



Controls



MSW SWITCH DISCONNECTORS



MSW **Switch Disconnectors**



MSW SWITCH DISCONNECTORS

Summary

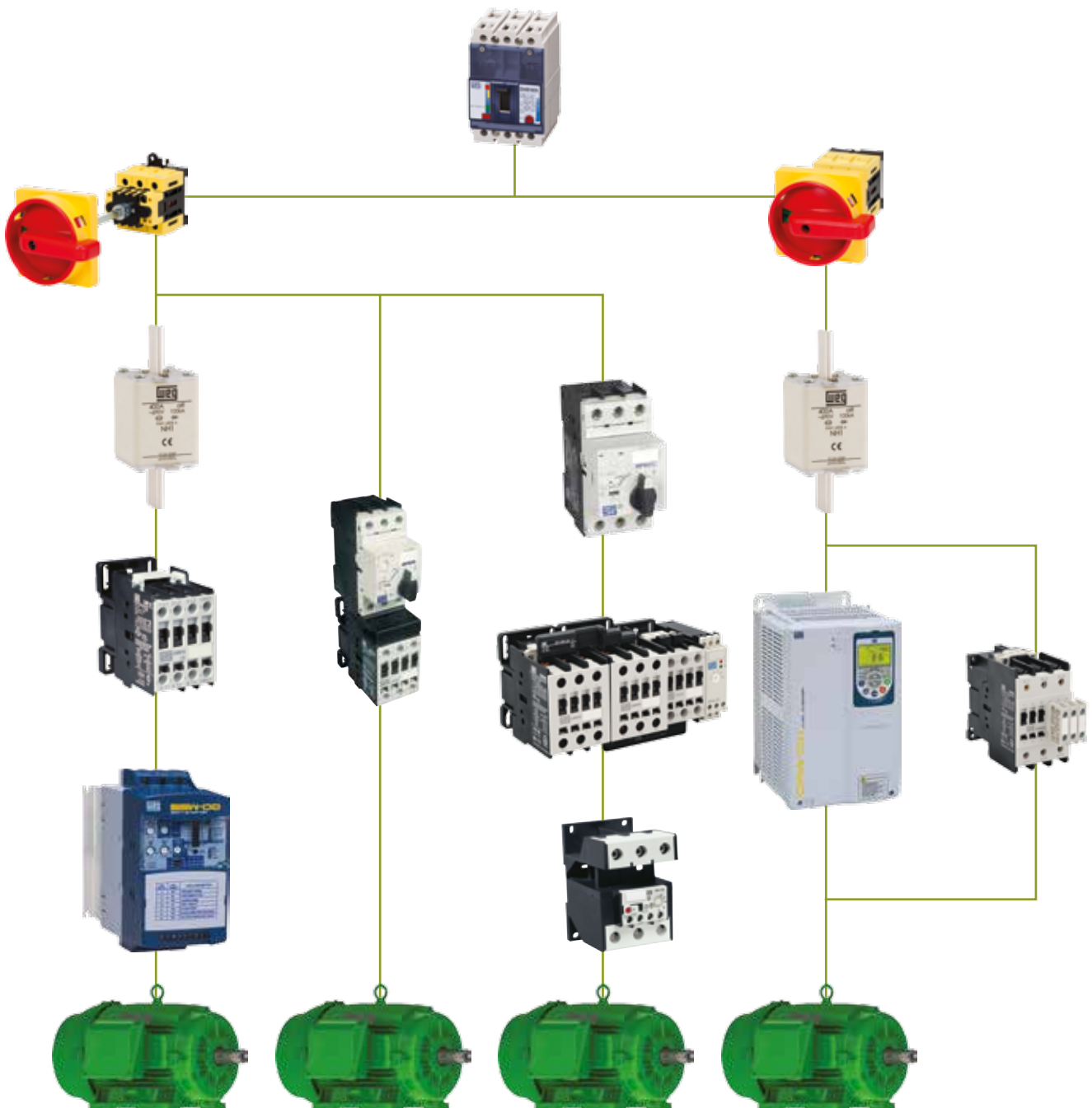
Switch-Disconnectors	4
How to Select a MSW Switch-Disconnecter for your Application	5
Switch-Disconnectors for Panel Door Mounting	7
Switch-Disconnecter for Base Mounting (Screw or Din Rail)	8
Technical Data	9
Switch-Disconnectors for Panel Door Mounting	10
Switch-Disconnectors for Base Mounting	14



Switch-Disconnectors

The MSW Switch-Disconnectors were developed according to IEC 60947-3/UL 508, and enable the manual drive of motors, machines and other equipment. Besides carrying and interrupting electric currents under normal or overload conditions, the design of the MSW Switch-Disconnectors provides complete physical insulation between the circuit and the power supply when in the OFF position. In this position, it is possible to use three padlocks in order to prevent inadvertent actuation, increasing the safety of operators and maintenance personnel.

The MSW Switch-Disconnectors are CE and UL certified, and can be used as the supply disconnecting device, meeting the requirements of IEC 60204-1, and as the emergency switching off device.



How to Select a MSW Switch-Disconnecter for your Application



The MSW line presents a series of accessories and configurations. WEG offers the full set with a standard configuration. The customer can select the Switch-Disconnectors and accessories according to the requirements of each application. Below are described the four steps necessary for the proper selection of the MSW Switch-Disconnecter.

1 - Mounting

The MSW Switch-Disconnectors are mounted on panel doors or bases according to the selected model.

- **Mounting on door:** in this system, the Switch-Disconnecter is mounted on panel doors by means of screws. The Switch-Disconnecter and the handle are always coupled.
- **Mounting on base:** the Switch-Disconnecter is mounted on a base, like panel plates, by screws or DIN rail. There is a shaft to couple the Switch-Disconnecter to the handle. The uncoupling of the Switch-Disconnecter and of the handle is only possible when the Switch-Disconnecter is in the OFF position.

The user must define the Switch-Disconnecter considering the wiring, access, simple mounting or any other criteria which may be deemed necessary.

2 - Current

The Switch-Disconnecter must present a rated current capacity equal to or above the rated current of the circuit/load.

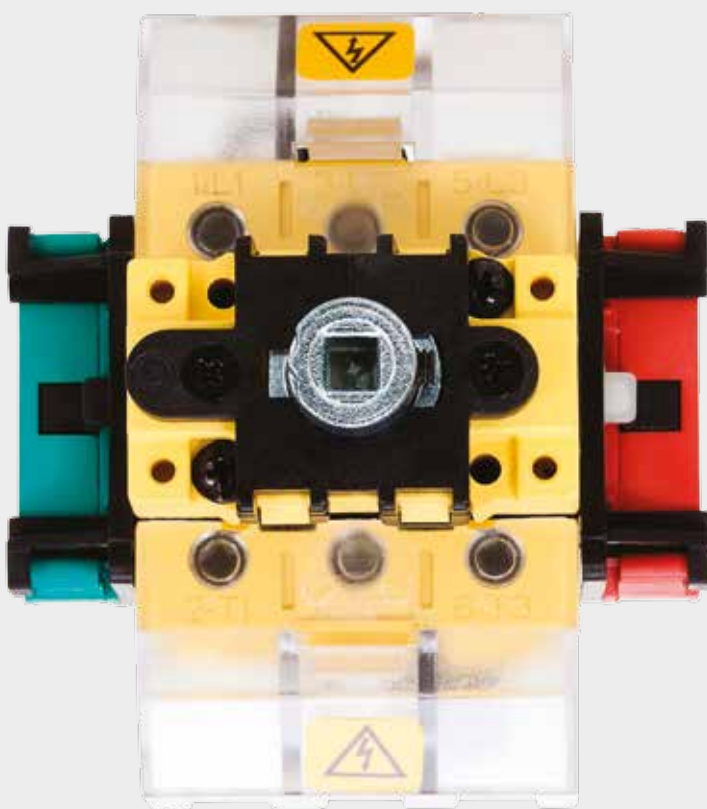
The MSW Switch-Disconnectors stand currents (Ith) up to 160 A for base mounting and up to 100 A for door mounting, according to the selected model. In order to select the Switch-Disconnecter, some currents are presented in the references according to the load characteristics. Other current values are presented in the table of technical data (page 8).

3 - Handle and Shaft

The handles of the MSW Switch-Disconnectors, developed with IP65 degree of protection, allow the use of up to three padlocks when in the OFF position, ensuring safety during maintenance. The handles of the MSW line are available in the colors red/yellow and black/gray.

For Switch-Disconnectors with base mounting, besides the handle, it is necessary to use a shaft. The shaft must have a length equal to or longer than the distance between the Switch-Disconnecter and the handle.

With those characteristics, it is possible to define a standard Switch-Disconnecter, but WEG offers other accessories that may be required for each application.



Switch-disconnector with 2 auxiliary contacts and 2 terminal covers.

4 - Accessories

4.a - Neutral Pole

For applications that require neutral disconnection the MSW line has an additional pole with early make contact, that can be assembled on the side of the Switch-Disconnecter.

4.b - Auxiliary Contacts

The MSW line provides auxiliary contacts for mounting on the sides of the Switch-Disconnecter. On each side of the Switch-Disconnecter, it is possible to mount an auxiliary contact, or a neutral pole, as shown in the figure on the left.

4.c - Terminal Cover

Aiming at enhancing the safety of machinery and equipment, the MSW line provides terminal covers that reduce the risk of inadvertent contact with the terminals. The terminal covers must cover all the poles with live conductors.

Overview

Mounting	Current (A)	Handle		Shaft (mm)			Neutral pole	Auxiliary contact			Terminal cover
		Red/yellow	Black/gray	85	185	300		1NO	1NC	1NOC	
Panel door	32	●	■				■	■	■		■
	40	●	■				■	■	■		■
	63	●	■				■	■	■		■
	80	●	■				■	■	■		■
	100	●									■
Base	32	●	■	◆	■	■	■	■	■		■
	40	●	■	◆	■	■	■	■	■		■
	63	●	■	◆	■	■	■	■	■		■
	80	●	■	◆	■	■	■	■	■		■
	125	●			■	●				■	■
	160	●			■	●				■	■

Notes: ◆ - Only available as part of the standard configuration.
 ● - Available as part of the standard configuration or it can be supplied separately.
 ■ - Only available to be supplied separately.

Switch-Disconnectors for Panel Door Mounting

Standard Configuration (Switch-Disconnecter + Handle Red/Yellow)

Type	I_n (A)	I_e (A)			Poles
		AC21 (690 V)	AC22 (690 V)	AC23 (690 V)	
MSW 25 P-3 H	32	32	25	16	3
MSW 40 P-3 H	40	40	32	20	3
MSW 63 P-3 H	63	63	63	26	3
MSW 80 P-3 H	80	80	80	32	3
MSW 100 P-3 H	100	100	86	38	3



Switch-Disconnectors and Accessories

Switch-Disconnecter

Type	I_n (A)	I_e (A)			Poles
		AC21 (690 V)	AC22 (690 V)	AC23 (690 V)	
MSW 25 P-3	32	32	25	16	3
MSW 40 P-3	40	40	32	20	3
MSW 63 P-3	63	63	63	26	3
MSW 80 P-3	80	80	80	32	3
MSW 100 P-3	100	100	86	38	3



Rotary Handle

Type	Switch-Disconnecter	Color
MSW H 40 P	MSW25/MSW40	Red/Yellow
MSW H 100 P	MSW63/MSW80/MSW100	Red/Yellow
MSW H 40 P-B	MSW25/MSW40	Black/Gray
MSW H 100 P-B	MSW63/MSW80/MSW100	Black/Gray



Neutral Pole

Type	Switch-Disconnecter	Contact
MSW AP 25-P-1 NA	MSW25	1 NO early make
MSW AP 40-P-1 NA	MSW40	1 NO early make
MSW AP 63-P-1 NA	MSW63	1 NO early make
MSW AP 80-P-1 NA	MSW80	1 NO early make



Auxiliary Contact

Type	Switch-Disconnecter	Contact
MSW AC-40 P 1NC	MSW25/MSW40	1NC
MSW AC-40 P 1NO	MSW25/MSW40	1NO
MSW AC-80 P 1NC	MSW63/MSW80	1NC
MSW AC-80 P 1NO	MSW63/MSW80	1NO



Terminal Cover

Type	Switch-Disconnecter	Poles
MSW TS-40 P	MSW25/MSW40	3
MSW TS-80 B/P	MSW63/MSW80	3
MSW TS-100 P ¹⁾	MSW100	2



Note: 1) Necessary 2 pieces of MSW TS-100P to cover 3 poles.
Terminal cover to line or load side (1 piece supplied).

Switch-Disconnecter for Base Mounting (Screw or Din Rail)

Standard Configuration (Switch-Disconnecter + Handle Red/Yellow + Shaft)

Type	I_n (A)	I_e (A)			Shaft length (mm)	Poles
		AC21 (690 V)	AC22 (690 V)	AC23 (690 V)		
MSW 25 B-3 H	32	32	25	16	85	3
MSW 40 B-3 H	40	40	32	20	85	3
MSW 63 B-3 H	63	63	63	26	85	3
MSW 80 B-3 H	80	80	80	32	85	3
MSW 125 B-3 H	125	125	125	80	300	3
MSW 160 B-3 H	160	160	160	100	300	3



Switch-Disconnectors and Accessories

Switch-Disconnecter

Type	I_n (A)	I_e (A)			Poles
		AC21 (690 V)	AC22 (690 V)	AC23 (690 V)	
MSW 25 B-3	32	32	25	16	3
MSW 40 B-3	40	40	32	20	3
MSW 63 B-3	63	63	63	26	3
MSW 80 B-3	80	80	80	32	3
MSW 125 B-3	125	125	125	80	3
MSW 160 B-3	160	160	160	100	3



Rotary Handle + Shaft

Type	Switch-Disconnecter	Color	Shaft (mm)
MSW H 40 B	MSW25/MSW40	Red/Yellow	85
MSW H 80 B	MSW63/MSW80	Red/Yellow	85
MSW H 160 B	MSW125/MSW160	Red/Yellow	300
MSW H 40-B-B	MSW25/MSW40	Black/Gray	85
MSW H 80-B-B	MSW63/MSW80	Black/Gray	85



Shaft

Type	Switch-Disconnecter	Color
MSW HS 185-40	MSW25/MSW40	185
MSW HS 300-40	MSW25/MSW40	300
MSW HS 185-160	MSW63/MSW80/MSW125/MSW160	185
MSW HS 300-160	MSW63/MSW80/MSW125/MSW160	300



Neutral Pole

Type	Switch-Disconnecter	Contact
MSW AP 25-B-1 NA	MSW25	1 NO early make
MSW AP 40-B-1 NA	MSW40	1 NO early make
MSW AP 63-B-1 NA	MSW63	1 NO early make
MSW AP 80-B-1 NA	MSW80	1 NO early make



Auxiliary Contact

Type	Switch-Disconnecter	Contact
MSW AC-40 B 1NC	MSW25/MSW40	1NC
MSW AC-40 B 1NO	MSW25/MSW40	1NO
MSW AC-80 B 1NC	MSW63/MSW80	1NC
MSW AC-80 B 1NO	MSW63/MSW80	1NO



Terminal Cover

Type	Switch-Disconnecter	Poles
MSW TS-40 B	MSW25/MSW40	3
MSW TS-80 B/P	MSW63/MSW80	3
MSW TS-160 B	MSW125/MSW160	3



Note: Terminal cover to line or load side (1 piece supplied).

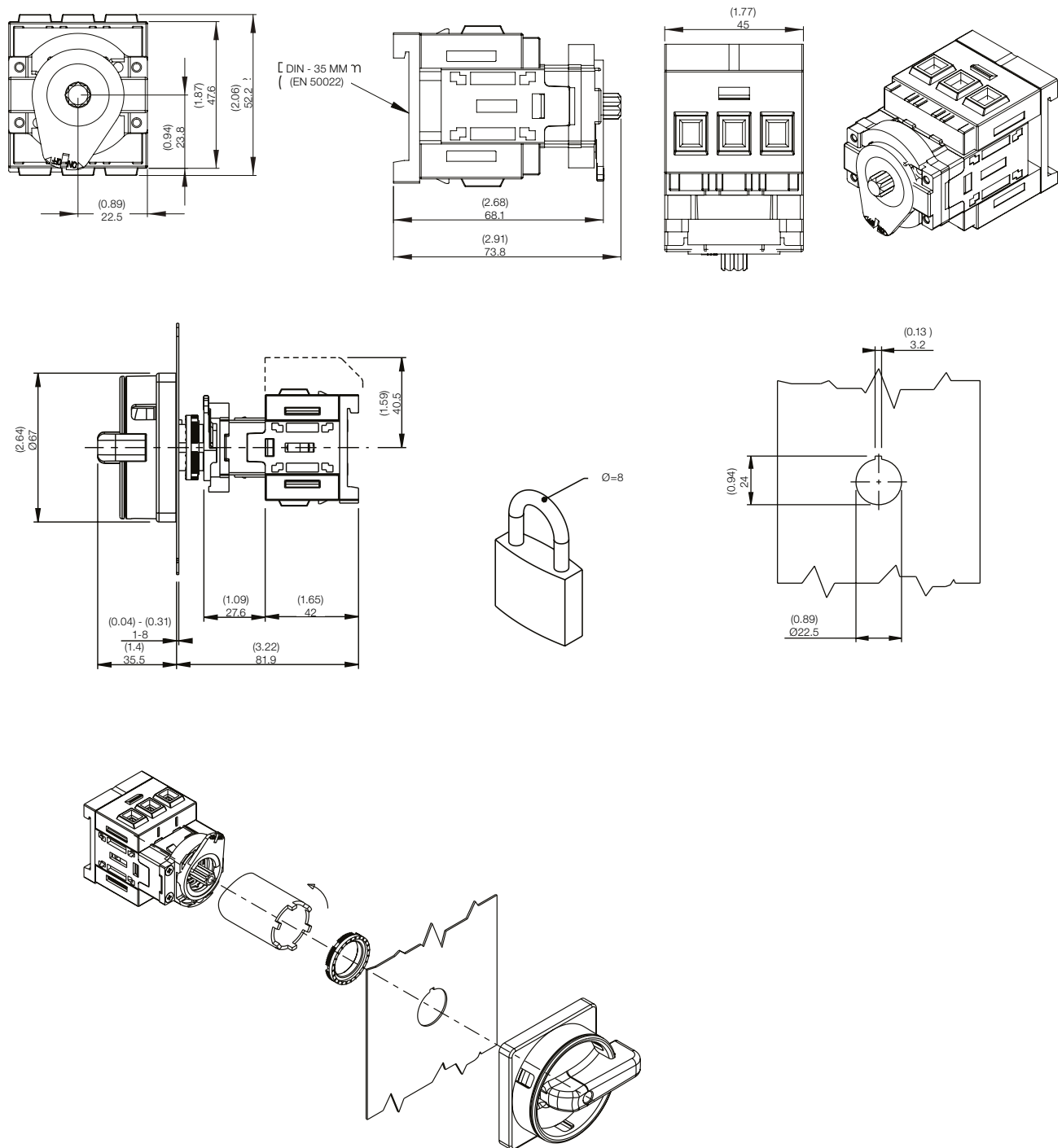


Technical Data

IEC 60947-3 characteristics				MSW 25	MSW 40	MSW 63	MSW 80	MSW 100	MSW 125	MSW 160	Auxiliary contact	
Rated operating voltage U _e			V	690								
Rated insulation voltage U _i			V	690	690	690	690	690	800	800	690	
Rated impulse withstand voltage U _{imp} (sectionable)			kV	8	8	8	8	8	8	8	4	
Rated thermal current I _{th}			A	32	40	63	80	100	125	160	16	
Rated thermal current in enclosed I _{the}			A	32	40	63	80	86	125	160	10	
Frequency			Hz	50/60								
Rated operating current I _e : alternate current												
AC-21A switching resistive loads			690 V	A	32	40	63	80	100	125	160	AC-15 240 V-5 A
AC-22A switching mixed resistive and inductive loads			500 V	A	-	-	-	-	100	125	160	DC-13 250 V-0.44 A
			690 V	A	25	32	63	80	86	125	160	-
AC-23A periodic switching of motors	3 phase 3 poles	230 V	A/kW	25/7.5	32/10	63/20	80/25	70/22	125/30	160/45	-	
		400 V	A/kW	25/15	32/18.5	50/28	75/42	67/37	125/55	160/75	-	
		500 V	A/kW	22/15	27/18.5	50/35	75/52	67/45	100/63	125/80	-	
		690 V	A/kW	16/15	20/18.5	26/25	32/31	38/37	80/75	100/90	-	
AC3 starting of cage motors (interruption while running)	3 phase 3 poles	230 V	A/kW	22/5.5	27/7.5	45/14	60/19	60/18.5	-	-	-	
		400 V	A/kW	22/11	27/15	40/22	55/30	55/30	-	-	-	
		500 V	A/kW	22/11	22/15	35/24	45/31	55/37	-	-	-	
		690 V	A/kW	16/11	16/15	22/21	25/24	32/30	-	-	-	
Rated interruption current AC-23A (cosφ 0.45)		230 V	A	200	256	360	600	560	-	-	-	
		400 V	A	200	256	320	536	536	1,000	1,280	-	
		500 V	A	176	216	280	536	536	-	-	-	
		690 V	A	128	160	176	256	304	800	800	-	
Short circuit characteristics												
Rated short-time short circuit withstand current I _{cw} (1s)			A	800	800	1,200	1,500	1,500	3,000	3,000	-	
Rated short circuit making capacity I _{cm}			A	1,500	1,500	2,200	2,800	2,840	4,500	4,500	-	
Conditional rated short circuit withstand current			kA	10	10	10/5	10/5	10	15	15	1	
Fuse rating gG	500 V		A	-	-	-	-	100	125	125	10	
	690 V		A	40	40	63/80	63/80	-	-	-	-	
UL 508 characteristics												
General use			600 V ac	A	32	40	60	80	100	125	160	HD A600 ac Q600 dc
Standard motors load	Single phase 2 poles	120 V ac	HP (FLA)	1.5 (20)	2 (24)	2	3	3 (34)	-	-	-	
		240 V ac	HP (FLA)	3 (17)	5 (28)	5	7.5	10 (50)	-	-	-	
	3 phase 3 poles	240 V ac	HP (FLA)	7.5 (22)	10 (28)	10	15	10 (28)	40 (104)	40 (104)	-	
		480 V ac	HP (FLA)	10 (14)	15 (21)	25	30	25 (34)	100 (124)	100 (124)	-	
		600 V ac	HP (FLA)	15 (17)	20 (22)	30	40	30 (32)	125 (125)	125 (125)	-	
General characteristics												
Protection degree	Handle	EN 60529/UL 50	IP65 / Type 1-4-4X-NEMA 4X									
	Terminals	EN 60529	IP20									
Material group	EN 60947-1		II						IIla	IIla	II	
Pollution grade	EN 60947-1		3									
Flammability	UL 94		V0									
Ambient temperature	Operation	°C	-25 +55									
	Storage	°C	-30 +70									
Climate withstand	IEC 68 part 2-3		Hot damp									
	IEC 68 part 2-30		Unsettled hot damp									
Switching force (3 poles)				0.8 Nm (7.1 lb.in.)		1 Nm (8.85 lb.in.)		1.5 Nm	2.6 (23 lb.in.)		-	
Connections		EN 60947-1										
Terminal block caliber				A6		A8		-		-	A2	
Terminal screw				M4		M5		M8		M8	M3.5	
Tightening torque	EN 60947-1		1.2 Nm		3 Nm			6 Nm		6 Nm	0.8 Nm	
	UL 508		10.6 lb.in. (1.2 Nm)		32 lb.in. (3.6 Nm)			53 lb.in. (6Nm)		7.1 lb.in.		
Main terminal capacity			mm ²	1.5-10		6-25		10-70		10-70	1-2.5	
Flexible conductors			AWG	12-6		10-2		3/0-6		3/0-6	18-12	
			mm ²	1.5-16		10-35		10-70		10-70	1-2.5	
Solid conductors			AWG	12-6		10-2		3/0-6		3/0-6	18-12	
Opening angles				90°							-	

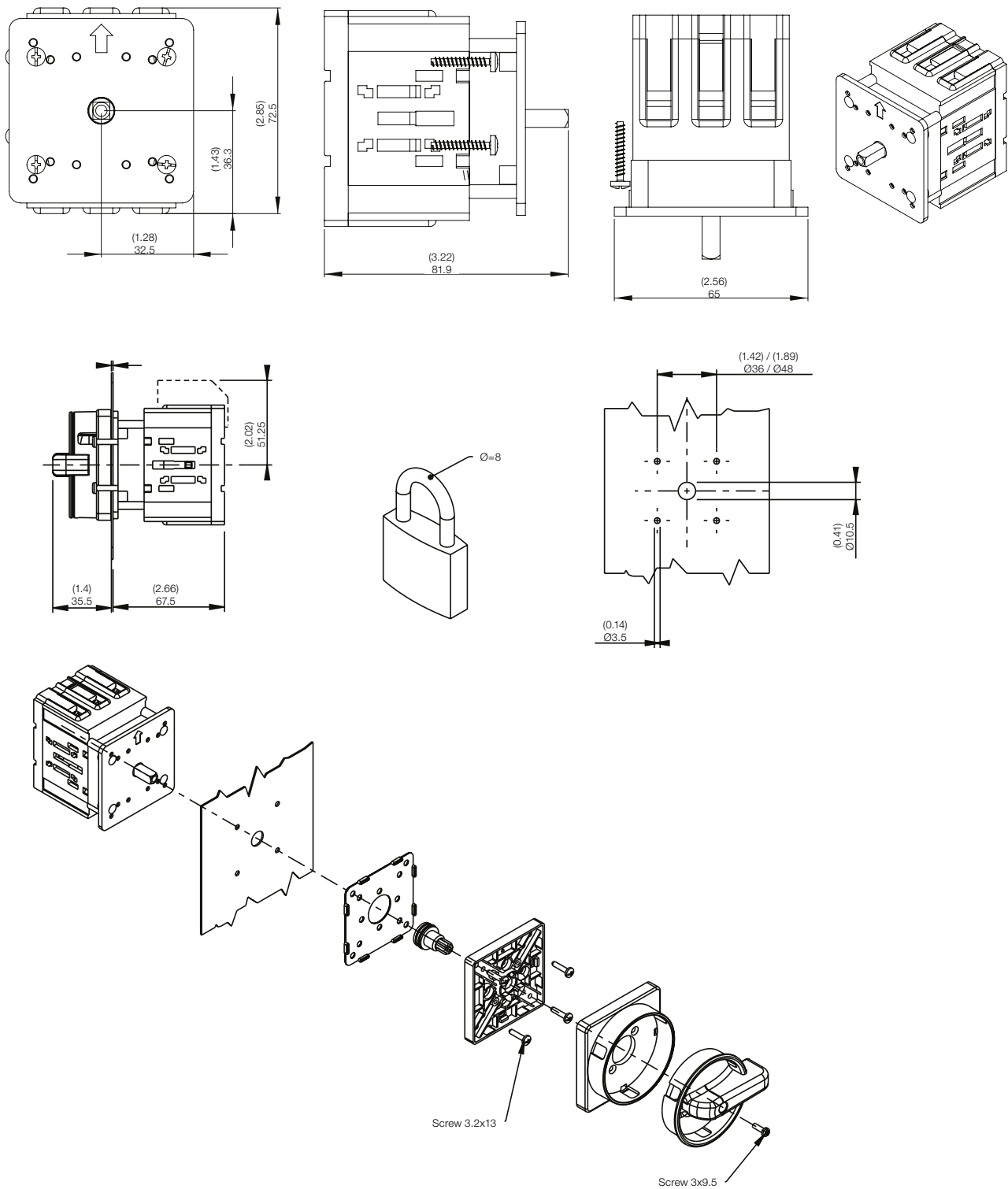
Switch-Disconnectors for Panel Door Mounting

MSW25...40P-3



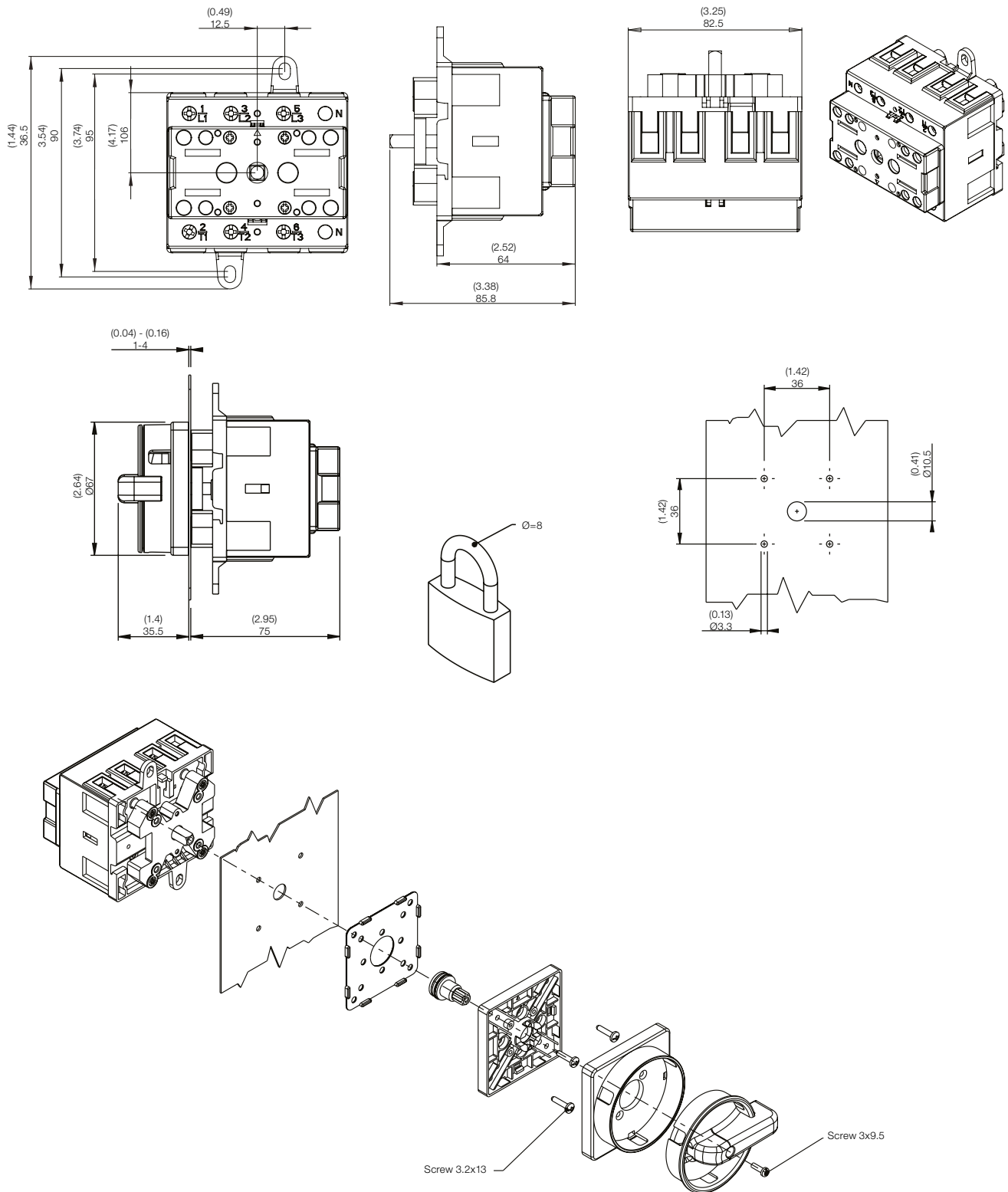
Note: Dimensions mm (in).

MSW63...80P-3



Note: Dimensions mm (in).

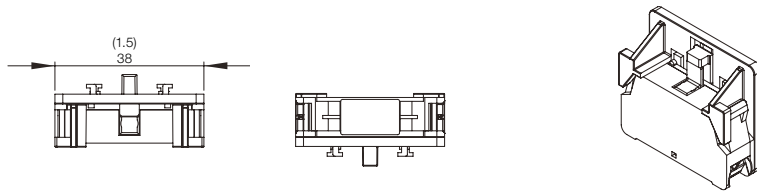
MSW100P-3



Note: Dimensions mm (in).

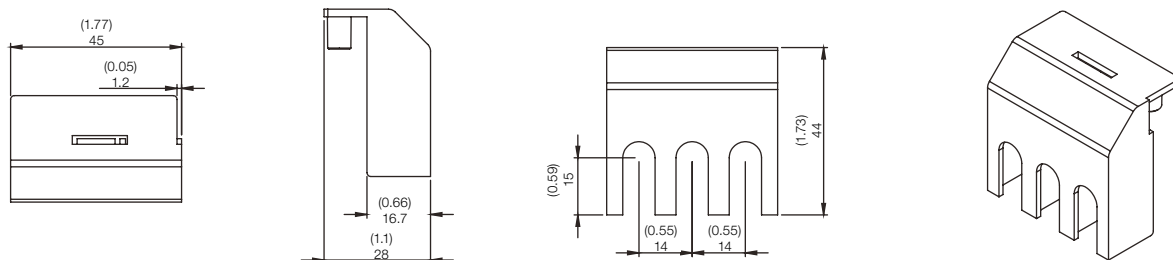
Auxiliary Contact

MSWAC-40...80P1NC / MSWAC-40...80P1NO

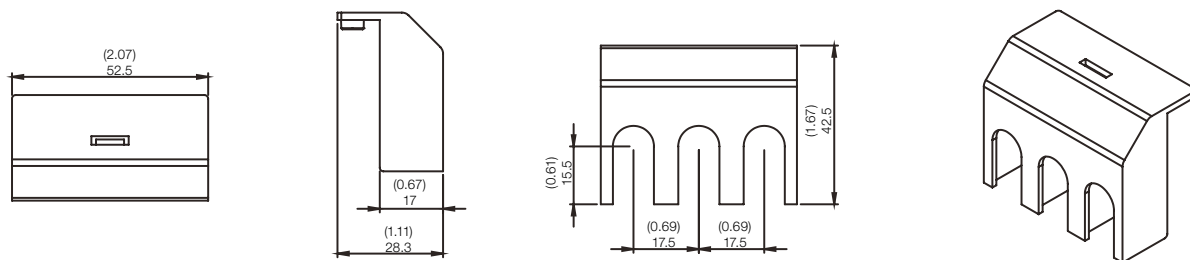


Terminal Cover

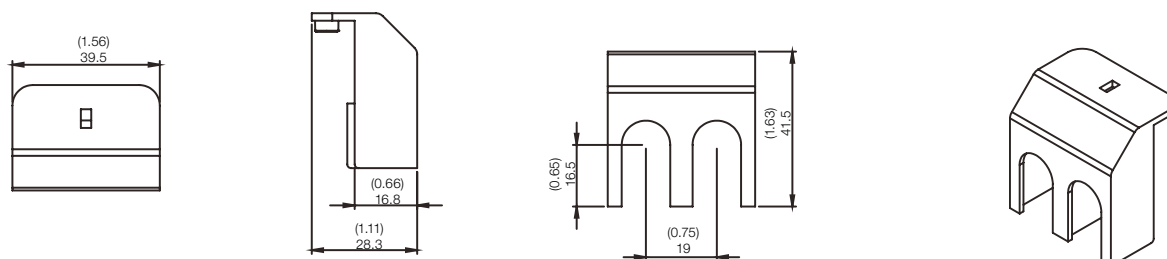
MSWTS-40P



MSWTS-80B-P



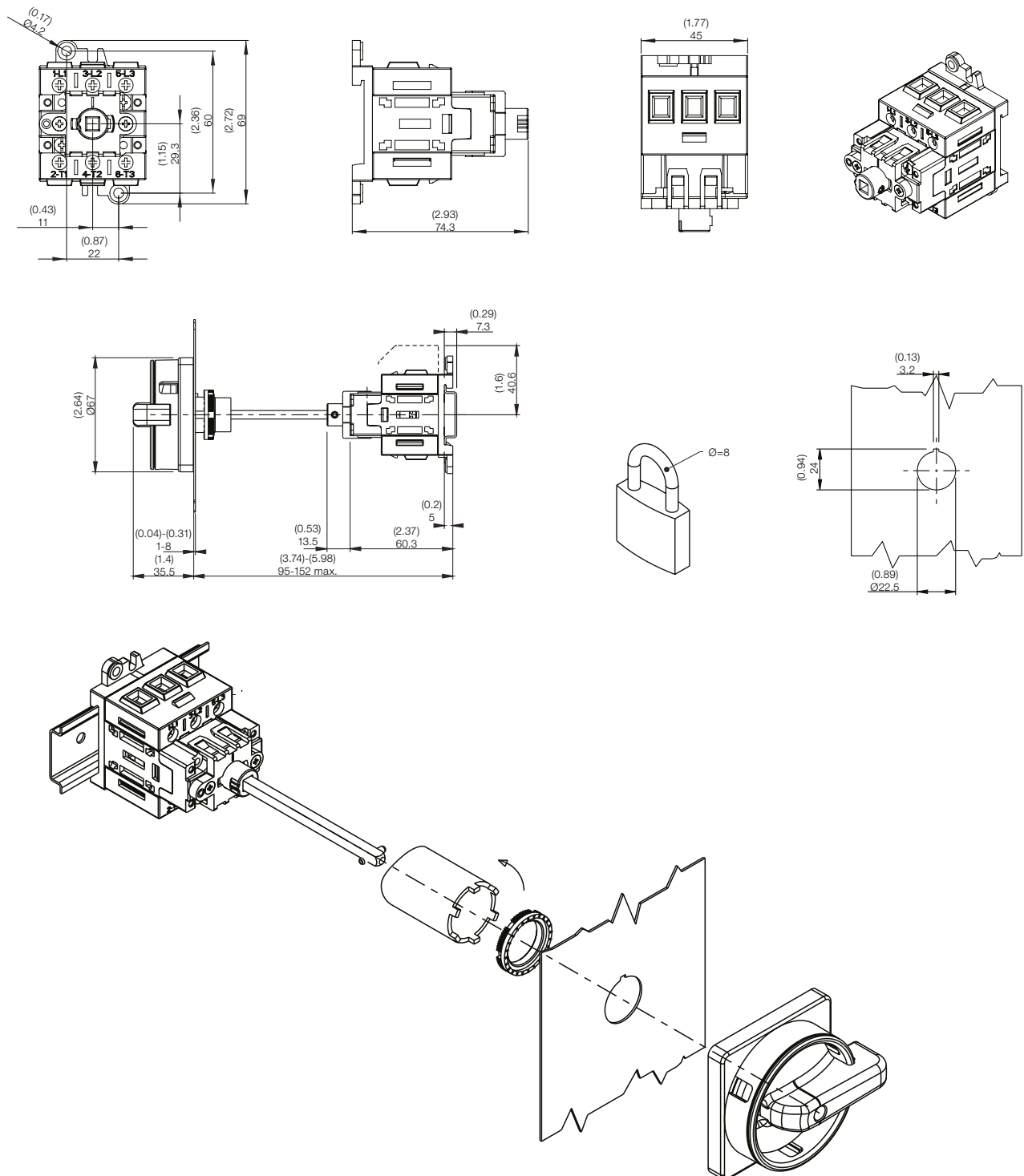
MSWTS-100P



Note: Dimensions mm (in).

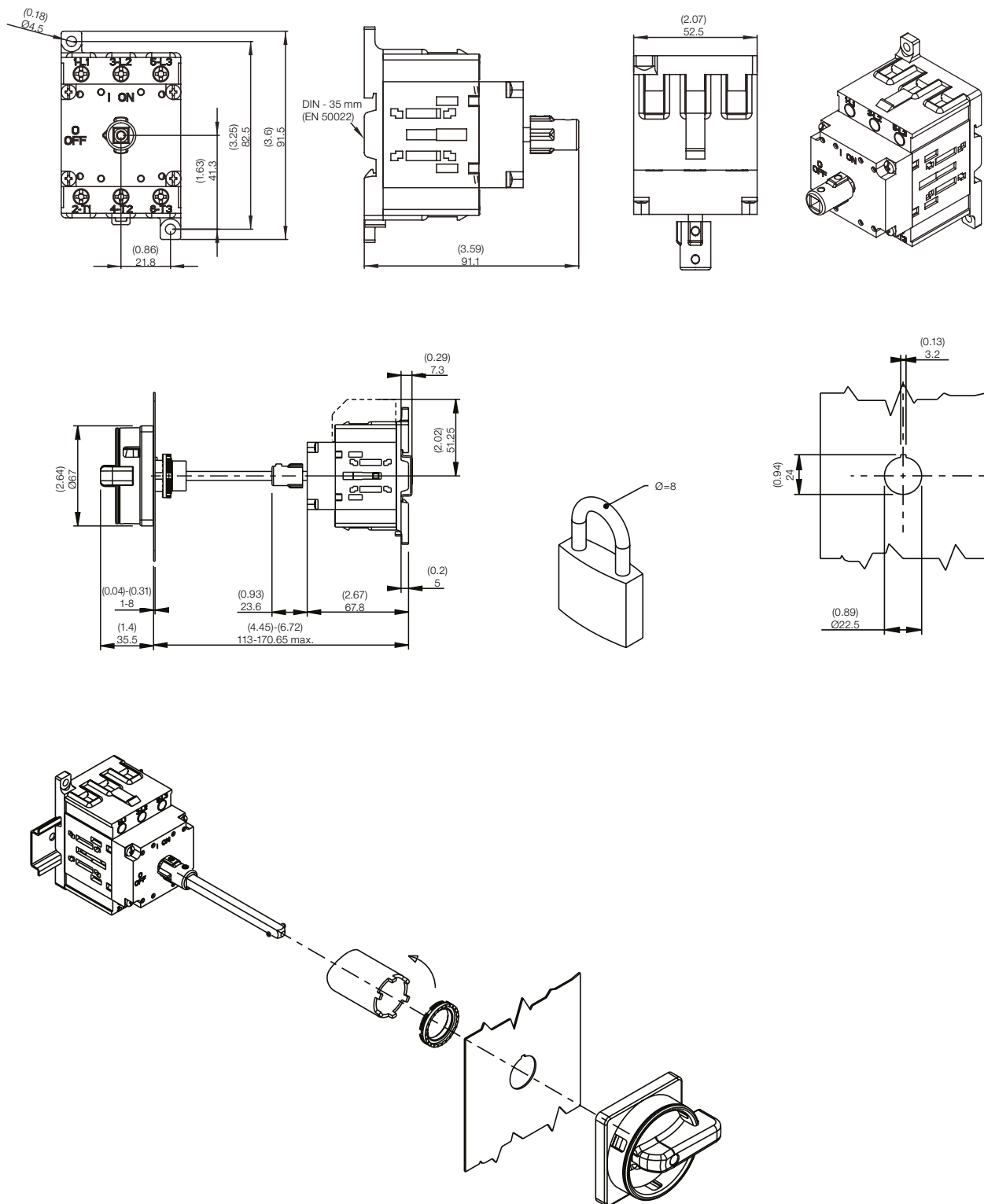
Switch-Disconnectors for Base Mounting

MSW25...40B-3



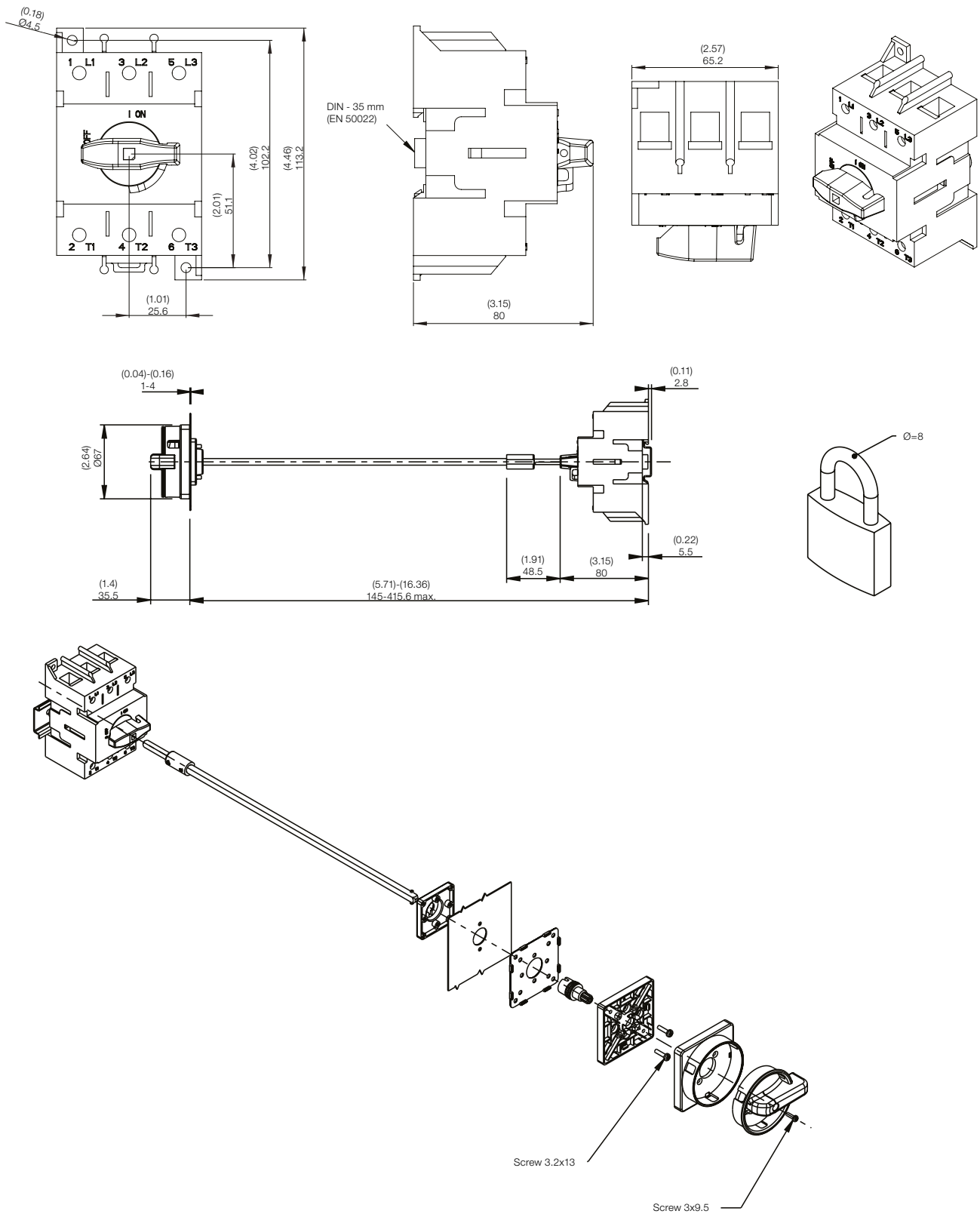
Note: Dimensions mm (in).

MSW63...80B-3



Note: Dimensions mm (in).

MSW125...160B-3

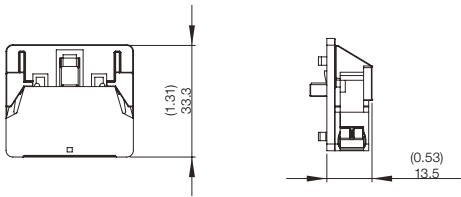


Note: Dimensions mm (in).



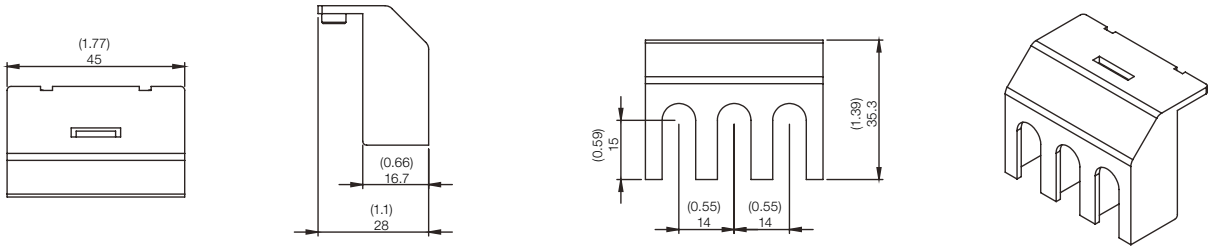
Auxiliary Contact

MSWAC-40...80B1NC / MSWAC-40...80B1NO

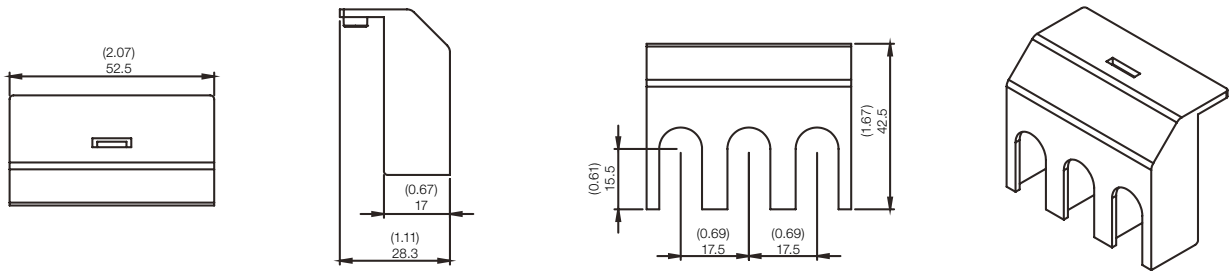


Terminal Cover

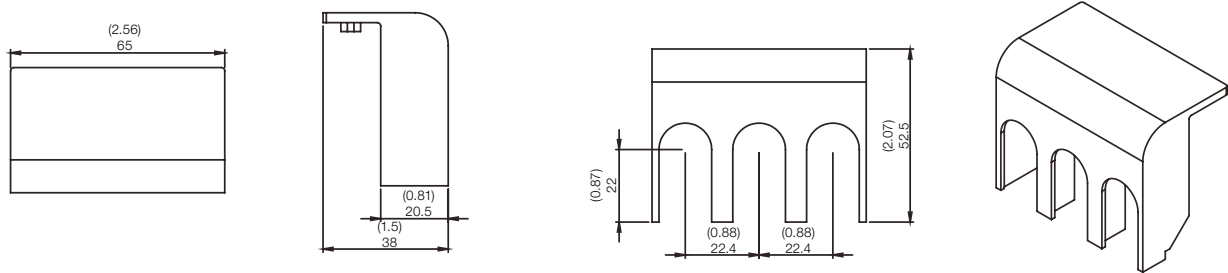
MSWTS-40B



MSWTS-80B-P



MSWTS-160B



Note: Dimensions mm (in).





AUCKLAND Unit 18, 761 Great South Road, Penrose, Auckland 1061, **P** +64 9 525 4440, **F** +64 9 525 4449
MATAMATA - HEAD OFFICE 2 Waihou Street, PO Box 242, Matamata 3440, **P** +64 7 881 9005, **F** +64 7 888 4317
CHRISTCHURCH 42 Hands Road, Middleton, Christchurch 8024, **P** +64 3 338 0000, **F** +64 3 338 0012

www.trind.co.nz