

# Specifications

Photo is representative

## Eaton 031014

Eaton Moeller® series T3  
Changeoverswitches, T3, 32 A, rear  
mounting, 3 contact unit(s), Contacts: 6, 60 °,  
maintained, With 0 (Off) position, 0-1-2,  
Design number 8451

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller® series T3 Changeover switch
<b>CATALOG NUMBER</b>	031014
<b>EAN</b>	4015080310143
<b>PRODUCT LENGTH/DEPTH</b>	144 mm
<b>PRODUCT HEIGHT</b>	54 mm
<b>PRODUCT WIDTH</b>	61 mm
<b>PRODUCT WEIGHT</b>	0.237 kg
<b>CERTIFICATIONS</b>	CSA File No.: 012528 UL CE VDE 0660 IEC/EN 60204 IEC/EN 60947 CSA Class No.: 3211-05 IEC/EN 60947-3 CSA-C22.2 No. 60947-4-1-14 CSA UL Category Control No.: NLRV CSA-C22.2 No. 94 UL File No.: E36332 UL 60947-4-1
<b>CATALOG NOTES</b>	Rated Short-time Withstand Current (Icw) for a time of 1 second
<b>MODEL CODE</b>	T3-3-8451/Z

## Features & Functions

<b>ENCLOSURE MATERIAL</b>	Plastic
<b>FITTED WITH:</b>	Black thumb grip and front plate 0 (off) position
<b>INSCRIPTION</b>	0-1-2
<b>NUMBER OF POLES</b>	3

## General

<b>DEGREE OF PROTECTION</b>	NEMA 12 NEMA 1 IP65
<b>DEGREE OF PROTECTION (FRONT SIDE)</b>	IP65 NEMA 12
<b>LIFESPAN, MECHANICAL</b>	500,000 Operations
<b>MODEL</b>	Reverser
<b>MOUNTING METHOD</b>	Rear mounting
<b>MOUNTING POSITION</b>	As required
<b>NUMBER OF CONTACT UNITS</b>	3
<b>OPERATING FREQUENCY</b>	1200 Operations/h
<b>OVERTVOLTAGE CATEGORY</b>	III
<b>POLLUTION DEGREE</b>	3
<b>PRODUCT CATEGORY</b>	Control switches
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	6000 V AC
<b>SAFE ISOLATION</b>	440 V AC, Between the contacts, According to EN 61140
<b>SAFETY PARAMETER (EN ISO 13849-1)</b>	B10d values as per EN ISO 13849-1, table C.1
<b>SHOCK RESISTANCE</b>	15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms
<b>SUITABLE FOR</b>	Branch circuits, suitable as motor disconnect, (UL/CSA) Ground mounting Intermediate mounting Front mounting
<b>SWITCHING ANGLE</b>	60 °
<b>TYPE</b>	Changeover switch

## Climatic environmental conditions

<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	50 °C
<b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN</b>	-25 °C
<b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX</b>	40 °C
<b>CLIMATIC PROOFING</b>	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

## Terminal capacities

<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	2 x (0.75 - 4) mm <sup>2</sup> , ferrules to DIN 46228 1 x (0.75 - 4) mm <sup>2</sup> , ferrules to DIN 46228
<b>TERMINAL CAPACITY (SOLID/FLEXIBLE WITH FERRULE AWG)</b>	14 - 10
<b>TERMINAL CAPACITY (SOLID/STRANDED)</b>	2 x (1 - 6) mm <sup>2</sup> 1 x (1 - 6) mm <sup>2</sup>
<b>SCREW SIZE</b>	M4, Terminal screw
<b>TIGHTENING TORQUE</b>	17.7 lb-in, Screw terminals 1.6 Nm, Screw terminals

## Electrical rating

### RATED BREAKING

**CAPACITY AT 220/230 V** 260 A  
(COS PHI TO IEC 60947-3)

### RATED BREAKING

**CAPACITY AT 400/415 V** 260 A  
(COS PHI TO IEC 60947-3)

### RATED BREAKING

**CAPACITY AT 500 V (COS PHI TO IEC 60947-3)** 240 A

### RATED BREAKING

**CAPACITY AT 660/690 V (COS PHI TO IEC 60947-3)** 170 A

25.5 A at AC-3, 690 V star-delta

32 A at AC-3, 500 V star-delta

32 A at AC-3, 230 V star-delta

32 A at AC-3, 400 V star-delta

### RATED OPERATIONAL CURRENT (IE)

32 A at AC-3, 230 V star-delta

### RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V

23.7 A

### RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V

23.7 A

### RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V

23.7 A

### RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V

14.7 A

### RATED OPERATIONAL CURRENT (IE) AT AC-21, 440 V

32 A

### RATED OPERATIONAL CURRENT (IE) AT AC-23A, 230 V

32 A

### RATED OPERATIONAL CURRENT (IE) AT AC-23A, 400 V, 415 V

32 A

### RATED OPERATIONAL CURRENT (IE) AT AC-23A, 500 V

26.4 A

### RATED OPERATIONAL CURRENT (IE) AT AC-23A, 690 V

17 A

### RATED OPERATIONAL CURRENT (IE) AT DC-1,

25 A

## Short-circuit rating

### RATED CONDITIONAL

**SHORT-CIRCUIT CURRENT (IQ)** 1 kA

### RATED SHORT-TIME

**WITHSTAND CURRENT (ICW)** 650 A, Contacts, 1 second

**SHORT-CIRCUIT CURRENT RATING (BASIC RATING)** 5 kA, SCCR (UL/CSA)  
40A, max. Fuse, SCCR (UL/CSA)

**SHORT-CIRCUIT CURRENT RATING (HIGH FAULT)** 10 kA, SCCR (UL/CSA)  
40 A, Class J, max. Fuse, SCCR (UL/CSA)

**SHORT-CIRCUIT PROTECTION RATING** 35 A gG/gL, Fuse, Contacts

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**LOAD-BREAK SWITCHES**

**L/R = 1 MS**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-13,**

**CONTROL SWITCHES L/R**

**= 50 MS**

**20 A**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-21,**

**1 A**

**240 V**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-23A,**

**25 A**

**24 V**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-23A,**

**25 A**

**48 V**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-23A,**

**25 A**

**60 V**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-23A,**

**12 A**

**120 V**

**RATED OPERATIONAL**

**CURRENT (IE) AT DC-23A,**

**5 A**

**240 V**

**RATED OPERATIONAL**

**POWER AT AC-3, 380/400**

**12 kW**

**V, 50 Hz**

**RATED OPERATIONAL**

**POWER AT AC-3, 415 V, 50**

**11 kW**

**Hz**

**RATED OPERATIONAL**

**POWER AT AC-3, 690 V, 50**

**11 kW**

**Hz**

**RATED OPERATIONAL**

**POWER AT AC-23A,**

**7.5 kW**

**220/230 V, 50 Hz**

**RATED OPERATIONAL**

**POWER AT AC-23A, 400 V,**

**15 kW**

**50 Hz**

**RATED OPERATIONAL**

**POWER AT AC-23A, 500 V,**

**15 kW**

**50 Hz**

**RATED OPERATIONAL**

**POWER AT AC-23A, 690 V,**

**15 kW**

**50 Hz**

**RATED OPERATIONAL**

**POWER STAR-DELTA AT**

**7.5 kW**

**220/230 V, 50 Hz**

**RATED OPERATIONAL**

**POWER STAR-DELTA AT**

**15 kW**

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**380/400 V, 50 HZ**

**RATED OPERATIONAL  
POWER STAR-DELTA AT  
500 V, 50 HZ**

18.5 kW

**RATED OPERATIONAL  
POWER STAR-DELTA AT  
690 V, 50 HZ**

**RATED OPERATIONAL  
VOLTAGE (UE) AT AC -  
MAX**

690 V

**RATED UNINTERRUPTED  
CURRENT (IU)**

32 A

**UNINTERRUPTED  
CURRENT**

Rated uninterrupted  
current lu is specified for  
max. cross-section.

## Switching capacity

LOAD RATING	2 x $I_e$ (with intermittent operation class 12, 25 % duty factor) 1.6 x $I_e$ (with intermittent operation class 12, 40 % duty factor) 1.3 x $I_e$ (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)	25 A, Rated uninterrupted current max. (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	10A, IU, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	P600 (UL/CSA) A600 (UL/CSA)
RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947-3)	320 A
VOLTAGE PER CONTACT PAIR IN SERIES	60 V

## Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	1.5 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 1-PHASE	3 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	3 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	10 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** 6

## Actuator

**ACTUATOR FUNCTION** Maintained With 0 (Off) position

**ACTUATOR TYPE** Short thumb-grip

## Design verification

### EQUIPMENT HEAT

DISSIPATION, CURRENT- 0 W

### DEPENDENT PVID

HEAT DISSIPATION 0 W  
CAPACITY PDISS

HEAT DISSIPATION PER  
POLE, CURRENT- 1.1 W  
DEPENDENT PVID

RATED OPERATIONAL  
CURRENT FOR SPECIFIED 32 A  
HEAT DISSIPATION (IN)

STATIC HEAT  
DISSIPATION, NON- 0 W  
CURRENT-DEPENDENT  
PVS

**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.

<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>10.10 TEMPERATURE RISE</b>	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
<b>10.11 SHORT-CIRCUIT RATING</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.13 MECHANICAL FUNCTION</b>	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## Resources

**BROCHURES** [Brochure - T Rotary Cam switch and P Switch-disconnector](#)

**CATALOGUES** [P Switch-disconnectors and T Rotary cam switches catalogue CA042001EN](#)

**DECLARATIONS OF CONFORMITY** [DA-DC-00004894.pdf](#) [DA-DC-00004923.pdf](#)

**DRAWINGS** [eaton-rotary-switches-mounting-t3-changeover-switch-dimensions-011.eps](#)

<a href="#">eaton-general-rotary-switch-t0-step-switch-symbol-003.eps</a>	
<a href="#">eaton-rotary-switches-mounting-t0-changeover-switch-3d-drawing-004.eps</a>	
<a href="#">eaton-rotary-switches-front-plate-t0-step-switch-symbol-006.eps</a>	
<b>ECAD MODEL</b>	<a href="#">ETN.031014.edz</a>
<b>INSTALLATION INSTRUCTIONS</b>	<a href="#">IL03801021Z</a>
<b>INSTALLATION VIDEOS</b>	<a href="#">Eaton's P Switch-disconnectors used in a factory</a>
<b>MCAD MODEL</b>	<a href="#">DA-CD-t3_z_3 DA-CS-t3_z_3</a>
<b>PRODUCT NOTIFICATIONS</b>	<a href="#">MZ008005ZU_Orderform_Customized_Switch.pdf</a> <a href="#">MZ008006ZU_Orderform_Customized_Switch.pdf</a>
<b>WIRING DIAGRAMS</b>	<a href="#">eaton-rotary-switches-switch-t0-changeover-switch-wiring-diagram-009.eps</a>

**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**



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