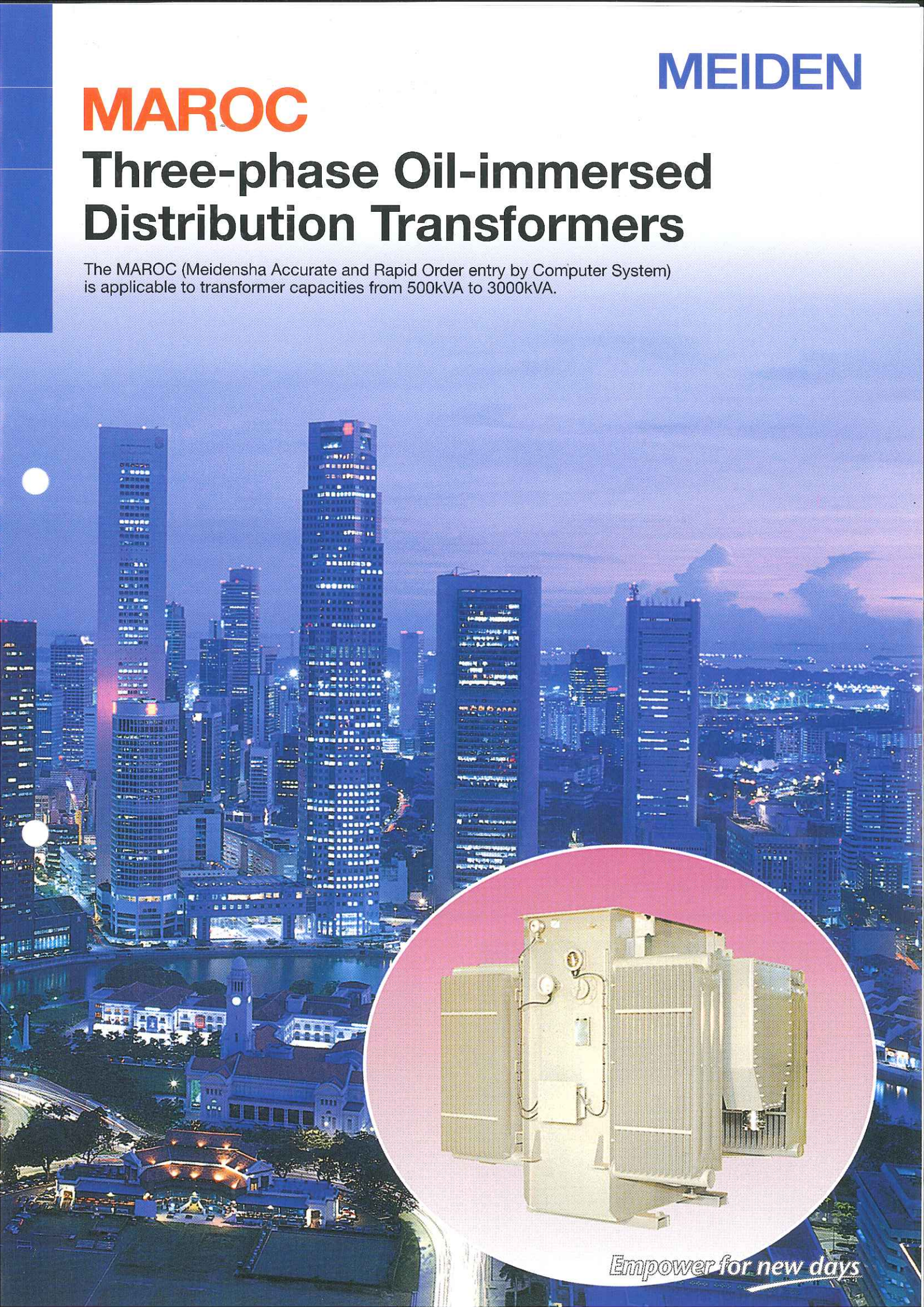
MEIDEN

MAROC

Three-phase Oil-immersed Distribution Transformers

The MAROC (Meidensha Accurate and Rapid Order entry by Computer System) is applicable to transformer capacities from 500kVA to 3000kVA.

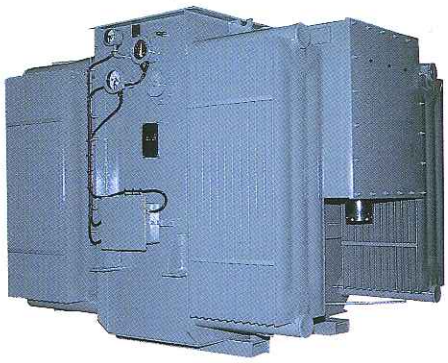


Empower for new days

Features of MAROC Transformer

MAROC transformers are the product of years of research. They have been made possible by unique engineering techniques developed by Meidensha Corporation over many years of its experience. The MAROC transformers are already in use by customers in many countries, in a wide range of applications.

- The unique MAROC design, coupled with Meidensha's computerized production control system, makes possible the short term delivery of units to the customer's specifications.
- Various patterns are available in regard to bushing arrangements, bus duct shapes, etc.
- MAROC transformers are unusually compact, with a very desirable resultant reduction in mass. Yet nowhere in their design is there any compromise of their outstanding performance characteristics and reliability.



6.6/0.433kV 1500kVA
Oil-immersed Self-cooled
Nitrogen Gas Sealed Type
(Standard Type)



22/0.21kV 1000kVA
Oil-immersed Self-cooled
Nitrogen Gas Sealed Type
(Standard Type)

Singapore Works



Winding

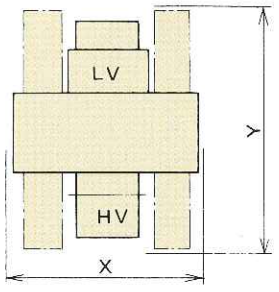


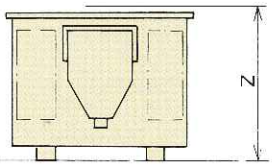
Core Cutting and Assembly

Construction

Table 1 Standard Design

Voltage (kV)	Capacity (kVA)	Mass		Dimensions(mm)			Remarks
		Oil(ℓ)	Total(kg)	X	Y	Z	
6.6/0.433	750	650	2750	1570	1900	1420	
	1000	700	3200	1570	1940	1460	
	1500	900	4150	1660	2060	1650	
	2000	1050	5050	1730	2290	1780	
11/0.433	750	650	2900	1570	1930	1420	
	1000	700	3300	1580	1950	1460	
	1500	900	4200	1680	2050	1650	
	2000	1100	5300	1800	2260	1780	
22/0.433	750	850	3350	1720	2020	1470	
	1000	900	3700	1730	2040	1510	
	1500	1100	4600	1770	2150	1700	
	2000	1300	5650	1860	2340	1830	

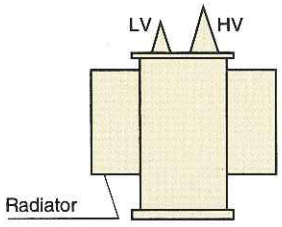




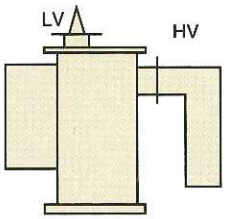
F–8

The computerized design technique is also applied for various kinds of terminations

(As indicated under drawing and others)



A–O



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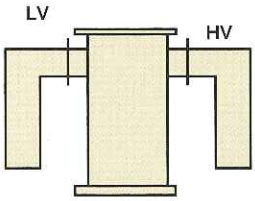

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Core and Coil Assembly

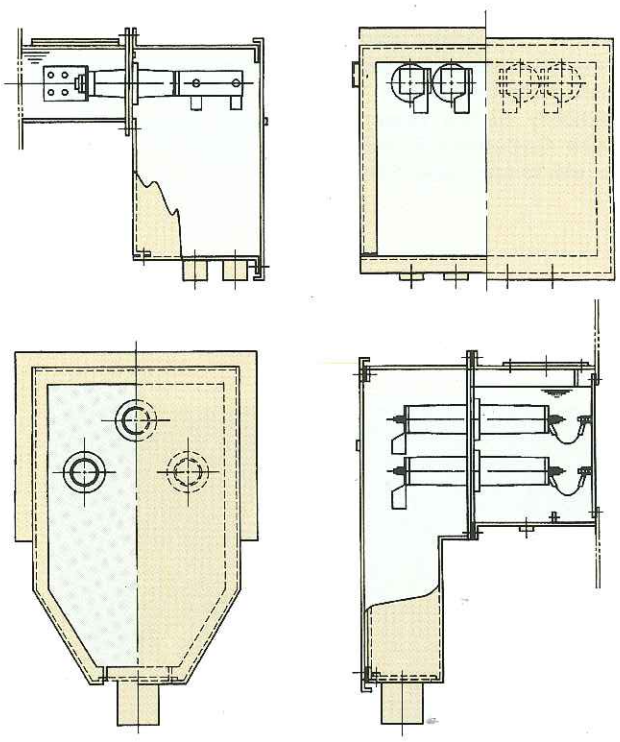


Tanking

Standard Accesories

- Nameplate (Rating plate)
- Off-circuit tap changer
- Pressure relief device
- Thermometer
- Oil gauge
- Pressure gauge
- Lifting lug for total mass
- Filling hole
- Oil drain valve
- Oil sampling plug
- Base (with pulling eyes)
- Earthing terminal
- Jacking boss
- Terminal box

Typical Arrangement of Cable Box



Cable / Capacity	HV (XLPE)	LV (XLPE)
	6.6kV to 22kV	0.433kV
750kVA 1000kVA	3C-185mm² ×1	1C×500mm² ×7
1500kVA	3C-185mm² ×1	1C×500mm² ×11
2000kVA	3C-185mm² ×1	1C×500mm² ×14

(As per copper conductor)



Under Testing



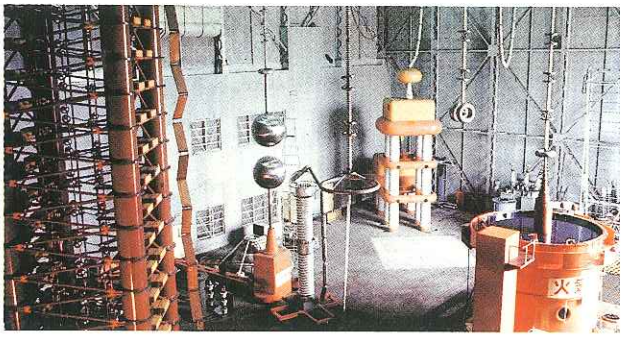
Gas Analyzer

Product Technology

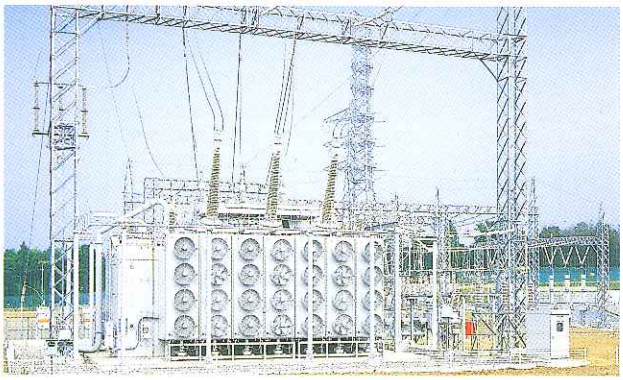
Meidensha Corporation began to manufacture the power transformers in 1897, and it has gone on the perpetual research and development ever since. The power transformers ranging from distribution class to 500MVA class have been produced in Numazu Works, the main factory of Meidensha Corporation.
The reliability of the power transformers produced by Meidensha Corporation is kept high as shown in Table 3. (Please refer to applicable standards.)

Singapore Works

Since its establishment in 1979 as a production base in South-East Asia, Singapore Works has manufactured and widely supplied many transformers in the local market such as Power Grid (former PUB), MRTC, PSA and other clients. They are also exported to the countries such as Malaysia, Indonesia, Philippines, Brunei, Vietnam, Hong Kong, Japan and others.
Singapore Works has been granted the pioneer status by The Economic Development Board of Singapore.
In 1994, Singapore Works had achieved manufacturing of 10,000 units of transformers since its establishment in 1979 thanks to the increasing demands due to satisfactions of many customers.
Furthermore, Singapore Works was awarded ISO9002 of International Standard in 1995 for their high quality control systems.









Specification

Table 3 Specifications

Application	Power and distribution facilities
Applicable standards	IEC 60076, IEEE C57.12.00, JEC-2200, JEC-2410, etc.
Installation	Outdoor or indoor
Cooling system	Oil-immersed self-cooled or oil-immersed forced-air-cooled
No. of phases	Three-phase or single-phase
Capacity range	500kVA to 3000kVA
Impedance	4~7% (Transformers can be manufactured with special impedance on request.)
Tap range	Not more than 5 taps for a tap range within ±5% of rated voltage
Oil preservation system	Hermetic sealed tank type
Voltage	

	Highest system voltage	Test voltage	BIL
HV side	36kV and below	70kV and below	200kV and below
LV side	7.2kV and below	22kV and below	60kV and below

Special requirement, for example, the adoption of short-time ratings, the modification for special usage at unusual ambient temperatures or altitude, etc., can also be accepted.





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62681819 (Factory)
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http://www.meidensg.com.sg

Cert No.:ISO95-2-0424
SS ISO 9002: 1994

JQA-0837

NUMAZU WORKS
Kaminakamizo 515,
Higashimakado-aza,
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Qualified ISO 9001: 1994
Cert No. 941869

MEIDEN

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MEIDEN ZHENGZHOU ELECTRIC CO., LTD.
MEIDEN SHANGHAI CO., LTD.
MEIDEN HANGZHOU DRIVE SYSTEMS CO., LTD.

Hong Kong
MEIDEN PACIFIC (CHINA) LTD.

India
MEIDEN INDIA PVT. LTD.

Indonesia
P.T. MEIDEN ENGINEERING INDONESIA

Korea
MEIDEN KOREA CO., LTD.

Malaysia
MEIDEN ASIA PTE. LTD. MALAYSIA BRANCH OFFICE

Singapore
MEIDEN ASIA PTE. LTD.
MEIDEN SINGAPORE PTE. LTD.

Thailand
THAI MEIDENSHA CO., LTD.
MEIDEN ELECTRIC (THAILAND) LTD.

United Arab Emirates
MEIDENSHA CORPORATION

The United Kingdom
MEIDEN EUROPE LTD.

The United States
MEIDEN AMERICA, INC.
MEIDEN TECHNICAL CENTER NORTH AMERICA LLC

Specifications in this catalog are subject to change without notice.

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