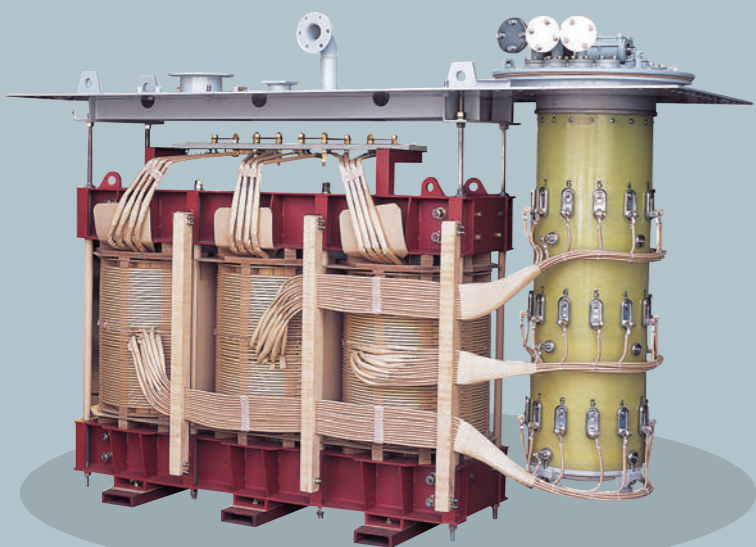


Power Transformer

We manufacture a range of either oil or synthetic liquid-filled transformers up to 30MVA at voltages up to 60KV.

Tapping are provided on the H.V winding, controlled either by means of an off-circuit switch, or an on-load tap changer.

Cooling is normally by means of tankmounted radiators, which can be either welded in position or of the detachable, bolt on type.

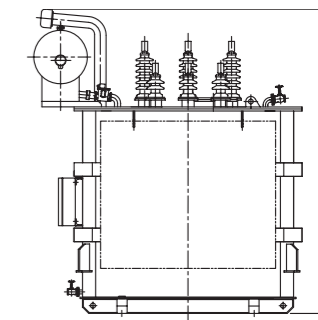
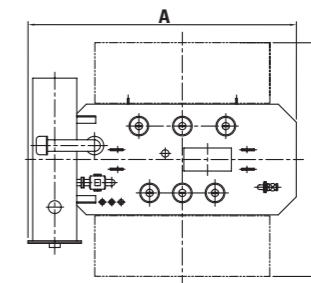


Applicable Standards

- KS (Korea Industrial Standard)
- IEC (International Electrotechnical Commission)
- BSI (British Standard Institution)
- ANSI (American National Standard Institution)
- IEEE (Institute of Electrical and Electronics Engineers)
- JEC (Japanese Electrical Committee)

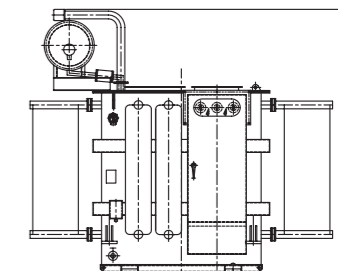
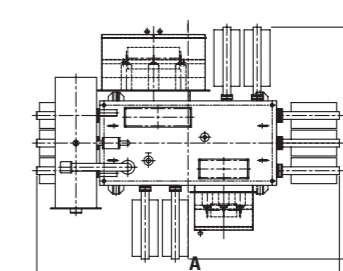
Ratings

- Phase: Three
- Frequency: 50/60Hz
- High Voltage: 66kV and Below
- Low Voltage: 27.5kV and Below
- Capacity: 2,000kVA through 30,000kVA



Open Type

| Capacity (kVA) | η (%) | ϵ (%) | l_o (%) | Dimension (mm) | | | Oil (l) | Total W.T (kg) |
|----------------|------------|----------------|-----------|----------------|------|------|---------|----------------|
| | | | | A | B | H | | |
| 2000 | 98.6 | 1.35 | 4.0 | 2350 | 1960 | 2500 | 1700 | 6200 |
| 2500 | 98.7 | 1.30 | 3.5 | 2400 | 2200 | 2600 | 2000 | 7000 |
| 3000 | 98.8 | 1.25 | 3.5 | 2600 | 2700 | 2700 | 2450 | 8600 |
| 5000 | 98.9 | 1.25 | 3.5 | 2700 | 2850 | 3100 | 2600 | 11000 |
| 6000 | 99.0 | 1.20 | 2.5 | 3000 | 3580 | 3300 | 3200 | 12000 |
| 7500 | 99.1 | 1.10 | 2.2 | 3400 | 3600 | 3500 | 4700 | 13200 |
| 10000 | 99.2 | 1.00 | 2.0 | 3400 | 3700 | 3800 | 5500 | 16200 |
| 15000 | 99.3 | 0.80 | 2.0 | 3600 | 3800 | 4000 | 6000 | 17500 |
| 20000 | 99.4 | 0.80 | 1.9 | 4000 | 5000 | 4300 | 6700 | 19000 |



Cable Box Type

| Capacity (kVA) | η (%) | ϵ (%) | l_o (%) | Dimension (mm) | | | Oil (l) | Total W.T (kg) |
|----------------|------------|----------------|-----------|----------------|------|------|---------|----------------|
| | | | | A | B | H | | |
| 2000 | 98.6 | 1.35 | 4.0 | 2300 | 1900 | 2500 | 1700 | 6800 |
| 2500 | 98.7 | 1.30 | 3.5 | 2450 | 2700 | 2700 | 2000 | 7500 |
| 3000 | 98.8 | 1.25 | 3.5 | 2600 | 2800 | 2800 | 2450 | 9000 |
| 5000 | 98.9 | 1.25 | 3.5 | 3700 | 3200 | 2850 | 2600 | 11500 |
| 6000 | 99.0 | 1.20 | 2.5 | 4400 | 3250 | 3300 | 3200 | 12800 |
| 7500 | 99.1 | 1.00 | 2.0 | 4600 | 3300 | 3500 | 4700 | 14000 |
| 10000 | 99.2 | 1.00 | 2.0 | 4800 | 3400 | 3900 | 5500 | 17000 |
| 15000 | 99.3 | 0.80 | 2.0 | 5000 | 3600 | 4100 | 6100 | 18500 |
| 20000 | 99.4 | 0.80 | 1.9 | 5600 | 4000 | 4500 | 6800 | 20000 |

Transformer Standard Accessories

| Accessories | Capacity (kVA) | | | |
|------------------------|----------------|--------------|--------------|--------------|
| | 1000 & Above | 3000 & Above | 5000 & Above | 7500 & Above |
| H.V&L.V Bushing | ⊙ | ⊙ | ⊙ | ⊙ |
| Oil drain Valve | ⊙ | ⊙ | ⊙ | ⊙ |
| Oil Filter Valve | ⊙ | ⊙ | ⊙ | ⊙ |
| Oil Sampling Valve | ⊙ | ⊙ | ⊙ | ⊙ |
| Oil Level Indicator | ⊙ | ⊙ | ⊙ | ⊙ |
| Thermometer | ⊙ | ⊙ | ⊙ | ⊙ |
| Name Plate | ⊙ | ⊙ | ⊙ | ⊙ |
| Dehydrating Breather | ⊙ | ⊙ | ⊙ | ⊙ |
| Pressure Relief Device | ⊙ | ⊙ | ⊙ | ⊙ |
| Conservator | ⊙ | ⊙ | ⊙ | ⊙ |
| Tap Changer | ⊙ | ⊙ | ⊙ | ⊙ |
| Radiator | ⊙ | ⊙ | ⊙ | ⊙ |
| Radiator Valve | ⊙ | ⊙ | ⊙ | ⊙ |
| Hand Hole | ⊙ | ⊙ | ⊙ | ⊙ |
| Lifting Lug | ⊙ | ⊙ | ⊙ | ⊙ |
| Grounding Terminal | ⊙ | ⊙ | ⊙ | ⊙ |
| Jacking Pad | ⊙ | ⊙ | ⊙ | ⊙ |
| Buchholz Relay | ⊙ | ⊙ | ⊙ | ⊙ |
| Ladder | ⊙ | ⊙ | ⊙ | ⊙ |
| Terminal | ⊙ | ⊙ | ⊙ | ⊙ |
| Skid Base | ⊙ | ⊙ | ⊙ | ⊙ |

* The above are subject to change without prior notice

Distribution Transformer



11kV or 33kV Class

Ratings

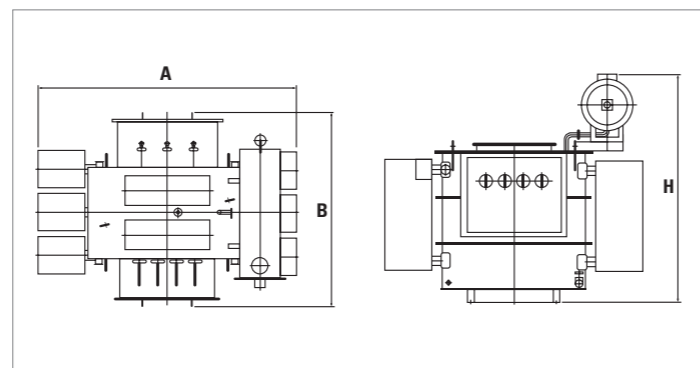
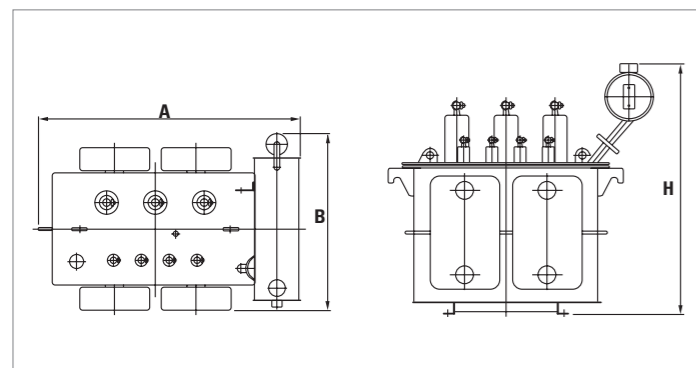
Phase: Single, Three
Frequency: 50/60Hz
High Voltage: 11kV, 33kV
Low Voltage: 433Y/250V, 415Y/240V, 400Y/230V



11kV or 33kV Class

Ratings

Phase: Single, Three
Frequency: 50/60Hz
High Voltage: 11kV, 33kV
Low Voltage: 433Y/250V, 415Y/240V, 400Y/230V

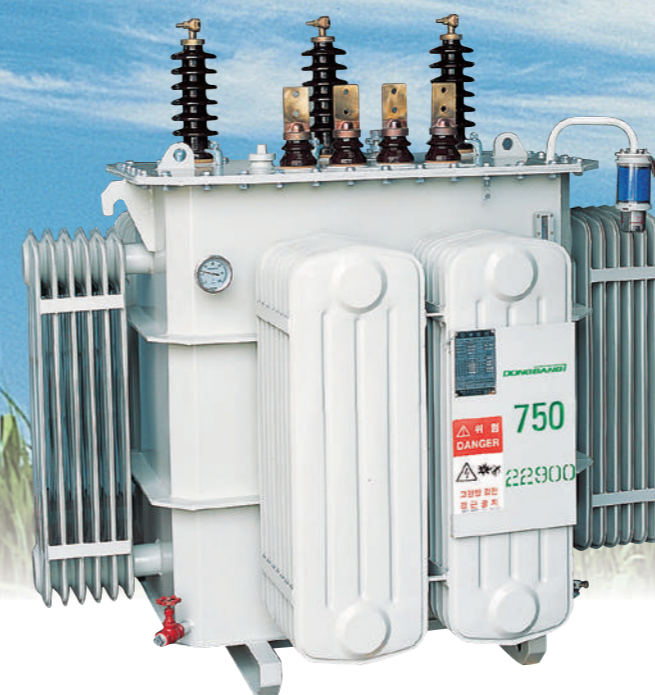


Three Phase Dimensions (11kV)

| Capacity (kVA) | Dimension (mm) | | | Oil (l) | Total W.T (kg) |
|----------------|----------------|------|------|---------|----------------|
| | A | B | H | | |
| 50 | 1040 | 700 | 1050 | 127 | 440 |
| 100 | 1130 | 780 | 1100 | 163 | 600 |
| 200 | 1140 | 800 | 1300 | 220 | 870 |
| 300 | 1180 | 900 | 1350 | 265 | 1100 |
| 500 | 1300 | 1350 | 1550 | 470 | 1900 |
| 750 | 1600 | 1600 | 1800 | 600 | 2500 |
| 1000 | 1650 | 1650 | 1850 | 700 | 3000 |

Three Phase Dimensions (11kV)

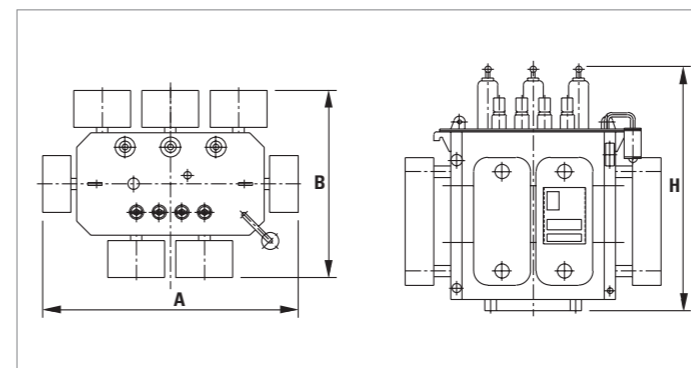
| Capacity (kVA) | Dimension (mm) | | | Oil (l) | Total W.T (kg) |
|----------------|----------------|------|------|---------|----------------|
| | A | B | H | | |
| 500 | 1510 | 1400 | 1600 | 500 | 2100 |
| 750 | 1850 | 1450 | 1800 | 650 | 2700 |
| 1000 | 2100 | 1580 | 1850 | 755 | 3300 |
| 1500 | 2300 | 1650 | 2050 | 1000 | 3900 |
| 2000 | 2650 | 1700 | 2250 | 1500 | 4700 |
| 3000 | 3760 | 1820 | 2500 | 2200 | 8400 |
| 5000 | 3870 | 1900 | 2680 | 2600 | 10000 |



22.9kV Class (Cover Bushing Type)

Ratings

Phase: Single, Three
Frequency: 50/60Hz
High Voltage: 22.9kV
Low Voltage: 600V and Below



Characteristics & Dimensions (Three phase)

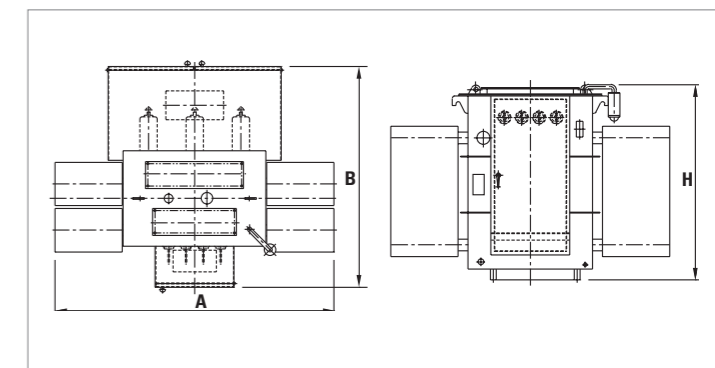
| Capacity (kVA) | η (%) | ϵ (%) | I_0 (%) | Dimension (mm) | | | Oil (l) | Total W.T (kg) |
|----------------|------------|----------------|-----------|----------------|------|------|---------|----------------|
| | | | | A | B | C | | |
| 100 | 97.2 | 1.8 | 6.5 | 1100 | 820 | 1270 | 210 | 740 |
| 150 | 97.5 | 1.7 | 6.2 | 1240 | 830 | 1370 | 260 | 950 |
| 200 | 97.7 | 1.6 | 6.0 | 1310 | 900 | 1370 | 280 | 1100 |
| 250 | 97.8 | 1.6 | 5.5 | 1350 | 940 | 1420 | 310 | 1250 |
| 300 | 98.0 | 1.5 | 5.5 | 1360 | 940 | 1480 | 340 | 1350 |
| 400 | 98.1 | 1.5 | 5.5 | 1470 | 1210 | 1530 | 450 | 1650 |
| 500 | 98.2 | 1.4 | 5.0 | 1580 | 1220 | 1580 | 470 | 1850 |
| 750 | 98.3 | 1.4 | 4.5 | 1790 | 1620 | 1700 | 680 | 2700 |
| 1000 | 98.5 | 1.3 | 4.0 | 1870 | 1680 | 1800 | 880 | 3450 |
| 1500 | 98.7 | 1.25 | 4.0 | 2580 | 1750 | 2060 | 1530 | 4550 |



22.9kV Class (Cable Box Type)

Ratings

Phase: Single, Three
Frequency: 50/60Hz
High Voltage: 22.9kV
Low Voltage: 600V and Below



Characteristics & Dimensions (Three phase)

| Capacity (kVA) | η (%) | ϵ (%) | I_0 (%) | Dimension (mm) | | | Oil (l) | Total W.T (kg) |
|----------------|------------|----------------|-----------|----------------|------|------|---------|----------------|
| | | | | A | B | C | | |
| 100 | 97.2 | 1.8 | 6.5 | 1200 | 1400 | 1350 | 280 | 900 |
| 150 | 97.5 | 1.7 | 6.2 | 1530 | 1430 | 1350 | 320 | 1150 |
| 200 | 97.7 | 1.6 | 6.0 | 1550 | 1500 | 1350 | 360 | 1320 |
| 250 | 97.8 | 1.6 | 5.5 | 1590 | 1520 | 1350 | 370 | 1550 |
| 300 | 98.0 | 1.5 | 5.5 | 1670 | 1540 | 1350 | 400 | 1600 |
| 400 | 98.1 | 1.5 | 5.5 | 1930 | 1580 | 1400 | 470 | 1850 |
| 500 | 98.2 | 1.4 | 5.0 | 1800 | 1580 | 1500 | 490 | 2150 |
| 750 | 98.3 | 1.4 | 4.5 | 2110 | 1680 | 1560 | 720 | 2850 |
| 1000 | 98.5 | 1.3 | 4.0 | 2300 | 1760 | 1610 | 950 | 3650 |
| 1500 | 98.7 | 1.25 | 4.0 | 2560 | 1850 | 1700 | 1600 | 4900 |

* The above are subject to change without prior notice

* The above are subject to change without prior notice

Single Phase Pole Mount Transformer



Single Bushing Type

Ratings

Frequency: 50/60Hz
High Voltage: 33, 22 & 11kV Grdy
Low Voltage: 600V and Below



CSP Type

Ratings

Frequency: 50/60Hz
High Voltage: 33, 22 & 11kV Grdy
Low Voltage: 600V and Below



Compact Type

Ratings

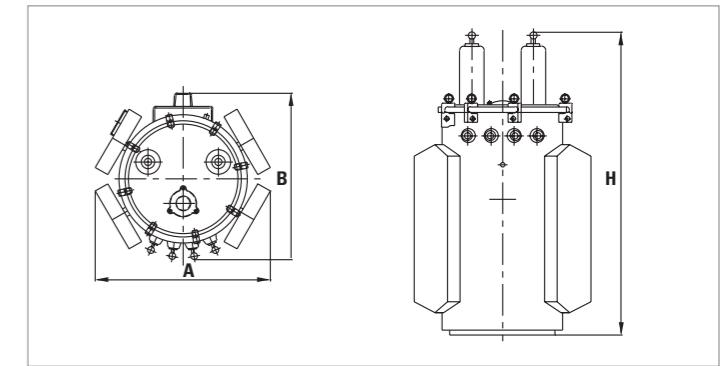
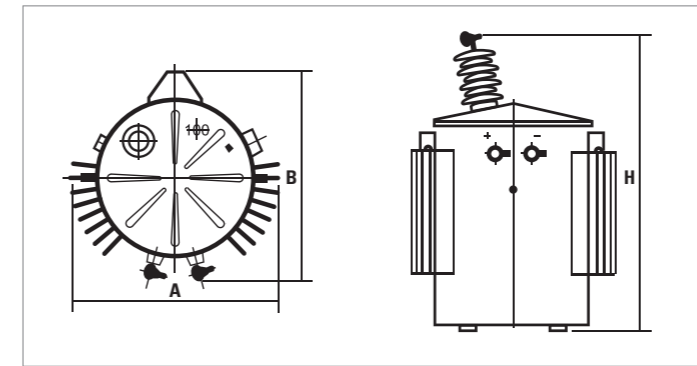
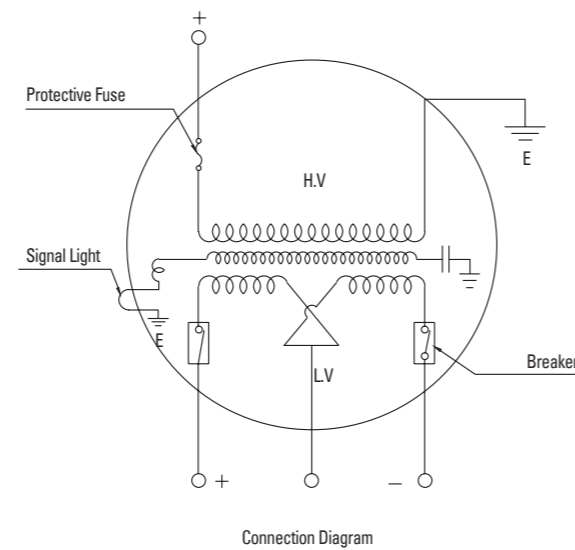
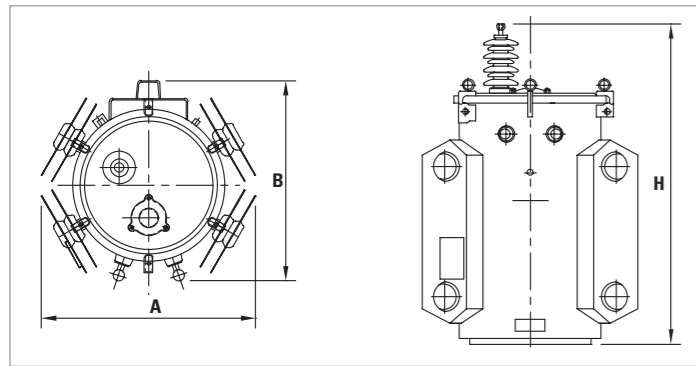
Frequency: 50/60Hz
High Voltage: 33, 22 & 11kV Grdy
Low Voltage: 600V and Below



Two Bushing Type

Ratings

Frequency: 50/60Hz
High Voltage: 33, 22 & 11kV Grdy
Low Voltage: 600V and Below



Characteristics & Dimensions

| Capacity (kVA) | Dimension (mm) | | | Oil (ℓ) | Total W.T (kg) |
|----------------|----------------|-----|------|---------|----------------|
| | A | B | H | | |
| 10 | 450 | 520 | 1020 | 30 | 125 |
| 20 | 500 | 570 | 1060 | 40 | 170 |
| 30 | 540 | 630 | 1110 | 50 | 225 |
| 50 | 650 | 680 | 1160 | 70 | 305 |
| 75 | 720 | 710 | 1180 | 90 | 400 |
| 100 | 740 | 740 | 1270 | 110 | 485 |
| 150 | 740 | 820 | 1220 | 110 | 500 |

Characteristics & Dimensions

| Capacity (kVA) | Dimension (mm) | | | Oil (ℓ) | Total W.T (kg) |
|----------------|----------------|-----|------|---------|----------------|
| | A | B | H | | |
| 20 | 530 | 610 | 1060 | 51 | 180 |
| 30 | 570 | 660 | 1080 | 62 | 220 |
| 50 | 590 | 700 | 1100 | 66 | 270 |
| 75 | 685 | 780 | 1140 | 102 | 380 |
| 100 | 805 | 820 | 1180 | 120 | 470 |

Characteristics & Dimensions

| Capacity (kVA) | Dimension (mm) | | | Oil (ℓ) | Total W.T (kg) |
|----------------|----------------|-----|------|---------|----------------|
| | A | B | H | | |
| 10 | 420 | 580 | 1100 | 50 | 170 |
| 15 | 490 | 590 | 1120 | 60 | 200 |
| 20 | 680 | 650 | 1150 | 75 | 250 |
| 30 | 690 | 660 | 1150 | 80 | 270 |
| 50 | 750 | 700 | 1200 | 90 | 360 |
| 75 | 790 | 750 | 1250 | 110 | 450 |
| 100 | 820 | 750 | 1280 | 130 | 560 |

* The above are subject to change without prior notice

* The above are subject to change without prior notice

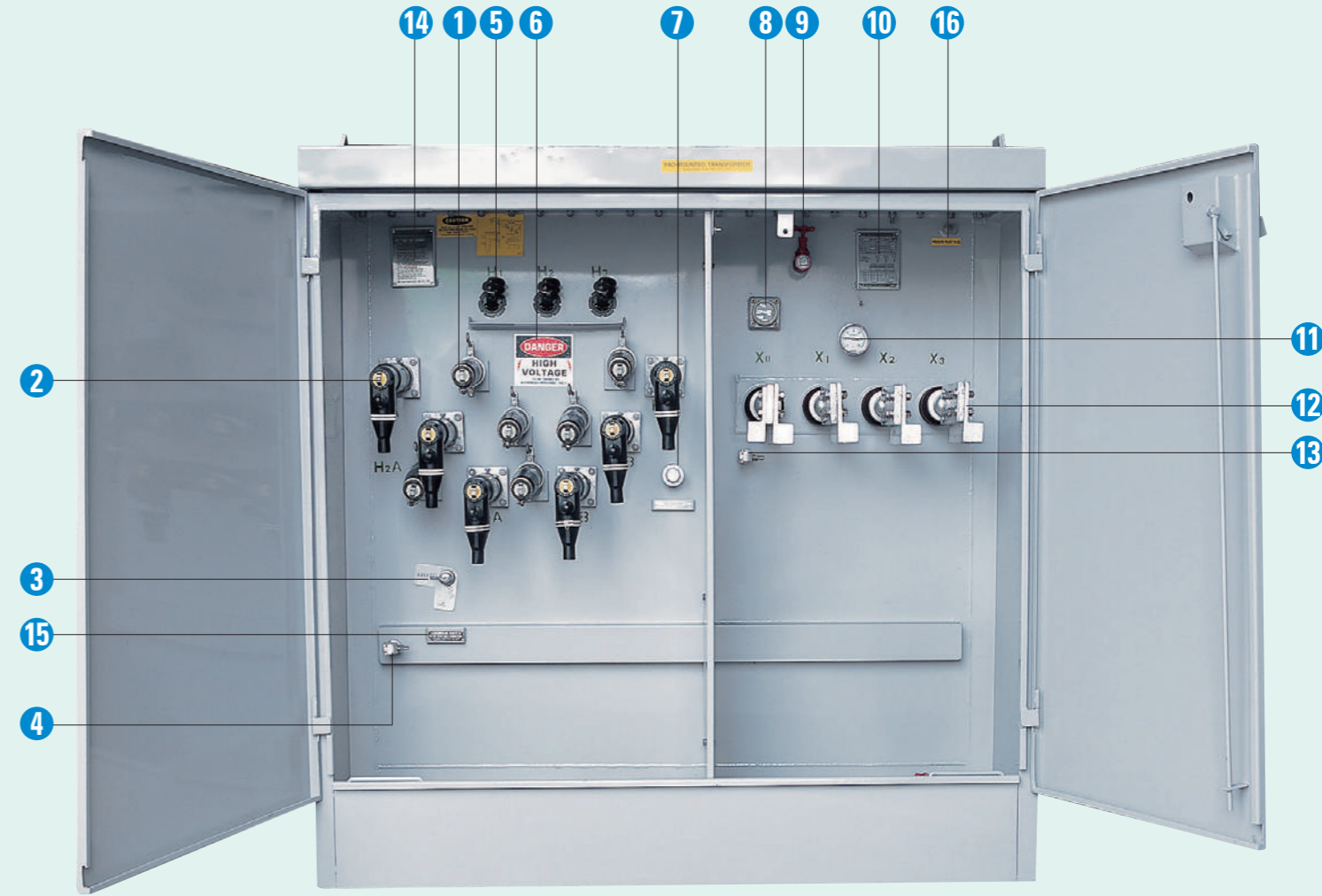
PAD Mounted Transformer

A pad-mounted transformer is specifically designed for applications of underground distribution loads ; apartments, schools, shopping centers, and industrial plants. For radial or loop feed applications, both live front and dead front construction is available.

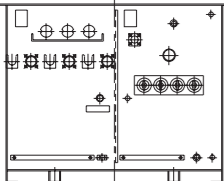
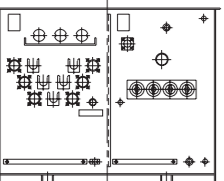
It is on oil-filled single or three phase distribution transformer.

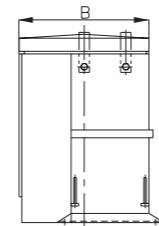
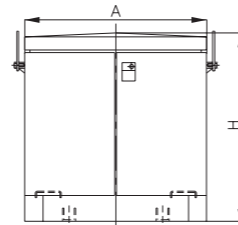


Rating
Phase: Three
Frequency: 50/60Hz
High Voltage: 6.6kV and above
Low Voltage : 600V and Below



Characteristics & Dimensions

| Description | Capacity (kVA) | BIL 95 kV | | | BIL150kV | | |
|---|----------------|-----------|--------|--------|----------|--------|--------|
| | | A (mm) | B (mm) | H (mm) | A (mm) | B (mm) | H (mm) |
| Dead front Radial feed  | 45 | 1500 | 1000 | 1300 | 1600 | 1150 | 1400 |
| | 75 | 1500 | 1000 | 1300 | 1600 | 1150 | 1400 |
| | 112.5 | 1500 | 1100 | 1300 | 1600 | 1200 | 1400 |
| | 150 | 1500 | 1200 | 1400 | 1600 | 1200 | 1650 |
| | 225 | 1550 | 1250 | 1400 | 1700 | 1250 | 1700 |
| | 300 | 1550 | 1450 | 1400 | 1700 | 1650 | 1800 |
| | 500 | 1600 | 1450 | 1500 | 1700 | 1650 | 1800 |
| | 750 | 1600 | 1700 | 1500 | 1800 | 1700 | 2050 |
| Dead front Loop feed  | 1000 | 1600 | 1750 | 1600 | 1800 | 1800 | 2100 |
| | 45 | 1550 | 1000 | 1450 | 1800 | 1150 | 1550 |
| | 75 | 1550 | 1000 | 1550 | 1800 | 1150 | 1600 |
| | 112.5 | 1550 | 1100 | 1600 | 1800 | 1200 | 1650 |
| | 150 | 1550 | 1200 | 1650 | 1800 | 1200 | 1700 |
| | 225 | 1600 | 1250 | 1700 | 1800 | 1250 | 1750 |
| | 300 | 1600 | 1350 | 1750 | 1800 | 1350 | 1850 |
| | 500 | 1650 | 1450 | 1850 | 1900 | 1650 | 1950 |
| 750 | 1650 | 1700 | 1950 | 1900 | 1700 | 2100 | |
| 1000 | 1650 | 1750 | 2100 | 1900 | 1800 | 2150 | |



1. PACKING STAND.
INSULATED STAND-OFF BUSHING
INSULATED PROTECTIVE CAP
2. LOAD BREAK ELBOW CONNECTOR
BUSHING WELL & INSERT
3. LOAD BREAK SWITCHGEAR
4. NEUTRAL TERMINAL (H.V)
5. BAY-O-NET FUSE HOLDER
6. DANGER MARK
7. TAP CHANGER
8. OIL LEVEL GAUGE
9. FILTER VALVE
10. NAME PLATE
11. THERMOMETER
12. SECONDARY BUSHING
TERMINAL LUG
13. GROUND TERMINAL (L.V)
14. FUSE NAME PLATE
15. GROUND LUGS
16. PRESSURE RELIEF VALVE



* The above are subject to change without prior notice

Dry Type Transformer (VPI)

WHAT IS "VPI"?

The coils shall be dried at atmospheric pressure in an oven through which hot air is continuously circulated.
 The totally dried coils shall be vacuum pressure impregnated in polyester resin varnish.
 The VPI process shall apply a one cycle polyester protective shield of varnish to the coils.
 The VPI process shall effectively impregnate the coils assemblies, thus resulting in a unit which is virtually impermeable to moisture, dust, dirt, salt air, and other industrial contaminants.
 The VPI processed coils shall be permanently assembled on the core, and then dipped in polyester resin varnish.
 The varnish shall be cured on the core and coil assembly following an established temperature vs. time baking cycle in a hot air circulating oven.

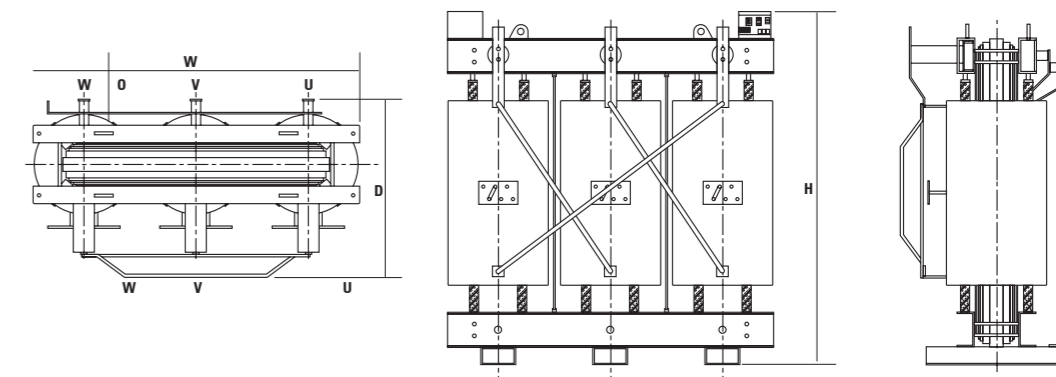
Substation (22.9kV CLASS) & Distribution Transformers

Rating

Phase: Single, Three
 Frequency: 50/60Hz
 Primary Voltage: 25kV and Below
 Secondary Voltage: 120V thru 6600V

Specification

Cooper Winding
 150°C or special request 220°C insulation
 AA, AA/FA
 Only "H" Class
 ANSI (IEEE), IEC, JEC, KS



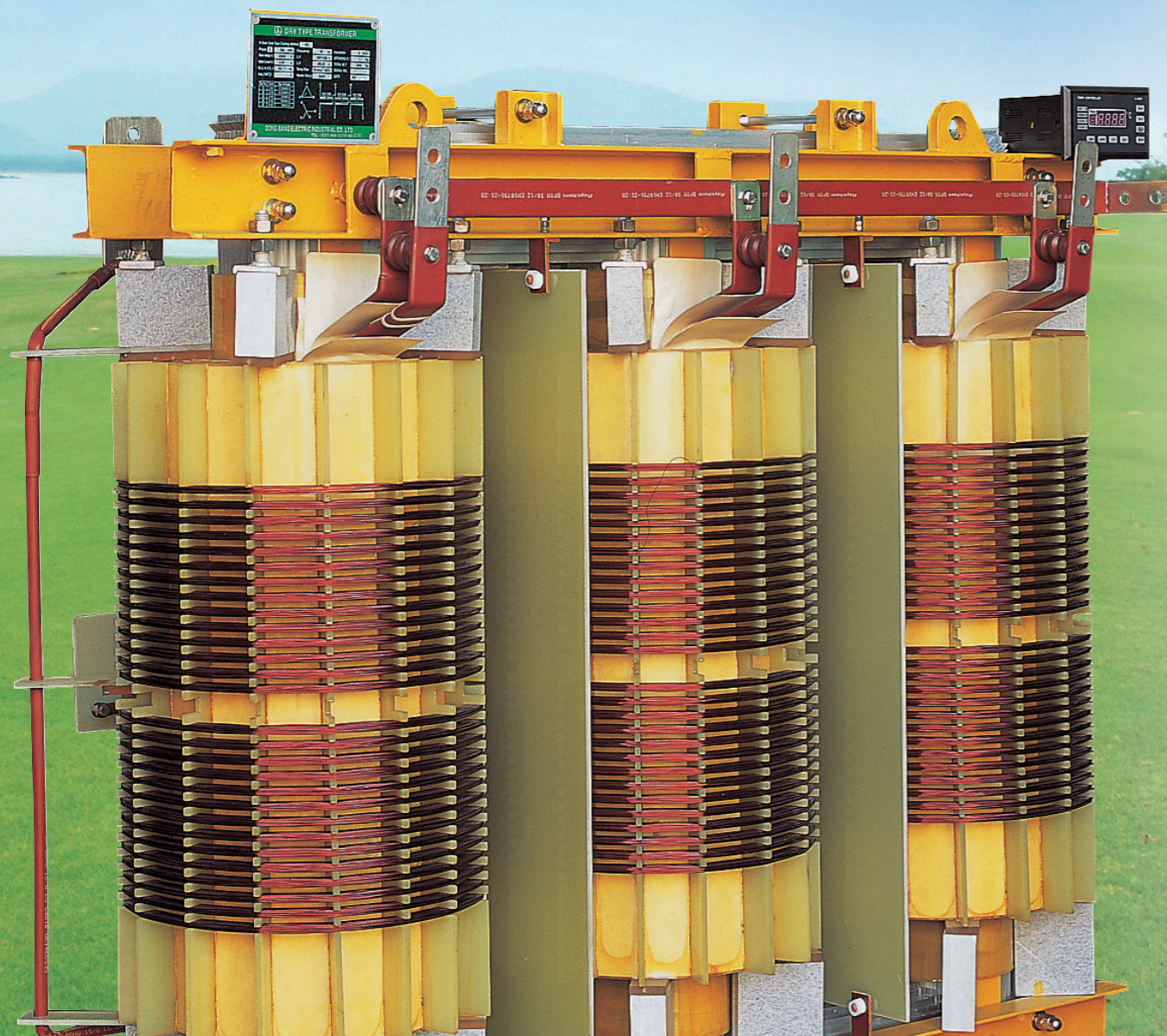
Dimensions

| Capacity (kVA) | Impedance (%) | Voltage variation rate (%) | Efficiency (%) | Dimension (mm) | | | Weight (Kg) |
|----------------|---------------|----------------------------|----------------|----------------|-----|------|-------------|
| | | | | W | D | H | |
| 100 | 6.0 | 2.1 | 97.4 | 1020 | 680 | 1100 | 570 |
| 200 | 6.0 | 2.0 | 98.0 | 1150 | 700 | 1200 | 830 |
| 300 | 6.0 | 1.7 | 98.1 | 1160 | 710 | 1340 | 1030 |
| 400 | 6.0 | 1.6 | 98.3 | 1220 | 730 | 1410 | 1200 |
| 500 | 6.0 | 1.5 | 98.3 | 1330 | 770 | 1450 | 1430 |
| 600 | 6.0 | 1.5 | 98.3 | 1360 | 780 | 1500 | 1640 |
| 750 | 6.0 | 1.4 | 98.5 | 1420 | 810 | 1530 | 1950 |
| 1000 | 6.0 | 1.3 | 98.6 | 1510 | 840 | 1610 | 2400 |
| 1500 | 6.0 | 1.2 | 98.8 | 1700 | 870 | 1800 | 3300 |
| 2000 | 6.0 | 1.1 | 98.8 | 1850 | 900 | 1930 | 4100 |

* The above are subject to change without prior notice

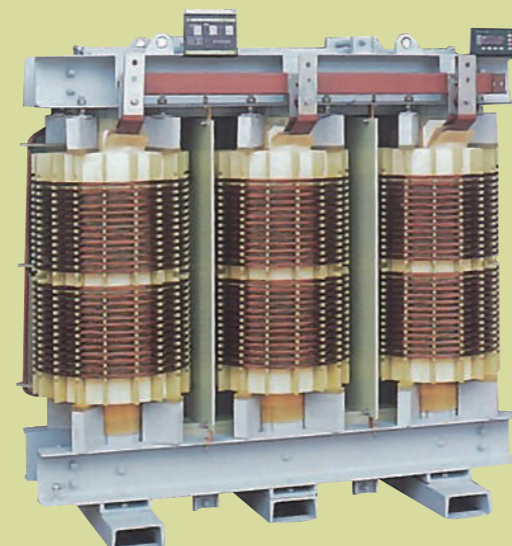
Characteristics

| Item | VPI Transformer | Mold Transformer | Oil Transformer |
|-----------------------------|-----------------|--------------------|-----------------|
| Insulation class | "H" type | "F" type, "B" type | "A" insulation |
| Maximum temperature limits | 220°C | 130-150°C | 90°C |
| Nonflammable degree | Excellent | Excellent | Good |
| Disaster prevention | Excellent | Excellent | Good |
| Small size & light weighted | Excellent | Very good | Good |
| Maintenance | Excellent | Very good | Good |
| Environment-friendly degree | Excellent | Very good | Good |



VPI (Vacuum Pressure Impregnation)

- High level of Safety
- High Reliability
- Environmentally Friendly
- Increase emergency overload capability
- No cracking
- Low Noise & Easy Maintenance
- Small size & Light Weighted
- Space Utilization
- Designed to be free of partial Discharge



Dry Type Transformer (UL)

DRY Type General Purpose & Power Transformers are designed, manufactured and tested in accordance with IEEE, ANSI, NEMA and UL standards.

These are air-cooled dry type transformers with Class 220(R) insulation systems.

All insulating materials are exceed NEMA ST20 standards and be rated for 220°C UL component recognize insulation system.



ELECTRICAL RATING : Delta to WYE, 50/60Hz

VOLTAGE TAPS :Transformers in most cases shall have a minimum of 480V (+2, -4, 2.5%) full capacity primary taps (432/444/456/468/480/492/504).

PERCENT IMPEDANCE & TEMPERATURE RISE

| Catalogue No. | Phase | Freq. | kVA | Ambient Temp. | ⊙Max. Temp. Rise | Insulation System Rating | % Imp. |
|---------------|-------|-------|-------|---------------|------------------|--------------------------|--------|
| DC342B045I | 3 | 60 | 45 | 40°C | 94°C | 220°C | 2.5 |
| DC342B075I | 3 | 60 | 75 | 40°C | 94°C | 220°C | 3.0 |
| DC342B112I | 3 | 60 | 112.5 | 40°C | 94°C | 220°C | 3.4 |
| DC342B150I | 3 | 60 | 150 | 40°C | 116°C | 220°C | 3.0 |
| ⊗-DC342B225I | 3 | 60 | 225 | 40°C | 75°C | 220°C | 3.9 |
| ⊗-DC342B300I | 3 | 60 | 300 | 40°C | 107°C | 220°C | 3.43 |

⊙ Data based on UL File E306669. ⊗-Use wire rated for at least 90°C.

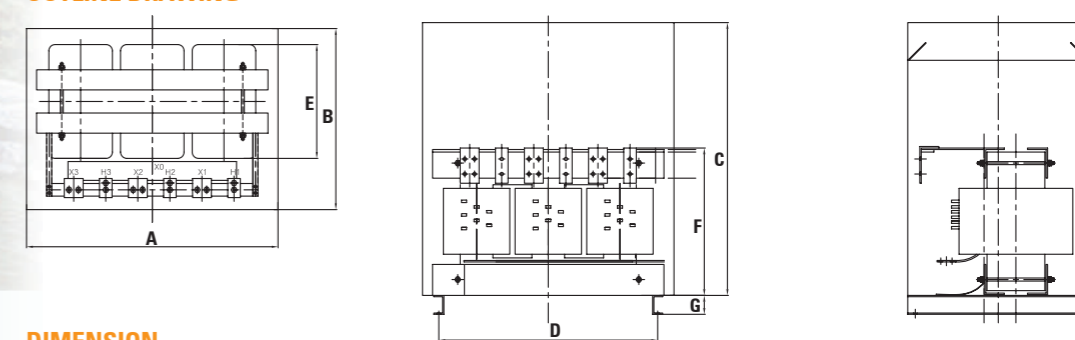
COOLING CLASS & WEIGHT

| Catalogue No. | Insulation System | Winding | Cooling Class | Vector Group | Weight (LBS) |
|---------------|-------------------|---------|---------------|--------------|--------------|
| DC342B045I | Dongbang-220 | COPPER | "AA" | Dyn 1 | 639(° ±10%) |
| DC342B075I | Dongbang-220 | COPPER | "AA" | Dyn 1 | 684(° ±10%) |
| DC342B112I | Dongbang-220 | COPPER | "AA" | Dyn 1 | 1058(° ±10%) |
| DC342B150I | Dongbang-220 | COPPER | "AA" | Dyn 1 | 1382(° ±10%) |
| DC342B225I | Dongbang-220 | COPPER | "AA" | Dyn 1 | 2059(° ±10%) |
| DC342B300I | Dongbang-220 | COPPER | "AA" | Dyn 1 | 2508(° ±10%) |

INSULATION SYSTEM

These transformers are provided with Class 220(R), electrical insulation system, File E304840, Vol.1, Sec.2, Designation DongBang-220.

OUTLINE DRAWING



DIMENSION

| Catalogue No. | Rating (kVA) | Cased (mm) | | | Core & Dim. (mm) | | |
|---------------|--------------|------------|-----|------|------------------|-----|-----|
| | | A | B | C | D | E | F |
| DC342B045I | 45 | 750 | 630 | 853 | 483 | 254 | 486 |
| DC342B075I | 75 | 750 | 630 | 893 | 545 | 321 | 510 |
| DC342B112I | 112.5 | 750 | 630 | 1023 | 555 | 325 | 585 |
| DC342B150I | 150 | 870 | 760 | 1103 | 689 | 365 | 630 |
| DC342B225I | 225 | 1170 | 830 | 1183 | 944 | 430 | 700 |
| DC342B300I | 300 | 1170 | 870 | 1233 | 954 | 470 | 738 |

SOUND LEVELS

DONGBANG Dry Type General Purpose and Power transformers are designed and manufactured to comply with NEMA and ANSI standards.

DONGBANG Dry type general purpose transformers shall be quite type with maximum sound level at 3 Decibels less than NEMA and ANSI standard level for transformer rating indicated.

| kVA | NEMA Standard Sound Level (DB) | Average Sound Level (DB) |
|---------|--------------------------------|--------------------------|
| 10-50 | 45 | 42 |
| 51-150 | 50 | 47 |
| 150-300 | 55 | 52 |

STANDARD FEATURES

- » UL LISTED
- » 3 Phase, 45 - 300kVA
- » 480V - 208Y / 120V (Dyn 1)
- » COPPER WINDINGS
- » INSULATION SYSTEM 220
- » 60 Hz
- » NEMA TYPE 1
- » FLOOR MOUNTING TYPE
- » 6 TAPS
- » COOLING CLASS "AA"



DB-GS Series Load Break Switch

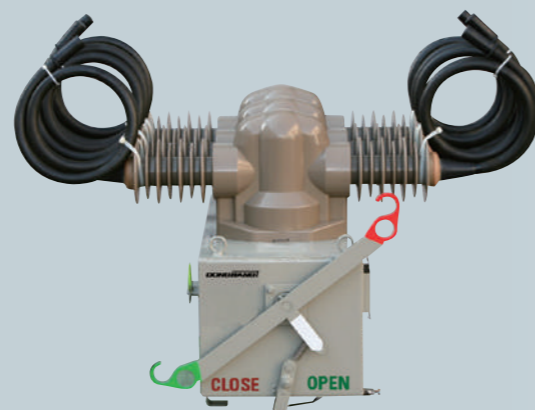
DB-GS series is 3 phase, SF₆ gas and polymeric insulated load break switches (LBS) for overhead lines operating at a voltage up to 25.8kV. It meets the demand for oil-less and maintenance free operation with SF₆ gas and polymeric, related parts and devices installed inside its hermetically sealed stainless steel tank.

DB-GS load break switches can be manually operated or motorized for sectionalizing, automation and remote control to suit your power line requirements.

DB-GS series load break switchgear has been fully certified in accordance with IEC 60694 (1996), IEC 60265 (1998) and ANSI/IEEE C37.71 (1984) to meet and exceed customer specifications



SF₆ GAS Insulated Type



Polymeric Insulated Type

OUTSTANDING FEATURES

- » SCADA-mate Configuration, or 3 Current Transformers and 6 Resistive Voltage Sensors are integrated inside of the tank. So extra cost to attach the CT and Voltage Sensor is not necessary.
- » World First Resistive Voltage Sensors with an accuracy of 0.5%, while traditional capacitive sensor has 3% accuracy.
- » SF₆ Gas Insulation and Interruption Media is enclosed in stainless steel tank sealed for life and maintenance free with less than 0.2% leakage rate per year, showing normal insulation and interruption performance even at an atmospheric gas pressure.
- » Unique and Field Proven Puffer and Heavy duty Tulip-Shaped Contacts made of arc resistant Cu-W tip ensures short arc-extinguishing time of less than 0.5 cycles and more than 400 times load current capacity.
- » There is no plastic material between open contacts, so SF₆ gas makes no deterioration combined with arc and leakage current in the tank.
- » Insulation Coordination enables outside flash over first. The outside flash over voltage is the least, the inside flash over voltage is next to it, and the puncture voltage of the bushings is the most among them.
- » Toggle Action Spring Mechanism that has very simple and reliable structure for close and open operation, and that is independent from operator's handling power or speed shows quick open and quick close operation below 0.7 sec when operated by motor.
- » Safety Bursting Membrane releases overpressure gas safely from the enclosed tank at a pressure of 0.3-0.7kgf/Cm²•G.
- » You can easily check the on/off position of the main contacts by ON/OFF Position Indicator directly connected with the main shaft from the ground level

DB-GS-AUTO TYPE LOAD BREAK SWITCH

DB-GS-Auto Type load break switch integrates 3 current transformers and 6 voltage sensors inside the tank.

Motor parts that is enclosed in the stainless steel box welded underneath the tank operate the main shaft only while electrical operation, so in any case, DB-GS-Auto type Switch reserves all the benefits of simplicity and reliability of manual operation.

Lead Acid Battery provides DC power to the control circuit board in case of AC power source failure. The batteries have sufficient capacity to sustain more than 24 hour operation while failure of AC power supply.

DB-GS-MANUAL TYPE LOAD BREAK SWITCH

DB-GS-MANUAL Type Load Break Switch operates manually without and separate control unit and any power supply.

INFORMATION FOR CUSTOMERS INQUIRY

- » If you take following advice when you make an inquiry to us, you will get more detailed and earlier reply.
- » Select product's type, voltage class, continuous current, and short-time withstand current
- » Select the control type combined, parts or functions you want to be included in the equipment
- » Select delivery place and transportation method
- » Write the selected specifications to us by email or fax.

ELECTRICAL CHARACTERISTICS

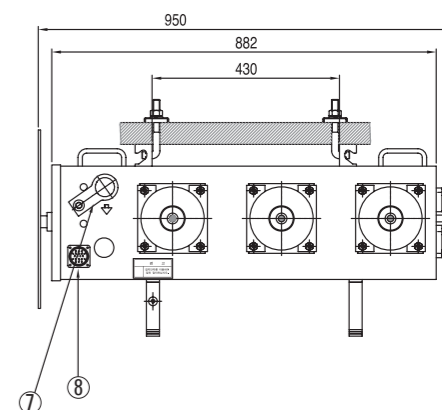
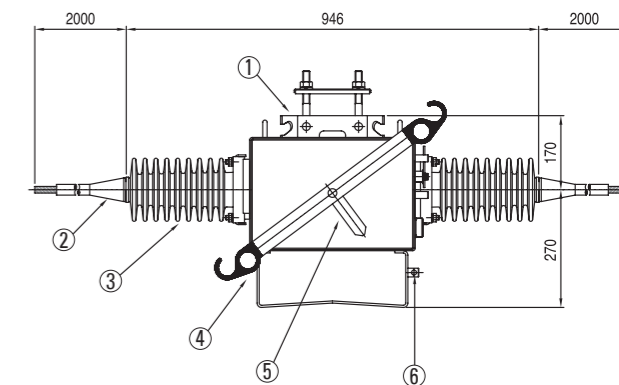
| Description | DB-GS | |
|---|---------------|---------------|
| | 25.8kV | 11/15kV |
| Rated Maximum Voltage | 25.8kV | 11/15kV |
| Rated Frequency | 50/60Hz | 50/60Hz |
| Rated Continuous Current | 400A(630A) | 400A(630A) |
| Number of Phases | 3 | 3 |
| Rated Impulse Withstand Voltage (BIL) | 150kV | 150kV |
| Rated Short Time Withstand Current (rms) | 12.5kA (1sec) | 12.5kA (1sec) |
| Cable Charging Current (rms, sym.) | 20A | 20A |
| Transformer Magnetizing Current Current (rms) | 14A | 14A(21A) |
| Line Charging Current | 2A | 2A |
| Power Frequency withstand Voltage 60kV (dry-1min/wet-10sec) | 60kV | 60kV |
| Electrical Operations | 400 times | 400 times |
| Mechanical Operations | 5,000 times | 5,000 times |
| Weight without Mounting Frame | 200kg | 200kg |

DB-GS Series Load Break Switch



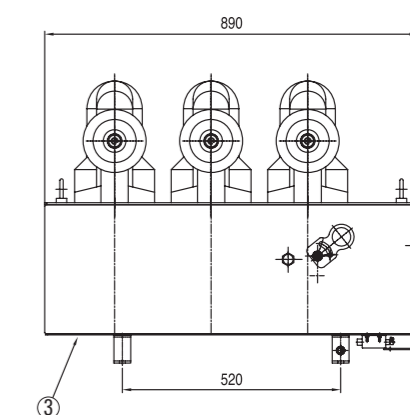
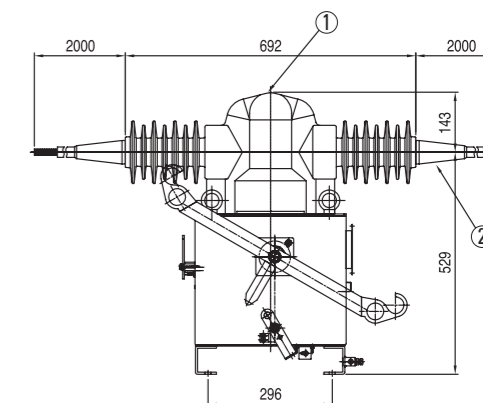
SF₆ GAS Insulated Type

1. Lifting Lug
2. Moldcone Lead Wire
3. Porcelain Bushing
4. Manual Operating Handle
5. Indicator
6. Earth Terminal
7. Operation Locking Handle
8. Receptacle



Polymeric Insulated Type

1. Epoxy Insulation Body
2. Moldcone Lead Wire
3. Enclosure



DB-PAD Series Load Break Switch

DB-PAD is puffer interrupting pad mounted fully dead front switchgear for underground system up to 25.8kV, 630A, enclosed in stainless steel tank full of SF₆ gas insulation media. It incorporates grounding switches in every way to provide added safety and faster working.

DB-PAD Series pad mounted load break switchgear has been fully certified in accordance with IEC 60265-1 and ANSI/IEEE C37.71 (1984) to meet and exceed customer specifications.



OUTSTANDING FEATURES

- » SF₆ Gas Insulation Media which is enclosed in stainless steel tank sealed for life and maintenance free with less than 0.2% leakage rate per year, showing normal insulation and interruption performance even at an atmospheric gas pressure
- » Unique and Field Proven Puffer and Heavy duty Tulip-Shaped Contacts made of arc resistant Cu-W tip ensures short arc-extinguishing time of less than 0.5 cycles and more than 400 times load current capacity
- » Internal power source through integrated capacitor-potential transformer combination for the control circuit's power
- » Three phase group-operated mechanism offers regular close-open speed regardless of operating speed or method (manual or electrical)
- » Front ground circuit bushings offer easy cable testing
- » Deadfront design and mechanical interlock between main and earth Switch provides a high level of safety and efficient maintenance. Closed state of main circuit switch interlocks grounding circuit switch, and also closed state of grounding circuit switch interlocks main circuit switch in every ways.
- » Integrated capacitive voltage sensors, CT's and internal power supply makes this switch easy to be installed in SCADA system

DB-PAD-AUTO TYPE

- » Every bushing in DB-PAD-AUTO Type Pad Mounted Load Break Switch is installed with CT and voltage sensor, so most electrical values of connected distribution system can be measured. And, combined with SCADA-mate control and RTU, this switch can be operated from system remote control center.
- » Lead Acid Battery provides DC power to the control circuit board in case of AC power source failure. The batteries have sufficient capacity to sustain more than 24 hour operation while failure of AC power supply.

DB-PAD-MANUAL TYPE

- » DB-PAD-MANUAL Type Pad Mounted Load Break Switch operates manually without and control unit and any power supply.

INFORMATION FOR CUSTOMER'S INQUIRY

- » If you take following advice when you make an inquiry to us, you will get more detailed and earlier reply.
- » Select the product's type, the number of ways, combination of circuit breaker and switch, voltage class, continuous current, and short time withstand current
- » Select the control type, parts or functions you want to be included in this equipment
- » Select delivery place and transportation method
- » Write the selected specifications to us by email or fax.



DB-PAD Series Load Break Switch



DB-PAD-AUTO
(4W4S)



DB-PAD-MANUAL
(3W3S)



DB-PAD-MANUAL
(4W4S)

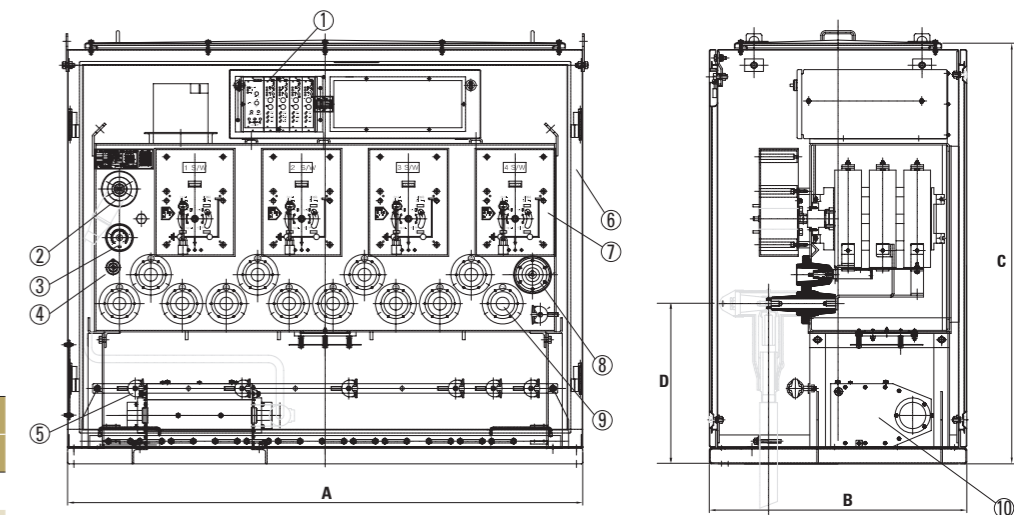


ELECTRICAL CHARACTERISTICS

| DESCRIPTION | | DB-PAD | |
|--|-------------------------------------|---------------|---------------|
| Maximum System Voltage | | 25.8kV | 11/15kV |
| Rated Frequency | | 50/60Hz | 50/60Hz |
| Rated Continuous Current | | 630A | 630A |
| Rated Fault Making Current (peak) | | 32.5kAp | 32.5 kAp |
| Electrical Operation Time (Close/Open) | | 700 ms each | 700 ms each |
| Number of Mechanical Operations (main) | | 5,000 times | 5,000 times |
| Number of Mechanical Operations (ground) | | 1,000 times | 1,000 times |
| Short Time Withstand Current (rms) | | 12.5kA (1sec) | 12.5kA (1sec) |
| Breaking Capacity | Mainly Active Load Current | 630A | 630A |
| | Cable Charging Current Breaking | 25A | 25A |
| | Magnetizing Current Breaking | 21A | 21A |
| | Line Charging Current Breaking | 1.5A | 1.5A |
| | Closed Loop Breaking Current | 630A | 630A |
| Insulation Level | Lightning Impulse Withstand Voltage | 125 kV BIL | 125 kV BIL |
| | Power Frequency Withstand Voltage | 60kV | 60kV |
| | DC Voltage Withstand Voltage | 78kV | 78kV |
| Weight without Outer Enclosure (4 way) | | 300kg | 300kg |

1. Local Controller
2. PT Bushing
3. SF6 Gas Pressure Gauge
4. SF6 Gas Filling Valve
5. Grounding Lug
6. Enclosure
7. Operating Shaft & Indicator
8. Earth Bushing
9. Main Bushing
10. PT

| Model | Dimension (±3%) | | | |
|-----------------|-----------------|-----|------|-----|
| | A | B | C | D |
| 4 W-4S (Auto) | 1600 | 800 | 1300 | 540 |
| 3 W-3S (Manual) | 1200 | 800 | 1200 | 540 |
| 4 W-4S (Manual) | 1600 | 800 | 1200 | 540 |



25.8kV SF₆ gas insulated switchgear

This product satisfies the standards of IEC 62271-100, IEC 60517 and ES 150-576.

In particular, it passed the test of E₂, M₂ and C₂ for the first time in Korea as the recognition of its outstanding electric and mechanic durability.

All main circuit charged part are in metal enclosure which is filled by SF₆ GAS and the GIS is consisted of two bus-bar tank (double bus-bar system), one VCB tank and operating control box.

2-position (ON-OFF) and 3-position (ON-OFF-earth) disconnecting switches are mounted inside of the bus-bar tank.



RATING

Voltage: 25.8kV
Frequency: 50/60Hz
Current: 2000A/600A
Short Time Withstand Current (1sec): 25kA
Impulse Voltage: 150kV
Breaking Capacity: 25kA

SPECIFICATION

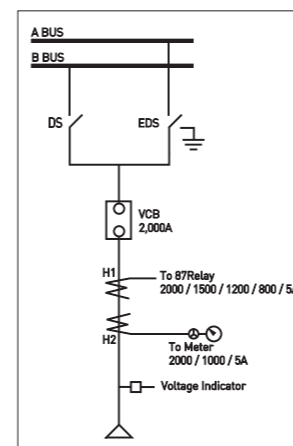
Guaranteed ON-OFF times on no-load
• VCB: 10,000 times
• D. S: 1,000 times
Performed test: "Class 2 (E₂, M₂, C₂)"

FEATURE

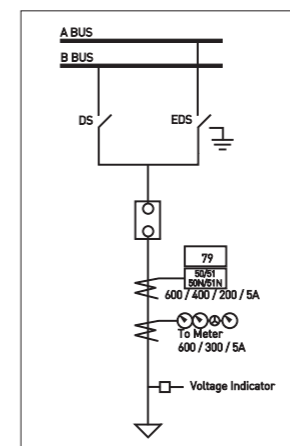
- » VT Panel is separately installed for voltage monitoring of double bus-bar.
- » 3 compartment (2 bus-bar compartment and 1 VCB compartment) are completely separated for easy maintenance.
- » 3 rupture disk (pressure release device) are installed at each compartment.
- » When the gas is leaked to become 0 air pressure (atmospheric pressure) it would endure to the highest voltage of operation



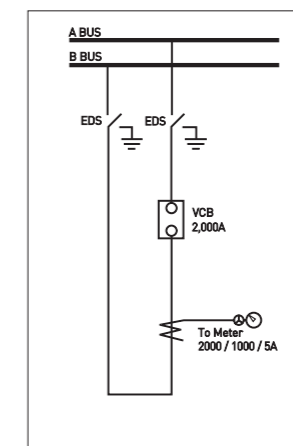
Bellows for panel connecting and absorbing of impact.
It is made be stainless steel.



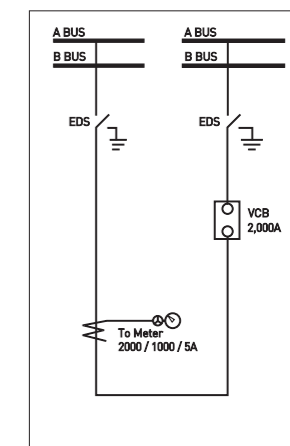
Main



Feeder



Bus Tie



Bus Section