DATASHEET - T0-2-8221/EZ

Changeoverswitches, T0, 20 A, centre mounting, 2 contact unit(s), Contacts: 4, 90 °, maintained, Without 0 (Off) position, 1-2, Design number 8221

Part no.	**T0-2-8221/EZ**
	010372
EL Number (Norway)	**1417002**

Product name	Eaton Moeller® series T0 Changeover switch
Part no.	T0-2-8221/EZ
EAN	4015080103721
Product Length/Depth	106 millimetre
Product height	48 millimetre
Product width	48 millimetre
Product weight	0.124 kilogram
Certifications	CSA File No.: 012528 UL 60947-4-1 UL IEC/EN 60947 UL Category Control No.: NLRV CSA IEC/EN 60204 CSA-C22.2 No. 60947-4-1-14 UL File No.: E36332 CSA Class No.: 3211-05 CSA-C22.2 No. 94 VDE 0660 CE IEC/EN 60947-3
Product Tradename	T0
Product Type	Changeover switch
Product Sub Type	None
Catalog Notes	Rated Short-time Withstand Current (Icw) for a time of 1 second
Enclosure material	Plastic
Fitted with:	Black thumb grip and front plate
Inscription	1-2
Number of poles	2
Degree of protection	NEMA 12 IP65 NEMA 1
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	2
Operating frequency	1200 Operations/h
Overvoltage category	III
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	90 °
Type	Changeover switch

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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Terminal capacity (flexible with ferrule)	2 x (0.75 - 2.5) mm^2, ferrules to DIN 46228 1 x (0.75 - 2.5) mm^2, ferrules to DIN 46228
Terminal capacity (solid/flexible with ferrule AWG)	18 - 14
Terminal capacity (solid/stranded)	1 x (1 - 2.5) mm^2 2 x (1 - 2.5) mm^2
Screw size	M3.5, Terminal screw
Tightening torque	1 Nm, Screw terminals 8.8 lb-in, Screw terminals
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 20 A at AC-3, 230 V star-delta 8.5 A at AC-3, 690 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	1 A
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 Iu is specified for max. cross-section.
Rated conditional short-circuit current (Iq)	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)	20 A, Class J, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA)
Short-circuit protection rating	20 A gG/gL, Fuse, Contacts
Load rating	2 x I# (with intermittent operation class 12, 25 % duty factor) 1.3 x I# (with intermittent operation class 12, 60 % duty factor) 1.6 x I# (with intermittent operation class 12, 40 % 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
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
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	4
Actuator function	Maintained Without 0 (Off) position
Actuator type	Short thumb-grip
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.
10.2.7 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.
10.9.2 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 8.0

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 zero (off) position			No
With retraction in 0-position			No
Rated permanent current Iu		A	20
Rated operation current Ie at AC-3, 400 V		A	11.5
Rated operation power at AC-3, 400 V		kW	4
Degree of protection (IP), front side			IP65
Degree of protection (NEMA), front side			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
Suitable for floor mounting			No
Suitable for front mounting			Yes
Suitable for distribution board installation			No
Suitable for intermediate mounting			No
Complete device in housing			No
Material housing			Plastic
Type of control element			Short thumb-grip
Type of electrical connection of main circuit			Screw connection

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