### **DATASHEET - T0-6-8348/IVS**



On-Off switch, T0, 20 A, service distribution board mounting, 6 contact unit(s), 12-pole, with black thumb grip and front plate



Part no. T0-6-8348/IVS Catalog No. 093457

Similar to illustration

Delivery program	
Product range	On-Off switch
Part group reference	ТО
	with black thumb grip and front plate
Number of poles	12-pole
Degree of Protection	Front IP30
Design	service distribution board mounting
Contact sequence	0 1 1 0
Switching angle	° 90
Switching performance	maintained
Design number	8348

Front plate no.			FS 908
front plate			0-1
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	5.5
Rated uninterrupted current	l <sub>u</sub>	Α	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 unit(s)	6

### **Technical data**

и	e	n	e	ra	ı

General			
Standards			IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL 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			
Mechanical variables			
Number of poles			12-pole
Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	l <sub>u</sub>	Α	20
Note on rated uninterrupted current !u			Rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$ 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
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>	$A_{rms}$	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 $\cos \phi$ 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 $I_{\rm e}$		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	X IU	1200
AC	Operations/ii		1200
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	P	kW	3
230 V Star-delta	P	kW	5.5
400 V 415 V	P	kW	5.5
400 V Star-delta	P	kW	7.5
500 V	P	kW	5.5
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	I <sub>e</sub>	Α	11.5
230 V star-delta	I <sub>e</sub>	Α	20
400V 415 V	l <sub>e</sub>	Α	11.5
400 V star-delta	l <sub>e</sub>	Α	20
500 V	I <sub>e</sub>	Α	9
500 V star-delta	I <sub>e</sub>	Α	15.6
690 V	I <sub>e</sub>	Α	4.9
690 V star-delta	I <sub>e</sub>	Α	8.5
AC-21A			
Rated operational current switch			
440 V	I <sub>e</sub>	Α	20
AC-23A	C		
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V	P	kW	3
400 V 415 V	P	kW	5.5
500 V	P	kW	7.5
690 V	P	kW	5.5
Rated operational current motor load switch			
230 V	I <sub>e</sub>	Α	13.3
400 V 415 V	I <sub>e</sub>	Α	13.3
500 V	I <sub>e</sub>	Α	13.3
690 V	I <sub>e</sub>	Α	7.6
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	I <sub>e</sub>	Α	10
Voltage per contact pair in series		V	60
DC-21A	I <sub>e</sub>	Α	
Rated operational current	I <sub>e</sub>	Α	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I <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			

Marts operational current				<u> </u>
2-00   Format operatural current   1	Rated operational current	l <sub>e</sub>	Α	5
Couracts   Couracts	Contacts		Quantity	3
Contacts   Control	240 V			
DC-13, Carroot soutchess Lift = 50 ms   Rande operational current   Va	Rated operational current	l <sub>e</sub>	Α	5
Related operational current   Value per current of pair in somes   Value   Total Current care pair in somes	Contacts		Quantity	5
Voltage per contact pair in series         V         32           Control cours relability at 24 V D.C, 10 mA         Feath Park Probability         V         20 °c 1 failure in 100,000 switching operations           Terminal capacities         V 10 °c 1 failure in 100,000 switching operations           Flexible with fortroles to DIN 48229         M 32 (11 - 25)           Terminal acrow         M 32 (10 75 - 23)           Terminal scrow         M 32 (10 75 - 23)           Terminal scrow           M 30           Terminal scrow         B 10 (1 most part part part part part part part par	DC-13, Control switches L/R = 50 ms			
	Rated operational current	l <sub>e</sub>	Α	10
Terminal capacities	Voltage per contact pair in series		٧	32
Terminal capacities	Control circuit reliability at 24 V DC, 10 mA	Fault	H <sub>F</sub>	< 10 <sup>-5</sup> < 1 failure in 100 000 switching operations
		probability		10 , 1 milite in 100,000 switching operations
Revolve with fearules to DIN 46228				la la la
Peublo with ferrules to DIN 49229	Solid or stranded		mm <sup>2</sup>	
Comminal screw	Flexible with ferrules to DIN 46228		mm <sup>2</sup>	
Tochnical safety parameters:  Tochnical safety parameters:  Notes   10   10   10   10   10   10   10   1			111111	2 x (0.75 - 2.5)
Technical safety parameters:         Notes         100         1	Terminal screw			M3.5
Notes         Billy values as per EN ISO 13849-1, table C1           Rating data for approved types         Secondary           Contacts         Ue         VAC         6000           Rated uninterrupted current max.         Walk conducting paths         Accession of the path of the pat			Nm	1
Rating data for approved types   Contacts	Technical safety parameters:			
Contacts         Use Plant of Department				B10 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rated operational voltage         Ue         V AC         600           Rated uninterrupted current max.         A         16           Main conducting paths         A         16           Auxiliary contacts         B         Concern Use           General Use         Iy         A         10           Pilot Duty         A 600 P 300         P 300           Switching capacity         P 500         P 500           Single-phase         P 1         D 5           120 V AC         P P 1         1 5           200 V AC         P P 1         1 5           Three-phase         P P 3         1 5           200 V AC         P P 3         3           480 V AC         P P 7.5         5           680 V AC         P P 7.5         5           8 Basic Rating         KA 5         5           Basic Rating         KA 5         5           max. Fuse         A 50         6           High fault rating         KA 10         A           max. Fuse         A 50         Class J           Terminal capacity         AWG 18-14         M3.5				
Rated uninterrupted current max.         Main conducting paths         A         16           General use         Ig         A         10           General Use         Ig         A 500 p 3000           Pilot Duty         A 500 p 3000         A 500 p 3000           Switching capacity         A 500 p 3000         A 500 p 3000           Maximum motor rating         Image: Imag				
Main conducting paths         A         16           General use         Auxiliary contacts         A         10           General Use         Iu         A         10           Pilot Duty         A 600 P 300         P 300           Switching capacity         P 300         P 300           Maximum motor rating         B 1         D 5           Single-phase         P 9         0.5           1 20 V AC         P 9         1.5           2 200 V AC         P 9         1.5           Three-phase         P 9         3           2 200 V AC         P 9         3           4 80 V AC         P 9         3           4 80 V AC         P 9         7.5           6 600 V AC         P 9         7.5           Short Circuit Current Rating         SCCR         SCCR           Basic Rating         KA         5           max. Fuse         A         50           High fault rating         KA         10           max. Fuse         A         20, class J           Terminal capacity         AWG         18-14           Forminal screw         M3.5	Rated operational voltage	U <sub>e</sub>	V AC	600
A   16     Auxiliary contacts	Rated uninterrupted current max.			
Auxiliary contacts         Iu         A         10           Pilot Duty         A 600         P000           Switching capacity         P 7000           Maximum motor rating         P 7000           Single-phase         P 7000           120 V AC         P 8000           200 V AC         P 9000           120 V AC         P 9000           17ree-phase         P 9000           200 V AC         P 9000           120 V AC         P 9000           480 V AC         P 9000           600 V AC         P 9000           Short Circuit Current Rating         S CCR           Basic Rating         K 3           max. Fuse         K 3           High fault rating         K 4           max. Fuse         K 5           High fault rating         K 3           max. Fuse         K 4           High fault rating         K 9           M 9000         A 9000           M 1000	Main conducting paths			
	General use		Α	16
Pilot Duty         A 600 P 300           Switching capacity         A 600 P 300           Maximum motor rating         Image: Common of the common of th	Auxiliary contacts			
Switching capacity         P 300           Maximum motor rating         HP         Common recognition           Single-phase         HP         0.5           120 V AC         HP         1           240 V AC         HP         1.5           Three-phase         HP         3           240 V AC         HP         3           480 V AC         HP         7.5           600 V AC         HP         7.5           Short Circuit Current Rating         SCCR           Basic Rating         KA         5           max. Fuse         A         50           High fault rating         KA         10           max. Fuse         A         20, Class J           Terminal capacity         AWG         18 - 14           Solid or flexible conductor with ferrule         AWG         18 - 14           Terminal screw         M3.5         AWG	General Use	lu	Α	10
Switching capacity         Maximum motor rating         Femals and street	Pilot Duty			
Maximum motor rating         HP         0.5           120 V AC         HP         1.5           240 V AC         HP         1.5           Three-phase         HP         3           200 V AC         HP         3           240 V AC         HP         3           480 V AC         HP         7.5           600 V AC         HP         7.5           Short Circuit Current Rating         SCCR           Basic Rating         kA         5           max. Fuse         A         50           High fault rating         kA         10           max. Fuse         A         20, Class J           Terminal capacity         AWG         18 - 14           Solid or flexible conductor with ferrule         AWG         18 - 14           Terminal screw         M3.5	Switching capacity			
Single-phase				
120 V AC       HP       0.5         200 V AC       HP       1         240 V AC       HP       1.5         Three-phase       HP       3         200 V AC       HP       3         480 V AC       HP       7.5         600 V AC       HP       7.5         Short Circuit Current Rating       SCCR         Basic Rating       kA       5         max. Fuse       A       50         High fault rating       kA       10         max. Fuse       A       20, Class J         Terminal capacity       AWG       18 - 14         Solid or flexible conductor with ferrule       AWG       18 - 14         Terminal screw       M3.5       M3.5				
HP   1   1   1   1   1   1   1   1   1			НР	0.5
240 V AC       HP       1.5         Three-phase       HP       3         200 V AC       HP       3         480 V AC       HP       7.5         600 V AC       HP       7.5         Short Circuit Current Rating       SCCR         Basic Rating       kA       5         max. Fuse       A       50         High fault rating       kA       10         max. Fuse       A       20, Class J         Terminal capacity       AWG       18 - 14         Solid or flexible conductor with ferrule       AWG       18 - 14         Terminal screw       M3.5				
Three-phase  200 V AC  HP  3  480 V AC  HP  7.5  600 V AC  HP  7.5  Short Circuit Current Rating  SCCR  Basic Rating  KA  5  max. Fuse  A  50  High fault rating  Max. Fuse  A  20, Class J  Terminal capacity  Solid or flexible conductor with ferrule  Terminal screw  M3.5				
200 V AC			***	
240 V AC       HP       3         480 V AC       HP       7.5         600 V AC       HP       7.5         Short Circuit Current Rating       SCCR         Basic Rating       kA       5         max. Fuse       A       50         High fault rating       kA       10         max. Fuse       A       20, Class J         Terminal capacity       AWG       18 - 14         Terminal screw       M3.5			ΗР	3
480 V AC       HP       7.5         600 V AC       HP       7.5         Short Circuit Current Rating       SCCR         Basic Rating       kA       5         max. Fuse       A       50         High fault rating       kA       10         max. Fuse       A       20, Class J         Terminal capacity       AWG       18 - 14         Solid or flexible conductor with ferrule       AWG       18 - 14         Terminal screw       M3.5				
600 V AC Short Circuit Current Rating SCCR Basic Rating kA 5 max. Fuse A 50 High fault rating kA 10 max. Fuse A 20, Class J  Terminal capacity Solid or flexible conductor with ferrule Terminal screw A 18 - 14 M3.5				
Short Circuit Current Rating  Basic Rating  kA  5  max. Fuse  A  50  High fault rating  kA  10  max. Fuse  A  20, Class J  Terminal capacity  Solid or flexible conductor with ferrule  Terminal screw  Since AWG  M3.5				
Basic Rating kA 5  max. Fuse A 50  High fault rating kA 10  max. Fuse A 20, Class J  Terminal capacity  Solid or flexible conductor with ferrule AWG 18 - 14  Terminal screw M3.5				1.3
max. Fuse         A         50           High fault rating         kA         10           max. Fuse         A         20, Class J           Terminal capacity         AWG         18 - 14           Terminal screw         M3.5				_
High fault rating kA 10  max. Fuse A 20, Class J  Terminal capacity  Solid or flexible conductor with ferrule AWG 18 - 14  Terminal screw M3.5				
max. Fuse A 20, Class J  Terminal capacity  Solid or flexible conductor with ferrule AWG 18 - 14  Terminal screw M3.5				
Terminal capacity  Solid or flexible conductor with ferrule  AWG 18 - 14  Terminal screw  M3.5				
Solid or flexible conductor with ferrule AWG 18 - 14 Terminal screw M3.5			Α	20, Class J
Terminal screw M3.5				
	Solid or flexible conductor with ferrule		AWG	18 - 14
Tightening torque Ib-in 8.8	Terminal screw			M3.5
	Tightening torque		lb-in	8.8

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.6
Equipment heat dissipation, current-dependent	$P_{vid}$	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
Operating ambient temperature max.	°C	50
C/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		Meets the product standard's requirements.
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])

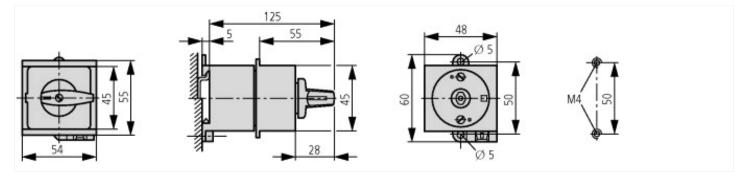
Version as main switch		No
Version as maintenance-/service switch		No
Version as safety switch		No
Version as emergency stop installation		No
Version as reversing switch		No
Number of switches		1
Max. rated operation voltage Ue AC	V	690
Rated operating voltage	V	690 - 690
Rated permanent current lu	Α	20
Rated permanent current at AC-23, 400 V	А	13.3
Rated permanent current at AC-21, 400 V	Α	20
Rated operation power at AC-3, 400 V	kW	5.5
Rated short-time withstand current lcw	kA	0.32
Rated operation power at AC-23, 400 V	kW	5.5
Switching power at 400 V	kW	5.5
Conditioned rated short-circuit current Iq	kA	6
Number of poles		12
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
Suitable for ground mounting	Yes
Suitable for front mounting 4-hole	No
Suitable for front mounting centre	No
Suitable for distribution board installation	Yes
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	IP30
Degree of protection (NEMA)	Other

### Approvals

Product Standards	UL 60947-4-1;CSA - C22.2 No. 60947-4-1-14; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
UL File No.	E36332
UL Category Control No.	NLRV
CSA File No.	12528
CSA Class No.	3211-05
North America Certification	UL listed, CSA certified
Suitable for	Branch circuits, suitable as motor disconnect
Degree of Protection	IEC: IP30; UL/CSA Type: –

### **Dimensions**



### Assets (links)

**Declaration of CE Conformity** 00003075

**Instruction Leaflets** 

IL03801006Z2018\_04

# Additional product information (links)

IL03801006Z (AWA1150-1686) Cam switches: se	L03801006Z (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=41			
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			
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			