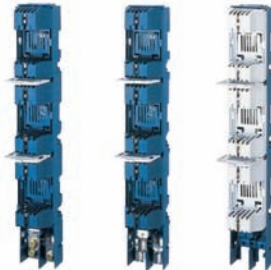


## NH Fuse Rails - Vertical

**BFR**  
690V / 160 - 630A  
Sizes 00, 1, 2, 3



**Description:** Vertical fus used with NH fuse links. Fully protected against accidental contact..

**Main features are:**

- Contact covers
- Phase barriers
- Label for protected circuit identification
- Busbar mounting option

**Ratings:**

- Volts: 690Vac
- Amps: 160 to 630A

**Applications:** Disconnecting cabinets and low voltage distribution switchboards with busbar spacing of 185mm

**Standards and Approvals:** CE, IEC 60269, EN 354701

**Dimensions:** see page 46

**Technical Data:**

| Type                               |          | BL00-3-F-HA                                      | BFR1                                                               | BFR2                                                               | BFR3                                                                 |
|------------------------------------|----------|--------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|
| Rated Current                      | $I_n$    | 160A                                             | 250A                                                               | 400A                                                               | 630A                                                                 |
| Standards                          |          | IEC 60269-1, 2                                   | IEC 60269-1, 2-1                                                   | IEC 60269-1, 2-1<br>EN 354701-2-1                                  | IEC 60269-1, 2-1<br>EN 354701-2-1                                    |
| Rated Voltage                      | $U_n$    | 690Vac                                           | 690Vac                                                             | 690Vac                                                             | 690Vac                                                               |
| Rated Frequency                    | $f$      | 40-60Hz                                          | 40-60Hz                                                            | 40-60Hz                                                            | 40-60Hz                                                              |
| Rated Insulation Voltage           | $U_i$    | 750Vac                                           | 1000Vac                                                            | 1000Vac                                                            | 1000Vac                                                              |
| Fuse Link Size                     |          | 000, 00                                          | 1                                                                  | 2                                                                  | 3                                                                    |
| Max Rated Current of the Fuse Link | $I_n$    | 160A                                             | 250A                                                               | 400A                                                               | 630A                                                                 |
| Thermal Current/Maximum Cable Size | $I_{th}$ | 210A with disconnecting knife SL00/Cross-section | 400A/240mm <sup>2</sup> with disconnection knife SL1/Cross-section | 560A/183mm <sup>2</sup> with disconnection knife SL2/Cross-section | 800A/2x185mm <sup>2</sup> with disconnection knife SL3/Cross-section |
| Degree of Protection               |          | IP20                                             | IP20                                                               | IP20                                                               | IP20                                                                 |
| Max Power Losses of the Fuse Link  | $P_y$    | 12W                                              | 32W                                                                | 45W                                                                | 60W                                                                  |
| Permissible Ambient Temperature    |          | -25°C to 55°C                                    | -25°C to 55°C                                                      | -25°C to 55°C                                                      | -25°C to 55°C                                                        |

### Part Numbers

| Size | Rating (Amps) | Part Reference   | Leading out Terminals                                                    | Compatible Fuse Links Size |
|------|---------------|------------------|--------------------------------------------------------------------------|----------------------------|
| 00   | 160           | BL00-3-F-HA      | M8 cable connections                                                     | 000 & 00                   |
| 1    | 250           | BFR1-3K/LM/C (*) | Pressed-in nuts with M10 screw                                           | 01 & 1                     |
|      |               | BFR1-3K/LW       | V-shaped clamps                                                          |                            |
|      |               | BFR1-3K/LL       | Busbar systems 185mm<br>Busbar spacing connects to Busbar with M12 bolts |                            |
| 2    | 400           | BFR2-3K/LM/C (*) | Pressed-in nuts with M10 screw                                           | 02 & 2                     |
|      |               | BFR2-3K/LW       | V-shaped clamps                                                          |                            |
|      |               | BFR2-3K/LL       | Busbar systems 185mm<br>Busbar spacing connects to Busbar with M12 bolts |                            |
| 3    | 630           | BFR3-3K/LM/C (*) | Pressed-in nuts with M10 screw                                           | 03 & 3                     |
|      |               | BFR3-3K/LW       | V-shaped clamps                                                          |                            |
|      |               | BFR3-3K/LL       | Busbar systems 185mm<br>Busbar spacing connects to Busbar with M12 bolts |                            |

\* with leading-out terminal cover

400Vac

500Vac

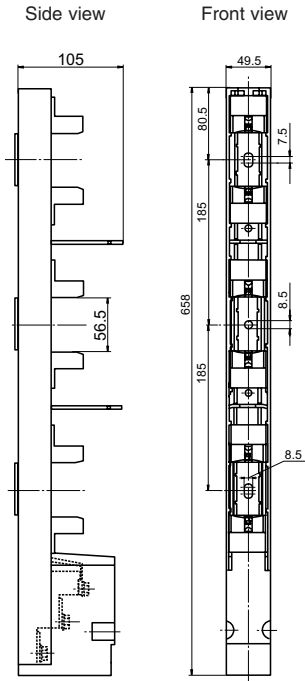
690Vac

aM

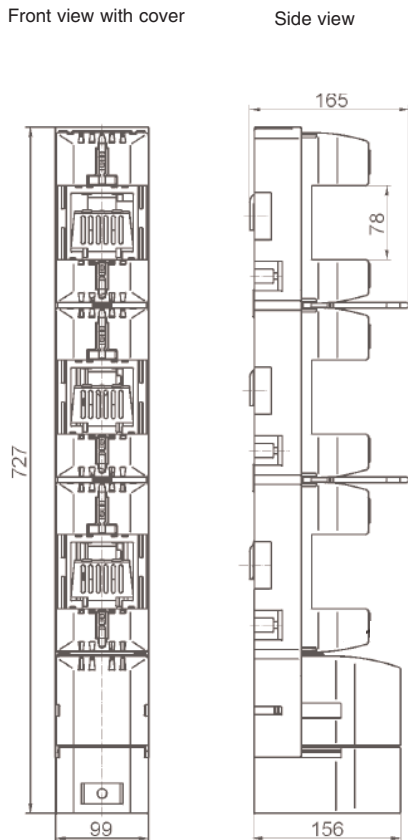
Accessories

## NH Fuse Rails - Vertical - Dimensions (mm)

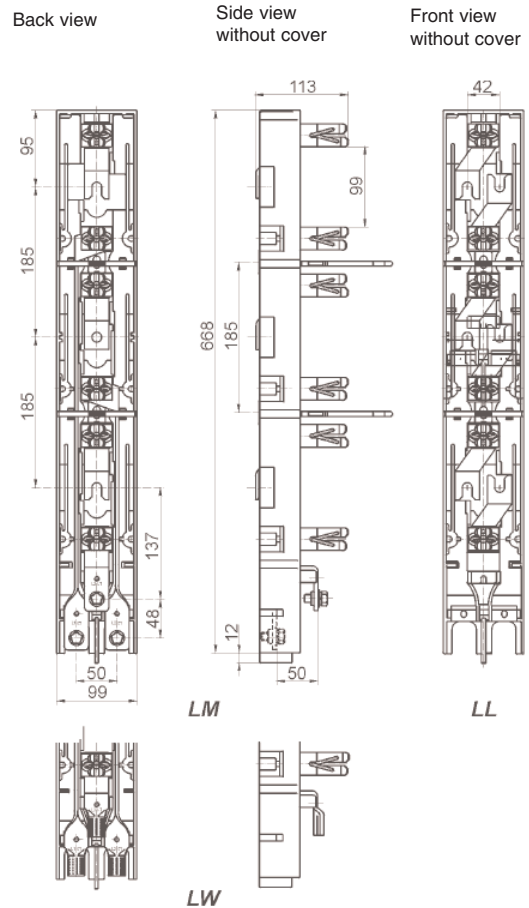
Dimensions for BL00-3-F-HA



Dimensions for BFR1, BFR2 and BFR3



Dimensions for BFR1, BFR2 and BFR3



400Vac

500Vac

690Vac

am

Accessories

## NH Fuse Switch Disconnectors - Vertical

**BFD**  
**690V / 160 - 630A**  
**Sizes 00, 1, 2, 3**



**Description:** Vertical fuse switch disconnectors are designed to be used with NH fuse links. Enabling safe connection and disconnection on the load.

**Main features are:**

- Lockable fuse cover
- Label for circuit identification
- Busbar mounting

**Ratings:**

- Volts: 690Vac
- Amps: 160 - 630A
- Utilization category: 400Vac - AC23B / 690Vac - AC22B

**Applications:** Distribution and industrial switchboards with busbar spacing of 185mm.

**Standards and Approvals:** CE, IEC 60947

**Technical Data:** see page 48

**Dimensions:** see page 48

### Part Numbers

| Size | Rating (Amps) | Part Reference   |                  | Terminals                                                                                      | Unit Packing | Compatible Fuse Links Size |
|------|---------------|------------------|------------------|------------------------------------------------------------------------------------------------|--------------|----------------------------|
|      |               | 1-Pole Switching | 3-Pole Switching |                                                                                                |              |                            |
| 00   | 160A          | N/A              | BSL00-3x-F       | M8 cable connections                                                                           | 1            | 00                         |
| 1    | 250           | BFD1-31/LM       | BFD1-33/LM       | Pressed-in nuts with M10 screw                                                                 | 1            | 01 & 1                     |
|      |               | BFD1-31/LW       | BFD1-33/LW       | V-shaped clamps                                                                                | 1            |                            |
|      |               | BFD1-31/LL       | BFD1-33/LL       | Switch disconnectors for Busbar systems 185mm Busbar spacing connects to Busbar with M12 bolts | 1            |                            |
| 2    | 400           | BFD2-31/LM       | BFD2-33/LW       | Pressed-in nuts with M10 screw                                                                 | 1            | 02 & 2                     |
|      |               | BFD2-31/LW       | BFD2-33/LW       | V-shaped clamps                                                                                | 1            |                            |
|      |               | BFD2-31/LL       | BFD2-33/LL       | Switch disconnectors for Busbar systems 185mm Busbar spacing connects to Busbar with M12 bolts | 1            |                            |
| 3    | 630           | BFD3-31/LM       | BFD3-33/LM       | Pressed-in nuts with M12 screw                                                                 | 1            | 03 & 3                     |
|      |               | BFD3-31/LW       | BFD3-33/LW       | V-shaped clamps                                                                                | 1            |                            |
|      |               | BFD3-31/LL       | BFD3-33/LL       | Switch disconnectors for Busbar systems 185mm Busbar spacing connects to Busbar with M12 bolts | 1            |                            |

400Vac

500Vac

690Vac

aM

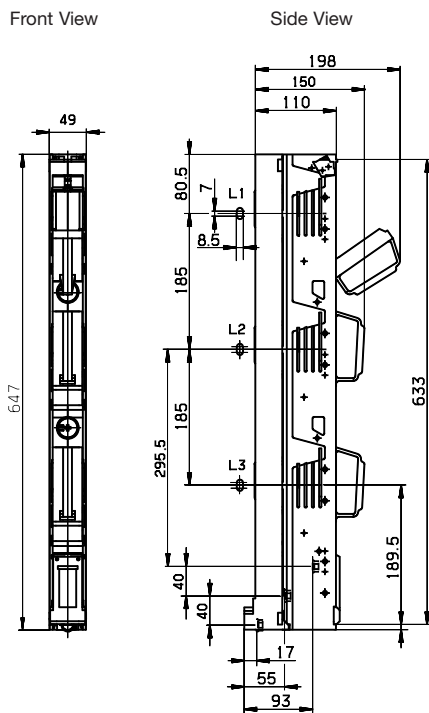
Accessories

## NH Fuse Switch Disconnectors - Vertical - Technical Data

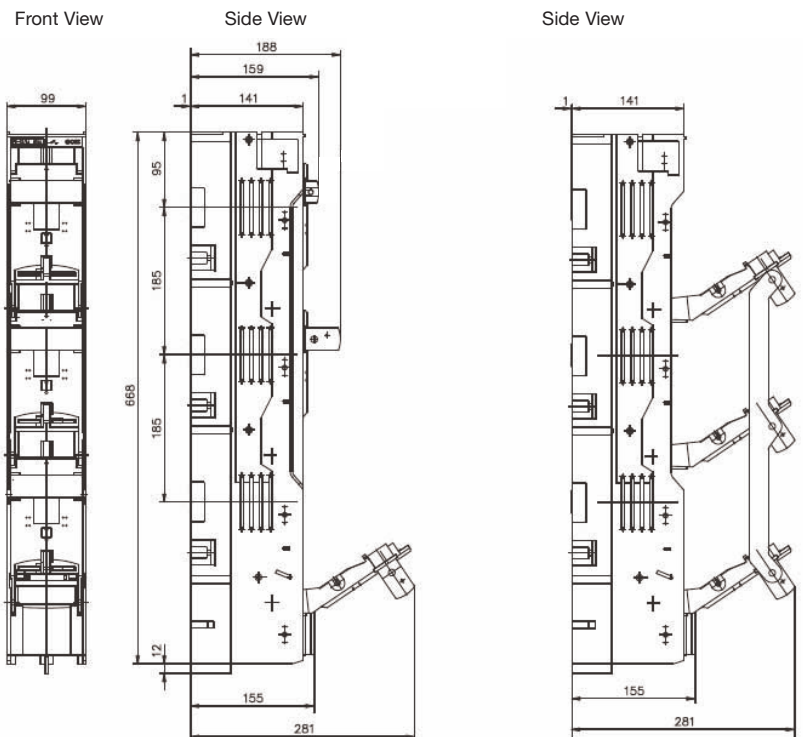
| Type                                                                |          | BSL00-3x-F                         | BFD1                              | BFD2                                    | BFD3                                                         |
|---------------------------------------------------------------------|----------|------------------------------------|-----------------------------------|-----------------------------------------|--------------------------------------------------------------|
| Rated Current                                                       | $I_n$    | 160A                               | 250A                              | 400A                                    | 630A                                                         |
| Rated Voltage                                                       | $U_n$    | 750Vac                             | 690Vac                            | 690Vac                                  | 690Vac                                                       |
| Standards                                                           |          | IEC 60947-1-3, EN 60947-1-3        | IEC 60947-1-3, EN 60947-1-3       | IEC 60947-1-3, EN 60947-1-3             | IEC 60947-1-3, EN 60947-1-3                                  |
| Utilisation Category                                                | $U_n$    | AC20B at 400Vac                    | AC23B at 400Vac/AC22B at 690Vac   | AC23B at 400Vac/AC22B at 690Vac         | AC23B at 400Vac/AC22B at 690Vac                              |
| Thermal Current with Fuse Links                                     | $I_{th}$ | 160A                               | 250A                              | 400A                                    | 630A                                                         |
| Thermal Current with Fuse Links (with disconnecting knife)          | $I_{th}$ | 160A with disconnecting knife SL00 | 400A with disconnecting knife SL1 | 560A with disconnecting knife SL2       | 800A with disconnecting knife SL3                            |
| Rated Frequency                                                     | $f$      | 40-60Hz                            | 40-60Hz                           | 40-60Hz                                 | 40-60Hz                                                      |
| Rated Insulation Voltage                                            | $I_{kn}$ | 750Vac                             | 1000Vac                           | 1000Vac                                 | 1000Vac                                                      |
| Conditional Short-Circuit Current with Fuse Links PN (RMS)          |          | 50kA                               | 120kA                             | 120kA - up to 250A<br>80kA - up to 400A | 120kA - up to 250A<br>80kA - up to 400A<br>50kA - up to 630A |
| Impulse Withstand Voltage                                           | $U_{im}$ | 6kV                                | 8kV                               | 8kV                                     | 8kV                                                          |
| Fuse Link Size                                                      |          | 000, 00                            | 1                                 | 2                                       | 3                                                            |
| Max Rated Current of the Fuse Link                                  | $I_n$    | 160A                               | 250A                              | 400A                                    | 630A                                                         |
| Max Power Loss of the Fuse Link                                     |          | 12W                                | 23W                               | 34W                                     | 48W                                                          |
| Power Losses at $I_n$ without Fuse Link                             | $I_n$    | 20W                                | 18W                               | 39W                                     | 90W                                                          |
| Electrical Durability                                               | $P_v$    | 200                                | 200                               | 200                                     | 200                                                          |
| Mechanical Durability                                               | $P_v$    | 1400                               | 1400                              | 800                                     | 800                                                          |
| Degree of Protection from Front Side, Built in Device, Cover Closed |          | IP20                               | IP20                              | IP20                                    | IP20                                                         |
| Degree of Protection from Front Side, Built-in Device, Cover Opened |          | IP20                               | IP20                              | IP20                                    | IP20                                                         |
| Permissible Ambient Temperature                                     |          | -25°C to 55°C                      | -25°C to 55°C                     | -25°C to 55°C                           | -25°C to 55°C                                                |
| Altitude Above Sea Level                                            |          | max 2000m                          | max 2000m                         | max 2000m                               | max 2000m                                                    |
| Overvoltage Category for 690Vac                                     |          | III                                | III                               | III                                     | III                                                          |
| Seismic Resistance acc to VDE SKODA                                 |          | 1.5g/8 to 50Hz                     | 1.5g/8 to 50Hz                    | 1.5g/8 to 50Hz                          | 1.5g/8 to 50Hz                                               |

## NH Fuse Switch Disconnectors - Vertical - Dimensions (mm)

Dimensions for BSL00-3x-F



Dimensions for BFD1, BFD2 and BFD3



## NH Fuse Switch Disconnectors - Horizontal

**BFH**  
**690V / 160 - 1600A**  
**Sizes 000, 00, 1, 2, 3, 4**



**Description:** Horizontal switch disconnectors are designed to be used with NH fuse links. Enabling safe connection and disconnection on load.

**Main features are:**

- Lockable fuse cover
- Label for protected circuit identification
- Panel mounting with screws (size 000 can be DIN railed mounted). Busbar mounting with screws.

**Ratings:**

- Volts: 690Vac / 250Vdc (sizes 1,2,3)  
 400Vdc (size 000)
- Amps: 160 -1600A
- Utilisation category: 400Vac - AC23B  
 500Vac - AC22B  
 690Vac - AC21B  
 250Vdc - DC21B (sizes 1,2,3)  
 250Vdc - DC22B (sizes 000,00)

**Applications:** Industrial control panels, motor control panels

**Standards and Approvals:** CE, IEC 60947

**Technical Data:** see page 50

**Dimensions:** see page 51 to 53

**Part Numbers**

| Size | Rating (A) | Catalogue Number |             | Terminals                                         | Unit Packing | Compatible Fuse Links Size |
|------|------------|------------------|-------------|---------------------------------------------------|--------------|----------------------------|
|      |            | 1- Pole          | 3-Pole      |                                                   |              |                            |
| 000  | 160        | BFH000-1A/T      | BFH000-3A/T | Terminal clips for 1.5 to 50mm <sup>2</sup> cable | 1            | 000                        |
| 00   | 160        | BFH00-1A/F       | BFH00-3A/F  | Terminal screw M8                                 | 1            | 00                         |
| 1    | 250        | BFH1-1A/F        | BFH1-3A/F   | Terminal screws M10                               | 1            | 01 & 1                     |
| 2    | 400        | BFH2-1A/F        | BFH2-3A/F   | Terminal screws M10                               | 1            | 02 & 2                     |
| 3    | 630        | BFH3-1A/F        | BFH3-3A/F   | Terminal screws M12                               | 1            | 03 & 3                     |
| 4    | 1600       | LBS4/1           | LBS4/3      | Terminal screws 2xM12                             | 1            | 4                          |

400Vac

500Vac

690Vac

aM

Accessories

## NH Fuse Switch Disconnectors- Horizontal - Technical Data

| Type                                                                                         |           | BFH000/BF00                                                                                 | BFH1                                                                                             | BFH2                                                                                           | BFH3                                                                                             |
|----------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Rated Voltage                                                                                | $U_n$     | 690Vac                                                                                      | 690Vac/250Vdc                                                                                    | 690Vac/250Vdc                                                                                  | 690Vac/250Vdc                                                                                    |
| Rated Current                                                                                | $I_n$     | 160A                                                                                        | 250A                                                                                             | 400A                                                                                           | 630A                                                                                             |
| Utilisation Category                                                                         |           | AC20B at 400Vac<br>AC22B at 500Vac<br>AC21B at 690Vac<br>DC22B at 250Vdc<br>DC20B at 440Vdc | AC23B at 400Vac<br>AC22B at 500Vac<br>AC21B at 690Vac<br>AC22B at 690Vac/200A<br>DC21B at 250Vdc | AC23B at 500Vac for BFH2-3<br>AC23B at 400Vac for BFH2-1<br>AC22B at 690Vac<br>DC21B at 250Vdc | AC23B at 500Vac for BFH3/F<br>AC23B at 400Vac for BFH3-1/F<br>AC22B at 690Vac<br>DC21B at 250Vdc |
| Thermal Current with Fuse links                                                              | $I_{th}$  | 160A                                                                                        | 250A                                                                                             | 400A                                                                                           | 630A                                                                                             |
| Thermal Current with Fuse Links with Disconnecting Knife                                     |           |                                                                                             | 325A with disconnecting knife SL1                                                                | 520A with disconnecting knife SL2                                                              | 750A with disconnecting knife SL3                                                                |
| Rated Frequency                                                                              | $f$       | 40-60Hz                                                                                     | 40-60Hz                                                                                          | 40-60Hz                                                                                        | 40-60Hz                                                                                          |
| Rated Insulation Voltage                                                                     | $U_i$     | 800Vac                                                                                      | 1000Vac                                                                                          | 1000Vac                                                                                        | 1000Vac                                                                                          |
| Conditional Short Circuit Current (RMS)                                                      | $I_{kn}$  | 120kA for 400Vac/160A<br>120kA for 500Vac/100A<br>80kA for 690Vac/100A                      | 120kA for 400Vac/250A<br>50kA for 500Vac/250A<br>min 25kA for 690Vac/250A                        | 120kA for 400Vac/250A<br>50kA for 500Vac/250A<br>min 25kA for 690Vac/250A                      | 120kA for 400Vac/630A<br>50kA for 500Vac/630A<br>min 25kA for 690Vac/630A                        |
| Impulse Withstand Voltage                                                                    | $U_{imp}$ | 8kV for BFH000-AV                                                                           | 12kV for BFH1-A/F                                                                                | 12kV for BFH2-A/F                                                                              | 12kV for BFH3-A/F                                                                                |
| Fuse Link Size                                                                               |           | 0                                                                                           | 1                                                                                                | 2                                                                                              | 3                                                                                                |
| Max Power Losses of the Fuse Link                                                            | $P_V$     | 9W                                                                                          | 23W                                                                                              | 34W                                                                                            | 48W                                                                                              |
| Power Losses at $I_n$ Without Fuse Link                                                      | $P_V$     | 7W                                                                                          | 9W                                                                                               | 23W                                                                                            | 49W                                                                                              |
| Electrical Durability (operating cycle)                                                      |           | 300 at 100A<br>200 at 160A                                                                  | 200 at 250A                                                                                      | 200 at 400A                                                                                    | 200 at 630A                                                                                      |
| Mechanical Durability (operating cycle)                                                      |           | 2000                                                                                        | 1400                                                                                             | 800                                                                                            | 800                                                                                              |
| Degree of Protection from Front Side, Built-In Device, Cover Closed (measuring holes filled) |           | IP30                                                                                        | IP30                                                                                             | IP30                                                                                           | IP30                                                                                             |
| Degree of Protection from Front Side, Built-In Device, Cover Opened                          |           | IP20                                                                                        | IP20                                                                                             | IP20                                                                                           | IP20                                                                                             |
| Permissible Ambient Temperature                                                              |           | -25°C to 55°C                                                                               | -25°C to 55°C                                                                                    | -25°C to 55°C                                                                                  | -25°C to 55°C                                                                                    |
| Altitude Above Sea Level                                                                     |           | max 2000m                                                                                   | max 2000m                                                                                        | max 2000m                                                                                      | max 2000m                                                                                        |
| Pollution Degree                                                                             |           | 3                                                                                           | 3                                                                                                | 3                                                                                              | 3                                                                                                |
| Overvoltage Category for 690Vac                                                              |           | III                                                                                         | IV                                                                                               | IV                                                                                             | IV                                                                                               |
| Seismic Resistance                                                                           |           | 0.25 to 50Hz/3g                                                                             | 0.25 to 50Hz/3g                                                                                  | 0.25 to 50Hz/3g                                                                                | 0.25 to 50Hz/3g                                                                                  |
| Torque of Outlets Terminals                                                                  |           | 3 to 3.5Nm                                                                                  |                                                                                                  |                                                                                                |                                                                                                  |
| Standards                                                                                    |           | IEC 60947-1, 3<br>IEC 60947-1,3                                                             | IEC 60947-1,3<br>IEC 60947-1,3                                                                   | IEC 60947-1,3<br>IEC 60947-1,3                                                                 | IEC 60947-1,3<br>IEC 60947-1,3                                                                   |

400Vac

500Vac

690Vac

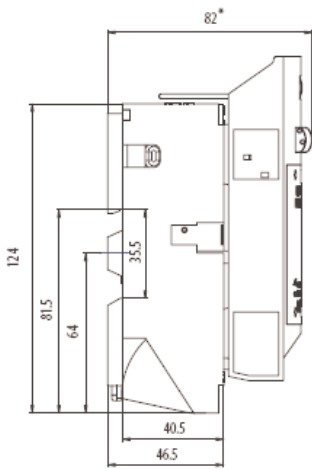
aM

Accessories

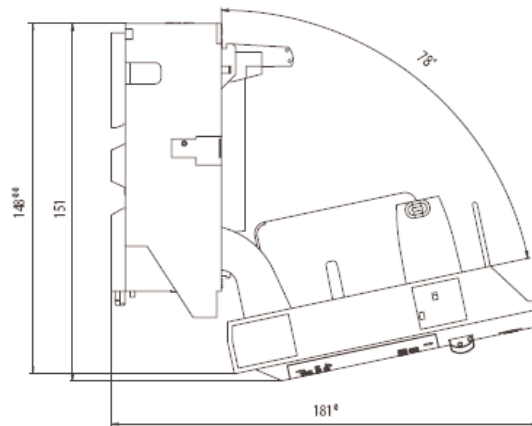
## NH Fuse Switch Disconnectors - Horizontal - Dimensions (mm)

### Size 000

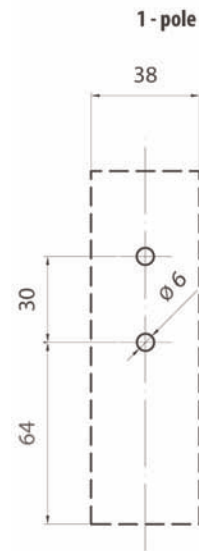
BHF000-1A/T & BFH000-3A/T  
side view



BHF000- 1A/T & BFH000-3A/T  
in open position

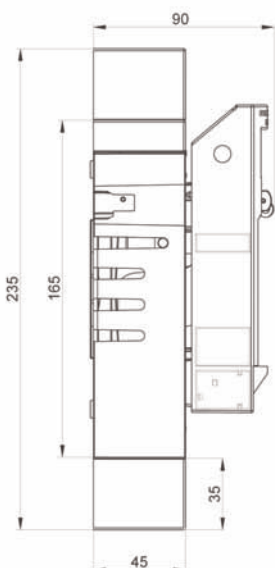


Clearance and drilling plans for  
BHF000-1A/T (1 pole), for BHF000-3A/T  
(3 poles) multiply the width by 3

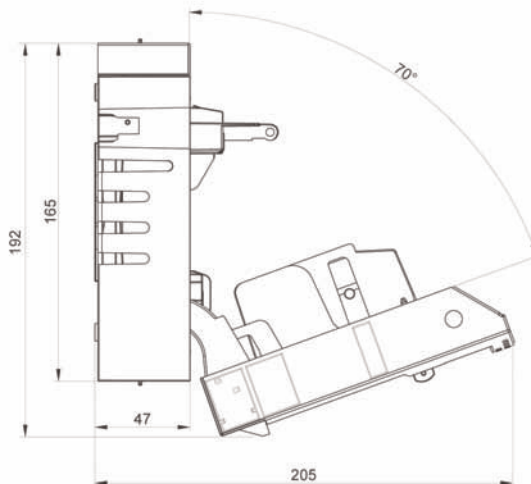


### Size 00

BFH00-1A/F and BFH00-3A/F  
side view



BFH00-1A/F and BFH00-3A/F  
in open position



Clearance and drilling plans for  
BHF00-1A/F (1 pole), for BHF00-3A/F  
(3 poles) multiply the width by 3



400Vac

500Vac

690Vac

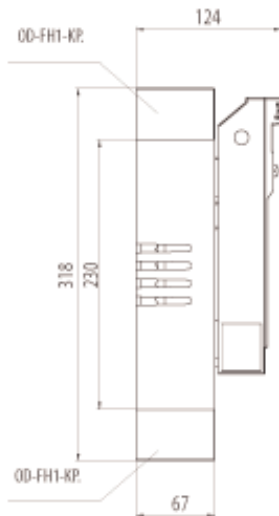
aM

Accessories

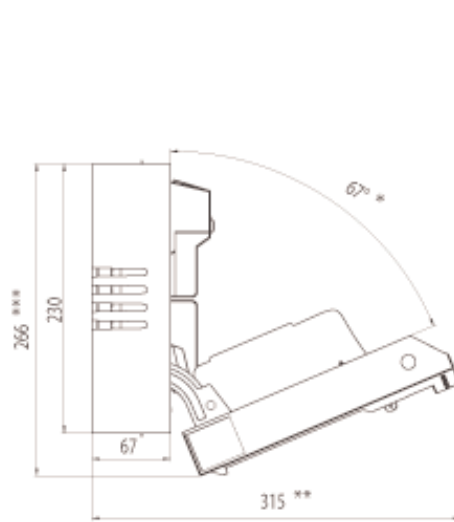
## NH Fuse Switch Disconnectors - Horizontal - Dimensions (mm)

### Size 1

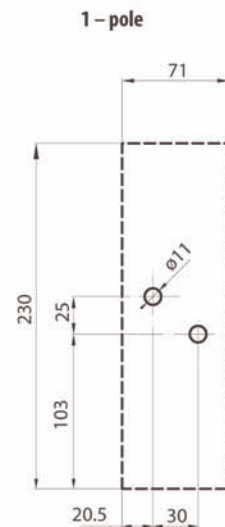
BH1-1A/F and BH1-3A/F  
side view



BH1-1A/F and BH1-3A/F  
in open position

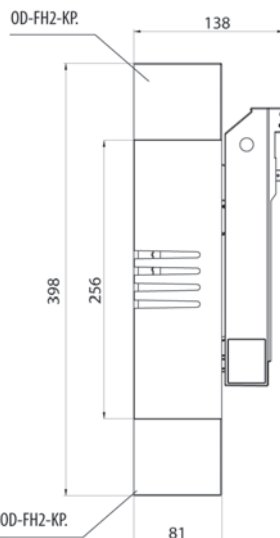


Clearance and drilling plans for  
BHF1-1A/F (1 pole), for BHF1-3A/F  
(3 poles) multiply the width by 3

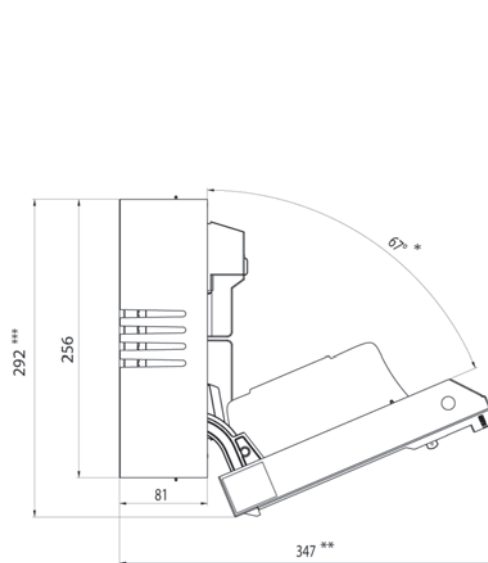


### Size 2

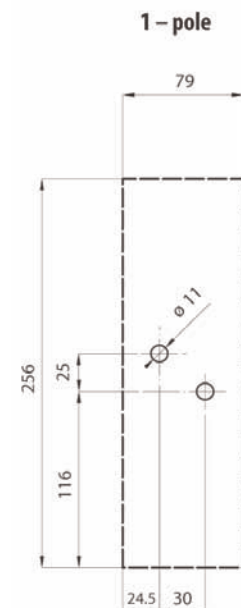
BFH2-1A/ and BFH2-3A/F  
side view



BFH2-1A/F and BFH2-3A/F  
in open position



Clearance and drilling plans for  
BHF2-1A/F (1 pole), for BHF2-3A/F  
(3 poles) multiply the width by 3



400Vac

500Vac

690Vac

aM

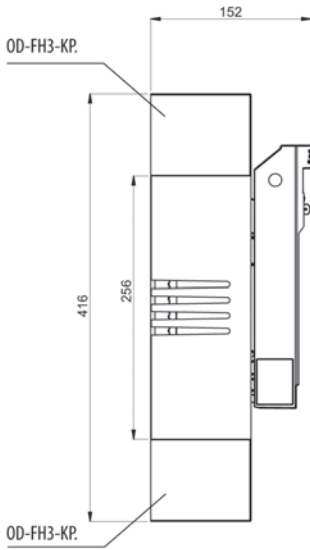
Accessories



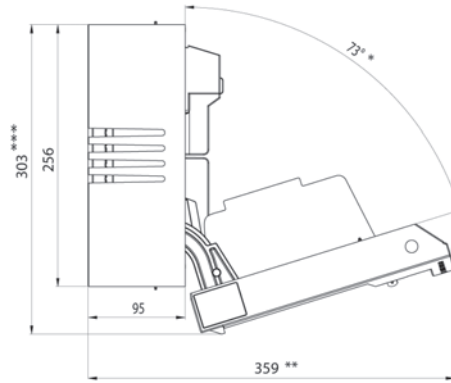
## NH Fuse Switch Disconnectors - Horizontal - Dimensions (mm)

### Size 3

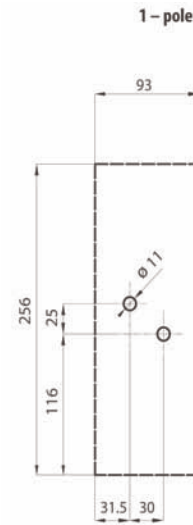
BH3-1A/F and BH3-3A/T  
side view



BH3-1A/F and BH3-3A/T  
in open position



Clearance and drilling plans for  
BHF3-1A/F (1 pole), for BHF3-3A/F  
(3 poles) multiply the width by 3



400Vac

500Vac

690Vac

aM

Accessories