Distribution transformers

Single phase overhead distribution transformers 10 kVA through 167 kVA

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Product overview

Application

The ABB overhead transformer may be used alone for the supply of a single phase load or as one of three units in a bank for the supply of a three phase load. The unit may be direct-mounted to a wooden or concrete pole, or cluster mounted on a pole for three phase use. The ABB transformers are designed for servicing residential overhead distribution loads. They are also suitable for light commercial loads, industrial lighting and diversified power applications.

Standards

All units are built in accordance with both CAN CSA C2.1-06 and CAN CSA C2.2-06, except as modified to comply with customer specifications. IEEE C57.12.20 or International Electrotechnical Commission Standard (IEC) may apply if required.

Features

- Core and coils designed for an optimum Total Ownership Cost (TOC)
- Wound core with step-lap joints for increased efficiency and lower noise levels
- “Low-high-low” windings for increased short circuit strength, efficiency and thermal strength
- Computer aided design for mechanical & electrical calculations (C.A.D.)
- Dual voltage designed to meet BIL and short circuit requirements on both connections
- Low voltage leads with embossed markings on all units with 3 LV bushings for easy reading and permanent identification on selected ratings
- Paint system meeting or exceeding the performance of the IEEE C57.12.28 Standard (para. 5.3 to 5.5 included), including the salt spray test
- Lifting lugs meeting all of the requirements of the CSA C2.1-06 and CSA C2.2-06 Standard (including feature to prevent sling slippage)
- Multiple cover clamps to ensure proper sealing and to minimize water retention on the cover edge
- Cover or sidewall mounted high voltage bushing(s) as required
- Low voltage spade or clamp type (basket) terminals as required
- Provision for surge arrester bracket, bracket available as an option
- Automatic self-resealing pressure relief valve

Dual Voltage Transformers and Taps

Dual voltage transformers have proven to be very useful for their versatility which allows lower inventories for the electric utilities and saves on change out costs in the event of upgrading to higher system voltage. Because taps are also in common use, it is appropriate that dual voltage transformers with taps be considered. As the transformer reliability is adversely affected by the increased number of HV leads introduced by dual voltage designs, ABB recommends the following:

- Dual Voltage transformers without taps should be limited to a 4:1 ratio (eg 2.4 x 8.0 kV)
- If taps are required on both connections, the voltage ratio should be 2:1

Accordingly, ABB recommends that:

(1) dual voltage transformers without taps be limited to a maximum HV spread of 2400V x 8000V, or 4800V x 16000V, and that

(2) transformers with taps (for both connections) be limited to a maximum spread of 2.1, for example 7200V x 14400V, or 8000V x 16000V.

Pole Mounted Transformers, Rating Details

General technical information is listed below. Information on less common requirements can be obtained through your ABB sales representative.

- kVA: 10, 15, 25, 37, 50, 75, 100, 167
- Temperature rise : 65 °C
- Cooling type : ONAN
- Single Phase
- Hertz : 60, 50
- Polarity : Additive or Subtractive
- Primary Voltage : 2400V through 34500 GrdY / 19920V
- Secondary Voltage : 120 / 240V, 240 / 480 V, 347V, 600V
- Insulation Class : 25kV (150kV BIL) and below
- Taps: none, or as an option, 4 x 2,5% HV (any combination of full capacity above nominal and /or reduced capacity below nominal)

Options

- Four HV winding taps complete with externally operated tapswitch
- Dual voltage primary complete with externally operated voltage switch
- Extra creep bushing
- Surge arrester bracket
- Internal Fault Detector (IFD)
- Non conductive transformer cover
- Biodegradable vegetable oil (BIOTEMP®)
- Stainless steel tank and cover

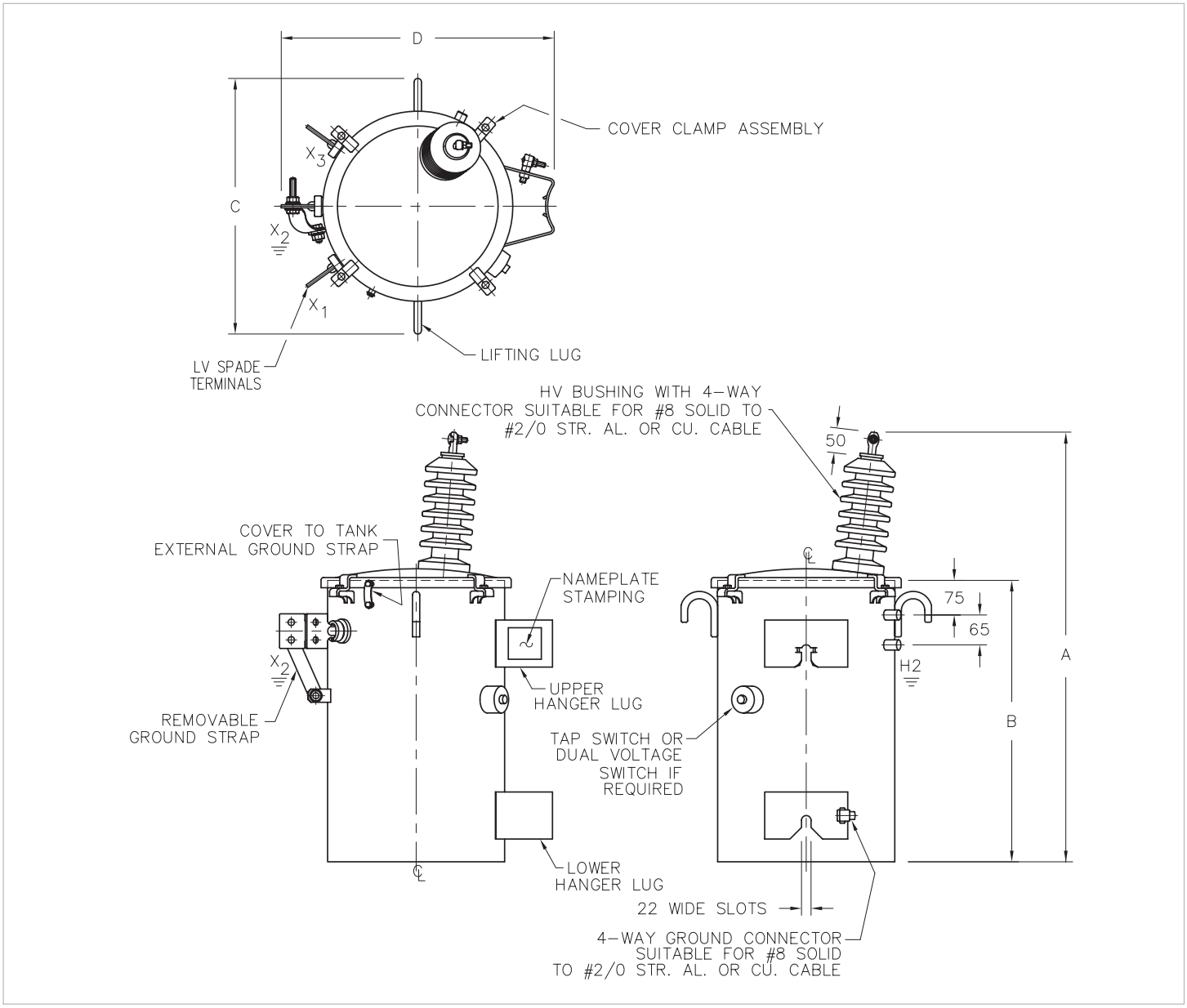
Outline dimensions

Outline Drawings

The influence of the loss evaluation formulae on transformer designs will lead to a wide variety of sizes and weights, thereby making it difficult, for the purpose of this information sheet, to cover the broad range of dimensions.

Typical Dimensions (mm) for grain oriented electrical design

KVA	A	B	C	D	Mass (kg)	Oil (litres)
10	885	560	500	525	100	22
25	935	610	560	590	160	30
50	1035	710	635	675	260	60
75	1035	710	745	840	375	90
100	1135	815	770	965	555	100
167	1335	1015	795	890	690	160



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