## **DATASHEET - T0-2-8400/Z**

Reversing switches, T0, 20 A, rear mounting, 2 contact unit(s), Contacts: 4, 45 °, maintained, With 0 (Off) position, 1-0-2, Design number 8400

T0-2-8400/Z

062571



Part no.

**General specifications** Product name Eaton Moeller® series T0 Reversing switch Part no. T0-2-8400/Z EAN 4015080625711 Product Length/Depth 128 millimetre 48 millimetre Product height 48 millimetre Product width 0.134 kilogram Product weight Certifications CSA UL Category Control No.: NLRV CSA File No.: 012528 VDE 0660 CSA Class No.: 3211-05 IEC/EN 60947 UL CSA-C22.2 No. 94 UL File No.: E36332 CE CSA-C22.2 No. 60947-4-1-14 IEC/EN 60947-3 UL 60947-4-1 IEC/EN 60204 Product Tradename TO Product Type Reversing 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 0 (off) position Inscription 1-0-2 Number of poles 2 **General information** NEMA 1 Degree of protection IP65 NEMA 12 Degree of protection (front side) IP65 NEMA 12 Lifespan, mechanical 400,000 Operations Model Reversing switch Mounting method Rear mounting Mounting position As required 2 Number of contact units 1200 Operations/h **Operating frequency** ш 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 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms Shock resistance Suitable for Branch circuits, suitable as motor disconnect, (UL/CSA) Intermediate mounting Ground mounting 45 ° Switching angle Туре Reversing 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)	1 x (0.75 - 2.5) mm <sup>2</sup> , ferrules to DIN 46228
	2 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	1 Nm, Screw terminals 8.8 lb-in, 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)	15.6 A at AC-3, 500 V star-delta 20 A at AC-3, 400 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 I/r = 1 ms	10 A
Rated operational current (Ie) at DC-13, control switches $L/R = 50 \text{ ms}$	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 lu is specified for max. cross-section.
Short-circuit rating	

Detection of the set o	014
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)	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	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	4
Actuator	
Actuator function	Maintained
Automation	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.
10.2.7 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 (ecl@ss13-27-37-14-05 [AKF062018])

Model Reversing switch   Number of poles 2   With zero (off) position Vith zero (off) position Vith zero (off) position   With retraction in 0-position No No   Rated permanent current lu A 0   Rated operation power at AC-3,400 V A 1.5   Degree of protection (IP), front side P6 P6   Degree of protection (IPAM), front side 9 9   Number of auxiliary contacts as normally closed contact P6 P6   Suitable for find mounting 9 9   Suitable for informounting 9 9   Suit			
With zero (off) position Yes   With zero (off) position No   With zero (off) position A   Rated permanent current lu A   Rated operation current le at AC-3, 400 V A   Barde operation power at AC-3, 400 V KW   Degree of protection (IP), front side F   Degree of protection (NEMA), front side F   Number of auxiliary contacts as normally closed contact F   Number of auxiliary contacts as normally open contact F   Suitable for front mounting F   Suitable for front mounting F   Suitable for intermediate mounting F	Model		Reversing switch
With retraction in 0-position   Image: Ima	Number of poles		2
Rated permanent current lu     A     Ø       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     FM     1965       Degree of protection (NEMA), front side     I     1       Number of auxiliary contacts as normally closed contact     FM     0       Number of auxiliary contacts as change-over contact     FM     0       Suitable for finor mounting     FM     0       Suitable for finot mounting     FM     No       Suitable for intermediate mounting     FM     No       Suitable for intermediate mounting     FM     No       Suitable for intermediate mounting     FM     No	With zero (off) position		Yes
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 IP65 12   Degree of protection (NEMA), front side IMME of auxiliary contacts as normally closed contact IMME of auxiliary contacts as normally open contact	With retraction in 0-position		No
Rated operation power at AC-3, 400 V   KW   4     Degree of protection (IP), front side   IP65     Degree of protection (NEMA), front side   I     Number of auxiliary contacts as normally closed contact   I     Number of auxiliary contacts as normally open contact   I     Number of auxiliary contacts as change-over contact   I     Suitable for floor mounting   I     Suitable for fort mounting   I     Suitable for distribution board installation   I     Suitable for intermediate mounting	Rated permanent current lu	А	20
Degree of protection (IP), front sideIP65Degree of protection (NEMA), front side12Number of auxiliary contacts as normally closed contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as change-over contact0Suitable for floor mountingYesSuitable for front mountingNoSuitable for distribution board installationYesSuitable for intermediate mountingYesSuitable for intermediate mountingYes	Rated operation current le at AC-3, 400 V	А	11.5
Degree of protection (NEMA), front side   Image: Complete device in housing	Rated operation power at AC-3, 400 V	kW	4
Number of auxiliary contacts as normally closed contact   Image: Contact is a normally closed contact   Image: Contact is a normally closed contact     Number of auxiliary contacts as normally open contact   Image: Contact is a normally closed contact   Image: Contact is a normally closed contact     Number of auxiliary contacts as normally open contact   Image: Contact is a normally closed contact   Image: Contact is a normal norm	Degree of protection (IP), front side		IP65
Number of auxiliary contacts as normally open contact   Image: Contact is a contact is contact is a contact is a contact is a cont	Degree of protection (NEMA), front side		12
Number of auxiliary contacts as change-over contact Image: Contact of the second sec	Number of auxiliary contacts as normally closed contact		0
Suitable for floor mountingMarkMarkSuitable for front mountingMarkMarkSuitable for distribution board installationMarkMarkSuitable for intermediate mountingMarkMarkComplete device in housingMarkMark	Number of auxiliary contacts as normally open contact		0
Suitable for distribution board installation Mo   Suitable for distribution board installation Mo   Suitable for intermediate mounting Mo   Complete device in housing 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	Suitable for floor mounting		Yes
Suitable for intermediate mounting Mail Yes   Complete device in housing Mail No	Suitable for front mounting		No
Complete device in housing No	Suitable for distribution board installation		No
	Suitable for intermediate mounting		Yes
Direction Provide Prov	Complete device in housing		No
nousing material Plastic	Housing material		Plastic
Type of control element Short thumb-grip	Type of control element		Short thumb-grip
Type of electrical connection of main circuit Screw connection	Type of electrical connection of main circuit		Screw connection