

# Specifications



Photo is representative

## Eaton 111914

Eaton Moeller series Power Defense - Molded Case Circuit Breaker. Circuit-breaker, 4 p, 80A, fixed mounted design

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller series Power Defense molded case circuit-breaker
<b>CATALOG NUMBER</b>	111914
<b>MODEL CODE</b>	LZMC1-4-A80-I
<b>EAN</b>	4015081114627
<b>PRODUCT LENGTH/DEPTH</b>	88 mm
<b>PRODUCT HEIGHT</b>	145 mm
<b>PRODUCT WIDTH</b>	120 mm
<b>PRODUCT WEIGHT</b>	1.324 kg
<b>COMPLIANCES</b>	RoHS conform
<b>CERTIFICATIONS</b>	IEC VDE 0660 IEC/EN 60947
<b>PRODUCT TYPE</b>	Molded case circuit breaker



Powering Business Worldwide

## Delivery program

<b>CIRCUIT BREAKER FRAME TYPE</b>	LZM1
<b>APPLICATION</b>	Use in unearthed supply systems at 690 V
<b>AMPERAGE RATING</b>	80 A
<b>NUMBER OF POLES</b>	Four-pole

## Technical data - electrical

<b>VOLTAGE RATING</b>	690 V - 690 V
<b>RATED INSULATION VOLTAGE (UI)</b>	690 V AC
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS</b>	6000 V
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS</b>	6000 V
<b>RATED OPERATIONAL CURRENT</b>	80 A (415 V AC-3, making and breaking capacity) 80 A (660-690 V AC-3, making and breaking capacity) 160 A (690 V AC-1, making and breaking capacity) 160 A (380/400 V AC-1, making and breaking capacity) 125 A (415 V AC-1, making and breaking capacity)
<b>CURRENT RATING OF NEUTRAL CONDUCTOR</b>	200% of phase conductor
<b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>	480 A
<b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>	800 A
<b>OVERLOAD CURRENT SETTING (IR)</b>	63 A - 80 A
<b>OVERLOAD CURRENT SETTING (IR) - MIN</b>	63 A
<b>OVERLOAD CURRENT SETTING (IR) - MAX</b>	80 A
<b>SHORT DELAY CURRENT SETTING (ISD) - MIN</b>	0 A
<b>SHORT DELAY CURRENT SETTING (ISD) - MAX</b>	0 A
<b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>	480 A
<b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>	800 A
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ</b>	55 kA

<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b>	36 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ</b>	22.5 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ</b>	6 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ</b>	121 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ</b>	76 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ</b>	63 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ</b>	24 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ</b>	14 kA
<b>SHORT-CIRCUIT TOTAL BREAKTIME</b>	< 10 ms
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Frame clamp
<b>ISOLATION</b>	300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts)
<b>OVERVOLTAGE CATEGORY</b>	III
<b>UTILIZATION CATEGORY</b>	A (IEC/EN 60947-2)
<b>POLLUTION DEGREE</b>	3
<b>LIFESPAN, ELECTRICAL</b>	10000 operations at 415 V AC-1 7500 operations at 690 V AC-1 5000 operations at 690 V AC-3 7500 operations at 415 V AC-3 10000 operations at 400 V AC-1

## Technical data - mechanical

<b>TYPE</b>	Circuit breaker
<b>RELEASE SYSTEM</b>	Thermomagnetic release
<b>MOUNTING METHOD</b>	DIN rail (top hat rail) mounting optional Built-in device fixed built-in technique Fixed
<b>DEGREE OF PROTECTION</b>	IP20 In the area of the HMI devices: IP20 (basic protection type)
<b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
<b>DEGREE OF PROTECTION (TERMINATIONS)</b>	IP00 (terminations, phase isolator and band terminal) IP10 (tunnel terminal)
<b>PROTECTION AGAINST DIRECT CONTACT</b>	Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110
<b>SHOCK RESISTANCE</b>	20 g (half-sinusoidal shock 20 ms)
<b>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	0
<b>NUMBER OF OPERATIONS PER HOUR - MAX</b>	120
<b>HANDLE TYPE</b>	Rocker lever
<b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>	Front side
<b>DIRECTION OF INCOMING SUPPLY</b>	As required
<b>STANDARD TERMINALS</b>	Box terminal
<b>TERMINAL CAPACITY (CONTROL CABLE)</b>	0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x) 0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x)
<b>TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)</b>	16 mm <sup>2</sup> (1x) at tunnel terminal
<b>TERMINAL CAPACITY (COPPER BUSBAR)</b>	Max. 16 mm x 5 mm direct at switch rear-side

## Design verification as per IEC/EN 61439 - technical data

<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	80 A
<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>	16.32 W

	<p>connection  Min. 12 mm x 5 mm direct  at switch rear-side  connection  M8 at rear-side screw  connection</p>
<b>TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)</b>	<p>6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) direct  at switch rear-side  connection  16 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at  tunnel terminal  10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) at  box terminal  10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x)  direct at switch rear-side  connection  6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) at  box terminal</p>
<b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>	<p>25 mm<sup>2</sup> (2x) direct at  switch rear-side  connection  25 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at  tunnel terminal  25 mm<sup>2</sup> (2x) at box  terminal  25 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x) at  box terminal  25 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x)  direct at switch rear-side  connection</p>
<b>TERMINAL CAPACITY (COPPER STRIP)</b>	<p>Max. 9 segments of 9 mm  x 0.8 mm at box terminal  Min. 2 segments of 9 mm  x 0.8 mm at box terminal</p>
<b>CLIMATIC PROOFING</b>	<p>Damp heat, constant, to  IEC 60068-2-78  Damp heat, cyclic, to IEC  60068-2-30</p>
<b>LIFESPAN, MECHANICAL</b>	20000 operations

## Design verification as per IEC/EN 61439

<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL IMPACT</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	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

## Additional information

<b>FEATURES</b>	Protection unit
<b>FUNCTIONS</b>	System and cable protection

### SPECIAL FEATURES

- Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity  $I_{cn}$ )
- Rated current = rated uninterrupted current: 80 A
- Set value in neutral conductor is synchronous with set value  $I_r$  of main pole.

	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

	<a href="#">eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-039.eps</a>
CHARACTERISTIC CURVE	<a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-051.eps</a>
	<a href="#">eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-033.eps</a>
DECLARATIONS OF CONFORMITY	<a href="#">eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250118en.pdf</a>
	<a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-018.eps</a>
DRAWINGS	<a href="#">eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps</a>
INSTALLATION INSTRUCTIONS	<a href="#">eaton-circuit-breaker-basic-unit-lzm1-instruction-leaflet-il01203007z.pdf</a>
INSTALLATION VIDEOS	<a href="#">Power Defense EMEA</a>

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**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**

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