

rotary switches

reliable switching to 100A



M

Rotary Switches



Moeller series rotary switches are an economic choice for the simple logic functions and manual switching required in many industrial applications. From simple ON-OFF disconnects, to reversing wye-delta motor control, Moeller series rotary switches offer an array of standard and custom switches to precisely match your functional requirements.

Switching to your application

Moeller series rotary switches contain two switch lines, each with two frame sizes, that can handle loads to 100A or 75HP @ 575V. As with other world class Moeller series products, you can expect the highest level of reliability from these devices.

The "T" rotary switch line is highly versatile, allowing for many configuration options such as step load switching, control switching and specialty selectors.

The "P" motor disconnect line has a robust amp and horsepower capacity, with optional built-in auxiliary contacts in our standard selection.

Red handles and yellow faceplate options are available, allowing for approved emergency-stop switches in all product lines and frame sizes.

Versatile switching, versatile mounting

All switches are available in multiple mounting types including traditional flush and base mounting. Many switches are also available with center hole mounting as well as pre-mounted in an NEMA 3R (IP65) enclosure. Multiple mounting options provide application flexibility so you can build the switch to fit your machine instead of the other way around.

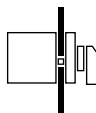
> Single phase and three phase switches

> Up to 100A / 75HP (@ 575V)

> Custom switches available with quick turnaround

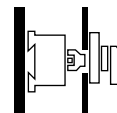
> Keyed and non-keyed switches

Flush Mounting



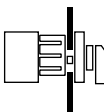
Suitable for panel or machine mounting

Base Mounting



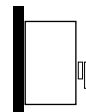
Designed for through-the-door mounting of enclosed systems

Center Hole Mounting

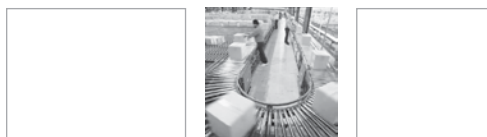


Switch is mounted in panel or machine with standard 22.5 mm hole (same as pilot devices)

Enclosed



Switch is self-enclosed in insulated plastic enclosure. Rated to NEMA 1, 12 & 3R and IP65.





Offering the right stuff

Various handle types, shrouds, shaft extensions, neutral terminals and keyed operator accessories are available to round out the line, making it easy to use the right stuff for your application.



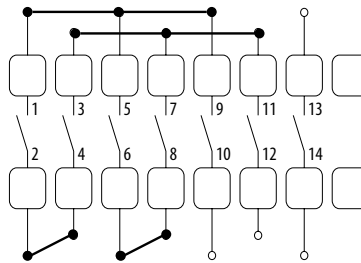
Approved for export or domestic use

Along with UL / CSA approvals, rotary switches are also approved for export with IEC and VDE. In addition, all enclosed rotary switches can be ordered with ATEX approvals (for explosive atmospheres). See page M40 for ATEX information.










Designed by the right person – YOU!

The nature of rotary switches allows for many different configurable combinations. We maintain a custom rotary switch facility in North America where contact design and behavior can be configured to your exact specifications within a week. Custom faceplates are engraved on location with a quick turn-around. Even master key systems are available. Sales representatives are always ready to assist in designing the switch you need... fast!



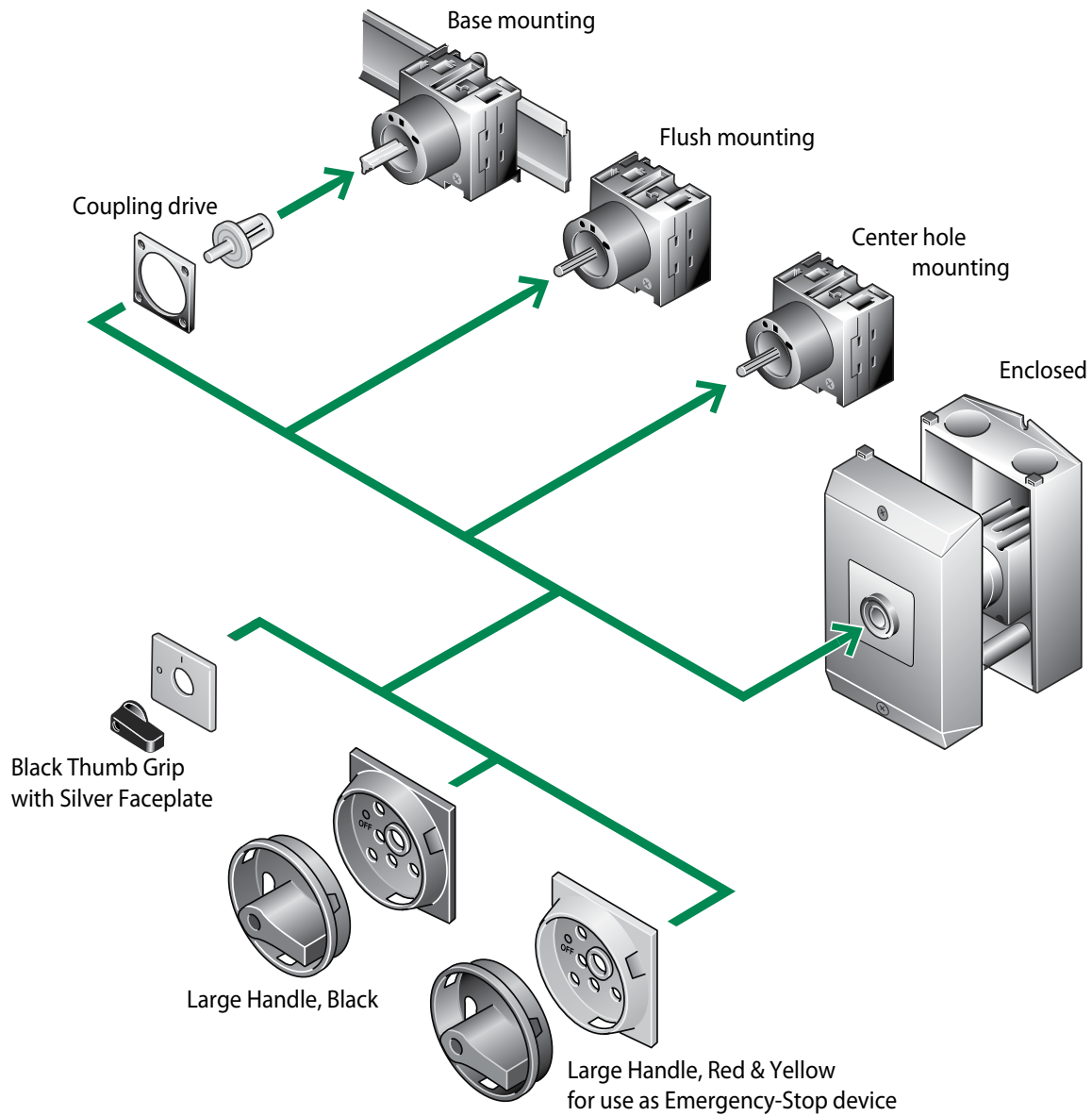
Custom rotary switch options include engraved faceplates, master key systems, and contact behavior configurations (illustrated left).

Feature Comparison




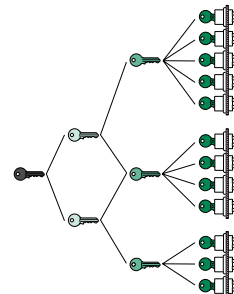
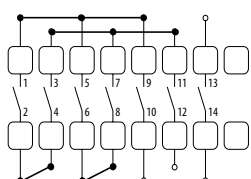

Feature Comparison														Flush Mounting	Base Mounting	Center Hole Mounting	Enclosed	Customizable	Maximum Chambers	Max Chambers when enclosed	Single Phase (page XX)	Three Phase (page XX)	Control Switches (page XX)	Specialty Switches (page XX)
Rotary Switch Series			Amperes																					
P Series Rotary Disconnect Switches																								
P	Small Frame Size	P1-25...	 20 Amps	✓	✓	✓	✓							✓	✓									
		P1-32...	 30 Amps	✓	✓	✓	✓							✓	✓									
	Large Frame Size	P3-63...	 60 Amps	✓	✓		✓							✓	✓									
		P3-100...	 100 Amps	✓	✓		✓							✓	✓									
T Series Rotary Cam Switches																								
T	Small Frame Size	T0-...	 16 Amps	✓	✓	✓	✓	✓	11	4	✓	✓	✓	✓										
		T3-...	 25 Amps	✓	✓	✓	✓	✓	11	5	✓	✓	✓	✓										
	Large Frame Size	T5B-...	 65 Amps	✓	✓		✓	✓	10	4	✓	✓	✓	✓										

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Rotary Switches

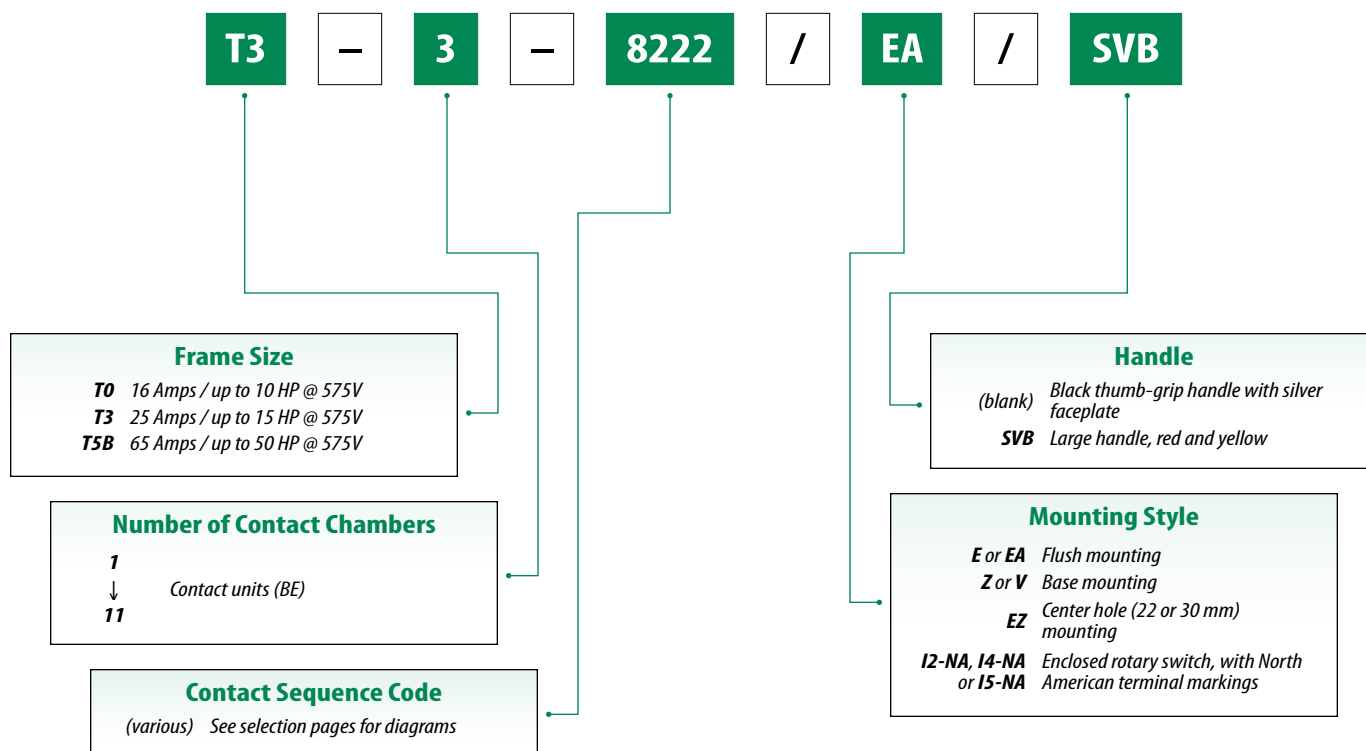


Rotary Switches Overview

Device	Description	Range	Pages	Device	Description	Pages
Rotary Switches				Enclosures		
	Single Phase Switches				Enclosures	M40
	Motor Disconnect On-Off Emergency-Stop Changeover Reversing	Up to 15 HP @230V; Up to 100 Amps	M10 – M15			
	Three Phase Switches			Faceplates		
	Motor Disconnect On-Off Emergency-Stop Changeover Reversing Star-Delta Multi-Speed	Up to 75 HP @575V; Up to 100 Amps	M16 – M25		Alternate faceplates Blank faceplates Custom engraved faceplates	M41 – M52
Control Switches				Master Key System		
	Step (2 – 6 steps) On-Off Hand-Auto On (make contact) Changeover Series		M26 – M32		Master key system for keyed operators	M53 – M58
Specialty Switches						
	Multi-purpose Coding Voltmeter Ammeter Voltmeter & Am-meter		M33 – M35	Custom Switches		
Accessories					Custom rotary switches	M59 – M65
	Handles Keyed Operators Terminals Extensions Shrouds		M36 – M39			

The Moeller series catalog numbering system for rotary switches and other devices follows a logical system. Device attributes can be determined by the following nomenclature.


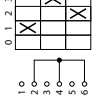

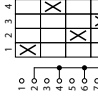

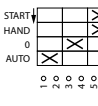

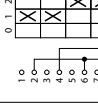

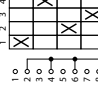
Dashes (–) and slashes (/) are used to separate device attributes and should always be included when ordering.



This page for reference only.

Please turn to the appropriate pages to determine the exact device and/or accessories required for your application.

Control Switches (16 Amps) ①





No. of Poles	Standard Faceplate (for other options, note faceplate code and frame size of desired switch and turn to page M41.)	Contact Sequence	Switch Type	Flush Mounting		Base Mounting		Center Hole (22.5 / 30 mm) Mounting		Enclosed NEMA 12, 3R (IP65)	
				Catalog No.	Price	Catalog No.	Price	Catalog No.	Price	Catalog No.	Price
Four-Position Switches – 16 Amps											
1	 FS 420		3-Steps Step Switch	T0-2-8241/E		T0-2-8241/Z		T0-2-8241/EZ		T0-2-8241/I2-NA	
	 FS 606		4-Steps Step Switch	T0-2-8231/E		T0-2-8231/Z		T0-2-8231/EZ		T0-2-8231/I2-NA	
	 FS 1413890		Hand-Auto Pulse Start Switch	T0-2-15907/E		T0-2-15907/Z		T0-2-15907/EZ		T0-2-15907/I2-NA	
3	 FS 420		3-Steps Step Switch	T0-5-8281/E		T0-5-8281/Z		T0-5-8281/EZ		–	
	 FS 606		4-Steps Step Switch	T0-6-8271/E		T0-6-8271/Z		T0-6-8271/EZ		–	

Custom switch configurations available - see page M59 for details.

- ① Non-enclosed switches are supplied with European terminal markings (1, 3, 5, etc.). For North American terminal markings (L1, L2, L3, etc.), add suffix -NA to catalog number and add \$25 to price. Enclosed switches have North American terminal markings as standard.

Ordering Instructions

- 1 Locate the desired rotary switch.
- 2 Order accessories separately on pages M36 – M40.

Standard Handle (supplied with above)	Optional Keyed Switch Handles (see page M37 for details)		
Black handle Silver faceplate	Cylinder Lock: Key operated Silver faceplate	Cylinder Lock: Black handle Silver faceplate	Padlock Mechanism: Black handle Silver faceplate
			
NEMA 1	Not UL/CSA approved	Not UL/CSA approved	Not UL/CSA approved

Switch Size T0

Switch Size	Maximum Motor Rating [HP]							Current Rating UL/CSA
	Single Phase			Three Phase				
	@115V	@200V	@230V	@200V	@230V	@460V	@575V	
T0	¾	2	2	3	3	10	10	16

Basic Switch (for customizing) Selection Instructions



- 1 Locate switch with enough contact chambers to hold the number of contacts of your custom switch. Each contact chamber can hold two contacts.
- 2 Locate the desired handle and mounting type combination. Select corresponding checkbox and enter price on form (page M65).
- 3 Add catalog prefix and suffix together to complete catalog number for order (ac-company with completed form).

T0... Basic Switches for Customizing

Catalog Number Prefix			Handle ②	Mounting Types									
Switch Size	Contact Chambers ①	Custom Switch		Flush		Base		Center Hole (22.5 mm)		Enclosed		Distribution Board	
				Catalog Suffix	Price	Catalog Suffix	Price	Catalog Suffix	Price	Catalog Suffix	Price	Catalog Suffix	Price
T0 Switch Sizes													
T0-	1-	SOND*	Black / Silver	/E		/Z		/EZ		/I2-NA		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		/I2/SVB-SW-NA		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		/I2/SVB-NA		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	2-	SOND*	Black / Silver	/E		/Z		/EZ		/I2-NA		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		/I2/SVB-SW-NA		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		/I2/SVB-NA		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	3-	SOND*	Black / Silver	/E		/Z		/EZ		/I2-NA		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		/I2/SVB-SW-NA		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		/I2/SVB-NA		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	4-	SOND*	Black / Silver	/E		/Z		/EZ		/I2-NA		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		/I2/SVB-SW-NA		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		/I2/SVB-NA		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	5-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	6-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	7-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	8-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	9-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	10-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	
T0-	11-	SOND*	Black / Silver	/E		/Z		/EZ		—		/IVS	
			Padlockable - Black	/EA/SVB-SW		/V/SVB-SW		—		—		—	
			Padlockable - Red / Yellow	/EA/SVB		/V/SVB		—		—		—	
			Without Faceplate Holder	—		—		/EZ/OFS		—		—	

① Each contact chamber can hold two contacts.

② Padlockable handles may only be used for 2-position, ON-OFF switches. Handles are marked ON at degree position 0 and OFF at degree position 270.

Rotary Switches

T0-...

T3-...

T5B-...

General

Standards			IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL, Switch-disconnectors to IEC/EN 60947-3 Load-break switches to IEC/EN 60947-3		
UL report number			E36332		
CSA report number			012528		
Lifespan, mechanical	Operations	[x 10 ⁶]	1	0.5	0.5
Maximum operating frequency	Operations/h		3000	3000	3000
Climatic proofing		Damp heat, constant to IEC 60068-2-78; damp heat, cyclical, to IEC 60068-2-30			
Ambient temperature					
Open		[°C / °F]	-25...50 °C / -13... 122 °F	-25...50 °C / -13... 122 °F	-25...50 °C / -13... 122 °F
Enclosed		[°C / °F]	-25...40 °C / -13... 104 °F	-25...40 °C / -13... 104 °F	-25...40 °C / -13... 104 °F
Mounting position			As required	As required	As required
Mechanical shock-resistance (IEC/EN 60068-2-27)					
Half-sinusoidal shock, 20 ms		[g]	> 15	> 15	> 15
Contacts					
Rated operational voltage	<i>U_e</i>	[V AC]	690	690	690
Rated impulse withstand voltage	<i>U_{imp}</i>	[V AC]	6000	6000	6000
Overvoltage category/pollution degree			III/3	III/3	III/3
Rated uninterrupted current (UL)	<i>I_u</i>	[A]	16	25	65
Rated uninterrupted current (IEC)					
Open	<i>I_u</i>	[A]	20	32	63
Enclosed	<i>I_u</i>	[A]	20	32	63
Load rating with intermittent operation, class 12					
AB 25 % DF		[x <i>I_e</i>]	2	2	2
AB 40 % DF		[x <i>I_e</i>]	1.6	1.6	1.6
AB 60 % DF		[x <i>I_e</i>]	1.3	1.3	1.3
Short-circuit rating	Fuse	[A gG/gL]	20	35	80
Rated short-time withstand current (1 s current)	<i>I_{cw}</i>	[A _{rms}]	320	650	1300
Safe isolation to VDE 0106 Part 101 and Part 101/A1					
Between contacts		[V AC]	440	440	440
Switching angles		[°]	90, 60, 45, 30	90, 60, 45, 30	90, 60, 45, 30
Contact units			11	11	10
Double-break contacts			max. 22	max. 22	max. 20
Current heat loss per contact at <i>I_e</i>		[W]	0.6	1.1	4.5
Terminal Capacities					
Solid or stranded		[mm ²]	1 x (1 – 2.5) 2 x (1 – 2.5)	1 x (1 – 6) 2 x (1 – 6)	1 x (2.5 – 35) 2 x (2.5 – 16)
Flexible with ferrule to DIN 46228		[mm ²]	1 x (0.75 – 1.5) 2 x (0.75 – 1.5)	1 x (0.75 – 4) 2 x (0.75 – 4)	1 x (1.5 – 25) 2 x (1.5 – 10)
Terminal screw			M3.5	M4	M6
Tightening torque		[Nm]	1	1.6	4

M

Rotary Switches

Rotary Switches				T0-...	T3-...	T5B-...
Switching Capacities						
AC						
Rated making capacity $\cos \varphi = 0.35$				[A]	130	800
Rated breaking capacity, motor load switch $\cos \varphi = 0.35$						
230V			[A]	100	260	520
400V			[A]	110	260	600
500V			[A]	80	240	480
690V			[A]	60	170	340
AC-21A Rated operational current load-break switch						
440V	I_e	[kW]		20	32	63
AC-3 motor load switch motor rating						
230V	P	[kW]		3	6.5	15
230V Star-delta	P	[kW]		4	11	22
400/415V	P	[kW]		4	12	22
400V Star-delta	P	[kW]		5.5	18.5	37
500V	P	[kW]		5.5	15	22
500V Star-delta	P	[kW]		7.5	22	37
690V	P	[kW]		4	15	22
690V Star-delta	P	[kW]		5.5	22	37
AC-23A motor load switches (main switches, maintenance switches)						
230V	P	[kW]		3.5	7.5	15
400/415V	P	[kW]		6.5	13	22
500V	P	[kW]		13	15	22
690V	P	[kW]		—	—	22
AC-15 Rated operational current control switch						
230V	I_e	[A]		6	10	16
400/415V	I_e	[A]		4	6	6
500V	I_e	[A]		2	4	4
DC (IEC only)						
DC-1, load-break switches L/R = 1 ms						
Rated operational current				I_e	[A]	10
Voltage per contact pair in series					[V]	60
DC-21A, 240 V						
Rated operational current				I_e	[A]	1
Contacts					[Quantity]	1
DC-23A, motor load switch L/R = 15 ms						
24V	Rated operational current	I_e	[A]	10	25	50
	Contacts		[Quantity]	1	1	1
48V	Rated operational current	I_e	[A]	10	25	50
	Contacts		[Quantity]	2	2	2
60V	Rated operational current	I_e	[A]	10	25	50
	Contacts		[Quantity]	3	3	3
120V	Rated operational current	I_e	[A]	5	12	25
	Contacts		[Quantity]	3	3	3
240V	Rated operational current	I_e	[A]	5	5	20
	Contacts		[Quantity]	5	5	6
DC-13, Control switches L/R = 50 ms						
Rated operational current				I_e	[A]	10
Voltage per contact pair in series					[V]	32
Control circuit reliability at 24V DC, 10 mA				Fault probability	[F/F]	< 10 ⁻⁵ (less than 1 fault in 100000 operations)

T0-... Rotary Switches

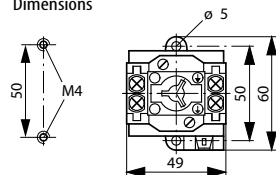
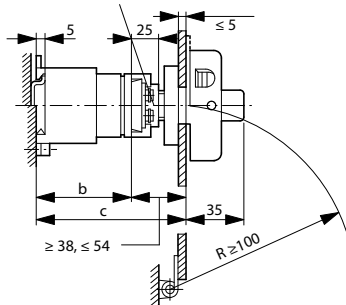
Base Mounting (continued)

Padlockable size handle

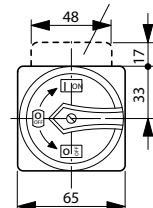
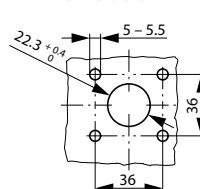
T0-.../V/SVB-SW

T0-.../V/SVB

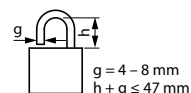
Dimensions are in millimeters.
Not intended for manufacturing purposes.

Base
Drilling
DimensionsZAV-T0
extension shaft available in 25 mm sections.
4 sections max. = 100 mm max. extension.

ZFS-...-T0

Door
Drilling
Dimensions

Maximum 3 padlocks



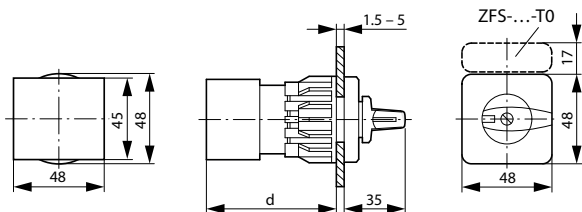
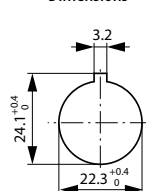
Catalog Number	Dimension	
	b	c
T0-1...	48	86 - 102
T0-2...	57	96 - 112
T0-3...	67	105 - 121
T0-4...	76	115 - 131
T0-5...	86	124 - 140
T0-6...	95	134 - 150
T0-7...	105	143 - 159
T0-8...	114	153 - 169
T0-9...	124	162 - 178
T0-10...	133	172 - 188
T0-11...	143	181 - 197

One contact unit depth:
9.5 mm

T0-... Rotary Switches
Center Hole Mounting

Standard size handle

T0-.../EZ

Door
Drilling
Dimensions

Catalog Number	Dimension
	d
T0-1...	61
T0-2...	70
T0-3...	80
T0-4...	89
T0-5...	99
T0-6...	108
T0-7...	118
T0-8...	127
T0-9...	137
T0-10...	146
T0-11...	156

One contact unit depth:
9.5 mm