

Voltage Regulators Selection Guide

Cooper Power Systems Voltage Regulators with the CL-6A Regulator Control are configured for both common and highly specialized applications. Refer to Tables 1 and 2 for detailed regulator rating information for typical 50 Hz and 60 Hz designs. For additional information, contact your Cooper Power Systems representative.

Optional Design Parameters

- Evaluated loss designs
- Short circuit withstand for ratings 288 kVA and below (40 X rated current)
- Type A design configuration in place of standard Type B configuration
- Higher-current tap-changer option for lower current applications
- Complete stainless steel unit
- Custom paint-color finish
- Control box
 - tank location
 - stainless steel

Unit Accessories

Long Control Cable

- Standard cable
- Armored cable
- Shielded cable
- 3 m (10'), 6.1 m (20'), 9.1 m (30'), 12.2 m (40'), or 15.2 m (50') lengths

Bushings

Bushing Connectors

- #6-250 MCM cable
- #6-800 MCM cable
- #2-1000 MCM cable
- 4-Hole NEMA spades

Bushing Creepage

- 673 mm (26.5") creep bushings
- 890 mm (35") creep bushings
- 1080 mm (42.5") creep bushings

Shunt Arresters

- Qty. 1, on **L** bushings
- Qty. 2, on **S** and **L** bushings
- Qty. 3, on all bushings
- Shunt arrester mounting brackets only

Birdguards

- Bushings only
- Bushings and series arresters

Ground Connectors

- #8-2/0
- #6-250 MCM
- #2-800 MCM
- On tank (Qty 1 or Qty 2)
- On control box (Qty 1)

Gauges

- Thermometer with or without alarm contacts
- Pressure–Vacuum gauge
- Dial-type oil-level gauge with or without alarm contacts
- Rapid-rise pressure relay with alarm contacts

Labeling

- Non-PCB decal
- Barcode
- Stenciling

Nameplate Stampings

- P.O. number
- Customer ID number
- Customer stock code number
- Customized

External Hardware

- Stainless steel

Control Accessories

Communications

- Fiber Optic/RS232 Interface board
- RS485 Interface board

Control Box Documentation

- Outline drawing
- Nameplate drawing
- Instruction manual
- Certified test report
- Non-PCB certification

Control Heater

- Thermostatically controlled

240 V External Source Terminals

TABLE 1
Typical Regulator Designs, 60 Hz

Item	Voltage Rating	Current	kVA	±10%*	±8.75%*	±7.5%*	±6.25%*	±5%*	BIL	Mounting	Future ONAF or ONAF	Connectors	Low Live Part (in.)
1	2500	200	50	200	220	240	270	320	60	Pole/Platform	N/A	# 6 - 800 MCM	64
2	2500	300	75	300	330	360	405	480	60	Pole/Platform	N/A	# 6 - 800 MCM	73.5
3	2500	400	100	400	440	480	540	640	60	Pole/Platform	N/A	# 6 - 800 MCM	73.5
4	2500	668	167	668	668	668	668	668	60	Pole/Platform	N/A	# 6 - 800 MCM	77.5
5	2500	1000	250	1000	1000	1000	1000	1000	60	Substation	Opt	1.125" - 12 Stud	103.25
6	2500	1332	333	1332	1332	1332	1332	1332	60	Substation	Opt	1.5" - 12 Stud	103.25
7	2500	1665	416	1665	1665	1665	1665	1665	60	Substation	Opt	1.5" - 12 Stud	113.24
8	5000	100	50	100	110	120	135	160	75	Pole/Platform	N/A	# 6 - 250 MCM	64
9	5000	200	100	200	220	240	270	320	75	Pole/Platform	N/A	# 6 - 250 MCM	67.5
10	5000	250	125	250	275	300	338	400	75	Pole/Platform	N/A	# 6 - 250 MCM	73.5
11	5000	334	167	334	367	401	451	534	75	Pole/Platform	N/A	# 6 - 250 MCM	74
12	5000	500	250	500	55	600	668	668	75	Substation	Opt	# 6 - 800 MCM	81.5
13	5000	668	333	668	668	668	668	668	75	Substation	Opt	# 6 - 800 MCM	96
14	5000	833	416	833	833	833	833	833	75	Substation	Opt	# 6 - 800 MCM	97.04
15	7620**	50	38.1	50	55	60	68	80	95	Pole/Platform	N/A	# 6 - 250 MCM	64
16	7620**	75	57.2	75	83	90	101	120	95	Pole/Platform	N/A	# 6 - 250 MCM	68
17	7620**	100	76.2	100	110	120	135	160	95	Pole/Platform	N/A	# 6 - 250 MCM	68
18	7620**	150	114.3	150	165	180	203	240	95	Pole/Platform	N/A	# 6 - 250 MCM	67.5
19	7620**	219	167	219	241	263	296	350	95	Pole/Substation	N/A	# 6 - 800 MCM	72
20	7620**	328	250	328	361	394	443	525	95	Pole/Substation	Opt	# 6 - 800 MCM	79.5
21	7620**	438	333	438	482	526	591	668	95	Substation	Opt	# 6 - 800 MCM	80
22	7620**	548	416	548	603	658	668	668	95	Substation	Opt	# 6 - 800 MCM	95.5
23	7620**	656	500	656	668	668	668	668	95	Substation	Opt	# 6 - 800 MCM	95.5
24	7620**	875	667	875	875	875	875	875	95	Substation	Opt	1.125" - 12 Stud	110.73
25	7620**	875	667	875	875	875	875	875	110	Substation	Future ONAF Std	1.5" - 12 Stud	120.73
26	7620**	1093	833	1093	1093	1093	1093	1093	110	Substation	Future ONAF Std	1.5" - 12 Stud	120.73
27	13800	50	69	50	55	60	68	80	95	Pole/Platform	N/A	# 6 - 250 MCM	67.5
28	13800	100	138	100	110	120	135	160	95	Pole/Platform	N/A	# 6 - 250 MCM	71.5
29	13800	150	207	150	165	180	203	240	95	Pole/Platform	N/A	# 6 - 250 MCM	73.5
30	13800	200	276	200	220	240	270	320	95	Pole/Substation	N/A	# 6 - 800 MCM	74
31	13800	300	414	300	330	360	405	480	95	Substation	Opt	# 6 - 800 MCM	85.5
32	13800	362	500	362	398	434	489	579	95	Substation	Opt	# 6 - 800 MCM	101.5
33	13800	400	552	400	440	480	540	640	95	Substation	Opt	# 6 - 800 MCM	†
34	13800	483	667	483	531	580	652	668	95	Substation	Opt	# 6 - 800 MCM	†
35	13800	604	833	604	664	668	668	668	95	Substation	Opt	# 6 - 800 MCM	†
36	14400	50	72	50	55	60	68	80	150	Pole/Platform	N/A	# 6 - 250 MCM	67.5
37	14400	100	144	100	110	120	135	160	150	Pole/Platform	N/A	# 6 - 250 MCM	69.5
38	14400	200	288	200	220	240	270	320	150	Pole/Substation	N/A	# 6 - 800 MCM	75.5
39	14400	231	333	231	254	277	312	370	150	Substation	N/A	# 6 - 800 MCM	81.5
40	14400	289	416	289	318	347	390	462	150	Substation	N/A	# 6 - 800 MCM	85.5
41	14400	300	432	300	330	360	405	480	150	Substation	N/A	# 6 - 800 MCM	85.5
42	14400	347	500	347	382	416	468	555	150	Substation	N/A	# 6 - 800 MCM	101.5
43	14400	400	576	400	440	480	540	640	150	Substation	N/A	# 6 - 800 MCM	99.5
44	14400	463	667	463	509	556	625	668	150	Substation	N/A	# 6 - 800 MCM	110.73
45	14400	500	720	500	550	600	668	668	150	Substation	N/A	# 6 - 800 MCM	108.73
46	14400	578	833	578	636	668	668	668	150	Substation	Opt	# 6 - 800 MCM	108.73
47	19920	50.2	100	50.2	55	60	68	80	150	Pole/Platform	N/A	# 6 - 250 MCM	71.5
48	19920	100.4	200	100.4	110	120	135	160	150	Pole/Substation	N/A	# 6 - 250 MCM	75.5
49	19920	167	333	167	184	200	225	267	150	Substation	Opt	# 6 - 800 MCM	85.5
50	19920	200.8	400	200.8	220	240	270	320	150	Substation	Opt	# 6 - 800 MCM	85.5
51	19920	251	500	250	275	300	338	400	150	Substation	Opt	# 6 - 800 MCM	107.05
52	19920	335	667	335	369	402	452	536	150	Substation	Opt	# 6 - 800 MCM	107.05
53	19920	418	833	418	460	502	564	668	150	Substation	Opt	# 6 - 800 MCM	108.73
54	19920	502	1000	502	552	602	668	668	150	Substation	Future ONAF Std	# 6 - 800 MCM	112.73
55	34500	50	172.5	50	55	60	68	80	200	Substation	N/A	# 6 - 250 MCM	†
56	34500	100	345	100	110	120	135	160	200	Substation	Opt	# 6 - 800 MCM	124.84
57	34500	200	690	200	220	240	270	320	200	Substation	Opt	# 6 - 800 MCM	127

TABLE 2
Typical Regulator Designs, 50 Hz

Item	Voltage Rating	Current	kVA	±10%*	±8.75%*	±7.5%*	±6.25%*	±5%*	BIL	Mounting	Future ONAF or ONAF	Connectors Clamp	Low Live Part (mm)
1	6600	50	33	50	55	60	68	80	95	Pole/Platform	N/A	#6 - 250	1716
2	6600	100	66	100	110	120	135	160	95	Pole/Platform	N/A	#6 - 250	1818
3	6600	150	99	150	165	180	203	240	95	Pole/Platform	N/A	#6 - 800	1816
4	6600	200	132	200	220	407	270	320	95	Pole/Platform	N/A	#6 - 800	1818
5	6600	300	198	300	330	360	405	480	95	Pole/Substation	N/A	#6 - 800	1869
6	6600	400	264	400	440	480	540	640	95	Substation	Opt	#6 - 800	2019
7	6600	500	330	500	550	600	668	668	95	Substation	Opt	#6 - 800	2276
8	6600	600	396	600	668	668	668	668	95	Substation	Opt	#6 - 800	2530
9	11000	50	55	50	55	60	68	80	95	Pole/Platform	N/A	#6 - 250	1716
10	11000	100	110	100	110	120	135	160	95	Pole/Platform	N/A	#6 - 250	1818
11	11000	150	165	150	165	180	203	240	95	Pole/Platform	N/A	#6 - 250	1869
12	11000	200	220	200	220	407	270	320	95	Pole/Substation	N/A	#6 - 800	1920
13	11000	300	330	300	330	360	405	480	95	Substation	Opt	#6 - 800	2174
14	11000	400	440	400	440	480	540	640	95	Substation	Opt	#6 - 800	2462
15	11000	500	550	500	550	600	668	668	95	Substation	Opt	#6 - 800	†
16	11000	600	660	600	668	668	668	668	95	Substation	Opt	#6 - 800	†
17	15000	50	75	50	55	60	68	80	150	Pole/Platform	N/A	#6 - 250	1715
18	15000	100	150	100	110	120	135	160	150	Pole/Platform	N/A	#6 - 250	1767
19	15000	150	225	150	165	180	203	240	150	Pole/Substation	N/A	#6 - 250	1970
20	15000	200	300	200	220	407	270	320	150	Substation	Opt	#6 - 800	2174
21	15000	300	450	300	330	360	405	480	150	Substation	Opt	#6 - 800	2172
22	15000	400	600	400	440	480	540	640	150	Substation	Opt	#6 - 800	2719
23	15000	500	750	500	550	600	668	668	150	Substation	Opt	#6 - 800	†
24	16000	100	160	100	110	120	135	160	150	Pole/Platform	N/A	#6 - 250	1870
25	16000	200	320	200	220	407	270	320	150	Substation	Opt	#6 - 250	2072
26	22000	50	110	50	55	60	68	80	150	Pole/Platform	N/A	#6 - 250	1970
27	22000	100	220	100	110	120	135	160	150	Pole/Substation	N/A	#6 - 250	1970
28	22000	150	330	150	165	180	203	240	150	Substation	Opt	#6 - 250	2223
29	22000	200	440	200	220	407	270	320	150	Substation	Opt	#6 - 800	2275
30	22000	300	660	300	330	360	405	480	150	Substation	Opt	#6 - 800	2719
31	22000	400	880	400	440	480	540	640	150	Substation	Opt	#6 - 800	†
32	33000	50	165	50	55	60	68	80	200	Substation	N/A	#6 - 800	†
33	33000	100	330	100	110	120	135	160	200	Substation	Opt	#6 - 800	3171
34	33000	150	495	150	165	180	203	240	200	Substation	Opt	#6 - 800	3171
35	33000	200	660	200	220	407	270	320	200	Substation	Opt	#6 - 800	3226

Notes to Tables 1 and 2:

* A 55/65°C rise rating on VR-32 regulators gives an additional 12% increase in capacity if the tap-changer's maximum current rating has not been exceeded.

For loading in excess of the above values, please refer to your customer service or sales representative.

** Regulators are capable of carrying current corresponding to rated kVA when operated at 7200 V.

† Contact Factory for details.

Cooper Power Systems Voltage Regulators for your application needs.

