

**Miniature circuit breaker (MCB), 4 A, 2p, characteristic: D**

**Part no.** FAZ-D4/2-NA  
**Catalog No.** 102182  
**Alternate Catalog No.** FAZ-D4/2-NA  
**EL-Nummer (Norway)** 1691647

Similar to illustration

**Delivery program**

|                                                 |          |    |                                                    |
|-------------------------------------------------|----------|----|----------------------------------------------------|
| Basic function                                  |          |    | Miniature circuit-breakers                         |
| Number of poles                                 |          |    | 2 pole                                             |
| Tripping characteristic                         |          |    | D                                                  |
| Application                                     |          |    | Switchgear for export to North America (UL-listed) |
| Rated current                                   | $I_n$    | A  | 4                                                  |
| Rated switching capacity acc. to IEC/EN 60947-2 | $I_{cu}$ | kA | 15                                                 |
| Product range                                   |          |    | FAZ-NA                                             |

**Technical data****Electrical**

|                                                 |            |      |                                        |
|-------------------------------------------------|------------|------|----------------------------------------|
| Standards                                       |            |      | UL 489, CSA C22.2 No. 5<br>IEC 60947-2 |
| Rated operational voltage                       | $U_e$      | V    |                                        |
|                                                 | $U_e$      | V AC | 277/480 Y                              |
|                                                 |            | V DC | 60                                     |
| Rated voltage according to IEC/EN 60947-2       | $U_n$      | V AC | 415                                    |
| Rated voltage according to UL                   | $U_n$      | V AC | 480Y/277                               |
| Rated switching capacity acc. to IEC/EN 60947-2 | $I_{cu}$   | kA   | 15                                     |
| Characteristic                                  |            |      | B, C, D                                |
| Selectivity Class                               |            |      | 3                                      |
| lifespan                                        |            |      |                                        |
| Lifespan                                        | Operations |      | > 20000                                |
| Direction of incoming supply                    |            |      | as required                            |

**Mechanical**

|                                    |  |     |                                                                                                             |
|------------------------------------|--|-----|-------------------------------------------------------------------------------------------------------------|
| Standard front dimension           |  | mm  | 45                                                                                                          |
| Enclosure height                   |  | mm  | 105                                                                                                         |
| Mounting width per pole            |  | mm  | 17.7                                                                                                        |
| Mounting                           |  |     | IEC/EN 60715 top-hat rail                                                                                   |
| Degree of Protection               |  |     | IP20, IP40 (when fitted)                                                                                    |
| Terminals top and bottom           |  |     | Twin-purpose terminals                                                                                      |
| Terminal protection                |  |     | Finger and back-of-hand proof to BGV A2                                                                     |
| Tightening torque of fixing screws |  | N/m | max. 2.4<br>UL:<br>#18-12 AWG: 2.4 Nm (21 lb-in)<br>#10-8 AWG: 2.8 Nm (25 lb-in)<br>#6 AWG: 4 Nm (36 lb-in) |
| Mounting position                  |  |     | As required                                                                                                 |

**Design verification as per IEC/EN 61439**

|                                                          |           |   |     |
|----------------------------------------------------------|-----------|---|-----|
| Technical data for design verification                   |           |   |     |
| Rated operational current for specified heat dissipation | $I_n$     | A | 4   |
| Heat dissipation per pole, current-dependent             | $P_{vid}$ | W | 0   |
| Equipment heat dissipation, current-dependent            | $P_{vid}$ | W | 2.9 |
| Static heat dissipation, non-current-dependent           | $P_{vs}$  | W | 0   |

|                                                                                                                        |                   |    |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|----------------------------------------------------------------------------------------------------------------------------------|
| Heat dissipation capacity                                                                                              | P <sub>diss</sub> | W  | 0                                                                                                                                |
| Operating ambient temperature min.                                                                                     |                   | °C | -25                                                                                                                              |
| Operating ambient temperature max.                                                                                     |                   | °C | 75                                                                                                                               |
|                                                                                                                        |                   |    | linear, per +1 °C, results in a 0.5% reduction of current carrying capacity                                                      |
| IEC/EN 61439 design verification                                                                                       |                   |    |                                                                                                                                  |
| 10.2 Strength of materials and parts                                                                                   |                   |    |                                                                                                                                  |
| 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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties                                                                                             |                   |    |                                                                                                                                  |
| 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 7.0

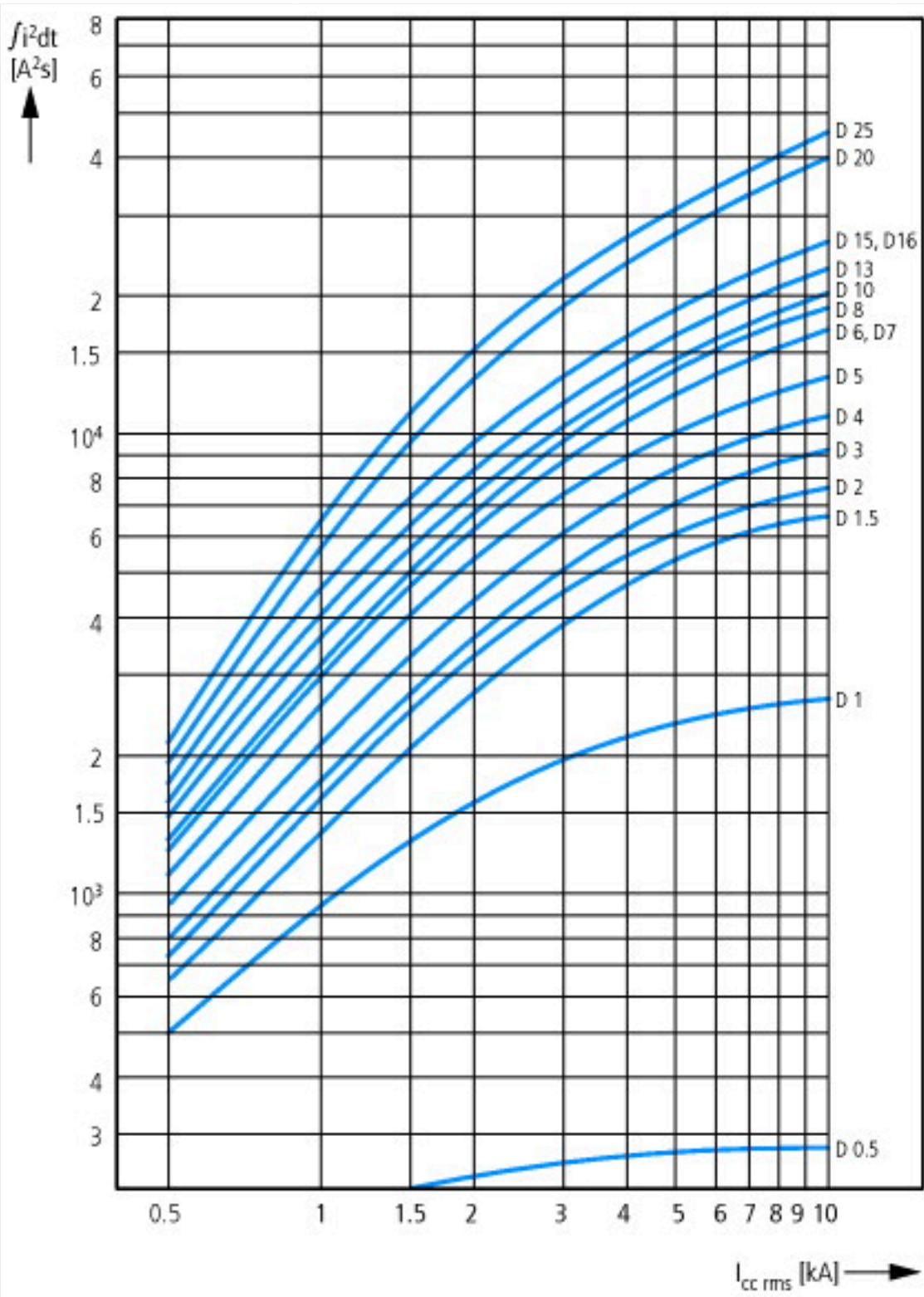
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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|---------|
| Circuit breakers and fuses (EG000020) / Miniature circuit breaker (MCB) (EC000042)                                                                                                                                |  |    |         |
| Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) (ec1@ss10.0.1-27-14-19-01 [AAB905014]) |  |    |         |
| Release characteristic                                                                                                                                                                                            |  |    | D       |
| Number of poles (total)                                                                                                                                                                                           |  |    | 2       |
| Number of protected poles                                                                                                                                                                                         |  |    | 2       |
| Rated current                                                                                                                                                                                                     |  | A  | 4       |
| Rated voltage                                                                                                                                                                                                     |  | V  | 415     |
| Rated insulation voltage U <sub>i</sub>                                                                                                                                                                           |  | V  | 440     |
| Rated impulse withstand voltage U <sub>imp</sub>                                                                                                                                                                  |  | kV | 4       |
| Rated short-circuit breaking capacity I <sub>cn</sub> EN 60898 at 230 V                                                                                                                                           |  | kA | 0       |
| Rated short-circuit breaking capacity I <sub>cn</sub> EN 60898 at 400 V                                                                                                                                           |  | kA | 0       |
| Rated short-circuit breaking capacity I <sub>cu</sub> IEC 60947-2 at 230 V                                                                                                                                        |  | kA | 15      |
| Rated short-circuit breaking capacity I <sub>cu</sub> IEC 60947-2 at 400 V                                                                                                                                        |  | kA | 15      |
| Voltage type                                                                                                                                                                                                      |  |    | AC      |
| Frequency                                                                                                                                                                                                         |  | Hz | 50 - 60 |
| Current limiting class                                                                                                                                                                                            |  |    | 3       |
| Suitable for flush-mounted installation                                                                                                                                                                           |  |    | No      |
| Concurrently switching N-neutral                                                                                                                                                                                  |  |    | No      |
| Over voltage category                                                                                                                                                                                             |  |    | 3       |
| Pollution degree                                                                                                                                                                                                  |  |    | 2       |
| Additional equipment possible                                                                                                                                                                                     |  |    | Yes     |
| Width in number of modular spacings                                                                                                                                                                               |  |    | 2       |

|                                                 |  |                 |          |
|-------------------------------------------------|--|-----------------|----------|
| Built-in depth                                  |  | mm              | 70.5     |
| Degree of protection (IP)                       |  |                 | IP20     |
| Ambient temperature during operating            |  | °C              | -25 - 75 |
| Connectable conductor cross section multi-wired |  | mm <sup>2</sup> | 1 - 25   |
| Connectable conductor cross section solid-core  |  | mm <sup>2</sup> | 1 - 25   |

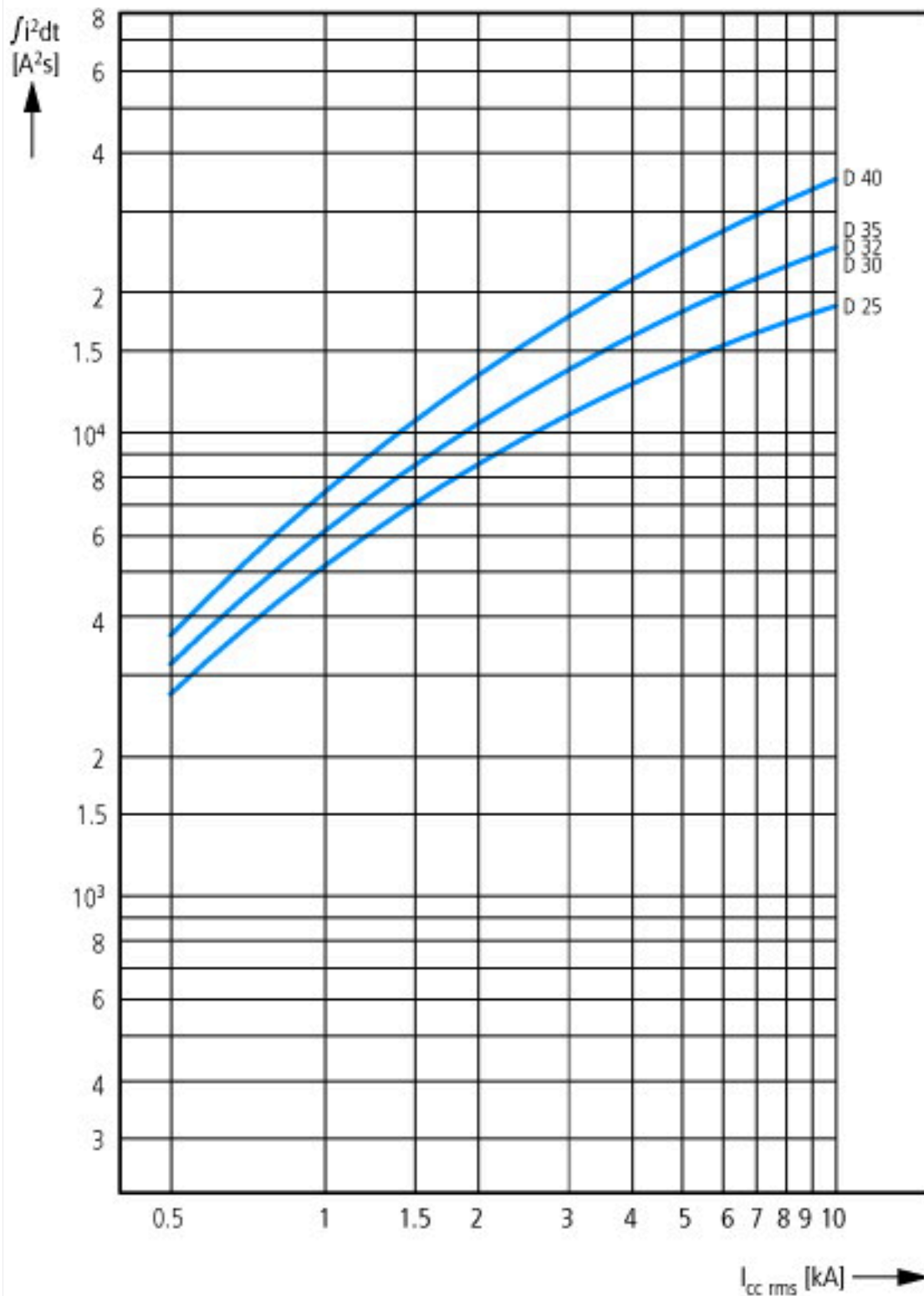
## Approvals

|                                      |  |  |                                                                               |
|--------------------------------------|--|--|-------------------------------------------------------------------------------|
| Product Standards                    |  |  | IEC/EN 60947-2; EN 45545-2; IEC 61373; UL 489; CSA-C22.2 No. 5-09; CE marking |
| UL File No.                          |  |  | E235139                                                                       |
| UL Category Control No.              |  |  | DIVQ                                                                          |
| CSA File No.                         |  |  | 204453                                                                        |
| CSA Class No.                        |  |  | 1432-01                                                                       |
| North America Certification          |  |  | UL listed, CSA certified                                                      |
| Specially designed for North America |  |  | Yes, suitable as BCPD                                                         |
| Suitable for                         |  |  | Feeder circuits, branch circuits                                              |
| Current Limiting Circuit-Breaker     |  |  | Yes                                                                           |
| Max. Voltage Rating                  |  |  | ≤ 32 A                                                                        |
| Degree of Protection                 |  |  | IEC: IP20, UL/CSA Type: -                                                     |

Characteristics



Let-through energy  $i^2t$   
Characteristic D (0.5 - 20 A), 277 V



Characteristic D (25 - 40 A), 240 V

## Additional product information (links)

Temperature dependency, derating

<https://www.eaton.com/content/dam/eaton/technicaldocumentation/technical-data-tables/Derating table FAZ-NA-RT.pdf>