

Changeoverswitches, T3, 32 A, rear mounting, Basic switch, 2 contact unit(s), Contacts: 4, 60  $^{\circ}$ , Design number 8211



Part no. T3-2-8211/XZ Catalog No. 018429

Delivery program			
Product range			Control switches
Part group reference			Т3
Basic function			Changeoverswitches
Contacts			4
Design			rear mounting Basic switch
Contact sequence			2 X X X X X X X X X X X X X X X X X X X
Switching angle		•	60
Design number			8211
Front plate no.			FS 684
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	15
Rated uninterrupted current	l <sub>u</sub>	Α	32
Note on rated uninterrupted current !u			Rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$ is specified for max. cross-section.
Number of contact units		contact unit(s)	2

# **Technical data**

Λ-	

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			
Open		°C	-25 - +50
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			As required
Contacts			
Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	l <sub>u</sub>	Α	32
Note on rated uninterrupted current !u			Rated uninterrupted current $I_{\text{u}}$ 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

Substitute   Sub	12	w.l		AD CO 0/ DE
Fise         A golyl         35           Rated short-time withstand current (is current)         Inw         Arm         600           Nate or nated short-time withstand current (con         Inw         Ax         100           Nate or conditional short-circuit current         In         Ax         10           South         Inw         Ax         200           Execution in Execution (and shing capacity case to IEE 60947-3         Ax         200           400,415 V         Ax         200           900 V         Ax         200           880 V         Ax         200           Stell isolation to EN 61140         Yex         AX           500 V         40         40           Current heat loss per contact at Ing         Yex         40           Current heat loss per contact at Ing (Ax-15230 V)         Yex         40           Litespan, mechanical         Operations Yex         20         11           Axi Samulant (and the contacts)         Yex         40         40           Axi Samulant (and the contacts)         Yex         40         40           Axi Samulant (and the contacts)         Yex         40         40           Axi Samulant (and the contacts)         Yex	1.3	x I <sub>e</sub>		AB 60 % DF
Retor dunot-time withstand current (w         I <sub>ca</sub> A <sub>max</sub> bits         550           Nate on rated short-time withstand current kew         I <sub>q</sub> ka         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1<				
Note on rated short-time withstand current tow         Iq         kA         1 town of 1 second           Switching capacity         Iq         kA         1           Switching capacity as per IEC 60947-3         A         20           Rated breaking capacity os q to IEC 60947-3         A         280           220 V         A         280           400415 V         A         280           500 V         A         280           500 V         A         240           680 V         A         240           Sate isolation to Not 1140         VAC         440           between the contacts         VAC         440           Current heat loss per contact at I <sub>e</sub> V         V         1.1           Current heat loss per contact at I <sub>e</sub> V         V         1.1           Litaspan, mechanical         Operations         X 10 <sup>6</sup> >5.5           Maximum operating frequency         P         kW         5.5           AC-3         220 V 230 V Star-delta         P         kW         5.5           Rating, motor load switch         P         kW         5.5           220 V 230 V Star-delta         P         kW         1.5	35	A gG/gL		
Retact conditional short-circuit current         Iq         IA         1           Switching capacity         See rated making capacity so per IEC 60947-3         A         300           220 V         A         260           440(415 V)         A         260           5500 V         A         260           680 V         A         200           She soloaton to N61140         VAC         400           between the contacts         VAC         440           Current heat loss per contact at I <sub>q</sub> VAC         400           Current heat loss per auxiliary circuit at I <sub>q</sub> (AC-15/220 V)         C         11           Current heat loss per auxiliary circuit at I <sub>q</sub> (AC-15/220 V)         P         X-10           Maximum operating frequency         Operationship         Y-10           AC         A         20           Rating, motor load switch         P         KW         5           220 V 220 V         P         KW         5           230 V Star-delta         P         KW         15           400 V 41 V         F         KW         15           500 V Star-delta         P         KW         15           600 V Star-delta         P	650	A <sub>rms</sub>	I <sub>cw</sub>	Rated short-time withstand current (1 s current)
Switching capacity         Service of making capacity as per IEC 69947-3         A         320           Rated breaking capacity cos g to IEC 69947-3         A         260           230 V         A         260           500 V         A         20           698 V         A         20           Safe isolation to EN 61140         A         20           between the contact at I <sub>0</sub> VAC         440           Current hear loss per contact at I <sub>0</sub> VAC         440           Current hear loss per auxiliary circuit at I <sub>0</sub> (AC-13/239 V)         Depressions/h         1220           AC         Operations         1220           AC         AC         400           AC         Depressions/h         1220           AC         AC         25           AC         AC         30           AC-3         1220           Resting, motor load switch         P         kW         5           220 V 220 V         P         kW         5           230 V Star-delta         P         kW         15           400 V 415 V         P         kW         15           500 V Star-delta         P         kW         15 <t< td=""><td>Current for a time of 1 second</td><td></td><td></td><td>Note on rated short-time withstand current lcw</td></t<>	Current for a time of 1 second			Note on rated short-time withstand current lcw
cos o rated making capacity as per IEC 60947-3         A         320           Rated breaking capacity cos or to IEC 60947-3         A         260           400/415 V         A         200           500 V         A         240           680 V         TO         A         240           Sels isolation to EN 61140         V         440         V           between the contacts         V         V         440           Current heat loss per contact at I <sub>6</sub> V         V         1.1           Current heat loss per auxiliary circuit at I <sub>6</sub> IAC-15/230 V)         V         1.1           Lifespan, mechanical         Operations X         1.9°         > 0.5           Maximum operating frequency         Operations X         1.9°         > 0.5           AC-3         Resting, motor load switch         P         kW         5.5           220 V 230 V         P         kW         5.5           240 V 315 Vs for-delta         P         kW         1.5           400 V 15 Vs for delta         P         kW         1.5           500 V Star-delta         P         kW         1.5           689 V Star-delta         P         kW         1.5           689 V Star-d	1	kA	$I_q$	Rated conditional short-circuit current
Rated breaking capacity cos q to IEC 60947-3         A         80           200 V         A         20           400/415 V         A         20           500 V         A         20           660 V         A         170           Sele isolation to EN 8140         V         40           between the contacts         VAC         440           Current heat loss per contact at 1 <sub>0</sub> C         0           Current heat loss per condiatory circuit at 1 <sub>0</sub> (AC-15/230 V)         C         0         1.1           Lifespan, mechanical         Operations N         20 P         > 0.5           Maximum operating frequency         Operations N         120 P         > 0.5           AC-3         T         120 P         120 P         120 P           2 20 V 200 V         P         kW         5.5         120 P           2 30 V Star-delta         P         kW         15         120 P           4 00 V 415 V         P         kW         15         120 P           4 00 V Star-delta         P         kW         15         120 P           6 690 V         P         kW         15         120 P           7 230 V Star-delta         P				
250 V	320	Α		$\cos \phi$ rated making capacity as per IEC 60947-3
AQQ/415 V   A   240		Α		Rated breaking capacity cos φ to IEC 60947-3
Sol   A   240   A   170	260	Α		230 V
A   170   Safe isolation to EN 61140   Safe	260	Α		400/415 V
Safe isolation to EN 61140         VAC         440           between the contacts         VAC         440           Current heat loss per contact at I <sub>e</sub> W         1.1           Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)         C0         1.1           Lifespan, mechanical         Operations X 10 <sup>8</sup>	240	Α		500 V
Detween the contacts   Current heat loss per contact at I <sub>e</sub>   Current heat loss per contact at I <sub>e</sub>   Current heat loss per contact at I <sub>e</sub>   Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)   Ci	170	Α		690 V
Current heat loss per ountact at I₀ Current heat loss per auxiliary circuit at Iॄ (AC-15/230 V)         V         1.1           Lifespan, mechanical         Operations/h         × 10 <sup>6</sup> > 0.5           Maximum operating frequency         Operations/h         1200           AC-3         Telegram, motor load switch         P         VW           220 V 230 V         P         kW         5.5           230 V Star-delta         P         kW         11           400 V 415 V         P         kW         15           500 V         P         kW         15           500 V Star-delta         P         kW         15           690 V Star-delta         P         kW         15           690 V Star-delta         P         kW         15           690 V Star-delta         P         kW         12           690 V Star-delta         P         kW         22           Rated operational current motor load switch         Io         A         23.7           230 V star-delta         Io         A         23.7           400 V star-delta         Io         A         23.7           400 V star-delta         Io         A         23.7           500				Safe isolation to EN 61140
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)         CO         1.1           Lifespan, mechanical         Operations / x 10 <sup>6</sup> > 0.5         > 0.5           Maximum operating frequency         Operations/h x 10 <sup>6</sup> > 100         100           AC-3         AC-3         To the control of the contr	440	V AC		between the contacts
Lifespan, mechanical       Operations/h       x 108       > 0.5         Maximum operating frequency       Operations/h       x 108       > 0.5         AC-3       AC-3       Company (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	1.1	W		Current heat loss per contact at I <sub>e</sub>
Maximum operating frequency         Operations/h         1200           AC-3	1.1	CO		Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)
Ac-a         Ac-b         Label Sections of the control	> 0.5	x 10 <sup>6</sup>	Operations	Lifespan, mechanical
AC-3  Rating, motor load switch  220 V 230 V  P  kW  230 V Star-delta  P  kW  7.5  400 V 415 V  P  kW  11  400 V Star-delta  P  kW  15  500 V  P  kW  15  500 V  P  kW  15  690 V  P  kW  11  690 V Star-delta  P  kW  12  Rated operational current motor load switch  230 V star-delta  P  kW  12  Rated operational current motor load switch  1e  A  23.7  400 V 415 V  1e  A  23.7  400 V 415 V  1e  A  23.7  400 V 5tar-delta  1e  A  23.7  400 V 5tar-delta  1e  A  23.7  500 V  1e  A  23.7  400 V 5tar-delta  1e  A  23.7  690 V 5tar-delta  1e  A  23.7  400 V 5tar-delta  1e  A  23.7  690 V 5tar-delta  1e  A  25.5	1200	·	Operations/h	
AC-3       Rating, motor load switch       P       kW         220 V 230 V       P       kW       5.5         230 V Star-delta       P       kW       7.5         400 V 415 V       P       kW       11         400 V Star-delta       P       kW       15         500 V       P       kW       15         500 V Star-delta       P       kW       11         690 V       P       kW       11         690 V Star-delta       P       kW       11         890 V Star-delta       P       kW       11         230 V star-delta       P       kW       22         Rated operational current motor load switch       V       23.7         230 V star-delta       Ie       A       23.7         400 V star-delta       Ie       A       23.7         500 V star-delta       Ie       A       23.7         500 V star-delta       Ie       A       23.7         690 V star-delta       Ie       A       32         690 V star-delta       Ie       A       14.7         690 V star-delta       Ie       A       25.5				
Rating, motor load switch       P       kW         220 V 230 V       P       kW       5.5         230 V Star-delta       P       kW       7.5         400 V 415 V       P       kW       11         400 V Star-delta       P       kW       15         500 V       P       kW       18.5         690 V       P       kW       11         690 V Star-delta       P       kW       12         Rated operational current motor load switch       V       22         Rated operational current motor load switch       V       23.7         230 V star-delta       Ie       A       23.7         400 V star-delta       Ie       A       23.7         400 V star-delta       Ie       A       23.7         500 V star-delta       Ie       A       23.7         500 V star-delta       Ie       A       23.7         690 V star-delta       Ie       A       32         690 V star-delta       Ie       A       32         690 V star-delta       Ie       A       25.5				
220 V 230 V P kW 5.5  230 V Star-delta P kW 7.5  400 V 415 V P kW 11  400 V Star-delta P kW 15  500 V Star-delta P kW 15  500 V Star-delta P kW 18.5  690 V P kW 11  690 V Star-delta P kW 22  Rated operational current motor load switch		kW	Р	
230 V Star-delta P kW 7.5  400 V 415 V P kW 11  400 V Star-delta P kW 15  500 V P kW 15  500 V Star-delta P kW 18.5  690 V P kW 11  690 V Star-delta P kW 22  Rated operational current motor load switch	5.5			
400 V Star-delta				
400 V Star-delta P KW 15 500 V P KW 15 500 V Star-delta P KW 18.5 690 V P KW 11 690 V Star-delta P KW 22  Rated operational current motor load switch  230 V le A 23.7 230 V star-delta le A 32 400 V 415 V le A 23.7 400 V star-delta le A 32 500 V le A 32 500 V le A 32 500 V le A 32 690 V le A 32 690 V star-delta le A 25.5				
500 V       P       kW       15         500 V Star-delta       P       kW       18.5         690 V       P       kW       11         690 V Star-delta       P       kW       22         Rated operational current motor load switch				
500 V Star-delta       P       kW       18.5         690 V       P       kW       11         690 V Star-delta       P       kW       22         Rated operational current motor load switch         230 V       Ie       A       23.7         230 V star-delta       Ie       A       32         400 V 415 V       Ie       A       23.7         400 V star-delta       Ie       A       32         500 V       Ie       A       23.7         500 V star-delta       Ie       A       23.7         690 V star-delta       Ie       A       32         690 V star-delta       Ie       A       14.7         690 V star-delta       Ie       A       25.5				
690 V       P       kW       11         690 V Star-delta       P       kW       22         Rated operational current motor load switch				
690 V Star-delta       P       kW       22         Rated operational current motor load switch         230 V       I <sub>e</sub> A       23.7         230 V star-delta       I <sub>e</sub> A       32         400 V star-delta       I <sub>e</sub> A       23.7         400 V star-delta       I <sub>e</sub> A       23.7         500 V       I <sub>e</sub> A       23.7         500 V star-delta       I <sub>e</sub> A       32         690 V       I <sub>e</sub> A       14.7         690 V star-delta       I <sub>e</sub> A       25.5				
Rated operational current motor load switch         230 V       I <sub>e</sub> A       23.7         230 V star-delta       I <sub>e</sub> A       32         400 V 415 V       I <sub>e</sub> A       23.7         400 V star-delta       I <sub>e</sub> A       32         500 V       I <sub>e</sub> A       23.7         500 V star-delta       I <sub>e</sub> A       32         690 V       I <sub>e</sub> A       14.7         690 V star-delta       I <sub>e</sub> A       25.5				
230 V       I <sub>e</sub> A       23.7         230 V star-delta       I <sub>e</sub> A       32         400 V 415 V       I <sub>e</sub> A       23.7         400 V star-delta       I <sub>e</sub> A       32         500 V       I <sub>e</sub> A       23.7         500 V star-delta       I <sub>e</sub> A       32         690 V       I <sub>e</sub> A       14.7         690 V star-delta       I <sub>e</sub> A       25.5	22	KVV	-	
230 V star-delta  I <sub>e</sub> A 32  400V 415 V I <sub>e</sub> A 32  400 V star-delta I <sub>e</sub> A 32  500 V I <sub>e</sub> A 23.7  500 V star-delta I <sub>e</sub> A 32  690 V I <sub>e</sub> A 25.5	22.7	۸		
400V 415 V				
400 V star-delta				
500 V		Α	l <sub>e</sub>	
500 V star-delta	32	Α	l <sub>e</sub>	400 V star-delta
690 V	23.7	Α	l <sub>e</sub>	500 V
690 V star-delta I <sub>e</sub> A 25.5	32	Α	l <sub>e</sub>	500 V star-delta
	14.7	Α	l <sub>e</sub>	690 V
	25.5	Α	I <sub>e</sub>	690 V star-delta
				AC-21A
Rated operational current switch				
440 V I <sub>e</sub> A 32	32	Α	I <sub>e</sub>	
AC-23A			-	
Motor rating AC-23A, 50 - 60 Hz P kW		kW	Р	
230 V P kW 7.5	7.5			
400 V 415 V P kW 15				
500 V P kW 15				
690 V P kW 15				
Rated operational current motor load switch				
	37	Δ	L	
400 V 415 V I <sub>e</sub> A 32				
500 V I <sub>e</sub> A 26.4		Α	l <sub>e</sub>	
690 V I <sub>e</sub> A 17	17	Α	l <sub>e</sub>	690 V
DC C				DC

DC-1, Load-break switches L/R = 1 ms			
Rated operational current	l <sub>e</sub>	Α	25
Voltage per contact pair in series		V	60
DC-21A	l <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	25
Contacts		Quantity	1
48 V			
Rated operational current	Ie	Α	25
Contacts		Quantity	2
60 V			
Rated operational current	l <sub>e</sub>	Α	25
Contacts		Quantity	3
120 V			
Rated operational current	I <sub>e</sub>	Α	12
Contacts		Quantity	3
240 V			
Rated operational current	l <sub>e</sub>	Α	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			
Rated operational current	Ie	Α	20
Voltage per contact pair in series		V	24
Control circuit reliability at 24 V DC, 10 mA	Fault probability	H <sub>F</sub>	< 10 <sup>-5</sup> ,< 1 failure in 100,000 switching operations
Terminal capacities			
Solid or stranded		mm <sup>2</sup>	1 x (1 - 6) 2 x (1 - 6)
Flexible with ferrules to DIN 46228		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 4)
Terminal screw			M4
Tightening torque for terminal screw		Nm	1.6
Technical safety parameters:			
Notes			B10 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rating data for approved types			
Terminal capacity			M.
Terminal screw			M4

# Design verification as per IEC/EN 61439

200.g.: 1010ao ao por 120, 211 or 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	32
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	1.1
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 <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	50
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) / Off-load switch (EC001105)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Changeover switch (ecl@ss10.0.1-27-37-14-05 [AKF062013])

Model			Reverser
Number of poles			2
With 0 (off) position			Yes
With retraction in 0-position			No
Rated permanent current lu	A	Д	32
Rated operation current le at AC-3, 400 V	A	4	23.7
Rated operation power at AC-3, 400 V	k	κW	12
Degree of protection (IP), front side			IP65
Degree of protection (NEMA), front side			Other
Number of auxiliary contacts as normally closed contact			0
Number of auxiliary contacts as normally open contact			0
Number of auxiliary contacts as change-over contact			0
Suitable for ground mounting			Yes
Suitable for front mounting 4-hole			No
Suitable for distribution board installation			No
Suitable for intermediate mounting			Yes
Complete device in housing			No
Material housing			Plastic
Type of control element			Other
Type of electrical connection of main circuit			Screw connection

## **Assets (links)**

**Declaration of CE Conformity** 00003074

**Instruction Leaflets** 

IL03801006Z2018\_04

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

IL03801006Z (AWA1150-1686) Cam switches: service distribution board

IL03801006Z (AWA1150-1686) Cam switches: service distribution board

ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL03801006Z2018\_04.pdf

Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=44
Ordering form for SOND switches and SOND front plates(DE_EN)	ftp://ftp.moeller.net/DOCUMENTATION/PDF/MZ008005ZU_Orderform_Customized_Switch.pdf
Ordering form for SOND switches and SOND front plates(DE_EN)	ftp://ftp.moeller.net/DOCUMENTATION/PDF/MZ008006ZU_Orderform_Customized_Switch.pdf