## DATASHEET - T0-4-8213/EZ

Changeoverswitches, T0, 20 A, centre mounting, 4 contact unit(s), Contacts: 8, 60 °, maintained, With 0 (Off) position, 1-0-2, Design number 8213



Part no.	T0-4-8213/EZ	
	062575	
EL Number	1417073	
(Norway)		

## **General specifications**

General specifications	
Product name	Eaton Moeller® series T0 Changeover switch
Part no.	T0-4-8213/EZ
EAN	4015080625759
Product Length/Depth	125 millimetre
Product height	48 millimetre
Product width	48 millimetre
Product weight	0.177 kilogram
Certifications	VDE 0660 IEC/EN 60947 CE CSA Class No.: 3211-05 CSA-C22.2 No. 94 UL File No.: E36332 CSA File No.: 012528 IEC/EN 60947-3 IEC/EN 60947-3 IEC/EN 60204 UL 60947-4-1 CSA UL Category Control No.: NLRV CSA-C22.2 No. 60947-4-1-14 UL CSA UL
Product Tradename	ТО
Product Type	Changeover switch
Product Sub Type	None
Catalog Notes	Rated Short-time Withstand Current (Icw) for a time of 1 second
Features & Functions	
Enclosure material	Plastic
Fitted with:	0 (off) position Black thumb grip and front plate
Inscription	1-0-2
Number of poles	4
General information	
Degree of protection	IP65 NEMA 1 NEMA 12
Degree of protection (front side)	IP65 NEMA 12
Lifespan, mechanical	400,000 Operations
Model	Reverser
Mounting method	Center mounting
Mounting position	As required
Number of contact units	4
Operating frequency	1200 Operations/h
Overvoltage category	
Pollution degree	3
Rated impulse withstand voltage (Uimp)	6000 V AC
Safe isolation	440 V AC, Between the contacts, According to EN 61140
Safety parameter (EN ISO 13849-1)	B10d values as per EN ISO 13849-1, table C.1
Shock resistance	15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms
Suitable for	Branch circuits, suitable as motor disconnect, (UL/CSA) Front mounting

Switching angle	60 °
Switching angle	
Туре	Changeover switch
Climatic environmental conditions	
Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	50 °C
Ambient operating temperature (enclosed) - min	-25 °C
Ambient operating temperature (enclosed) - max	40 °C
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Terminal capacities	
Terminal capacity (flexible with ferrule)	2 x (0.75 - 2.5) mm <sup>2</sup> , ferrules to DIN 46228 1 x (0.75 - 2.5) mm <sup>2</sup> , ferrules to DIN 46228
Terminal capacity (solid/flexible with ferrule AWG)	18 - 14
Terminal capacity (solid/stranded)	1 x (1 - 2.5) mm <sup>2</sup> 2 x (1 - 2.5) mm <sup>2</sup>
Screw size	M3.5, Terminal screw
Tightening torque	8.8 lb-in, Screw terminals 1 Nm, Screw terminals
Electrical rating	
Rated breaking capacity at 220/230 V (cos phi to IEC 60947-3)	100 A
Rated breaking capacity at 400/415 V (cos phi to IEC 60947-3)	110 A
Rated breaking capacity at 500 V (cos phi to IEC 60947-3)	80 A
Rated breaking capacity at 660/690 V (cos phi to IEC 60947-3)	60 A
Rated operational current (Ie)	20 A at AC-3, 400 V star-delta 15.6 A at AC-3, 500 V star-delta 8.5 A at AC-3, 690 V star-delta 20 A at AC-3, 230 V star-delta
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V	11.5 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V	11.5 A
Rated operational current (Ie) at AC-3, 500 V	9 A
Rated operational current (Ie) at AC-3, 660 V, 690 V	4.9 A
Rated operational current (Ie) at AC-21, 440 V	20 A
Rated operational current (Ie) at AC-23A, 230 V	13.3 A
Rated operational current (Ie) at AC-23A, 400 V, 415 V	13.3 A
Rated operational current (Ie) at AC-23A, 500 V	13.3 A
Rated operational current (Ie) at AC-23A, 690 V	7.6 A
Rated operational current (Ie) at DC-1, load-break switches l/r = 1 ms	10 A
Rated operational current (Ie) at DC-13, control switches L/R = 50 ms	10 A
Rated operational current (Ie) at DC-21, 240 V	1A
Rated operational current (Ie) at DC-23A, 24 V	10 A
Rated operational current (Ie) at DC-23A, 48 V	10 A
Rated operational current (Ie) at DC-23A, 60 V	10 A
Rated operational current (Ie) at DC-23A, 120 V	5 A
Rated operational current (Ie) at DC-23A, 240 V	5 A
Rated operational power at AC-3, 380/400 V, 50 Hz	4 kW
Rated operational power at AC-3, 415 V, 50 Hz	5.5 kW
Rated operational power at AC-3, 690 V, 50 Hz	4 kW
Rated operational power at AC-23A, 220/230 V, 50 Hz	3 kW
Rated operational power at AC-23A, 400 V, 50 Hz	5.5 kW
Rated operational power at AC-23A, 500 V, 50 Hz	7.5 kW
Rated operational power at AC-23A, 690 V, 50 Hz	5.5 kW
Rated operational power star-delta at 220/230 V, 50 Hz	5.5 kW
Rated operational power star-delta at 380/400 V, 50 Hz	7.5 kW
Rated operational power star-delta at 500 V, 50 Hz	7.5 kW
Rated operational power star-delta at 690 V, 50 Hz	5.5 kW
Rated operational voltage (Ue) at AC - max	690 V
Rated uninterrupted current (Iu)	20 A
Uninterrupted current	Rated uninterrupted current lu is specified for max. cross-section.

Short-circuit rating	
Rated conditional short-circuit current (Ig)	6 kA
Rated short-time withstand current (Icw)	320 A, Contacts, 1 second
Short-circuit current rating (basic rating)	5 kA, SCCR (UL/CSA)
	50A, max. Fuse, SCCR (UL/CSA)
Short-circuit current rating (high fault)	10 kA, SCCR (UL/CSA) 20 A, Class J, max. Fuse, SCCR (UL/CSA)
Short-circuit protection rating	20 A gG/gL, Fuse, Contacts
Switching capacity	
Load rating	1.6 x I# (with intermittent operation class 12, 40 % duty factor) 2 x I# (with intermittent operation class 12, 25 % duty factor) 1.3 x I# (with intermittent operation class 12, 60 % duty factor)
Number of contacts in series at DC-21A, 240 V	1
Number of contacts in series at DC-23A, 24 V	1
Number of contacts in series at DC-23A, 48 V	2
Number of contacts in series at DC-23A, 60 V	3
Number of contacts in series at DC-23A, 120 V	3
Number of contacts in series at DC-23A, 240 V	5
Switching capacity (main contacts, general use)	16 A, Rated uninterrupted current max. (UL/CSA)
Switching capacity (auxiliary contacts, general use)	10A, IU, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)	A600 (UL/CSA) P300 (UL/CSA)
Rated making capacity up to 690 V (cos phi to IEC/EN 60947-3)	130 A
Voltage per contact pair in series	60 V
Motor rating	
Assigned motor power at 115/120 V, 60 Hz, 1-phase	0.5 HP
Assigned motor power at 200/208 V, 60 Hz, 1-phase	1 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase	3 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase	1.5 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase	3 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	7.5 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase	7.5 HP
Contacts	
Control circuit reliability	1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10
	mA)
Number of auxiliary contacts (change-over contacts)	0
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	0
Number of contacts	8
Actuator	
Actuator function	Maintained With 0 (Off) position
Actuator type	Short thumb-grip
Design verification	
Equipment heat dissipation, current-dependent Pvid	0 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0.6 W
Rated operational current for specified heat dissipation (In)	20 A
Static heat dissipation, non-current-dependent Pvs	0 W
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.

10.3 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.
10.9.2 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 9.0**

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 / Load-break switch (ecl@ss13-27-37-14-05 [AKF062018])

Model Reverser   Number of poles 4   With zero (off) position 4   With retraction in 0-position No   Rated permanent current lu No   Rated permanent current lu No   Rated operation current le at AC-3, 400 V No   Degree of protection (IP), front side Mo   Degree of protection (IPA, front side Mo   Number of auxiliary contacts as normally coper contact Mo   Number of auxiliary contacts as normally coper contact Mo   Suitable for informating Mo   Suitable			
Whit zero diff position     Yes       With zero diff position     No       Rated permanet current lu     A     O       Rated peraion current le at AC-3, 400 V     A     Sacconstructurent lu       Bated operation power at AC-3, 400 V     KW     G       Degree of protection (NFMA), front side     KW     Feb       Degree of protection (NEMA), front side     Yes     Feb       Number of auxiliary contacts as normally closed contact     Yes     G       Number of auxiliary contacts as normally closed contact     Yes     G       Sutable for florm munting     Yes     No       Sutable for inform munting     Yes     No       Sutable for informounting     Yes     No	Model		Reverser
With retraction in 0-position     No       Rated permanent current lu     A     0       Rated operation current le at AC-3, 400 V     A     1.5       Rated operation power at AC-3, 400 V     KW     4       Degree of protection (IP), front side     P65     1       Degree of protection (NEMA), front side     J     0     1       Number of auxiliary contacts as normally closed contact     J     0     1       Number of auxiliary contacts as normally closed contact     J     0     1       Sutable for from nounting     J     J     0     1     1       Sutable for intermediate mounting     J     S <t< td=""><td>Number of poles</td><td></td><td>4</td></t<>	Number of poles		4
Aed permanent current lu   A   2     Rated operation current le at AC-3, 400 V   A   1.5     Rated operation power at AC-3, 400 V   KW   4     Degree of protection (IP), front side   FP6   FP6     Degree of protection (NEMA), front side   P   6     Number of auxiliary contacts as normally closed contact   P   6     Number of auxiliary contacts as change-over contact   0   0     Suitable for front mounting   V   No   No     Suitable for intermediate mounting   V   No   No     Suitable for intermediate mounting   No   No   No     Roung material   No   No	With zero (off) position		Yes
Rate operation current le at AC-3, 400 V   A   1.5     Rate operation power at AC-3, 400 V   KW   4     Degree of protection (IP), font side   IP65     Degree of protection (NEMA), front side   I   0     Number of auxiliary contacts as normally closed contact   I   0     Number of auxiliary contacts as normally closed contact   I   0     Number of auxiliary contacts as change-over contact   I   0     Suitable for floor mounting   I   I   I     Suitable for intermediate mounting   I   I   I     Suitable for intermediate mounting   I   I   I   I     Suitable for intermediate mounting   I	With retraction in 0-position		No
Rate operation power at AC-3, 400 V   KW   4     Degree of protection (IP), front side   P65     Degree of protection (NEMA), front side   0     Number of auxiliary contacts as normally closed contact   0     Number of auxiliary contacts as normally copen contact   0     Number of auxiliary contacts as normally copen contact   0     Suitable for floor mounting   V   0     Suitable for front mounting   V   V     Suitable for intermediate mounting   V   V     Suitable for intermediate mounting   V   No     Suitable for intermediate mounting   No   No     Suitable for intermediate mounting   No   No     Housing material   No   No   No     Suitable for intermediate mounting   No   No   No     Housing material   No   No	Rated permanent current lu	А	20
Degree of protection (IP), front sideP66Degree of protection (NEMA), front side2Number of auxiliary contacts as normally closed contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as change-over contact0Suitable for floor mountingNoSuitable for front mountingNoSuitable for intermediate mountingNoFor per control elementNoSuitable for intermediate mountingNoSuitable for intermediate mountingSoSuitable for intermedi	Rated operation current le at AC-3, 400 V	А	11.5
Degree of protection (NEMA), front side12Degree of protection (NEMA), front side10Number of auxiliary contacts as normally closed contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as normally open contact0Suitable for floor mounting0Suitable for floor mountingNoSuitable for fint mountingNoSuitable for intermediate mountingNoSuitable for intermediate mountingNoComplete device in housingNoHousing materialNoNounder of auxiliary contactsNoSuitable for intermediate mountingNoSuitable for intermediate mountingNoSu	Rated operation power at AC-3, 400 V	kW	4
Number of auxiliary contacts as normally closed contact   Image: contact as normally closed contact     Number of auxiliary contacts as normally open contact   Image: contact as normally closed contact     Number of auxiliary contacts as normally open contact   Image: contact as normally closed contact     Number of auxiliary contacts as normally open contact   Image: contact as normally closed contact     Number of auxiliary contacts as change-over contact   Image: contact as normally closed contact     Suitable for floor mounting   Image: contact as normally closed contact     Suitable for floor mounting   Image: contact as normally closed contact     Suitable for intermediate mounting   Image: contact as normally closed contact     Complete device in housing   Image: contact as normally closed contact     Housing material   Image: contact as normally closed contact     Image: control element   Image: contact as normally closed contact	Degree of protection (IP), front side		IP65
Number of auxiliary contacts as normally open contact   Image: Content of auxiliary contacts as change-over contact   Image: Content of auxiliary contacts as change-over contact     Number of auxiliary contacts as change-over contact   Image: Content of auxiliary contacts as change-over contact   Image: Content of auxiliary contacts as change-over contact     Suitable for floor mounting   Image: Content of auxiliary contacts as change-over contact   Image: Content of auxiliary contacts as change-over contact     Suitable for floor mounting   Image: Content of auxiliary contacts as change-over contact   Image: Content of auxiliary contacts as change-over contact     Suitable for distribution board installation   Image: Content of auxiliary contacts as change-over contact   Image: Content of auxiliary contacts as change-over contact     Suitable for intermediate mounting   Image: Content of auxiliary contacts as change-over contacts   Image: Content of auxiliary contacts as change-over contacts     Suitable for intermediate mounting   Image: Content of auxiliary contacts   Image: Content of auxiliary contacts     Suitable for intermediate mounting   Image: Content of auxiliary contacts   Image: Content of auxiliary contacts     Suitable for intermediate mounting   Image: Content of auxiliary contacts   Image: Content of auxiliary contacts     Suitable for intermediate mounting   Image: Content of auxiliary contacts   Image: Content of auxiliary contacts	Degree of protection (NEMA), front side		12
Number of auxiliary contacts as change-over contact   Image: Content of the state of the st	Number of auxiliary contacts as normally closed contact		0
Suitable for floor mounting   No     Suitable for fort mounting   Yes     Suitable for distribution board installation   No     Suitable for intermediate mounting   No     Suitable for intermediate mounting   No     Suitable for intermediate mounting   No     Housing material   No     Type of control element   Mo	Number of auxiliary contacts as normally open contact		0
Suitable for front mounting Yes   Suitable for distribution board installation Mo   Suitable for intermediate mounting Mo   Complete device in housing Mo   Housing material Mo   Type of control element Mo	Number of auxiliary contacts as change-over contact		0
Suitable for distribution board installation Mo   Suitable for intermediate mounting Mo   Complete device in housing Mo   Housing material Mo   Type of control element Mo	Suitable for floor mounting		No
Suitable for intermediate mounting A A   Complete device in housing A A   Housing material A A   Type of control element A A	Suitable for front mounting		Yes
Complete device in housing Mo   Housing material Mo   Type of control element Mo	Suitable for distribution board installation		No
Housing material Material Plastic   Type of control element Material Short thumb-grip	Suitable for intermediate mounting		No
Type of control element Short thumb-grip	Complete device in housing		No
	Housing material		Plastic
Type of electrical connection of main circuit Screw connection	Type of control element		Short thumb-grip
	Type of electrical connection of main circuit		Screw connection