ENYSTAR
Modular VTPN Distribution Board System up to 250 A
according to IEC 61439-3
for commercial and industrial buildings

Download at www.hensel.in
Competence in distribution board systems

The HENSEL company was founded in 1931. At that time, more and more technical products for electrical installations were being manufactured from modern thermosetting materials instead of cast iron or steel. With an innovative range of modern installation and distribution systems for the national and international market, HENSEL has become one of the leading companies in distributing electrical power in the field of low voltage. Technical competence and creative development ideas make us a partner for electricians’ and panel builders’ needs today and tomorrow.

Modular VTPN Distribution Board System up to 250 A according to IEC 61439-3 for commercial and industrial buildings

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>System description</td>
<td>4</td>
</tr>
<tr>
<td>Key advantages at a glance</td>
<td>4</td>
</tr>
<tr>
<td>Properties of the system</td>
<td>5</td>
</tr>
<tr>
<td>Product overview</td>
<td>6-7</td>
</tr>
<tr>
<td>VTPN distribution boards:</td>
<td></td>
</tr>
<tr>
<td>Incoming for isolator/MCB/RCCB or RCBO up to 125 A</td>
<td>8-11</td>
</tr>
<tr>
<td>VTPN distribution boards:</td>
<td></td>
</tr>
<tr>
<td>Incoming for MCCB up to 125 A</td>
<td>12-13</td>
</tr>
<tr>
<td>VTPN distribution boards:</td>
<td></td>
</tr>
<tr>
<td>Incoming for MCCB up to 250 A</td>
<td>14-17</td>
</tr>
<tr>
<td>Accessories</td>
<td>18-24</td>
</tr>
<tr>
<td>Technical details</td>
<td>25-31</td>
</tr>
</tbody>
</table>

Headquarters in Lennestadt / Germany

Headquarters of Hensel Electric India Pvt. Ltd.
**Safe and reliable in harsh environments.**

For use with devices from different manufacturers.

VTPN distribution boards supply electrical power especially throughout commercial and industrial buildings. Developed for the requirements of harsh industrial atmospheres, they ensure reliable supply of electricity especially in demanding environmental conditions.

**Electrical characteristics**

- Rated voltage: max. 690 V a.c.
- Rated insulation voltage: 690 V a.c., 1000 V d.c.
- Rated current: max. 250 A
- Rated short-time withstand current: max. 7.2 kA

**System description**

Characteristics dependent on the system

- Protected outdoor installation and harsh environment.
  - Hint: Please consider climatic influences and effects on the built-in devices.
- Protection class I, protective earth connection suitable for metal armoured cables
- High impact resistance IK 08 (5 Joule)
- Dust-proof, protected against water IP 66

For operating and ambient conditions refer to page 26.

**Characteristics dependent on the material**

- Flame-retardant, self-extinguishing
  - Glow wire test 960° C
- UV resistance according to IEC 61439
- Chemical resistance against acid 10%, alkaline 10%, petrol and mineral oil
- Silicone- and halogene-free
- Resistant to weather influences (humidity, temperature, wind)

**Modular distribution board system**

- Pre-assembled with vertical busbar system
- Free for use with devices of different manufacturers and brands

**Separate lighting and power supply areas**

via division of busbars from 12 modules on allow in case of power failures the supply of special circuits by generator, for example lighting.

**Pre-assembled**

with vertical busbar system and support for devices. Built-in devices can be installed on site.

**Modular distribution board system**

combines within the standard ENYSTAR enclosure system, for example to operate external devices, such as plug devices, push buttons and switches.
VTPN Distribution Board System

Product overview

**Incoming:** for isolator/MCB/RCCB or RCBO
up to 125 A
Outgoing: SP/TP MCBs up to 63 A

- **transparent door**
- **opaque door**

- **FP VN 0400**
  - 4 way
  - (8+12 modules)

- **FP VN 0800**
  - 8 way
  - (8+24 modules)

- **FP VN 1200**
  - 12 way
  - (8+36 modules)

- **FP VN 1600**
  - 16 way
  - (8+48 modules)

- **FP VN 0410**
  - 4 way
  - (8+12 modules)

- **FP VN 0810**
  - 8 way
  - (8+24 modules)

- **FP VN 1210**
  - 12 way
  - (8+36 modules)

- **FP VN 1610**
  - 16 way
  - (8+48 modules)

**Incoming:** for MCCB up to 125 A
Outgoing: SP/TP MCBs up to 63 A

- **transparent door**
- **opaque door**

- **FP VN 0801**
  - 8 way
  - (8+24 modules)

- **FP VN 0811**
  - 8 way
  - (8+24 modules)

**Incoming:** for MCCB up to 250 A
Outgoing: SP/TP MCBs up to 63 A

- **transparent door**
- **opaque door**

- **FP VN 0802**
  - 8 way
  - (8+24 modules)

- **FP VN 0812**
  - 8 way
  - (8+24 modules)

- **FP VN 1202**
  - 12 way
  - (8+36 modules)

- **FP VN 1212**
  - 12 way
  - (8+36 modules)

- **FP VN 1602**
  - 16 way
  - (8+48 modules)

- **FP VN 1612**
  - 16 way
  - (8+48 modules)
ENYSTAR
VTPN Distribution Boards
Incoming for isolator/MCB/RCCB or RCBO

FP VN 0400
Incoming up to 125 A
4 ways with MCB max. 63 A
with transparent door
- modules: 8+12
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N 1 x 6-35 mm², 8 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 330 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>UL = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>PDSL = 1.2 W / K</td>
</tr>
</tbody>
</table>

FP VN 0800
Incoming up to 125 A
8 ways with MCB max. 63 A
with transparent door
- modules: 8+24
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N 1 x 6-35 mm², 16 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 330 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>UL = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>PDSL = 1.2 W / K</td>
</tr>
</tbody>
</table>

FP VN 1200
Incoming up to 125 A
12 ways with MCB max. 63 A
with transparent door
- modules: 8+36
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N 1 x 6-35 mm², 24 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>UL = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>PDSL = 1.2 W / K</td>
</tr>
</tbody>
</table>

FP VN 1600
Incoming up to 125 A
16 ways with MCB max. 63 A
with transparent door
- modules: 8+48
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N 1 x 6-35 mm², 32 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>UL = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>PDSL = 2.5 W / K</td>
</tr>
</tbody>
</table>
ENYSSTAR
VTPN Distribution Boards
Incoming for isolator/MCB/RCCB or RCBO

**FP VN 0410**
Incoming up to 125 A
4 ways with MCB max. 63 A
with opaque door
- modules: 8+12
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N: 1 x 6-35 mm², 8 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 330 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>U_0 = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>I_0 = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>P_{DNL} = 1.2 W / K</td>
</tr>
</tbody>
</table>

**FP VN 0810**
Incoming up to 125 A
8 ways with MCB max. 63 A
with opaque door
- modules: 8+24
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N: 1 x 6-35 mm², 16 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 330 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>U_0 = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>I_0 = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>P_{DNL} = 1.2 W / K</td>
</tr>
</tbody>
</table>

**FP VN 1210**
Incoming up to 125 A
12 ways with MCB max. 63 A
with opaque door
- modules: 8+36
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N: 1 x 6-35 mm², 24 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>U_0 = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>I_0 = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>P_{DNL} = 1.2 W / K</td>
</tr>
</tbody>
</table>

**FP VN 1610**
Incoming up to 125 A
16 ways with MCB max. 63 A
with opaque door
- modules: 8+48
- incoming via isolator/MCB/RCCB or RCBO
- PE and N terminals
- per PE/N: 1 x 6-35 mm², 32 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>U_0 = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>I_0 = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>P_{DNL} = 2.5 W / K</td>
</tr>
</tbody>
</table>
ENYSTAR
VTPN Distribution Boards
Incoming for MCCB

FP VN 0801
Incoming for MCCB up to 125 A
8 ways with MCB max. 63 A
with transparent door

- modules: 8x24
- PE and N terminals
- per PE/N 1 x 6-5 mm², 16 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>U&lt;sub&gt;r&lt;/sub&gt; = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>I&lt;sub&gt;sw&lt;/sub&gt; = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>P&lt;sub&gt;inst&lt;/sub&gt; = 1.9 W / K</td>
</tr>
</tbody>
</table>

FP VN 0811
Incoming for MCCB up to 125 A
8 ways with MCB max. 63 A
with opaque door

- modules: 8x24
- PE and N terminals
- per PE/N 1 x 6-35 mm², 16 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>U&lt;sub&gt;r&lt;/sub&gt; = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>I&lt;sub&gt;sw&lt;/sub&gt; = 3.6 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>P&lt;sub&gt;inst&lt;/sub&gt; = 1.9 W / K</td>
</tr>
</tbody>
</table>
ENYSTAR
VTPN Distribution Boards
Incoming for MCCB

FP VN 0402
Incoming for MCCB up to 250 A
4 ways with MCB max. 63 A
with transparent door
- modules: 8+12
- PE and N terminals
- per PE/N 1 x 6-95 mm², 8 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 330 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>U_r = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 7.2 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>P_{inst} = 1.2 W / K</td>
</tr>
</tbody>
</table>

FP VN 0802
Incoming for MCCB up to 250 A
8 ways with MCB max. 63 A
with transparent door
- modules: 8+24
- PE and N terminals
- per PE/N 1 x M10, 16 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>U_r = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 7.2 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>P_{inst} = 1.9 W / K</td>
</tr>
</tbody>
</table>

FP VN 1202
Incoming for MCCB up to 250 A
12 ways with MCB max. 63 A
with transparent door
- modules: 8+36
- PE and N terminals
- per PE/N 1 x M10, 24 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>U_r = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 7.2 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>P_{inst} = 2.5 W / K</td>
</tr>
</tbody>
</table>

FP VN 1602
Incoming for MCCB up to 250 A
16 ways with MCB max. 63 A
with transparent door
- modules: 8+48
- PE and N terminals
- per PE/N 1 x M10, 32 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>rated voltage</th>
<th>U_r = 690 V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated short-time withstand current</td>
<td>Icw = 7.2 kA / 1 s</td>
</tr>
<tr>
<td>installable power dissipation</td>
<td>P_{inst} = 2.5 W / K</td>
</tr>
</tbody>
</table>
ENYSTAR
VTPN Distribution Boards
Incoming for MCCB

**FP VN 0412**
Incoming for MCCB up to 250 A
4 ways with MCB max. 63 A
with opaque door
- modules: 8+12
- PE and N terminals
- per PE/N 1 x 6-95 mm², 8 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 330 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>$U_n = 690$ V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>$I_{cw} = 7.2$ kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>$P_{diss} = 1.2$ W / K</td>
</tr>
</tbody>
</table>

**FP VN 0612**
Incoming for MCCB up to 250 A
8 ways with MCB max. 63 A
with opaque door
- modules: 8+24
- PE and N terminals
- per PE/N 1 x M10, 16 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>$U_n = 690$ V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>$I_{cw} = 7.2$ kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>$P_{diss} = 1.9$ W / K</td>
</tr>
</tbody>
</table>

**FP VN 1212**
Incoming for MCCB up to 250 A
12 ways with MCB max. 63 A
with opaque door
- modules: 8+36
- PE and N terminals
- per PE/N 1 x M10, 24 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>$U_n = 690$ V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>$I_{cw} = 7.2$ kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>$P_{diss} = 2.5$ W / K</td>
</tr>
</tbody>
</table>

**FP VN 1612**
Incoming for MCCB up to 250 A
16 ways with MCB max. 63 A
with opaque door
- modules: 8+48
- PE and N terminals
- per PE/N 1 x M10, 32 x 1,5-16 mm², Cu
- flanges with integrated earthing plate
- installation dimensions: width 240 mm, height 92 mm
- door fastener with tool operation

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>$U_n = 690$ V a.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-time withstand current</td>
<td>$I_{cw} = 7.2$ kA / 1 s</td>
</tr>
<tr>
<td>Installable power dissipation</td>
<td>$P_{diss} = 2.5$ W / K</td>
</tr>
</tbody>
</table>
ENYSTAR
Accessories

Connection Box 19
Sealing device for covers, blanking strips 20
Closing plates, metal insert for closing plates 21
Flanges for cable entry 22
Ventilation flanges 23
Fixing devices 24

Example:
The Connection Box allows a simple and fast installation of devices that must be operated externally, such as plug devices, push buttons and switches.

FP CB 210
Connection Box
- for mounting on box walls (270 mm)
- hinged mounting area
- for the installation of devices that must be operated externally, such as plug devices, push buttons and switches
<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FP PL 2</strong></td>
<td>Sealing device for covers not suitable for circuit-breaker boxes</td>
</tr>
<tr>
<td></td>
<td>- can be retrofitted</td>
</tr>
<tr>
<td></td>
<td>- 2 pieces</td>
</tr>
<tr>
<td></td>
<td>- with fixing screws</td>
</tr>
<tr>
<td><strong>AS 12</strong></td>
<td>Blanking strip 12 modules</td>
</tr>
<tr>
<td></td>
<td>- 12 x 18 mm, divisible every 9 mm</td>
</tr>
<tr>
<td></td>
<td>- for the covering of spare equipment openings, for material thickness up to 3 mm</td>
</tr>
<tr>
<td><strong>AS 18</strong></td>
<td>Blanking strip 18 modules</td>
</tr>
<tr>
<td></td>
<td>- 18 x 18 mm, divisible every 9 mm</td>
</tr>
<tr>
<td></td>
<td>- for the covering of spare equipment openings, for material thickness up to 3 mm</td>
</tr>
<tr>
<td><strong>FP VP 27</strong></td>
<td>Closing plate 270 mm</td>
</tr>
<tr>
<td></td>
<td>- with 2 fixing elements</td>
</tr>
<tr>
<td></td>
<td>- without knockouts</td>
</tr>
<tr>
<td><strong>FP VP 36</strong></td>
<td>Closing plate 360 mm</td>
</tr>
<tr>
<td></td>
<td>- with 2 fixing elements</td>
</tr>
<tr>
<td></td>
<td>- without knockouts</td>
</tr>
<tr>
<td><strong>FP VM 27</strong></td>
<td>Metal insert for closing plates</td>
</tr>
<tr>
<td></td>
<td>- box size 2 (270 mm)</td>
</tr>
<tr>
<td></td>
<td>- for earthing of metal armoured cables</td>
</tr>
<tr>
<td></td>
<td>- without knockouts</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FP VM 36</strong></td>
<td>Metal insert for closing plates</td>
</tr>
<tr>
<td></td>
<td>- for box wall 3 (360 mm)</td>
</tr>
<tr>
<td></td>
<td>- for earthing of metal armoured cables</td>
</tr>
<tr>
<td></td>
<td>- without knockouts</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Closing plate: Earth connection according to British Standard installation via built-in metal insert.
**FP FG 200**
Flange without knockouts
- box size 2 (270 mm)
- attached enclosure connectors: 2 items

<table>
<thead>
<tr>
<th>mounting width</th>
<th>240 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>mounting height</td>
<td>92 mm</td>
</tr>
</tbody>
</table>

**FP FG 201**
Flange without knockouts with metal insert
- box size 2 (270 mm)
- for earthing of metal armoured cables
- attached enclosure connectors: 2 items

<table>
<thead>
<tr>
<th>mounting width</th>
<th>240 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>mounting height</td>
<td>92 mm</td>
</tr>
</tbody>
</table>

**FP FG 300**
Flange without knockouts
- for box wall 3 (360 mm)
- attached enclosure connectors: 2 items

<table>
<thead>
<tr>
<th>mounting width</th>
<th>330 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>mounting height</td>
<td>92 mm</td>
</tr>
</tbody>
</table>

**FP FG 301**
Flange without knockouts with metal insert
- for box wall 3 (360 mm)
- for earthing of metal armoured cables
- attached enclosure connectors: 2 items

<table>
<thead>
<tr>
<th>mounting width</th>
<th>330 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>mounting height</td>
<td>92 mm</td>
</tr>
</tbody>
</table>

**FP BF 27**
Ventilation flange 270 mm
- for ventilation of ENYSTAR Distribution boards in the event of extremely high internal temperatures or a risk of water condensation
- for vertical installation on box walls
- with 2 fixing elements

**FP BF 36**
Ventilation flange 360 mm
- for ventilation of ENYSTAR Distribution boards in the event of extremely high internal temperatures or a risk of water condensation
- for vertical installation on box walls
- with 2 fixing elements

**BE 44**
Ventilation insert
ENYSTAR
Accessories

FP AL 40
4 stainless steel external brackets
- for external fixing of enclosures

FP MS 1
Profile for wall mounting
- for ENYSTAR distribution board assemblies up to 810 x 1260 mm
- with 8 screws, washers and nuts for fastening of enclosures

<table>
<thead>
<tr>
<th>length</th>
<th>1960 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>material</td>
<td>sendzimir galvanised steel profile with structured powder coating</td>
</tr>
</tbody>
</table>

ENYSTAR
Technical details

- Operating and ambient conditions: 26
- Standards and regulations: 26
- Fixing dimensions in mm: 27
- Installation instruction outgoing circuits: 28
- Installation instruction incoming: 28
- Current ratings of outgoing circuits: 29
- Determination of power dissipation (Pd): 29
- Determining the rated diversity factor (RDF): 30
- Terminal technology: 31
ENYSTAR Technical details Operating and ambient conditions, standards

<table>
<thead>
<tr>
<th>Application area</th>
<th>Suitable for indoor installation and outdoor installation protected against weather influences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>However, pay attention to the climatic effects on the installed equipment, for example, high or low ambient temperatures or forming of condensed water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ambient temperature</th>
<th>The ambient temperature for enclosures with electrical functions (distribution boards) is reduced by the installed equipment technology!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value over 24 hours</td>
<td>+35°C</td>
</tr>
<tr>
<td>Maximum value</td>
<td>+40°C</td>
</tr>
<tr>
<td>Minimum value</td>
<td>−5°C</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>50% at 40°C</td>
</tr>
<tr>
<td>- short-time</td>
<td>100% at 25°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fire protection</th>
<th>Demands placed on electrical devices from standards and laws:</th>
</tr>
</thead>
<tbody>
<tr>
<td>in the event of internal faults</td>
<td>Minimum requirements</td>
</tr>
<tr>
<td></td>
<td>- Glow wire test in accordance with IEC 60695-2-11:</td>
</tr>
<tr>
<td></td>
<td>- 650°C for boxes and cable glands</td>
</tr>
<tr>
<td></td>
<td>- 850°C for conducting components</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Burning behaviour</th>
<th>Minimum requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IEC 60 695-2-11</td>
</tr>
<tr>
<td></td>
<td>- UL Subject 94</td>
</tr>
<tr>
<td></td>
<td>960°C</td>
</tr>
<tr>
<td></td>
<td>V-2</td>
</tr>
<tr>
<td></td>
<td>flame-retardant</td>
</tr>
<tr>
<td></td>
<td>self-extinguishing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degree of protection against mechanical load</th>
<th>IK 08 (5 Joule)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic behaviour</td>
<td>halogen-free ¹</td>
</tr>
<tr>
<td></td>
<td>silicone-free</td>
</tr>
</tbody>
</table>

¹ “Halogen-free” in accordance with IEC 60754-2 “Common test methods for cables - Determination of the amount of halogen acid gas”.

Standards and regulations

- IEC 61439-3
  - Low-voltage switchgear and controlgear assemblies intended to be in places where unskilled persons have access to their use - distribution boards
- IEC 60999, connecting devices
  - Safety requirements for screw-type and screwless-type clamping units for electrical copper conductors
- DIN 43880
  - Built-in equipment for electrical installations; overall dimensions and related mounting dimensions
- IEC 60529
  - Degrees of protection provided by enclosures (IP-Code)
Outgoing circuits
The cutout in the protection cover is provided for devices with the following dimensions:

<table>
<thead>
<tr>
<th>50.5</th>
<th>50.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.3</td>
<td>12.3</td>
</tr>
</tbody>
</table>

The DIN rail for installation of the electrical devices is adjustable in height. The distance from top edge of the DIN rail to the connecting strap of the busbar may be 12.3 to 17.5 mm. To adjust the height use spacers enclosed in each enclosure.

In enclosures with busbars 125 A, the incoming device is installed on a DIN rail. The protection cover provides cut-outs of 144 x 45 mm for 8 modules 18 mm each. The distance between top edge of the DIN rail to bottom edge of the protection cover is 50.5 mm.

In enclosures with busbars 250 A, the incoming device is installed on a mounting plate. The position of the feeder is freely selectable on the mounting plate. The mounting plate is adjustable in height every 2 mm from 65.2 mm to 87.2 mm.

The protection cover provides cut-outs of 144 x 45 mm for 8 modules 18 mm each.

Determination of the power dissipation (\(P_v\))

The permissible power dissipation (\(P_v\)) for the entire assembly is determined from the difference of:
- installed power loss through installed equipment, busbars and wiring and
- power dissipation of the enclosures, e.g. heat.

The following table specifies the values of power dissipation for all types of VTPN distribution boards:

<table>
<thead>
<tr>
<th>Number of outgoing circuits</th>
<th>VTPN distribution boards IEC 61439-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>0.8</td>
</tr>
<tr>
<td>4-5</td>
<td>0.7</td>
</tr>
<tr>
<td>6-9</td>
<td>0.6</td>
</tr>
<tr>
<td>10 or more</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Determining the rated diversity factor (RDF)

Specified operating current
If the operating current \( I_o \) is specified and not calculated, formula 1 can be used to determine the rated diversity factor (RDF).

Calculated operating current
If the operating current \( I_o \) is calculated, the rated diversity factor (RDF) is determined via the power dissipation \( P_i \).

IEC 61439 / EN 61439 -1 Section 5.4
Rated diversity factor RDF (Rated Diversity Factor)
"The rated diversity factor is the per unit value of the rated current, assigned by the assembly manufacturer, to which outgoing circuits of an assembly can be continuously and simultaneously loaded taken into account the mutual thermal influences."

Formula 1: \[
RDF = \frac{I_o}{I_c}
\]

Formula 2: \[
RDF = \sqrt{\frac{\text{dissipated power dissipation}}{\text{installed power dissipation}}}
\]

Example 1: WITH specified operating current

The customer specifies the operating current \( I_c \).
This value is used in Formula 1.
\[
RDF = \frac{I_o}{I_c}
\]

Example: \( I_o = 12 \text{ A} \) and \( I_c = 16 \text{ A} \)
\[
RDF = \frac{12 \text{ A}}{16 \text{ A}} = 0.75
\]

RDF = 0.75

Example 2: WITHOUT specifying the operating current

- With a positive difference of installed and dissipated power dissipation, the rated diversity factor (RDF) is equal to the assumed load factor.

- With a negative difference, the HENSEL calculation tool automatically calculates the rated diversity factor (RDF) according to formula 2.

Example: IB = 12 A and Inc = 16 A
\[
RDF = \frac{12 \text{ A}}{16 \text{ A}} = 0.75
\]

Example: Result from the calculation table is 0.75.
RDF = 0.75

The ONLINE calculation tool from Hensel supports designer and panel builder to determine the power dissipation of an assembly quickly and easily.

www.hensel-electric.de/61439

---

Technical details
Terminal Technology

N and PE terminals
Flexible conductors can be used only with end ferrule!