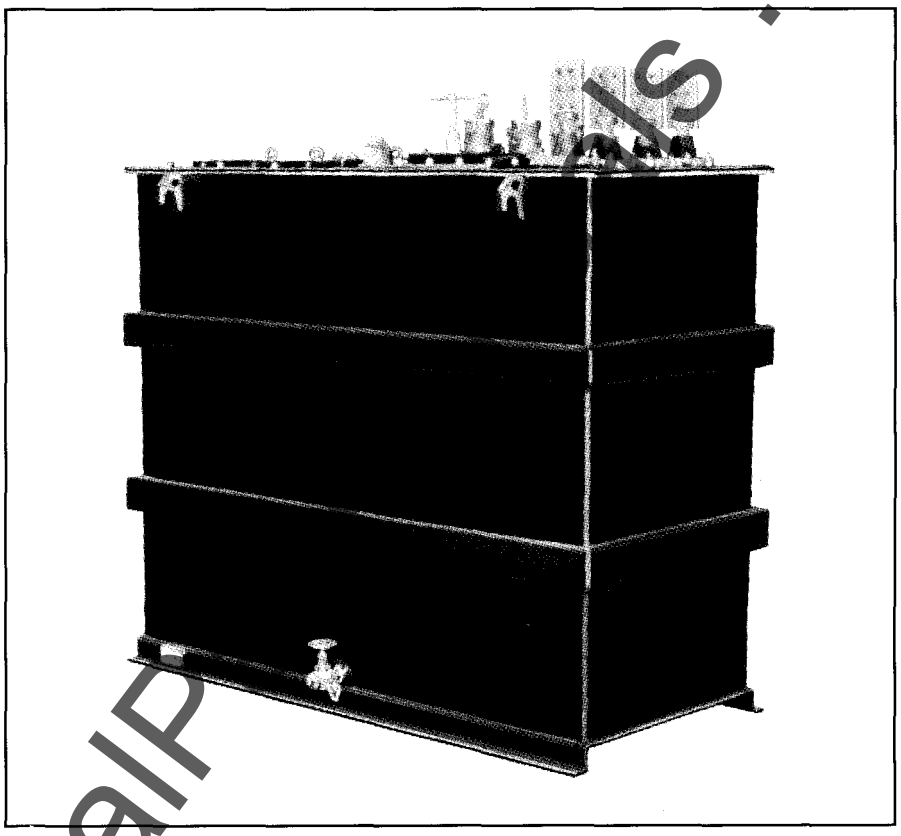
Class 7260
November 1994
Supersedes Catalog
Class 7260 dated June, 1988



3-Phase, Liquid-Filled, Submersible Transformers

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SQUARE D
GROUPE SCHNEIDER

3-Phase, Liquid-Filled, Submersible Transformers

General Description

Submersible transformers are used in underground or below-grade level vaults that are subject to occasional flooding. All live parts—fuses, switches, gauges, etc.—are mounted on the top surface. The transformer is suitable for occasional submerged operation. Only the drain valve and sampling device are mounted on the sidewalls of the transformer. The finish is generally black enamel. An undercoating of coal tar–based paint, on the bottom and mounting surfaces, provides superior corrosion protection.

The 5-legged wound-core-and-coil assembly is suspended from the top plate, which is welded to the tank. A bolted hand-hole permits inspection and internal maintenance. Dead-front bushing wells are standard for the high voltage side. Spade-type bushings are standard for the secondary. Bay-O-Net™ fuses or dry-well cannister fuses are optional, as are internal switches for isolation or loop feed. Submersible transformers comply with ANSI Standard C57.12.24 for Underground Distribution Transformers, but not with ANSI C57.12.40 for Network Transformers.

Standard Features

- De-energized tap changer, removable T-handle
- One-inch (25.4 mm) upper filling plug and filter press connection
- One-inch (25.4 mm) drain valve with sampler
- Provisions for jacking and lifting
- Dead-front universal bushing wells (three on radial feed, six on loop feed)
- Liquid level gauge or sight-plug
- Dial-type thermometer
- Pressure/vacuum gauge
- Pressure relief valve (35 SCFM, automatic reset)

Optional Features

- Two-position LBOR™ switch (one on radial feed, three on loop feed)
- Canister dry-well fuses
- Bay-O-Net fuses
- Key interlocks

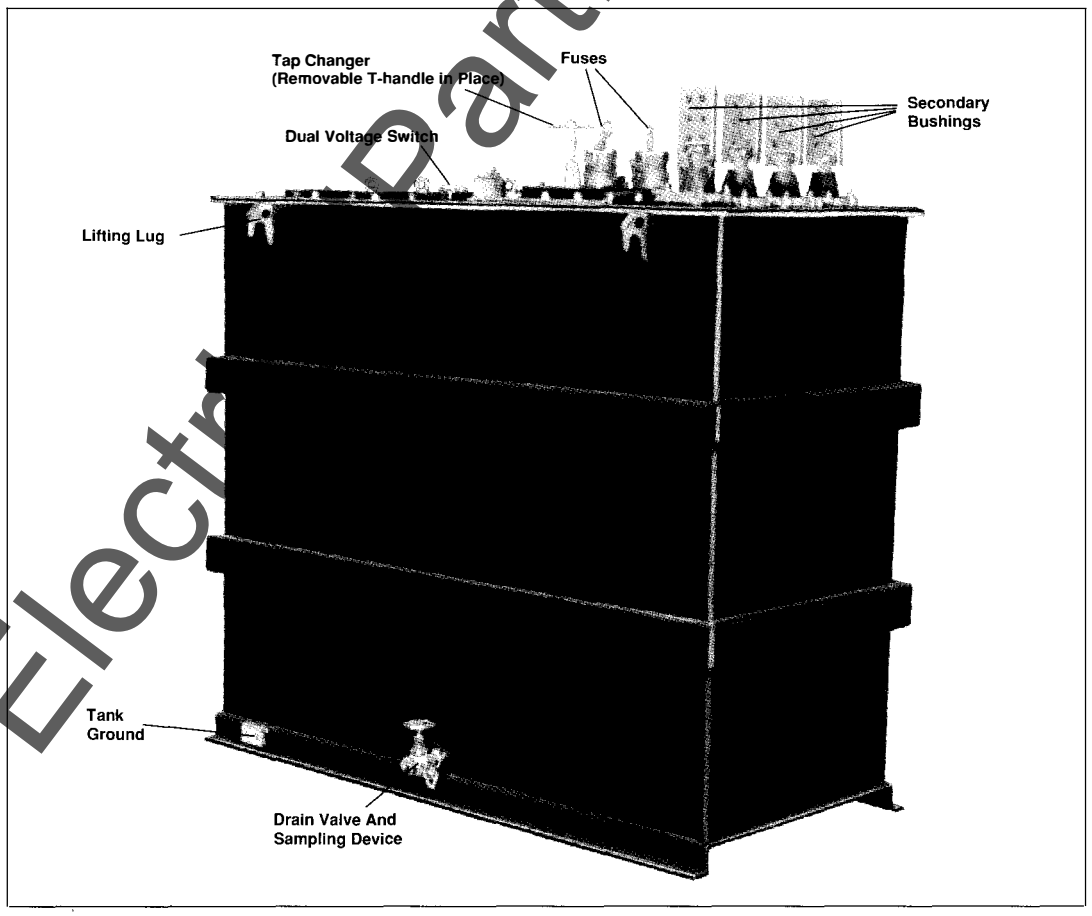


Figure 1: Submersible Transformer

Standard Voltage/kVA Ratings Combinations①

High Voltage Class	Low Voltage Ratings	kVA Ratings
2.5 kV	208Y/120	150–1000
	240	150–2500
	480Y/277	150–2500
	480	150–2500
8.7 kV, 15 kV	208Y/120	500–1000
	240	500–2500
	480Y/277	500–2500
	480	500–2500
25 kV	208Y/120	750–1000
	240	750–2500
	480Y/277	750–2500
	480	750–2500
35 kV	208Y/120	750–1000
	240	750–2500
	480Y/277	750–2500
	480	750–2500

Standard kV Ratings

150, 225, 300, 500, 750, 1000, 1500, 2000, 2500

Standard Voltages

High Voltage Delta Ratings

Voltage Class	Voltage
2.5 kV	2400
5.0 kV	4160, 4800
8.7 kV	6900, 7200, 8320
15.0 kV	12000, 12470, 13200, 13800, 14400
25.0 kV	22900, 24940 kV

High Voltage Wye Ratings

Voltage Class	Voltage
5.0 kV	4160Y/4800
8.7 kV	7200Y/4160, 8320Y/4800
15.0 kV	12000Y/6930, 12470Y/7200, 14400Y/8320
25.0 kV	21600Y/12470, 22860Y/13200,
	23900Y/13800, 24940Y/14400
35.0 kV	34500Y/19920

Low Voltage Ratings

Voltage Class	Voltage②
1.2 kV	208Y/120, 240, 480Y/277, 480

Standard Impedance

kVA Range	Low Voltage	Typical % IZ③
150	208Y/120, 240	3.75
	277Y/480, 480	3.75
225–300	208Y/120, 240	4.0
	277Y/480, 480	3.8
500	208Y/120, 240	4.5
	277Y/480, 480	4.5
750–2500	208Y/120, 240	5.75
	277Y/480, 480	5.75

Standard BIL Ratings

High Voltage BIL Ratings

Voltage Class	Standard	Optional
2.5 kV	45 kV	60 kV
5.0 KV	60 kV	75 kV
8.7 kV	75 kV	95 kV
15.0 kV	95 kV	110 kV
25.0 kV	125 kV	150 kV
35.0 kV	150 kV	—

Low Voltage Ratings

Voltage Class	Standard BIL④	Optional BIL
208Y/120	30 kV	45 kV
240	30 kV	45 kV
277Y/480	30 kV	45 kV
480	30 kV	45 KV

Winding Temperature Rise

Standard—65°C
Optional—55°/65°C

55°/65°C option increases the normal kVA ratings by 12% when operated at 65°C winding temperature rise (e.g., 1000 kVA with 55°/65°C rating may be operated continuously at 1120 kVA, which yields a 65°C rise with no loss to transformer life expectancy). Winding temperature rise may be designed to compensate for applications with elevated ambients. Contact factory for details.

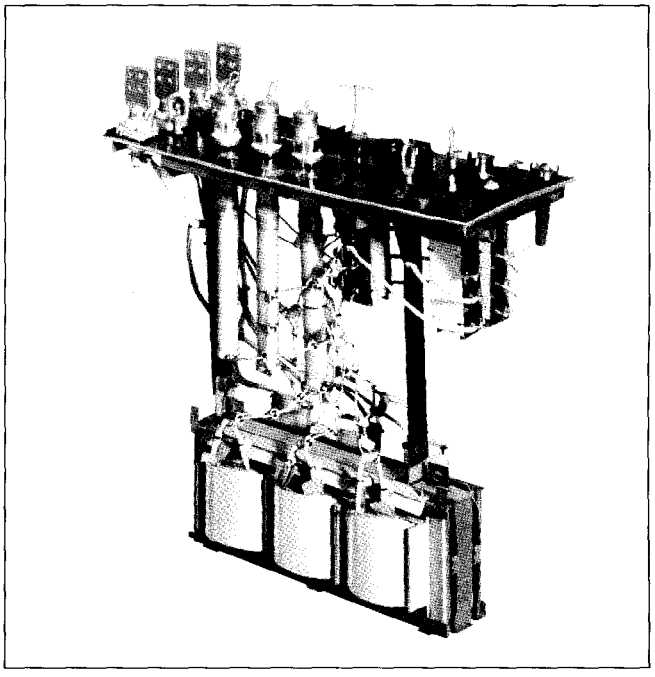


Figure 2: Core And Coil Assembly

① Based on standard designs. Nonstandard designs may place further restrictions on the availability of voltage/kVA combinations.
② Consult factory for availability of voltages other than standard voltages listed.
③ 7.5% ANSI standard tolerance.
● For nonstandard BIL ratings, consult factory.

3-Phase, Liquid-Filled, Submersible Transformers

Coolant
Standard—Mineral Oil
Optional—Silicone Fluid

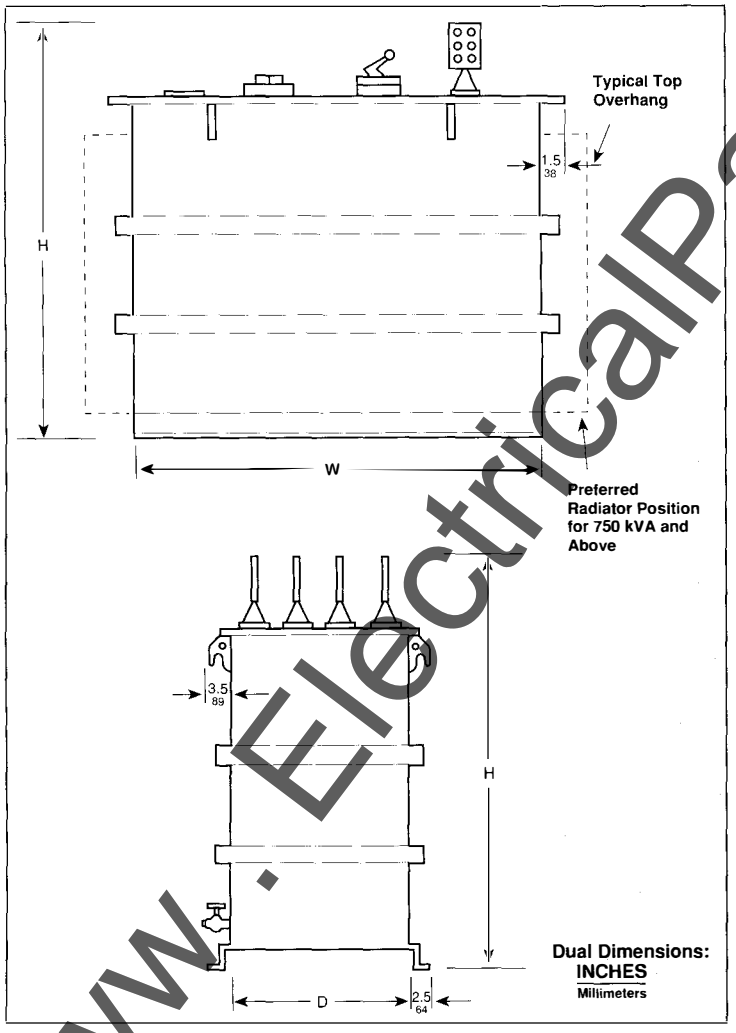
High Voltage Taps
Standard—2 taps; 2-1/2% FCAN, FCBN
Optional—4 taps; 2-1/2% FCBN
Optional—No taps

Conductor Material
Standard—Aluminum
Optional—Copper

Sound Level
Maximum sound levels for liquid filled transformers per ANSI C57.12.24.

kVA:	150	225	300	500	750
db:	55	55	55	56	57
kVA:	**1000**	**1500**	**2000**	**2500**	
db:	58	60	61	62	

Dimensions



Typical Performance Data
High Voltage—15 kV Class
Low Voltage—480Y/277 V

kVA	% IZ	% IR	% IX	X/R Ratio
150	3.25	1.18	3.03	2.56
225	3.5	1.17	3.30	2.82
300	4.0	1.16	3.83	3.30
500	4.65	1.15	4.51	3.93
750	5.75	1.13	5.64	5.01
1000	5.75	1.22	5.62	4.62
1500	5.75	1.14	5.64	4.95
2000	5.75	1.18	5.63	4.77
2500	5.75	1.00	5.66	5.66

Approximate Dimensions: ①

High Voltage Class: 15 kV And Below

95 kV BIL And Below

kVA	D (in/mm)	W (in/mm)	H (in/mm)
150	38/965	63/1600	60/1524
225	38/965	63/1600	60/1524
300	42/1067	66/1676	67/1702
500	44/1118	72/1829	67/1702
750	46/1168	80/2032	82/2083
1000	52/1321	86/2184	83/2108
1500	61/1549	91/2311	97/2464
2000	69/1753	95/2413	107/2718
2500	71/1803	104/2642	117/2972

High Voltage Class: 25 kV

125 kV BIL

kVA	D (in/mm)	W (in/mm)	H (in/mm)
300	45/1143	73/1854	72/1829
500	52/1321	80/2032	75/1905
750	53/1346	88/2235	86/2184
1000	56/1422	92/2337	90/2286
1500	66/1676	98/2489	97/2464
2000	75/1905	105/2667	113/2870
2500	80/2032	115/2921	117/2972

High Voltage Class: 35 kV

150 kV BIL

kVA	D (in/mm)	W (in/mm)	H (in/mm)
500	60/1524	96/2438	77/1956
750	60/1524	96/2438	92/2337
1000	72/1829	108/2743	93/2362
1500	72/1829	108/2743	97/2464
2000	84/2134	120/3048	113/2870
2500	84/2134	120/3048	117/2972

● Not certified for construction.
Different combinations of voltages, kVA, fuses, switches, loop or radial feed, etc. can alter dimensions substantially. Dimensions shown are approximate dimensions for frequently encountered combinations. Consult factory for exact dimensions.

Order No. 7260CT9401 November 1994 Printed in USA
(Replaces Class 7260 dated 6/88)

SQUARE D
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