

Changeoverswitches, Contacts: 8, 10 A, front plate: 1-0-2, 60 °, maintained, flush mounting



Part no. TM-4-8213/E Article no. 013180

Delivery program			
Product range			Control switches
Part group reference			TM
Basic function			Changeoverswitches
			with black thumb grip and front plate
Contacts			8
Degree of Protection			Front IP65
Design			flush mounting
Contact sequence			
Switching angle		0	60
Switching performance			maintained With 0 (Off) position
Front plate no.			1 0 2 F 071
front plate			1-0-2
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	3
Rated uninterrupted current	I _u	A	10
	·u		
Number of contact units		contact	4

Technical data

Rated operational voltage

•	_	_	_	_	_	ı
u	е	n	е	r	а	ı

General			
Standards			IEC/EN 60947, VDE 0660, CSA, UL Control switch as per IEC/EN 60947-5-1 Auxiliary switch as per IEC/EN 60947-5-1
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +50
Overvoltage category/pollution degree			III/3
Rated impulse withstand voltage	U _{imp}	V AC	4000
Mounting position			As required
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Contacts			
Electrical characteristics			

unit(s)

V AC

500

 U_{e}

Fuer Part	Note on rated uninterrupted current $\boldsymbol{!}_{\boldsymbol{u}}$			Rated uninterrupted current lu is specified for max. cross-section.
Switching capacity Safe isolation to Elf 611 00 Use of 15 Current heart loss per contact at L ₂ (AC-18/230 V) 00 0.15 Lifespan, mechanical Operations x 1gf ² > 1 Mostimum operating frequency Operations x 1gf ² > 1 AC-22A Both Solving Ac-22A, 59 - 60 to 12 P kW 4 AC01415 V P kW 3 4 AC01415 V P kW 3 4 Control circuit reliability wt 24 V DC, 10 mA Fout probability hg 10 % < 1 fault in 100000 operations	Short-circuit rating			
Sele isolation to Notify 30	Fuse		A gG/gL	10
Current heat loss per contact at I _q W 0.15 Current heat loss per auxiliary circuit et I _q (AC-15/238 V) CD 0.15 Uitispan, mechanical Maximum operating frequency Operations X 1.09 AC P KW 2 AC 23A P KW 3 Motor rating AC-23A, 50-60 H2 P KW 3 4 000 v 415 V P KW 3 Control circuit rollability at 24 VDC, 10 mA P KW 3 Feature of propositions Terminal capacities Terminal screw m 1 x 1 5 2 2 x 1 5	Switching capacity			
Corrent heat loss per auxiliarly circuit at la (AC-15/230 V)	Safe isolation to EN 61140			
Life plan, mechanical Operations x x 10° > 1 Maximum operating frequency Operations X x 10° 200 AC AC Control circle x 124 x 10° Control circle x 124 x 10° Yes Xes AC 23A Pe kW Xes	Current heat loss per contact at I _e		W	0.15
Maximum operating frequency AC AC-23A AC-23A AC-23A AC-23A AC-25A AC-2	Current heat loss per auxiliary circuit at I _e (AC-15/230 V)		CO	0.15
ACC	Lifespan, mechanical	Operations	x 10 ⁶	>1
Motor rating AC-23A, 50 - 60 Hz	Maximum operating frequency	Operations/h		1200
Motor rating AC-23A, 50 - 60 Hz P kW 400 V 415 V P kW 3 Control circuit reliability at 24 V DC, 10 mA Fault probability Hg 10 -5 < 1 fault in 100000 operations Terminal Capacities Solid or stranded J x 1.5	AC			
Main conducting paths Push	AC-23A			
Control circuit reliability at 24 V DC, 10 mA Fault probability Hy broadbility 10 st. 15	Motor rating AC-23A, 50 - 60 Hz	P	kW	
Polit Part	400 V 415 V	P	kW	3
Solid or stranded	Control circuit reliability at 24 V DC, 10 mA		H _F	$<$ 10 $^{-5}$, $<$ 1 fault in 100000 operations
Flexible	Terminal capacities			
Terminal screw M2.5 Max. tightening torque Mm 0.5 Rating data for approved types VAC 300 Rated operational voltage Ue VAC 300 Rated uninterrupted current max. VAC 300 Main conducting paths I A 0 General use Iy A 10 Auxiliary contacts I A 300 Pilot Duty A 10 Switching capacity A 300 Maximum motor rating I A 300 Switching capacity I A 300 Maximum motor rating I I A 300 Single-phase I P 0.33 I 240 VAC IP 0.75 I 277 VAC IP 0.75 I Three-phase IP 1.0 I 240 VAC IP 0.75 I 240 VAC IP 0.75 I	Solid or stranded		mm ²	
Max. tightening torque Nm 0.35 Rating data for approved types VAC VAC 300 Rated operational voltage U _e VAC 300 Rated uninterrupted current max. Iu A 10 Main conducting paths Iu A 10 General use Iu A 10 Auxiliary contacts Iu A 300 Pilot Duty A 300 Switching capacity A A300 Switching capacity A 50 Single-phase B 0.33 120 V AC HP 0.75 277 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 0.75 250 V AC HP 0.75 260 V AC HP 0.75 270 V AC HP 0.75 280 V AC HP 0.75 290 V AC HP	Flexible		mm ²	
National data for approved types Contacts	Terminal screw			M2.5
Contacts Ue V AC 300 Rated operational voltage V AC 300 Rated uninterrupted current max. V AC V AC Main conducting paths V VAC In Control of the state	Max. tightening torque		Nm	0.35
Rated uninterrupted current max. Main conducting paths General use Auxiliary contacts General Use Pilot Duty Switching capacity Maximum motor rating Single-phase 120 V AC 240 V AC 277 V AC 777 V AC 777 V AC 717 V AC 717 V AC 720 V AC 240 V AC 340 V AC 440 V	Rating data for approved types			
Rated uninterrupted current max. Main conducting paths General use Auxiliary contacts General Use Pilot Duty Switching capacity Maximum motor rating Single-phase 120 V AC 240 V AC 171 V AC 171 V AC 171 V AC 172 V AC 171 V AC 171 V AC 171 V AC 171 V AC 172 V AC 171 V AC 172 V AC 173 V AC 174 V AC 175 V AC 175 V AC 176 V AC 177 V AC 177 V AC 178 V AC 179 V AC 170 V	Contacts			
Main conducting paths IU A 10 Auxiliary contacts IU A 10 General Use IU A 10 Pilot Duty A 300 A Switching capacity A A Maximum motor rating B A Single-phase B B 120 V AC B B 240 V AC B B Three-phase B B 120 V AC B B 240 V AC B B 120 V AC B B 340 V AC B B 150 V AC B B	Rated operational voltage	U _e	V AC	300
General use Iu A 10 Auxiliary contacts Iu A 10 General Use Iu A 10 Pilot Duty A A300 Switching capacity F C Maximum motor rating F F Single-phase HP 0.33 240 V AC HP 0.75 Three-phase HP 0.75 Three-phase HP 0.75 240 V AC HP 0.75 240 V AC HP 0.75 240 V AC HP 0.75 Solid or flexible conductor with ferrule AWG 16-14 Flexible AWG 16-2 Flexible AWG 16-2 2 X 16 2 X 16	Rated uninterrupted current max.			
Auxiliary contacts Iu A 10 Pilot Duty A 300 A 300 Switching capacity Feet and the second of the sec	Main conducting paths			
General Use IU A 10 Pilot Duty A 300 A 300 Switching capacity Feet Temperature Feet Temperature Maximum motor rating Feet Temperature Feet Temperature \$\text{Single-phase}\$ Feet HP 0.33 \$240 V AC Feet HP 0.75 \$\text{Three-phase}\$ Feet HP 0.75 \$\text{240 V AC}\$ Feet HP 0.75 \$\text{240 V AC}\$ Feet HP 0.75 \$\text{Terminal capacity}\$ Feet AWG 16 - 14 \$\text{Solid or flexible conductor with ferrule} AWG 16 - 14 \$\text{Flexible}\$ AWG 16 - 22 x 16	General use	I _U	Α	10
Pilot Duty A 300 Switching capacity Figure 1 Maximum motor rating Figure 2 Single-phase Figure 2 120 V AC HP 0.33 240 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 0.75 240 V AC HP 1 1crminal capacity AWG 16 - 14 Flexible AWG 16 - 14 Flexible AWG 16 - 24	Auxiliary contacts			
Switching capacity Head of the state of the	General Use	I _U	Α	10
Maximum motor rating HP 0.33 120 V AC HP 0.75 277 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 0.75 240 V AC HP 1 250 Jid or flexible conductor with ferrule AWG 16 - 14 Flexible AWG 16 - 2x 16	Pilot Duty			A 300
Single-phase HP 0.33 240 V AC HP 0.75 277 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 1 Terminal capacity AWG 16 - 14 Flexible AWG 16 - 2x 16	Switching capacity			
120 V AC HP 0.33 240 V AC HP 0.75 277 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 1 Terminal capacity WG 16 - 14 Solid or flexible conductor with ferrule AWG 16 - 14 Flexible AWG 16 - 2x 16	Maximum motor rating			
240 V AC HP 0.75 277 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 1 Terminal capacity WG 16 - 14 Solid or flexible conductor with ferrule AWG 16 - 14 Flexible AWG 16 - 14 AWG 16 - 2x + 16	Single-phase			
277 V AC HP 0.75 Three-phase HP 0.75 120 V AC HP 0.75 240 V AC HP 1 Terminal capacity AWG 16 - 14 Flexible AWG 16 - 2x 16	120 V AC		HP	0.33
Three-phase HP 0.75 240 V AC HP 1 Terminal capacity WG 16 - 14 Solid or flexible conductor with ferrule AWG 16 - 2 x 16	240 V AC		HP	0.75
120 V AC HP 0.75 240 V AC HP 1 Terminal capacity AWG 16 - 14 Flexible AWG 16 - 2x 16	277 V AC		HP	0.75
240 V AC Terminal capacity Solid or flexible conductor with ferrule Flexible AWG 16 - 14 AWG 16 2 x 16	Three-phase			
Terminal capacity Solid or flexible conductor with ferrule Flexible AWG 16 - 14 AWG 16 2 x 16	120 V AC		HP	0.75
Solid or flexible conductor with ferrule AWG 16 - 14 Flexible AWG 16 2 x 16	240 V AC		HP	1
Flexible AWG 16 2 x 16	Terminal capacity			
2 x 16	Solid or flexible conductor with ferrule		AWG	16 - 14
	Flexible		AWG	
IVI LIU	Terminal screw			M2.5

Design verification as per IEC/EN 61439

Tightening torque

echnical data for design verification			
Rated operational current for specified heat dissipation	In	Α	10
Heat dissipation per pole, current-dependent	P _{vid}	W	0.15
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	50

lb-in

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	Please enquire
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 6.0

Low-voltage industrial components (EG000017) / Off-load switch (EC001105)

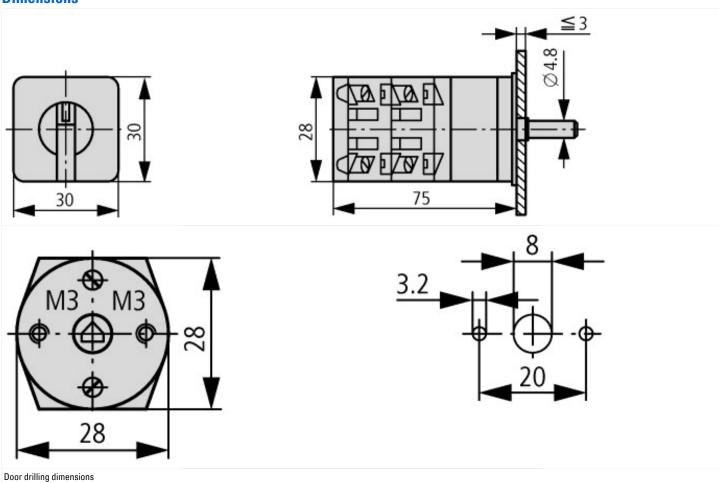
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Changeover switch (ecl@ss8.1-27-37-14-05 [AKF062010])

Model		Reverser
Number of poles		4
With 0 (off) position		Yes
With retraction in 0-position		No
Rated permanent current lu	Α	10
Rated operation current le at AC-3, 400 V	А	0
Rated operation power at AC-3, 400 V	kW	4.4
Degree of protection (IP), front side		IP65
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		No
Suitable for front mounting 4-hole		Yes
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Complete device in housing		No
Type of control element		Toggle
Type of electrical connection of main circuit		Screw connection

Approvals

Product Standards	UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
UL File No.	E36332
UL Category Control No.	NLRV
CSA File No.	UL report applies to both US and Canada

Dimensions



Additional product information (links)

That is a product in the same	(
IL03801025Z On-Off-switch, changeover switch	h, control switch
IL03801025Z On-Off-switch, changeover switch control switch	, ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801025Z2014_12.pdf
Form for ordering non-standard front plates	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=4.87
Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=135
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