

# ON-OFF switches, Contacts: 3, 10 A, front plate: 0-1, 90 $^{\circ}$ , maintained, flush mounting



Part no. TM-2-8292/E Article no. 074877

Delivery program			
Product range			Control switches
Part group reference			TM
Basic function			ON-OFF switches
			with black thumb grip and front plate
Contacts			3
Degree of Protection			Front IP65
Design			flush mounting
Contact sequence			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Switching angle		0	90
Switching performance			maintained With 0 (Off) position
Front plate no.			F 056
front plate			0-1
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	3
Rated uninterrupted current	l <sub>u</sub>	Α	10
Number of contact units		contact unit(s)	2

#### **Technical data**

Rated operational voltage

#### General

delleral			
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			

V AC

500

Rated uninterrupted current		Α	10
·	Iu	A	
Note on rated uninterrupted current !u			Rated uninterrupted current lu is specified for max. cross-section.
Short-circuit rating			
Fuse		A gG/gL	10
Switching capacity Safe isolation to EN 61140			
		147	0.45
Current heat loss per contact at I <sub>e</sub>		W	0.15
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)		CO	0.15
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	>1
Maximum operating frequency	Operations/h		1200
AC			
AC-23A			
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	H <sub>F</sub>	< 10 <sup>-5</sup> , < 1 fault in 100000 operations
Terminal capacities			
Solid or stranded		mm <sup>2</sup>	1 x 1,5 2 x 1,5
Flexible		mm <sup>2</sup>	1 x 1.5 2 x 1.5
Terminal screw			M2.5
Max. tightening torque		Nm	0.35
Rating data for approved types			
Contacts			
Rated operational voltage	U <sub>e</sub>	V AC	300
Rated uninterrupted current max.			
Main conducting paths			
General use	I <sub>U</sub>	Α	10
Auxiliary contacts			
General Use	I <sub>U</sub>	Α	10
Pilot Duty			A 300
Switching capacity			
Maximum motor rating			
Single-phase			
120 V AC		НР	0.33
240 V AC		НР	0.75
277 V AC		НР	0.75
Three-phase			
120 V AC		НР	0.75
240 V AC		НР	1
Terminal capacity			
Solid or flexible conductor with ferrule		AWG	16 - 14
Flexible		AWG	16 2 x 16
Terminal screw			M2.5

## Design verification as per IEC/EN 61439

Tightening torque

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	10
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.15
Equipment heat dissipation, current-dependent	$P_{\text{vid}}$	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

lb-in

Operating ambient temperature max.	°C	50
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		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 switch gear must be observed. $\label{eq:constraint}$
10.12 Electromagnetic compatibility		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 instruction leaflet (IL) is observed.

### **Technical data ETIM 6.0**

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@ss8.1-27-37-14-03 [AKF060010])

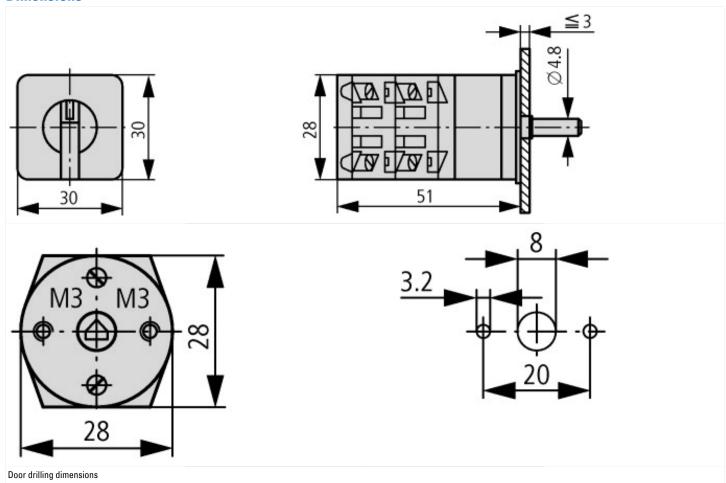
Version as maintenance-/service switch  Version as safety switch  Version as emergency stop installation  Version as reversing switch  Max. rated operation voltage Ue AC  Rated operating voltage  Rated permanent current lu  Rated permanent current lu  Rated permanent current lu  Rated permanent current lev  Rated short-time withstand current lev  Rated short-time vithstand current lev  Rated short-time vithstand current lev  Rated short-time vithstand current lev  Rated operation power at AC-23, 400 V  RW  0  Conditioned rated short-circuit current lq  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  Motor drive optional  Motor drive integrated  Voltage release optional  Device construction  Built-in device fixed built-in technique	[AKFU60UTU])		
Version as safety switch Version as emergency stop installation Version as reversing switch Max. rated operation voltage Ue AC Vorsion as reversing switch Max. rated operation voltage Ue AC Norsion as reversing switch Max. rated operation voltage Ue AC Norsion as reversing switch N	Version as main switch		No
Version as emergency stop installation         No           Version as reversing switch         No           Max. rated operation voltage Ue AC         V         500           Rated operating voltage         V         500 - 500           Rated permanent current lu         A         10           Rated permanent current at AC-21, 400 V         A         0           Rated operation power at AC-3, 400 V         kW         0           Rated short-time withstand current lcw         kA         0           Rated operation power at AC-23, 400 V         kW         0           Switching power at 400 V         kW         0           Conditioned rated short-circuit current lq         kA         0           Number of poles         KA         0           Number of auxiliary contacts as normally closed contact         KA         0           Number of auxiliary contacts as change-over contact         0         0           Motor drive optional         No         No           Motor drive integrated         No         No           Voltage release optional         No         No           Device construction         Built-in device fixed built-in technique	Version as maintenance-/service switch		No
Version as reversing switch  Max rated operating voltage Ue AC  Rated operating voltage  Rated permanent current lu  Rated permanent current at AC-21,400 V  Rated permanent current at AC-3,400 V  Rated operation power at AC-3,400 V  Rated short-time withstand current lcw  Rated operation power at AC-23,400 V  Rated operation power at AC-23,400 V  Rated operation power at AC-23,400 V  Rubber 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  Motor drive optional  Motor drive integrated  Notol  Device construction  Bull-in device fixed built-in technique	Version as safety switch		No
Max. rated operating voltage Rated operating voltage Rated operating voltage Rated permanent current lu Rated permanent current at AC-21, 400 V Rated operation power at AC-3, 400 V Rated operation power at AC-3, 400 V Rated short-time withstand current lcw Rated operation power at AC-23, 400 V Rated short-time virithat d'2-23, 400 V Rated operation power at AC-23, 400 V R	Version as emergency stop installation		No
Rated operating voltage Rated permanent current lu Rated permanent current at AC-21, 400 V Rated permanent current at AC-21, 400 V Rated short-time withstand current lew Rated operation power at AC-3, 400 V Rated short-time withstand current lew Rated operation power at AC-23, 400 V Rw Rated operation power at AC-23, 400 V Rw Routed short-circuit current lq Rw Routed short-circuit current lq Rw Routed operation power at 400 V Rw Rw Routed operation power at 400 V Rw Rw Routed operation power at 400 V Rw	Version as reversing switch		No
Rated permanent current Iu A 0 0 Rated permanent current at AC-21, 400 V	Max. rated operation voltage Ue AC	V	500
Rated permanent current at AC-21, 400 V Rated operation power at AC-3, 400 V Rated short-time withstand current lcw Rated operation power at AC-23, 400 V RW Conditioned rated short-circuit current lq RA  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 change-over contact Motor drive optional Motor drive integrated Voltage release optional Device construction  Rated operation power at AC-2, 400 V RA  O RA  O Ro  O Ro  No Ro  No Ro  Device construction	Rated operating voltage	V	500 - 500
Rated operation power at AC-3, 400 V Rated short-time withstand current lcw Rated operation power at AC-23, 400 V Rated operation power at AC-23, 400 V Rww Conditioned rated short-circuit current lq Rw 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 change-over contact Number of auxiliary contacts as change-over contact Notor drive optional Motor drive integrated Voltage release optional Device construction  kW 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Rated permanent current lu	Α	10
Rated short-time withstand current lcw Rated operation power at AC-23, 400 V  Switching power at 400 V  Conditioned rated short-circuit current lq  kA  0  Conditioned rated short-circuit current lq  kA  0  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  Motor drive optional  Motor drive optional  Motor drive integrated  Voltage release optional  Device construction  KA  0  0  0  No  No  No  No  Built-in device fixed built-in technique	Rated permanent current at AC-21, 400 V	Α	0
Rated operation power at AC-23, 400 V kW 0  Switching power at 400 V kW 0  Conditioned rated short-circuit current Iq kA 0  Number of poles  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  Motor drive optional No  Motor drive integrated No  Voltage release optional No  Device construction Built-in device fixed built-in technique	Rated operation power at AC-3, 400 V	kW	0
Switching power at 400 V  Conditioned rated short-circuit current Iq  kA  0  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  No  Motor drive optional  Motor drive integrated  Voltage release optional  Device construction  kW  0  Conditioned release optional  No  Built-in device fixed built-in technique	Rated short-time withstand current lcw	kA	0
Conditioned rated short-circuit current Iq kA 0 Number of poles 3 Number of auxiliary contacts as normally closed contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as change-over contact 0 Number of auxiliary contacts as change-over contact 0 Motor drive optional No Motor drive integrated No Voltage release optional No Device construction Built-in device fixed built-in technique	Rated operation power at AC-23, 400 V	kW	0
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 integrated  Notor drive integrated  Notor drive construction  Notor drive construction  Notor drive construction  Built-in device fixed built-in technique	Switching power at 400 V	kW	0
Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  No Motor drive optional  No Motor drive integrated  No Voltage release optional  No Device construction  O  No Built-in device fixed built-in technique	Conditioned rated short-circuit current Iq	kA	0
Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  O  Motor drive optional  No  Motor drive integrated  No  Voltage release optional  Device construction  O  O  Device construction  O  O  O  O  O  O  O  O  O  O  O  O  O	Number of poles		3
Number of auxiliary contacts as change-over contact  Motor drive optional  Motor drive integrated  No  Voltage release optional  Device construction  O  No  Built-in device fixed built-in technique	Number of auxiliary contacts as normally closed contact		0
Motor drive optional No Motor drive integrated No Voltage release optional No Device construction Built-in device fixed built-in technique	Number of auxiliary contacts as normally open contact		0
Motor drive integrated  No  Voltage release optional  Device construction  No  Built-in device fixed built-in technique	Number of auxiliary contacts as change-over contact		0
Voltage release optional No Device construction Built-in device fixed built-in technique	Motor drive optional		No
Device construction  Built-in device fixed built-in technique	Motor drive integrated		No
	Voltage release optional		No
Suitable for ground mounting No	Device construction		Built-in device fixed built-in technique
	Suitable for ground mounting		No

Suitable for front mounting 4-hole	Yes
Suitable for front mounting center	No
Suitable for distribution board installation	No
Suitable for intermediate mounting	No
Colour control element	Black
Type of control element	Toggle
Interlockable	No
Type of electrical connection of main circuit	Screw connection
Degree of protection (IP), front side	IP65

## 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
North America Certification	UL listed, certified by UL for use in Canada
Degree of Protection	IEC: IP65; UL/CSA Type: –

### **Dimensions**



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

IL03801025Z On-Off-switch, changeover switch	L03801025Z On-Off-switch, changeover switch, 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=40	
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