

ZiyaoPower SZ13-M Oil-Immersed Transformer

Technical Datasheet

1. Application

ZiyaoPower **SZ13-M fully-sealed oil-immersed distribution transformers** are designed for outdoor and indoor power distribution networks. The hermetically-sealed corrugated tank design eliminates the need for a conservator, preventing oil oxidation and moisture ingress. These transformers are optimized for long service life (25+ years) in utility, industrial, and commercial power distribution applications.

Efficiency: Grade 2 Energy Efficiency (NX2) with On-Load Tap Changer (OLTC)

Typical applications: utility distribution substations, industrial plants, mining operations, oil & gas facilities, commercial buildings, and renewable energy (wind/solar) step-up stations.

2. Technical Parameters

Rated High Voltage	10 kV (11 kV, 20 kV, 33 kV customizable)
Rated Low Voltage	0.4 kV
Rated Frequency	50 Hz / 60 Hz
Tap Range (Off-circuit)	+2 x 2.5% (standard)
Vector Group	Dyn11 / Yyn0
Cooling Method	ONAN (Oil Natural Air Natural)
Insulation Level (LI/AC)	75 kV / 35 kV (10 kV class)
Tank Type	Hermetically sealed, corrugated fin wall
Dielectric Fluid	Mineral oil (IEC 60296) / Natural ester (optional)
Protection Devices	Pressure relief valve, Buchholz relay, oil level gauge
Applicable Standards	IEC 60076, IEEE C57.12.00, GB 1094, GB 20052

3. Loss & Performance Data

Model	kVA	P0(W)	P75(W)	η(%)	k(%)	Oil(L)	W(mm)	H(mm)	W(mm)	H(mm)
SZ13-M-6300	6300	570	6200	0.3	4.5	1600	1620	880	1650	
SZ13-M-8000	8000	700	7500	0.3	4.5	1900	1720	920	1750	
SZ13-M-10000	10000	830	10300	0.3	4.5	2200	1820	970	1830	
SZ13-M-12500	12500	970	12000	0.2	4.5	2600	1920	1020	1930	
SZ13-M-16000	16000	1080	14500	0.2	4.5	3160	2020	1070	2030	
SZ13-M-20000	20000	1160	18300	0.2	5.0	3780	2180	1120	2130	
SZ13-M-25000	25000	1170	21200	0.2	5.0	4480	2340	1170	2230	

Oil volume and dimensions are approximate. Contact ZiyaoPower for certified data.

4. Key Features

- Hermetically sealed corrugated tank: zero oil contact with atmosphere, extended oil life
- High-grade grain-oriented silicon steel core: low no-load loss, meets GB 20052 efficiency tiers
- Full-cover vacuum oil filling: eliminates internal air pockets for superior dielectric strength
- Integrated pressure relief valve and Buchholz relay (gas + oil surge detection)
- On-load voltage regulation (OLTC) for voltage-sensitive industrial and grid applications
- Corrugated fin cooling panels: maximized heat dissipation without external radiators
- Drain valve + sampling valve for routine oil testing (DGA, moisture, breakdown voltage)

8. Hot-dip galvanized or painted steel tank with C3/C4 corrosion class options

5. Standards & Certifications

- IEC 60076: Power Transformers (all relevant parts)
- IEEE C57.12.00: Standard for Liquid-Immersed Distribution Transformers
- GB 1094 / GB 20052: Chinese national transformer standards
- ISO 9001: Quality Management System
- Type tested: temperature rise, lightning impulse, short-circuit withstand

6. How to Order

Specify: **SZ13-M-[kVA]/[HV kV]-[LV kV] [Vector Group] [Options]**

Example: **SZ13-M-1000/10-0.4 Dyn11 Natural Ester**

Available options:

- Natural ester fluid (FR3 / MIDELENER) for enhanced fire safety and biodegradability
- Automatic tap changer (OLTC) for on-load voltage regulation (SZ13 model only)
- Winding temperature indicator (WTI) and oil temperature indicator (OTI)
- Bay-o-net fuse protection with remote alarm
- Off-circuit tap changer with padlock (standard)
- Special voltage ratios: 11 kV, 20 kV, 33 kV primary

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This datasheet is for reference only. Specifications subject to change without notice.