

Key Coding

Below is an example reference guide that is useful in selecting and tracking codes. Start down the Aa column as the lower codes (typically Aa to Za) are stocked. The chart continues on to Zz. Note that there are only 24 letters used—O & Q are not used.

Codes are ordered with upper case letters. Labels with two letter codes will show the first letter in the upper case and the second letter in lower case.

	Code	Application & Date	Code	Application & Date	Code	Appli & Da
Start Down	Aa	granulation machine #472 24/3/01	Ab		Ac	
	Ba		Bb		Bc	
	Ca		Cb		Cc	
	Da		Db		Dc	

Code	Application & Date	Code	Application & Date	Code	Application & Date	Code	Application & Date	Code	Application & Date	Code	Application & Date
Aa		Ab		Ac		Ad		Ae		Af	
Ba		Bb		Bc		Bd		Be		Bf	
Ca		Cb		Cc		Cd		Ce		Cf	
Da		Db		Dc		Dd		De		Df	
Ea		Eb		Ec		Ed		Ee		Ef	
Fa		Fb		Fc		Fd		Fe		Ff	
Ga		Gb		Gc		Gd		Ge		Gf	
Ha		Hb		Hc		Hd		He		Hf	
Ia		Ib		Ic		Id		Ie		If	
Ja		Jb		Jc		Jd		Je		Jf	
Ka		Kb		Kc		Kd		Ke		Kf	
La		Lb		Lc		Ld		Le		Lf	
Ma		Mb		Mc		Md		Me		Mf	
Na		Nb		Nc		Nd		Ne		Nf	
Pa		Pb		Pc		Pd		Pe		Pf	
Ra		Rb		Rc		Rd		Re		Rf	
Sa		Sb		Sc		Sd		Se		Sf	
Ta		Tb		Tc		Td		Te		Tf	
Ua		Ub		Uc		Ud		Ue		Uf	
Va		Vb		Vc		Vd		Ve		Vf	
Wa		Wb		Wc		Wd		We		Wf	
Xa		Xb		Xc		Xd		Xe		Xf	
Ya		Yb		Yc		Yd		Ye		Yf	
Za		Zb		Zc		Zd		Ze		Zf	

Safety Switches

Rotary Switches



Description

The rotary switches are used for electrical isolation of machinery to improve safe access and also as teach boxes in robot cells. Once the power has been turned off, the key can then be withdrawn and used in the next sequence of operation such as unlocking an access hatch or allowing valves to be operated.

The rotary switch can either be mounted in a panel or purchased in an enclosure. The rotary switch is available with 4 poles, either 4 N.O. or 2 N.C. and 2 N.O. The 100 A 4 N.O. switch has 3 contacts rated at 100 A and 1 contact rated at 20 A.

Features

- 316L stainless steel keys
- Direct drive operation—positively opens contacts
- Stainless steel dust cap included
- Up to 400 A isolation
- 4 N.O., 2 N.O. and 2 N.C., 3 N.O./1 N.C., 3 N.O., or 3 N.C. and neutral contacts
- Replaceable code barrel assembly

Specifications

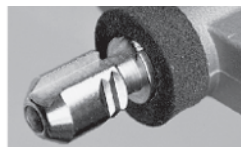
Safety Ratings

Standards	EN1088, IEC/EN60204-1, IEC/EN60947-5-1, ISO12100-1&2, ISO14119, GS-ET-19, AS4024.1, UL508, CSA 22.2
Category	Cat. 1 per EN 954-1 (ISO 13849-1) Suitable for Cat. 2, 3, and 4 systems
Certifications	CE Marked for all applicable directives, BG, cULus on contact block; C-Tick not required
Operating Characteristics	
Conduit Entry	4 x M20 (RKS only)
Mechanical Life	100,000 operations
Finger Protection	DIN 57106/VDE 0106 T.100
Environmental Characteristics	
Operating Temperature [C (F)]	-10...+40 ° (14...104 °)
Relative Humidity	95%
Physical Characteristics	
Shear Force to Key	15.1 k•N (3398 lbs), max.
Torque to Key	14 N•m (124 lb•in), max.

Specifications (continued)



Weight [g (lbs)]	RPSE	10, 11, 12, 13, 20:	500 (1.1)	14, 16:	1000 (2.2)
	RKSE	10, 11, 12, 13:	850 (1.9)	14, 16:	1250 (2.8)
Electrical Life	100,000 operations				
Climatic Test	Constant to DIN IEC 68 Part 2-3 Variable to DIN IEC 68 Part 2-30				
Ambient Temperature, Operation	Encased -25...40 °C (10...104 °F)				
(Ui) Rated Insulation Voltage	690V				
(Uimp) Rated Impulse withstand Voltage	6 kV				
S3 Intermittent Rating Duty Factor (VDE 0530, Part 1)	60/40/25% = 1, 3/1, 6/2 xlu				
Last two digits of Cat. No. (See Product Selection table)	10				
	11				
	12				
	13				
Rated Uninterrupted Current (Iu)	IEC/EN/VDE	20A	32A	63A	100A
	UL/CSA	16A	30A	60A	100A
Rated Operational Voltage (Ue)	IEC/EN/VDE	690V	690V	690V	1000V
	UL/CSA	600V	600V	600V	600V
	Main Switch Isolation Voltage, Max.	750V	750V	750V	1000V
Rated Operational Current (Ie)	AC-21A IEC/EN/VDE	20A	32A	63A	100A
	AC-1 SEV	20A	32A	63A	100A
Rated Operational Power at 50/60 Hz (AC-23A IEC/EN/VDE)	3-phase 220...240V	4 kW	5.5 kW	15 kW	22 kW
	3-pole 380...440V	7.5 kW	11 kW	22 kW	37 kW
	500...690V	7.5 kW	11 kW	22 kW	37 kW
Rated Operational Power at 50/60 Hz (AC-3A IEC/EN/VDE)	3-phase 220...240V	3 kW	4 kW	11 kW	22 kW
	3-pole 380...440V	5.5 kW	7.5 kW	18.5 kW	30 kW
	500...690V	5.5 kW	7.5 kW	18.5 kW	30 kW
DOL Rating (UL/CSA)	3-phase 140V	1 HP	2 HP	5 HP	10 HP
	3-pole 240V	2 HP	5 HP	15 HP	25 HP
	480V	5 HP	10 HP	30 HP	30 HP
Rated Breaking Capacity	AC-23/AC-3 220...240V	250A	330A	500A	600A
	Motor Switch 380...440V	250A	330A	500A	600A
	500...690V	150A	220A	270A	300A
Fuse Rating (GI)		25 A, max.	35 A, max.	63/50 A, max.	100 A, max.
Rated Fuse Short Circuit Current		15 kA	15 kA	15/20 kA	25 kA
Terminal Cross Section		1...10		4...16	2.5...3.5
		mm ² single/multiple wire			
Conductor Size, mm ² min...max		0.75 ...6		2.5...10	1.5...2.5
		(stranded) with sleeve			
		8 AWG		6 AWG	2 AWG

The Prosafe Advantage





Stainless steel construction.

Product Selection

Type	Contact Type	Current Accuracy	Cat. No.
 Enclosure Mounted (RKS only)	4 N.O.	20 A	440T-MRKSE10*
	2 N.O. & 2 N.C.	20 A	440T-MRKSE11*
	4 N.O.	32 A	440T-MRKSE12*
	4 N.O.	63 A	440T-MRKSE13*
	3 N.O. & 1 N.O.	3 N.O. 100 A and 1 N.O. 20 A	440T-MRKSE14*
Mild Steel Enclosure Mounted (RKS only)	8 N.O.	20 A	440T-MRKSE16*
	3 N.O. + Neutral	200 A	440T-MRKSE21*
	3 N.O.	400 A	440T-MRKSE22*
 Panel Mounted	4 N.O.	20 A	440T-MRPSE10*
	2 N.O. & 2 N.C.	20 A	440T-MRPSE11*
	4 N.O.	32 A	440T-MRPSE12*
	4 N.O.	63 A	440T-MRPSE13*
	3 N.O. & 1 N.O.	3 N.O. 100 A and 1 N.O. 20 A	440T-MRPSE14*
	8 N.O.	20 A	440T-MRPSE16*
	3 N.O. & 3 N.C.	20 A	440T-MRPSE18*
	4 N.O.	40 A	440T-MRPSE20*

* Substitute the desired primary code for this symbol (key not included). See page 3-107.

Type	Number of Keys	Contact Type	Current Accuracy	Cat. No.	
Isolator on First Key Out					
	Dual key isolator	2 keys out	4 N.O.	20 A	440T-MMRSE10**
			2 N.O. & 2 N.C.	20 A	440T-MMRSE11**
			4 N.O.	32 A	440T-MMRSE12**
	Triple key isolator	3 keys out	4 N.O.	63 A	440T-MMRSE13**
			4 N.O.	20 A	440T-MMRSE20***
			2 N.O. & 2 N.C.	20 A	440T-MMRSE21***
	Quad key isolator	4 keys out	4 N.O.	32 A	440T-MMRSE22***
			4 N.O.	63 A	440T-MMRSE23***
			4 N.O.	20 A	440T-MMRSE30****
	Dual key exchange isolator	1 key in/ 1 key out	2 N.O. & 2 N.C.	20 A	440T-MMRSE31****
			4 N.O.	32 A	440T-MMRSE32****
			4 N.O.	63 A	440T-MMRSE33****
	Triple key exchange isolator	1 key in/ 2 key out	4 N.O.	20 A	440T-MMRSE10*⊗
			2 N.O. & 2 N.C.	20 A	440T-MMRSE11*⊗
			4 N.O.	32 A	440T-MMRSE12*⊗
	Quad key exchange isolator	1 key in/ 3 key out	4 N.O.	63 A	440T-MMRSE13*⊗
			4 N.O.	20 A	440T-MMRSE20*⊗⊗
			2 N.O. & 2 N.C.	20 A	440T-MMRSE21*⊗⊗
			4 N.O.	32 A	440T-MMRSE22*⊗⊗
			4 N.O.	63 A	440T-MMRSE23*⊗⊗
			4 N.O.	20 A	440T-MMRSE30*⊗⊗⊗
			2 N.O. & 2 N.C.	20 A	440T-MMRSE31*⊗⊗⊗
			4 N.O.	32 A	440T-MMRSE32*⊗⊗⊗
			4 N.O.	63 A	440T-MMRSE33*⊗⊗⊗

* Substitute the desired primary code for this symbol (key not included). See page 3-107.

⊗ Substitute the desired secondary code for this symbol (key included). See page 3-107.

Safety Switches

Rotary Switches

Accessories

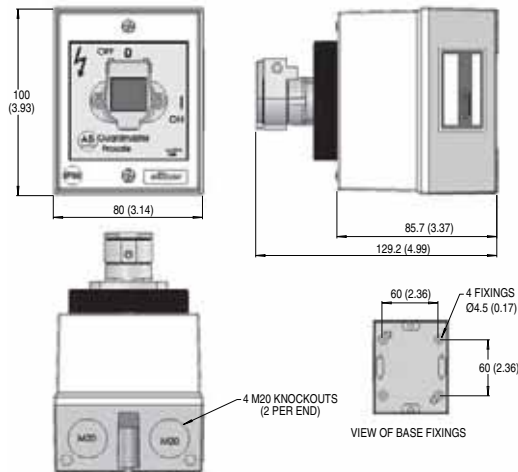
Description	Additional Information	Cat. No.
Stainless steel key	3-140	440T-AKEYE10*
Stainless steel replacement code barrel for products other than 100 A RPS/RKS units with dust cap		440T-ASCBE14*
Stainless steel replacement code barrel for 100 A unit rotary switch		440T-ASCBE11*
Stainless steel weatherproof replacement dust cap		440T-ASF10*
Cable grip, M20 conduit, accommodates cable diameter 7...10.5 mm (0.27...0.41 in.)	3-53	440A-A09028
Adaptor, conduit, M20 to 1/2 inch NPT, plastic		440A-A09042
Supplemental Contact Block, 20 A, 1 N.O. Late Make, Early Break 1 N.C. Auxiliary	For use with RPSE12, RPSE20 (maximum 1 per switch)	440T-AACA10
Supplemental Contact Block, 20 A, 2 N.O. Late Make, Early Break	For use with RPSE12, RPSE20 (maximum 1 per switch)	440T-AACA11
Supplemental Contact Block, 20 A, 1 N.O., 1 N.C.	For use with RPSE13 & 14	440T-AACA20
Supplemental Contact Block, 20 A, 2 N.O.	For use with RPSE13 & 14	440T-AACA21
ABS plastic enclosure	For use with dual key, and dual key exchange, isolators	440T-AIPB10
Stainless steel enclosure (240x180x150 mm)	For use with >20 A RPSE units (not including RPSE21 or 22)	440T-AIPB25
Stainless steel enclosure (150x150x80 mm)	For use with RPSE10 & 11	440T-AIPB26
ABS plastic enclosure	For use with triple/quad key, and triple/quad key exchange, isolators	440T-AIPB50
Stainless steel enclosure	For use with triple/quad key, and triple/quad key exchange, isolators	440T-AIPB55

* Substitute the desired primary code for this symbol (key not included). See page 3-107.

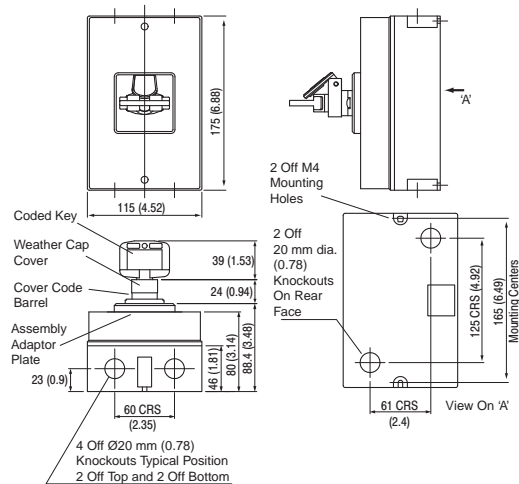
Approximate Dimensions [mm (in.)]

Dimensions are not intended to be used for installation purposes.

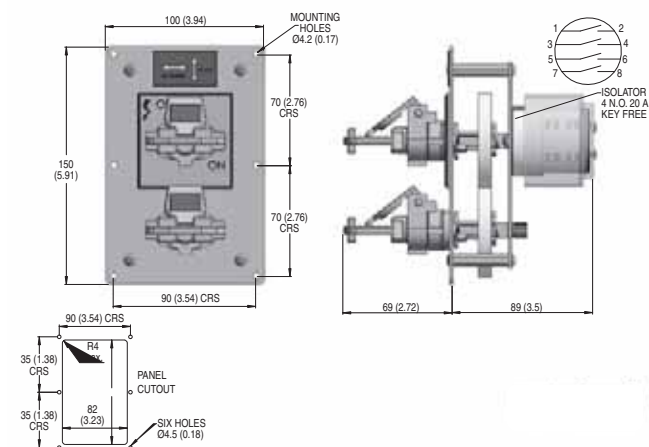
MRKSE10 and MRKSE11



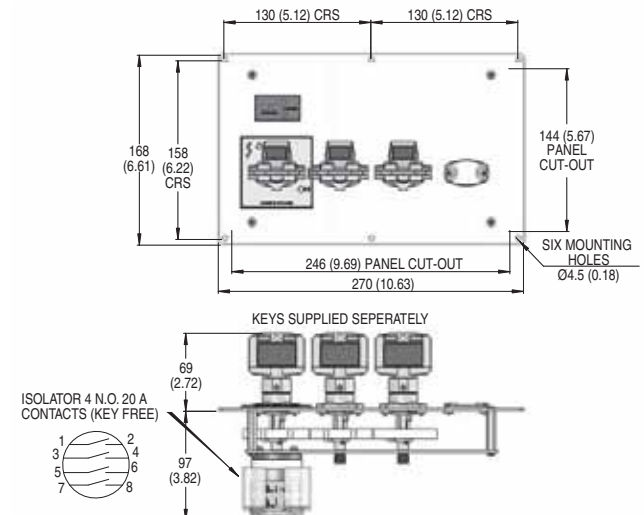
MRKSE12 and MRKSE13



MMRSE10



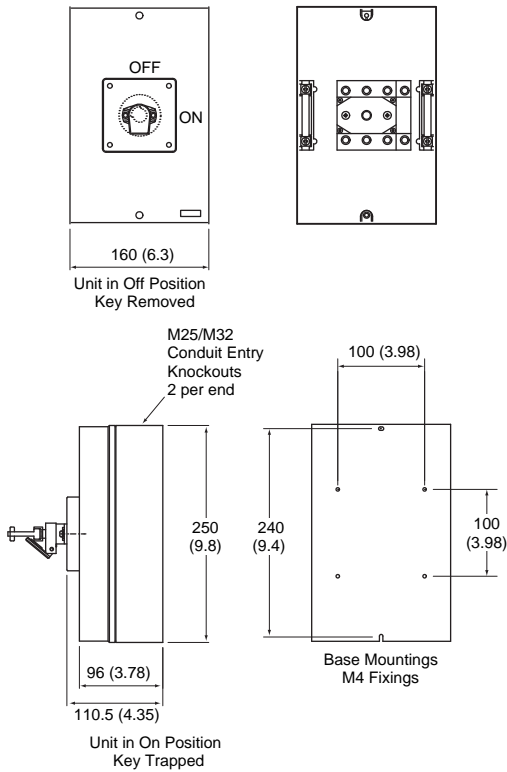
MMRSE20



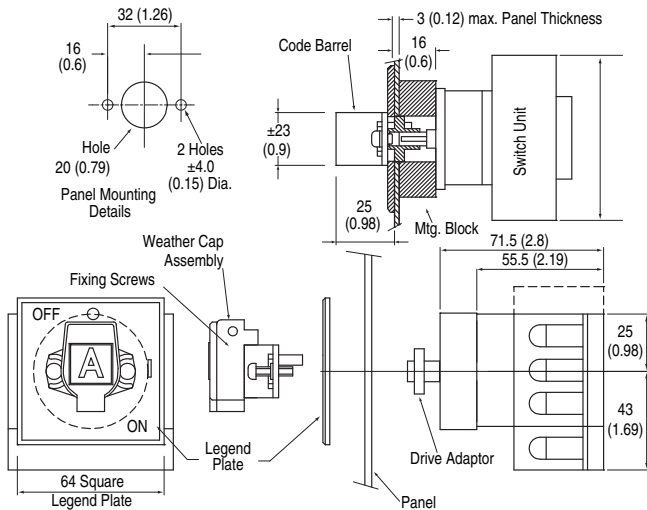
Approximate Dimensions [mm (in.)] (continued)

Dimensions are not intended to be used for installation purposes.

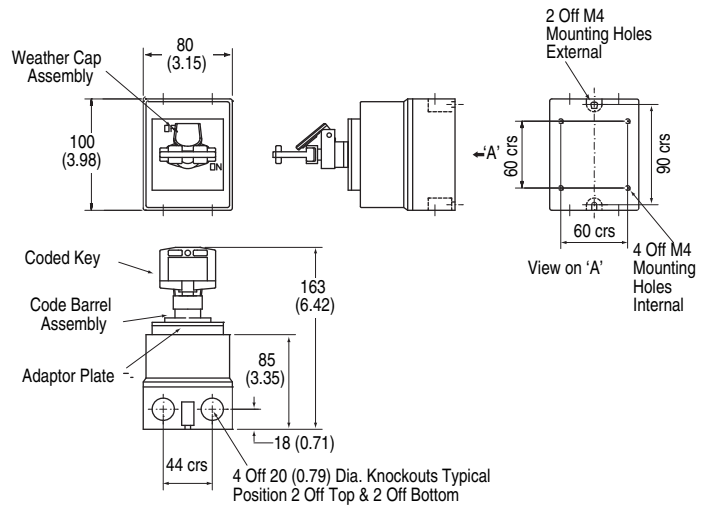
MRKSE14



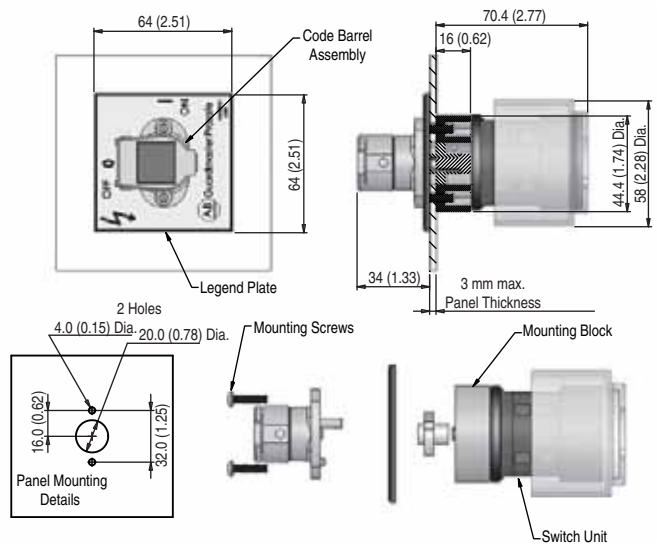
MRPSE 12, 13, 14 and 20



MRKSE16



MRPSE10 and 11



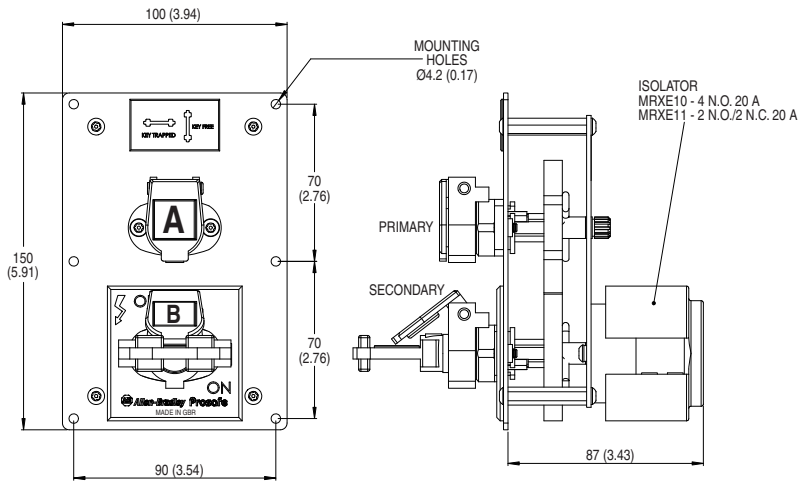
3-Trapped Key
Switches

Safety Switches

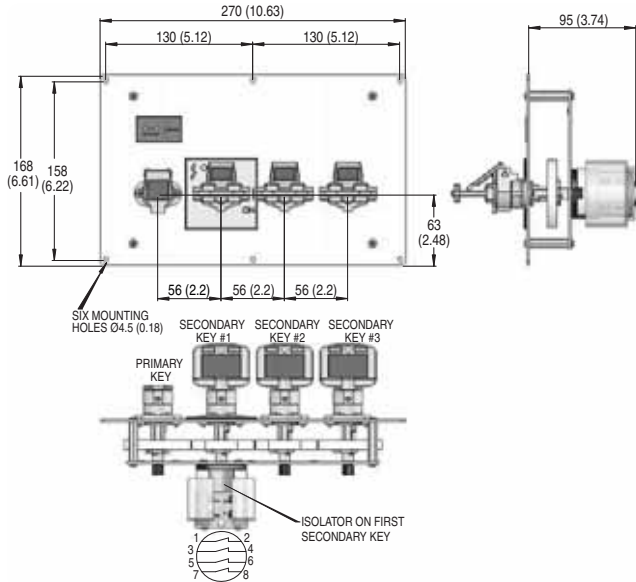
Rotary Switches

Approximate Dimensions [mm (in.)] (continued)

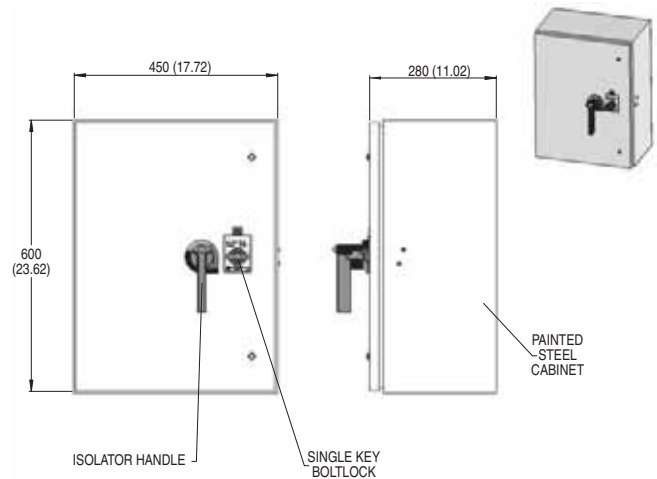
MMRXE10 and MMRXE11



MMRXE30



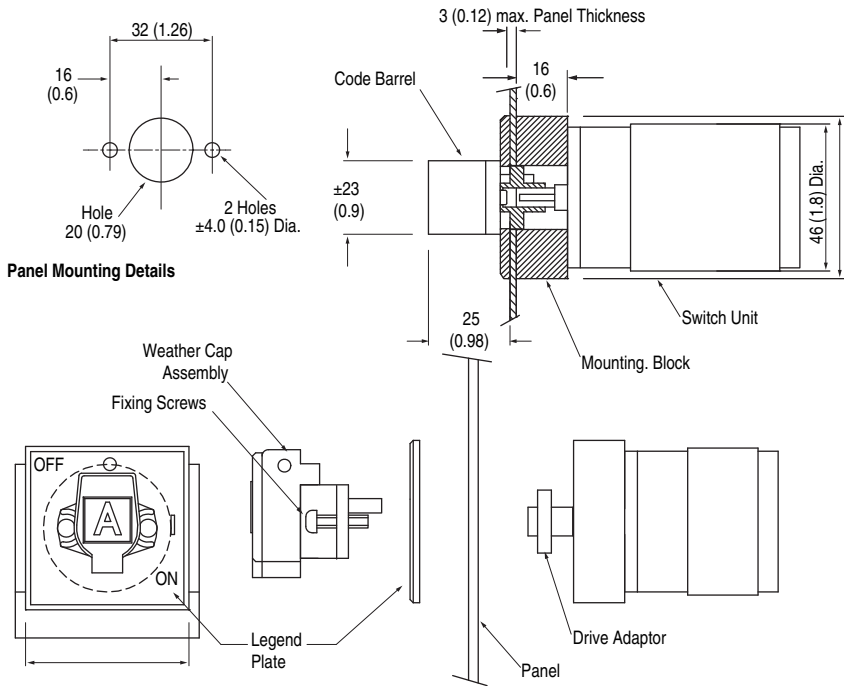
MRKSE22



3-Trapped Key Switches

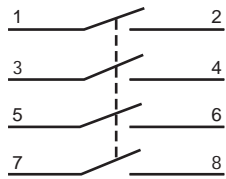
Approximate Dimensions [mm (in.)] (continued)

MRPSE16

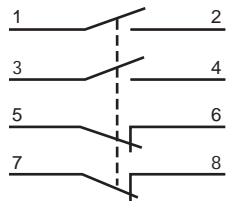


Typical Wiring

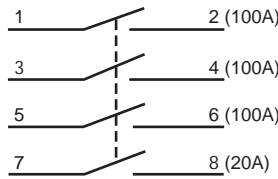
Diagrams Shown with Key Free



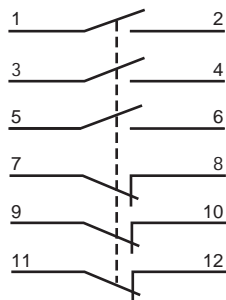
MRKSE10 and MRPSE10
MRKSE12 and MRPSE12
MRKSE13 and MRPSE13
----- and MRPSE20



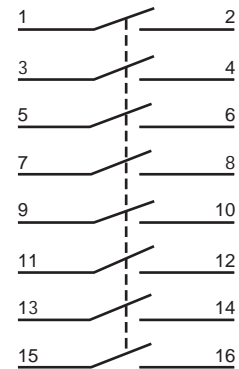
MRKSE11 and MRPSE11
MMRSE11 and MMRXE11
MMRSE21 and MMRXE21
MMRSE31 and MMRXE31



MRKSE14 and MRPSE14



MRKSE18 and MRPSE18



MRKSE16 and MRPSE16

Solenoid Release Units



Description

The solenoid release unit is used for electrical isolation of machinery to improve safe access. It consists of a rotary power switch and a solenoid. The trapped key can be removed once an external signal is given to its internal solenoid locking mechanism. An indicator light on the solenoid release unit indicates when the trapped key can be removed; that is, when power is applied to the solenoid. The solenoid signal only needs to be present when key removal is necessary. The solenoid is rated for 100% duty cycle. Power to the solenoid can be removed after the trapped key is removed.

Rotating the trapped key causes the isolating power switch to change state; the normally open contacts open and the normally closed contacts (if applicable) will close.

The trapped key can then be used in the next sequence of the operation.

Features

- Direct drive operation—positively opens contacts
- Integral solenoid monitoring
- Key trapped until release signal is applied
- LED or NEON "key free" indication
- 316L stainless steel construction
- 24V DC, 110V AC or 230V AC solenoid options
- Weatherproof stainless steel dust cap as standard
- UL and CSA Approval on switches
- Single or multiple key units available (contact factory)
- Replaceable code barrel assembly

Specifications

Safety Ratings

Standards	EN1954-1, IEC/EN60204-1, EN1088, IEC/EN60947-5-1, ISO13849-1, ISO12100-1&2, ISO14119, GS-ET-19, AS4024.1
Certifications	CE Marked for all applicable directives and BG

Operating Characteristics

Solenoid Voltage	24V DC, 110V AC, 230V AC
Solenoid Power	DC Types: 6.5 W continuous AC Types: 6V A continuous
Electrical Life	100,000 operations
Mechanical Life	100,000 operations

Utilization Category

Electrical Characteristics	See rotary power switches.
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Environmental & Physical Characteristics

Shear Force to Key	15.1 k•N (3398 lbs), max.
Torque to Key	14 N•m (124 lb•in), max.
Material	Trapped Key Components: 316L stainless steel Steel Face Plate: 316L stainless steel Optional Box: ABS plastic
Operating Temperature [C (F)]	0...40 ° (32...104 °)
Relative Humidity	95%

3-Trapped Key Switches

The Prosafe Advantage



Stainless steel construction.

Product Selection

Type	Solenoid Voltage	Contacts	Current, Nom	Cat. No.
Single key out	24V DC	2 N.O. & 2 N.C.	20 A	440T-MSRUE11*
		4 N.O.		440T-MSRUE10*
		3 N.O. & 3 N.C.	32 A	440T-MSRUE12*
	110V AC	2 N.O. & 2 N.C.	20 A	440T-MSRUE13*
				440T-MSRUE22*
		4 N.O.	32 A	440T-MSRUE20*
				440T-MSRUE23*
		3 N.O. & 3 N.C.	20 A	440T-MSRUE14*
				440T-MSRUE24*
	230V AC	2 N.O. & 2 N.C.	20 A	440T-MSRUE33*
				440T-MSRUE30*
		4 N.O.	32 A	440T-MSRUE34*
	63 A			440T-MSRUE35*
	110V DC	2 N.O. & 2 N.C.	20 A	440T-MSRUE44*
				440T-MSRUE40*
3 N.O. & 3 N.C.		440T-MSRUE46*		
Dual key out	24V DC	4 N.O.	20 A	440T-MS2097D**
		2 N.O. & 2 N.C.		440T-MS2097A**
		4 N.O.	32 A	440T-MS2097G**
				63 A
		4 N.O.	20 A	440T-MS3417D***
Triple key out	24V DC	2 N.O. & 2 N.C.	32 A	440T-MS3417A***
		4 N.O.		440T-MS3417G***
		4 N.O.	63 A	440T-MS3417J***
Quad key out	24V DC	4 N.O.	20 A	440T-MS3418D****
		2 N.O. & 2 N.C.		440T-MS3418A****
		4 N.O.	32 A	440T-MS3418G****
				63 A

* Substitute the desired primary code for this symbol (key not included). See 3-107.

Accessories

Description	Additional Information	Cat. No.
Stainless steel key	3-140	440T-AKEYE10*
Stainless steel replacement code barrel with dust cap		440T-ASCBE14*
Stainless steel weatherproof replacement dust cap		440T-ASFCE10*
Optional plastic enclosure	For use with single key out 20 A units	440T-AIPB10
	For use with single key out 32 A units	440T-AIPB22
Optional ABS plastic enclosure	For use with triple/quad key out units	440T-AIPB50
Optional stainless steel enclosure	For use with triple/quad key out units	440T-AIPB55

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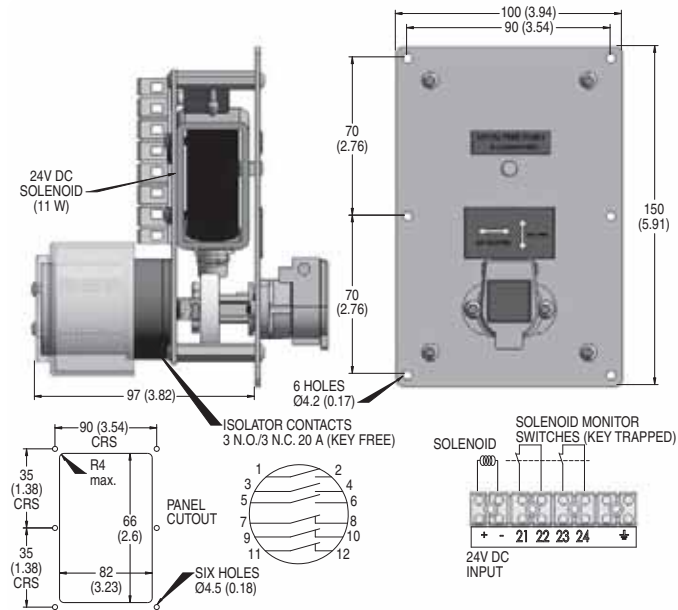
Safety Switches

Solenoid Release Units

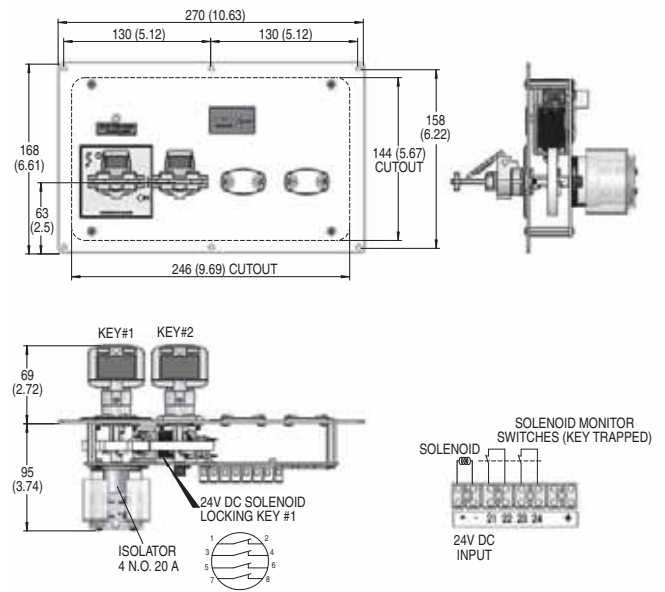
Approximate Dimensions [mm (in.)]

Dimensions are not intended to be used for installation purposes.

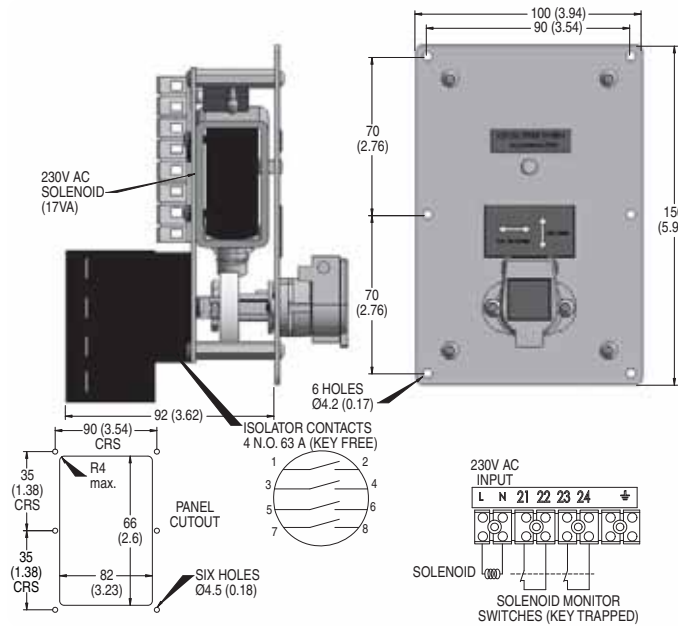
MSRUE13



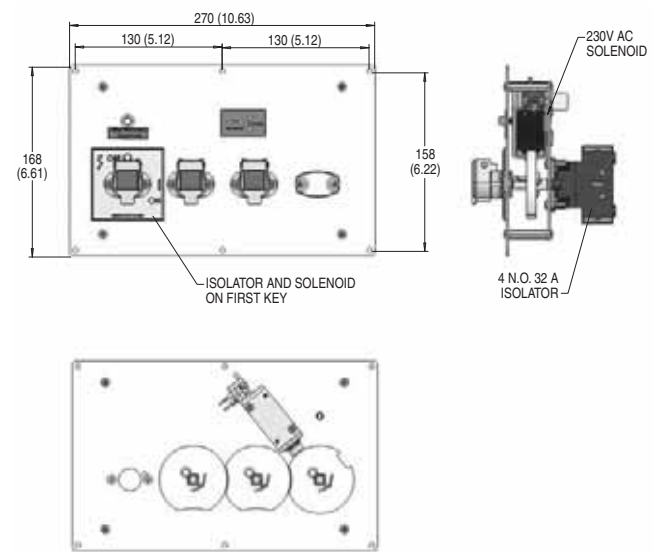
MS2097



MSRUE35



MS3417



3-Trapped Key Switches

Typical Wiring

