

SAFETY INSTRUCTIONS



Read carefully and completely before installing, operating, or maintaining the equipment this manual.

Legend:
H01R(B) means H01R or/and H01B. For other application terms in this instruction sheet, this is equivalent.



DANGER



Hazardous Voltage!
Danger of life or serious injury!



Any work on electrical equipment may only be performed by qualified electricians in accordance with the National or local codes.

Before starting work:

- Disconnect power mains
- Prevent reconnection with OSHA lockout/tagout procedures!
- Test for absence of harmful voltages!
- Ground and short circuits!
- Cover or close of nearby live parts!



Reliable functioning of the equipment is only guaranteed with approved MERZ Schaltgeräte GMBH + CO KG components!

Storage and transport

- Dry and dust free
- Storage temperatures min./max.: -25°C/+50°C [-77°F/+122°F]
- During transport secure against shock and/or falling

Installation and commissioning



- Confirm rating of device is sized properly for application
- Do not use damaged units in application
- The device specifications must be complied with
- Laws, regulations, guidelines and standards that apply in the country of operation must be followed

Specifications acc. UL 60947-4-1 and CSA C22.2 NO. 60947-4-1-14

Type		ML1-016	ML1-025	ML1-032	ML1-040	ML2-063	ML2-080	ML3-125
GENERAL PURPOSE 600 Vac, 3-ph	A	16	25	32	40	63	80	125
Motor 3-ph 240 V 480 V 600 V	hp (FLA) hp (FLA) hp (FLA)	7.5 (22) 10 (14) 10 (11)	7.5 (22) 10 (14) 10 (11)	10 (28) 20 (27) 20 (22)	10 (28) 20 (27) 20 (22)	15 (42) 30 (40) 30 (32)	20 (54) 40 (52) 40 (41)	25 (68) 50 (65) 50 (52)
Motor 1-ph 120 V 240 V (2-pole)	hp (FLA) hp (FLA)	1 (16) 2 (12)	1 (16) 2 (12)	1.5 (20) 3 (17)	1.5 (20) 3 (17)	3 (34) 7.5 (40)	5 (56) 10 (50)	7.5 (80) 15 (68)
Max. surrounding air temperature (open type)	°C [°F]	60 [140]	60 [140]	60 [140]	60 [140]	70 [158]	70 [158]	75 [167]
Max. ambient temperature (enclosed type)	°C [°F]	45 [113]	45 [113]	45 [113]	45 [113]	50 [122]	50 [122]	55 [131]

Suitable for use on a circuit capable of delivering not more than 5 kA rms symmetrical amperes, 600 Volts maximum.

Type			AUX11
Rating code		A	A600
Thermal current		A	10
Maximum current			
Make / Break	120 V	A	60 / 6.0
Make / Break	240 V	A	30 / 3.0
Make / Break	480 V	A	15 / 1.5
Make / Break	600 V	A	12 / 1.2
Maximum volt-amperes			
Make / Break		VA	7200 / 720

Connection

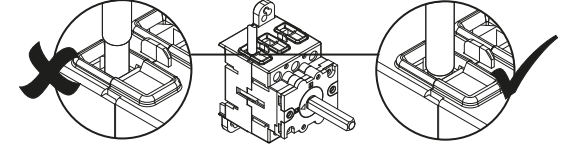
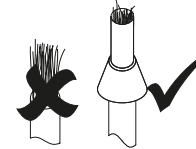


Use Copper (CU) wire only, 75°C or higher.

Type		ML1*	ML2*	ML3*	AUX11	2KL
Terminal cross section	AWG	14 - 8	14 - 2	8 - 1/0	17 - 13	17 - 13
Single or multi-core	mm ²	2.5 - 16	2.5 - 35	6 - 70	1 - 4	1 - 4
Finely stranded with sleeve	mm ²	2.5 - 16	1.5 - 25	6 - 50	1 - 2.5	1 - 2.5
Stripping distance connector cable	mm [in]	10 [0.39]	13 [0.51]	16 [0.63]	10 [0.39]	10 [0.39]
Torque terminal screw	Nm [ft.lb]	1.2 [0.89]	2.5 [1.84]	3 [2.21]	0.6 [0.44]	0.6 [0.44]
Screw driver terminal screw		PZ2/PH2	PZ2/PH2	PZ3/PH3	PZ1/PH1	PZ1/PH1

* Values also valid for optional contacts PE, N, NV and SK

Note: Pozi Drive set can be ordered at automation.direct.com.
Part number: 05057460055 and 05073220055 (WERA).

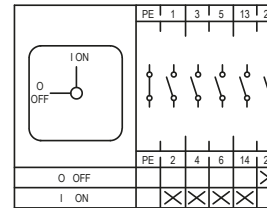


Ensure there are no loose stray wire strands.

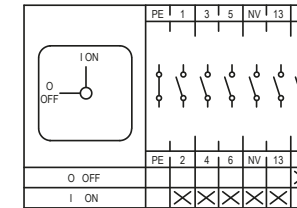
Contact diagrams

ML - standard enclosed

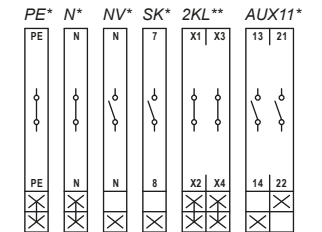
ML1-025-V-E01R ML2-063-V-E03R
ML1-032-V-E01R ML2-080-V-E03R
ML1-040-V-E02R ML3-125-V-E03R



ML1-040-V-E04R
ML2-063-V-E05R



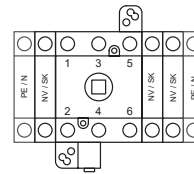
ML - Optional accessories



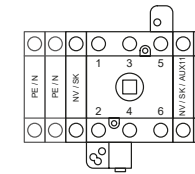
* Followed by 1, 2 or 3. This number stands for the ML series for which it can be used.

** Can be used with ML1, ML2 and ML3 series.

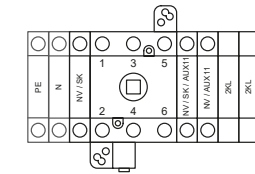
Optional contact, Auxiliary contact and Terminal 2-pole



optional contact / terminal
max. 2 NV / SK
in total max. 3 contacts
+ max. 1 PE terminal
+ max. 1 N terminal



optional contact / auxiliary contact / terminal
max. 2 NV / SK / AUX11
in total max. 3 contacts
+ max. 1 PE terminal
+ max. 1 N terminal



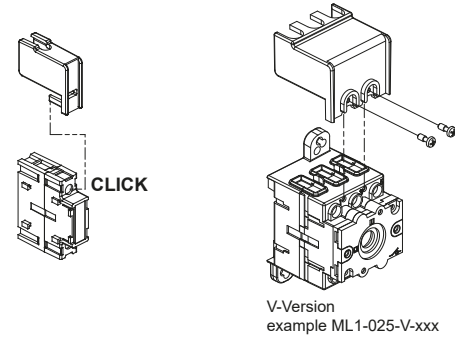
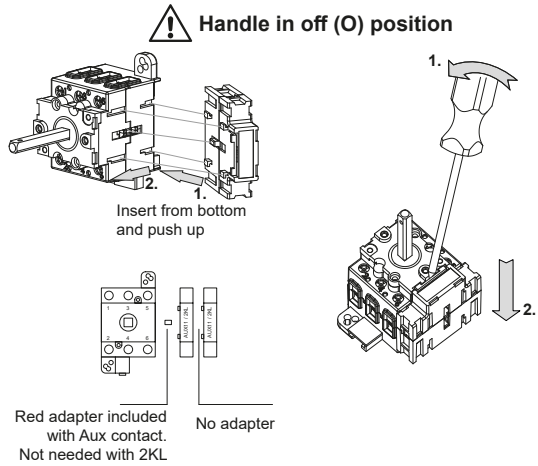
optional contact / auxiliary contact / terminal 2-pole / terminal
max. 2 NV / SK / AUX11
in total max. 3 contacts
+ max. 2 2KL terminal 2-pole
+ max. 1 PE terminal
+ max. 1 N terminal

Assembly

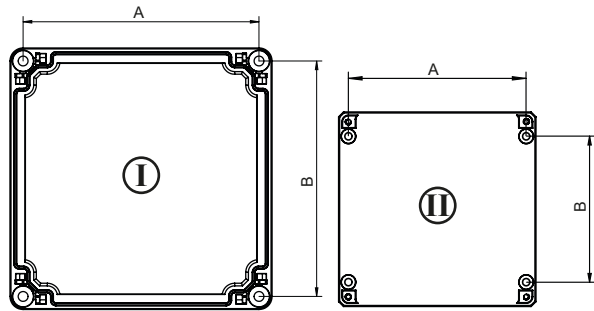
Dismantling

Terminal cover

Enclosure modifications



Mounting dimensions



Type		I	II
A	mm [in]	180 [7.09]	110 [4.33]
B	mm [in]	180 [7.09]	90 [3.54]
max. Ø screw shaft	mm [in]	7.5 [0.3]	4.5 [0.18]
max. Ø screw head	mm [in]	10.5 [0.41]	8.5 [0.33]

I ML1-040-V-E02R, ML2-063-V-E03R, ML2-080-V-E03R, ML3-125-V-E03R, ML1-040-V-E04R, ML2-063-V-E05R

II ML1-025-V-E01R, ML1-032-V-E01R

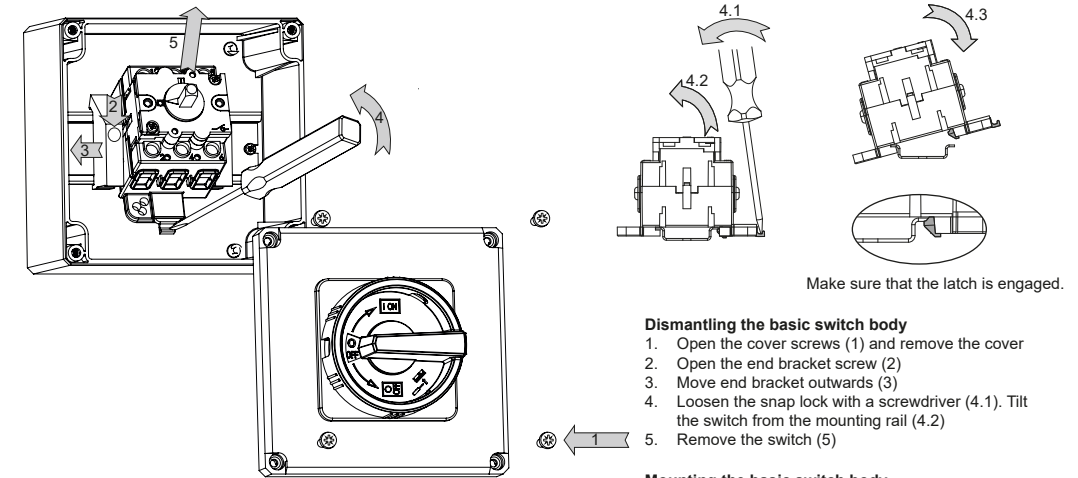
Enclosure modifications

! MERZ schaltgeräte GMBH + CO KG cannot assure the safety or effectiveness of any modifications or additions not made by MERZ schaltgeräte GMBH + CO KG. However, the following information may be helpful. These instructions do not eliminate the need to consult with equipment manufacturers and to observe all regulatory agency procedure and safe practices to assure the proper and electrical and mechanical function of MERZ schaltgeräte GMBH + CO KG products.

! Before altering the enclosure make sure that the switch is in OFF position and follow the instruction „Before starting work“.

! Remove the switch from the enclosure before you start drilling the clearance hole for the cable glands.

! Enclosures are rated NEMA Type 4x.
Use cable glands rated NEMA Type 4x.



Dismantling the basic switch body

1. Open the cover screws (1) and remove the cover
2. Open the end bracket screw (2)
3. Move end bracket outwards (3)
4. Loosen the snap lock with a screwdriver (4.1). Tilt the switch from the mounting rail (4.2)
5. Remove the switch (5)

Mounting the basic switch body

1. Hook the switch into the mounting rail and (4.3)
2. Move the end bracket to the switch (3)
3. Tight the end bracket screw (2)
If the switch has been changed by an additional contact, it may be necessary to reposition the switch. The switch axis must be arranged in the center of the housing.
4. Make sure that the cover gasket is placed correct. Place the cover on the lower part and tighten the cover screws (1).

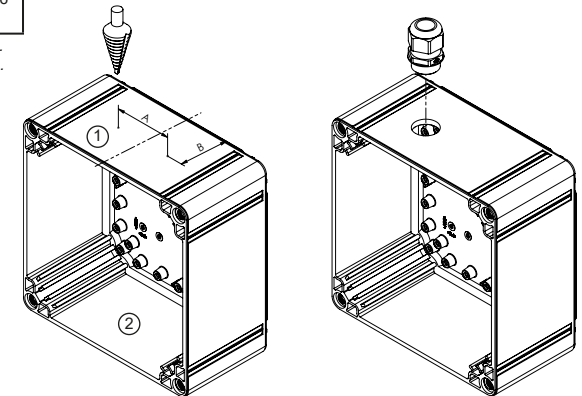
Type		I	II
Cover screw		PZ3 / PH3	PZ2 / PH2
Screw driver		2.0 [1.49]	1.5 [1.11]
Tightening torque	Nm [ft.lb]		
End bracket		slotted	slotted
Screw driver	mm	0.8 x 4	0.8 x 4
	in	0.03 x 0.016	0.03 x 0.016
Tightening torque	Nm [ft.lb]	0.5 [0.37]	0.5 [0.37]

Note: Pozi Drive set can be ordered at automation direct.com.
Part number: 05057460055 and 05073220055 (WERA).

Type		I		II	
		1	2	1	2
A	mm [in]	60 [2.36]	40 [1.57]		
B	mm [in]	55 [2.17]	36 [1.41]		
Max. cable gland	metric	2 x M40	2 x M25		
	NPT	2 x 1 1/4"	2 x 3/4"		

I ML1-040-V-E02R, ML2-063-V-E03R, ML2-080-V-E03R, ML3-125-V-E03R, ML1-040-V-E04R, ML2-063-V-E05R

II ML1-025-V-E01R, ML1-032-V-E01R



Replacement screw sets

ML-SKT-1: includes cover screws and screws for mounting rail for ML1-025-V-E01R and ML1-032-V-E01R

ML-SKT-2: includes cover screws and screws for mounting rail for ML1-040-V-E02R, ML2-063-V-E03R, ML2-080-V-E03R, ML3-125-V-E03R, ML1-040-V-E04R and ML2-063-V-E05R

ML-SKT-4: includes mounting screws for cover coupling application on the handle screw for ML1-025-V-E01R, ML1-032-V-E01R, ML1-040-V-E02R, ML2-063-V-E03R, ML2-080-V-E03R, ML3-125-V-E03R, ML1-040-V-E04R and ML2-063-V-E05R

Subject to change without notice. Store for use at a later date.

For more information please contact: www.automationdirect.com

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