PowerIT Vacuum Cast Coil Dry Type Distribution Transformers

Enclosure Description

Industrial IT Enabled products from ABB are the building blocks for greater productivity, featuring all the tools necessary for lifecycle product support in consistent electronic form.
New enclosures design

Standard enclosure:

The enclosure is made of cut and bent steel sheets of the bolt-on type with removable panels and supported by the transformer's framework. Its removable base can be installed without having to lift the transformer.

Central front and rear handle panels will be provided for access to the tap changer.

Inlet-outlet of cables is situated at the bottom of the enclosure through aluminum flange plates to be machined by the customer.

Available standard types are: IP21, IP23, IP31, IP33 and other requested types.

Enclosure Protection Grade

The protection of enclosures against ingress of dirt or against the ingress of water is defined in IEC529 (BSEN60529:1991).

The various degrees of protection are most commonly expressed as "IP" followed by two numbers, precising the degree of protection. The first digit shows the extent to which the equipment is protected against particles, or which persons are protected from enclosed hazards. The second digit indicates the extent of protection against water.

Our standard range of manufacturing includes up to IP 33. Others alternatives can be considered.

Ingress Protection (IP) Codes

<table>
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<tr>
<th>First Numeral Protection against solid bodies</th>
<th>Second Numeral Protection against liquid</th>
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<tr>
<td>0 - No protection</td>
<td>0 - No protection</td>
</tr>
<tr>
<td>1 - Objects &gt;= 50mm</td>
<td>1 - Vertically dripping water</td>
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<tr>
<td>2 - Objects &gt;= 12.5mm</td>
<td>2 - 75 to 105deg angled dripping water</td>
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<td>3 - Objects &gt;= 2.5mm</td>
<td>3 - Spraying water</td>
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<tr>
<td>4 - Objects &gt;=1.0mm</td>
<td>4 - Splashing water</td>
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<td>5 - Dust-protected</td>
<td>5 - Water jets</td>
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<td>6 - Dust-tight</td>
<td>6 - Heavy seas, powerful jets</td>
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<td></td>
<td>7 - Effects of immersion</td>
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<td></td>
<td>8 - Indefinite immersion</td>
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Prepared By: Vanessa John  Date: 15/04/2004  Rev. No: 0  Page No: 2 of 9
Approved By: Carlos Garcia  Date: 16/04/2004
Applicability:  Lang: English  Title: Enclosure Description

ABB  Document No. 1LES100012-ZB
Design for IP21 and IP31

Hole punching detail

Design for IP23 and IP33

Rain protection detail

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ABB

Document No. 1LES100012-ZB
Title: Enclosure Description
Options:

- **Ground mounted Enclosure:**
  The enclosure is fixed to the floor, not to the transformer framework. It will be delivered in a flat pack for assembly on site.

- **Doors instead of handle panels:**
  Doors will be in any case for access to the tap changer, not of the full-height type (except in the ground mounted enclosure). Mechanical key interlock can be provided on request.
- **Connection box:**
  
  Fixed on the surface of the enclosure to place the transformer temperature control device.

- **Different Inlet-Outlet of cables**
  - At the top through Aluminum gland plates to be machined by the customer
  - On the side with or without **lateral cable boxes**
**Unloading Operation:**

The following steps will be adhered to at customer site to unload the transformer from the truck:

- Release the transformer from the fixing points.

- Transformer will be lifted by a crane. Hook the crane using the two lifting lugs available on the top of the transformer-enclosure. Never use the lateral lifting lugs of the enclosure for this purpose (in case that the enclosure is equipped with them).
Sketch instructions to assembly:

Enclosure disassembled
**Range of sizes available**

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<th>MODEL</th>
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<th>LENGTH</th>
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<th>Enclos. Weight kg</th>
<th>Transf. weight kg</th>
<th>TOTAL Weight kg</th>
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*contact manufacturer for ranges up to 36KV.*