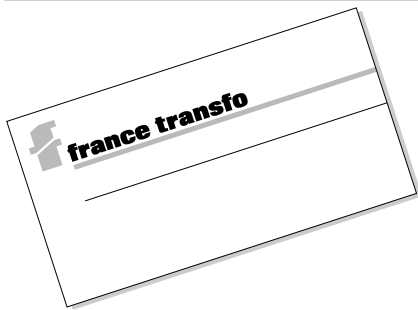


HV/LV distribution transformers

pole mounted immersed transformers

from 50 to 160 kVA

insulation < 24 kV / 400 V



description

- three-phase transformers, for pole mounting in overhead systems. For the hanging on poles, in an inclined position, they are equipped with a hook in accordance with EDF technical specification HN 52 S 20 (november 1993) ;
- step-down type ⁽¹⁾ ;
- rated frequency: 50 Hz ⁽⁶⁾ ;
- maximum ambient temperature : 40°C ⁽⁵⁾ ;
- mineral oil immersed ⁽¹⁾ ;
- hermetically sealed with integral filling ⁽¹⁾ ;
- bolted cover on corrugated tank ;
- ONAN type natural cooling ;
- anti-corrosive treatment : tank and cover fully hot dip galvanized ;
- anti-corrosive coating ;
- final colour grey RAL 7033.

basic fittings

- 1 off-circuit tappings switch with padlocking located on the cover ; this switch operates on the highest rated voltage to bring the transformer to the supply voltage-actual value ;
- 3 HV porcelain bushings on the cover ;
- 4 LV porcelain bushings - 250 A on the small side of the tank ;
- 1 LV bushing protection (only for storage and handling) ;
- 1 earthing terminal on the hanging device ;
- 2 lifting and unloading lugs ;
- 1 rating plate fixed on the small side of the tank ;
- 1 filling plug ;
- protection index IP 00.

options

The following fittings may be provided as an option :

- 3 special "seaside" HV porcelain bushings ;
- 3 HV plug-in bushings 250 A/24 KV ;
- 3 HV mobile plug-in connectors 250 A / 24 KV, straight or elbow (the cable characteristics should always be specified) ;
- polyester box equipped with Gardy circuit-breakers

standards

These transformers comply with ⁽¹⁾ :

- IEC standards ;
- French standards NF C 52-100 (1990) and NF C 52-112-1 (1994) ;
- "Electricité de France" technical specification HN 52 S 20 (november 1993) ;
- CENELEC harmonization document HD 428-5.

France Transfo guarantees that its transformers are assembled using components that are both new and PCB-free (< 2 ppm level), in strict compliance with the current standards.



electrical characteristics

rated power (kVA) ⁽¹⁾	50	100	3150
rated voltage — primary ⁽¹⁾	15 or 20 kV		
secondary at no-load ⁽¹⁾	400 V between phases, 231 V phase to neutral		
rated insulation level ⁽³⁾ — primary	24 kV for 20 kV, 17.5 kV for 15 kV		
HV tapping range (off voltage)	± 2.5% or ± 5%		
vector group	star - zigzag neutral brought-out, Yzn 11 for 50 kVA delta - star neutral brought-out, Dyn 11 for 100 and 160 kVA.		
losses (W) — no-load	145	210	460 ⁽⁴⁾
load ⁽²⁾	1350	2150	2350
rated impedance voltage (%) ⁽²⁾	4	4	4
no load current (%)	2.9	2.5	2.3
voltage drop — P.F. = 1	2.68	2.16	1.54
at full load (%) — P.F. = 0.8	3.92	3.73	3.43
efficiencies — P.F. = 1	97.10	97.69	98.27
at full load (%) — P.F. = 0.8	96.40	97.13	97.85
noise level ⁽⁴⁾ — acoustic power L _{WA}	50	49	62
dB(A) — acoustic pressure L _{PA} at 0.3 m	40	39	52

- D 165 for 50 and 100 kVA ;
- D 265 T for 160 kVA, protection through thermal image tripping device ;
- 3T/6T bicalibre up to 100 kVA inclusive ;
- 7T for 160 kVA ;

Note: Gardy circuit-breakers are in accordance with EDF specifications HN 63 S 11 (1984) and approved by EDF technical departments.

- manual mechanical control, lockable in both positions (connected or disconnected). The circuit-breaker box and its mechanical control can not be mounted on poles of different section or nature.

Note : the above options concern usual cases and are not restrictive. For other information, please consult us.

(1) others possibilities upon request, consult us.
(2) load losses and rated impedance voltage at 75°C.
(3) reminder of insulation levels :

rated insulation level (kV)	7,2	12	17,5	24	36
kV r.m.s. 50 Hz - 1 mn	20	28	38	50	70
kV B.I.L. 1.2/50 µs	60	75	95	125	170

(4) noise measure in compliance with the IEC 551 standard.
(5) other ambient temperature (45°C, 50°C, 55°C, etc...) upon request, consult us.
(6) other rated frequency (60 Hz) upon request, consult us.

Merlin Gerin

Modicon

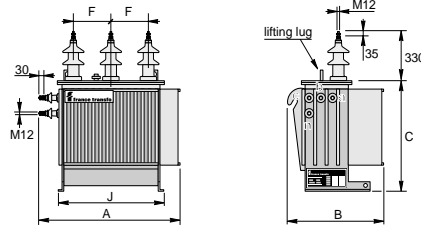
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Telemecanique

Schneider
Electric

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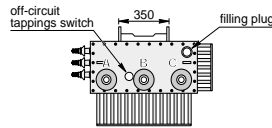
dimensions and weights

Typical dimensions and weights are indicated in the table below for mineral oil immersed transformers.

They are provided for 20kV/400 V transformers with electrical characteristics, as described in the previous table.

For other electrical characteristics (voltage, losses, etc...) or other dielectric, dimensions and weights would be different, please, consult us.

with standards HV porcelain bushings

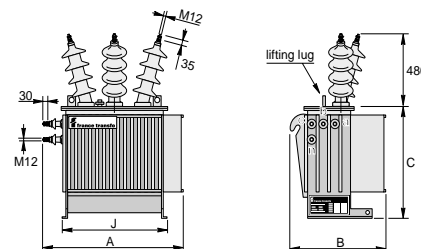


N. B.

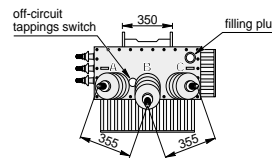
The terminal marking is in accordance with NFC 52 100 (1990), see attached diagram. Upon request, it can be done in accordance with IEC standards 616 (1978).

dimensions (mm)

kVA	50	100	160
A	880	960	1170
B	610	680	700
C	770	820	830
F	260	265	265
J	730	750	800
weights (kg)			
total	340	490	615
mineral oil	90	110	150



with special "seaside" HV porcelain bushings



dimensions (mm)

kVA	50	100	160
A	880	960	1170
B	610	680	700
C	770	820	830
J	730	750	800
weights (kg)			
total	350	500	625
mineral oil	90	110	150

Casual arrangements such as bars and cables supports, flexible connectors, etc. are to be provided the contractors in order to avoid mechanical stresses on the transformer flat-bars and bushings.

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Due to the evolution of standards and materials, the present document will bind us only after confirmation from technical department.