Description

The Power-D-Box® with printed circuit board is a compact power distribution system, designed as a 2U 19" rack, made of aluminium profiles with anodised front plate. It accommodates the following circuit breaker types: thermal magnetic types 3600 / 3900 or 2210 (1-pole or 2-pole) and electronic circuit breakers type ESS30 or ESX10. 30 single pole ways (15 x 2-pole ways) are available as a redundant or non-redundant system. The integral group signalling is optionally working as series connection of the make contacts or parallel connection of the break contacts. The entire internal circuitry is on printed circuit board.

Ordering Information

<table>
<thead>
<tr>
<th>Type number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDB-P-L</td>
<td>19&quot; Power-D-Box® with printed circuit board, positive pole protected</td>
</tr>
</tbody>
</table>

**Suitable plug-in circuit breaker types**

- 2210 circuit breaker type 2210
- 3600 circuit breaker type 3600 or 3900
- ESS30 electronic circuit breaker ESS30
- ESX10 electronic circuit protector ESX10

**Number of protected poles**

- 1-pole protected (standard)
- 2P 2-pole protected (only with 2210)

**Supply and load terminals**

- 30A0 1 x 30 breakers (1-pole), not redundant
- 30R0 2 x 15 breakers (1-pole), redundant
- 28R0 2 x 7 breakers (2-pole), redundant
- 30A3SW 1 x 30 breakers (1-pole), not redundant
- 30R3SW 2 x 15 breakers (1-pole), redundant
- 28R4SW 2 x 7 breakers (2-pole), redundant
- 15A4SW 1x15 devices (2-pole), non-redundant

**Signalling, terminals on pcb**

- B1 make contact connected in series
- B4 make contact connected in series and break contact connected in parallel

**Signalling, terminals on symmetrical rail**

- B1GR make contact connected in series
- B4GR make contact connected in series and break contact connected in parallel

**Preferred types**

**circuit breaker 3600 / 3900**

- PDB-P-L-3600-30A0-B4 terminals on pcb
- PDB-P-L-3600-30A3SW-B4GR terminals on symmetrical rail

**circuit breaker 2210 1-pole**

- PDB-P-L-2210-30A0-B4 terminals on pcb
- PDB-P-L-2210-30R0-B4 terminals on pcb, redundant
- PDB-P-L-2210-30A3SW-B4GR terminals on symmetrical rail
- PDB-P-L-2210-30R3SW-B4GR terminals on symmetrical rail, redundant

**circuit breaker 2210 2-pole**

- PDB-P-L-2210-2P-28R4SW-B4GR terminals on symmetrical rail, redundant

**circuit breaker ESS30**

- PDB-P-L-ESS30-30A0-B1 terminals on pcb
- PDB-P-L-ESS30-30A3SW-B1GR terminals on symmetrical rail

**PDB-P-L-2210-2P-28R4SW-B4GR ordering example**
### Benefits

- Less wiring time through pcb design
- Small installation depth of 205 mm or 250 mm for use where space is at a premium
- Removable front plate with captive screws and imprinted marking
- 30 slots for thermal-magnetic or electronic circuit breakers in a Power-D-Box®
- Redundancy possible with 2 x 15 ways 1-pole or 2 x 7 ways 2-pole
- Circuit breaker can be plugged in later (even with the system on – hot-swap capability)
- Screw terminals directly on the pcb (only positive pole), optional additional terminal on rear-side symmetrical rail with additional negative pole patching
- Terminals placed at an angle for best access by means of a screwdriver from behind/above
- Supply for cables up to 35 mm² (16 mm² when redundant)
- Supply up to 2 x 100 A (redundant)
- Load terminals for cables up to 2.5 mm²
- Load terminals up to 16 A (10 A with electronic protection)
- Group signalling by integral potential-free aux. contacts optional – make contact connected in series – break contact connected in parallel
- Signalling separately available per group for redundant design
- Integral cable grip rail behind the terminals
- Cover of live parts by means of perforated metal plate on top
- Blanking pieces for free slots included (30 pcs)
- Other versions are available upon request, e.g. with back-up fuses, decoupling diodes, separate circuits, AC and/or DC, customer-specific marking etc.

### Technical Data

<table>
<thead>
<tr>
<th>19&quot; Power-D-Box®</th>
<th>length: 84 modules (426.72 mm)</th>
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</thead>
<tbody>
<tr>
<td>height:</td>
<td>2U (88.90 mm)</td>
</tr>
<tr>
<td>depth:</td>
<td>205 mm (version A0/R0) 250 mm (version A3/R3/R4)</td>
</tr>
<tr>
<td>material:</td>
<td>aluminium, partly anodised</td>
</tr>
<tr>
<td>Voltage rating:</td>
<td>AC 50 V; DC 65 V</td>
</tr>
<tr>
<td>Supply:</td>
<td>studs M6 for ring cable lug (version A0/R0) screw terminal 35 mm² (version A3) screw terminal 16 mm² (version R3/R4) max. 100 A per group (except version 2210-2P)</td>
</tr>
<tr>
<td>Version 2210-2P</td>
<td>screw terminal 10 mm² max. 50 A per group (at ambient temperature T&lt;sub&gt;amb&lt;/sub&gt; &lt; 40 °C), otherwise 40 A</td>
</tr>
<tr>
<td>Load terminals:</td>
<td>30 ways 1-pole protected (version A0/A3) 2 x 15 ways 1-pole protected (version R0/R3) 1 x 15 ways 2-pole protected (version 2210-2P-A4) 2 x 7 ways 2-pole protected (version 2210-2P-R4) screw terminals 2.5 mm² max. 16 A (depending on breaker rating)</td>
</tr>
<tr>
<td>Group signalling:</td>
<td>make contact connected in series (all versions) and break contact connected in parallel (not ESS30) per group screw terminal 1.5 mm² (version A0/R0) screw terminal 2.5 mm² (version A3/A4/R3/R4) max. 0.5 A</td>
</tr>
<tr>
<td>Housing ground/earth:</td>
<td>via M6 terminal studs on the inside, duplicated when redundant (R0/R3/R4)</td>
</tr>
<tr>
<td>Ambient temperature range:</td>
<td>0 … 50 °C</td>
</tr>
</tbody>
</table>
# Flexible Power-D-Box® with pcb for 3600/2210/ESS30/ESX10

## Available terminal designs

<table>
<thead>
<tr>
<th>Version for</th>
<th>supply terminals</th>
<th>load terminals</th>
<th>signalling</th>
</tr>
</thead>
<tbody>
<tr>
<td>circuit breaker 3600 / 3900</td>
<td>terminals on size</td>
<td>torque</td>
<td>size</td>
</tr>
<tr>
<td>PDB-P-L-3600-30A0-B4</td>
<td>pcb</td>
<td>M6</td>
<td>3.7 – 4.3 Nm</td>
</tr>
<tr>
<td>PDB-P-L-3600-30R0-B4</td>
<td>pcb</td>
<td>M6</td>
<td>3.7 – 4.3 Nm</td>
</tr>
<tr>
<td>PDB-P-L-3600-30A3SW-B4GR</td>
<td>rail</td>
<td>35 mm²</td>
<td>3.2 – 3.7 Nm</td>
</tr>
<tr>
<td>PDB-P-L-3600-30R3SW-B4GR</td>
<td>rail</td>
<td>16 mm²</td>
<td>2.5 – 3.0 Nm</td>
</tr>
<tr>
<td>circuit breaker 2210 1-pole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDB-P-L-2210-30A0-B4</td>
<td>pcb</td>
<td>M6</td>
<td>3.7 – 4.3 Nm</td>
</tr>
<tr>
<td>PDB-P-L-2210-30R0-B4</td>
<td>pcb</td>
<td>M6</td>
<td>3.7 – 4.3 Nm</td>
</tr>
<tr>
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<td>rail</td>
<td>35 mm²</td>
<td>3.2 – 3.7 Nm</td>
</tr>
<tr>
<td>PDB-P-L-2210-30R3SW-B4GR</td>
<td>rail</td>
<td>16 mm²</td>
<td>2.5 – 3.0 Nm</td>
</tr>
<tr>
<td>circuit breaker 2210 2-pole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDB-P-L-2210-2P-28R0-B4</td>
<td>pcb</td>
<td>10 mm²</td>
<td>1.2 – 1.5 Nm</td>
</tr>
<tr>
<td>PDB-P-L-2210-2P-28R4SW-B4GR</td>
<td>rail</td>
<td>16 mm²</td>
<td>2.5 – 3.0 Nm</td>
</tr>
<tr>
<td>PDB-P-L-2210-2P-30A4SW-B2GR</td>
<td>rail</td>
<td>16 mm²</td>
<td>2.5 – 3.0 Nm</td>
</tr>
<tr>
<td>circuit breaker ESS30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDB-P-L-ESS30-30A0-B1</td>
<td>pcb</td>
<td>M6</td>
<td>3.7 – 4.3 Nm</td>
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<tr>
<td>PDB-P-L-ESS30-30R0-B1</td>
<td>pcb</td>
<td>M6</td>
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</tr>
</tbody>
</table>

Ground terminals (studs) | M6 | 3.7 – 4.3 Nm |

## Schematic diagram for 1-pole versions

[Diagram of 1-pole versions showing terminals on pcb (A0 / R0) and terminals on symmetrical rail (A3 / R3)]

## Schematic diagrams: for 2210 / 3600 / 3900, not redundant
Schematic diagram for 1-pole versions

**Schematic diagrams:** for 2210 / 3600 / 3900, redundant

Schematic diagrams for 1-pole versions, ESS30

**Schematic diagrams:** for ESS30, not redundant

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Flexible Power-D-Box® with pcb for 3600/2210/ESS30/ESX10
Flexible Power-D-Box® with pcb for 3600/2210/ESS30/ESX10

Schematic diagram for 1-pole versions, ESS30

Schematic diagrams: for ESS30, redundant
terminals on pcb (A0 / R0)
terminals on symmetrical rail (A3 / R3)

Dimensions

Views / dimensions: front view all versions
Dimensions pcb

Top view / dimensions: terminals on pcb

Rear view: terminals on pcb, redundant
Dimensions symmetrical rail

**Top view / dimensions:** terminals on symmetrical rail, not redundant

**Rear view:** terminals on symmetrical rail, not redundant
Dimensions symmetrical rail

Top view / dimensions: terminals on symmetrical rail, not redundant

Rear view: terminals on symmetrical rail, not redundant
Schematic diagrams: for 2210, redundant

terminals on pcb (A0 / R0)

terminals on symmetrical rail (R4)
**Dimensions**

**Views / dimensions:** front view all versions

![Front View Diagram](image)

**Top view/dimensions:** terminals on pcb, redundant

![Top View Diagram](image)

**Rear view:** terminals on pcb, redundant

![Rear View Diagram](image)
Dimensions

**Top view/dimensions:** terminals on symmetrical rail, redundant

**Rear view:** terminals on symmetrical rail, redundant
Flexible Power-D-Box® with pcb for 3600/2210/ESS30/ESX10

**Accessories**

**Blanking piece for Power-D-Box**
- (types 3600/3900, 2210)
- Y 308 563 01

**Blanking piece for Power-D-Box**
- (types ESS30/ESX10)
- Y 308 563 41

**For removing the blanking piece:**
push in the screwdriver as shown below

**Withdrawal tool for ESS20/ESS30/ESX10**
- Y 308 602 01

**Jumper**
to bypass looped through unused auxiliary contacts (series connection)
- X 222 066 01
  for 2210 and 3600

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This is a metric design and millimeter dimensions take precedence (mm).

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.