## DATASHEET - T0-3-15683/EA/SVB



Main switch, 3 pole + 2 N/O + 1 N/C, 20 A, Emergency-Stop function, 90  $^{\circ}$ , Lockable in the 0 (Off) position, flush mounting



T0-3-15683/EA/SVB Part no. 015571 Catalog No.

**EL-Nummer** (Norway)

0001417010

Delivery program			
Product range			Main switch maintenance switch Repair switch
Part group reference			ТО
Stop Function			Emergency switching off function
			With red rotary handle and yellow locking ring
Number of poles			3 pole
Auxiliary contacts			
		N/0	2
7		N/C	1
Locking facility			Lockable in the 0 (Off) position
Degree of Protection			Front IP65
Design			flush mounting
Contact sequence			- X X X X
Switching angle		0	90
Design number			15683
Function			ION O OFF
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	5.5
Rated uninterrupted current	Iu	Α	20
Note on rated uninterrupted current !u			Rated uninterrupted current $I_{\rm u}$ is specified for max. cross-section.
Number of contact units		contact unit(s)	3

## **Technical data**

General	
Standards	IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL Switch-disconnector according to IEC/EN 60947-3
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature	

Open		°C	-25 - +50
Enclosed		°C	-25 - +40
		-6	
Overvoltage category/pollution degree			111/3
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Mechanical shock resistance		g	15
Mounting position			As required
Contacts			
Mechanical variables			
Number of poles			3 pole
Auxiliary contacts			
		N/0	2
		N/C	1
Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	I <sub>u</sub>	Α	20
Note on rated uninterrupted current $!_{\rm u}$			Rated uninterrupted current $\mathbf{I}_{\mathbf{U}}$ is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x I <sub>e</sub>	2
AB 40 % DF		x I <sub>e</sub>	1.6
AB 60 % DF		x l <sub>e</sub>	1.3
Short-circuit rating		C	
Fuse		A gG/gL	20
Rated short-time withstand current (1 s current)			320
	I <sub>cw</sub>	A <sub>rms</sub>	
Note on rated short-time withstand current lcw			Current for a time of 1 second
Rated conditional short-circuit current	Iq	kA	6
Switching capacity cos φ rated making capacity as per IEC 60947-3		Α	130
			130
Rated breaking capacity cos φ to IEC 60947-3		A	400
230 V		A	100
400/415 V		A	110
500 V		Α .	80
690 V		Α	60
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at l <sub>e</sub>		W	0.6
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)		CO	0.6
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 0.4
Maximum operating frequency	Operations/h		1200
AC			
AC-3			
Rating, motor load switch	Р	kW	
220 V 230 V	Р	kW	3
230 V Star-delta	P	kW	5.5
400 V 415 V	P	kW	5.5
400 V Star-delta	P	kW	7.5
500 V	P	kW	5.5
500 V Star-delta	P	kW	7.5
690 V	P	kW	4
690 V Star-delta	P	kW	5.5
	٢	KVV	J.J
Rated operational current motor load switch		۸	115
230 V	l <sub>e</sub>	Α	11.5
230 V star-delta	l <sub>e</sub>	Α	20
400V 415 V	I <sub>e</sub>	Α	11.5
400 V star-delta	I <sub>e</sub>	Α	20

1				
BOS   VI star-delta	500 V	l <sub>e</sub>	Α	9
BSD V star-detian	500 V star-delta	l <sub>e</sub>	Α	15.6
AC-21A Rated operational current swinch  44 By V  AC-23A  Motor rating AC-23A, 59 - 80 Hz  20 V  P  WW  210 V  By W  55  50D V  P  WW  55  50D V  Rated operational current motor load switch  220 V  Rated operational current  By A  CO-1, Load-break switches L/R = 1 ms  Rated operational current  Rated operational curr	690 V	l <sub>e</sub>	Α	4.9
AC-21A Rated operational current  Ad 90 V  AC 23A  Motor rating AC-23A, 59 - 60 Hz  201	690 V star-delta	l <sub>e</sub>	Α	8.5
Rated operational current switch				
Motor rating AC 23A, 50 - 60 Hz				
AC 23A   Mattor rating AC 23A, 50 - 80 Hz		ı	Δ	20
Motor rating AC 224, 50 -50 Hz		'e	^	20
		n	LAAZ	
MOV 415 V   P				
SOU				
Rated operational current wotor load switch				
Rated operational current motor load switch   Ie				
		Р	kW	5.5
A00 V 415 V				
Source   S		l <sub>e</sub>	Α	13.3
Best	400 V 415 V	l <sub>e</sub>	Α	13.3
DC   DC-1, Load-break switches L/R = 1 ms   Rated operational current   I	500 V	l <sub>e</sub>	Α	13.3
DC-1, Load-break switches L/R = 1 ms   Rated operational current   Ie   A   10	690 V	l <sub>e</sub>	А	7.6
Rated operational current   I	DC			
Rated operational current	DC-1, Load-break switches L/R = 1 ms			
Voltage per contact pair in series   V   60		l <sub>e</sub>	A	10
DC-21A			V	60
Rated operational current   Ie				
Contacts  DC-23A, motor load switch L/R = 15 ms  24 V  Rated operational current  Contacts  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Ratel operational current  Voltage per contact pair in series  Solid or stranded  mm²  1 x (1 - 2,5) 2 x (1 - 2,5) 2 x (1 - 2,5)				1
DC-23A, motor load switch L/R = 15 ms  24 V  Rated operational current  48 V  Rated operational current  Ie A 10  Contacts  Quantity  Rated operational current  Ie A 10  Contacts  Quantity 2  80 V  Rated operational current  Ie A 10  Contacts  Quantity 3  120 V  Rated operational current  Ie A 5  Contacts  Quantity 3  240 V  Rated operational current  Ie A 5  Contacts  Quantity 3  DC-13, Control switches L/R = 50 ms  Rated operational current  Ie A 5  Contacts  Quantity 5  Contacts  Contacts  Quantity 5  Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Terminal capacities  Solid or stranded				
Rated operational current			Quantity	1
Rated operational current				
Contacts  48 V  Rated operational current  Contacts  Rated operational current  Rated operational current  Rated operational current  Contacts  Rated operational current  Ie A  Quantity  Rated operational current  Ie A  Contacts  Quantity  Rated operational current  Ie A  Contacts  Quantity  Rated operational current  Ie A  Contacts  Quantity  Rated operational current  Ie A  5  Quantity  DC-13, Control switches L/R = 50 ms  Rated operational current  Ie A  To  Control circuit reliability at 24 V DC, 10 mA  Fault  probability  Fault  probability  Terminal capacities  Solid or stranded				
A8 V Rated operational current  Contacts  Contacts  Rated operational current  Rated operational current  Contacts  Rated operational current  Rated operational current  Rated operational current  Rated operational current  Contacts  Contacts  Quantity  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Ratel operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Ratel operational current  Voltage per contact pair in series  Solid or stranded  Mm²  1 × (1 - 2.5) 2 × (1 - 2.5) 2 × (1 - 2.5) 2 × (1 - 2.5)				
Rated operational current  Contacts  60 V  Rated operational current  Ie A 10  Contacts  Quantity 3  120 V  Rated operational current  Ie A 5  Contacts  Quantity 3  240 V  Rated operational current  Ie A 5  Contacts  Quantity 5  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  Ie A 10  Quantity 5  Control circuit reliability at 24 V DC, 10 mA  Ie A 10  Valage per contact pair in series  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  If I x (1 - 2.5) 2 x (1 - 2.5) 2 x (1 - 2.5)	Contacts		Quantity	1
Contacts 60 V  Rated operational current le A 10  Contacts Quantity 3  120 V  Rated operational current le A 5  Contacts Quantity 3  240 V  Rated operational current le A 5  Contacts Quantity 3  Contacts Quantity 5  DC-13, Control switches L/R = 50 ms Rated operational current le A 10  Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current le A 10  Voltage per contact pair in series V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded				
Rated operational current  Contacts  Quantity  Rated operational current  Rated operational current  Rated operational current  Contacts  Quantity  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  Voltage per contact pair in series  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  Voltage per contact pair in series  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Rated operational current  V 32  Control circuit reliability at 24 V DC, 10 mA	Rated operational current	l <sub>e</sub>	Α	10
Rated operational current  Contacts  Quantity  Rated operational current  Ie A 5  Contacts  Quantity 3  240 V  Rated operational current  Ie A 5  Contacts  Quantity 3  240 V  Rated operational current  Ie A 5  Contacts  Quantity 5  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  V 32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  In A 10  1 × (1 - 2,5) 2 × (1 - 2,5)	Contacts		Quantity	2
Contacts  120 V  Rated operational current  Le A 5  Contacts Quantity 3  240 V  Rated operational current Le A 5  Contacts Quantity 5  Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current Voltage per contact pair in series V 32  Control circuit reliability at 24 V DC, 10 mA  Terminal capacities  Solid or stranded  Quantity 3  Le A 5  Quantity 5  La Control circuit reliability at 24 V DC, 10 mA  Pault probability Probability  I x (1 - 2,5) 2 x (1 - 2,5)	60 V			
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Rated operational current  Contacts  Quantity  Rated operational current  Rated operational current  Ie  A  5  Contacts  Quantity  5  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  A  5  Quantity  5  Quantity  5  Cuntrol circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  Mm²  1 x (1 - 2,5) 2 x (1 - 2,5)	Contacts		Quantity	3
Contacts  Quantity  Rated operational current  Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Terminal capacities  Solid or stranded  Quantity  1  A  5  Quantity  6  Quantity  7  Qu	120 V			
Rated operational current  Rated operational current  Ie  Quantity  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  Ie  A  10  V  32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)	Rated operational current I,	l <sub>e</sub>	Α	5
Rated operational current  Rated operational current  Ie  Quantity  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  Ie  A  10  V  32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)	Contacts		Quantity	3
Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Terminal capacities  Solid or stranded  Control circuits at 24 V DC, 10 mA  Terminal capacities  Solid or stranded  Cuantity  5  Quantity  5  V  32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  HF  C10 -5, < 1 fault in 100000 operations  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)	240 V			
Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Terminal capacities  Solid or stranded  Control circuits at 24 V DC, 10 mA  Terminal capacities  Solid or stranded  Cuantity  5  Quantity  5  V  32  Control circuit reliability at 24 V DC, 10 mA  Fault probability  HF  C10 -5, < 1 fault in 100000 operations  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)	Rated operational current	l <sub>e</sub>	A	5
DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  Terminal capacities  Solid or stranded  Terminal capacities  Terminal capacities		•		
Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Terminal capacities  Solid or stranded  Rated operational current  I e  A 10  V 32  Fault probability  HF  <10 -5, < 1 fault in 100000 operations  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)				-
Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Fault probability  HF  <10 -5, < 1 fault in 100000 operations  Terminal capacities  Solid or stranded  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)		l <sub>a</sub>	Δ	10
Control circuit reliability at 24 V DC, 10 mA Fault probability $H_F$ $< 10^{-5}$ , $< 1$ fault in 100000 operations  Terminal capacities  Solid or stranded $mm^2$ $1 \times (1 - 2,5)$ $2 \times (1 - 2,5)$		•		
Terminal capacities  Solid or stranded  mm²  1 x (1 - 2,5) 2 x (1 - 2,5)				
Solid or stranded $ mm^2 \qquad 1 \times (1 - 2,5) \\ 2 \times (1 - 2,5) $	point of Circuit Teriability at 24 V DC, TO IIIA F	probability	ΠF	< 10 °, < 1 fault in 100000 operations
2 x (1 - 2,5)	erminal capacities			
	Solid or stranded		$mm^2$	1 x (1 - 2,5)
1 I GAIDIG WILLI I GIT LIES LU DITY 40220	layible with farrules to DIN 16229		2	
2 x (0.75 - 2.5)	IGAIDIG WILLI IGITUIGS LU DIIN 40220		mm <sup>2</sup>	2 x (0.75 - 2.5)
Terminal screw M3.5	erminal screw			M3.5
Tightening torque for terminal screw Nm 1	Fightening torque for terminal screw		Nm	1
Technical safety parameters:				
Notes B10 <sub>d</sub> values as per EN ISO 13849-1, table C1	Notes			B10 <sub>d</sub> values as per EN ISO 13849-1, table C1

#### Rating data for approved types

Rating data for approved types			
Contacts			
Rated operational voltage	U <sub>e</sub>	V AC	600
Rated uninterrupted current max.			
Main conducting paths			
General use		Α	16
Auxiliary contacts			
General Use	I <sub>U</sub>	Α	10
Pilot Duty			A 600 P 600
Switching capacity			
Maximum motor rating			
Single-phase			
120 V AC		HP	0.5
200 V AC		HP	1
240 V AC		HP	1.5
Three-phase			
200 V AC		HP	3
240 V AC		HP	3
480 V AC		HP	7.5
600 V AC		HP	7.5
Short Circuit Current Rating		SCCR	
Basic Rating		kA	5
max. Fuse		Α	50
High fault rating		kA	10
max. Fuse		Α	20, Class J
Terminal capacity			
Solid or flexible conductor with ferrule		AWG	18 - 14
Terminal screw			M3.5
Tightening torque		lb-in	8.8

#### Design verification as per IEC/EN 61439

Design verification as per IEG/EN 01439			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.6
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	$P_{\text{diss}}$	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	50
EC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties	
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 7.0**

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

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])

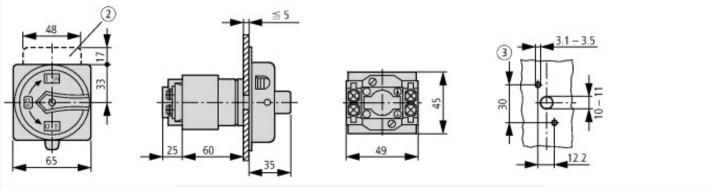
Version as main switch		Yes
Version as maintenance-/service switch		Yes
Version as safety switch		No
Version as emergency stop installation		Yes
Version as reversing switch		No
Number of switches		1
Max. rated operation voltage Ue AC	V	690
Rated operating voltage	V	690 - 690
Rated permanent current lu	Α	20
Rated permanent current at AC-23, 400 V	Α	13.3
Rated permanent current at AC-21, 400 V	Α	20
Rated operation power at AC-3, 400 V	kW	5.5
Rated short-time withstand current lcw	kA	0.32
Rated operation power at AC-23, 400 V	kW	5.5
Switching power at 400 V	kW	5.5
Conditioned rated short-circuit current Iq	kA	6
Number of poles		3
Number of auxiliary contacts as normally closed contact		1
Number of auxiliary contacts as normally open contact		2
Number of auxiliary contacts as change-over contact		0
Motor drive optional		No
Motor drive integrated		No
Voltage release optional		No
Device construction		Built-in device fixed built-in technique
Suitable for ground mounting		No
Suitable for front mounting 4-hole		No
Suitable for front mounting centre		Yes
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Colour control element		Red
Type of control element		Door coupling rotary drive
Interlockable		Yes
Type of electrical connection of main circuit		Screw connection
Degree of protection (IP), front side		IP65
Degree of protection (NEMA)		12

# Approvals

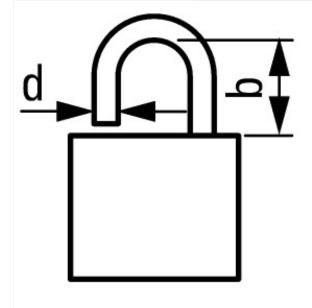
Product Standards	UL 60947-4-1;CSA - C22.2 No. 60947-4-1-14; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
UL File No.	E36332

UL Category Control No.	NLRV
CSA File No.	12528
CSA Class No.	3211-05
North America Certification	UL listed, CSA certified
Suitable for	Branch circuits, suitable as motor disconnect
Degree of Protection	IEC: IP65; UL/CSA Type 1, 12

#### **Dimensions**



- ② ZFS-... Label mount not included as standard ③ Drilling dimensions door



d = 4 - 8 mmb + d ≤ 47 mm d = 0.16 - 0.31" b + d ≤ 1.85"

≦3 padlocks

#### **Assets (links)**

**Declaration of CE Conformity** 

00003075

**Instruction Leaflets** 

IL03801020Z2018\_05