

Merz ML Series Non-Fusible Disconnect Switches



DIN Rail



Front Door



Enclosed

Compact Switches

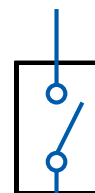
UL 508/UL 60947 manual motor controllers have been additionally rated for use as motor disconnects. They are also known as compact switches in Europe.

The term "compact switch" is a common one in the industry and describes a particular approach to the design of disconnect switches – specifically, ON/OFF switches arranged for switchboard installation.

In the majority of cases the switches are designed for snap-on DIN rail mounting, base mounting or front mounting in a door. The terminal screws are all accessible from one side. ML1 Compact Switches are available for applications from 16A to 40A. For more demanding applications loads, the ML2 to ML3 series accommodates loads from 63A up to 125A.

Technical details for units in these series are covered in the following pages.

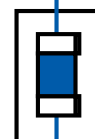
Typical Control Panel



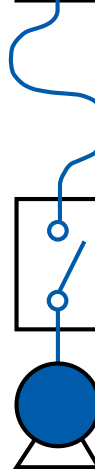
UL 98 or UL 489
Non-fusible disconnect switches

or

Fusible disconnect switches



UL 508
Non-Fusible Switches



Agency Approvals

UL Listed File, E195426

Standards: UL 508, UL 60947-1 and UL 60947-4-1

Cam Switches CSA only file 025483_0_000

CE: 2014/35/EU LVD

2014/30/EU EMC

2011/65/EU RoHS

Merz UL 508 Non-Fusible Disconnect Switches DIN Rail Mount

To assemble a switch, please select:



Switch Body

+



External Handle

OR



Switch Body

+



Shaft

+



External Handle

Merz UL 508 Non-Fusible Manual Motor Controller Switches - DIN Rail Mount					
Part Number	Price	Description	Switch Body Rating (A)	Poles	Drawing Link
ML1-016-V-A01	\$4nc?:	Non-fusible UL 508 / UL 60947 600VAC manual motor controller	16	3	PDF
ML1-025-V-A01	\$.4nc,:		25		PDF
ML1-032-V-A01	\$4nd0:		32		PDF
ML1-040-V-A01	\$4nd1:		40		PDF
ML2-063-V-A02	\$4nd2:		63		PDF
ML2-080-V-A02	\$4nd3:		80		PDF
ML3-125-V-A02	\$4nd4:		125		PDF

Merz UL 508 Non-Fusible Disconnect Switches

DIN Rail Mount - Accessories

Lockable Handles								
Part Number	Price	Description	Type	Color	Mounting	NEMA/UL Type	Use With	Drawing Link
H05R	\$4ndu:	Two-position, lockable in OFF only	Round	Red/yellow	External front mount	NEMA 4/4X	Merz ML1 switch bodies in DIN rail applications with hinged doors.	PDF
H05B	\$4ndv:	Two-position, lockable in OFF only	Round	Black/gray	External front mount	NEMA 4/4X	Merz ML1 switch bodies in DIN rail applications with hinged doors.	PDF
H06R	\$4ndx:	Two-position, lockable in OFF only	Round	Red/yellow	External front mount	NEMA 4/4X	Merz ML2 and ML3 switch bodies in DIN rail applications with hinged doors.	PDF
H06B	\$4ndy:	Two-position, lockable in OFF only	Round	Black/gray	External front mount	NEMA 4/4X	Merz ML2 and ML3 switch bodies in DIN rail applications with hinged doors.	PDF
H01R	\$4ndz:	Two-position, lockable in OFF only	Round	Red/yellow	External front mount	NEMA 4/4X	Merz ML1 switch bodies in DIN rail applications with non-hinged doors.	PDF
H01B	\$;4nd]:	Two-position, lockable in OFF only	Round	Black/gray	External front mount	NEMA 4/4X	Merz ML1 switch bodies in DIN rail applications with non-hinged doors.	PDF
H02R	\$;4nd[:	Two-position, lockable in OFF only	Round	Red/yellow	External front mount	NEMA 4/4X	Merz ML2 and ML3 switch bodies in DIN rail applications with non-hinged doors.	PDF
H02B	\$4nd_:	Two-position, lockable in OFF only	Round	Black/gray	External front mount	NEMA 4/4X	Merz ML2 and ML3 switch bodies in DIN rail applications with non-hinged doors.	PDF
H10B	\$4nd#:	Two-position, lockable in OFF only	Pistol	Black/gray	Direct mount	NEMA 1	Merz ML1 switch bodies in DIN rail applications. On-off faceplate included.	PDF
H10R	\$;4nd!:	Two-position, lockable in OFF only	Pistol	Red/yellow	Direct mount	NEMA 1	Merz ML1 switch bodies in DIN rail applications. On-off faceplate included.	PDF
H11B	\$;4nd,::	Two-position, lockable in OFF only	Pistol	Black/gray	Direct mount	NEMA 1	Merz ML2 switch bodies in DIN rail applications. On-off faceplate included.	PDF
H11R	\$4ne0:	Two-position, lockable in OFF only	Pistol	Red/yellow	Direct mount	NEMA 1	Merz ML2 switch bodies in DIN rail applications. On-off faceplate included.	PDF
H12B	\$4ne1:	Two-position, lockable in OFF only	Pistol	Black/gray	Direct mount	NEMA 1	Merz ML3 switch bodies in DIN rail applications. On-off faceplate included.	PDF
H12R	\$4ne2:	Two-position, lockable in OFF only	Pistol	Red/yellow	Direct mount	NEMA 1	Merz ML3 switch bodies in DIN rail applications. On-off faceplate included.	PDF

Adjustable Shafts for External Handles					
Part Number	Price	Description	Length (mm [in])	Use With	Drawing Link
AL-165	\$4ne9:	6x6 mm [0.24 x 0.24 in] shaft	178-238 [7.01-9.37]	Merz handles -H01R(B), -H02R(B), -H05R(B), -H06R(B)	PDF
AL-265	\$4nea:	6x6 mm [0.24 x 0.24 in] shaft	278-338 [10.95-13.31]	Merz handles -H01R(B), -H02R(B), -H05R(B), -H06R(B)	PDF
AL-365	\$4neb:	6x6 mm [0.24 x 0.24 in] shaft	378-438 [14.88-17.24]	Merz handles -H01R(B), -H02R(B), -H05R(B), -H06R(B)	PDF
ASB-AL265-365	\$4nec:	Shaft support	—	Merz AL-265 and AL-365 shafts	NA

NOTE: Shaft supports are necessary for extension of AL-265 and AL-365.



[AL-165](#)

Merz UL 508 Non-Fusible Disconnect Switches

Accessories

Merz UL 508 Additional Pole Modules (For Use with Merz MLx Switch Bodies in DIN Rail Applications)

Part Number	Price	Description	Module Rating (A)	Use With	Drawing Link
<u>SK1-V</u>	\$4nd5:	Fourth pole module (load break capable)	40A	ML1 switch bodies	<u>PDF</u>
<u>SK2-V</u>	\$4nd6:	Fourth pole module (load break capable)	80A	ML2 switch bodies	<u>PDF</u>
<u>SK3-V</u>	\$4nd7:	Fourth pole module (load break capable)	125A	ML3 switch bodies	<u>PDF</u>
<u>PE1-V</u>	\$4nd8:	Ground pole module	40A	ML1 switch bodies	<u>PDF</u>
<u>PE2-V</u>	\$4nd9:	Ground pole module	80A	ML2 switch bodies	<u>PDF</u>
<u>PE3-V</u>	\$4nda:	Ground pole module	125A	ML3 switch bodies	<u>PDF</u>
<u>N1-V</u>	\$4ndb:	Solid neutral pole module	40A	ML1 switch bodies	<u>PDF</u>
<u>N2-V</u>	\$4ndc:	Solid neutral pole module	80A	ML2 switch bodies	<u>PDF</u>
<u>N3-V</u>	\$4ndf:	Solid neutral pole module	125A	ML3 switch bodies	<u>PDF</u>

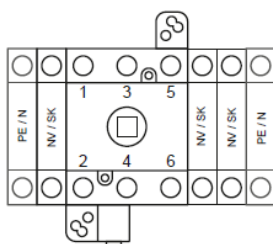
Merz UL 508 Auxiliary Contact

Part Number	Price	Description	Rating	Drawing Link
<u>AUX11-V</u>	\$4ndg:	1 NO / 1 NC auxiliary contacts, left or right side mount For use with Merz ML1, ML2 or ML3 DIN rail mount switch bodies -A01, -A02, -E01R, -E02R, E03R, -E04R, -E05R	10A @ 600VAC	<u>PDF</u>

Merz UL 508 Terminal

Part Number	Price	Description	Rating	Drawing Link
<u>2KL-V</u>	\$4ndh:	2-pole solid feed-through terminal, left or right side mount For use with Merz ML1, ML2 or ML3 DIN rail mount switch bodies -A01, -A02, -E01R, -E02R, E03R, -E04R, -E05R	10A @ 600VAC	<u>PDF</u>

Optional contact, auxiliary contact, and terminal 2-pole



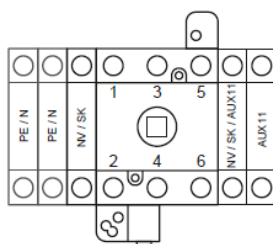
Optional contact/terminal

Max. 2NV/SK

In total max 3 contacts

+max 1 PE terminal

+max 1 N terminal



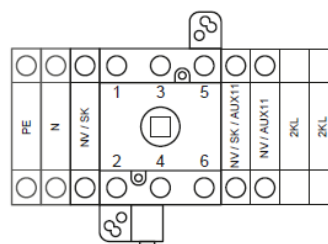
Optional contact/auxiliary contact/terminal

Max. 2NV/SK/AUX11

In total max 3 contacts

+max 1 PE terminal

+max 1 N terminal



Optional contact/auxiliary contact/terminal 2-pole/terminal

Max. 2NV/SK/AUX11

In total max 3 contacts

+max 2 2KL terminal 2-pole

+max 1 PE terminal

+max 1 N terminal

Merz UL 508 Non-Fusible Disconnect Switches With External Handle, Front Door Mount



Switch Body With Front External Handle

Wire connections accessible from the rear

Merz UL 508 Non-Fusible Disconnect Switches - With External Handle, Front Mount

Part Number	Price	Description	Switch Body Rating (A)	Poles	Handle	Drawing Link
ML1-016-E-H03R	\$4ndd:	Non-fusible UL 508 / UL 60947 manual motor controller 600VAC "suitable as motor" disconnect switch	16	3	Red/yellow	PDF
ML1-016-E-H03B	\$4nde:		16		Black/gray	PDF
ML1-025-E-H03R	\$-4ndi:		25		Red/yellow	PDF
ML1-025-E-H03B	\$-4ndj:		25		Black/gray	PDF
ML1-032-E-H03R	\$4ndk:		32		Red/yellow	PDF
ML1-032-E-H03B	\$-4ndl:		32		Black/gray	PDF
ML1-040-E-H03R	\$4ndn:		40		Red/yellow	PDF
ML1-040-E-H03B	\$4ndo:		40		Black/gray	PDF
ML2-063-E-H04R	\$4ndp:		63		Red/yellow	PDF
ML2-063-E-H04B	\$4ndq:		63		Black/gray	PDF

NOTE: Hardware for 4-hole door mounting and lockable handle for use with NEMA 4/4X enclosures included

Merz UL 508 Auxiliary Contact

Part Number	Price	Description	Rating	Drawing Link
AUX11-E	\$4nds:	Auxiliary contact, left or right side mount, 1 NO / 1 NC contacts For use with Merz ML1, ML2 or ML3 door mount switch bodies -H03R(B), -H04R(B)	10A @ 600VAC	PDF

Merz UL 508 Terminal

Part Number	Price	Description	Rating	Drawing Link
2KL-E	\$;4ndt:	2-pole solid feed-through terminal, left or right side mount For use with Merz ML1, ML2 or ML3 door mount switch bodies -H03R(B), -H04R(B)	10A @ 600VAC	PDF

Merz UL 508 Non-Fusible Disconnect Switches With Enclosure



Switch Body With Enclosure

General characteristics

- Gray enclosure with red handle
- Equipped with a 3-pole Merz ML1, ML2 or ML3 disconnect
- 1 removable ground terminal
- Possibility of adding 1 power pole and 1 auxiliary contact
- Operating temperature max 45°C or 55°C [113°F or 131°F]
- Operating temperature min -5°C [23°F]
- Polycarbonate plastic enclosure
- NEMA/UL Type 1, 3R, 4, 4X

Merz UL 508 Non-Fusible Disconnect Switches - With Enclosure									
Part Number	Price	Description	Enclosure Rating (A)	Poles	Enclosure Size (in [mm])	Weight (lb [kg])	Included With PE/ Neutral Terminal	Included With Auxiliary Contacts	Drawing Link
ML1-025-V-E01R	\$4ne8:	Non-fusible UL 508 / UL 60947 manual motor controller 600VAC "suitable as motor" disconnect switch	25	3	4.80 x 7.72 [122 x 120]	1.35 [0.61]	PE1-V	AUX11-V 1 NO / 1 NC	PDF
ML1-032-V-E01R	\$4ned:		32		4.80 x 7.72 [122 x 120]	1.35 [0.61]	PE1-V		PDF
ML1-040-V-E02R	\$04nee:		40		7.87 x 7.87 [200 x 200]	3.35 [1.52]	PE1-V		PDF
ML2-063-V-E03R	\$;04nef:		63		7.87 x 7.87 [200 x 200]	3.85 [1.75]	PE2-V		PDF
ML2-080-V-E03R	\$04neg:		80		7.87 x 7.87 [200 x 200]	3.85 [1.75]	PE2-V		PDF
ML3-125-V-E03R	\$04neh:		125		7.87 x 7.87 [200 x 200]	4.05 [1.84]	PE3-V		PDF
ML1-040-V-E04R	\$-04nei:		40		7.87 x 7.87 [200 x 200]	3.40 [1.54]	PE1-V + NV2-V*		PDF
ML2-063-V-E05R	\$-04nej:		63		7.87 x 7.87 [200 x 200]	4.05 [1.84]	PE2-V + NV2-V*		PDF

* Replacement NV2-V units are not sold by AutomationDirect.com.

Merz UL 508 Non-Fusible Disconnect Switches

Accessories

Terminal Shrouds

Part Number	Price	Description	Use With	Poles	Drawing Link
<u>HS1-ML1</u>	\$4nd?:	Terminal shroud, line or load side	Merz ML1 switch bodies	1	<u>PDF</u>
<u>HS3-ML1</u>	\$4ne3:	Terminal shroud, line or load side	Merz ML1 switch bodies	3	<u>PDF</u>
<u>HS1-ML2</u>	\$4ne4:	Terminal shroud, line or load side	Merz ML2 switch bodies	1	<u>PDF</u>
<u>HS3-ML2</u>	\$4ne5:	Terminal shroud, line or load side	Merz ML2 switch bodies	3	<u>PDF</u>
<u>HS1-ML3</u>	\$4ne6:	Terminal shroud, line or load side	Merz ML3 switch bodies	1	<u>PDF</u>
<u>HS3-ML3</u>	\$4ne7:	Terminal shroud, line or load side	Merz ML3 switch bodies	3	<u>PDF</u>

[HS1-ML1](#)

Replacement Mounting Screws

Part Number	Price	Description	Use With
<u>ML-SKT-1</u>	\$4nev:	Cover mounting screws	Merz small size enclosed disconnects -E01R
<u>ML-SKT-2</u>	\$4nex:	Cover mounting screws	Merz large size enclosed disconnects -E02R, -E03R, -E04R, -E05R
<u>ML-SKT-3</u>	\$4ney:	Screw kit, mounting and hardware screws	Shafts AL-165, AL-265, AL-365 (Shaft support ASB-AL265-365 and terminal shrouds HS3-ML1, HS3-ML2, HS3-ML3 included)
<u>ML-SKT-4</u>	\$4nez:	Handle mounting screws	Merz handles -H01R(B), -H02R(B), -H03R(B), -H04R(B), -H05R(B), -H06R(B), -H08R(B), -H09R(B), -H010R(B), -H011R(B), -H012R(B)

[ML-SKT-1](#)

Merz UL 508 Non-Fusible Disconnect Switches

Technical Characteristics

Characteristics According to UL 508, UL 60947-4-1

Type	ML1-016	ML1-025	ML1-032	ML1-040	ML2-063-	ML2-080	ML3-125
General use rating (A)	16	25	32	40	63	80	125
Short-circuit rating at 600VAC (kA)	5	5	5	5	5	5	5
Type of fuse	RK5	RK5	RK5	RK5	RK5	RK5	RK5
Max. fuse rating (A)	50	50	50	50	80	80	125

Max. Motor hp / Max. 3-Phase Motor FLA

Type		ML1-016	ML1-025	ML1-032	ML1-040	ML2-063	ML2-080	ML3-125
General purpose 600VAC 3-phase [A]		16	25	32	40	63	80	125
Motor 3-phase	240VAC (hp [FLA])	7.5 [22]	7.5 [22]	10 [28]	10 [28]	15 [42]	20 [54]	25 [68]
	480VAC (hp [FLA])	10 [14]	10 [14]	20 [27]	20 [27]	30 [40]	40 [52]	50 [65]
	600VAC (hp [FLA])	10 [11]	10 [11]	20 [22]	20 [22]	30 [32]	40 [41]	50 [52]
Motor 1-phase	120VAC (hp [FLA])	1 [16]	1 [16]	1.5 [20]	1.5 [20]	3 [34]	5 [56]	7.5 [80]
	240VAC 2-Pole (hp [FLA])	2 [12]	2 [12]	3 [17]	3 [17]	7.5 [40]	10 [50]	15 [68]

Wire Type / Temperature – Use Copper (Cu) Wire Only, 75°C [167°F] 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 [mm2]	2.5-16	2.5-35	6-70	1-4	1-4
Stranded with sleeve [mm2]	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 (N•m [lb•ft])	1.2 [0.89]	2.5 [1.84]	3 [2.21]	0.6 [0.44]	0.6 [0.44]

Environmental – Switch Body

Type	ML1-016	ML1-025	ML1-032	ML1-040	ML2-063	ML2-080	ML3-125
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]
Mounting	Horizontal on DIN rail or front door panel						

Auxiliary contacts

Electrical characteristics	A600, thermal 10A @ 600VAC
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Product Weight – lb (kg)

Type	ML1-016	ML1-025	ML1-032	ML1-040	ML2-063	ML2-080	ML3-125
Open switches	0.40 [0.18]	0.40 [0.18]	0.40 [0.18]	0.40 [0.18]	0.75 [0.34]	0.75 [0.34]	0.95 [0.43]

Agency Approvals

UL file #E195426 (Manual Motor Controllers)

Note: Short-circuit rating achieved when used with corresponding fuse type and max fuse rating.

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.