DATASHEET - T0-2-1/I1/SVB



Main switch, 3 pole, 20 A, Emergency-Stop function, 90 °, Lockable in the 0 (Off) position, surface mounting



Part no. T0-2-1/l1/SVB Catalog No. 207147

EL-Nummer 0001457790 (Norway)

Technical data General

General			
Standards			IEC/EN 60947, VDE 0660, IEC/EN 60204 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			
Enclosed		°C	-25 - +40
Overvoltage category/pollution degree			III/3
Rated impulse withstand voltage	U _{imp}	V AC	6000
Mechanical shock resistance	·	g	15
Mounting position		3	As required
Contacts			
Mechanical variables			
Number of poles			3 pole
Electrical characteristics			
Rated operational voltage	U _e	V AC	690
Rated uninterrupted current	Iu	Α	20
Note on rated uninterrupted current !			Rated uninterrupted current I_u is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x l _e	2
AB 40 % DF		x l _e	1.6
AB 60 % DF		x l _e	1.3
Short-circuit rating			
Fuse		A gG/gL	
Rated short-time withstand current (1 s current)	I _{cw}	A _{rms}	320
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		A	130
Rated breaking capacity cos φ to IEC 60947-3		A	
230 V		Α	100
400/415 V		Α	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 I _e		W	0.6
Current heat loss per auxiliary circuit at I _e (AC-15/230 V)		CO	0.6
Lifespan, mechanical	Operations	x 10 ⁶	> 0.4
Maximum operating frequency	Operations/h		1200
AC			
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	P	kW	3
230 V Star-delta	P	kW	5.5
400 V 415 V	Р	kW	5.5

400 V Star-delta	Р	kW	7.5
500 V	Р	kW	5.5
500 V Star-delta	P	kW	7.5
690 V	P	kW	4
690 V Star-delta	P	kW	5.5
Rated operational current motor load switch			
230 V	l _e	Α	11.5
230 V star-delta	I _e	Α	20
400V 415 V		A	11.5
	l _e		
400 V star-delta	l _e	A	20
500 V	l _e	Α	9
500 V star-delta	I _e	Α	15.6
690 V	le	Α	4.9
690 V star-delta	I _e	Α	8.5
AC-21A			
Rated operational current switch			
440 V	I _e	A	20
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V		kW	2
	P		3
400 V 415 V	P	kW	5.5
500 V	P	kW	7.5
690 V	Р	kW	5.5
Rated operational current motor load switch			
230 V	l _e	Α	13.3
400 V 415 V	I _e	Α	13.3
500 V	le	Α	13.3
690 V	I _e	Α	7.6
DC			
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	la	A	
	l _e		
Rated operational current	le	A	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I _e	Α	10
Contacts		Quantity	1
48 V			
Rated operational current	le	Α	10
Contacts		Quantity	2
60 V			
Rated operational current	I _e	Α	10
Contacts		Quantity	
120 V			
Rated operational current	I _e	A	5
	·e		
Contacts		Quantity	3
240 V			_
Rated operational current	l _e	Α	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			

Voltage per contact pair in series		V	32	
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 x (1 - 2,5) 2 x (1 - 2,5)	
Flexible with ferrules to DIN 46228		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	
Terminal screw			M3.5	
Tightening torque for terminal screw		Nm	1	
Technical safety parameters:				
Notes			B10 _d values as per EN ISO 13849-1, table C1	
Rating data for approved types				
Terminal capacity				
Terminal screw			M3.5	
Tightening torque		lb-in	8.83	

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
Heat dissipation per pole, current-dependent	P _{vid}	W	0.6
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
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 b observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must b 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

Version as main awitch Yes Version as maintenance/service switch Yes Version as a serversing switch Yes Version as a serversing switch Yes Version as serversing switch Yes Numbor of switches Yes Rated operation voltage Ue AC Yes Rated operating voltage Ae Rated permanent current at AC-23, 400 V Ae Rated operation power at AC-3, 400 V Ae Rated operation power at AC-3, 400 V Ae Rated operation power at AC-3, 400 V Ae Switching power at AC-3, 400 V Ae Conditioned rated short-circuit current iq Ae Number of power Ae Number of power Ae Number of power Ae <t< th=""><th>[AKF060013])</th><th></th><th></th></t<>	[AKF060013])		
Version as safety switch Feed Page 1988 Version as reversing switch Feed Page 1988 Version as reversing switch Feed Page 1988 Max. rated operation voltage Ue AC Version as reversing writage Rated operation voltage Ue AC AV Rated operation power at AC-23,400 V AV Rated operation power at AC-23,400 V AV Substact sing voltage at AC-23,400 V AV Number of poles AV Number of auxiliary contacts as normally open contact AV Motor drive eptional AV Motor drive eptional <td>Version as main switch</td> <td></td> <td>Yes</td>	Version as main switch		Yes
Version as emergency storp installation 4 Yes Version as reversing switch 6 10 Number of switches 7 10 Nax. rated operation voltage Ue AC 7 80 Rated operation voltage 7 60 Rated operation voltage 7 60 Rated permanent current ta 8 9 Rated permanent current at AC-23,400 V 8 13 Rated operation power at AC-3,400 V 8 2 Rated operation power at AC-3,400 V 8 2 Rated operation power at AC-23,400 V 8 5 Switching power at 400 V 9 5 Conditioned rated short-drive urrent prover at AC-23,400 V 9 6 Number of ouxiliary contacts as normally closed contact 9 6 Number of ouxiliary contacts as normally closed contact 9 1 Number of ouxiliary contacts as shange-over contact 9 1 Wolter of frow from grand 9 1 1 Vittge release optional 9 1 1 <td>Version as maintenance-/service switch</td> <td></td> <td>Yes</td>	Version as maintenance-/service switch		Yes
Version as reversing switch 6 1 Number of switches 1 1 Max. rated operation voltage Us AC V 660 Rated operating voltage V 680-890 Rated operating voltage A 20 Rated permanent current at AC-23, 400 V A 3.3 Rated spermanent current at AC-23, 400 V A 20 Rated spermanent withstand current tow A 3.2 Rated sport since withstand current tow B A 3.2 Rated sport since withstand current tow B A 3.2 Rated short-tire withstand current tow B A 3.2 Rated short-directive turrent tow B A 6.2 Number of power at AC-23, 400 V B B 5.0 Number of power at AC-24, 400 V B B 6.0 Number of power at AC-23, 400 V B B 6.0 Number of power at AC-24, 400 V B B 6.0 Number of power at AC-24, 400 V B B 6.0 <td< td=""><td>Version as safety switch</td><td></td><td>Yes</td></td<>	Version as safety switch		Yes
Number of switches Image: Comparison voltage Ue AC V 690-690 Rated operation voltage Ue AC A 20 Rated operation Eurrent at AC-23, 400 V A 20 Rated operation power at AC-3, 400 V K 32 Rated operation power at AC-23, 400 V K 32 Rated operation power at AC-23, 400 V K 32 Rated operation power at AC-23, 400 V K 32 Rated operation power at AC-23, 400 V K 32 Rated operation power at AC-23, 400 V K 32 Rated operation power at AC-23, 400 V K 32 Rated operation power at AC-23, 400 V K 4 Rated operation power at AC-3, 400 V K 4 Conditioned rated short-circuit current Iq K 6 Number of poles K 6 6 Number of auxiliary contacts as change-over contact K <t< td=""><td>Version as emergency stop installation</td><td></td><td>Yes</td></t<>	Version as emergency stop installation		Yes
Max. rated operation voltage Ue AC V 890 - 690 Rated operating voltage V 890 - 690 Rated permanent current tu A 20 Rated permanent current at AC-23, 400 V A 333 Rated operation power at AC-34, 400 V A 55 Rated operation power at AC-24, 400 V B A 322 Rated operation power at AC-23, 400 V B B 55 Rated operation power at AC-24, 400 V B B 55 Rated operation power at AC-23, 400 V B B 55 Switching power at 400 V B B 55 Conditioned rated short-circuit current Iq B B 6 Number of poles B B G C Number of auxiliary contacts as normally open contact B G G Number of auxiliary contacts as change-over contact B G G Motor drive integrated B G G Motor drive integrated B G Complete device in housing Suitable	Version as reversing switch		No
Rated operating voltage V 800 - 890 Rated permanent current 1u A 20 Rated permanent current at AC-23, 400 V A 13.3 Rated permanent current at AC-24, 400 V A 20 Rated operation power at AC-3, 400 V A 0.32 Rated short-ine withstand current tew B A 6 Number of auxiliary contacts as normally closed contact B 0 0 Number of auxiliary contacts as normally open contact B 0 0 Motor drive epitional B 0 0 Motor drive integrated B 0 0 Voltage release optional B 0 0 Sui	Number of switches		1
Rated permanent current lu A 20 Rated permanent current at AC-23, 400 V A 13.3 Rated permanent current at AC-21, 400 V A 20 Rated operation power at AC-3, 400 V KW 5.5 Rated operation power at AC-23, 400 V KW 5.5 Rated operation power at AC-23, 400 V KW 5.5 Switching power at 400 V WW 5.5 Conditioned rated short-circuit current lq KW 6 Number of poles LW 6 Number of auxiliary contacts as normally closed contact LW 0 Number of auxiliary contacts as change-over contact LW 0 Motor drive optional LW No Motor drive optional LW No Voltage release optional LW No Device construction LW No Suitable for front mounting 4-hole LW No Suitable for front mounting achine LW No Suitable for front mounting achine LW No Suitable for front mounting achine incircuit	Max. rated operation voltage Ue AC	V	690
Rated permanent current at AC-22, 400 V A 33 Rated permanent current at AC-21, 400 V A 20 Rated operation power at AC-3, 400 V KM 5.5 Rated short-time withstand current lcw KA 0.22 Rated short-time withstand current lcw KM 5.5 Switching power at AC-23, 400 V W 5.5 Witching power at AD-23, 400 V W 5.5 Conditioned rated short-circuit current lq KM 6 Number of poles B 3 3 Number of auxiliary contacts as normally closed contact W 0 0 Number of auxiliary contacts as normally open contact W 0 0 Motor drive eptimal W 0 0 Motor drive eptimal W 0 0 Motor drive eptimal W 0 0 Suitable for ground mounting W 0 0 Suitable for front mounting 4-hele W 0 0 Suitable for firet mounting centre W 0 0	Rated operating voltage	V	690 - 690
Rated permanent current at AC-21, 400 V A 20 Rated operation power at AC-3, 400 V KM 5.5 Rated short-time withstand current lcw KM 3.2 Rated operation power at AC-23, 400 V KM 5.5 Switching power at 400 V KM 5.5 Conditioned rated short-circuit current lq KM 6 Number of poles KM 6 Number of auxiliary contacts as normally closed contact KM 0 Number of auxiliary contacts as normally open contact KM 0 Number of auxiliary contacts as change-over contact KM No Motor drive optional KM No Motor drive integrated KM No Voltage release optional KM No Device construction KM Yes Suitable for ground mounting KM No Suitable for front mounting 4-ble No No Suitable for front mounting centre No No Suitable for intremediate mounting KM No Suitable for intremediate mountin	Rated permanent current lu	Α	20
Rated operation power at AC-3,400 V Rated short-time withstand current lcw Rated operation power at AC-23,400 V Rothing power at 400 V Conditioned rated short-circuit current Iq Number of pulses Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Nother drive optional Notor drive integrated Note drive integrated Note of one open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Note of rive integrated Not	Rated permanent current at AC-23, 400 V	Α	13.3
Rated short-time withstand current Icw Rated operation power at AC-23, 400 V Switching power at 400 V Conditioned rated short-circuit current Iq Number of poles Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Notor drive optional Notor drive optional Notor drive optional Notor drive optional Notor drive integrated Notor drive in	Rated permanent current at AC-21, 400 V	Α	20
Reted operation power at AC-23, 400 V Switching power at 400 V Conditioned rated short-circuit current Iq Number of poles Number of poles Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Notor drive optional Notor drive integrated Notor drive in	Rated operation power at AC-3, 400 V	kW	5.5
Switching power at 400 V Conditioned rated short-circuit current Iq Number of poles Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as norm	Rated short-time withstand current lcw	kA	0.32
Conditioned rated short-circuit current Iq KA 6 Number of poles 3 3 Number of auxiliary contacts as normally closed contact 9 0 Number of auxiliary contacts as normally open contact 9 0 Number of auxiliary contacts as change-over contact 9 No Motor drive optional No No Motor drive integrated No No Voltage release optional No Complete device in housing Device construction Complete device in housing Yes Suitable for ground mounting 4-hole No No Suitable for front mounting 4-hole No No Suitable for distribution board installation No No Suitable for distribution board installation No No Suitable for intermediate mounting No No Colour control element No No Type of contr	Rated operation power at AC-23, 400 V	kW	5.5
Number of poles Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Notor drive optional Notor drive integrated No No Notor drive integrated No	Switching power at 400 V	kW	5.5
Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Motor drive optional Motor drive integrated No Notor drive integrated No Voltage release optional Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for intermediate mounting Suitable for intermediate mounting Colour control element Type of control element Type of electrical connection of main circuit Number of auxiliary contacts as normally closed contact O O O O O O O O O O O O O	Conditioned rated short-circuit current Iq	kA	6
Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No Motor drive optional No No No Voltage release optional No Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for firont mounting centre Suitable for intermediate mounting Suitable for often theorem in stallation Suitable for intermediate mounting No Suitable for forth mounting fentre No	Number of poles		3
Number of auxiliary contacts as change-over contact Motor drive optional Motor drive integrated No Voltage release optional Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for distribution board installation Suitable for intermediate mounting Colour control element Type of control element Type of electrical connection of main circuit Type of electrical connection of main circuit No O O O O O O O O O O O O O	Number of auxiliary contacts as normally closed contact		0
Motor drive optional Motor drive integrated No Voltage release optional Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for front mounting centre Suitable for intermediate mounting Suitable for front mounting centre	Number of auxiliary contacts as normally open contact		0
Motor drive integratedNoVoltage release optionalNoDevice constructionComplete device in housingSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoColour control elementRedType of control elementDoor coupling rotary driveInterlockableYesType of electrical connection of main circuitScrew connection	Number of auxiliary contacts as change-over contact		0
Voltage release optional No Device construction Complete device in housing Suitable for ground mounting Yes Suitable for front mounting 4-hole No Suitable for front mounting centre No 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	Motor drive optional		No
Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for distribution board installation Suitable for intermediate mounting Colour control element Type of control element Type of electrical connection of main circuit Complete device in housing Yes Complete device in housing Yes No No No Red No Door coupling rotary drive Yes Screw connection	Motor drive integrated		No
Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for front mounting centre Suitable for distribution board installation Suitable for intermediate mounting No Colour control element Type of control element Suitable Suitab	Voltage release optional		No
Suitable for front mounting 4-hole Suitable for front mounting centre No Suitable for distribution board installation Suitable for intermediate mounting Colour control element Type of control element Type of electrical connection of main circuit No Screw connection	Device construction		Complete device in housing
Suitable for front mounting centre No Suitable for distribution board installation No Suitable for intermediate mounting No Colour control element Type of control element Interlockable Type of electrical connection of main circuit No Screw connection	Suitable for ground mounting		Yes
Suitable for distribution board installation Suitable for intermediate mounting No Colour control element Type of control element Interlockable Type of electrical connection of main circuit No Red Door coupling rotary drive Yes Type of electrical connection of main circuit Screw connection	Suitable for front mounting 4-hole		No
Suitable for intermediate mounting No Colour control element Type of control element Interlockable Type of electrical connection of main circuit No Red Door coupling rotary drive Yes Type of electrical connection of main circuit Screw connection	Suitable for front mounting centre		No
Colour control element Type of control element Interlockable Type of electrical connection of main circuit Red Door coupling rotary drive Yes Type of electrical connection of main circuit Screw connection	Suitable for distribution board installation		No
Type of control element Door coupling rotary drive Interlockable Yes Type of electrical connection of main circuit Screw connection	Suitable for intermediate mounting		No
Interlockable Yes Type of electrical connection of main circuit Screw connection	Colour control element		Red
Type of electrical connection of main circuit Screw connection	Type of control element		Door coupling rotary drive
	Interlockable		Yes
Degree of protection (IP), front side	Type of electrical connection of main circuit		Screw connection
	Degree of protection (IP), front side		IP65
Degree of protection (NEMA) Other	Degree of protection (NEMA)		Other

Dimensions





