

—
INSTALLATION INSTRUCTION

By-pass and transfer switches OT_Y

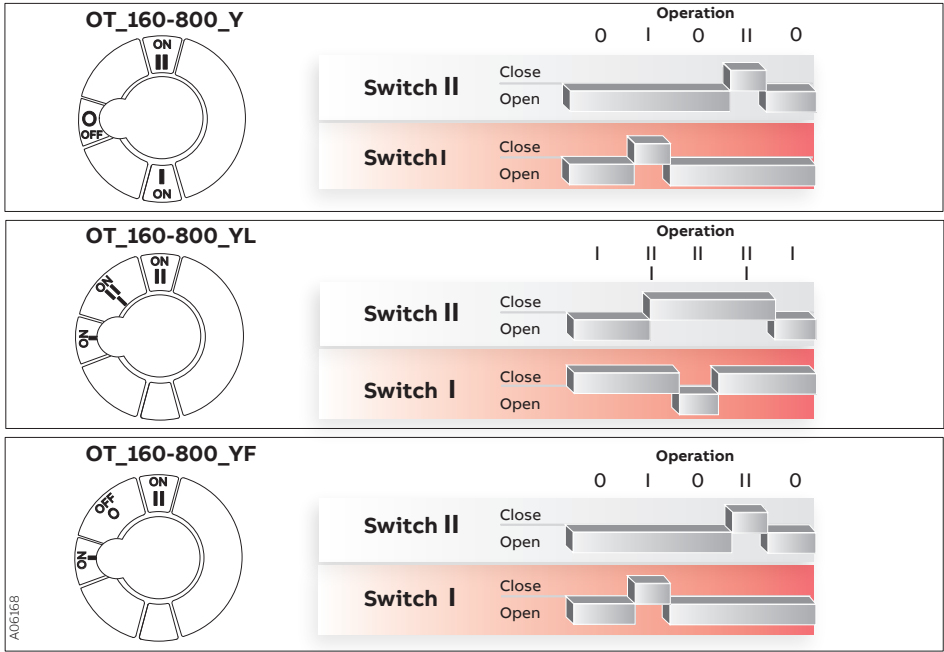


Table of contents

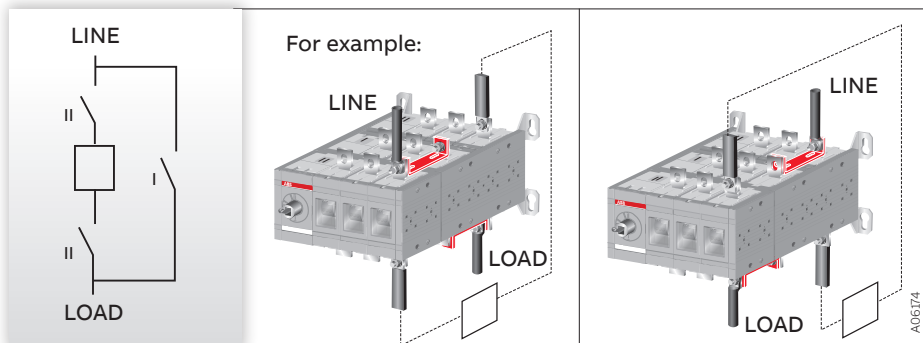
03	Operation
04	Connection diagram
04	Mounting positions
04	Label
05	Control circuit
06	Manual operation
07	Electronical operation
08	Impulse control
08	Continuous control
09	Locking
10	Locking state information
11	Technical data
12	Terminal clamp sets OZX_
13	Bridging bars OTZC_
14	Reversing bars OTZR_
15	Auxiliary contact OA_
16	Voltage sensing connectors OMZB_
17	Terminal shrouds OTS_
18	Handle for manual operation OH_ZVX
19	Handles, direct mounting OTV_
20	Handle and spare fuse storage OTVS1
21	Phase barriers OTB_
22	UL standard switches
23	Mounting and dimension drawings
23	OT160-250_Y_
24	OT200U_Y_
25	OT315-400_Y_
26	OT400U_Y_
27	OT630-800E_Y_
28	OT600U_Y_
29	OTM160-250E_Y_, OTM200U_Y_
30	OTM315-400E_Y_, OTM400U_Y_
31	OTM630-800E_Y_, OTM600U_Y_

By-pass and transfer switches OT_Y

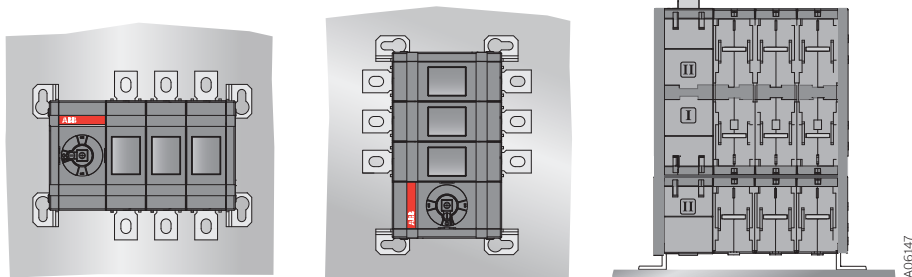
Operation



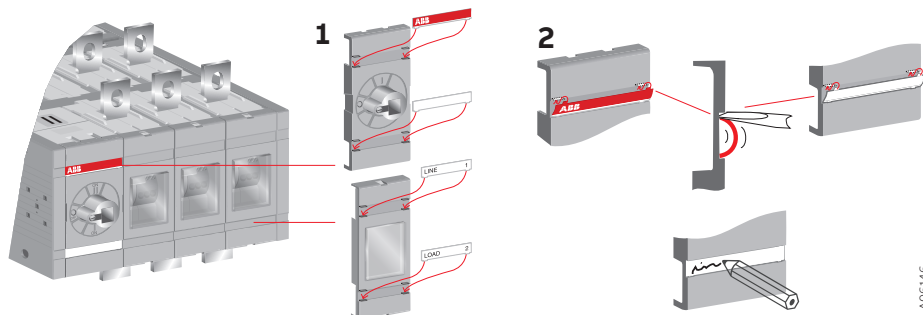
Connection diagram



Mounting positions



Label



Control circuit



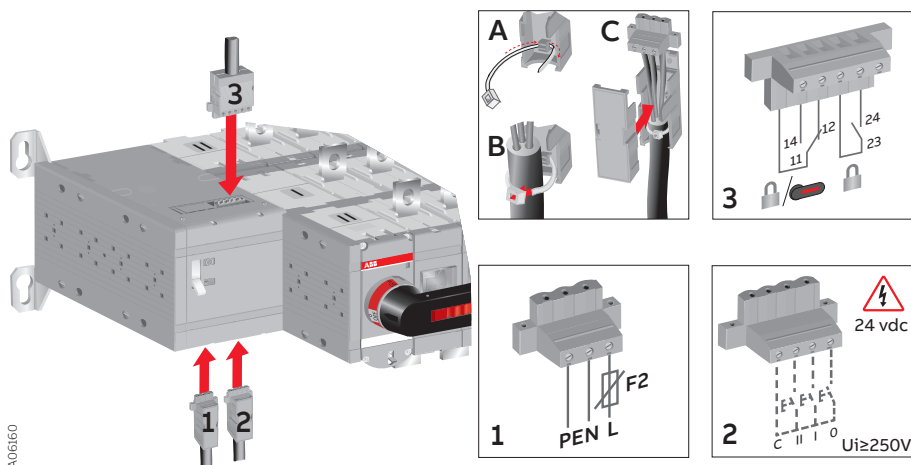
Only an authorised electrician may perform the electrical installation and maintenance of motorized switch. Do not attempt any installation or maintenance actions when a motorized switch is connected to the electrical mains. Before starting work, make sure that the switch is de-energised.



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



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).

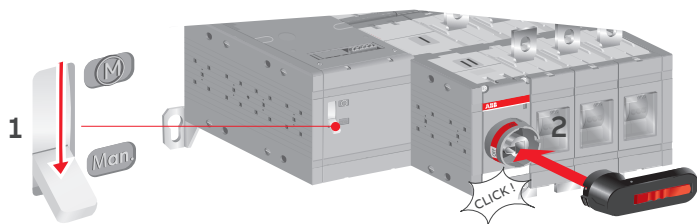


1. Terminal for motor operator voltage supply
2. Control terminal push buttons or selector switch
3. Terminal for state information of locking



Do not couple power for the control terminal. See the correct terminal for the power supply in the picture above.

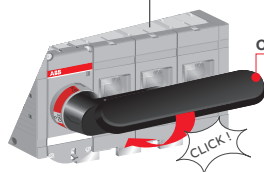
Manual operation



OHBZ_

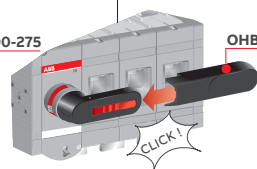
3

OTM315-400_Y	OHBZX200
OTM600-800_Y	OHBZX275



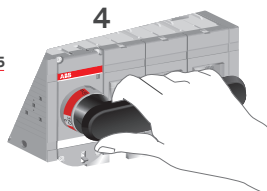
OHBZX200-275

OTM160-250_Y	OHBZV125
--------------	----------



OHBZV125

4



A06161



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

Manual control shall only be done using extension handle delivered along with the product.

Electrical operation



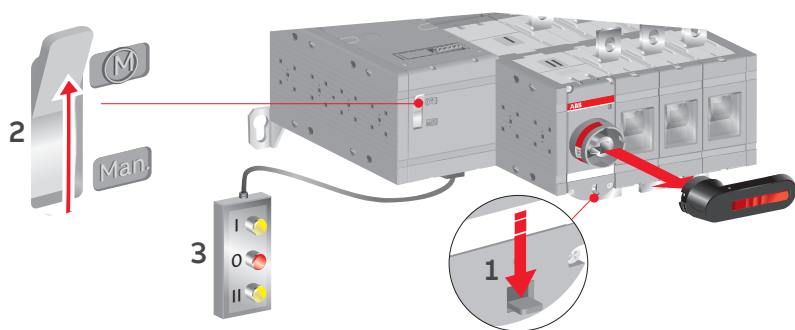
Never open any covers on the product. There may be dangerous external control voltages inside the motorized switch even if the voltage is turned off.



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

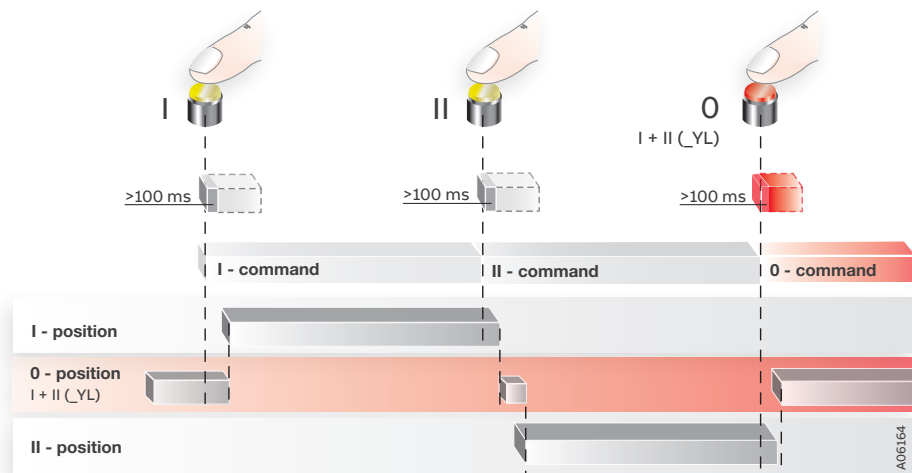


Exercise sufficient caution when handling the unit.



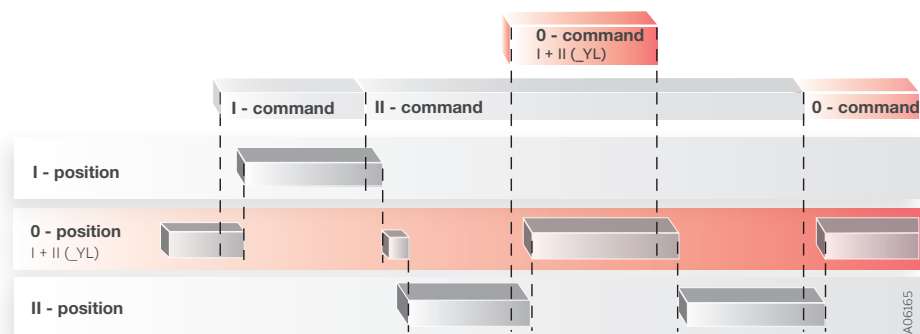
The motor operator is protected from overloading by a fuse (F1) under the motor operator. Only use the same type of fuse that is described on the label close to the fuse.

Impulse control

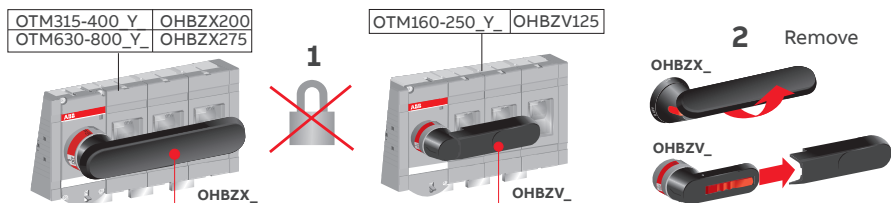


If a new command is given before the switch has reached the position of the previous command, the fuse (F1) may operate.

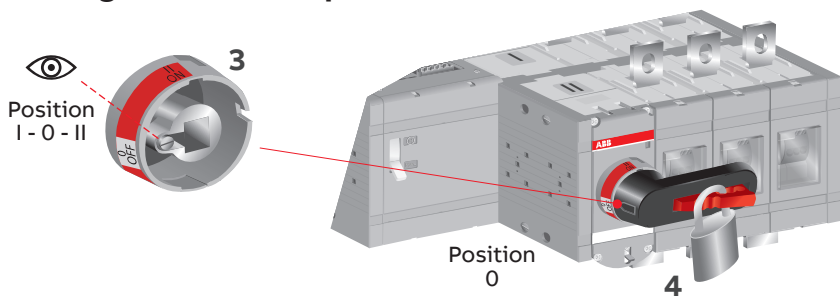
Continuous control



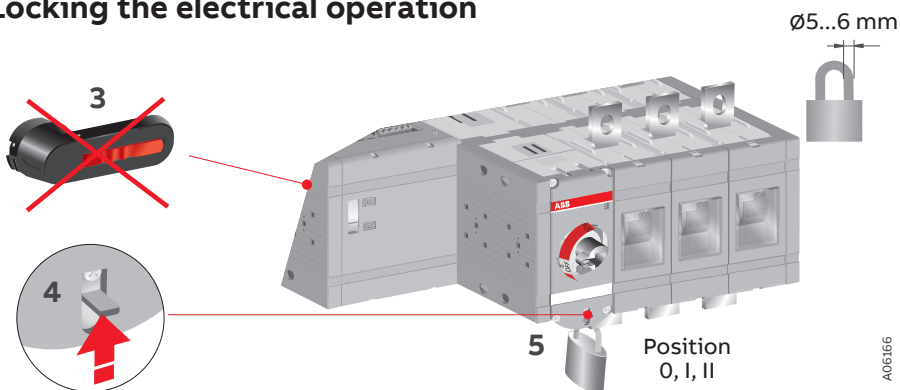
Locking



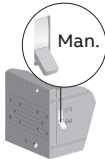
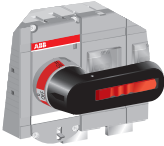
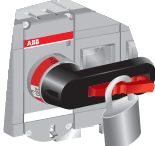
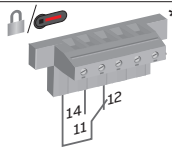
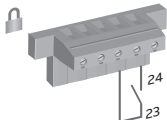
Locking the manual operation



Locking the electrical operation



Locking state information

* The voltage on motor operator supply needed

AD6167

Technical data

Motor operator

Motor operator, control circuit	Value	Cabling
Rated operational voltage U [V]	220-240 Vac, 50-60 Hz	
Operating voltage range	0,85... 1,1 x U	
Operating angle	90° 0-I, I-O, 0-II, II-O; 180° I-O-II	
Operating time	See Table 2	
Protection degree	IP 20, front panel	
Rated impulse withstand voltage U _{imp}	4 kV	
Voltage supply	PE N L	1,5 -2,5 mm ²
F2	Max. MCB 16A	
Cable of the push-buttons (no SELV)	C II I O	1,5 -2,5 mm 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 -2,5 mm ²
Locking motor operator	23-24 (NO)	1,5 -2,5 mm ²
Operating temperature	-25... +55 °C	
Transportation and storage temperature	-40... +70 °C	
Altitude	Max. 2000 m	

Table 1 General technical data of motor operators

Type	Voltage U _e [V]	Nominal current ^{a)} I _n [A]	Current inrush ^{a)} [A]	Operating time ^{a)} I-O, 0-I, 0-II, II-O [s]	Operating transfer time ^{a)} I-II or II-I [s]	OFF-time when operating ^{a)} I-II or II-I [s]
OTM160-250_Y	220-240 Vac	0,2	1,3	0,4-1,0	1,0-2,0	0,4-1,0
OTM315-400_Y	220-240 Vac	0,7	2,8	0,4-1,0	0,9-2,0	0,4-1,0
OTM600-800_Y	220-240 Vac	0,7	2,8	0,4-1,0	0,9-2,0	0,4-1,0

Table 2 Specified technical data of motor operators

^{a)} Under nominal conditions

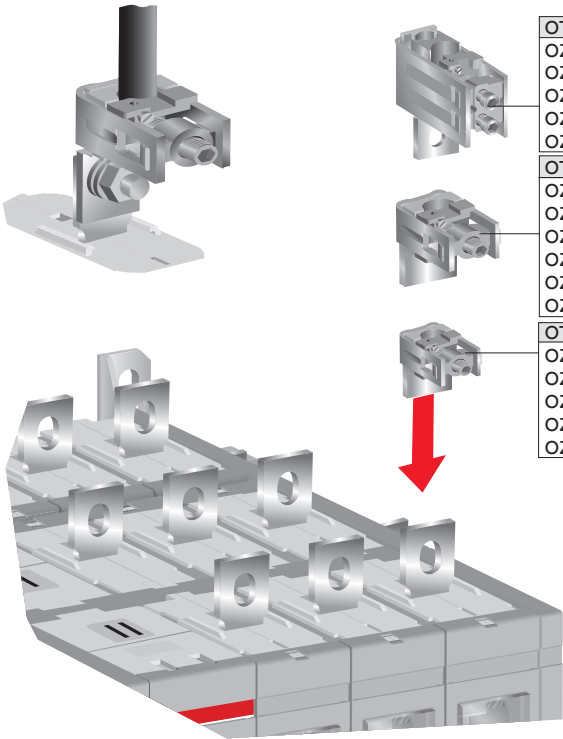
State information

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

Table 3 State information

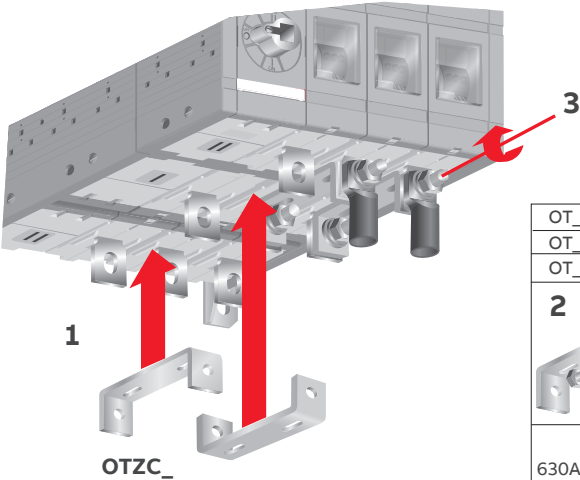
Terminal clamp sets

OZX_



OT630-800E_Y OZXB3 OZXB4 OZXB5 OZXB6* OZXB7L	OT600U_Y OZXA-800_ OZXA-806_ * max. 1 pcs/side
OT315-400E_Y OZXB2L OZXB3 OZXB7 OZXB7L OZXB8 OZXB9	OT400U_Y OZXA-400_ OZXA-406_
OT160-250E_Y OZXB1L OZXB2 OZXB2L OZXB8 OZXB9	OT200U_Y OZXA-200_ OZXA-206_

Bridging bars
OTZC_



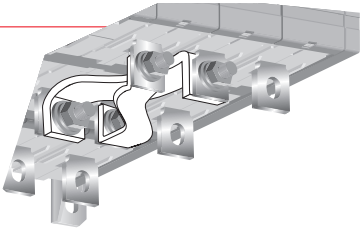
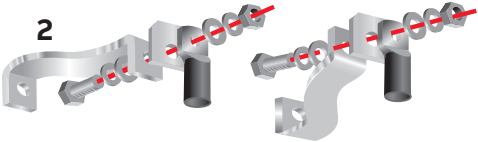
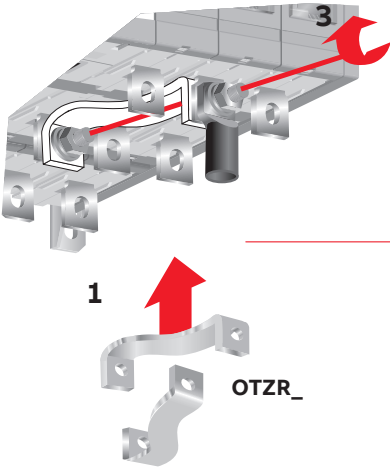
OT_160-250_Y_	OTZC13, OTZC14
OT_315-400_Y_	OTZC23, OTZC24
OT_600-800_Y_	OTZC33, OTZC34
2 	
630A 	800A



Reversing bars

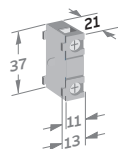
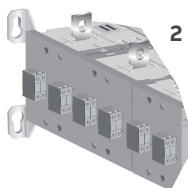
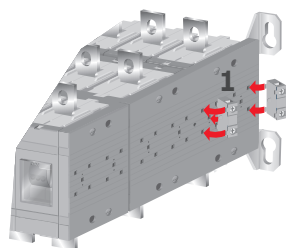
OTZR_

OT_160-250_Y	OTZR1
OT_315-400_Y	OTZR2
OT_600-800_Y	OTZR3



Auxiliary contact

OA_



OT_Y
OT_YF

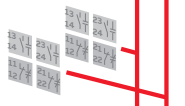
I max 2+2	
OA 1G10	OA 3G01
I	—
O	—
II	—



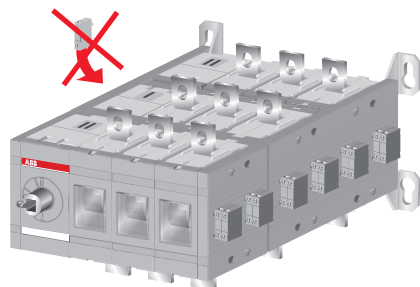
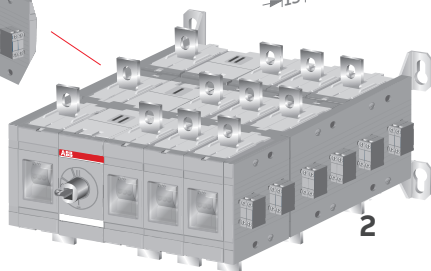
II max 2+2+2+2	
OA 1G10	OA 3G01
I	—
O	—
II	—

OT_YL

I max 2+2	
OA 1G10	OA 3G01
I	—
I+II	—
II	—

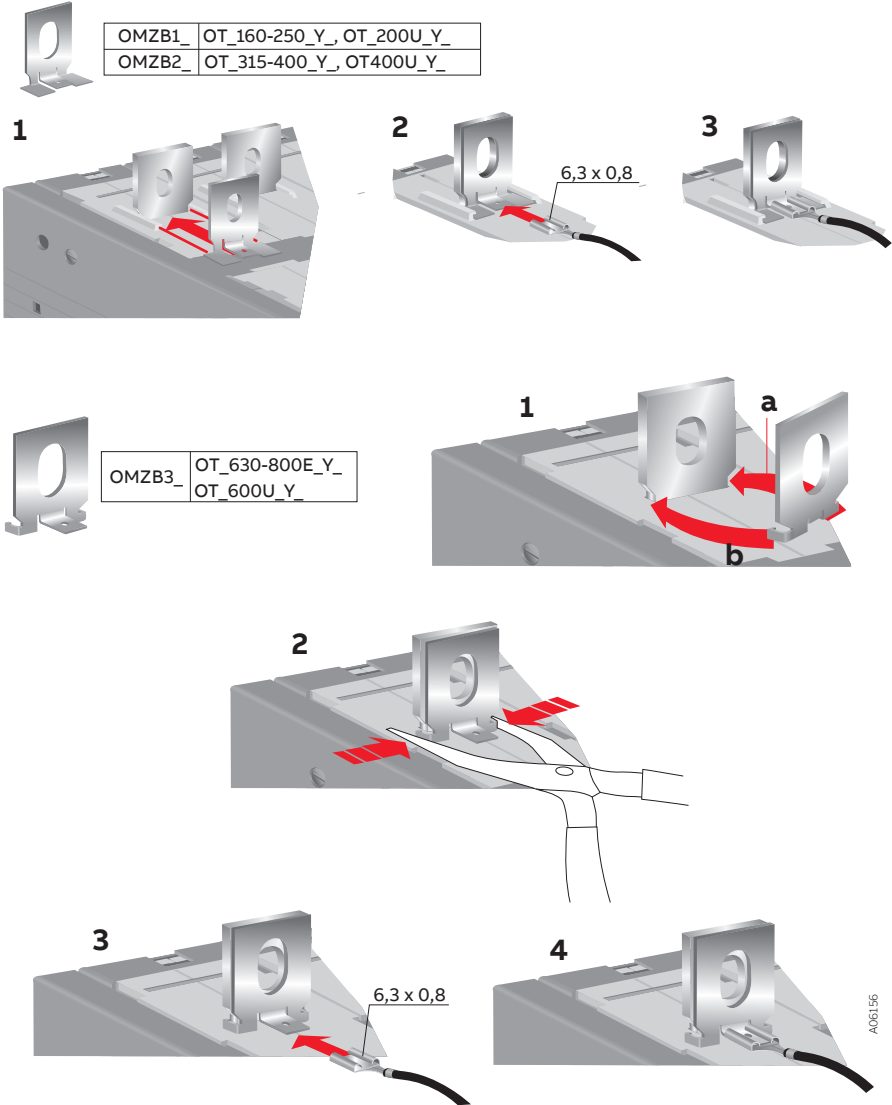


II max 2+2+2+2	
OA 1G10	OA 3G01
I	—
I+II	—
II	—



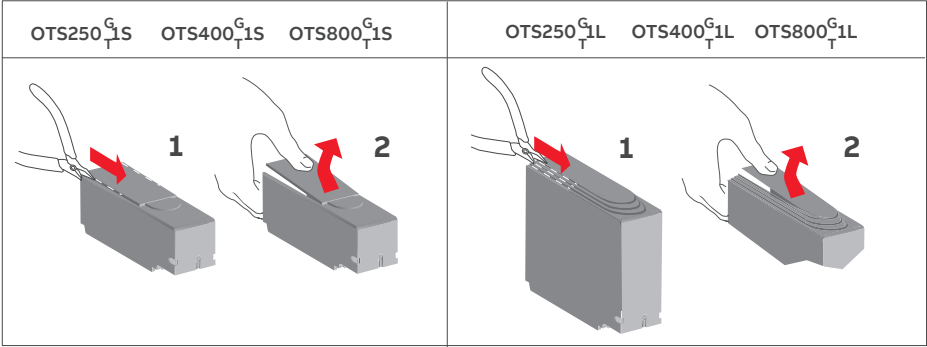
A06154

Voltage sensing connectors
OMZB_

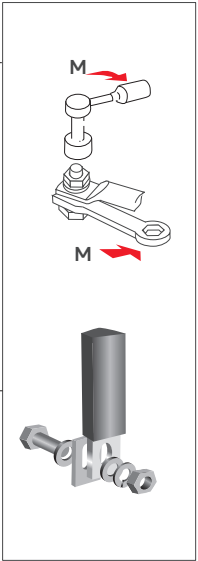
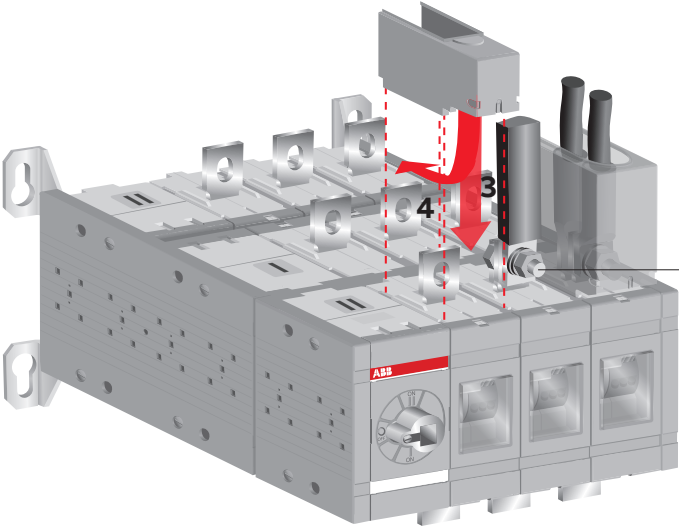


Terminal shrouds

OTS_

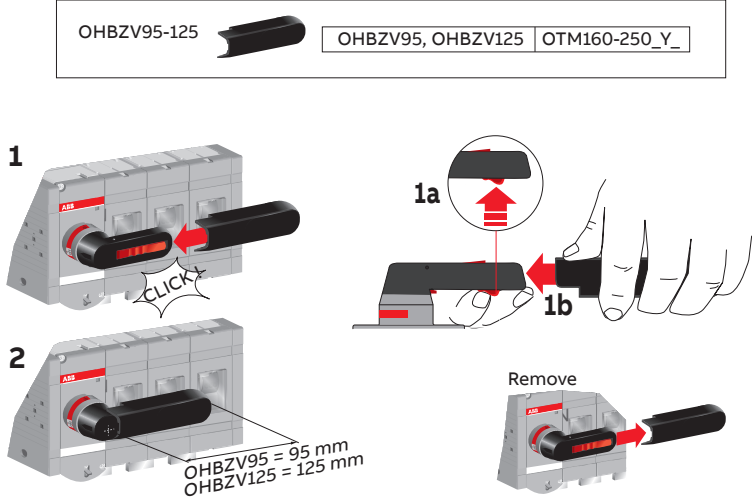
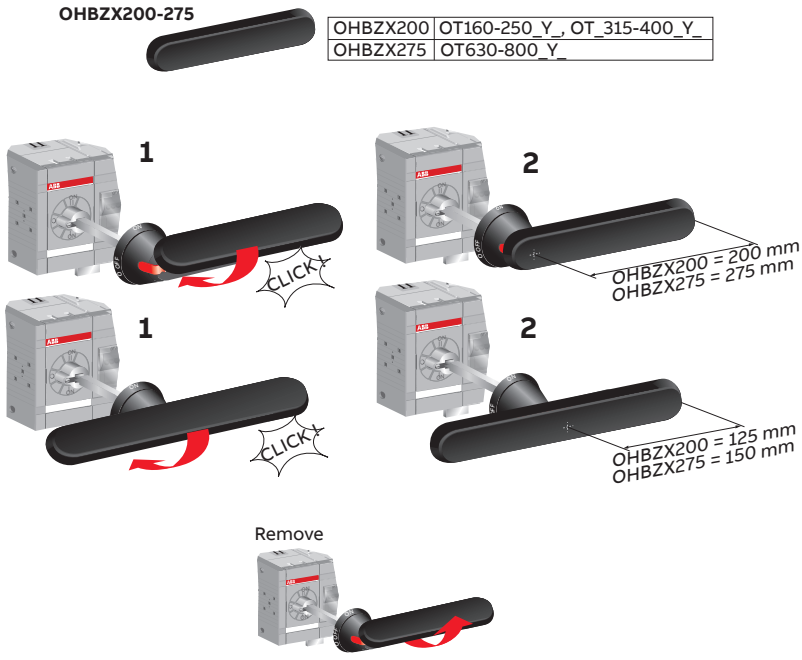


			M	M
OT_160-250_Y_	OTS250_	M8	15...22 Nm	5/6DIA in. 133-195 lb.in
OT_315-400_Y_	OTS400_	M10	30...44 Nm	266-390 lb.in
OT_600-800_Y_	OTS800_	M12	50...75 Nm	433-664 lb.in



Handle for manual operation

OH_ZVX

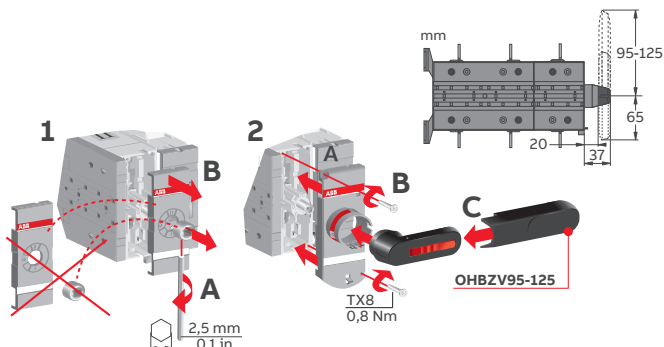


Handles, direct mounting

OTV_

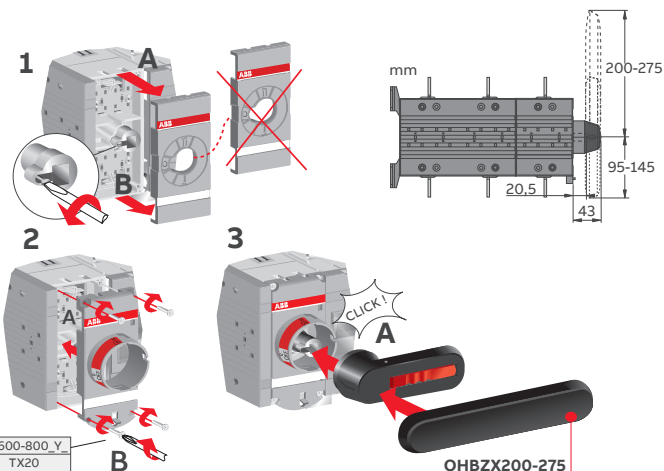
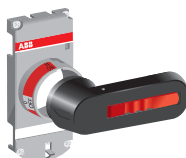
OT160-250_Y_

OTV250ECK
OTV250ECLK
OTV250ECKFK

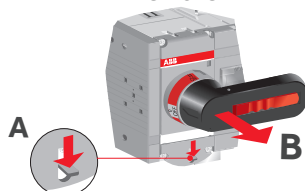


OT315-800_Y_

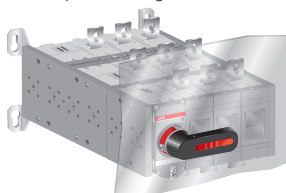
OTV400ECK
OTV800ECK
OTV400ECLK
OTV800ECLK
OTV400ECKFK
OTV800ECKFK



Remove



Note: Use protection against direct contact. For example:

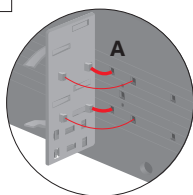
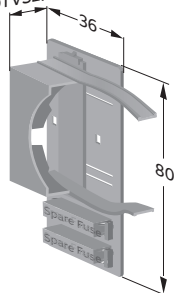


Handle and spare fuse storage

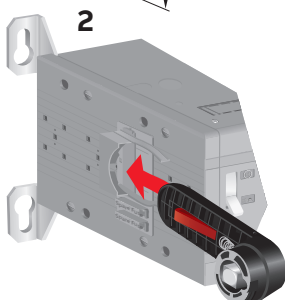
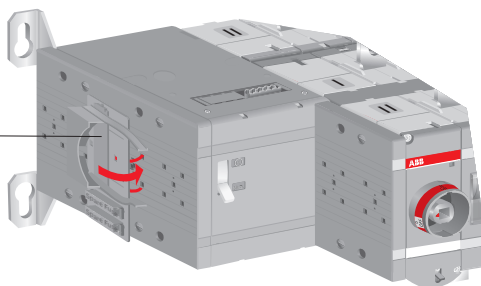
OTVS1

OTVS1	OTM160-250_Y
OTVS2	OTM315-800_Y

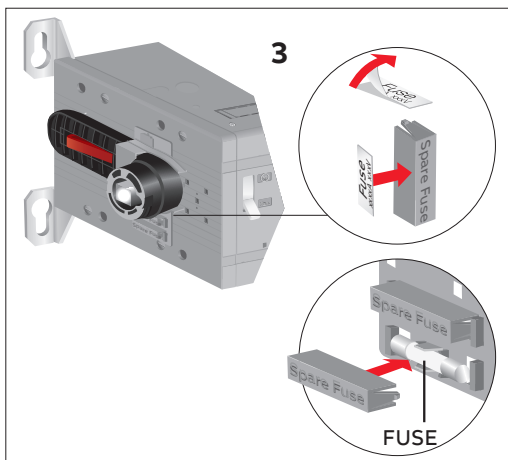
OTVS1: 20
OTVS2: 31



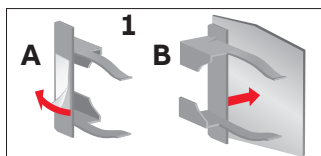
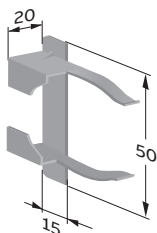
1



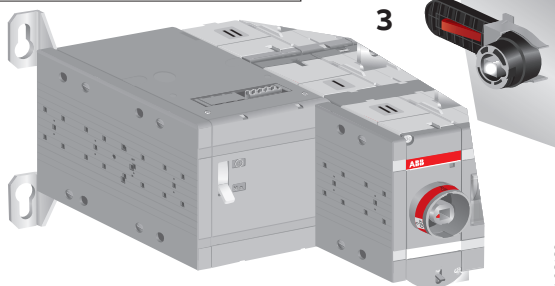
3



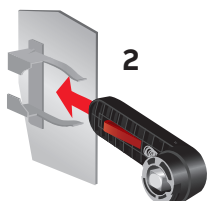
OTVS0	OTM160-250_Y
-------	--------------



1

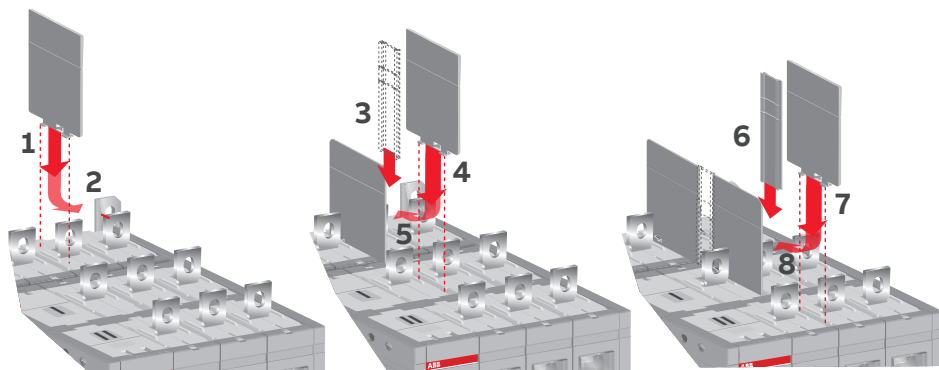


3

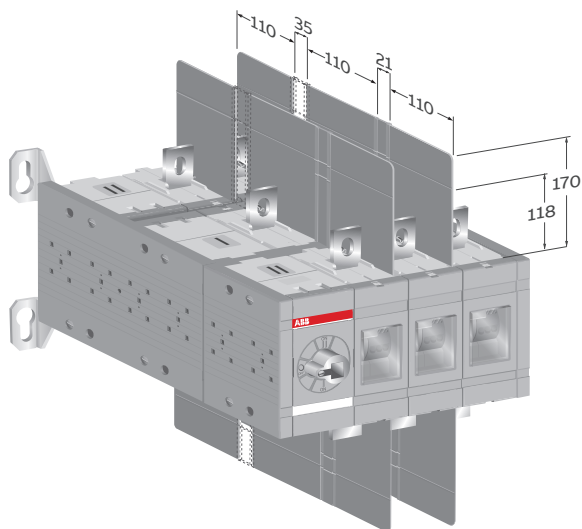


Phase barriers

OTB_



A06159



Phase barrier type 68838 on:

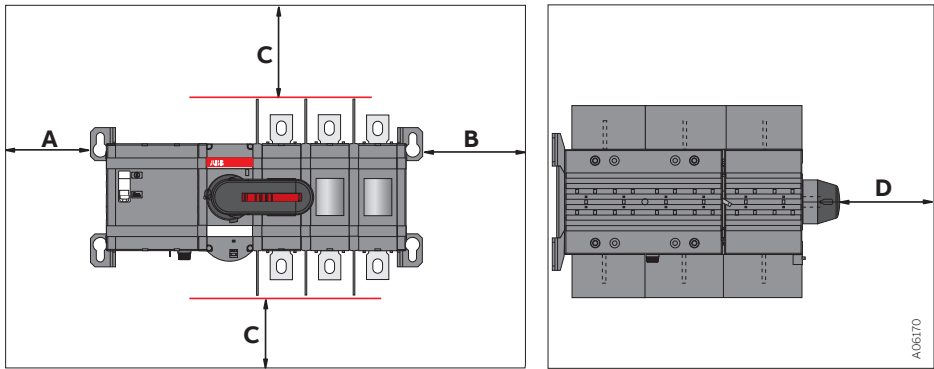
OT_600U_Y
OT_630-800E_Y

Phase barriers 68838 or shrouds must be used to maintain a clearance of 1 inch on the By-pass switch type OT_600U_Y, if lugs are wider than 39 mm/1.54 in.

The Type for the package of 6 barriers is OTB600/6Y.

Phase barriers 68912 must be used on By-pass switches type OT_600-800_Y, if the voltage is > 415 V.

UL standard switches



	Current	Height	Width	Depth
OT200U_Y	200 A	406 mm/16 in	305 mm/12 in	203 mm/8 in
OT400U_Y	400 A	610 mm/24 in	356 mm/14 in	254 mm/10 in
OT600U_Y	600 A	610 mm/24 in	700 mm/28 in	400 mm/16 in

	A	B	D
OT200-600U_Y	0	13 mm/0.5 in	13 mm/0.5 in

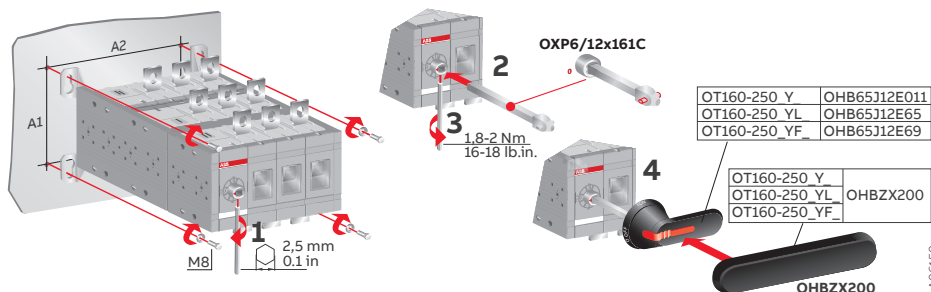
OT200U_Y			
Cable size		Cable size	
AWG	C	MCM	C
4-3	100 mm/4 in	250	200 mm/8 in
2	100 mm/4 in	300	250 mm/10 in
1	100 mm/4 in		
1/0	125 mm/5 in		
2/0	150 mm/6 in		
3/0-4/0	175 mm/7 in		

OT400U_Y			
Cable size		Cable size	
AWG	C	MCM	C
2	100 mm/4 in	250	250 mm/8 in
1	100 mm/4 in	300	250 mm/10 in
1/0	125 mm/5 in	350	300 mm/12 in
2/0	150 mm/6 in		
3/0-4/0	175 mm/7 in		

OT600U_Y			
Cable size		Cable size	
AWG	C	MCM	C
2	100 mm/4 in	250	200 mm/8 in
1	100 mm/4 in	300	250 mm/10 in
1/0	125 mm/5 in	350	300 mm/12 in
2/0	150 mm/6 in	400	330 mm/13 in
3/0-4/0	175 mm/7 in	500	356 mm/14 in
		600	381 mm/15 in

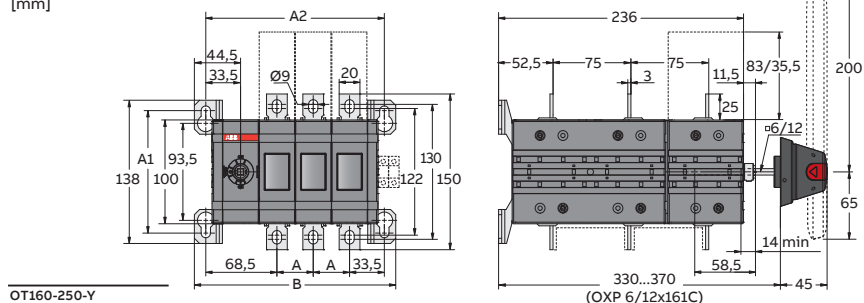
Mounting and dimension drawings

OT160-250E_Y_



OT160-250E02-04Y_

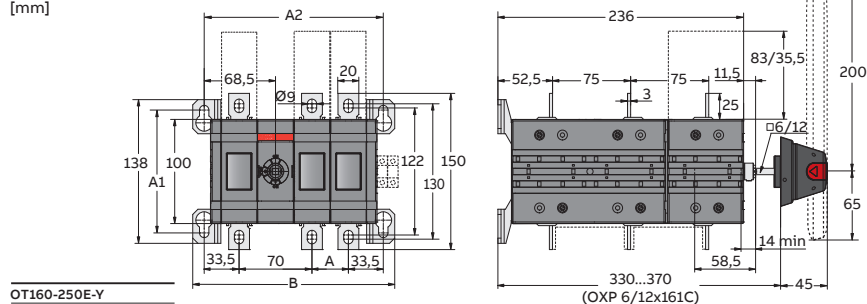
[mm]



M00405/OT160-250E02-04Y A A06150

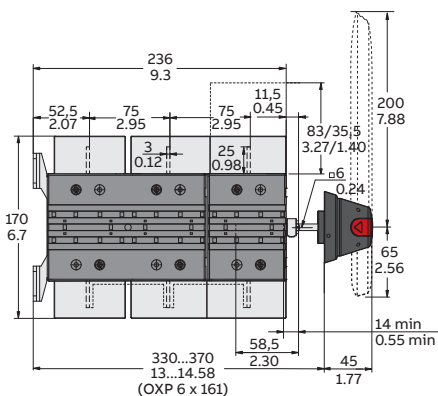
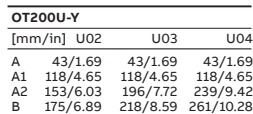
OT160-250E12-22Y_

[mm]



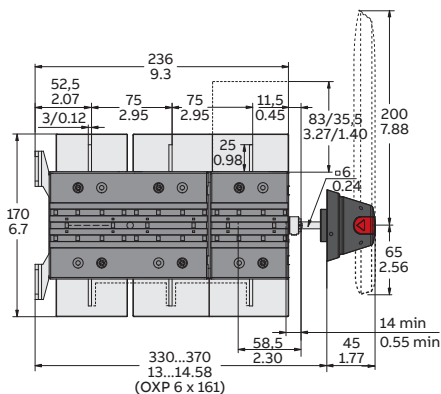
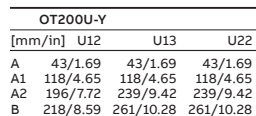
M00406/OT160-250E12-22Y A

OT200U02-04Y_



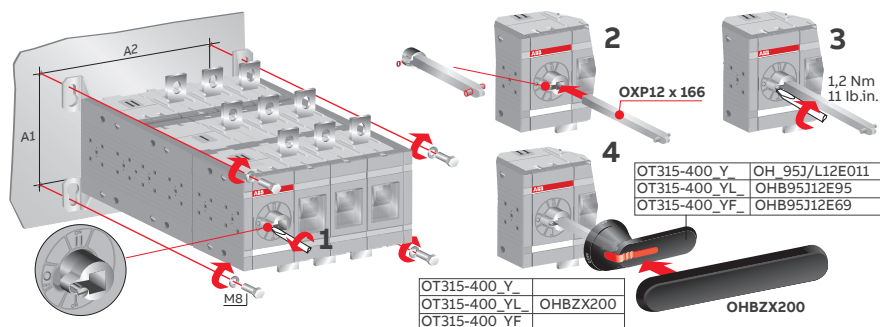
M00407/OT200U02-04Y A /A06171

[mm]
[in]



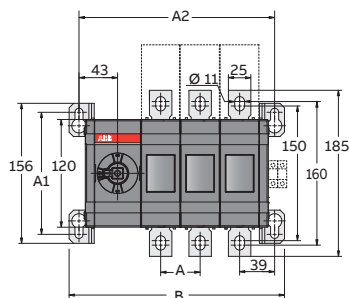
M00407/OT200U12-22Y A

OT315-400E_Y_



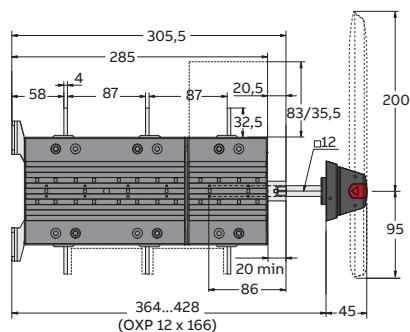
OT315-400E02-04Y_

[mm]



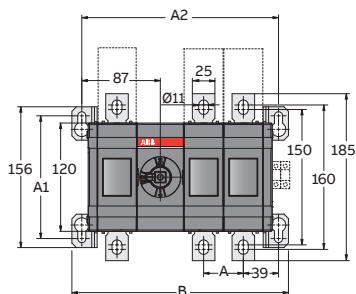
OT315-400E-Y

	E02	E03	E04
A	44	44	44
A1	136	136	136
A2	174	218	262
B	196	240	284



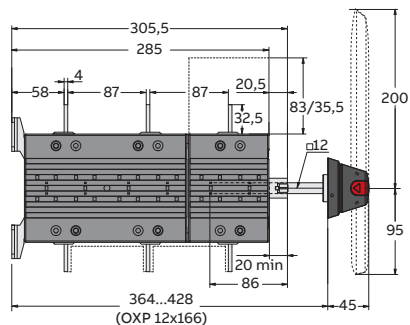
OT315-400E12-22Y_

[mm]



OT315-400E-Y

	E12	E13	E22
A	44	44	44
A1	136	136	136
A2	218	262	262
B	240	284	284



A06144

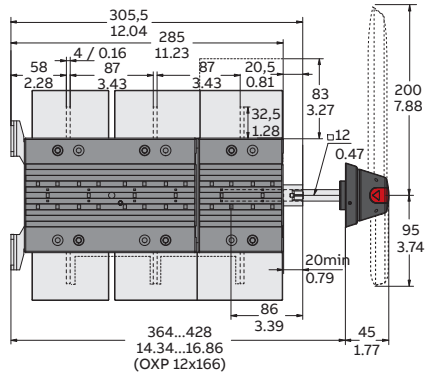
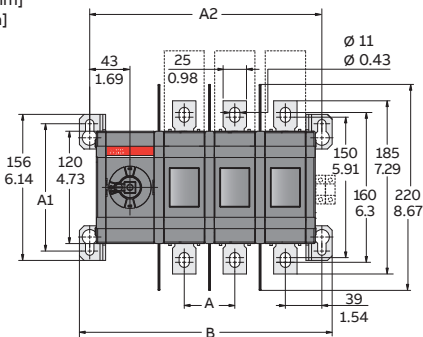
M00409 / OT315-400E02-04Y A A06144

M00410 / OT315-400E12-22Y A

OT400U_Y_

OT400U02-04Y_

[mm]
[in]

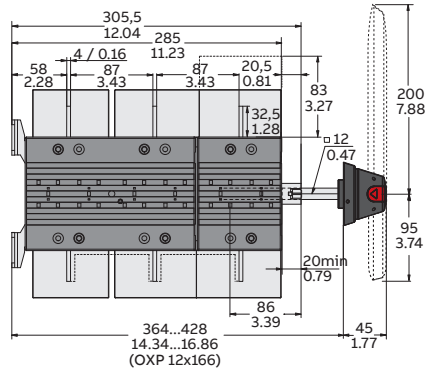
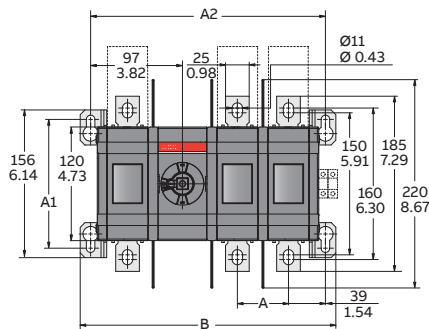


OT400U-Y

[mm/in]	U02	U03	U04
A	54/2.13	54/2.13	54/2.13
A1	136/5.36	136/5.36	136/5.36
A2	194/7.64	248/9.77	302/11.9
B	216/8.51	270/10.64	324/12.76

OT400U12-22Y_

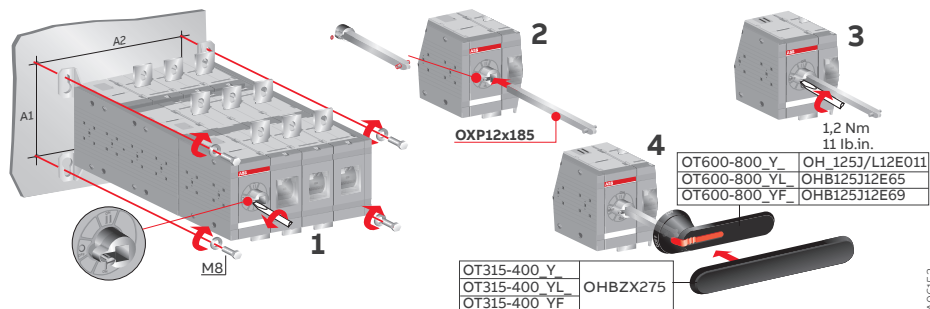
[mm]
[in]



OT400U-Y

[mm/in]	U12	U13	U22
A	54/2.13	54/2.13	54/2.13
A1	136/5.36	136/5.36	136/5.36
A2	248/9.77	302/11.90	302/11.90
B	270/10.64	324/12.76	324/12.76

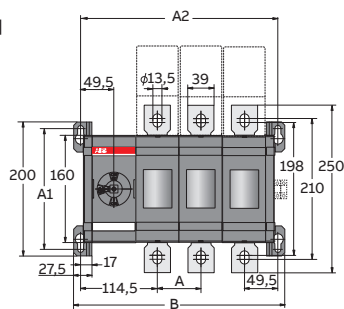
OT630-800E_Y_



A06152

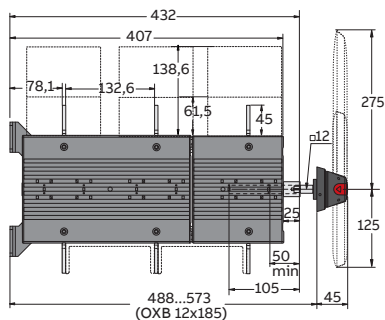
OT630-800E02-04Y_

[mm]



OT630-800E_Y

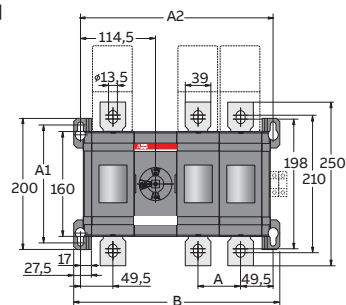
	E02	E03	E04
A	65	65	65
A1	180	180	180
A2	229	294	359
B	250	315	380



M00397/OT630-800E02-04Y A A06152

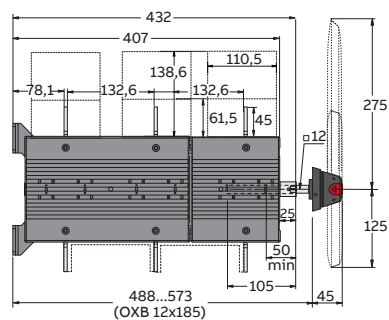
OT630-800E12-22Y_

[mm]



OT630-800E_Y

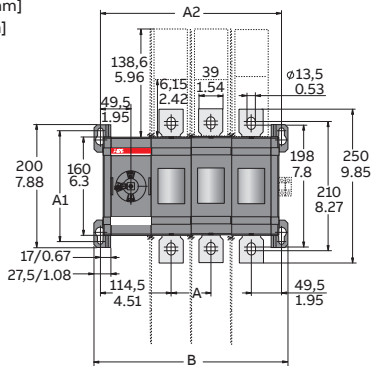
	E12	E13	E22
A	65	65	65
A1	180	180	180
A2	294	359	359
B	315	380	380



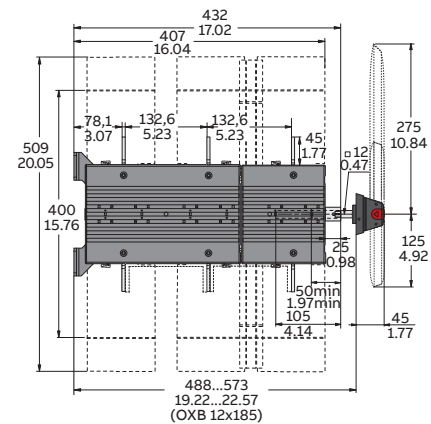
M00398/OT630-800E12-22Y A

STRENGTHS AND LIMITATIONS

[mm]
[in]



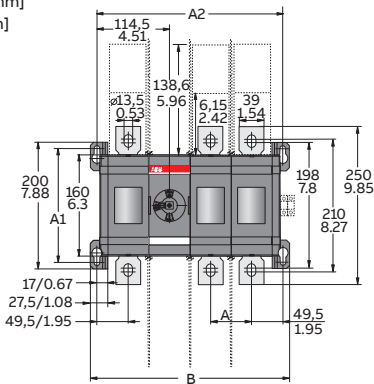
OT600U_Y			
[mm/in]	U02	U03	U04
A	65/2.56	65/2.56	65/2.56
A1	180/7.09	180/7.09	180/7.09
A2	229/9.02	294/11.58	359/14.14
B	250/9.85	315/12.41	380/14.97



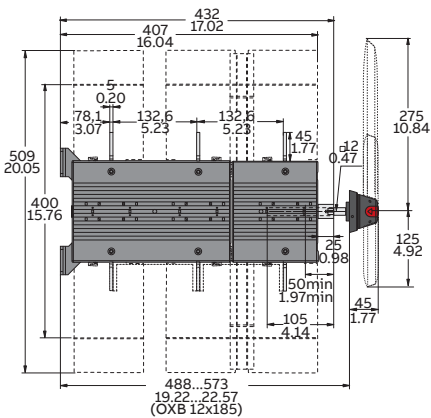
M00395/OT600U02-04Y A

Discussion

[mm]
[in]

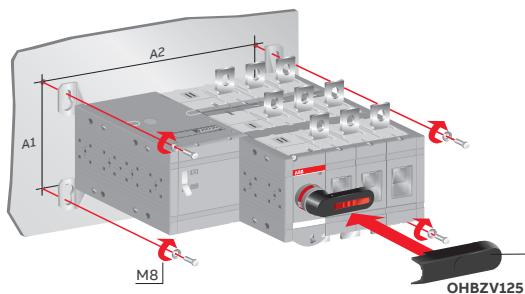


OT600U_Y			
[mm/in]	U12	U13	U22
A	65/2.56	65/2.56	65/2.56
A1	180/7.09	180/7.09	180/7.09
A2	294/11.58	359/14.14	359/14.14
B	315/12.41	380/14.97	380/14.97

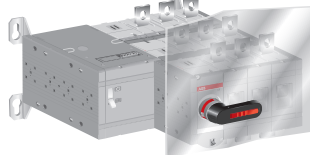


M00396/OT600U12-22Y

OTM160-250E_Y_, OTM200U_Y_



Note:
Use protection against direct
contact. For example:

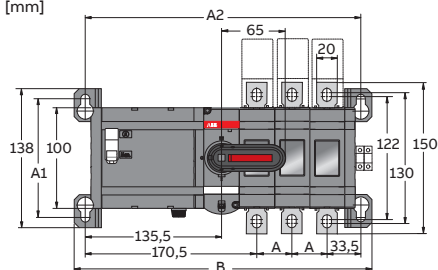


OTM160-250_Y_	OHZV125
OTM160-250_YL_	
OTM160-250_YF_	

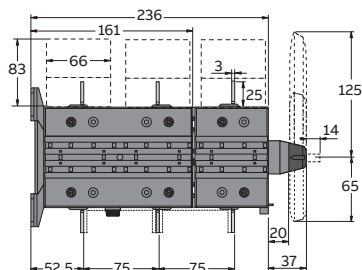
A06151

OTM160-250E02-04Y_

[mm]



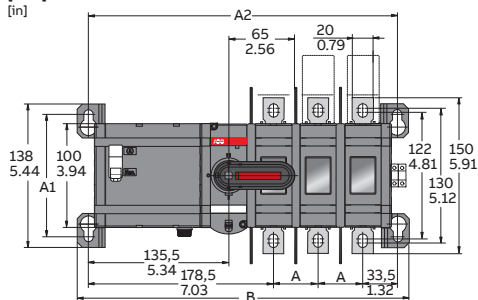
OTM160-250E_Y_			
	E2	E3	E4
A	35	35	35
A1	118	118	118
A2	239	274	309
B	261	296	331



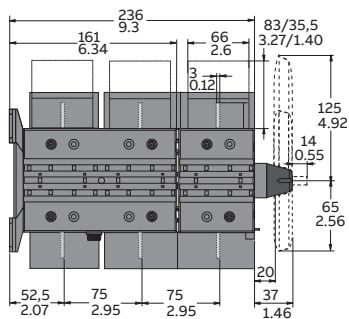
M00399/OTM160-250E02-4Y A

OTM200U02-04Y_

[mm]



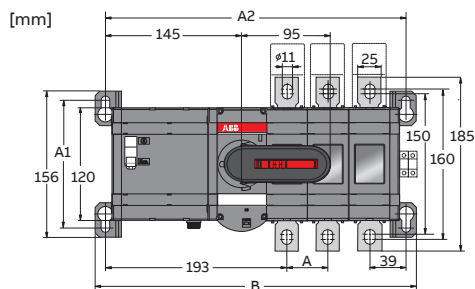
OTM200U_Y_			
[mm/in]	U2	U3	U4
A	43/1.69	43/1.69	43/1.69
A1	118/4.65	118/4.65	118/4.65
A2	255/10.05	298/11.74	341/13.43
B	277/10.91	320/12.61	363/14.3



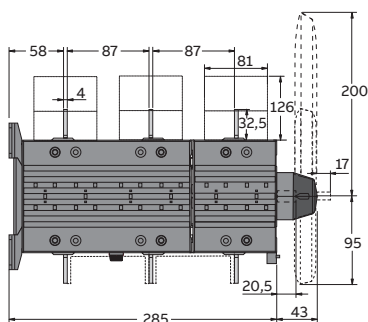
M00400/OTM200U02-4Y A

OTM160-250_Y	OHBZX200
OTM160-250_YL	
OTM160-250_YF	

OTM315-400E02-04Y



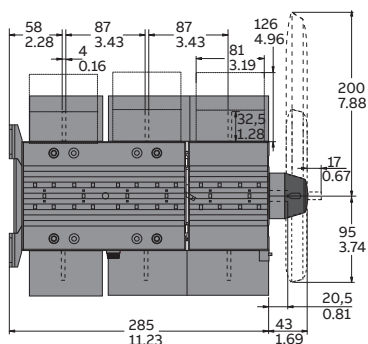
OTM315-400E_Y			
	E2	E3	E4
A	44	44	44
A1	136	136	136
A2	276	320	364
B	298	342	386



M00401/OTM315-400E Y A A06145

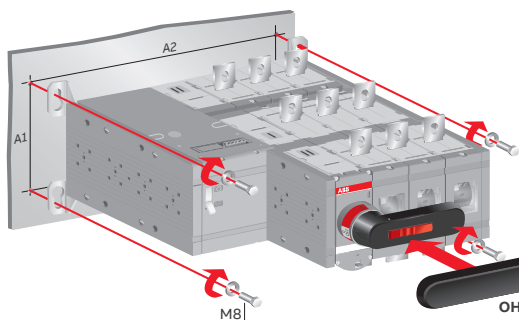
Technical drawing of the front view of a 4-axis linear stage. The drawing shows a rectangular body with four vertical guide rails. Dimensions are provided in mm and inches. Key dimensions include: total width 203 mm (8 inches), total height 185 mm (7.29 inches), and various mounting and clearance dimensions. A red label '10111100000' is visible on the front face.

OTM400U_Y			
[mm/in]	U2	U3	U4
A	54/2.13	54/2.13	54/2.13
A1	136/5.36	136/5.36	136/5.36
A2	296/11.66	350/13.79	404/15.92
B	318/12.53	372/14.65	426/16.78

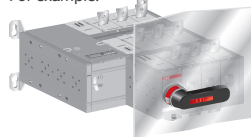


100402/OTM400U2-4Y A

OTM630-800E_Y_, OTM600U_Y_



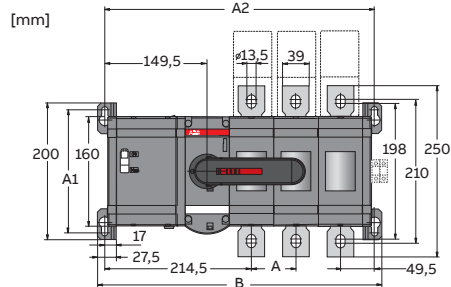
Note:
Use protection against direct contact.
For example:



OTM630-800 Y	OHBXZ275
OTM630-800 YL	
OTM630-800 YF	

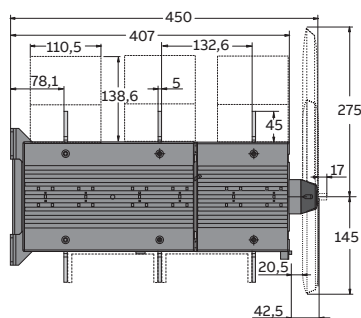
OHBXZ275

OTM630-800E02-04Y_

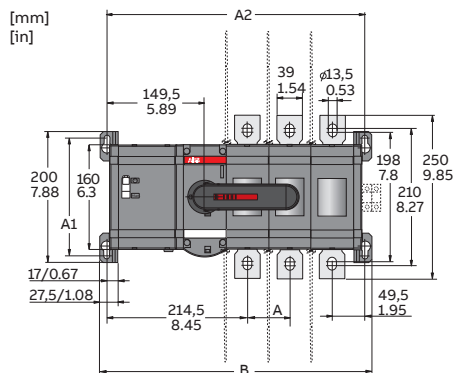


OTM630-800E_Y

	E2	E3	E4
A	65	65	65
A1	180	180	180
A2	329	394	459
B	350	415	480

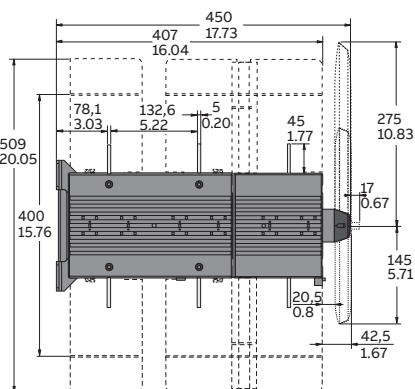


OTM600U02-04Y_



OTM600U_Y

	U2	U3	U4
A	65/2.56	65/2.56	65/2.56
A1	180/7.09	180/7.09	180/7.09
A2	329/12.96	394/15.52	459/18.08
B	350/13.79	415/16.35	480/18.91



A06153

M00404/OTM630-800E2-4Y A A06153

M00403/OTM600U2-4Y A

[illegible]

Notes

[illegible]



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	Figyelmeztetés! 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 elektrotehnikās zināšanas.
MT	Twissija! Voltaġġ 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.



Contact us

ABB Oy

Muottitie 2A 65320

Vaasa, Finland

abb.com/lowvoltage