

# Specifications



Photo is representative



## Eaton 278978

Eaton Moeller series xEffect - FAZ MCB. FAZ, 3-pole+N, tripping characteristic: C, rated current In: 32 A

### General specifications

|                     |                                        |
|---------------------|----------------------------------------|
| <b>PRODUCT NAME</b> | Eaton Moeller series xEffect - FAZ MCB |
|---------------------|----------------------------------------|

|                       |        |
|-----------------------|--------|
| <b>CATALOG NUMBER</b> | 278978 |
|-----------------------|--------|

|                   |            |
|-------------------|------------|
| <b>MODEL CODE</b> | FAZ-C32/3N |
|-------------------|------------|

|            |               |
|------------|---------------|
| <b>EAN</b> | 4015082789787 |
|------------|---------------|

|                             |       |
|-----------------------------|-------|
| <b>PRODUCT LENGTH/DEPTH</b> | 80 mm |
|-----------------------------|-------|

|                       |         |
|-----------------------|---------|
| <b>PRODUCT HEIGHT</b> | 75.5 mm |
|-----------------------|---------|

|                      |       |
|----------------------|-------|
| <b>PRODUCT WIDTH</b> | 72 mm |
|----------------------|-------|

|                       |          |
|-----------------------|----------|
| <b>PRODUCT WEIGHT</b> | 0.456 kg |
|-----------------------|----------|

|                    |              |
|--------------------|--------------|
| <b>COMPLIANCES</b> | RoHS conform |
|--------------------|--------------|

|                       |                                                          |
|-----------------------|----------------------------------------------------------|
| <b>CERTIFICATIONS</b> | IEC/EN 60947-2<br>IEC/EN 60898<br>EN45545-2<br>IEC 61373 |
|-----------------------|----------------------------------------------------------|



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## Additional information

### CURRENT LIMITING CLASS

3

### FEATURES

Concurrently switching N-neutral  
Additional equipment possible

### SPECIAL FEATURES

Ambient temperature hint:  
a 1 °C increase results in a  
0.5% linear reduction of  
current carrying capacity

### USED WITH

FAZ  
Miniature circuit breaker

## Delivery programme

### AMPERAGE RATING

32 A

### APPLICATION

- Switchgear for industrial and advanced commercial applications
- xEffect - Switchgear for industrial and advanced commercial applications

### NUMBER OF POLES

Three-pole + N

### NUMBER OF POLES (PROTECTED)

3

### NUMBER OF POLES (TOTAL)

4

### RELEASE CHARACTERISTIC

C

### TRIPPING CHARACTERISTIC

C

### TYPE

- FAZ
- Miniature circuit breaker

## Design verification to IEC/EN 61439

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <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.                         |
| <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</b>                                                                  | Does not apply, since the                                                                                                        |

## Design verification to IEC/EN 61439 - technical data

|                                                                      |        |
|----------------------------------------------------------------------|--------|
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                           | 75 °C  |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>                           | -25 °C |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>                 | 12.5 W |
| <b>HEAT DISSIPATION CAPACITY</b>                                     | 0 W    |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT</b>                  | 0 W    |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 32 A   |
| <b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT</b>                | 0 W    |

|                                                                 |                                                                    |
|-----------------------------------------------------------------|--------------------------------------------------------------------|
| <b>AGAINST ELECTRIC SHOCK</b>                                   | 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.                             |

## Technical data - electrical

|                                                                              |                  |
|------------------------------------------------------------------------------|------------------|
| <b>ADMISSIBLE BACK-UP FUSE - MAX</b>                                         | 125 A gL/gG      |
| <b>BREAKING CAPACITY</b>                                                     | 10 kA (UL1077)   |
| <b>DIRECTION OF INCOMING SUPPLY</b>                                          | As required      |
| <b>FREQUENCY RATING - MAX</b>                                                | 60 Hz            |
| <b>FREQUENCY RATING - MIN</b>                                                | 50 Hz            |
| <b>LIFESPAN, ELECTRICAL</b>                                                  | 10000 operations |
| <b>OPERATIONAL SWITCHING CAPACITY</b>                                        | 7.5 kA           |
| <b>OPERATIONAL VOLTAGE (IEC/EN 60947-2) - MAX</b>                            | 440 VAC          |
| <b>OVERVOLTAGE CATEGORY</b>                                                  | III              |
| <b>POLLUTION DEGREE</b>                                                      | 2                |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>                                | 4 kV             |
| <b>RATED INSULATION VOLTAGE (UI)</b>                                         | 440 V            |
| <b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>                                  | 400 V            |
| <b>RATED SERVICE SHORT-CIRCUIT BREAKING CAPACITY (IEC/EN 60898-1) - ICS</b>  | 7.5 kA           |
| <b>RATED SERVICE SHORT-CIRCUIT BREAKING CAPACITY (IEC/EN 60947-2) - ICS</b>  | 7.5 kA           |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC/EN 60898-1) - ICN AT 230 V</b> | 10 kA            |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC/EN 60898-1)- ICN AT 400 V</b>  | 10 kA            |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC 60947-2)- ICU AT 230 V</b>     | 15 kA            |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC 60947-2)- ICU AT 400 V</b>     | 15 kA            |
| <b>RATED SWITCHING CAPACITY (IEC/EN 60898-1)</b>                             | 10 kA            |

## Technical data - mechanical

|                                                                |                                                |
|----------------------------------------------------------------|------------------------------------------------|
| <b>BUILT-IN DEPTH</b>                                          | 70.5 mm                                        |
| <b>BUSBAR MATERIAL THICKNESS</b>                               | 0.8 mm - 2 mm                                  |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX</b> | 25 mm <sup>2</sup>                             |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN</b> | 1 mm <sup>2</sup>                              |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX</b>  | 25 mm <sup>2</sup>                             |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN</b>  | 1 mm <sup>2</sup>                              |
| <b>DEGREE OF PROTECTION</b>                                    | IP20<br>IP40 (when fitted)                     |
| <b>ENCLOSURE WIDTH</b>                                         | 80 mm                                          |
| <b>FRAME</b>                                                   | 45 mm                                          |
| <b>MOUNTING METHOD</b>                                         | Top-hat rail IEC/EN 60715                      |
| <b>MOUNTING POSITION</b>                                       | As required                                    |
| <b>MOUNTING WIDTH</b>                                          | 17.5 mm                                        |
| <b>MOUNTING WIDTH PER POLE</b>                                 | 17.5 mm                                        |
| <b>TERMINAL CAPACITY (CONTROL CABLE)</b>                       | 25 mm <sup>2</sup> (1x)                        |
| <b>TERMINAL CAPACITY OF SCREW TERMINALS FOR MAIN CABLE</b>     | 10 mm <sup>2</sup> (2x)                        |
| <b>TERMINAL PROTECTION</b>                                     | Finger and hand touch safe, DGUV VS3, EN 50274 |
| <b>TERMINALS (TOP AND BOTTOM)</b>                              | Twin-purpose terminals                         |
| <b>WIDTH IN NUMBER OF MODULAR SPACINGS</b>                     | 4                                              |

|                                                                                     |                     |
|-------------------------------------------------------------------------------------|---------------------|
| <b>RATED SWITCHING<br/>CAPACITY (IEC/EN 60947-<br/>2)</b>                           | 15 kA               |
| <b>RATED SWITCHING<br/>CAPACITY (IEC/EN 60947-<br/>2) AT MAX VOLTAGE<br/>RATING</b> | 10 kA               |
| <b>SELECTIVITY CLASS</b>                                                            | 3                   |
| <b>VOLTAGE RATING</b>                                                               | 240 V AC / 415 V AC |
| <b>VOLTAGE RATING (IEC/EN<br/>60898-1)</b>                                          | 415 VAC             |
| <b>VOLTAGE RATING (UL)</b>                                                          | 480Y/277 V          |
| <b>VOLTAGE RATING AT DC</b>                                                         | 60 V DC (per pole)  |
| <b>VOLTAGE TYPE</b>                                                                 | AC                  |

## Resources

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CATALOGUES                 | <a href="#">eaton-xeffect-industrial-switchgear-range-catalog-ca003002en-en-us.pdf</a>                                                                                                                                                                                                                                                                                                                                                                       |
| CHARACTERISTIC CURVE       | <a href="#">eaton-mcb-current-xeffect-faz-characteristic-curve.eps</a><br><a href="#">eaton-mcb-xeffect-faz-characteristic-curve-002.eps</a><br><a href="#">eaton-mcb-current-xeffect-faz-characteristic-curve-002.eps</a><br><a href="#">eaton-xeffect-faz-mcb-characteristic-curve.jpg</a><br><a href="#">eaton-mcb-tripping-characteristic-xeffect-faz-characteristic-curve-002.eps</a><br><a href="#">eaton-mcb-xeffect-faz-characteristic-curve.eps</a> |
| DECLARATIONS OF CONFORMITY | <a href="#">eaton-mcb-declaration-of-conformity-eu250395en.pdf</a><br><a href="#">eaton-mcb-declaration-of-conformity-uk251436en.pdf</a>                                                                                                                                                                                                                                                                                                                     |
| DRAWINGS                   | <a href="#">eaton-mcb-xeffect-faz-dimensions-004.eps</a><br><a href="#">eaton-xeffect-faz-mcb-dimensions-004.jpg</a><br><a href="#">eaton-xeffect-faz-mcb-3d-drawing-002.jpg</a><br><a href="#">eaton-mcb-faz-xeffect-faz-3d-drawing-004.eps</a><br><a href="#">eaton-xeffect-faz-mcb-3d-drawing-010.jpg</a><br><a href="#">eaton-xeffect-faz-mcb-3d-drawing-009.jpg</a>                                                                                     |
| ECAD MODEL                 | <a href="#">DA-CE-ETN.FAZ-C32_3N</a>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| INSTALLATION INSTRUCTIONS  | <a href="#">eaton-mcb-rccb-rcbo-g9-il019140zu.pdf</a>                                                                                                                                                                                                                                                                                                                                                                                                        |
| MCAD MODEL                 | <a href="#">eaton-non-selective-universal-mcb-mcad-3d-models-faz-xxx-4p.stp</a>                                                                                                                                                                                                                                                                                                                                                                              |
| PEP ECO-PASSPORT           | <a href="#">eaton-non-selective-universal-mcb-pep-eato-00047-v0101-en.pdf</a>                                                                                                                                                                                                                                                                                                                                                                                |

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|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| WIRING DIAGRAMS | <a href="#">eaton-xpole-mmc4-6-m-mcb-wiring-diagram-004.jpg</a> |
|                 | <a href="#">eaton-mcb-xeffect-faz-wiring-diagram-006.eps</a>    |

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|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |

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