

Auxiliary winding switch, Contacts: 3, 20 A, front plate: 0<Start-1, 45 °, momentary/maintained, surface mounting

Powering Business Worldwide\*

Part no. T0-2-15120/l1 Article no. 222597

Similar to illustration

Delivery program			
Product range			Control switches
Part group reference			ТО
Basic function			Auxiliary winding switch
			with black thumb grip and front plate
Contacts			3
Degree of Protection			IP65
			totally insulated
Design			surface mounting
Contact sequence			0 START1  1 0 0 START1  X X X X X X X X X X X X X X X X X X X
Switching angle		0	45
Switching performance			momentary/maintained With 0 (Off) position With spring-return to 0
Front plate no.			FS 142010
front plate			0 <start-1< td=""></start-1<>
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	5.5
Rated uninterrupted current	Iu	Α	20
Number of contact units		contact unit(s)	2

# **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			III/3
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Mechanical shock resistance	r	g	15
Mounting position		J	As required
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Contacts			
Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	Iu	Α	20
Note on rated uninterrupted current !u			Rated uninterrupted current lu 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 I <sub>e</sub>	1.3
Short-circuit rating			
Fuse		A gG/gL	20
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	Iq	kA	6
Switching capacity			
$\cos \phi$ rated making capacity as per IEC 60947-3		Α	130
Rated breaking capacity cos φ to IEC 60947-3		Α	
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 <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	P	kW	
220 V 230 V	P	kW	3
230 V Star-delta	Р	kW	5.5
400 V 415 V	Р	kW	5.5
400 V Star-delta	P	kW	7.5
500 V	Р	kW	5.5
500 V Star-delta	Р	kW	7.5
690 V	P	kW	4
690 V Star-delta	P	kW	5.5
Rated operational current motor load switch		^	115
230 V	l <sub>e</sub>	A	11.5
230 V star-delta	l <sub>e</sub>	A	20
400V 415 V	l <sub>e</sub>	A	11.5
400 V star-delta	l <sub>e</sub>	Α	20
500 V	l <sub>e</sub>	Α	9
500 V star-delta	l <sub>e</sub>	Α	15.6
690 V	l <sub>e</sub>	Α	4.9
690 V star-delta	le	Α	8.5
AC-21A			
Rated operational current switch			

440 V	I <sub>e</sub>	Α	20
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	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	I <sub>e</sub>	A	13.3
400 V 415 V	I <sub>e</sub>	Α	13.3
500 V		A	13.3
	I <sub>e</sub>		
690 V	I <sub>e</sub>	Α	7.6
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	l <sub>e</sub>	Α	10
Voltage per contact pair in series		V	60
DC-21A	I <sub>e</sub>	Α	
Rated operational current	l <sub>e</sub>	Α	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	l <sub>e</sub>	Α	10
Contacts		Quantity	1
48 V			
Rated operational current	I <sub>e</sub>	Α	10
Contacts		Quantity	2
60 V			
Rated operational current	I <sub>e</sub>	Α	10
Contacts		Quantity	3
120 V		,	
Rated operational current	I <sub>e</sub>	Α	5
Contacts	·e	Quantity	
240 V		Quantity	
Rated operational current	I <sub>e</sub>	A	5
	'e		
Contacts  DC-13, Control switches L/R = 50 ms		Quantity	
		^	10
Rated operational current	I <sub>e</sub>	A	10
Voltage per contact pair in series		V	32
ontrol circuit reliability at 24 V DC, 10 mA	Fault probability	H <sub>F</sub>	$< 10^{-5}$ , $< 1$ fault in 100000 operations
erminal capacities			
olid or stranded		mm <sup>2</sup>	1 x (1 - 2,5)
exible with ferrules to DIN 46228		mm <sup>2</sup>	2 x (1 - 2,5) 1 x (0.75 - 2.5)
			2 x (0.75 - 2.5)
erminal screw			M3.5
lax. tightening torque		Nm	1
echnical safety parameters: otes			B10 <sub>d</sub> values as per EN ISO 13849-1, table C1
ating data for approved types			orag values as per civilos isomori, table or
erminal capacity			
Terminal screw			M3.5

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	Α	20

provide heat dissipation data for the devices.  10.11 Short-circuit rating  Is the panel builder's responsibility. The specifications for the switchgear observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.				
Static heat dissipation, non-current-dependent  Poss W 0  Operating ambient temperature min. Operating ambient temperature max.  Description or materials and parts  10.2 Strongth of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of resistance of insulating materials to normal heat  10.2.3.2 Verification of resistance of insulating materials to abnormal heat  10.2.3.2 Verification of resistance of insulating materials to abnormal heat  10.2.3.1 Verification of resistance of insulating materials to abnormal heat  10.2.3.1 Verification of resistance of insulating materials to abnormal heat  10.2.3.1 Verification of resistance of insulating materials to abnormal heat  10.2.4. Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  10.2.6 Mechanical impact  10.2.7 Inscriptions  10.3 Degree of protection of ASSEMBLIES  10.4 Clearances and creepage distances  10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Power-frequency electric strongth  10.9.2 Power-frequency electric strongth  10.9.2 Power-frequency electric strongth  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  In 10.13 Electromagnetic compatibility  In 10.14 Electromagnetic compatibility  In 10.15 Electromagnetic compatibility  In 10.16 Incorporation of excitations and connections  10.17 Internal electrical circuits and connections  10.18 Lectronal electrical circuits and connections  10.19 Internal electrical circuits and connections  10.10 Temperature rise  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Electromagnetic compatibility  10.14 Electromagnetic compatibility  10.15 Protection against electric shock  10.16 Incorporation of excitations and components  10.17 Electromagnetic compatibility  10.18 Temperature rise  10.19 Internal electr	Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.6
Heat dissipation capacity Operating ambient temperature min. Operating ambient temperature max.  **C*** C***  **C***  **Jess**  **C**  **Jess**  **C**  **Jess**  **Descripting ambient temperature max.  **C**  **Jess**  **C**  **Jess**  **Descripting ambient temperature max.  **IECLEN 1439 design verification  **10.2.1 Corrosion resistance  **ID.2.3.1 Verification of thermal stability of enclosures  **ID.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects  **ID.2.3.2 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  **ID.2.3.1 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  **ID.2.3.2 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  **ID.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  **ID.2.4 Resistance to ultra-violet (UV) radiation  **ID.2.5 Lifting**  **ID.2.5 Lifting**  **ID.2.6 Mechanical impact*  **ID.2.6 Mechanical impact*  **ID.2.7 Inscriptions*  **ID.2.7 Inscriptions*  **ID.2.7 Inscriptions*  **ID.2.7 Inscriptions*  **ID.2.7 Inscriptions*  **ID.3.2 Dees not apply, since the entire switchgear needs to be evaluated.  **Meets the product standard's requirements.  **ID.2.5 Lifting*  **Does not apply, since the entire switchgear needs to be evaluated.  **Meets the product standard's requirements.  **Does not apply, since the entire switchgear needs to be evaluated.  **ID.3.2 Inscriptions*  **ID.3.3 Insulation properties  **ID.4.3.3 Insulation properties  **ID.4.4 Clearances and creepage distances  **ID.4.4 Clearances and creepage distances  **ID.4.5 Lifting*  **ID.4.5 Lifting*  **ID.4.5 Lifting*  **ID.4.5 Lifting*  **ID.5 Lifting*  **ID.5 Lifting*  **ID.6.5 Lifting*  **ID.6.5 Lifting*  **ID.6.5 Lifting*  **ID.6.6 Lifting*  **ID.6.6 Lifting*  **ID.6.6 Lifting*  **ID.6.6 Lifting*  **ID.6.6 Lifting*	Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
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10.4 Clearances and creepage distances  10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Insulation properties  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder is responsibility.  Is the panel builder's responsibility. The specifications for the switchgear observed.  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.2.7 Inscriptions			Meets the product standard's requirements.
10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Insulation properties  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.12 Electromagnetic compatibility  10.15 Incorporation of switching devices and components  Does not apply, since the entire switchgear needs to be evaluated.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  The panel builder is responsibility.  Is the panel builder is responsibility. The specifications for the switchgear observed.  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Insulation properties  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.12 Electromagnetic compatibility  10.12 Electromagnetic compatibility  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder is responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Insulation properties  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.12 Electromagnetic compatibility  Is the panel builder's responsibility.  Is the panel builder's responsibility.  The panel builder is responsibility.  Is the panel builder is responsibility.  Is the panel builder is responsibility.  Is the panel builder's responsibility. The specifications for the switchgear observed.  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.8 Connections for external conductors  10.9 Insulation properties  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.9 Insulation properties  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.12 Electromagnetic compatibility  10.19 Is the panel builder's responsibility.  11.10 Is the panel builder is responsibility.  12.11 Short-circuit rating  13.12 Electromagnetic compatibility. The specifications for the switchgear observed.	10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  Is the panel builder's responsibility.  Is the panel builder is responsibility.  The panel builder is responsible for the temperature rise calculation. Eato provide heat dissipation data for the devices.  Is the panel builder's responsibility. The specifications for the switchgear observed.  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage  1s the panel builder's responsibility.  10.9.4 Testing of enclosures made of insulating material  1s the panel builder's responsibility.  The panel builder is responsible for the temperature rise calculation. Eato provide heat dissipation data for the devices.  10.11 Short-circuit rating  Is the panel builder's responsibility. The specifications for the switchgear observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.9 Insulation properties			
10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  The panel builder is responsibility.  The panel builder is responsible for the temperature rise calculation. Eato provide heat dissipation data for the devices.  10.11 Short-circuit rating  Is the panel builder's responsibility. The specifications for the switchgear observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.10 Temperature rise  The panel builder is responsible for the temperature rise calculation. Eato provide heat dissipation data for the devices.  10.11 Short-circuit rating  Is the panel builder's responsibility. The specifications for the switchgear observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
provide heat dissipation data for the devices.  10.11 Short-circuit rating  Is the panel builder's responsibility. The specifications for the switchgear observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
observed.	10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
10.13 Mechanical function  The device meets the requirements, provided the information in the instru	10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
leaflet (IL) is observed.	10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

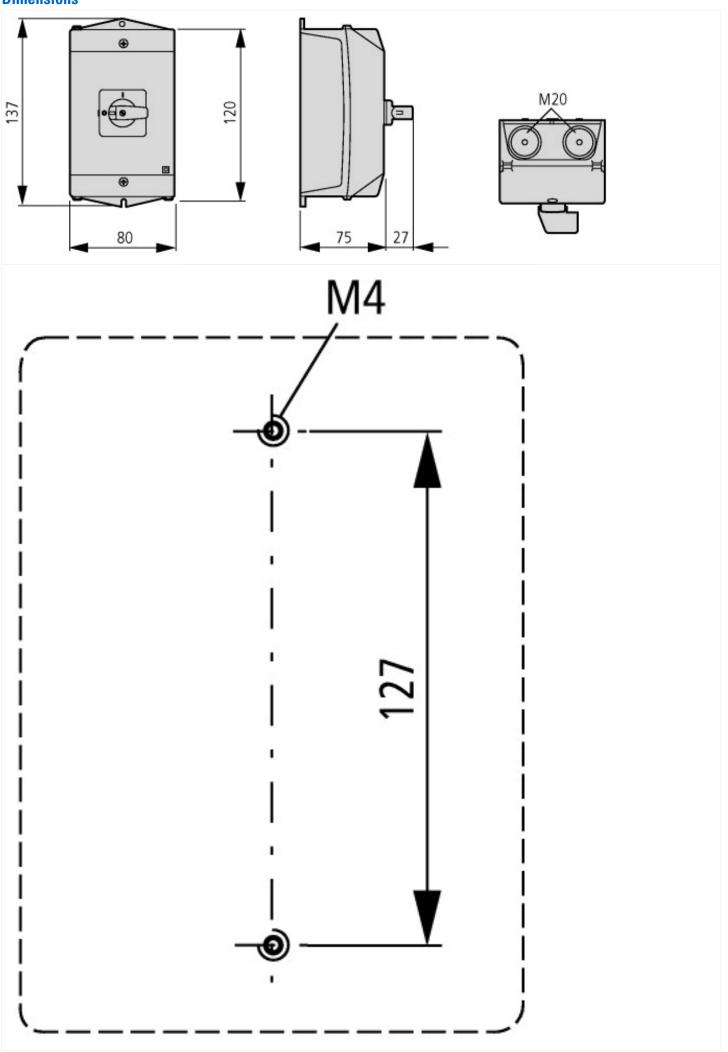
### **Technical data ETIM 6.0**

Low-voltage industrial components (EG000017) / Control switch (EC002611)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Control switch (ecl@ss8.1-27-37-14-14 [ACN998008])

[/10/1000000]/		
Type of switch		Reverser
Number of poles		2
Max. rated operation voltage Ue AC	V	690
Rated permanent current lu	Α	20
Number of switch positions		3
With 0 (off) position		Yes
With retraction in 0-position		Yes
Device construction		Surface mounted device
Width in number of modular spacings		0
Suitable for ground mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Complete device in housing		Yes
Type of control element		Toggle
Front shield size		48x48 mm
Degree of protection (IP), front side		IP65

## Dimensions



## **Additional product information (links)**

IL03801007Z (AWA1150-1687) Cam switches: surface mounting enclosure				
IL03801007Z (AWA1150-1687) Cam switches: surface mounting enclosure	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801007Z2016_07.pdf			
Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=68			
Technical overview cam switch, switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.2			
System overview cam switch T	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.4			
System overview switch-disconnector P	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.6			
Key to part numbers Cam switch	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8			
Key to part numbers Switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8			
Switches for ATEX	http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html			