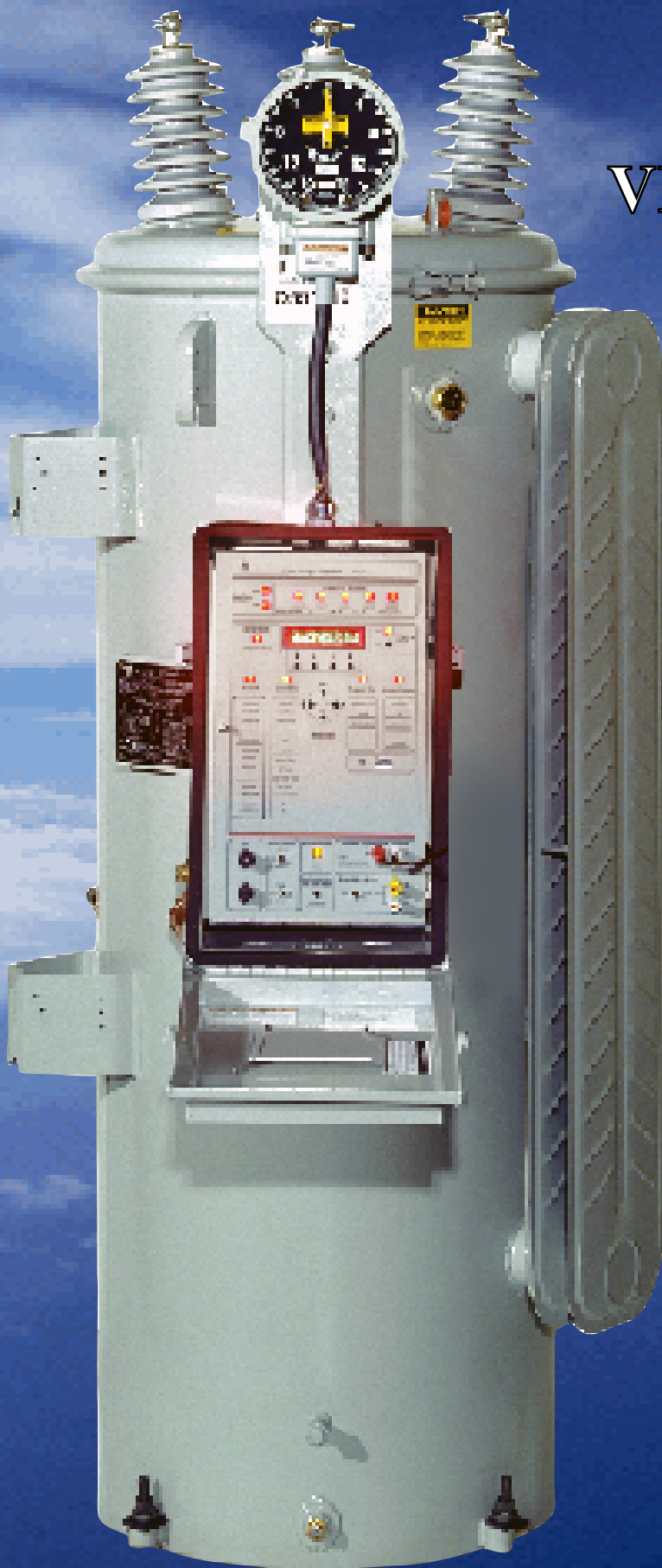




GE Commercial Transformer



VR-1 Single Phase Step Voltage Regulator



GE VR-1 Voltage Regulator

Internal Zenox Varistor provides optimum surge protection against abnormal voltage surges

A sealed tank, cover-suspended design that allows complete removal of all internals from the top

Weather resistant tank and paint finish

Laser-etched nameplate

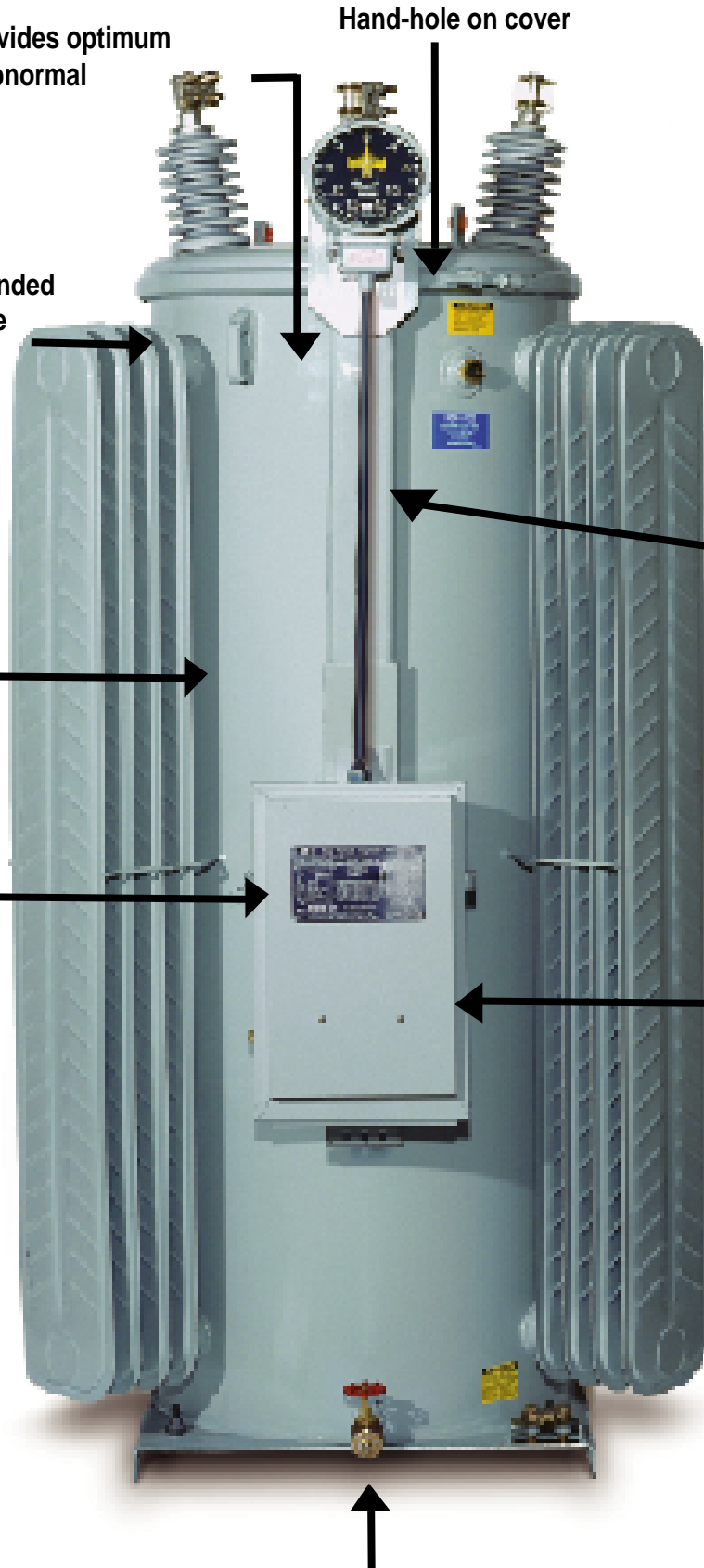
Hand-hole on cover

Reliability; expected switch life is 2 million operations which could mean 20 years of trouble free service

GE provides 2 control types (VR-1 & SM-3)

Oil drain and sampling device

GE Six-Sigma quality ensures superiority in design and manufacture





GE VR-1 Voltage Regulator

Why would I need a Regulator?

Variation of voltage can have detrimental effects on Utilities and their customers. To prevent customer complaints, loss of revenue due to sub-normal voltage, and increased costs due to higher line losses, GE has designed the VR-1 Voltage Regulator with you, "The Utilities", in mind. With over 40 years of experience, GE has designed the most reliable regulator ever assembled.

Standard Ratings:

50 - 833 kVA

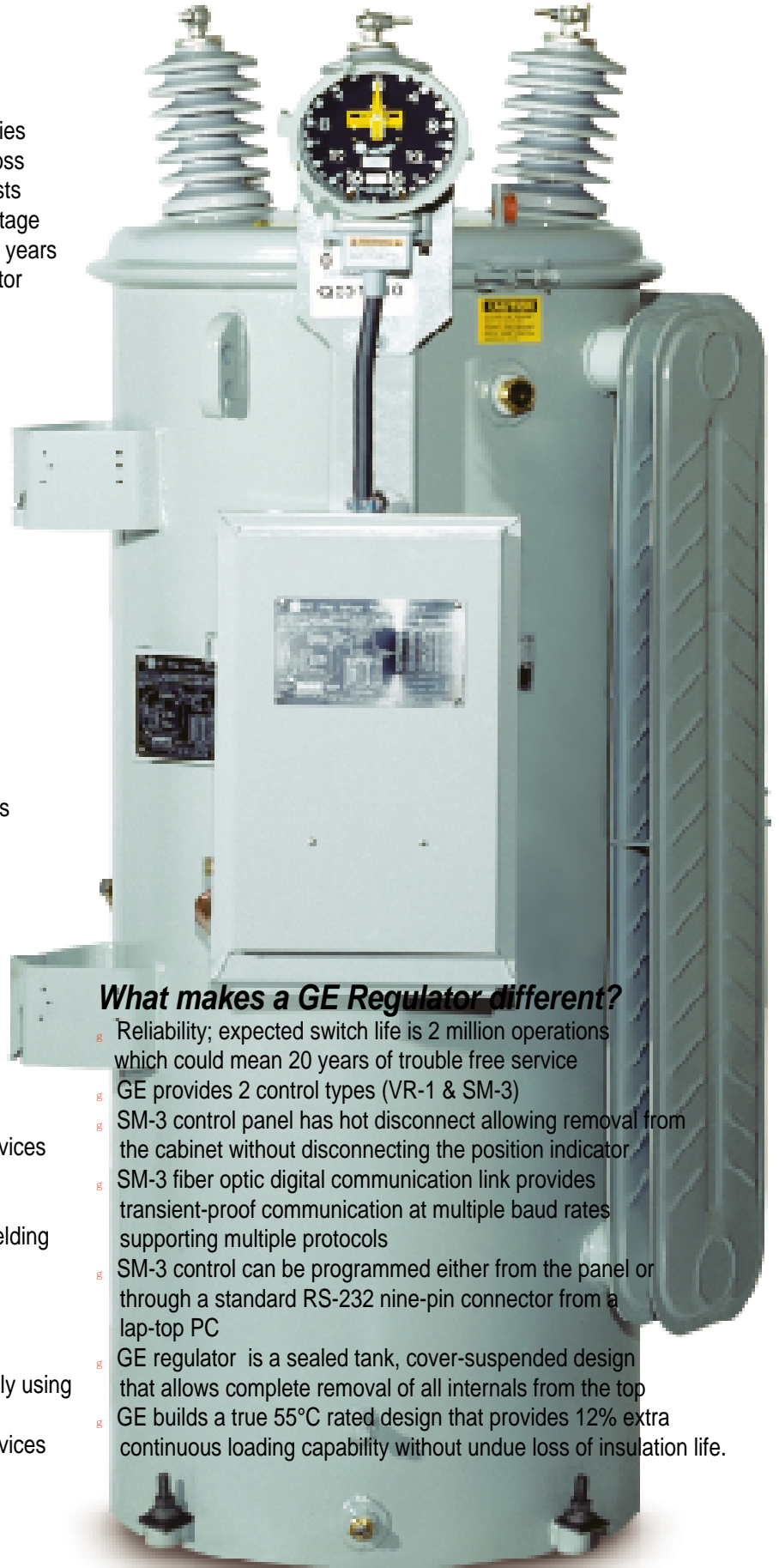
Voltage From 2500 (for 2500/4330Y Volt Circuits, 60kv-BIL) to 19920 Volts (for 34,500 GrdY / 19920 Circuits, 150kv-BIL)

Standard Features (External):

- Weather resistant tank and finish
- Three cover bushings
- Hand-hole cover
- Lifting lugs on the tank
- Oil drain and sampling device
- Minimum oil sight gage
- Provisions for mounting line-to-ground surge arresters
- Provisions for grounding tank with clamp-type terminals
- Dial-type position indicator with drag hand and load bonus adjustment
- Provisions for direct-to-pole mounting
- Diagrammatic anodized aluminum nameplate on tank and control cabinet

Standard Features (Internal):

- Switching reactor
- Equalizer windings to balance reactor voltage where necessary
- Self-contained voltage supply for motor and control devices
- Oil level line inside tank to indicate 25°C oil level
- Switching mechanism to have a quick-break, slow-make operation, and be provided with electrostatic shielding
- Core and coil assembly to be provided with patterned, epoxy-coated insulation paper and oven-bonded to provide short-circuit withstand as specified by ANSI C57.15.
- By-pass protection for series winding mounted internally using zinc-oxide disks.
- Self-contained voltage supply for motor and control devices
- Current transformer



What makes a GE Regulator different?

- Reliability; expected switch life is 2 million operations which could mean 20 years of trouble free service
- GE provides 2 control types (VR-1 & SM-3)
- SM-3 control panel has hot disconnect allowing removal from the cabinet without disconnecting the position indicator
- SM-3 fiber optic digital communication link provides transient-proof communication at multiple baud rates supporting multiple protocols
- SM-3 control can be programmed either from the panel or through a standard RS-232 nine-pin connector from a lap-top PC
- GE regulator is a sealed tank, cover-suspended design that allows complete removal of all internals from the top
- GE builds a true 55°C rated design that provides 12% extra continuous loading capability without undue loss of insulation life.



GE VR-1 Voltage Regulator

kVA	Catalog No.	Load Amps at Raise & Lower 10% Regulation	Approx. Wt. (lbs) Including Oil		Gallons Oil ⁽¹⁾ Net @ 7.45 lbs per Gal.	Approximate Dimensions Over-all Inches		Type
			Ship	Net		Proj. Floor Space	Height	
2500 VOLTS - 60 kV BIL (for 2500/4330Y, 2400/4160Y volt circuits)								
50	33D3050(2)	200	1330	1230	62	27 X 31	68	Pole
75	33D3075(2)	300	1490	1390	65	32 X 32	70	Pole
100	33D3100(2)	400	1930	1830	86	29 X 40	76	Pole/Station
167	33D3167	668	2200	2100	90	34 X 42	77	Station
5000 VOLTS - 75 kV BIL (for 5000/8660Y, 4800/8310Y, 2500/4330Y volt circuits)								
50	33D4050(2)	100	1190	1090	46	24 X 31	66	Pole
100	33D4100(2)	200	1590	1490	61	32 X 37	69	Pole
167	33D4167(2)	334	2250	2150	88	33 X 38	76	Pole
250	33D4250(3)	500	2660	2560	92	34 X 46	83	Station
333	33D4333(3)	666	2900	2800	98	43 X 46	83	Station
7620 VOLTS - 95 kV BIL (for 7960/13,800Y, 7620/13,200Y, 7200/12470Y volt circuits)								
38.1	33D5038(2)	50	1100	1000	46	24 X 33	64	Pole
76.2	33D5076(2)	100(5)	1380	1280	57	27 X 35	70	Pole
114.3	33D5114(2)	150(5)	1700	1600	63	32 X 35	71	Pole
167	33D5167(2)	219/232(5)(6)	2000	1900	67	34 X 43	75	Pole
250	33D5250	328/347(5)(6)	2720	2620	95	38 X 42	83	Station
333	33D5333	438/463(5)(6)	3080	2980	100	39 X 42	88	Station
416	33D5416	548/578(5)(6)	3380	3280	106	41 X 41	91	Station
509	33D5509	668(5)	3810	3710	125	45 X 45	93	Station
13,800 VOLTS - 95 kV BIL (suitable for 13,800, 13,200 or 12,000 Volt Circuits at Rated Amperes)								
69	33D6069(2)	50	1380	1280	52	27 X 35	72	Pole
138	33D6138(2)	100	1890	1790	64	29 X 35	87	Pole
207	33D6207(2)	150	2600	2500	99	33 X 42	82	Pole
276	33D6276(2)	200	3120	3020	127	34 X 43	92	Pole/Station
14,400 VOLTS - 150 kV BIL⁽⁸⁾ (for 14,400/24940Y volt circuits, also 7200/12,470 GRDY circuits at rated amperes)								
72	33D7072(2)	50	1920	1820	96	29 X 38	79	Pole
144	33D7144(2)	100	2480	2380	102	33 X 40	88	Pole
288	33D7288	200	3290	3190	127	39 X 45	96	Station
333	33D7333	231	4010	3910	161	42 X 47	103	Station
416	33D7416	289	4020	3920	161	43 X 45	103	Station
432	33D7432	300	4340	4240	169	48 X 49	103	Station
500	33D7500	347	4870	4770	168	42 X 49	109	Station
576	33D7576	400	5060	4960	172	48 X 49	109	Station
667	33D7667	463	5450	5350	172	50 X 49	109	Station
720	33D7720	500	5550	5450	194	54 X 53	109	Station
19,920 VOLTS - 150 kV BIL⁽⁸⁾ (for 34,500 GRDY/19,920 volt circuits)								
100	33D8100(2)	50.2	2330	2230	110	29 X 36	94	Pole
200	33D8200	100.4	3040	2940	132	31 X 41	101	Station
333	33D8333	167	4040	3940	160	42 X 49	103	Station
400	33D8400	201	4250	4150	165	48 X 49	103	Station
500	33D8500	251	5490	5390	174	53 X 49	109	Station
667	33D8667	335	5590	5490	177	56 X 51	109	Station
833	33D8833	418(65C)	5680	5580	197	58 X 53	109	Station

Notes:

- (1) All regulators are shipped oil-filled.
- (2) These regulators have provisions for direct-to-pole, platform, or crossarm mounting. For crossarm mounting, suspension hooks will be required and may be obtained from hardware manufacturer.
- (3) These regulators are furnished with taps in the control circuit to operate at 2500V and 4800V at rated current.
- (4) For direct-to-pole mounting of this regulator, adapter plate 3901A389P31 is required.
- (5) These 7620V regulators can be operated at 7960V, 7620V, 7200V, 5000V, 4800V, 4330V, 4160V, 2500V and 2400V at rated amperes. Units shipped connected for 7200V operation.
- (6) These regulators capable of operation at voltages from 7960V to 2500V. Can apply currents up to the current determined by the rated kVA and the voltage level, provided the operating voltage is from 7200V to 7960V. For voltages below 7200V, the current is limited to the value determined for 7200V operation.
- (7) This regulator has a tap for 4800V only at rated current.
- (8) 150 kV BIL on S and L, 95 kV BIL on SL.

