

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

Part no. T0-2-8221/IVS
057832
EL Number 1417066
(Norway)

General specifications		
Product name		Eaton Moeller® series T0 Changeover switch
Part no.		T0-2-8221/IVS
EAN		4015080578321
Product Length/Depth		92 millimetre
Product height		55 millimetre
Product width		54 millimetre
Product weight		0.12 kilogram
Certifications		IEC/EN 60947 CSA CSA-C22.2 No. 60947-4-1-14 UL IEC/EN 60947-3 UL File No.: E36332 CSA File No.: 012528 CE IEC/EN 60204 VDE 0660 UL Category Control No.: NLRV UL 60947-4-1 CSA-C22.2 No. 94 CSA Class No.: 3211-05 UL CSA
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
Features & Functions		
Enclosure material		Plastic
Fitted with:		Black thumb grip and front plate
Inscription		1-2
Number of poles		2
General information		
Degree of protection		IP30
Degree of protection (front side)		IP30 NEMA 2
Lifespan, mechanical		400,000 Operations
Model		Reverser
Mounting method		Service distribution board 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		Ground mounting Distribution board installation Branch circuits, suitable as motor disconnect, (UL/CSA)
Switching angle		90 °

Type		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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Terminal capacities		
Terminal capacity (flexible with ferrule)		1 x (0.75 - 2.5) mm ² , ferrules to DIN 46228 2 x (0.75 - 2.5) mm ² , ferrules to DIN 46228
Terminal capacity (solid/flexible with ferrule AWG)		18 - 14
Terminal capacity (solid/stranded)		2 x (1 - 2.5) mm ² 1 x (1 - 2.5) mm ²
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, 230 V star-delta 20 A at AC-3, 400 V star-delta 8.5 A at AC-3, 690 V star-delta 15.6 A at AC-3, 500 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 I/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.

Short-circuit rating		
Rated conditional short-circuit current (I _q)		6 kA
Rated short-time withstand current (I _{cw})		320 A, Contacts, 1 second
Short-circuit current rating (basic rating)		50A, max. Fuse, SCCR (UL/CSA) 5 kA, 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
Switching capacity		
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)		P300 (UL/CSA) A600 (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		4
Actuator		
Actuator function		Maintained Without 0 (Off) position
Actuator type		Short thumb-grip
Design verification		
Equipment heat dissipation, current-dependent P _{vid}		0 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent P _{vid}		0.6 W
Rated operational current for specified heat dissipation (I _n)		20 A
Static heat dissipation, non-current-dependent P _{vs}		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		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.
10.9.2 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 (ecf@ss13-27-37-14-05 [AKF062018])			
Model			Reverser
Number of poles			2
With zero (off) position			No
With retraction in 0-position			No
Rated permanent current I _u		A	20
Rated operation current I _e at AC-3, 400 V		A	11.5
Rated operation power at AC-3, 400 V		kW	4
Degree of protection (IP), front side			IP30
Degree of protection (NEMA), front side			2
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			Yes
Suitable for front mounting			No
Suitable for distribution board installation			Yes
Suitable for intermediate mounting			No
Complete device in housing			No
Housing material			Plastic
Type of control element			Short thumb-grip
Type of electrical connection of main circuit			Screw connection