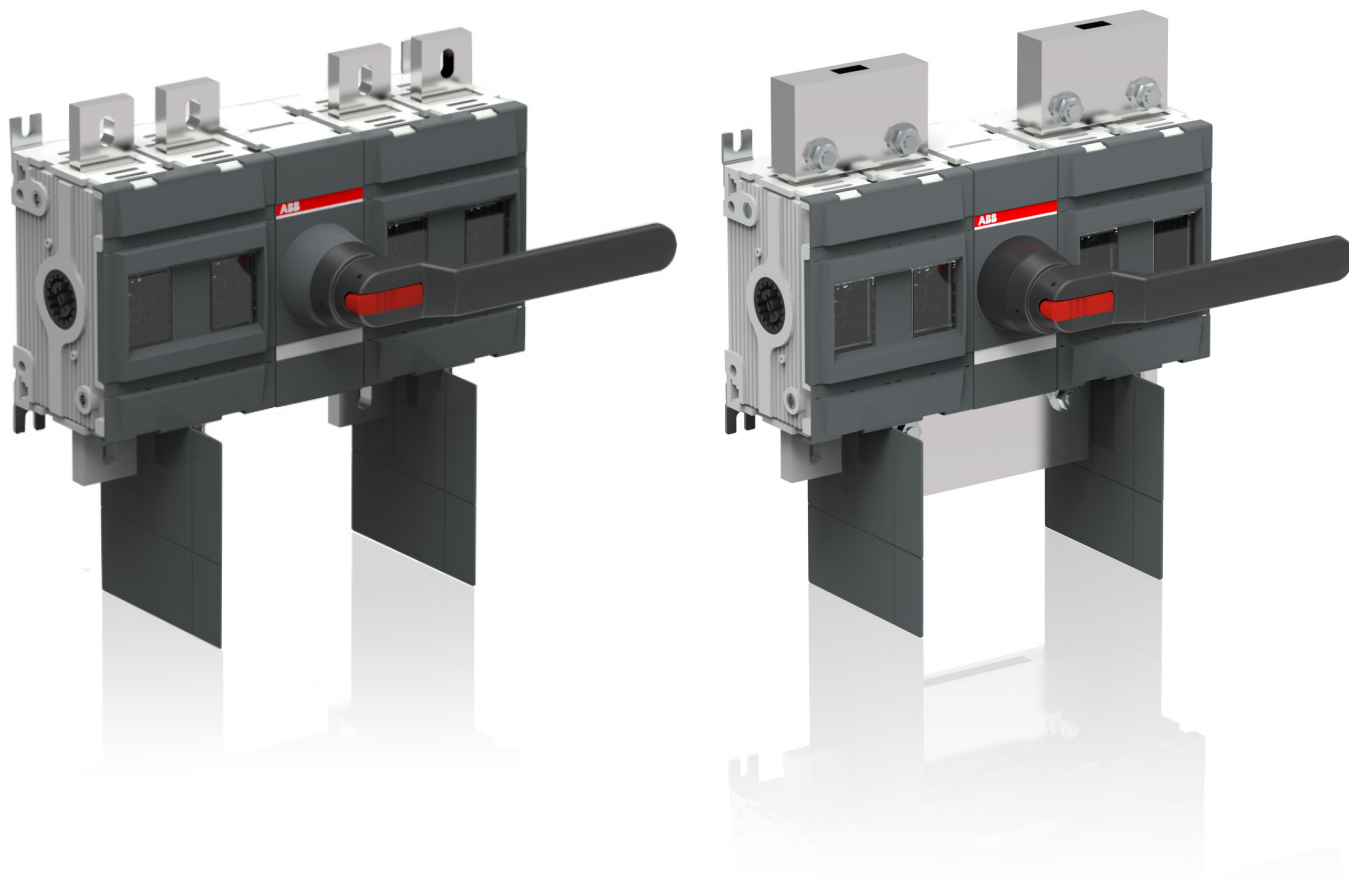


# OTDC 800...1600 Amperes Switches for photovoltaic applications



With the extension of the OTDC range to high currents of up to 1600 A IEC and 1000 A UL, ABB now meets the needs and demands of high-power inverters and recombiners.



#### High-powered applications

Large inverters require high-performing dc disconnection devices to reliably isolate the system from the dc side. The big OTDC extends ABB's dedicated dc switch offering up to 1600 Amperes, providing a robust switching solution for the largest PV applications.



#### Lifecycle performance

The photovoltaic installations are designed to have a long life span. Reliable practical performance is critical, and optimizing the critical current performance ensures reliable operation, quality and performance across all possible current levels. This results in dependable, seamless 1000 V breaking all the way from zero to 1600 A throughout the long life of the photovoltaic plant.



#### Next level safety

In photovoltaic applications with high voltage levels, if not dealt with, prolonged arcing can pose a very real fire hazard when switching the relatively low critical currents. The critical currents have been carefully charted, eliminated and the operation verified. The practical safety of personnel and equipment is taken to the next level.

# Technical data

## Technical data according to IEC 60947 for switch-disconnectors OTDC1000...1600

Switch size			OTDC1000E	OTDC1250E	OTDC1600E
Rated insulation voltage U <sub>i</sub>	Pollution degree 3	V	1500	1500	1500
Rated impulse withstand voltage		kV	12	12	12
Rated thermal current I <sub>th</sub>	In open air, normal conditions <sup>1)</sup>	A	1000	1250	1600
	In enclosure 40°C	A	1000	1250	1250
	In enclosure 60°C	A	800	1000	1000
...with minimum cable or bar cross section	Cu	mm <sup>2</sup>	2x (60x5)	2x (50x8)	2x (50x10)
Rated operational current / poles in series	1000 One circuit	A	1000/4	1250/4	1600/4
Rated short-time withstand current, 1000 V, 1 s	R.M.S. -value I <sub>cw</sub>	kA	10	10	10
Rated short circuit making capacity, 1000 V	Peak value I <sub>cm</sub>	kA	10	10	10
Power loss / pole	At rated current	W	22	35	58

<sup>1)</sup> Normal conditions defined in IEC 60947-1-6.1

## Technical data in accordance to UL98B for photovoltaic disconnect switches OTDC800...1000U

Suitable For Use in Photovoltaic Systems in Accordance With Article 690 of the NEC.

Switch size		OTDC800US22	OTDC800U22	OTDC1000US22	OTDC1000U22
UL Listed	Standard	UL 98B	UL 98B	UL 98B	UL 98B
Rated ambient temperature	°C	-20...+50	-20...+50	-20...+50	-20...+50
Rated current /poles in series 1000 V	One circuit	800 / 4	800 / 4	930 / 4 <sup>2)</sup>	1000 / 4 <sup>3)</sup>
Short circuit rating	kA, 1000 V	10	10	10	10
Protection type		Circuit breaker	Circuit breaker	Circuit breaker	Circuit breaker
Wire range	MCM	4 x #4 - 300	4 x #4 - 300	4 x #4 - 400	4 x #4 - 400
Cable lug		OZXA1200	OZXA1200	OZXA1200	OZXA1200
Technical data according to IEC	refer to	OTDC1000E	OTDC1250E	OTDC1250E	OTDC1600E

<sup>2)</sup> When shrouds are used rated current I = 920A

<sup>3)</sup> When shrouds are used rated current I = 980A

# Type designation key

## OTDC100...800, IEC and UL98B

OTDC	1000	U	S	22	K
1	2	3	4	5	6

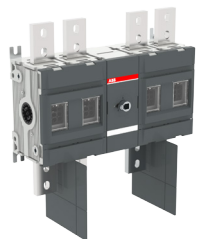
1	Product Series
OTDC	ABB DC switch-disconnector brand
2	Switch size
800...1600	800,1000, 1250, 1600 Amperes
3	Voltage and standard
E	1000 VDC, IEC
U	1000 VDC, UL98B
4	Connection kit/jumper
blank	not included
S	Grounded version, pre-mounted connection kits

5	Number of poles
22	Four poles, mechanism between the poles
6	Included handle
-	none
P	external handle and shaft
K	direct mount, front operation

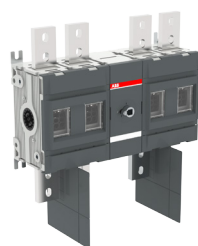
## Ordering information



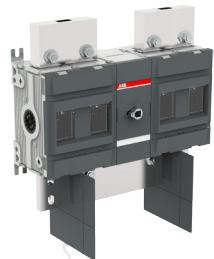
OTDC1000...1250E22



OTDC1600E22



OTDC800...1000U22



OTDC800...1000US22

### Single circuit, 1000 VDC, IEC - 1000 to 1600 A

Front operated, mechanism at the end of the switch. Included terminal bolts: M12X60.

Number of poles	Circuit	Rated operat. current [A] IEC/ 1000 V	Type	Order number	Weight/ unit [kg]
Handle and shaft not included					
4	6a, 6b	1000	OTDC1000E22	1SCA142337R1001	21
4	6a, 6b	1250	OTDC1250E22	1SCA140871R1001	21
4	6a, 6b	1600	OTDC1600E22	1SCA143718R1001	21
External handle OHB274J12 and shaft OXP12X280 included					
4	6a, 6b	1000	OTDC1000E22P	1SCA143711R1001	21
4	6a, 6b	1250	OTDC1250E22P	1SCA143717R1001	21
4	6a, 6b	1600	OTDC1600E22P	1SCA143720R1001	21
Direct mount handle OTV1000EK included					
4	6a, 6b	1000	OTDC1000E22K	1SCA143710R1001	21
4	6a, 6b	1250	OTDC1250E22K	1SCA143716R1001	21
4	6a, 6b	1600	OTDC1600E22K	1SCA143719R1001	21

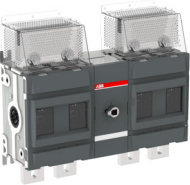
### Single circuit, 1000 VDC, UL98B - 800 to 1000 A

Front operated, mechanism at the end of the switch. Included terminal bolts: M12X60.

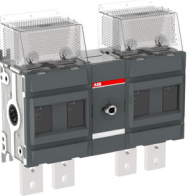
External handle OHB27412 and shafts OXP12X\_. Can be ordered separately. See page 9.

Number of poles	Circuit	Rated operat. current [A] UL98B / 1000 V	Type	Order number	Weight/ unit [kg]
Handle and jumpers not included					
4	6a, 6b	800	OTDC800U22	1SCA142338R1001	21
4	6a, 6b	1000	OTDC1000U22	1SCA143712R1001	21
Includes direct mount handle OTV1000EK. Jumpers not included.					
4	6a, 6b	800	OTDC800U22K	1SCA143721R1001	21
4	6a, 6b	1000	OTDC1000U22K	1SCA143713R1001	21
Grounded versions - pre-mounted jumpers included. Handle not included.					
4	6m	800	OTDC800US22	1SCA142339R1001	21
4	6m	930	OTDC1000US22	1SCA143714R1001	21
Grounded System versions - pre-mounted jumpers and direct mount handle OTV1000EK included.					
4	6m	800	OTDC800US22K	1SCA143722R1001	21
4	6m	930	OTDC1000US22K	1SCA143715R1001	21

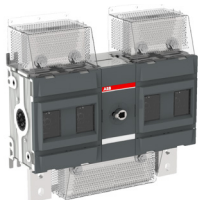
# Ordering information



OTDC1000...1600E22



OTDC800...1000U22



OTDC800...1000US22

## Connection kits and shrouds

Connection kits and shrouds must be ordered separately. See following pages for circuit diagrams, connection kits and shrouds. The column "Needed quantity" tells how many pieces need to be ordered for each switch. The kits include the needed jumpers, screws and washers.

Switches	Circuit type	Connection kit/jumper		Recommended shroud <sup>1)</sup>	
		Type	Needed quantity	Type	Needed quantity
OTDC1000...1600E22_, OTDC800...1000U22_	6a	OTDCKIT1250B11	2	OTDCS1250T1	2
OTDC1000...1600E22_, OTDC800...1000U22_	6b	OTDCKIT1250B11	2	OTDCS1250T1	2
OTDC800...1000US22_ <sup>2)</sup>	6m	OTDCKIT1250B11	2	OTDCS1250T1	2
		OTDCKIT1250B101	1	OTDCS1250T2	1

<sup>1)</sup> The use of shrouds limits the rated current: OTDC1000U22 to 980 A and OTDC1000US22 to 920 A.

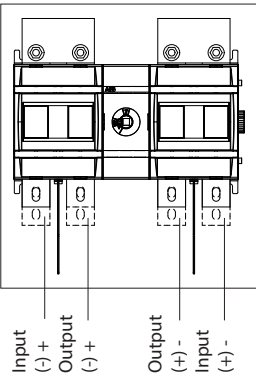
<sup>2)</sup> Jumpers are factory mounted.

## Circuit 6a, 6b

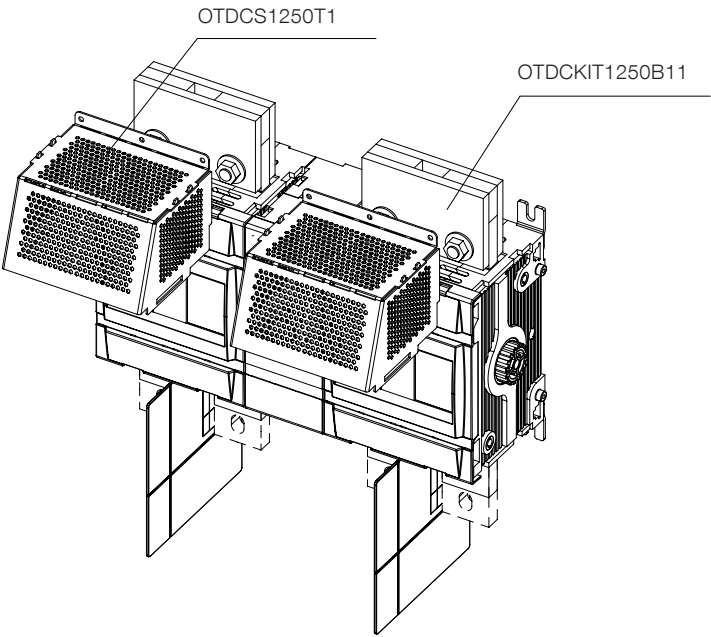
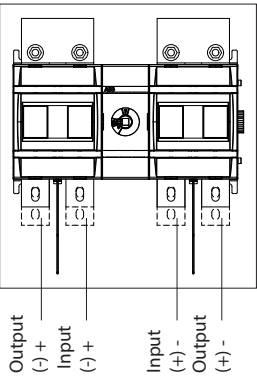
### Accessories for OTDC1000...1600E22\_, OTDC800...1000U22\_

Description	Type	Order number	Needed quantity
Connection -KIT	OTDCKIT1250B11	1SCA143479R1001	2
Shroud	OTDCS1250T1	1SCA144019R1001	2

Circuit 6a



Circuit 6b

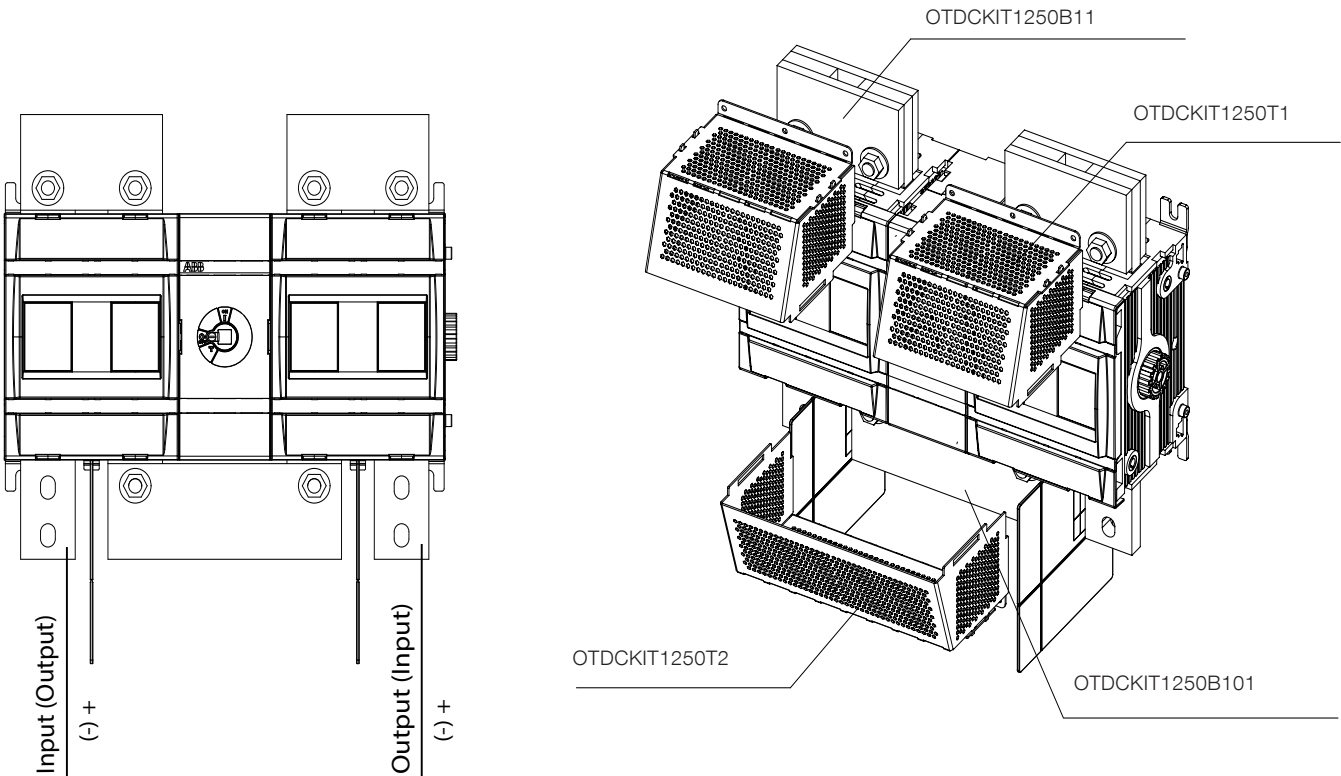


# Ordering information

## Circuit 6m

### Accessories for OTDC800...1000US22\_

Description	Type	Order number	Needed quantity
Connection -KIT	OTDCKIT1250B11	1SCA143479R1001	2
Shroud	OTDCS1250T1	1SCA144019R1001	2
Connection -KIT	OTDCKIT1250B101	1SCA142335R1001	1
Shroud	OTDCS1250T2	1SCA144021R1001	1



# Accessories



OHB274/J12

## Handles

Colour	Handle lenght [mm]	Type	Order number	Weight/ unit [kg]
External handle				
Black	274	OHB274J12	1SCA115920R1001	0.54
Red-yellow	274	OHY274J12	1SCA115919R1001	0.54
Direct mount handles				
Black	274	OTV1000EK	1SCA106608R1001	1.5

# Accessories



OXP12\_



OA1G10, OA3G01



OEA28



OTS1600GT1L



OTS1600GT1S



OTZT4\_

## Shafts

To be used with pistol handles, OTDC1000...1600E, OTDC800...1000U.

Lenght [mm]	Height [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

## Auxiliary contacts

Mounting on the left side of the switch: Max. 8 auxiliary contact blocks with the OEA28 module.

Suitable for switches	Type	Order number	Weight/ unit [kg]
OTDC1000...1600E, OTDC800...1000A	OA1G10	1SCA022353R4970	0.03
OTDC1000...1600E, OTDC800...1000A	OA3G01	1SCA022456R7410	0.03
Module for auxiliary contacts			
OTDC1000...1600E, OTDC800...1000A	OEA28	1SCA022714R8810	0.04

## Terminal shrouds

The use of shrouds limits the rated current: OTDC1000U22 to 980 A and OTDC1000US22 to 920 A.

Suitable for switches	Type	Order number	Weight/ unit [kg]
OTDC1000...1600E, OTDC800...1000A	OTS1600G1S	1SCA102667R1001	0.13
OTDC1000...1600E, OTDC800...1000A	OTS1600G1L	1SCA106134R1001	0.22

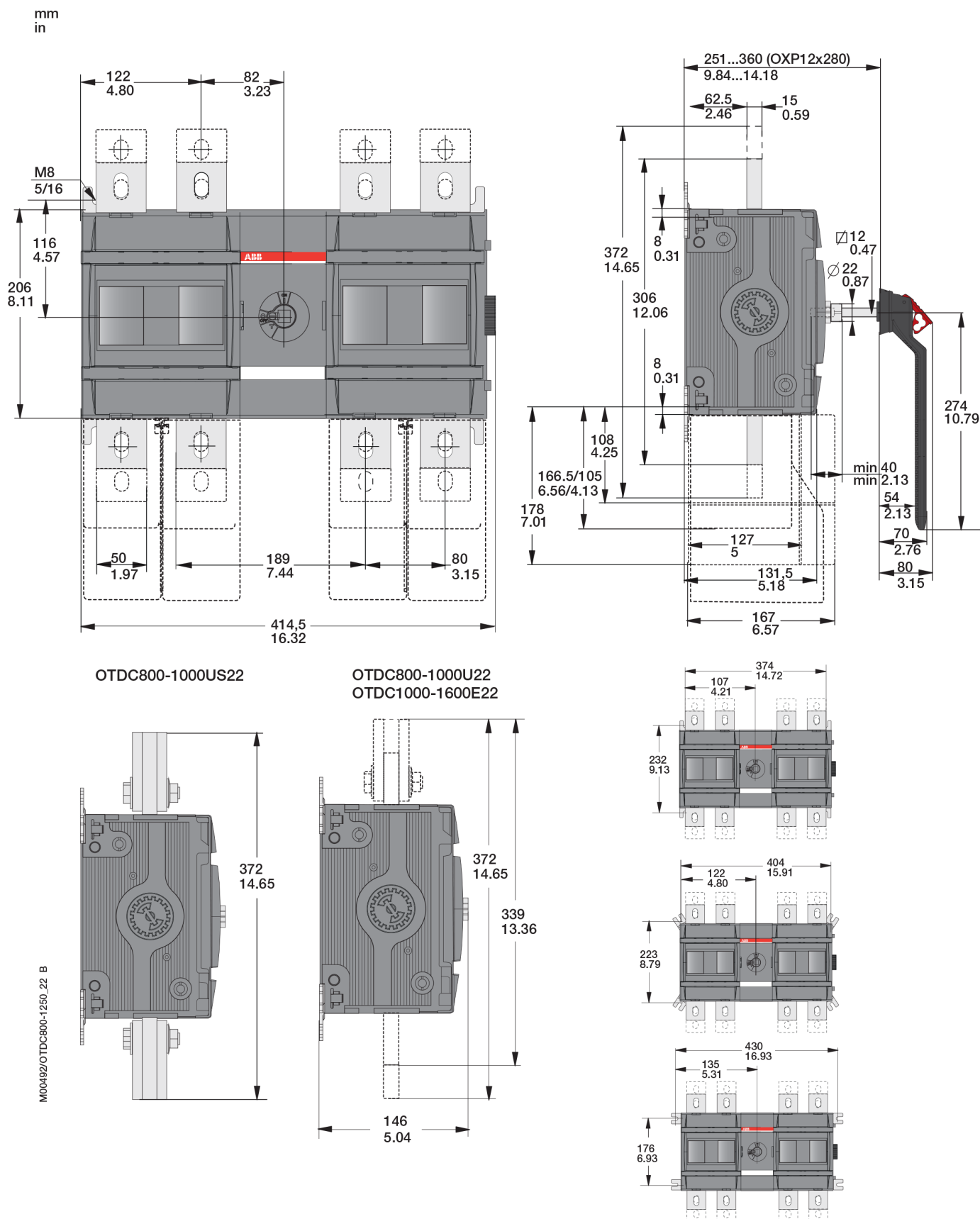
## Interlock

Suitable for switches	Type	Order number	Weight/ unit [kg]
Interlocked in the OFF -position using padlocks or a mechanical interlock kit mounted on the mechanism. The diameter of the lock bail can be max 8 mm.			
OTDC1000...1600E, OTDC800...1000U_	OTZT4A	1SCA106526R1001	1.0
Mechanical interlock kit			
OTDC1000...1600E, OTDC800...1000U_	OTZT4L	1SCA106531R1001	1.0

## Cable lug

Suitable for switches	Type	Order number	Weight/ unit [kg]
OTDC1000...1600E, OTDC800...1000U_	OZXA1200	1SCA130842R1001	0.5

# Dimension drawings



# Contact us

For more information please contact:

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