

INSTALLATION AND OPERATING INSTRUCTION

Motorized switch-disconnectors OTM3200E4M230C-GE

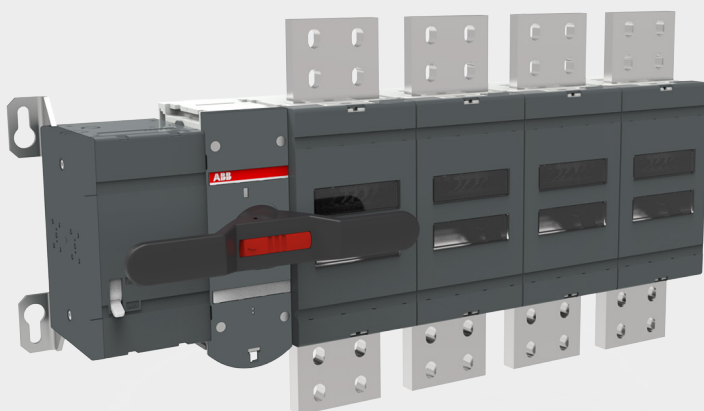
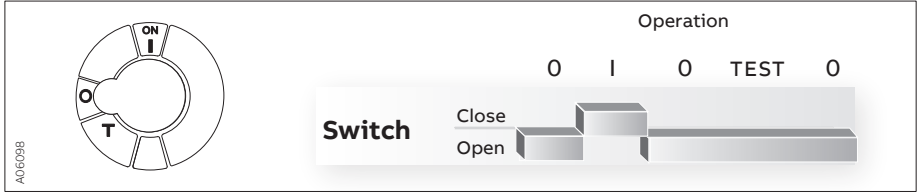


Table of contents

Operation	03
1. Introduction	04
1.1 Use of symbols	04
1.2 Explanations of abbreviations and terms	04
2. Product overview	05
3. Installation	06
3.1 Mounting the motorized switch-disconnector	06
3.2 Dimensional drawings	07
3.3 Connections	08
3.4 Mounting connections	08
3.5 Supporting distances	09
3.6 Mounting positions	09
3.7 Labelling	10
4. Connecting	11
4.1 Control circuit	11
5. Operating	12
5.1 Electrical operation	12–13
5.1.1 Impulse control	14
5.1.2 Continuous control	14
5.2 Manual operation using the handle	15
5.3 Locking	16
5.3.1 Locking the electrical operation	16
5.3.2 Locking the manual operation	17–18
6. Technical data	19
6.1 Motor operation	19
6.2 State information	19
7. Accessories	20
7.1 Auxiliary contacts	20
7.1.1 Mounting of auxiliary contacts	20
7.1.2 Mounting of Test auxiliary contacts	21
7.2 Phase barriers	22

Operation



1. Introduction

1.1 Use of symbols

This manual describes the installation and the basic operation of the motorized switch-disconnectors, type OTM3200E4M230C-GE. The instructive part is followed by a section on available accessories.

This switch is intended for mounting in OTM3200E4M230C-GE, manufactured by GE POWER CONVERSION INDIA Pvt Ltd. Metallic enclosure and the dimension is 2x1x1 m. The minimum clearance between the switch and adjacent parts of the enclosure or other grounded components that may be mounted near the switch is 14 mm.



Hazardous voltage

Warns about a situation where a hazardous voltage may cause physical injury to a person or damage to equipment.



General warning

Warns about a situation where something other than electrical equipment may cause physical injury to a person or damage to equipment.



Caution

Provides important information or warns about a situation that may have a detrimental effect on equipment.



Information

Provides important information about the equipment.

1.2 Explanations of abbreviations and terms

OTM_:	Motorized switch-disconnector, the type name
OME_:	Motor operator, the type name
OTS_:	Terminal shrouds, the type name, accessories
OA_:	Auxiliary contacts, the type name, accessories
OTB_:	Phase barriers, the type name, accessories

2. Product overview

Motorized switch-disconnectors (type OTM3200E4M230C-GE) are suitable for remote control. You can operate the motorized switch-disconnectors either electrically by using the motor operator or manually by using the handle. The operation, either electrical or manual, can be chosen by the selector switch “Motor/Manual” on the motor operator. Motorized switch-disconnectors consist of the switch-disconnector and the motor operator.

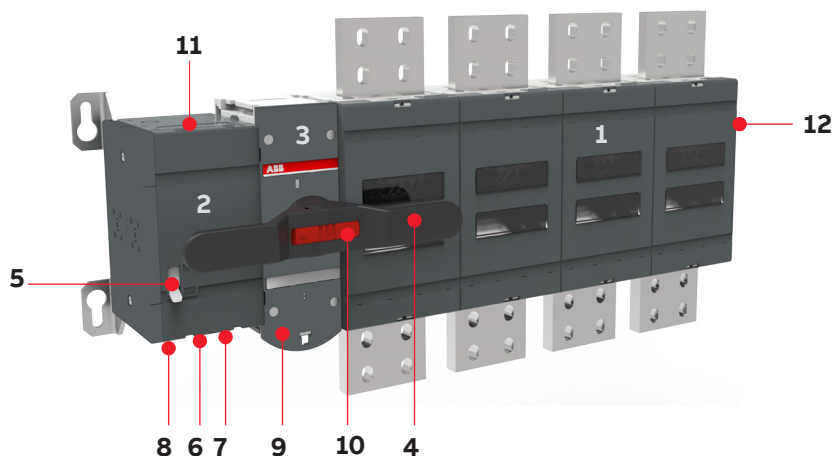


Figure 2.1 Motorized switch-disconnector (type OTM3200E4M230C-GE)

- 1 Switch-disconnector
- 2 Motor operator
- 3 Switch panel, the operating mechanism
- 4 Handle for manual operation
- 5 Motor/Manual selection
- 6 Terminals for motor operator voltage supply
- 7 Terminals for push-buttons
- 8 Fuse (F1) of motor operator
- 9 Locking latch for releasing the handle and locking electrical control
- 10 Locking clip for locking manual operation
- 11 Terminals for locking state information
- 12 Place for auxiliary contact blocks

3. Installation

3.1 Mounting the motorized switch-disconnector



Use protection against direct contact.

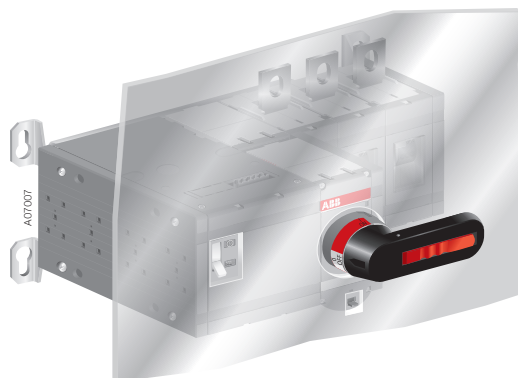


Figure 3.1 An example of using protection against direct contact

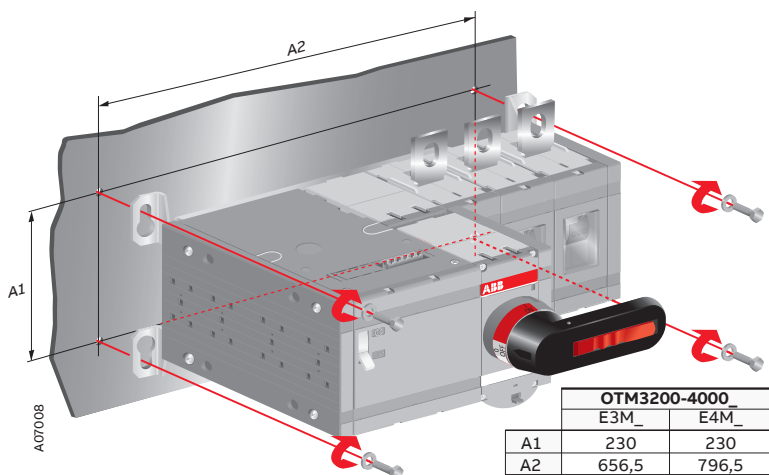
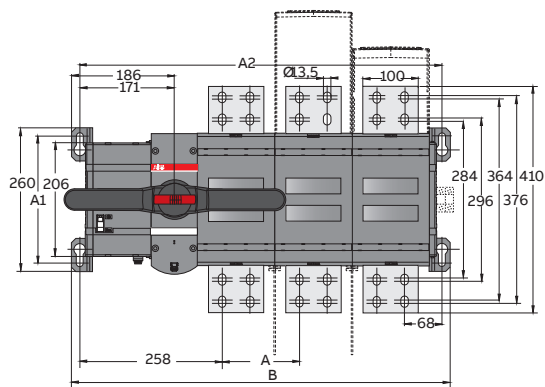


Figure 3.2 Motorized switch-disconnectors. drilling hole distances / screw mounting [mm/in]

3.2 Dimensional drawings

mm



OTM3200-4000-M			
	E2	E3	E4
A	140	140	140
A1	230	230	230
A2	516,5	656,5	796,5
B	546,5	686,5	826,5

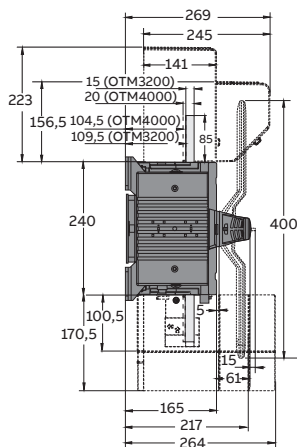


Figure 3.3 OTM3200-4000E_M

M00433/OTM3200-4000_M A

3.3 Connections

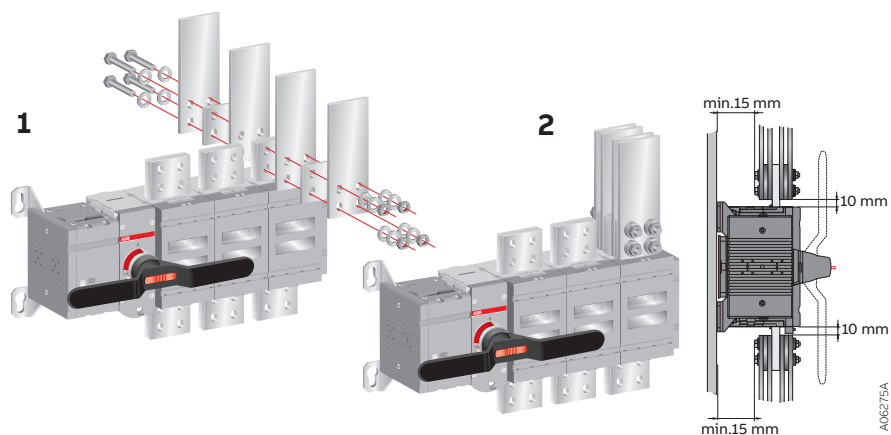


Figure 3.4 Mounting the connections to the motorized change-over switches OTM3200E4M230C-GE. The minimum connection busbars $5 \times 100 \times 10 = 5000 \text{ mm}^2$ Cu and bridge busbars $1 \times 80 \times 15 = 1200 \text{ mm}^2$ Cu, 1pc bridge busbar for each terminal.

3.4 Mounting connections

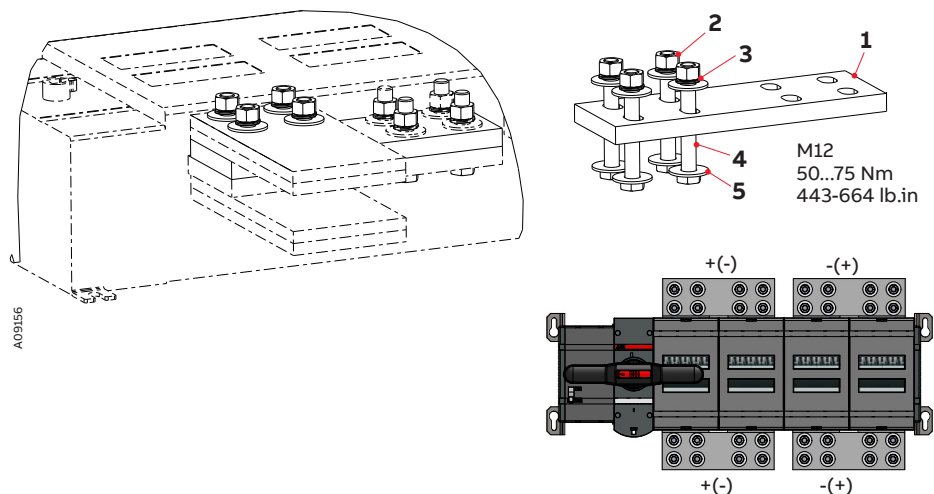


Figure 3.5 Circuit 3 OTM3200E4M230C-GE

3.5 Supporting distances

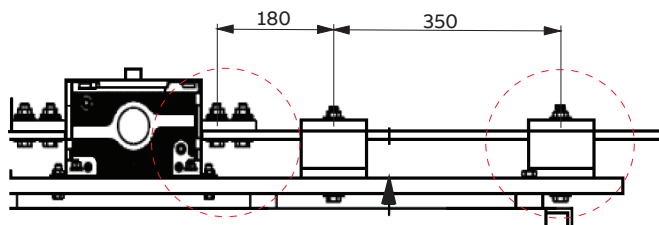


Figure 3.6 Supporting distances

3.6 Mounting positions

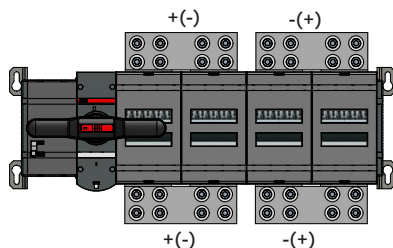


Figure 3.7 Mounting positions

Do not install the motorized switch-disconnectors in any other position than the described above.

3.7 Labelling

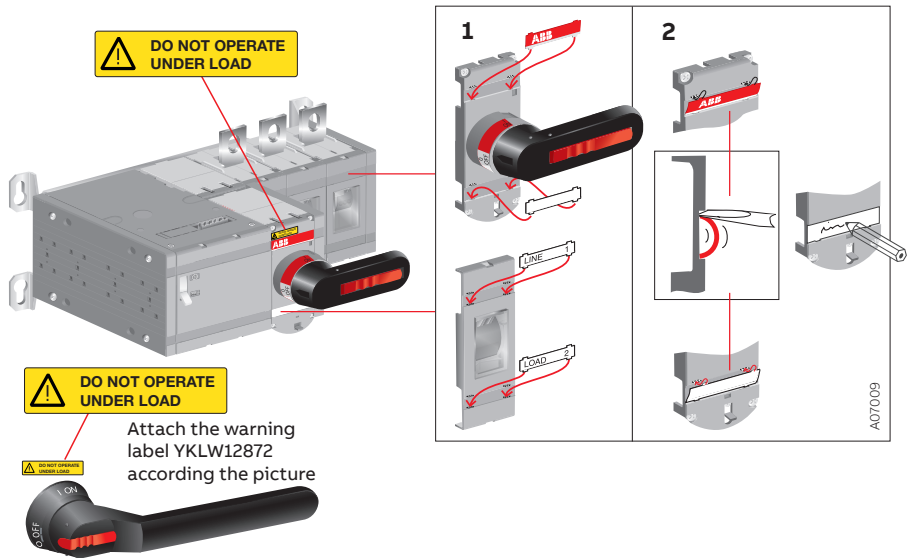


Figure 3.8 Labelling of the motorized switch-disconnectors

4. Connecting



Only an authorised electrician may perform the electrical installation and maintenance of motorized switch-disconnectors. Do not attempt any installation or maintenance actions when a motorized switch-disconnector is connected to the electrical mains. Before starting work, make sure that the switch-disconnector is de-energised.

4.1 Control circuit

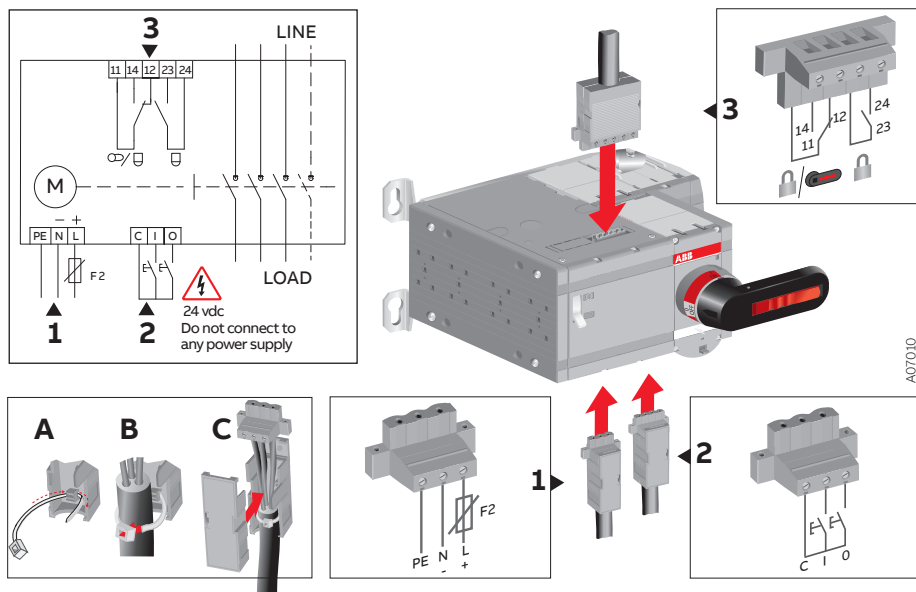


Figure 4.1 Motorized switch-disconnector terminals

1. Terminal for motor operator voltage supply
2. Control terminal for push buttons or selector switch
3. Terminal for state information of locking



Do not couple power for the control terminal. See the correct terminal for the power supply in Figure 4.1.



The control voltage (output C = 24Vdc) on the control terminal is non-isolated, see box 2 in Figure 4.1.



When relay outputs are used with inductive loads (such as relays, contactors and motors), they must be protected from voltage spikes using varistors, RC-protectors (AC current) or DC current diodes (DC current).

5. Operating



Never open any covers on the product, if the voltage is connected. There may be still dangerous external control voltages inside the motorized switch-disconnector even if the voltage is turned off.



Never handle control cables when the voltage of the motorized switch-disconnector or external control circuits are connected.



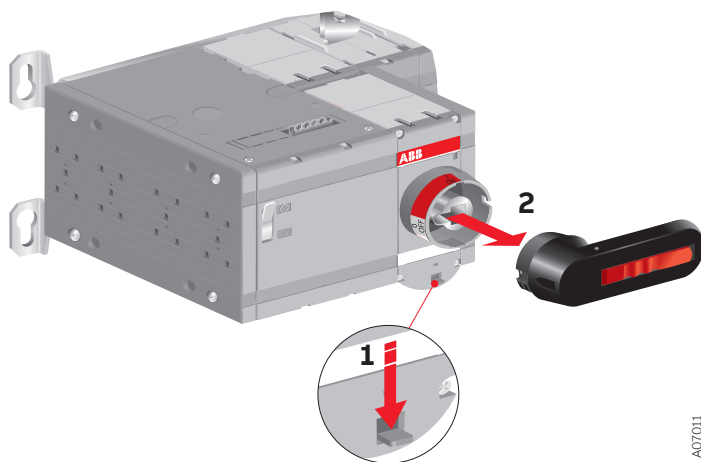
Exercise sufficient caution when handling the unit.

5.1 Electrical operation

The motorized switch-disconnectors are available for remote control.

To operate the motorized switch-disconnector electrically:

1. Release the handle from the switch panel by pressing down the locking latch under the switch panel and pulling the handle off, see Figure 5.1.



A07011

Figure 5.1 Releasing the handle



Electrical operation is disabled if the handle is attached to the switch panel.

2. Turn the Motor/Manual selection switch to the Motor (M) position, see Figure 5.2.

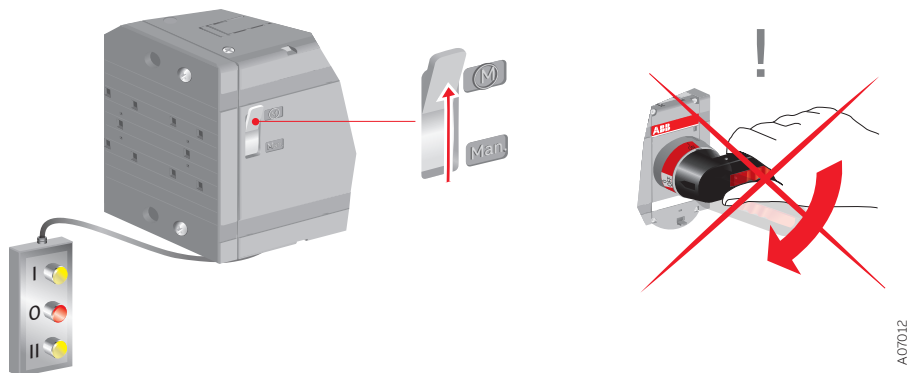


Figure 5.2 Motor/Manual selection switch in the Motor (M) position

3. Operate the motorized switch-disconnector with the push-buttons or selector switch via impulse control or continuous control.



The motor operator is protected from overloading by a fuse (F1) under the motor operator. Only use the same type of fuse that is described on the label close to the fuse.

The max. continuous operating rate is 1 cycle / 2 min, max. short-time rate <10 cycles is 5 cycles / min.

5.1.1 Impulse control

When using impulse control, the switch-disconnector is controlled by electric impulses. When you press the control button, the switch-disconnector is driven to the corresponding position (I or 0). The control impulse must last more than 100 ms to take effect. A new command cannot be given until the switch-disconnector has reached the position of the previous command. Figure 5.3 shows the operation of the switch-disconnector with impulse control.



If a new command is given before the switch has reached the position of the previous command, the fuse (F1) may operate.

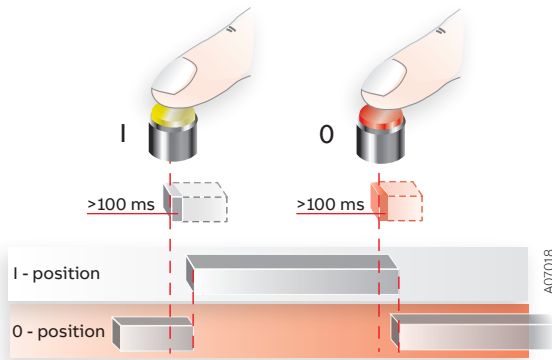


Figure 5.3 Impulse control

5.1.2 Continuous control

When using continuous control, the control command is supplied to the switch continuously. When you press the control button, the switch-disconnector is driven to the corresponding position (I or 0). The position will change only when the new command is given. Figure 5.4 shows the operation of the switch-disconnector with continuous control.



The continuous control command can be given with push buttons, cam switches or with relays incorporated in PLC equipment or with other suitable contacts.

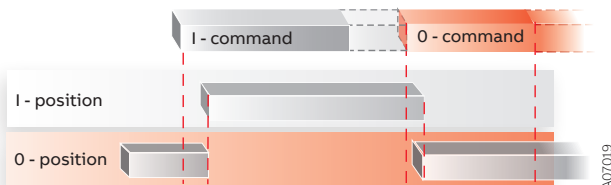


Figure 5.4 Continuous control

5.2 Manual operation using the handle

You can operate the motorized switch-disconnector manually by using the handle that is included in the delivery.

To operate the motorized switch-disconnector manually:

1. Turn the Motor/Manual selector to the Manual (Man.) position, see Figure 5.5. The motor operator is switched off and electrical operation is prevented.

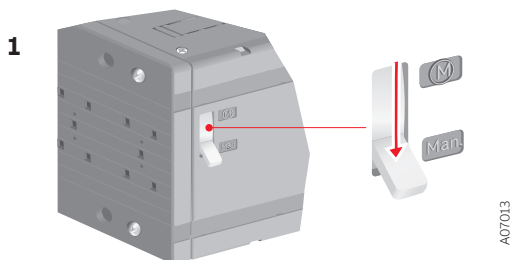


Figure 5.5 Motor/Manual selection in the Man. position

2. Attach the handle by pressing it to the switch panel until it clicks into place, see Figure 5.6. You can attach the handle in both positions (I or 0).

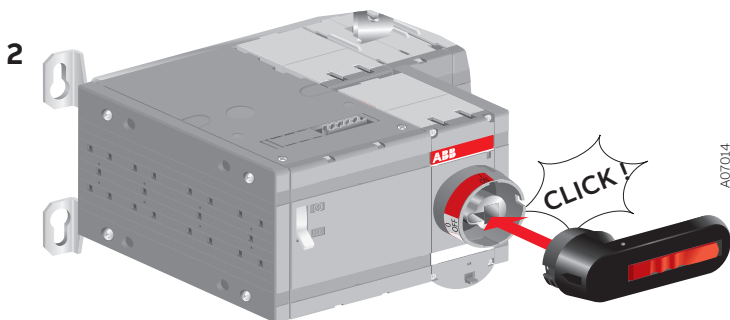


Figure 5.6 Attaching the handle

3. Operate the motorized switch-disconnector by turning the handle to the required position (I or 0).



Electrical operation is prevented when the handle is attached to the switch panel.

5.3 Locking

You can lock the motorized switch-disconnector to a specific position.

5.3.1 Locking the electrical operate

To disable electrical control, lock the locking latch with a padlock. After the locking latch has been locked, the switch-disconnector cannot be controlled electrically. You can lock the electrical operation to both positions (I or O).

To lock electrical operation:

1. Pull up the locking latch under the switch panel.
2. Place the padlock under the latch, see Figure 5.7.

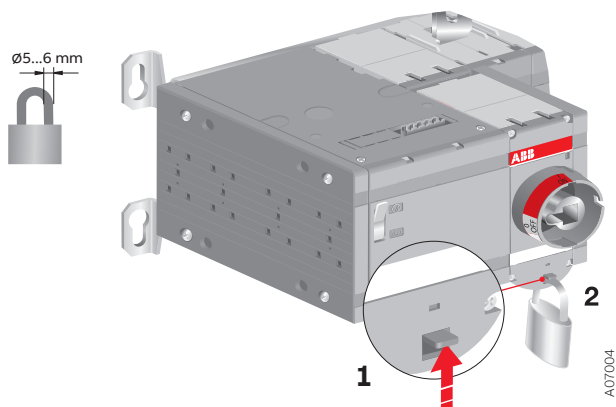


Figure 5.7 Locking the electrical operation



You cannot attach the handle when electrical operation is locked.

5.3.2 Locking the manual operation

By default, manual operation can only be locked to position 0. Locking to position I is optional and possible only with modifications to the switch panel.

To lock manual operation:

1. Turn the handle to the required position.
2. Pull out the clip from the handle and place the padlock on the handle; see Figure 5.8.

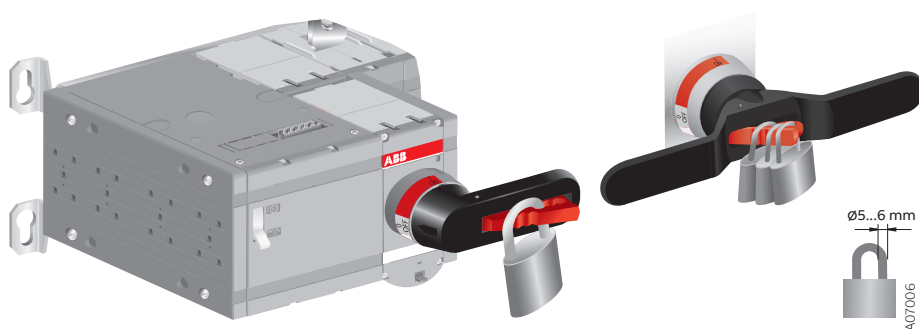


Figure 5.8 Locking the manual operation



The handle cannot be removed when padlocked to position 0.

The following chart shows the locking state information (the voltage on motor operator supply needed)*).

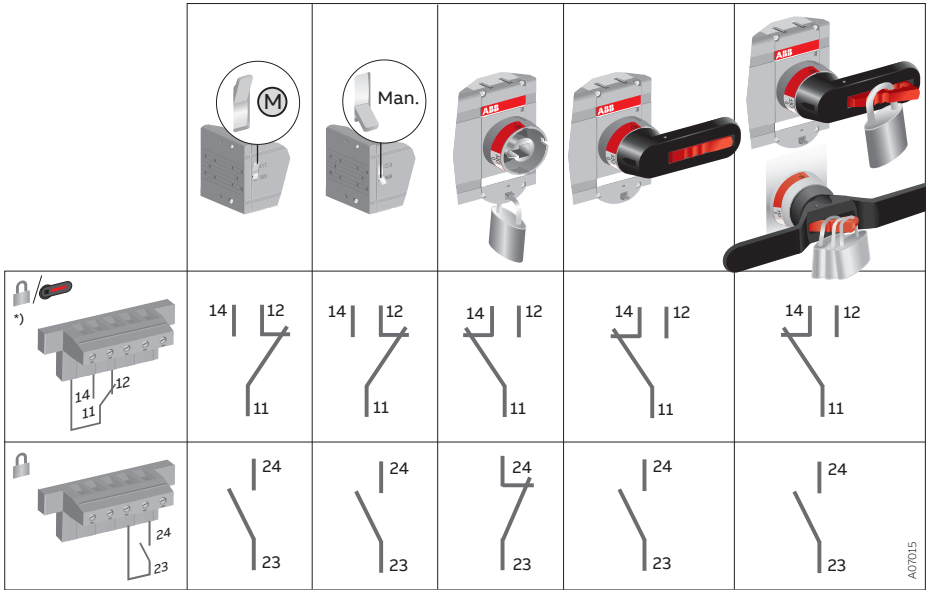


Figure 5.9 Locking state information

6. Technical data

6.1 Motor operation

Motor operator, control circuit	Value	Cabling
Rated operational voltage U [V]	220-240 Vac, 50-60Hz	
Operating voltage range	0,85... 1,1 x U	
Operating angle	90° 0-I, I-0	
Operating time	See Table 7-2	
Protection degree	IP 20, front panel	
Rated impulse withstand voltage U _{imp}	2,5 kV	
Voltage supply	PE N L	1,5 -2,5mm ²
F2	Max. MCB 16A	
Cable of the push-buttons (no SELV)	C I O	1,5 -2,5mm ²
Maximum cable length	100 m	
State information of locking (no SELV)		
Handle attached or motor operator locked	11-12-14 (C/O)	1,5 -2,5mm ²
Locking motor operator	23-24 (NO)	1,5 -2,5mm ²
Operating temperature	-25... +55 °C	
Transportation and storage temperature	-29... +70°C	
Altitude	Max. 2000 m	

Table 6.1 General technical data of motor operators

Type	Voltage U ^{a)} [V]	Nominal current ^{a)} I _n [A]	Current inrush ^{a)} [A]	Operating time ^{a)} I-0, 0-I, [s]	Fuse 5 x 200 m 250 U
OTM3200...4000_	220-240Vac	1,4	10	1,0 - 2,0	T 2 Ah

Table 6.2 Specified technical data of motor operators

^{a)} Under nominal conditions

6.2 State information

Measurement	Value
Handle attached or motor operator locked	11-12-14 (C/O): 5A, AC-1 / 250V
Locking motor operator	23-24 (NO): 5A, AC-1 / 250V
SCPD	Max. MCB C2A

Table 6.3 State information

7. Accessories

7.1 Auxiliary contacts

7.1.1 Mounting of auxiliary contacts

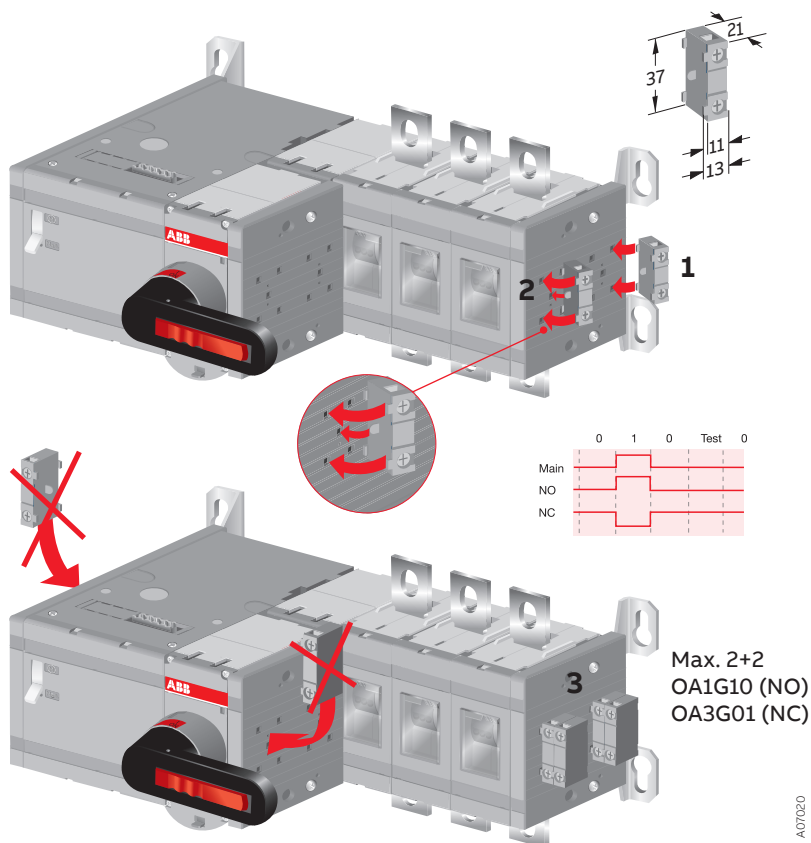


Figure 7.1 Mounting of auxiliary contacts, type OA_ on the right side of the switch-disconnector

7.1.2 Mounting of the test auxiliary contacts

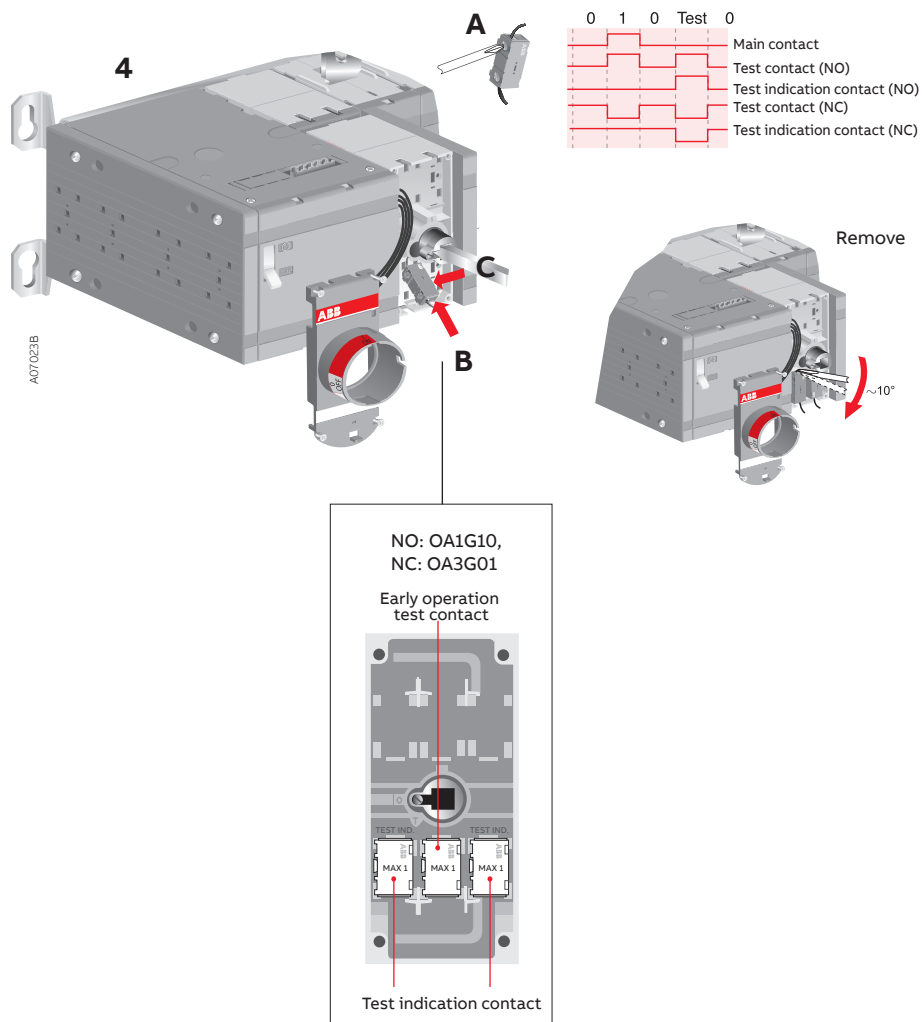


Figure 7.2

Mounting of the test auxiliary contacts, type OA_ to the switch mechanism of the motorized OTM3200-4000

7.2 Phase barriers

Phase barriers must be used to maintain a clearance of 1 inch on the motorized switch-disconnectors. Phase barrier type CXBY69470 must be used on OTM3200-4000E_.

The type for the package of 6 barriers are OTB4000/6.

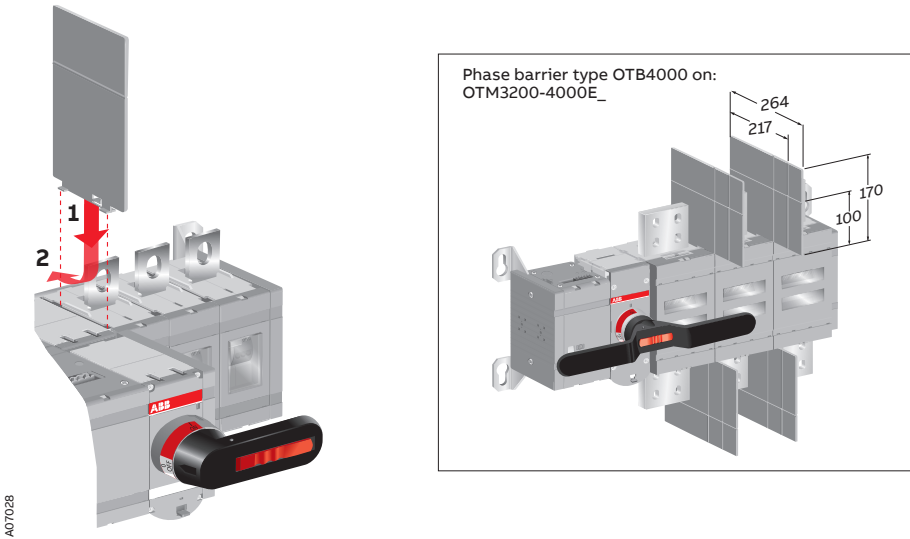


Figure 7.3 OTM3200-4000E_ mounting of phase barriers



BG	Внимание! Опасно напряжение! Да се монтира само от лице с електротехническа квалификация.
CN	警告！电压危险！只能由专业电工进行安装。
CZ	Varování! Nebezpečné napětí! Montáž smí provádět výhradně elektrotechnik!
DA	Advarsel! Farlig elektrisk spænding! Installation må kun foretages af personer med elektroteknisk ekspertise.
DE	Warnung! Gefährliche Spannung! Installation nur durch elektrotechnische Fachkraft.
EL	Προειδοποίηση! Υψηλή τάση! Η εγκατάσταση πρέπει να γίνεται μόνο από εξειδικευμένους ηλεκτροτεχνικούς.
EN	Warning! Hazardous voltage! Installation by person with electrotechnical expertise only.
ES	¡Advertencia! ¡Tensión peligrosa! La instalación deberá ser realizada únicamente por electricistas especializados.
ET	Hoiatus! Ohtlik pinge. Paigaldada võib ainult elektrotehnika-alane ekspert.
FI	Varoitus! Vaarallinen jännite! Asennuksen voi tehdä vain sähköalan ammattihenkilö.
FR	Avertissement! Tension électrique dangereuse! Installation uniquement par des personnes qualifiées en électrotechnique.
HR	Upozorenje! Opasan napon! Postavljati smije samo elektrotehnički stručnjak.
HU	Figyelemzetetés! Veszélyes feszültség! Csak elektrotechnikai tapasztalattal rendelkező szakember helyezheti üzembe.
IE	Rabhadh! Voltas guaiseach! Ba chóir do dhuine ag a bhfuil saineolas leictreicniúil, agus an té sin amháin, é seo a shuiteáil.
IT	Avvertenza! Tensione pericolosa! Fare installare solo da un elettricista qualificato.
LT	Dėmesio! Pavojinga įtampa! Dirbti leidžiama tik elektrotechnikui patirties turintiems asmenims.
LV	Uzmanību! Bīstami - elektrība! Montāžas darbus drīkst veikt tikai personas, kurām ir atbilstošas elektrotehniskās zināšanas.
MT	Twissija! Voltagg perikoluż! Għandu jiġi installat biss minn persuna b'kompetenza elettroteknika.
NL	Waarschuwing! Gevaarlijke spanning! Mag alleen geïnstalleerd worden door een deskundige elektrotechnicus.
NO	Advarsel! Farlig spenning! Montering skal kun utføres av kvalifiserte personer med elektrokompetanse.
PL	Ostrzeżenie! Niebezpieczne napięcie! Instalacji może dokonać wyłącznie osoba z fachową wiedzą w dziedzinie elektrotechniki.
PT	Aviso! Tensão perigosa! A instalação só deve ser realizada por um eletricista especializado.
RO	Avertizare! Tensiune periculoasă! Instalarea trebuie efectuată numai de către o persoană cu experiență în electrotehnică.
RU	Осторожно! Опасное напряжение! Монтаж должен выполняться только специалистом-электриком.
SE	Varning! Farlig spänning! Installation får endast utföras av en elektriker.
SK	Varovanie! Nebezpečné napätie! Montáž môže vykonávať iba skúsený elektrotechnik.
SL	Opozorilo! Nevarna napetost! Vgradnjo lahko opravi le oseba z elektrotehničnim strokovnim znanjem.



Contact us

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