Main switch, T0, 20 A, flush mounting, 2 contact unit(s), 3 pole + N, Emergency switching off function, With red rotary handle and yellow locking ring



Part no. T0-2-10/EA/SVB 011100

Product tamm Part no. First No. First No. Froduct Langth Neght Product	General specifications	
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Product width Product weight Cartifications Product Tradename To None Catalog Notas Cartifications Cart	Product height	74 millimetre
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CSA-C222 No. 98 CSCA-C222 No. 99 CSCA-C22 No.		
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Product Type Product Sub Type Catalog Notes Rated Short-time Withstand Current (Icw) for a time of 1 second Features & Functions Features & Varsion as maintenance-/service switch Varsion as maintenance-/service sw		CE VDE 0660 IEC/EN 60947-3 IEC/EN 60947-3 IEC/EN 60204 UL 60947-4-1 UL Category Control No.: NLRV UL File No.: E36332 CSA-C22.2 No. 60947-4-1-14 UL IEC/EN 60947 CSA Class No.: 3211-05 CSA File No.: 012528 CSA UL CSA
Product Sub Type Catalog Notes Rated Short-time Withstand Current (Icw) for a time of 1 second Features & Functions Features & Functions Features & Version as maintenance-/service switch Version as maintenance-/se	Product Tradename	TO
Features & Functions Features Version as maintenance-/service switch Version as emergency stop installation Version as emergency stop installation Version as emergency stop installation Version as main services on a small service switch Version as main services on a small service switch Version as main services on a small service switch Version as main services on a small service switch Version as main services on a small service on services on a small service on services on a small service on a service of services on a small service on services on a small service on service on services on a small service on service on services on a small service on service on service on services on a small service on service on services on services on a small service on service on services o	Product Type	Main switch
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Degree of protection Degree of protection (front side) Lifespan, mechanical Mounting method Mounting position Mounting position Number of contact units Operating frequency Operating frequency Overvoltage category Ill Pollution degree Rated impulse withstand voltage (Uimp) Safe isolation Safe y parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle NEMA 12 NEMA 12 IP65 400,000 Operations Flush mounting As required 2 2 2 2 2 2 2 2 2 2 2 2 2	Number of poles	4
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Lifespan, mechanical 400,000 Operations Mounting method Flush mounting Mounting position As required Number of contact units 2 Operating frequency 1200 Operations/h Overvoltage category III Pollution degree 3 Rated impulse withstand voltage (Uimp) 6000 V AC Safe isolation 440 V AC, Between the contacts, According to EN 61140 Safety parameter (EN ISO 13849-1) B10d values as per EN ISO 13849-1, table C.1 Shock resistance 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Suitable for Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center Switching angle 90 °	Degree of protection	NEMA 12
Mounting method Mounting position As required Number of contact units 2 Operating frequency Overvoltage category III Pollution degree Rated impulse withstand voltage (Uimp) Safe isolation Safety parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle Flush mounting 6000 V AC Foot Part No. 1200 Operations/h III Flush mounting Flu	Degree of protection (front side)	IP65
Mounting position Number of contact units 2 Operating frequency 1200 Operations/h Overvoltage category III Pollution degree 3 Rated impulse withstand voltage (Uimp) Safe isolation Safety parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle As required 2 As required 2 Rated impulse withstand voltage (Uimp) B100 operations/h 6000 V AC Setween the contacts, According to EN 61140 B10d values as per EN ISO 13849-1, table C.1 Shock resistance Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center 90 °	Lifespan, mechanical	400,000 Operations
Number of contact units Operating frequency 1200 Operations/h III Pollution degree 3 Rated impulse withstand voltage (Uimp) Safe isolation Safety parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle 2 1200 Operations/h III All Contact Units 1200 Operations/h III All Contact Units 440 V AC, Between the contacts, According to EN 61140 B10d values as per EN ISO 13849-1, table C.1 Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center 90°	Mounting method	Flush mounting
Operating frequency Overvoltage category III Pollution degree 3 Rated impulse withstand voltage (Uimp) Safe isolation Safety parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle 1200 Operations/h III 6000 V AC 440 V AC, Between the contacts, According to EN 61140 810d values as per EN ISO 13849-1, table C.1 Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center 90 °	Mounting position	As required
Overvoltage category Pollution degree 3 Rated impulse withstand voltage (Uimp) Safe isolation Safety parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle III 6000 V AC 6000 V AC 440 V AC, Between the contacts, According to EN 61140 B10d values as per EN ISO 13849-1, table C.1 Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center 90 °	Number of contact units	2
Pollution degree 3 Rated impulse withstand voltage (Uimp) 6000 V AC Safe isolation 440 V AC, Between the contacts, According to EN 61140 Safety parameter (EN ISO 13849-1) B10d values as per EN ISO 13849-1, table C.1 Shock resistance 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Suitable for Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center Switching angle 90 °	Operating frequency	1200 Operations/h
Rated impulse withstand voltage (Uimp) Safe isolation 440 V AC, Between the contacts, According to EN 61140 Safety parameter (EN ISO 13849-1) Shock resistance Suitable for Switching angle 6000 V AC 440 V AC, Between the contacts, According to EN 61140 B10d values as per EN ISO 13849-1, table C.1 Spok resistance 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center 90 °	Overvoltage category	III
Safe isolation 440 V AC, Between the contacts, According to EN 61140 Safety parameter (EN ISO 13849-1) Shock resistance 5 y Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center Switching angle 90°	Pollution degree	3
Safety parameter (EN ISO 13849-1) Shock resistance 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Suitable for Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center Switching angle 90 °	Rated impulse withstand voltage (Uimp)	6000 V AC
Shock resistance 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Suitable for Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center Switching angle 90 °		440 V AC, Between the contacts, According to EN 61140
Suitable for Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting center Switching angle 90 °	Safety parameter (EN ISO 13849-1)	B10d values as per EN ISO 13849-1, table C.1
Switching angle Front mounting center 90 °	Shock resistance	15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms
	Suitable for	
Climatic environmental conditions	Switching angle	90 °
	Climatic environmental conditions	

Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	50 °C
Ambient operating temperature (enclosed) - min	-25 °C
Ambient operating temperature (enclosed) - max	40 °C
Climatic proofing	Damp heat, cyclic, to IEC 60068-2-30
, ,	Damp heat, constant, to IEC 60068-2-78
Terminal capacities	
Terminal capacity	$2 \times (1 - 2.5) \text{ mm}^2$, solid or stranded $2 \times (0.75 - 2.5) \text{ mm}^2$, flexible with ferrules to DIN 46228 $1 \times (1 - 2.5) \text{ mm}^2$, solid or stranded $1 \times (0.75 - 2.5) \text{ mm}^2$, flexible with ferrules to DIN 46228 $18 - 14 \text{ AWG}$, solid or flexible with ferrule
Screw size	M3.5, Terminal screw
Tightening torque	1 Nm, Screw terminals 8.8 lb-in, Screw terminals
Electrical rating	o.o iu-iii, screw teriiiiidis
Rated breaking capacity at 220/230 V (cos phi to IEC 60947-3)	100 A
Rated breaking capacity at 220/230 V (cos phi to IEC 60947-3)	110 A
Rated breaking capacity at 400/413 V (cos phi to IEC 60947-3)	80 A
Rated breaking capacity at 660/690 V (cos phi to IEC 60947-3)	60 A
Rated operational current (le) at AC-3, 220 V, 230 V, 240 V	11.5 A
Rated operational current (le) at AC-3, 220 V, 230 V, 240 V Rated operational current (le) at AC-3, 380 V, 400 V, 415 V	11.5 A
Rated operational current (le) at AC-3, 500 V, 400 V, 413 V	9 A
Rated operational current (le) at AC-3, 660 V, 690 V	4.9 A
Rated operational current (Ie) at AC-21, 440 V	20 A
Rated operational current (Ie) at AC-23A, 230 V	13.3 A
Rated operational current (Ie) at AC-23A, 400 V, 415 V	13.3 A
Rated operational current (Ie) at AC-23A, 500 V	13.3 A
Rated operational current (Ie) at AC-23A, 690 V	7.6 A
Rated operational current (le) at DC-1, load-break switches l/r = 1 ms	10 A
Rated operational current (le) at DC-13, control switches L/R = 50 ms	10 A
Rated operational current (le) at DC-21, 240 V	1A
Rated operational current (Ie) at DC-23A, 24 V	10 A
Rated operational current (Ie) at DC-23A, 48 V	10 A
Rated operational current (Ie) at DC-23A, 60 V	10 A
Rated operational current (Ie) at DC-23A, 120 V	5 A
Rated operational current (Ie) at DC-23A, 240 V	5 A
Rated operational current (Ie) star-delta at AC-3, 220/230 V	20 A
Rated operational current (Ie) star-delta at AC-3, 380/400 V	20 A
Rated operational current (le) star-delta at AC-3, 500 V	15.6 A
Rated operational current (le) star-delta at AC-3, 690 V	8.5 A
Rated operational power at AC-3, 380/400 V, 50 Hz	5.5 kW
Rated operational power at AC-3, 415 V, 50 Hz	5.5 kW
Rated operational power at AC-3, 500 V, 50 Hz	5.5 kW
Rated operational power at AC-3, 690 V, 50 Hz	4 kW
Rated operational power at AC-23A, 220/230 V, 50 Hz	3 kW
Rated operational power at AC-23A, 400 V, 50 Hz	5.5 kW
Rated operational power at AC-23A, 500 V, 50 Hz	7.5 kW
Rated operational power at AC-23A, 690 V, 50 Hz	5.5 kW
Rated operational power star-delta at 220/230 V, 50 Hz	5.5 kW
Rated operational power star-delta at 380/400 V, 50 Hz	7.5 kW
Rated operational power star-delta at 500 V, 50 Hz	7.5 kW
Rated operational power star-delta at 690 V, 50 Hz	5.5 kW
Rated operational voltage (Ue) at AC - max	690 V
Rated uninterrupted current (Iu)	20 A
Uninterrupted current	Rated uninterrupted current lu is specified for max. cross-section.

Rated conditional short-circuit current (Iq)	6 kA
Rated short-time withstand current (Icw)	320 A, Contacts, 1 second
Short-circuit current rating (basic rating)	0.32 kA 5 kA, SCCR (UL/CSA)
Short-circuit current rating (high fault)	50A, max. Fuse, SCCR (UL/CSA) 20 A, Class J, max. Fuse, SCCR (UL/CSA)
Chart aircuit protection rating	10 kA, SCCR (UL/CSA)
Short-circuit protection rating	20 A gG/gL, Fuse, Contacts
Switching capacity	
Load rating	1.3 x # (with intermittent operation class 12, 60 % duty factor) 2 x # (with intermittent operation class 12, 25 % duty factor) 1.6 x # (with intermittent operation class 12, 40 % duty factor)
Number of contacts in series at DC-21A, 240 V	1
Number of contacts in series at DC-23A, 24 V	1
Number of contacts in series at DC-23A, 48 V	2
Number of contacts in series at DC-23A, 60 V	3
Number of contacts in series at DC-23A, 120 V	3
Number of contacts in series at DC-23A, 240 V	5
Switching capacity (main contacts, general use)	16 A, Rated uninterrupted current max. (UL/CSA)
Switching capacity (auxiliary contacts, general use)	10A, IU, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)	A600 (UL/CSA) P300 (UL/CSA)
Rated making capacity up to 690 V (cos phi to IEC/EN 60947-3)	130 A
Voltage per contact pair in series	60 V
Motor rating	
Assigned motor power at 115/120 V, 60 Hz, 1-phase	0.5 HP
Assigned motor power at 200/208 V, 60 Hz, 1-phase	1 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase	3 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase	1.5 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase	3 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	7.5 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase	7.5 HP
Contacts	
Control circuit reliability	1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA)
Number of auxiliary contacts (change-over contacts)	0
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	0
Actuator	
Actuator color	Red
Actuator type	Door coupling rotary drive
Design verification	
Equipment heat dissipation, current-dependent Pvid	0 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0.6 W
Rated operational current for specified heat dissipation (In)	20 A
Static heat dissipation, non-current-dependent Pvs	0 W
10.2.2 Corrosion resistance	Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects	Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation	UV resistance only in connection with protective shield.
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.

10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Switch disconnector (low voltage) (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss13-27-37-14-03 [AKF060018])

Width	mm	65
Degree of protection (NEMA)		12
Degree of protection (IP), front side		IP65
With pre-assembled cabling		No
Type of electrical connection of main circuit		Screw connection
Interlockable		Yes
Type of control element		Door coupling rotary drive
Colour control element		Red
Suitable for intermediate mounting		No
Suitable for distribution board installation		No
Suitable for front mounting centre		Yes
Suitable for front mounting 4-hole		No
Suitable for floor mounting		No
Device construction		Built-in device fixed built-in technique
Voltage release optional		No
Motor drive integrated		No
Motor drive optional		No
Number of auxiliary contacts as change-over contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
Number of poles		4
Conditioned rated short-circuit current Iq	kA	6
Switching power at 400 V	kW	5.5
Rated operation power at AC-23, 400 V	kW	5.5
Rated short-time withstand current lcw	kA	0.32
Rated operation power at AC-3, 400 V	kW	5.5
Rated permanent current at AC-21, 400 V	Α	20
Rated permanent current at AC-23, 400 V	Α	
Rated permanent current lu	Α	20
Rated operating voltage	V	690 - 690
Max. rated operation voltage Ue AC	V	690
Number of switches		1
Version as reversing switch		No
Version as emergency stop installation		Yes
Version as safety switch		No
Version as maintenance-/service switch		Yes
Version as main switch		Yes
[AKF060018])		

Height	mm	74
Depth	mm	111
Width in number of modular spacings		