



Asia Trafo Co., Ltd

SPECIFICATION OF OIL IMMERSSED TRANSFORMER

แบบควบคุม

ฉบับที่.....1

## TRANSFORMER SPECIFICATION

100 kVA. 3Ph. 50 Hz.

33000 - 416/240 V. Dyn 11

HERMETICALLY SEAL TYPE

88/99 หมู่ 12 ซ.สุนทรวีภาค ถ.บางพลี - คำหลุ ด.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

SPEC No.

S-TR100-SC-33000-416/240

Page 1/4

แบบต้นฉบับ

S-TR100-33000-416, Rev.00



Asia Trafo Co., Ltd

SPECIFICATION OF OIL IMMERSED TRANSFORMER

แบบควบคุม

ฉบับที่.....1

TECHNICAL DATA FOR 100 kVA, 33000-416 V. Dyn11

| No.      | Description                                    |                                | Unit        | Guaranteed Value                            |               |           |
|----------|------------------------------------------------|--------------------------------|-------------|---------------------------------------------|---------------|-----------|
| 1        | Manufacture's name                             |                                | -           | ASIA TRAF0 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         | 100                                         |               |           |
| 6        | Number of phase                                |                                | -           | 3                                           |               |           |
| 7        | Rated frequency                                |                                | Hz          | 50                                          |               |           |
| 8        | Rated high voltage                             |                                | V           | 33000                                       |               |           |
| 9        | Rated low voltage                              |                                | V           | 416                                         |               |           |
| 10       | Conection symbol                               |                                | -           | Dyn11                                       |               |           |
| 11       | Rated high current                             |                                | A           | 1.75                                        |               |           |
| 12       | Rated low current                              |                                | A           | 138.79                                      |               |           |
| 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          | 50                                          |               |           |
| 20       | Max. temperature rise of winding, at full load |                                | °C          | 55                                          |               |           |
| 21       | Max. temperature rise of top oil, at full load |                                | °C          | 50                                          |               |           |
| 22       | Class of insulation                            |                                | -           | A (105°C)                                   |               |           |
| 23       | Noise level                                    |                                | dB(A)       | ≤ 56                                        |               |           |
| 24       | No-load current & Tolerance                    |                                | % & %       | 0.960 % & +30%                              |               |           |
| 25       | Short-circuit impedance at 75°C & Tolerance    |                                | % & %       | 4.00 & ±10                                  |               |           |
| 26       | No-load loss                                   |                                | W           | 260                                         |               |           |
| 27       | Load loss at 75°C                              |                                | W           | 1450                                        |               |           |
| 28       | Efficiency at 75°C                             | : Full load unity power factor | %           | 98.32                                       |               |           |
|          |                                                | : Full load 0.8 power factor   | %           | 97.91                                       |               |           |
|          |                                                | : 3/4 load unity power factor  | %           | 98.59                                       |               |           |
|          |                                                | : 3/4 load 0.8 power factor    | %           | 98.24                                       |               |           |
|          |                                                | : 1/2 load unity power factor  | %           | 98.77                                       |               |           |
|          |                                                | : 1/2 load 0.8 power factor    | %           | 98.47                                       |               |           |
| 29       | Voltage regulation at                          | : Unity power factor           | %           | 1.52                                        |               |           |
|          |                                                | : 0.8 power factor             | %           | 1.20                                        |               |           |
| 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    | 170                                         | 30            |           |
|          | Power-frequency test voltage, 1 min            |                                | kV, r.m.s   | 70                                          | 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 |
| 00       |                                                | 7/8/2563                       | วรภานต์     | กิตติ                                       | กิตติ         | กิตติ     |
| SPEC No. |                                                | S-TR100-SC-33000-416/240       |             |                                             |               | Page 2/4  |

แบบต้นฉบับ



Asia Trafo Co., Ltd

SPECIFICATION OF OIL IMMERSED TRANSFORMER

แบบควบคุม

ฉบับที่.....

TECHNICAL DATA FOR 100 kVA, 33000-416 V. Dyn11

| No. | Description                                 | Unit                 | Guaranteed Value               |             |
|-----|---------------------------------------------|----------------------|--------------------------------|-------------|
| 32  | Transformer oil                             | -                    | Mineral oil (None PCB)<br>≥ 55 |             |
|     | Type of oil                                 | -                    |                                |             |
|     | Oil dielectric breakdown                    | kV                   |                                |             |
| 33  | <b>Bushings</b>                             |                      | HV.Bushing                     | LV.Bushing  |
|     | Applied standard                            | -                    | DIN 42531                      | DIN 42530   |
|     | Rated current                               | A                    | 250                            | 250         |
|     | Full-wave impulse withstand voltage, or BIL | kV, peak             | 170                            | 30          |
|     | Low-frequency dry 1-minute test voltage     | kV, r.m.s.           | 70                             | 10          |
|     | Low-frequency wet 10 second test voltage    | kV, r.m.s.           | 70                             | 10          |
|     | Protection class                            | -                    | 30NF                           | 1N          |
|     | Color of glazing                            | -                    | Brown                          | Brown       |
|     | Stud thread size (Dia)                      | mm.                  | 12                             | 12          |
| 34  | <b>Terminal connectors</b>                  |                      | HV.Terminal                    | LV.Terminal |
|     | Diameter range                              | mm.                  | Clamp (7.5-12.6)               | PAD 12 mm.  |
|     | Number of circuit                           | -                    | 1(35.95 mm <sup>2</sup> )      | 4           |
| 35  | <b>Pressure relief value</b>                |                      |                                |             |
|     | Operating pressure                          | kg / cm <sup>2</sup> | 0.45                           |             |
|     | Flow rate at 1.03 Kg/cm <sup>2</sup>        | 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

Type tests

- Temperature - rise test (IEC 60076-2)
- Full wave lightning impulse test (IEC 60076-1 and IEC 60076-3)
- Measurement of no-load loss and current at 90% and 110 %  
Of rated voltage (IEC 60076-1 )

Special tests

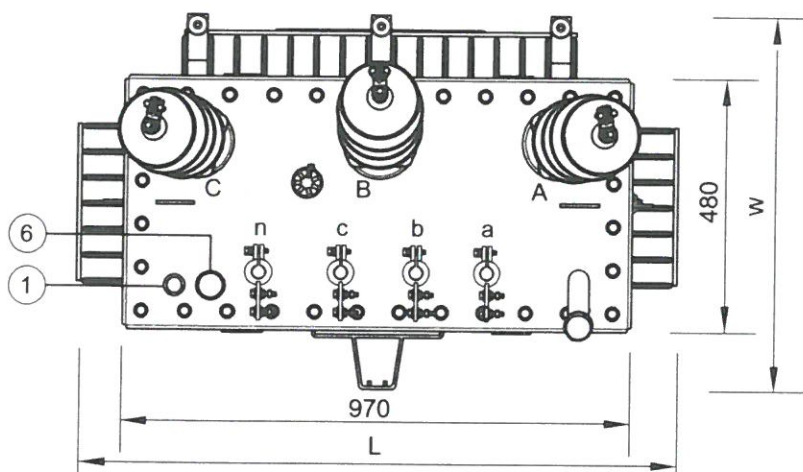
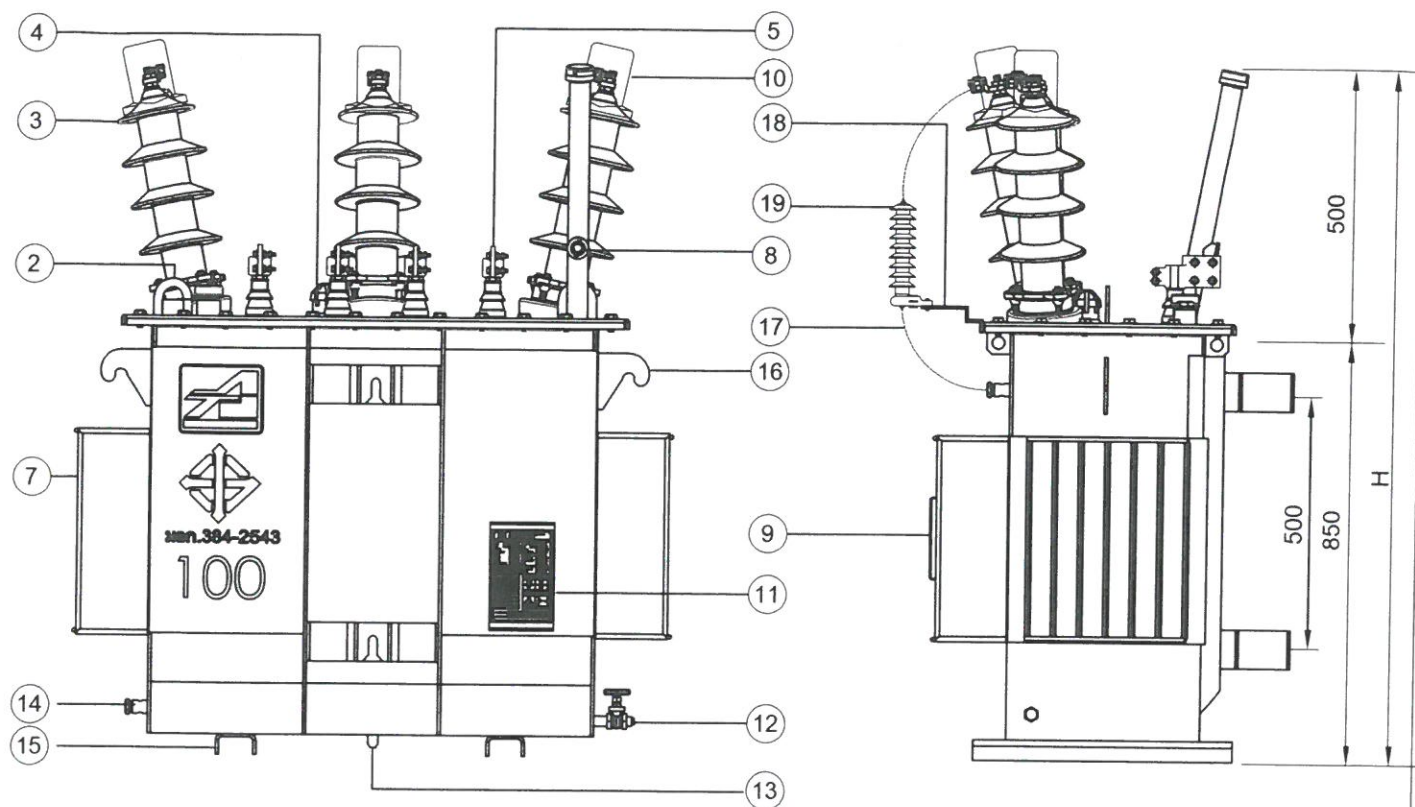
- Short-circuit withstand test (IEC 60076-5 )

■ with

□ without

|          |                          |             |            |             |           |
|----------|--------------------------|-------------|------------|-------------|-----------|
| Rev      | Date                     | Prepared by | Checked by | Approved by | Signature |
| 00       | 7/8/2563                 | วรกานต์     | กิตติ      | กิตติ       | กิตติ     |
| SPEC No. | S-TR100-SC-33000-416/240 |             |            |             | Page 3/4  |

แบบต้นฉบับ



**แบบควบคุม**  
**ฉบับที่.....1.....**

**แบบต้นฉบับ**

| 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 (ALUMINIUM)      | 1   |
| 5.           | LV.Bushing with terminal connectors   | 4   |
| 6.           | Pressure relief device                | 1   |
| 7.           | Corrugated fins                       | 3   |
| 8.           | Oil level                             | 1   |
| 9.           | Manufactory plate                     | 1   |
| 10.          | Bird guard cap                        | 3   |
| 11.          | Nameplate with connection diagram     | 1   |
| 12.          | Oil drain valve                       | 1   |
| 13.          | Sludge Drain Plug                     | 1   |
| 14.          | Earth terminal                        | 1   |
| 15.          | Sub base                              | 2   |
| 16.          | Lifting Lugs For Tank                 | 2   |
| 17.          | Flexible copper insulated ground lead | 3   |
| 18.          | Bracket for surge arrester            | 3   |
| 19.          | Surge arrester (Polymer housing type) | 3   |



ASIA TRAFICO CO., LTD.

Project :

Title : OUTLINE DRAWING

OIL IMMERSSED TRANSFORMER

100 kVA 3Ph 50Hz 33000 - 416/240 V.

TYPE : HERMETICALLY SEALED TANK

| Dimension in millimeters |      |     | Weight | Oil    |
|--------------------------|------|-----|--------|--------|
| H                        | L    | W   | kgs    | Litres |
| 1350                     | 1140 | 690 | 720    | 218    |

SPEC NO. S-TR100-SC-33000-416/240

| Signature   |                    | Date   |
|-------------|--------------------|--------|
| Drawn By    | <i>[Signature]</i> | 7/8/63 |
| Checked By  | <i>[Signature]</i> | 7/8/63 |
| Approved By | <i>[Signature]</i> | 7/8/63 |