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# TRANSFORMER SPECIFICATION

## 3000 kVA. 3Ph. 50 Hz.

## 22000 - 400/230 V. Dyn 11

## HERMETICALLY SEAL TYPE

88/99 หมู่ 12 ซ. สุนทรวิภาค ถ.บางพลี - ตำหรุ ต.บางปลา อ.บางพลี จ.สมุทรปราการ 10540 Tel. (02) 346-0980-7 Fax. (02) 346-0978-9

88/99 Moo.12 Soi sunthonwipark Bangplee -tumroo Road Bangpra Bangplee samuthprakarn 10540 Tel. (02) 346-0980-7 Fax. (02) 346-0978-9



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# Asia Trafo Co., Ltd

## SPECIFICATION OF OIL IMMERSED TRANSFORMER

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### TECHNICAL DATA FOR 3000 kVA, 22000-400 V. Dyn11

| No. | Description | | Unit | Guaranteed Value | |
|---|---|---|---|---|---|
| 1 | Manufacture's name | | - | ASIA TRAFO CO.,LTD. | |
| 2 | Country of origin | | - | Thailand | |
| 3 | Applied standard | | - | IEC 60076 | |
| 4 | Type of Transformer | | - | Hermetically seal type (Corrugate fins) | |
| 5 | Rated power | | kVA | 3000 | |
| 6 | Number of phase | | - | 3 | |
| 7 | Rated frequency | | Hz | 50 | |
| 8 | Rated high voltage | | V | 22000 | |
| 9 | Rated low voltage | | V | 400 | |
| 10 | Conection symbol | | - | Dyn11 | |
| 11 | Rated high current | | A | 78.73 | |
| 12 | Rated low current | | A | 4330.13 | |
| 13 | Primary tapping : | | - | Off-circuit tap changer | |
| 14 | Number of steps of high voltage tapping | | Step | 4 Steps 5 Position | |
| 15 | Percent of rated voltage of each tapping | | % | ±2 x 2.5% | |
| 16 | Type of oil preservation system | | - | Completely oil fill system | |
| 17 | Operation duty | | - | Continuous operation | |
| 18 | Cooling System | | - | ONAN | |
| 19 | Ambient | | °C | 40 | |
| 20 | Max. temperature rise of winding, at full load | | °C | 65 | |
| 21 | Max. temperature rise of top oil, at full load | | °C | 60 | |
| 22 | Class of insulation | | - | A (105°C) | |
| 23 | Noise level | | dB(A) | ≤ 66 | |
| 24 | No-load current & Tolerance | | % & % | 3.0 % & +30% | |
| 25 | Short-circuit impedence at 75°C & Tolerance | | % & % | 7.00 & ±10 | |
| 26 | No-load loss | | W | 3500 | |
| 27 | Load loss at 75°C | | W | 33000 | |
| 28 | Efficiency at 75°C | : Full load unity power factor | % | 98.80 | |
| | | : Full load 0.8 power factor | % | 98.50 | |
| | | : 3/4 load unity power factor | % | 99.03 | |
| | | : 3/4 load 0.8 power factor | % | 98.79 | |
| | | : 1/2 load unity power factor | % | 99.22 | |
| | | : 1/2 load 0.8 power factor | % | 99.03 | |
| 29 | Voltage regulation at | : Unity power factor | % | 1.34 | |
| | | : 0.8 power factor | % | 1.03 | |
| 30 | **Winding** | | | HV.Winding | LV.Winding |
| | Material of winding | | - | Copper | Copper |
| | Insulation material of wire | | - | Polyvinyl formal | Kraft paper |
| | Full-wave impulse withstand voltage, or BIL | | kV, peak | 125 | 30 |
| | Power-frequency test voltage, 1 min | | kV, r.m.s | 50 | 10 |
| | Construction of winding | | - | Layer winding | Layer winding |
| 31 | **Core** | | | | |
| | Core silicon steel grade | | - | Cold rolled grain oriented electrical steel | |

| Rev | Date | Prepared by | Checked by | Approved by | Signature |
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# Asia Trafo Co., Ltd

## SPECIFICATION OF OIL IMMERSED TRANSFORMER

### TECHNICAL DATA FOR 3000 kVA, 22000-400 V. Dyn11

| No. | Description | Unit | Guaranteed Value | |
|---|---|---|---|---|
| | **Transformer oil** | - | | |
| 32 | Type of oil | - | Mineral oil (None PCB) | |
| | Oil dielectric breakdown | kV | ≥55 | |
| | **Bushings** | | HV.Bushing | LV.Bushing |
| | Applied standard | - | DIN 42531 | DIN 42530 |
| | Rated current | A | 250 | 4500 |
| | Full-wave impulse withstand voltage, or BIL | kV, peak | 125 | 30 |
| 33 | Low-frequency dry 1-minute test voltage | kV, r.m.s. | 50 | 10 |
| | Low-frequency wet 10 second test voltage | kV, r.m.s. | 50 | 10 |
| | Protection class | - | 20NF | 1N |
| | Color of glazing | - | Brown | Brown |
| | Stud thread size (Dia) | mm. | 12 | 55 |
| | **Terminal connectors** | | HV.Terminal | LV.Terminal |
| 34 | Diameter range | mm. | Clamp (7.5-12.6) | PAD 55 mm. |
| | Number of circuit | - | 1(35.95 $mm^2$) | 6 |
| | **Pressure relief value** | | | |
| 35 | Operating pressure | kg / cm2 | 0.45 | |
| | Flow rate at 1.03 Kg/cm2 | cc / sec | 165200 | |
| 36 | Color of tank | - | Gray (RAL 7036) | |

Accessories

- ■ HV & LV Bushing with terminal connectors
- ■ Name plate with connection diagram
- ■ Arcing horn
- ■ Bird guard cap
- ■ Off-circuit tap changer
- ■ Thermometer pocket
- ■ Oil drain and sampling valve
- ■ Earthing terminal
- ■ Lifting eyes on the cover
- ■ Lifting lugs
- ■ Oil level gauge
- ■ Pressure relief device
- ☐ Buchholz relay with alarm&trip contacts
- ☐ Dehydrating breather with silica gel
- ■ Other ... Factory standard

Routine test

- ■ Measurement of voltage ratio and check of phase displacement
- ■ Insulation resistance test
- ■ Measurement of winding resistance
- ■ Separated source voltage withstand test
- ■ Induce over voltage withstand test
- ■ Measurement of no-load loss and exciting current
- ■ Measurement of short circuit impedance and load loss
- ■ Oil dielectric strength test

■ with ☐ without

| Rev | Date | Prepared by | Checked by | Approved by | Signature |
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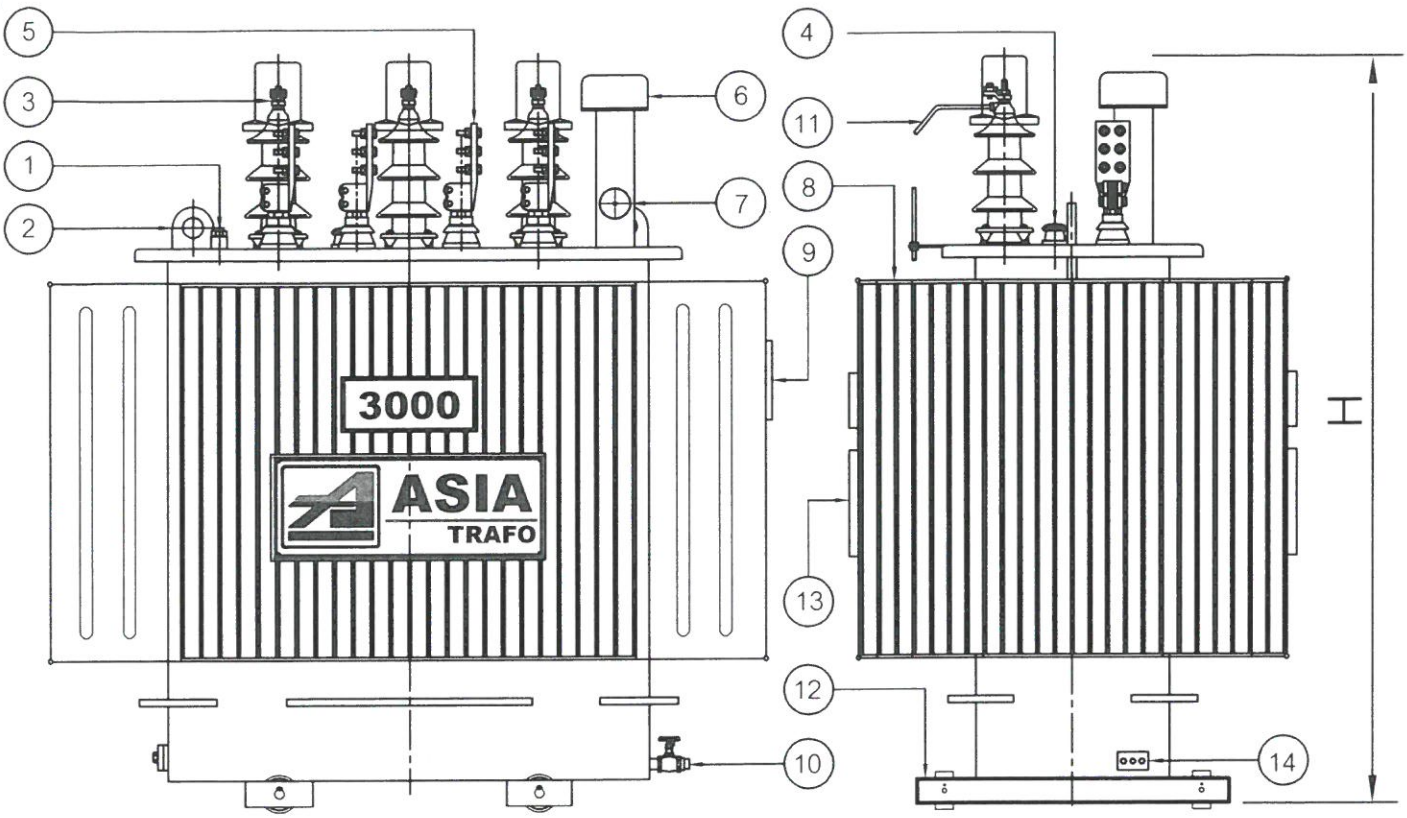


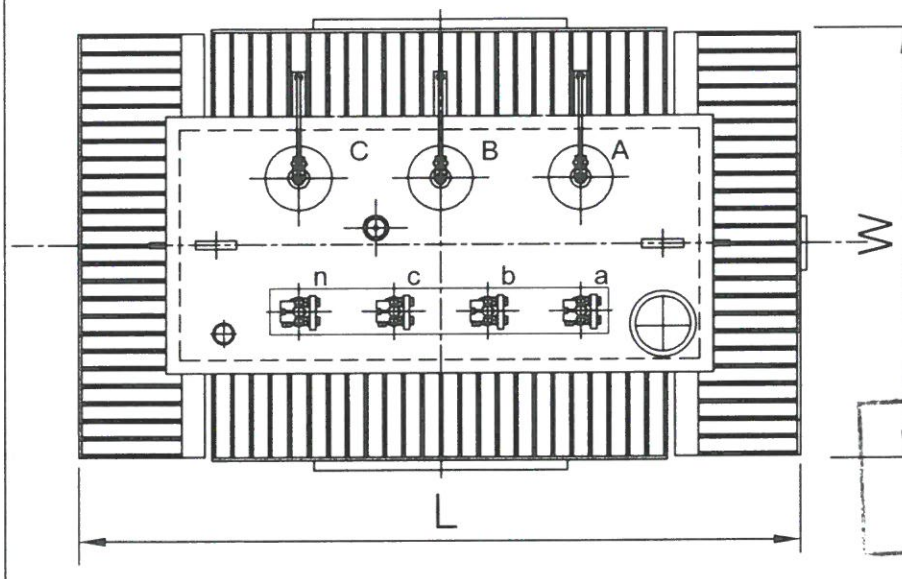


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PRELIMINARY DRAWING : This drawing is for estimate only,showing approximate dimensions. It should not be referred to as the final drawing.

| LIST OF PART | | |
|---|---|---|
| No. | PART NAME | Qty |
| 1. | Thermometer pocket | 1 |
| 2. | Lifting eye for cover | 2 |
| 3. | HV.Bushing with terminal connectors | 3 |
| 4. | Off load tap changer | 1 |
| 5. | LV.Bushing with terminal connectors | 4 |
| 6. | Pressure relief device | 1 |
| 7. | Oil level | 1 |
| 8. | Corrugated fins | 4 |
| 9. | Nameplate with connection diagram | 1 |
| 10. | Oil drain valve | 1 |
| 11. | Arcing Horn | 3 |
| 12. | Sub base | 2 |
| 13. | Manufactory plate | 2 |
| 14. | Earth terminal | 1 |

ASIA TRAFO CO.,LTD.

Project :

Tilte :

OUTLINE DRAWING

OIL IMMERSED TRANSFORMER

3000 kVA 3Ph 50Hz 22000 - 400/230 V.

| Dimension in millimeters | | | Weight | Oil |
|---|---|---|---|---|
| H | L | W | kgs | Litres |
| 2540 | 2600 | 1540 | 6880 | 1770 |

SPEC NO. S-TR3000-22000-400/230

| Signature | | Date |
|---|---|---|
| Drawn By | | 4/8/63 |
| Checked By | | 4/8/63 |
| Approved By | | 4/8/63 |