



Low Voltage Switches

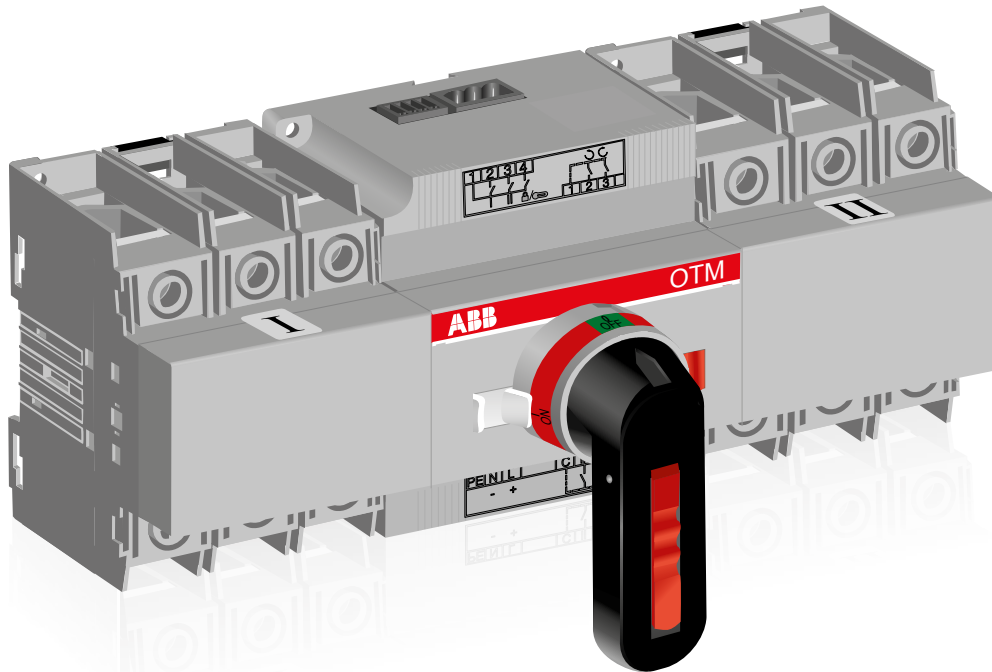
# Switches

## Motorized change-over switches

### OTM40...125\_C

# OTM40...125\_C

## Improves your performance



### Assembly made easy

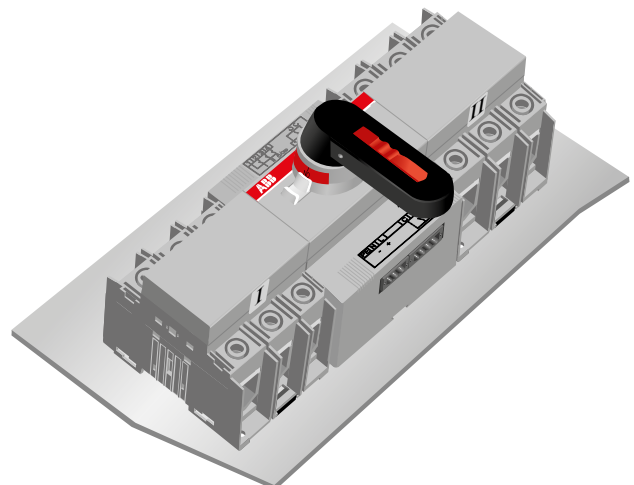
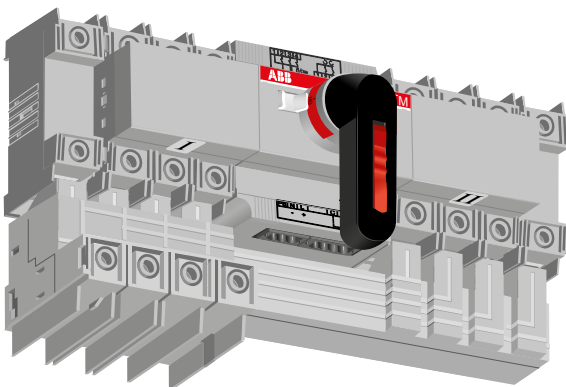
- Bridging bars for quick wiring
- Tunnel terminals ensure a tight and good connection every time
- Snap on accessories are easy to install
- Mounting in any direction

- ▶ Fast and reliable installation every time

### Most compact solution

- The very small footprint area of OTM allows it to be installed in confined spaces

- ▶ Reduced size means savings in costs



Effortless assembly, safety features, optimized performance and small size enable OTM40...125\_C motorized change-over switches to improve the performance of your application!

ABB offers a wide range of components for change-over applications. Meaning that all components can be sourced from one supplier.

#### Performance that meets your needs

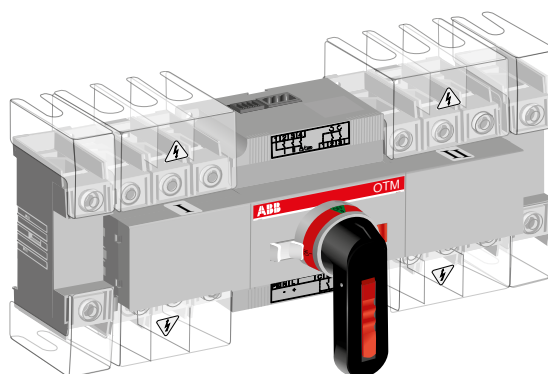
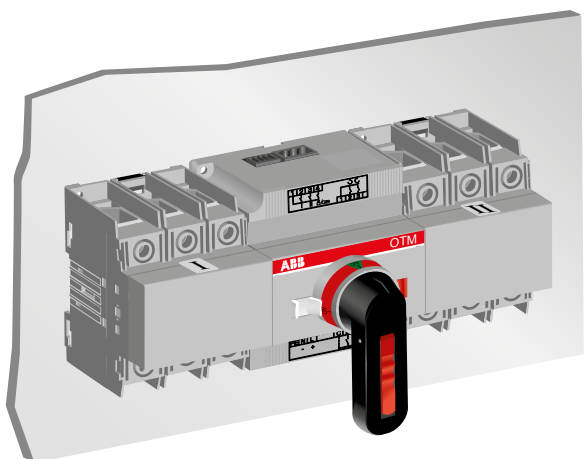
- Tested according to IEC 60947-3 and IEC 60947-6-1
- Full ratings according to utilization categories AC22A/32B which are the typical categories in GenSet applications
- A wide supply voltage range provides enhanced logistics and effortless design work
- 3- and 4-pole switches as standard

▶ Designed for your application

#### Safe to use

- OTM is not only a transfer device, it is also an isolator providing safe maintenance work
- Reliable position indication is always guaranteed
- Finger-safe construction prevents contact with live parts
- Mechanical and electrical locking options - safety is always considered

▶ Safe and reliable operation and maintenance



# Technical data

## OTM40...125\_C

### Motorized change-over switches

#### Data according to IEC 60947-3

		Switch size	
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V
Dielectric strength		50 Hz 1min.	kV
Rated impulse withstand voltage			kV
Rated thermal current and rated operational current AC20/DC20	/ ambient 40°C	In open air	A
	/ ambient 40°C	In enclosure	A
	/ ambient 60°C	In enclosure	A
..with minimum conductor cross section		Cu	mm <sup>2</sup>
Rated operational current, AC-21A		up to 500 V	A
		690 V	A
Rated operational current, AC-22A		up to 500 V	A
		690 V	A
Rated operational current, AC-23A		up to 415 V	A
		500 V	A
		690 V	A
Rated operational current / poles in series, DC-21A		up to 48 V	A
		110 V	A
		220 V	A
Rated operational current / poles in series, DC-22A		up to 48 V	A
		110 V	A
		220 V	A
Rated operational current / poles in series, DC-23A		up to 48 V	A
		110 V	A
		220 V	A
Rated operational power, AC-23A <sup>1)</sup> The kW-ratings are accurate for 3-phase 1500 R.P.M. standard asynchronous motors		230 V	kW
		400 V	kW
		415 V	kW
		500 V	kW
		690 V	kW
Rated breaking capacity in category AC-23		up to 415 V	A
		500 V	A
		690 V	A
Rated conditional short-circuit current $I_p$ (r.m.s.) and corresponding max. allowed cut-off current $\hat{I}_c$ (peak) value. The cut-off current $\hat{I}_c$ refers to values listed by fuse manufacturers (single phase test acc. to IEC60269).	$I_p$ (r.m.s.) 50 kA, 415 V Max. OFA_ fuse size	$\hat{I}_c$ (peak) gG/aM	kA A/A
	$I_p$ (r.m.s.) 18 kA, 690 V Max. OFA_ fuse size	$\hat{I}_c$ (peak) gG	kA A
	$I_p$ (r.m.s.) 50 kA, 690 V Max. OFA_ fuse size	$\hat{I}_c$ (peak) gG/aM	kA A/A
Rated short-time withstand current	$I_{sw}$ (r.m.s.)	690 V 1s	kA
Rated short-time making capacity <sup>2)</sup>	$I_{sm}$ (peak)	690 V	kA
Power loss / pole	With rated current		W
Mechanical endurance	Number of oper. cycles <sup>3)</sup>		Cycles
Mechanical endurance / switch	Number of operations		Oper.
Cable size	Cu-wire size suitable		mm <sup>2</sup>
	for terminal clamps		AWG
Terminal tightening torque	Counter torque required		Nm
Operating torque	Typical for 3-pole switches		Nm
Weight without accessories	3-pole switch		kg
	4-pole switch		kg

#### Data according to IEC 60947-6-1

Class of equipment			
Rated short-time withstand current	$I_{sw}$ (r.m.s.)	690 V 0.1s	kA
Conditional short-circuit current	$I_{cs}$ (r.m.s.)	415 V	kA
Corresponding fuse rating	gG/aM fuse	415 V	A
Rated operational current, AC-31B		up to 415 V	A
Rated operational current, AC-32B		up to 415 V	A
Rated operational current, AC-33B		up to 415 V	A

<sup>1)</sup> These values are given for guidance and may vary acc. to the motor manufacturer.

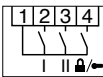
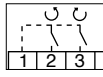
<sup>2)</sup> Short circuit duration >50ms, without fuse protection

<sup>3)</sup> Operating cycle: O - I - O - II - O

OTM40_	OTM63_	OTM80_	OTM100_	OTM125_
800	800	800	800	800
6	6	6	6	6
8	8	8	8	8
40	63	80	115	125
40	63	80	115	125
32	50	63	80	100
10	16	25	35	50
40	63	80	100	125
40	63	80	100	125
40	63	80	100	125
40	63	80	100	125
40	63	80	80	90
40	60	60	60	70
40	40	40	40	50
40/1	63/1	80/1	100/1	125/1
40/2	63/2	80/2	100/2	125/2
40/4	63/4	80/4	100/4	100/4
40/1	63/1	80/1	100/1	125/1
40/2	63/2	80/2	100/2	125/2
40/4	63/4	80/4	80/4	80/4
40/1	63/1	80/1	100/1	125/1
40/2	63/2	80/2	100/2	125/2
40/4	63/4	63/4	63/4	63/4
7.5	15	22	22	22
18.5	30	37	37	45
18.5	30	37	37	45
22	37	37	37	45
37	37	37	37	45
320	504	640	640	720
320	480	480	480	560
320	320	320	320	400
16.5	16.5	16.5	16.5	16.5
125/125	125/125	125/125	125/125	125/125
11	11	11	11	11
125	125	125	125	125
10	10	10	10	10
63/63	63/63	63/63	63/63	63/63
2.5	2.5	2.5	2.5	2.5
3.6	3.6	3.6	3.6	3.6
1.6	2.8	3.5	4.0	6.3
10 000	10 000	10 000	10 000	10 000
20 000	20 000	20 000	20 000	20 000
2.5-25/2x2.5-16	10-70	10-70	10-70	10-70
14-4/2x14-6	8-00	8-00	8-00	8-00
6	6	6	6	6
5	5	5	5	5
1.37	1.37	1.37	1.37	1.37
1.60	1.60	1.60	1.60	1.60
PC	PC	PC	PC	PC
5	5	5	5	5
50	50	50	50	50
125	125	125	125	125
40	63	80	100	125
40	63	80	100	125
40	63	80	80	80

# Technical data, motor operator OTM40...125\_C

## Data for motor operator

according to IEC 60947		Switch size	40...125
Rated operational voltage $U_e$	Pollution degree 3 50/60 Hz	V AC/DC	110 - 240
Operating voltage range			0.85 - 1.1 x $U_e$
Operating time <sup>1)</sup>	90° I-0, 0-I, 0-II, II-0	s	0.5-1.0
Operating transfer time <sup>1)</sup>	180° I-II, II-I	s	1.2-1.5
OFF -time when operating I-II or II-I <sup>1)</sup>	180° I-II, II-I	s	0.4-0.8
Nominal current $I_n$ <sup>1)</sup>		A	0.2-0.5
Current inrush <sup>1)</sup>		A	1.5-3.0
Operating rate	Cycle 0-I-0-II-0	cycles/min	1
	Max. continuous Max. short-time ≤ 10 cycles	cycles/min	10
Overvoltage category			III
Rated impulse withstand voltage $U_{imp}$		kV	4
Dielectric strength	50 Hz 1 min.	kV	1.5
Impulse command	Min. impulse duration	ms	100
<b>Terminals</b>			
<b>Voltage supply wiring for <math>U_e</math></b>			PE - N - L
Cross section	Solid/stranded	mm <sup>2</sup>	1.5 - 2.5
Short-circuit protection device	Max. MCB	A	16
<b>Control terminal</b>			C - II - I - O
Cross section	Solid/stranded	mm <sup>2</sup>	1.5 - 2.5
Maximum cable length		m	100
<b>Terminal for state information</b>			
Terminal for state information		Solid/stranded	mm <sup>2</sup> 1.5
Also used with the OMD automatic control unit		Rating	A 3
			AC-1/250V
Common, voltage supply	1		
Position of switch I	2		
Position of switch II	3		
Handle attached or motor operator locked	4		
Short-circuit protection device		Max. MCB	C2A
<b>Control terminal for OMD automatic control unit</b>			
Control terminal for OMD automatic control unit		Solid/stranded	mm <sup>2</sup> 1.5 - 2.5
Common, voltage supply from motor operator	1	V DC	24
Close switch I or open switch II	2	V DC	24
		mW	500
Close switch II or open switch I	3	V DC	24
		mW	500
Operating temperature		°C	-25...+55
Transportation and storage temperature		°C	-40...+70
Max. altitude		m	2000
Protection degree (front panel)			IP20

<sup>1)</sup> Under nominal conditions

# Ordering information

## OTM40...125\_C

OTM40...125F3C\_



OTM40...125F4C\_



### Change-over switches, motor operation, I-O-II -operation, open transition

Including a handle for manual operation, a storage clip for the handle and male connectors for control circuits. Cable cross section for OTM40 is 2.5...25 mm<sup>2</sup> or 2 x 2.5...16 mm<sup>2</sup> and for OTM63...125 is 10 ... 70 mm<sup>2</sup>.

Number of poles	Rated current AC-21A... AC-22A up to 415 V I [A]		Rated current AC-31B/ AC-33B 400V I [A]	Type	Order number	Package [pcs]	Weight [kg]
	Rated power S[kVA]	Rated power S[kVA]	Rated power S[kVA]				
<b>Motor voltage U<sub>e</sub> 110-240 V AC/DC</b>							
3	40	27	40/40	OTM40F3CMA230V	1SCA120096R1001	1	1.64
4	40	27	40/40	OTM40F4CMA230V	1SCA120102R1001	1	1.86
3	63	43	63/63	OTM63F3CMA230V	1SCA120095R1001	1	1.64
4	63	43	63/63	OTM63F4CMA230V	1SCA120101R1001	1	1.86
3	80	55	80/80	OTM80F3CMA230V	1SCA120093R1001	1	1.64
4	80	55	80/80	OTM80F4CMA230V	1SCA120100R1001	1	1.86
3	100	70	100/80	OTM100F3CMA230V	1SCA120071R1001	1	1.64
4	100	70	100/80	OTM100F4CMA230V	1SCA120098R1001	1	1.86
3	125	86	125/80	OTM125F3CMA230V	1SCA120070R1001	1	1.64
4	125	86	125/80	OTM125F4CMA230V	1SCA120097R1001	1	1.86

# Ordering information

## Accessories

OHB65D6CM  
S07102



### Handles, direct mounting

Plastic I - O - II handle.

Suitable for switches	Colour		Type	Order number	Units/ type [pcs]	Weight [kg]
OTM40...125F_C	Black	Shaft incl.	OHB65D6CM	1SCA022807R9430	1	0.12

OTVS0  
S07103

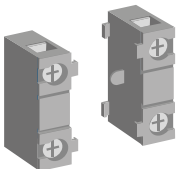


### Handle storage clip

The handle can be stored in the handle storage clip OTVS0. The handle storage clip can be fixed to a panel frame using the included adhesive tape.

Suitable for switches	Type	Order number	Units/ type [pcs]	Weight [kg]
OTM40...125F_	OTVS0	1SCA117524R1001	1	0.02

OA1\_,8\_,7\_  
S00261A



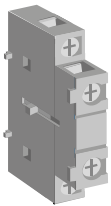
### Auxiliary contacts

Snap-on mounting to the switch, IP 20, max. 2 blocks/ side.  $I_{th} = 16$  A, suitable for cable cross sections max.  $2 \times 2.5$  mm<sup>2</sup>. Simultaneous action with the main contacts. The type and ordering number is for one piece.

Suitable for switches	Contact functions	Installation side	Type	Order number	Delivery batch [pcs]	Weight [kg]
OTM40...125F_CM	1NO	Right	OA1G10	1SCA022353R4970	1	0.03
OTM40...125F_CM	1NC	Right	OA8G01	1SCA022744R2240	1	0.03
OTM40...125F_CM	1NO	Left	OA7G10	1SCA022673R1140	1	0.03
OTM40...125F_CM	1NC	Left	OA1G01	1SCA022353R4890	1	0.03
OTM40...125F3CM	1NO+1NC	Either	OA2G11 <sup>1)</sup>	1SCA022379R8100	1	0.04

<sup>1)</sup> Not mountable on 4-pole change-over switches.

OA2G11  
S01025A

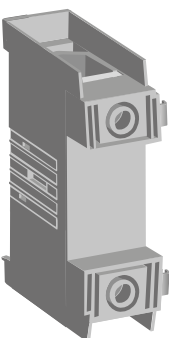


### 4th poles

Snap-on mounting to the left or right side of the switches, IP20. Simultaneous operation with power poles. The type and ordering number is for one piece.

Suitable for switches	Rated current / up to 415V AC-21A/AC-22A /AC-23A I[A]	Type	Order number	Delivery batch [pcs]	Weight [kg]
OTM40F_	40/40/40	OTPS60FP	1SCA111009R1001	1	0.14
OTM63...125F_	125/125/90	OTPS125FP	1SCA105099R1001	1	0.14

OTPS\_  
S01342A

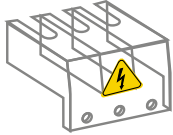




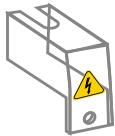
# Ordering information

## Accessories

OTS125T3  
S00265A



OTS125T1  
S00462A



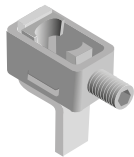
OZXT1  
S00738A



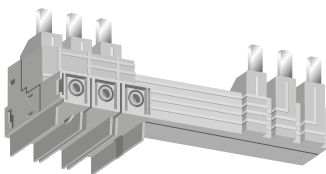
OZXT2, OZXT3  
S01349A



OZXL1  
S01361A



OMZC\_  
S07104



### Terminal shrouds

Transparent plastic, snap-on mounting to the switches, IP20. The full shrouding of a 3-pole change-over switch is achieved with four 3-pole shrouds.\*

Suitable for switches	Type	Order number	Units/ type [pcs]	Weight [kg]
<b>For three pole switches</b>				
OTM40...125F_	OTS125T3	1SCA022379R9680	1	0.03
<b>For fourth pole</b>				
OTPS60FP, OTPS125FP	OTS125T1	1SCA022379R9760	1	0.03

### Terminal clamp sets

Suitable for switches	Cable cross section [mm <sup>2</sup> ]	Type	Order number	Units/ type [pcs]	Weight [kg]
<b>Terminal clamp sets for Al- and Cu-cables insulated versions</b>					
OTM40...125F_	16...50 Al / 2.5...50 Cu	OZXT1	1SCA022469R6310	3	0.06
OTM63...125F_	16...120 Al/Cu	OZXT2	1SCA022620R7200	3	0.21
OTM63...125F_	2x(16...50) Al/Cu	OZXT3	1SCA022639R0720	3	0.21
<b>Terminal clamp sets for Al- and Cu-cables</b>					
OTM40...125F_	10...70 Al/Cu	OZXL1	1SCA022439R6770	3	0.14

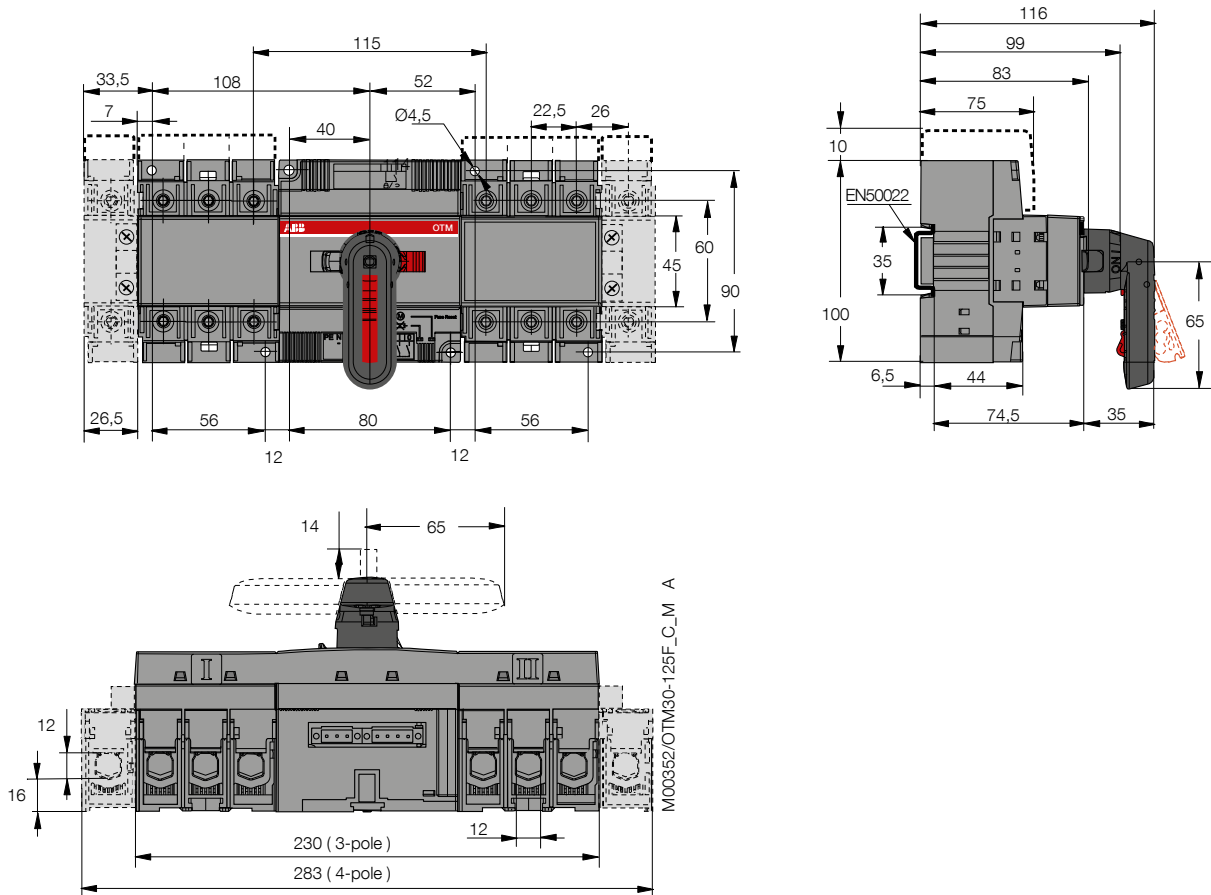
### Parallel connection kits

Finger protected connection bars for parallel connection of the upper or lower terminals. The bars accept additional cables, the maximum size is stated below.

Suitable for switches	Cable cross section [mm <sup>2</sup> ]	Type	Order number	Units/ type [pcs]	Weight [kg]
OTM40F3C_	2.5...25/2x2.5...16	OMZC003	1SCA121324R1001	1	0.5
OTM40F4C_	2.5...25/2x2.5...16	OMZC004	1SCA121325R1001	1	0.65
OTM40...125F3C_	10...70	OMZC003	1SCA117037R1001	1	0.5
OTM40...125F4C_	10...70	OMZC004	1SCA117038R1001	1	0.65

\* Terminal shrouds can also be mounted on parallel connection kits.

# Dimension drawings OTM40...125\_C





# Contact us

## ABB Oy

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