

## 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

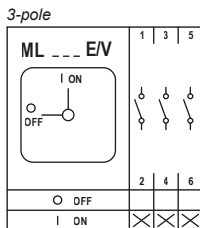
## Specifications acc. UL 60947-4-1 and CSA C22.2 NO. 60947-4-1-14

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)	7.5 (22)	7.5 (22)	10 (28)	10 (28)	15 (42)	20 (54)	25 (68)
	hp (FLA)	10 (14)	10 (14)	20 (27)	20 (27)	30 (40)	40 (52)	50 (65)
	hp (FLA)	10 (11)	10 (11)	20 (22)	20 (22)	30 (32)	40 (41)	50 (52)
Motor 1-ph 120 V 240 V (2-pole)	hp (FLA)	1 (16)	1 (16)	1.5 (20)	1.5 (20)	3 (34)	5 (56)	7.5 (80)
	hp (FLA)	2 (12)	2 (12)	3 (17)	3 (17)	7.5 (40)	10 (50)	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]

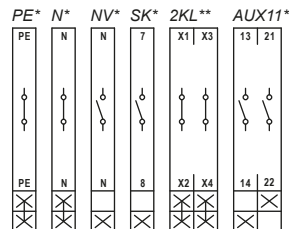
Suitable for use on a circuit capable of delivering not more than 5 kA rms symmetrical amperes, 600 Volts maximum.

## Contact diagrams

### ML1 / ML2 / ML3



### ML - Optional accessories



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

\* 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.

## Connection

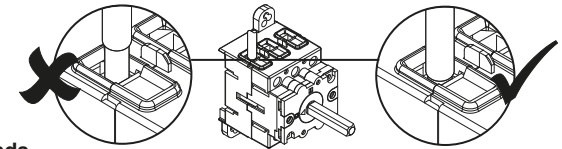
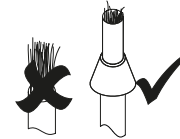


**Use Copper (CU) wire only, 75°C or higher.**

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 <sup>2</sup>	2.5 - 16	2.5 - 35	6 - 70	1 - 4	1 - 4
Finely stranded with sleeve	mm <sup>2</sup>	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

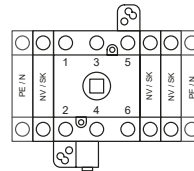
\* Values also valid for optional contacts PE, N, NV and SK

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

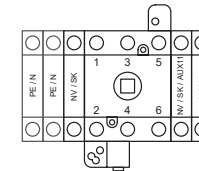


**Ensure there are no loose stray wire strands.**

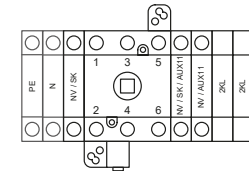
## Optional contact, Auxiliary contact and Terminal 2-pole



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

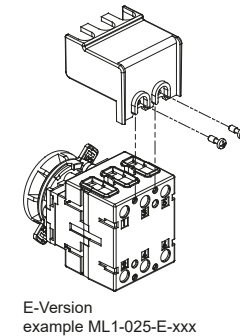
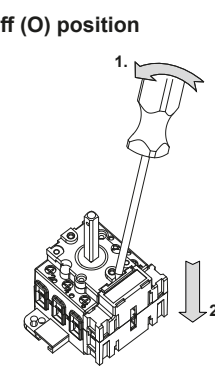
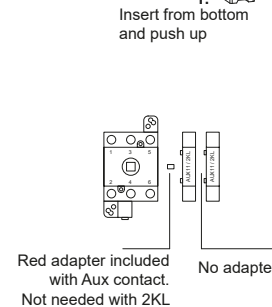
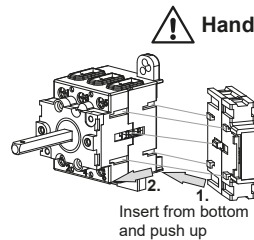


optional contact / auxiliary contact / terminal 2-pole / terminal  
max. 2 NV / SK / AUX11  
in total max. 3 contacts  
+ max. 2 2KL terminal 2-pole  
+ max. 1 PE terminal  
+ max. 1 N terminal

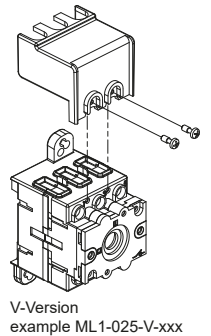
## Assembly

## Dismantling

## Terminal cover



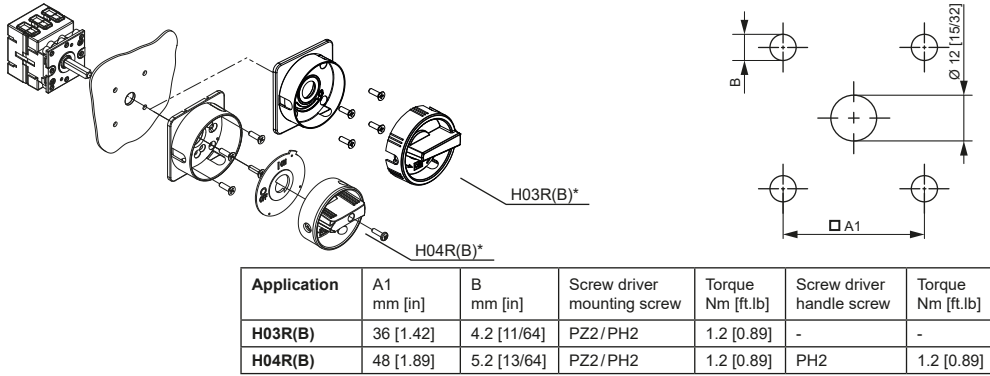
E-Version  
example ML1-025-E-xxx



V-Version  
example ML1-025-V-xxx

CLICK

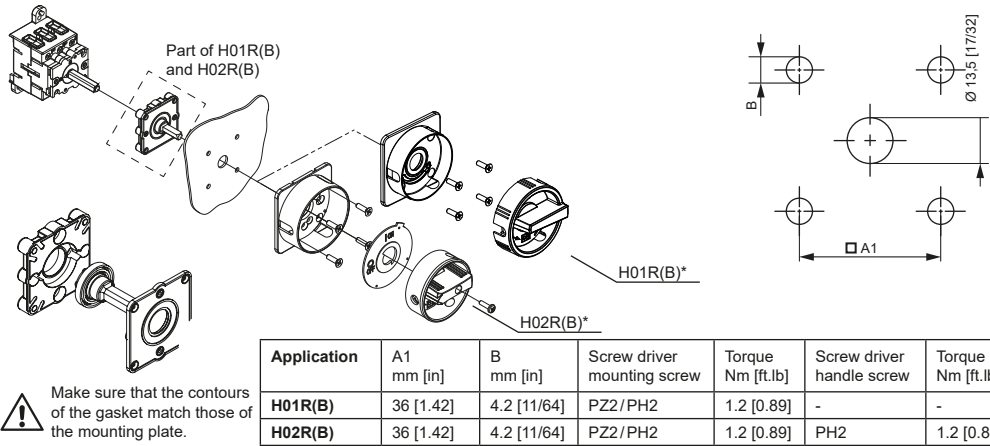
## 4-hole mounting



Application	A1 mm [in]	B mm [in]	Screw driver mounting screw	Torque Nm [ft.lb]	Screw driver handle screw	Torque Nm [ft.lb]
H03R(B)	36 [1.42]	4.2 [11/64]	PZ2/PH2	1.2 [0.89]	-	-
H04R(B)	48 [1.89]	5.2 [13/64]	PZ2/PH2	1.2 [0.89]	PH2	1.2 [0.89]

Note: Pozi Drive set can be ordered at [automationdirect.com](http://automationdirect.com). Part number: 05057460055 and 05073220055 (WERA).

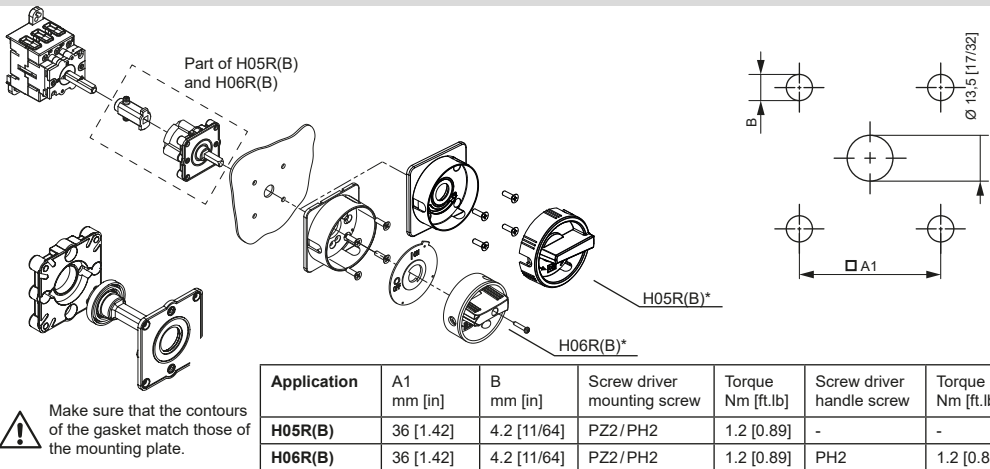
## Cover coupling



Application	A1 mm [in]	B mm [in]	Screw driver mounting screw	Torque Nm [ft.lb]	Screw driver handle screw	Torque Nm [ft.lb]
H01R(B)	36 [1.42]	4.2 [11/64]	PZ2/PH2	1.2 [0.89]	-	-
H02R(B)	36 [1.42]	4.2 [11/64]	PZ2/PH2	1.2 [0.89]	PH2	1.2 [0.89]

Note: Pozi Drive set can be ordered at [automationdirect.com](http://automationdirect.com). Part number: 05057460055 and 05073220055 (WERA).

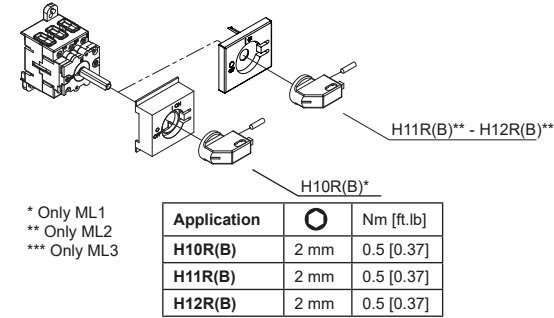
## Door coupling



Application	A1 mm [in]	B mm [in]	Screw driver mounting screw	Torque Nm [ft.lb]	Screw driver handle screw	Torque Nm [ft.lb]
H05R(B)	36 [1.42]	4.2 [11/64]	PZ2/PH2	1.2 [0.89]	-	-
H06R(B)	36 [1.42]	4.2 [11/64]	PZ2/PH2	1.2 [0.89]	PH2	1.2 [0.89]

Note: Pozi Drive set can be ordered at [automationdirect.com](http://automationdirect.com). Part number: 05057460055 and 05073220055 (WERA).

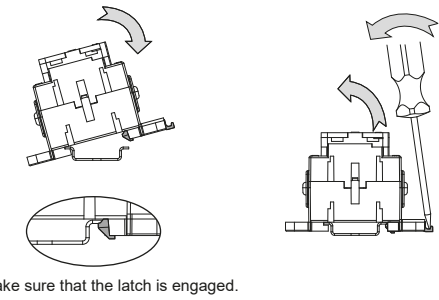
## Distribution board mounting



Application	Ø	Nm [ft.lb]
H10R(B)	2 mm	0.5 [0.37]
H11R(B)	2 mm	0.5 [0.37]
H12R(B)	2 mm	0.5 [0.37]

\* Only ML1  
\*\* Only ML2  
\*\*\* Only ML3

## Snap-on mounting

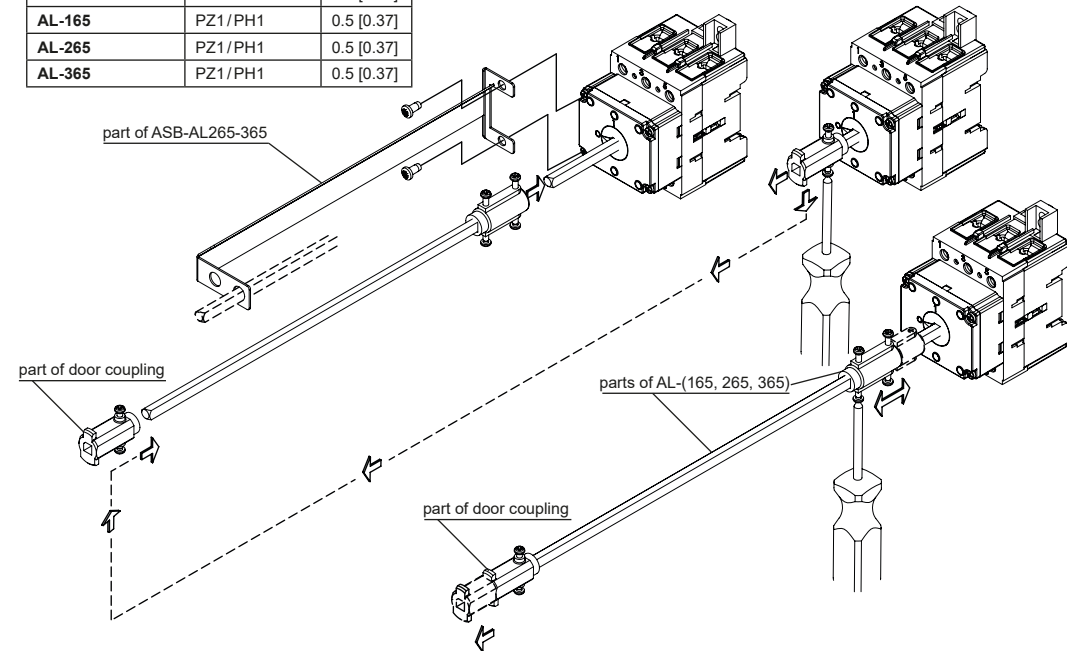


Make sure that the latch is engaged.

## Extension shaft and shaft support

Application	Screw driver mounting screw	Torque Nm [ft.lb]
ASB-AL265-365	PZ2/PH2	1.0 [0.74]
AL-165	PZ1/PH1	0.5 [0.37]
AL-265	PZ1/PH1	0.5 [0.37]
AL-365	PZ1/PH1	0.5 [0.37]

Note: Pozi Drive set can be ordered at [automationdirect.com](http://automationdirect.com). Part number: 05057460055 and 05073220055 (WERA).



## Replacement screw sets

ML-SKT-3: includes all necessary screws for HS3-ML1, HS3-ML2, HS3-ML3, AL-165, AL-265, AL-365 and ASB-AL265-365

ML-SKT-4: includes all necessary screws for H01R(B), H02R(B), H03R(B), H04R(B), H05R(B), H06R(B), H10R(B), H11R(B), H12R(B)

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

For more information please contact: [www.automationdirect.com](http://www.automationdirect.com)

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