# DATASHEET - T0-3-15159/I1/SVB



Main switch, 3 pole + 2 N/O + 1 N/C, 20 A, Emergency-Stop function, 90 °, surface mounting



Part no. Catalog No. EL-Nummer

T0-3-15159/I1/SVB 222646

0001457835

EL-Nummer (Norway)

### **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
- i			
7		N/C	1
Degree of Protection			IP65
			totally insulated
Design			surface mounting
Contact sequence			$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Switching angle		0	90
Design number			15159
Function			
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	5.5
Rated uninterrupted current	lu	A	20

Note on rated uninterrupted current !u			Rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$ is specified for max. cross-section.
Number of contact units		contact	3
		unit(s)	
Technical data			
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			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>	A	20
Note on rated uninterrupted current !u			Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x l <sub>e</sub>	2
AB 40 % DF		x I <sub>e</sub>	1.6
AB 60 % DF		x l <sub>e</sub>	1.3
		x 'e	
Short-circuit rating		A gG/gL	20
Fuse			
Rated short-time withstand current (1 s current)	I <sub>cw</sub>	A <sub>rms</sub>	320
Note on rated short-time withstand current lcw			Current for a time of 1 second
Rated conditional short-circuit current	Ι <sub>q</sub>	kA	6
Switching capacity		٨	100
cos φ rated making capacity as per IEC 60947-3		A	130
Rated breaking capacity cos φ to IEC 60947-3		A	
230 V		A	100
400/415 V		A	110
500 V		A	80
690 V		A	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	Р	kW	5.5
400 V 415 V	Р	kW	5.5
400 V Star-delta	Р	kW	7.5
500 V	D	L\\/	5.5

500 V

kW

5.5

Ρ

	D	134/	7.
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	le	A	11.5
230 V star-delta	le	A	20
400V 415 V	le	А	11.5
400 V star-delta	l <sub>e</sub>	А	20
500 V	le	А	9
500 V star-delta	l <sub>e</sub>	Α	15.6
690 V	le	A	4.9
690 V star-delta	le	А	8.5
AC-21A			
Rated operational current switch			
440 V	le	А	20
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	Р	kW	
230 V	P	kW	3
400 V 415 V	P	kW	5.5
500 V	Р	kW	7.5
690 V	P	kW	5.5
Rated operational current motor load switch			
230 V	l <sub>e</sub>	A	13.3
400 V 415 V	l <sub>e</sub>	A	13.3
500 V		A	13.3
	l <sub>e</sub>		
690 V	le	A	7.6
DC-1, Load-break switches L/R = 1 ms Rated operational current	1	٨	10
	l <sub>e</sub>	A	10
Voltage per contact pair in series		V	60
DC-21A	l <sub>e</sub>	A	
Rated operational current	le	A	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	l <sub>e</sub>	A	10
Contacts		Quantity	1
48 V			
Rated operational current	l <sub>e</sub>	А	10
Contacts		Quantity	2
60 V			
Rated operational current	le	А	10
Contacts		Quantity	3
120 V			
Rated operational current	le	А	5
Contacts		Quantity	3
240 V			
Rated operational current	le	А	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			
Rated operational current	l <sub>e</sub>	А	10
Voltage per contact pair in series		V	32
Control circuit reliability at 24 V DC, 10 mA	Fault	H <sub>F</sub>	< 10 <sup>-5</sup> , < 1 fault in 100000 operations
	probability		,

#### **Terminal capacities**

Torininal oupdotated		
Solid or stranded	mm <sup>2</sup>	1 x (1 - 2,5) 2 x (1 - 2,5)
Flexible with ferrules to DIN 46228	mm <sup>2</sup>	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 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rating data for approved types		
Terminal capacity		
Terminal screw		M3.5

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	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 <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
IEC/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)

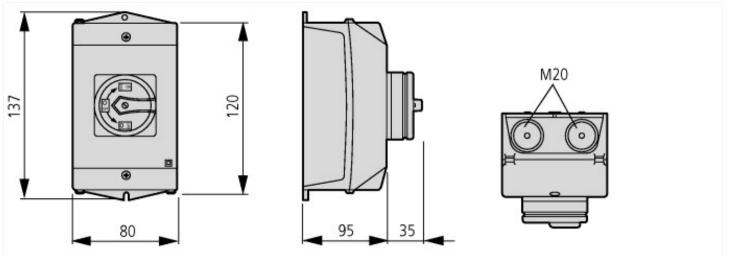
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])		
Version as main switch	Yes	
Version as maintenance-/service switch	Yes	

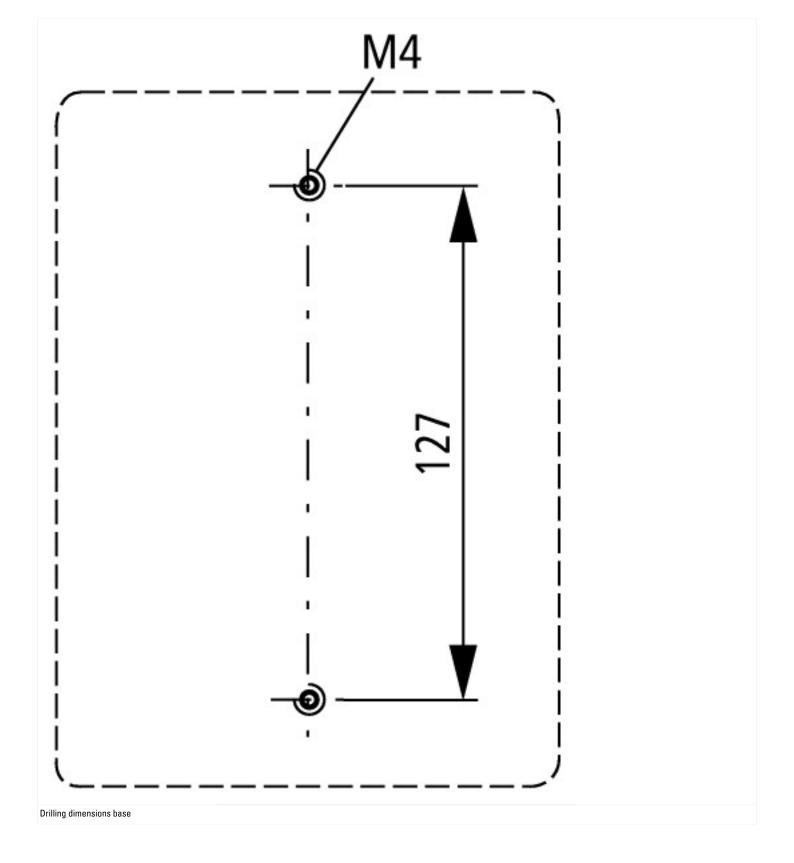
No

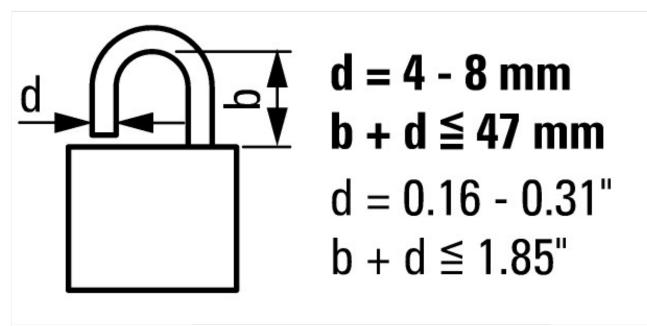
Version as safety switch

Version as reversing which         No           Number of switches         1           Max. red operation voltage Uo AC         V         60           Rated operation voltage Uo AC         V         60           Rated operation voltage Uo AC         V         60           Rated permanent current U         A         0           Rated operation yoltspa Uo AC         A         0           Rated permanent current U         A         0           Rated operation yourset AC-23, 400 V         A         0           Soltablo operat AC-23, 400 V         A         0           Rated operation yourset AC-23, 400 V         A         0           Soltablo operat AC-23, 400 V         A         0           Number of axiliary contacts an ormally closed contact         A         0           Number of axiliary contacts an ormally closed contact         A         0           Number of axiliary contacts an ormally closed contact         A         0           Number of axiliary contacts an ormally closed contact         A         0           Solt			
Number of switches         Image operation voltage Ue AC         Image operation voltage AC	Version as emergency stop installation		Yes
Ar. rated operation voltage Ue AC         V         80           Rated operation voltage Ue AC         V         800         800           Rated permanent current Iu         A         0	Version as reversing switch		No
Number of average         V         800 - 800           Rated permanent current lu         60 - 800         3.3           Rated permanent current at AC-23, 400 V         6         A         9.3           Rated opermanent current at AC-23, 400 V         6         A         9.3           Rated opermanent current at AC-23, 400 V         6         A         9.3           Rated opermanent current at AC-23, 400 V         6         A         9.3           Rated opermanent current at AC-23, 400 V         6         A         9.3           Switching power at AC-23, 400 V         6         A         9.3           Switching power at AC-23, 400 V         6         A         9.3           Switching power at AC-23, 400 V         6         A         9.3           Switching power at AC-23, 400 V         6         A         9.3           Switching power at AC-23, 400 V         6         A         9.3           Switching power at AC-23, 400 V         6         9.4         9.4           Switching power at AC-23, 400 V         6         9.4         9.4           Number of auxiliary contacts as normality closed contact         6         9.4         9.4         9.4         9.4         9.4         9.4         9.4         9	Number of switches		1
Reter         A         2           Reted permanent current tat AC-23, 400 V         A         13.3           Reted permanent current tat AC-21, 400 V         A         2           Reted permanent current tat AC-21, 400 V         KM         5.3           Reted permanent current tat AC-21, 400 V         KM         5.3           Reted permanent current tat AC-21, 400 V         KM         5.3           Reted permanent current tat AC-21, 400 V         KM         5.3           Reted permanent current tat AC-21, 400 V         KM         5.3           Stricting power at AC-23, 400 V         KM         5.3           Stricting power at AC-23, 400 V         KM         5.3           Conditioned rated short-circuit current tat         KM         6.3           Number of auxiliary contacts as normally closed contact         KM         6.3           Number of auxiliary contacts as normally closen contact         KM         6.3           Number of auxiliary contacts as normally closen contact         KM         6.3           Number of auxiliary contacts as normally closen contact         KM         6.3           Number of auxiliary contacts as normally closen contact         KM         6.3           Stricting reter as change-over contact         KM         6.3	Max. rated operation voltage Ue AC	V	690
And permanent current at AC-23, 400 V       A       33         Rated permanent current at AC-21, 400 V       K       30         Rated operation power at AC-3, 400 V       K       53         Rated operation power at AC-23, 400 V       K       32         Rated operation power at AC-23, 400 V       KW       53         Rated operation power at AC-23, 400 V       KW       53         Switching power at 400 V       KW       53         Conditioned rated short-circuit current lq       KW       53         Number of auxiliary contacts as normally closed contact       KW       50         Number of auxiliary contacts as normally closed contact       F       6         Number of auxiliary contacts as change-over contact       F       6       6         Number of auxiliary contacts as change-over contact       F       6       6       6         Number of auxiliary contacts as change-over contact       F       6	Rated operating voltage	V	690 - 690
Anard permanent current at AC-21, 400 V     Image: Provide at AC-3, 400 V       Rated operation power at AC-3, 400 V     Image: A       Bated operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation power at AC-23, 400 V     Image: A       Switch operation contract     Image: A       Number of auxiliary contacts as normally closed contact     Image: A       Number of auxiliary contacts as change-over contact     Image: A       Number of auxiliary contacts as change-over contact     Image: A       Notor drive optional     Image: A       Notor drive optional     Image: A       Subte for front mounting 4-hole     Image: A       Subte for front mounting -th-ter     Image: A       Subte for indirinution toption instrictuit     Image: A	Rated permanent current lu	А	20
Rate operation power at AC-3, 400 V         KW         5           Rated short-time withstand current low         032           Rated operation power at AC-23, 400 V         KW         5           Switching power at AC-23, 400 V         KW         5           Switching power at AC-23, 400 V         KW         5           Solid context         KW         5           Conditioned rated short-circuit current lq         KW         6           Number of auxiliary contacts as normally cosed contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         6           Number of auxiliary contacts as change-over contact         KM         No           Solid contage optional         KM         Solid contage contage contact         No	Rated permanent current at AC-23, 400 V	А	13.3
Rated short-time withstand current low     Image: Rated operation power at AC-23, 400 V     Image: Rated operation power at 400 V     Image: Rated operation power	Rated permanent current at AC-21, 400 V	А	20
Reted operation power at AC-23, 400 V       Image: S       5         Switching power at 400 V       KW       5         Conditioned rated short-circuit current lq       KM       6         Number of poles       3       3         Number of auxiliary contacts as normally closed contact       F       6         Number of auxiliary contacts as normally closed contact       F       6         Number of auxiliary contacts as normally closed contact       F       6         Number of auxiliary contacts as change-over contact       F       6         Motor drive optional       F       6       6         Note of elease optional       F       6       6         Note of for mounting 4-hole       F       6       6       6         Suitable for front mounting 4-hole       F       6	Rated operation power at AC-3, 400 V	kW	5.5
Witching power at 400 VImage: Source of the section of t	Rated short-time withstand current lcw	kA	0.32
Additional rated short-circuit current lq         KA         6           Number of poles         3         3           Number of auxiliary contacts as normally closed contact         6         3           Number of auxiliary contacts as normally closed contact         6         3           Number of auxiliary contacts as normally come contact         6         3           Number of auxiliary contacts as change-over contact         6         9           Motor drive optional         6         6           Nutge release optional         6         6           Valtage release optional         6         6           Suitable for ground mounting         6         6           Suitable for front mounting centre         6         6           Suitable for intermediate mounting         6         6           Type of electrical connection of mai	Rated operation power at AC-23, 400 V	kW	5.5
Number of poles         Image: Pole of auxiliary contacts as normally closed contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contact         Image: Pole of auxiliary contacts as normally open contacts         Image: Pole of auxiliary contacts as normally open contacts         Image: Pole of auxiliary contacts as normally open contacts         Image: Pole of auxiliary contacts as normally open contacts         Image: Pole of auxiliary contacts as normally contacts         Image: Pole	Switching power at 400 V	kW	5.5
Aumber of auxiliary contacts as normally closed contact         0           Number of auxiliary contacts as normally open contact         3           Number of auxiliary contacts as change-over contact         0           Motor drive optional         0           Motor drive integrated         0           Voltage release optional         0           Device construction         0           Suitable for ground mouting         6           Suitable for front mouting 4-hole         0           Suitable for first mouting centre         0           Suitable for instruction         0           Suitable for instructure         0           Suitab	Conditioned rated short-circuit current Iq	kA	6
Number of auxiliary contacts as normally open contact       3         Number of auxiliary contacts as change-over contact       0         Motor drive optional       0         Motor drive optional       No         Motor drive integrated       No         Votage release optional       No         Device construction       Complete device in housing         Suitable for ground mounting 4-hole       Yes         Suitable for front mounting centre       No         Suitable for intermediate mounting       Yes         Suitabl	Number of poles		3
Number of auxiliary contacts as change-over contact       Image: Contacts as change-over contact         Motor drive optional       No         Motor drive integrated       No         Voltage release optional       No         Device construction       Conplete device in housing         Suitable for ground mounting       Yes         Suitable for fort mounting 4-hole       No         Suitable for fort mounting centre       No         Suitable for fort mounting centre       No         Suitable for intermediate mounting       No         Suitable for intermediate mounting       No         Suitable for intermediate mounting       Mo	Number of auxiliary contacts as normally closed contact		0
Autor drive optional         No           Motor drive optional         No           Motor drive integrated         No           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 front mounting centre         No           Suitable for intermediate mounting         No           Suitable for intermediate mounting         No           Colour control element         No           Type of control element         Yes           Type of electrical connection of main circuit         Yes           Suitable for front mounting centre         No           Suitable for intermediate mounting         No           Suitable for intermediate mounting         Yes	Number of auxiliary contacts as normally open contact		3
Motor drive integrated         Moder           Wotage 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 front mounting centre         No           Suitable for intermediate mounting         No           Suitable for intermediate mounting         No           Colour control element         Red           Type of centre formation formation         Source compliant or formation           Type of electrical connection of main circuit         Source compliant or formation           Type of entre formation         Source compliant or formation           Type of entre formation         Source compliant or formation           Type of electrical connection of main circuit         Source compliant or formation           Type of entre formation         Source compliant or formation           Type of entre formation         Source compliant or formation           Type of electrical connection of main circuit         Source compliant or formation           Type of entre formation         Source compliant or formation           Type of entre formation         Source compliant or formation	Number of auxiliary contacts as change-over contact		0
Voltage 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 elementNoType of centrelSeree constructionType of electrical connection of main circuitSeree constructionDegree of protection (IP), front sideNoDegree of protection (IP), front sideSeree constructionDescent of the side of construction of main circuitNoDescent of the side of construction of main circuitSeree constructionDescent of (IP), front sideNoDescent of (IP), front sideSeree construction of main circuitDescent of (IP), front sideNoDescent of (IP), front sideSeree construction of main circuitDescent of (IP), front sideNoDescent of (IP), front sideSeree construction of main circuitDescent of (	Motor drive optional		No
Device constructionComplete device in housingSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoSuitable for intermediate mountingNoColour control elementNoType of control elementSourcoupling rotary driveInterlockableYesType of electrical connection of main circuitSourcePegee of protection (IP), front sideSourceInterlockableInterlockableSuitable of (IP), front sideSourceSuitable of (IP), front sideSource <td>Motor drive integrated</td> <td></td> <td>No</td>	Motor drive integrated		No
Suitable for ground mounting       Fee         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       No         Type of control element       Soite See         Type of electrical connection of main circuit       See         Pegree of protection (IP), front side       See	Voltage release optional		No
Suitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoColour control elementNoType of control elementRedInterlockableSor coupling rotary driveType of electrical connection of main circuitSor eve connectionDegree of protection (IP), front sideSor eve connection	Device construction		Complete device in housing
Suitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoColour control elementRedType of control elementDor coupling rotary driveInterlockableYesType of electrical connection of main circuitSciew connectionDegree of protection (IP), front sideInterlockable	Suitable for ground mounting		Yes
Suitable for distribution board installation       No         Suitable for intermediate mounting       No         Colour control element       No         Type of control element       Red         Interlockable       Door coupling rotary drive         Type of electrical connection of main circuit       Serew connection         Degree of protection (IP), front side       Image: Serew connection of main circuit	Suitable for front mounting 4-hole		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     Interlockable	Suitable for front mounting centre		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     Image: Strew connection	Suitable for distribution board installation		No
Type of control element     Door coupling rotary drive       Interlockable     Yes       Type of electrical connection of main circuit     Sorew connection       Degree of protection (IP), front side     Sofew	Suitable for intermediate mounting		No
Interlockable     Yes       Type of electrical connection of main circuit     Screw connection       Degree of protection (IP), front side     IP65	Colour control element		Red
Type of electrical connection of main circuit     Screw connection       Degree of protection (IP), front side     IP65	Type of control element		Door coupling rotary drive
Degree of protection (IP), front side	Interlockable		Yes
	Type of electrical connection of main circuit		Screw connection
Degree of protection (NEMA) Other	Degree of protection (IP), front side		IP65
	Degree of protection (NEMA)		Other

# Dimensions







≦ 3 padlocks

### **Assets (links)**

Declaration of CE Conformity 00003075

Instruction Leaflets IL03801007Z2018\_05