

# Molded Case Circuit Breaker Specifications

Bulletin Number 140U-D

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## Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

| Resource                                                                                    | Description                                                                         |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770-4.1</a> | Provides general guidelines for installing a Rockwell Automation industrial system. |
| Product Certifications website, <a href="http://www.ab.com">http://www.ab.com</a>           | Provides declarations of conformity, certificates, and other certification details. |

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

|                                                                                                                                                                                |                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                                                                                                                |  |
| Frame Reference                                                                                                                                                                | D-Frame                                                                            |
| Max. Current $I_n$                                                                                                                                                             | 30 A                                                                               |
| Current Range                                                                                                                                                                  | 0.5...30 A                                                                         |
| Thermal Magnetic                                                                                                                                                               | ✓                                                                                  |
| Rotary Operators                                                                                                                                                               | ✓                                                                                  |
| Internal Control Modules (Field installed)                                                                                                                                     | ✓                                                                                  |
| Standards Compliance (For information regarding specific breakers, please consult <a href="http://www.ab.com">www.ab.com</a> . Standards compliance varies by catalog number.) |                                                                                    |
| UL 489                                                                                                                                                                         | ✓                                                                                  |
| UL File Nos.                                                                                                                                                                   | E334037,<br>E33916                                                                 |
| CSA C22.2, No. 5                                                                                                                                                               | ✓                                                                                  |
| IEC 60947-2                                                                                                                                                                    | ✓                                                                                  |
| CE                                                                                                                                                                             | ✓                                                                                  |

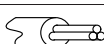
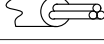
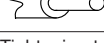
## General Data

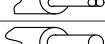
| Attribute                                                                                    | 140U-D                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Number of Poles</b>                                                                       | 2 and 3                                                                                                                                                                                                                                                                                                                                                      |
| <b>Rated Insulation Voltage <math>U_i</math></b>                                             |                                                                                                                                                                                                                                                                                                                                                              |
| IEC / EN [V]                                                                                 | 690                                                                                                                                                                                                                                                                                                                                                          |
| UL, CSA [V]                                                                                  | 600                                                                                                                                                                                                                                                                                                                                                          |
| <b>Ratings</b>                                                                               | HACR                                                                                                                                                                                                                                                                                                                                                         |
| Suitable for continuous operation at 100 percent of rating only if used in cubicle space for | 0.5...10 A, cubicle space 250 x 175 x 150 mm (10 x 7 x 6 inches).                                                                                                                                                                                                                                                                                            |
| <b>Rated Impulse Withstand Voltage <math>U_{imp}</math></b>                                  |                                                                                                                                                                                                                                                                                                                                                              |
| Pollution degree                                                                             | 3                                                                                                                                                                                                                                                                                                                                                            |
| Main circuits $U_{imp}$ /Overvoltage Category                                                | 6 kV/III                                                                                                                                                                                                                                                                                                                                                     |
| Auxiliary circuits $U_{imp}$ /Overvoltage Category                                           | 6 kV/III                                                                                                                                                                                                                                                                                                                                                     |
| Safe separation between main and auxiliary circuits                                          | up to 400V                                                                                                                                                                                                                                                                                                                                                   |
| <b>Rated Frequency</b> [Hz]                                                                  | 50/60                                                                                                                                                                                                                                                                                                                                                        |
| <b>Utilization Category</b>                                                                  |                                                                                                                                                                                                                                                                                                                                                              |
| IEC 60947-2 (Circuit breaker)                                                                | A                                                                                                                                                                                                                                                                                                                                                            |
| <b>Life Span</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                              |
| Mechanical [operations]                                                                      | 100 000                                                                                                                                                                                                                                                                                                                                                      |
| Electrical ( $I_e$ max.) [operations]                                                        | 10 000                                                                                                                                                                                                                                                                                                                                                       |
| Switching Frequency [operations/h]                                                           | max. 25                                                                                                                                                                                                                                                                                                                                                      |
| <b>Ambient Temperature</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                              |
| Storage [°C]                                                                                 | -40...+80                                                                                                                                                                                                                                                                                                                                                    |
| Operation [°C]                                                                               | -25...+60 (70 with 15 % $I_n$ current reduction)                                                                                                                                                                                                                                                                                                             |
| <b>Climatic resistance</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                              |
| Moisture change climate (600068-2-30)                                                        | 23 °C / 83 % relative humidity and 40 °C / 92 % relative humidity, 56 cycles                                                                                                                                                                                                                                                                                 |
| Dry heat (60086-2-2)                                                                         | 100 °C, relative humidity <50 %, 7 days                                                                                                                                                                                                                                                                                                                      |
| Moisture heat (60068-2-3)                                                                    | 40 °C, relative humidity 93 %, 56 days                                                                                                                                                                                                                                                                                                                       |
| <b>Site Altitude</b> [m]                                                                     | to 2000 N.N.                                                                                                                                                                                                                                                                                                                                                 |
| <b>Protection Class</b>                                                                      | IP2X, when wired                                                                                                                                                                                                                                                                                                                                             |
| <b>Resistance to Shock</b> , Transport (60068-2-27)                                          | 30 g, 11 ms, all axes                                                                                                                                                                                                                                                                                                                                        |
| <b>Resistance to Vibration</b> , Operation (60068-2-6)                                       | 18 g                                                                                                                                                                                                                                                                                                                                                         |
| <b>Overload Protection</b> [°C]                                                              | Yes acc. IEC/EN 60947-2, UL489, CSA 22.2, Ambient Temperature Compensation -25...+60                                                                                                                                                                                                                                                                         |
| Phase-loss Protection                                                                        | No phase loss protection                                                                                                                                                                                                                                                                                                                                     |
| Short circuit protection (Magnetic)                                                          | fixed setting 15...20 x $I_n$                                                                                                                                                                                                                                                                                                                                |
| <b>Total Power loss <math>P_v</math></b>                                                     |                                                                                                                                                                                                                                                                                                                                                              |
| @ $I_n$ max. [W]                                                                             | 7.5                                                                                                                                                                                                                                                                                                                                                          |
| <b>Main Disconnect Switch Application</b>                                                    | Yes, with accessories                                                                                                                                                                                                                                                                                                                                        |
| <b>Application Conditions</b>                                                                | For utilization outside North America, Assemblies (of products) shall comply to the IEC61439-1 requirements<br>140U circuit breakers are intended for use in closed areas without hazardous operating conditions such as dust or explosive or corrosive gases. Enclosures of appropriate manner need to be in place to protect devices in such environments. |
| <b>Standards</b>                                                                             | UL489; CSA C22.2 No. 5; IEC / EN 60947-1, -2                                                                                                                                                                                                                                                                                                                 |
| <b>Certifications</b>                                                                        | CE; cULus listed Circuit Breaker, File No. E334037 and E33916 (accessories)                                                                                                                                                                                                                                                                                  |

## Terminal Specifications 140U-D

| Attribute                                                                                                                   | 140U-D...                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Use 75°C Cu wire only                                                                                                       |                                                                                      |
| <b>Terminal Parts</b>                                                                                                       |  |
| Type of terminals                                                                                                           |                                                                                      |
| Screwdriver                                                                                                                 | Pozidriv No. 2 / Blade No. 3                                                         |
|  1. conductor [mm <sup>2</sup> ] / [AWG] | 1...6/—                                                                              |
|  2. conductor [mm <sup>2</sup> ] / [AWG] | 1...4/—                                                                              |
|  1. conductor [mm <sup>2</sup> ] / [AWG] | 1...6/—                                                                              |
|  2. conductor [mm <sup>2</sup> ] / [AWG] | 1...6/—                                                                              |
|  1. conductor [mm <sup>2</sup> ] / [AWG] | —/No. 18...10                                                                        |
|  2. conductor [mm <sup>2</sup> ] / [AWG] | —/No. 18...10                                                                        |
|  1. conductor [mm <sup>2</sup> ] / [AWG] | 1...6/No. 18...10                                                                    |
|  2. conductor [mm <sup>2</sup> ] / [AWG] | 1...6/No. 18...10                                                                    |
| Tightening torque [N•m] / [lb•in]                                                                                           | 2...2.5/18...22                                                                      |

## Terminal specification 140U-D

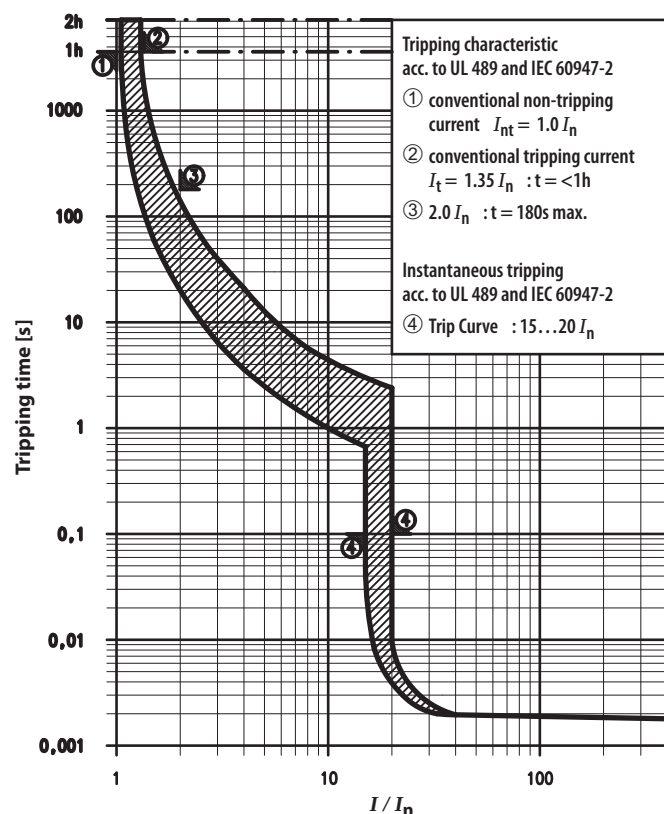
| Cat. No.                                                                          |              |                          | 140U-D...                                                                          |
|-----------------------------------------------------------------------------------|--------------|--------------------------|------------------------------------------------------------------------------------|
| Use 75°C Cu wire only                                                             |              |                          |                                                                                    |
| <b>Terminal Parts</b>                                                             |              |                          |  |
| Type of terminals                                                                 |              |                          |                                                                                    |
| Screwdriver                                                                       |              |                          | Pozidriv No. 2 / Blade No. 3                                                       |
|  | 1. conductor | [mm <sup>2</sup> ]/[AWG] | 1...6/—                                                                            |
|  | 2. conductor | [mm <sup>2</sup> ]/[AWG] | 1...4/—                                                                            |
|  | 1. conductor | [mm <sup>2</sup> ]/[AWG] | 1...6/—                                                                            |
|  | 2. conductor | [mm <sup>2</sup> ]/[AWG] | 1...6/—                                                                            |
|  | 1. conductor | [mm <sup>2</sup> ]/[AWG] | —/No. 18...10                                                                      |
|  | 2. conductor | [mm <sup>2</sup> ]/[AWG] | —/No. 18...10                                                                      |
|  | 1. conductor | [mm <sup>2</sup> ]/[AWG] | 1...6/No. 18...10                                                                  |
|  | 2. conductor | [mm <sup>2</sup> ]/[AWG] | 1...6/No. 18...10                                                                  |
| Tightening torque                                                                 |              | [N•m]/[lb•in]            | 2...2.5/18...22                                                                    |

| Cat. No.                                                                                                                | 140U-D-WTE      | 140U-D-W |
|-------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| Use 75°C Cu wire only                                                                                                   |                 |          |
| Rated Thermal Current $I_{th}$ [A]                                                                                      | 64              | 64       |
|  1. conductor [mm <sup>2</sup> ]/[AWG] | 2.5...25/14...4 | —        |
|  1. conductor [mm <sup>2</sup> ]/[AWG] | 2.5...25/14...4 | —        |
|  1. conductor [mm <sup>2</sup> ]/[AWG] | 2.5...25/14...4 | —        |
|  1. conductor [mm <sup>2</sup> ]/[AWG] | 2.5...25/14...4 | —        |
| Tightening torque                                                                                                       | 3...3.5/27...31 | —        |

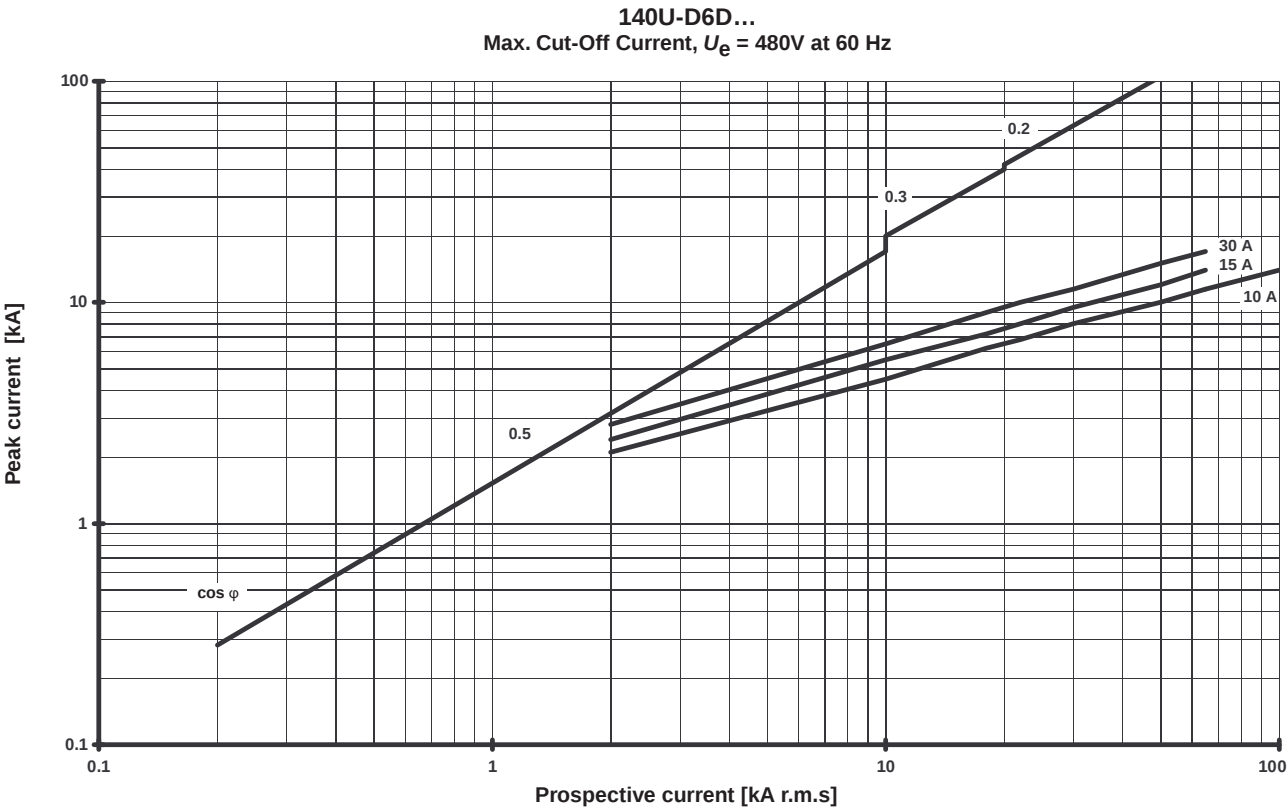
## Weights

| Description      | Weight [g] | Cat.No.   |
|------------------|------------|-----------|
| Circuit Breakers | 395        | 140U-D... |

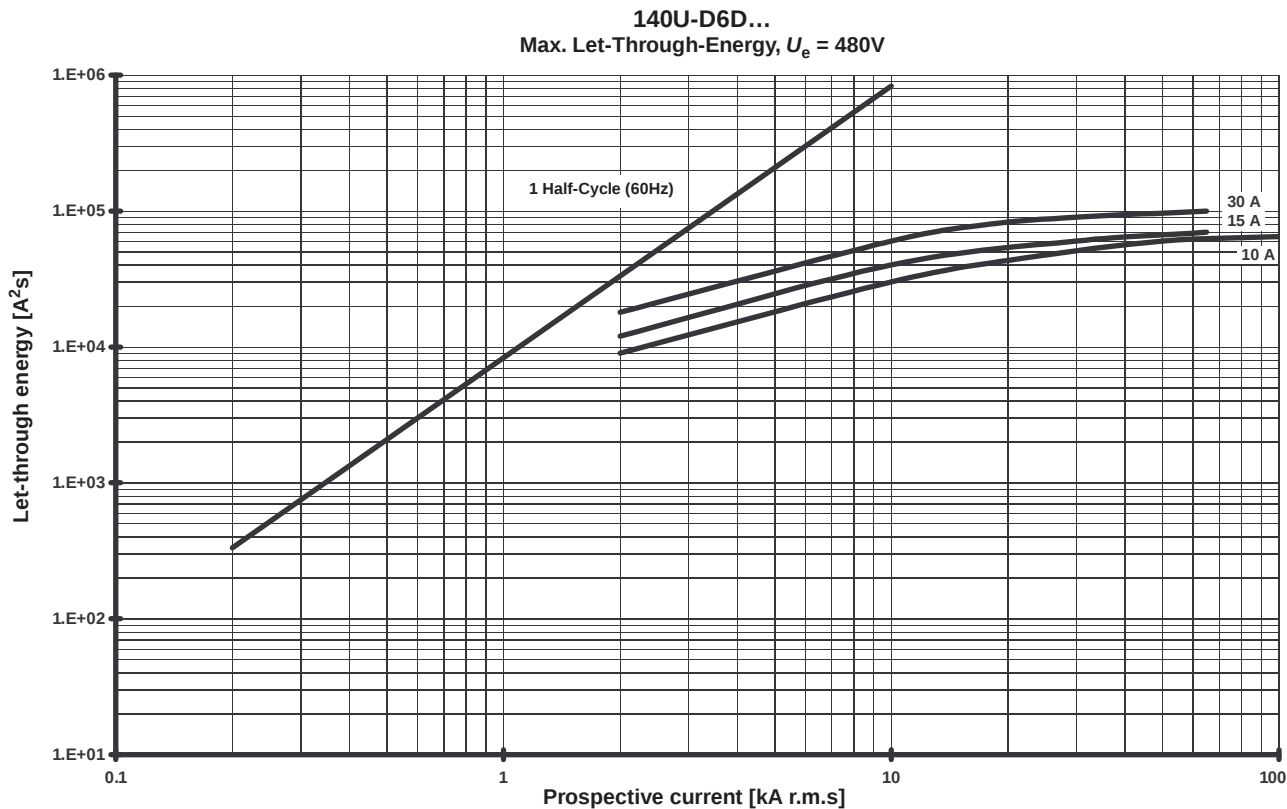
## Time-Current Characteristic



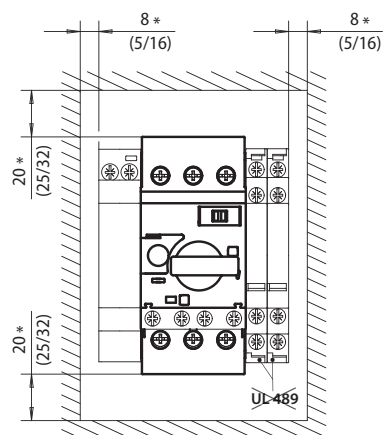
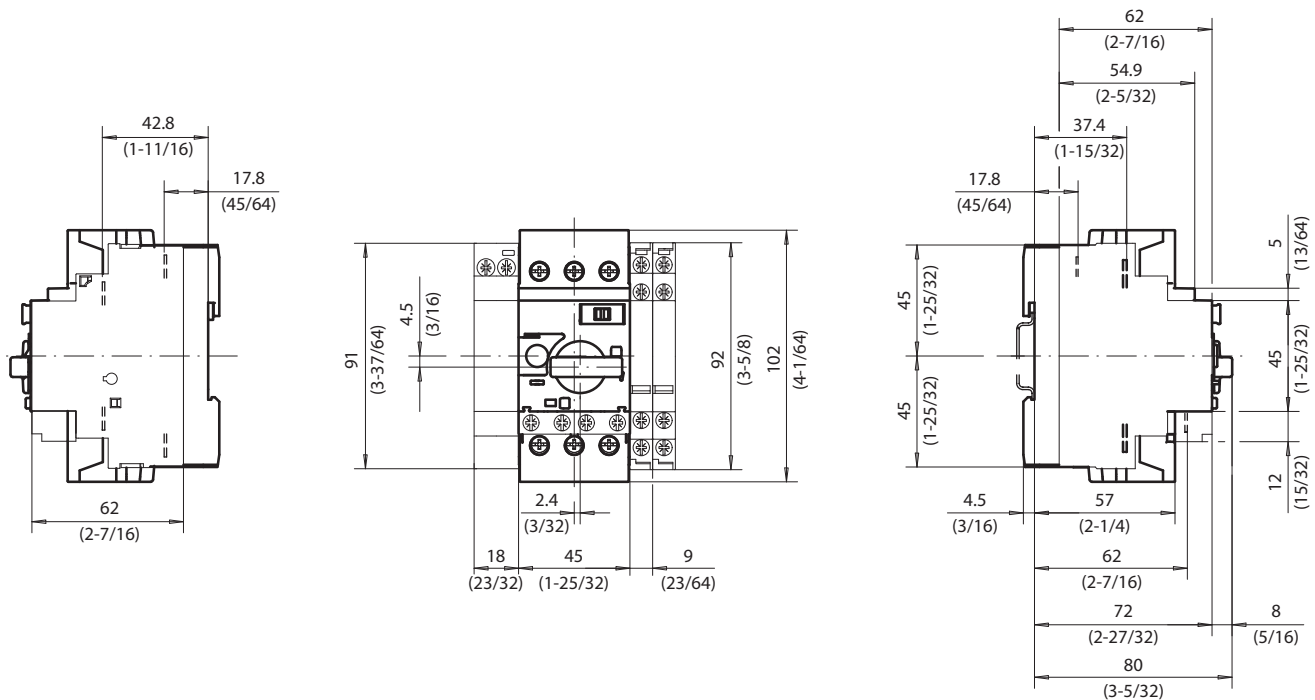
Bulletin 140U-D Molded Case Circuit Breakers (Maximum Cut-Off Current)



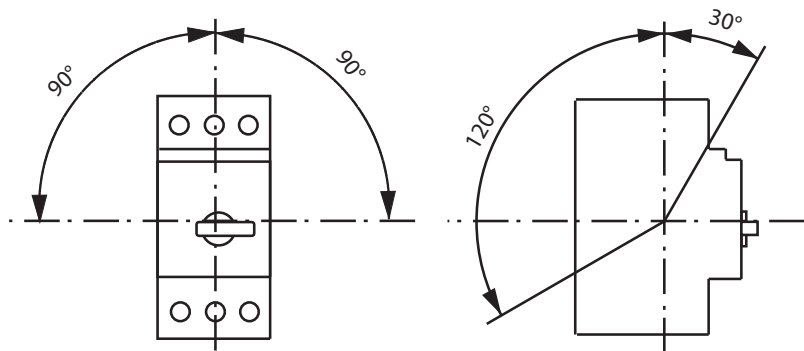
Bulletin 140U-D Molded Case Circuit Breakers (Maximum Let-Through-Energy)



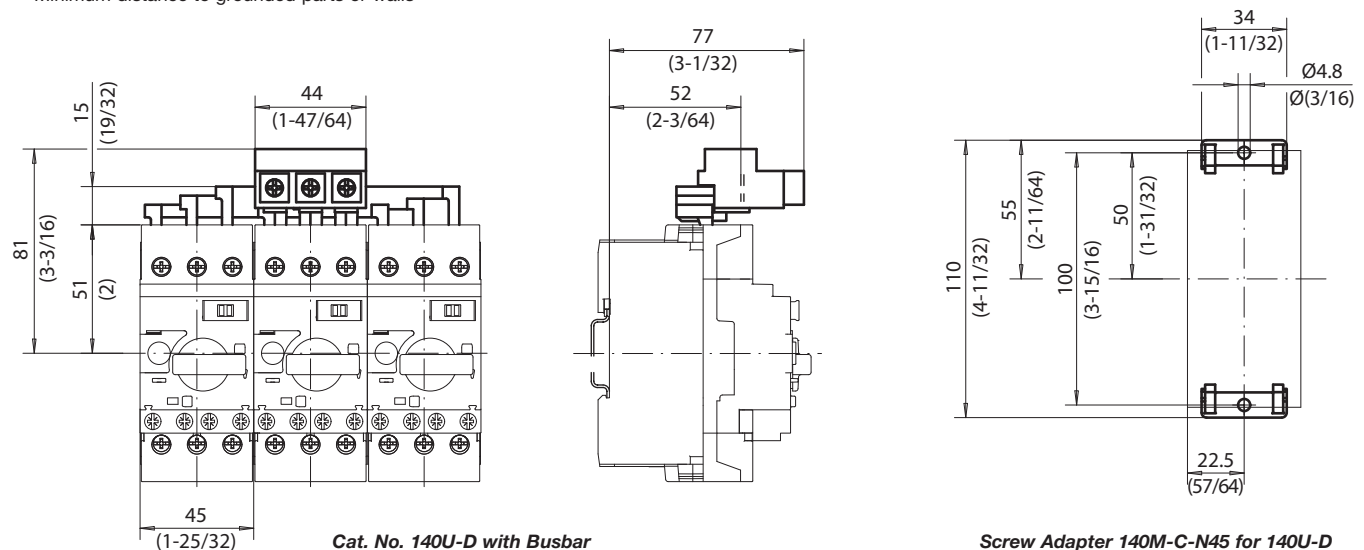
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.



★ Minimum distance to grounded parts or walls



Mounting position



Cat. No. 140U-D with Busbar

Screw Adapter 140M-C-N45 for 140U-D



## Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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