## Product Datasheet

# EFEN LV Horizontal Fuse Switch Disconnects

### The best of both worlds with EFEN SILAS and IN Series

DS0036 R3 EFEN LV Horizontal Fuse Switch Disconnects 10/2024

Horizontal fuse switch disconnects provide an alternative mounting and connection method to vertical disconnects, for example for single circuit supplies and for the safe and cost effective upgrade or replacement of earlier generations of fuse switches.

The EFEN SILAS range has been used successfully in New Zealand for 30+ years by our brand partner EFEN, and is now complemented by the EFEN IN series.

Both the SILAS and IN series use the widely available and economic DIN blade fuse cartridges, and offer an excellent level of operator safety thanks to their AC22B switching capacity. Both may be used in AC or DC applications, as specified by their ratings.

The SILAS range is designed for independent mounting for single switch protection applications by virtue of its terminal covers. These features are ideally suited to solar applications or wherever battery protection is required in an internal installation.

SILAS is also suitable for multiple feeder mounting on busbars with ratings from 160 A to 630 A.

The EFEN IN series of switches is available from 160 to 1,600 A and is a more compact design. Cable covers are supplied: these can be removed for use in applications where a protective enclosure is used. Its compact size makes the IN ideal for network pillar applications.

Sizes 00, 1, 2 and 3 of the IN series and sizes 1, 2 and 3 of the SILAS series have the added advantage of phase protection barriers moulded into the base.

# Characteristics and Ratings (According to IEC 60947-3)

| IN series | | DIN size | 000/00 | 1 | 2 | 3 | 4A |
|---|---|---|---|---|---|---|---|
| Rated operational current, Ie | 690 V | A | 160 | 250 | 400 | 630 | 1,250<br>1.600 |
| Conventional free-air thermal current Ith | 690 V | A | 160 | 250 | 400 | 630 | 1,250<br>1,600 |
| Rated operational voltage, Ue | | V | 690 | 690 | 690 | 690 | 690 |
| Rated insulation voltage, Ui | | V | 800 | 800 | 800 | 800 | 800 |
| Rated impulse withstand voltage, Uimp | | kVpk | 8 | 8 | 8 | 8 | 8 |
| Rated conditional short circuit current | 400 V | kA | 100 | 100 | 1001 | 100 | 50 |
| (when protected with NH fuse-links) | 690 V | kA | 50 | 50 | 50 | 50 | 50 |
| Utilisation category | 400 V | | AC-22B | AC-22B | AC-22B | AC-22B | AC-22B |
| | 500 V<br>690 V | | AC-22B<br>AC-21B | AC-22B<br>AC-21B | AC-22B<br>AC-21B | AC-22B<br>AC-21B | AC-22B<br>AC-21B |
| | 440 Vdc2 | | DC-21B | DC-21B | DC-21B | DC-21B | DC-21B |
| Mechanical service life | | Cycles | 1,600 | 1,600 | 1,000 | 1,000 | 600 |
| Permissible ambient temperature | | °C | | | 25 to +55 | | |
| Degree of protection to IEC 60529 | | | | | IP3X | | |
| Maximum permissible power dissipation of the NH fuse-links | | W | 12 | 23 | 34 | 48 | 115<br>140 |
| Weight without fuse links | | kg | 0.5 | 2.0 | 3.3 | 5.3 | 14.0 |

| SILAS Series | | DIN size | 000/00 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|
| Rated operational current, Ie | 690 V | A | 160 | 250 | 400 | 630 |
| Conventional free-air thermal current Ith | 690 V | A | 160 | 250 | 400 | 630 |
| Rated operational voltage, Ue | | V | 690 | 690 | 690 | 690 |
| Rated insulation voltage, Ui | | V | 1,000 | 1,000 | 1,000 | 1,000 |
| Rated impulse withstand voltage, Uimp | | kVpk | 8 | 8 | 8 | 8 |
| Rated conditional short circuit current (when protected with NH fuse-links) | 690 V | kA | 80 | 80 | 50 | 80 |
| Utilisation category | 400 V<br>500 V<br>690 V<br>220Vdc 440 Vdc | | AC-23B AC-22B AC-21B DC-22B | AC-23B AC-22B AC-21B DC-21B<br>DC-21B | AC-23B AC-22B AC-21B DC-21B<br>DC-21B | AC-23B AC-22B AC-21B DC-21B<br>DC-21B |
| Mechanical service life | | Cycles | 1,600 | 1,600 | 1,000 | 1,000 |
| Permissible ambient temperature | | °C | 25 to +55 | | | |
| Degree of protection to IEC 60529 | | | IP3X | | | |
| Maximum permissible power dissipation of the NH fuse-links | | W | 12 | 23 | 34 | 48 |
| Weight without fuse links | | kg | 0.8 | 2.2 | 3.6 | 4.1 |

**Notes**

1. With pilot tool
2. When equipped with L1 and L3 with two poles; 1-pole Ue = 220 Vdc

## Tightening Torques for Terminals and Busbar Mounting

| IN Series | DIN size | 000/00 | 1 | 2 | 3 | 4A |
|---|---|---|---|---|---|---|
| Multiple use screw terminal | Nm | 14 | 32 | 32 | 32 | 32/56 |
| Pressure plates with bolts / prism clamps | | 4 | 8 | 14 | 14 | - |
| Busbar mounting | | 6 | 10 | 10 | 14 | - |

| SILAS Series | DIN size | 000/00 | 1 | 2 | 3 |
|---|---|---|---|---|---|
| Multiple use screw terminal | Nm | 12 | 20 | 20 | 20 |
| Pressure plates with bolts / prism clamps | | 3 | 6 | 8 | 8 |
| Busbar mounting | | 3 | 6 | 8 | 8 |
| Box clamps | | 5 | 12 | 20 | 20 |

## Conductor Application Ranges

| IN Series | Conductor type | | Cross section | 000/00 | 1 | 2 | 3 | 4A |
|---|---|---|---|---|---|---|---|---|
| Multiple use screw terminal | - | - | - | M8 | M10 | M10 | M10 | M12/M16 |
| Pressure plates with bolts | CU | RE | mm2 | 1.5-16 | 1.5-16 | - | - | - |
| | | RM/SM | | 2-25 | 6-50 | 6-70 | 6-70 | |
| Pressure plates with bolts and prism clamps | CU/AL | RE/RM/ SE/SM | | 2.5-70 | 70-150 | 70-240 | 70-240 | - |
| Flat conductor (max W x H) | - | - | mm | 10x6 | 16x15 | 21x15 | 21x15 | - |

| SILAS Series | Conductor type | | Cross section | 000/00 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|
| Multiple use screw terminal | - | - | - | M8 | M10 | M10 | M10 |
| Pressure plates with bolts | CU | RE | mm2 | 6-50 | 70-150 | - | - |
| | | RM/SM | | 6-25 | 6-50 | 6-70 | 6-70 |
| Pressure plates with bolts and prism clamps | CU/AL | RE/RM/ SE/SM | | 6-70 | 70-150 | 120-240 | 150-300 |
| Box clamps | CU | RE/RM | | 2.5-95 | 35-150 | 95-300 | 95-300 |
| | | RE/RM | | - | 50-150 | 120-300 | 120-300 |
| | AL | RE/RM | | - | 35-150 | 95-300 | 95-300 |
| | | RE/RM | | - | 50-150 | 120-300 | 120-300 |
| Flat conductor (max W x H) | - | - | mm | - | 15x20 | 20 x 32 | 20 x 32 |

## Product Selection Table and Dimensions

| Hiko Code | Type | DIN Size | Current Rating (A) | Configuration | Mounting System | Optional V-Clamps1 | Nominal Height (mm) | Nominal Width (mm) | Nominal Depth (mm) |
|---|---|---|---|---|---|---|---|---|---|
| WE160E | IN | 00 | 160 | Single Phase | Base plate | No | 157 | 50 | 80 |
| EFH00160 | | 00 | 160 | Three phase single throw | | Yes | 156 | 106 | 90 |
| EFH1250 | | 1 | 250 | | | | 270 | 184 | 110 |
| EFH2400 | | 2 | 400 | | | | 281 | 210 | 127 |
| EFH3630 | | 3 | 630 | | | | 289 | 250 | 132 |
| EFH41600 | | 4A | 1,600 | | | No | 330 | 378 | 233 |
| EF00160S | | 00 | 160 | Single phase | | Yes | 200 | 50 | 95 |
| EF1250S | | 1 | 250 | | | | 284 | 100 | 142 |
| EF2400S | | 2 | 400 | | | | 284 | 100 | 142 |
| EF3630S | | 3 | 630 | | | | 284 | 115 | 142 |
| EF41600S | | 4A | 1,600 | | | No | 330 | 126 | 233 |
| EF2400SB | | 2 | 400 | | Busbar | Yes | 284 | 100 | 142 |
| EF3630SB | | 3 | 630 | | | | 284 | 115 | 142 |
| WE500 | SILAS | 00 | 160 | Three phase single throw | Base plate | Yes | 194 | 106 | 80 |
| WE510 | | 1 | 250 | | | | 306 | 184 | 110 |
| WE520 | | 2 | 400 | | | | 306 | 210 | 130 |
| WE530 | | 3 | 630 | | | | 306 | 250 | 130 |

**Notes**
1. add “V” suffix to product code to specify V-clamps.

**Also available**
Fuse links
Solid copper (knife) links
LV switchgear assembly frames, cabinets and underground pits

**Other literature available on request**
Reports, drawings, technical data sheets, installation instructions, O&M guidelines