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Internet Web Site: www.ge.com/energy

For more information on these products, see our Internet Web Site or order publications listed below.

Order From:

GE

Attn: Distribution Services

1601 GE Road

Bloomington, IL 61704

Phone: 309-664-1513 (Dial Comm 8*325-4513)

Fax: 309-662-9660 (Dial Comm 8*325-4511)

Reference Publications

Capacitors

GEP-974G, DEA-226	Motor and Pump Capacitors, 240 and 480 Volts
GEP-974G, DEA-226	Fixed-Low Voltage Power Factor Correction Capacitors, 240, 480 and 600 Volts
GEP-974G, DEA-226	Automatically Switched, LV Power Factor Correction Capacitors, 240, 480 and 600 Volts
GEP-974G, DEA-226	Automatically Switched Harmonic Filters, 240, 480 and 600 Volts
DEA-298	GEMATIC® Quick Response
GEP-974G, DEA-222, DEA-226	Medium Voltage 2400-4800 Volts, Type HWT
DEA-216	High Voltage Single-Phase Capacitors, 2400-21,600 Volts
DEA-213, DEA-214	High Voltage Pole Top and Open Stack Rack Equipment
DEA-224	Protective Capacitors for AC Rotating Machines

Arresters: TVSS

GED-7060A	TRANQUELL® Secondary Surge Arresters and Protective Capacitor
FETA-100A	Product Selection and Application Guide

Harmonic Filters

GEH-7256	Matrix D Harmonic Filter
DET-376	GEMACTIVE Harmonic Filter
FETR-100	AC Line/Load Reactors



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Line/Load Reactors

Up to 600V

Section 20

Motor Protection

Reactors help to protect motors from the high peak voltages and fast rise times (dv/dt) which can be experienced in IGBT inverter applications when the distance between the inverter and motor is long.

Harmonic Reduction

Because all standard GE Line/Load reactors are compensated for harmonics (current and frequency), they are extremely effective at reducing the amount of harmonics which are produced by a drive/inverter. Use 5% impedance, harmonic compensated reactors for best reaction of harmonic distortion.

Voltage Spike Protection

A 3% impedance reactor is very effective at protecting against damage to or nuisance tripping of AC voltage source inverters, due to voltage spikes.

Voltage spikes on the AC power lines cause elevation of the DC Bus voltage which may cause the inverter to "trip-off" and indicate an over-voltage protection condition. Use reactors to absorb these line spikes and offer protection to the rectifiers and DC Bus capacitors while minimizing nuisance tripping of the inverter.

Cabinet Product Number	List Price GO-52	NEMA 1 Enclosure Style	Type	W	H	D	Wgt (lbs.)
37GCAB8	\$146.00	CAB-8	Wall Mount	8	8	6	7
37GCAB13V	\$240.00	CAB-13V	Floor	13.22	13	13.09	31
37GCAB17V	\$650.00	CAB-17V	Floor	17	24	18.38	45
37GCAB26C	\$1564.00	CAB-26C	Floor	17.54	31	20.90	180

Outline Dimensions

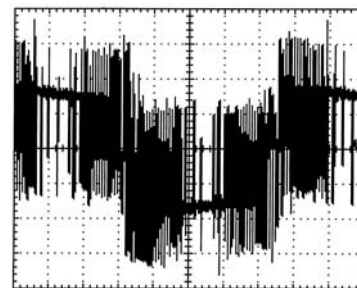
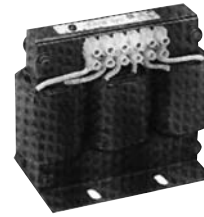
Exact terminal configuration may be different than shown. For exact terminal configuration contact factory for outline drawing.

Agency Approvals

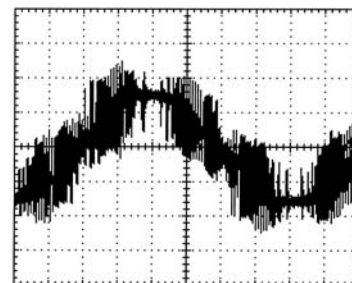
- GE line reactors are UL recognized.
- All UL approvals are for USA and Canada.
- UL-506 File #E191687 (1 amp-1200 amps)
- UL-508 File #E191686 (1 amp-1200 amps)
- All higher currents offer UL recognized insulation systems and construction.
- CE Marked

NEMA 1 Cabinets

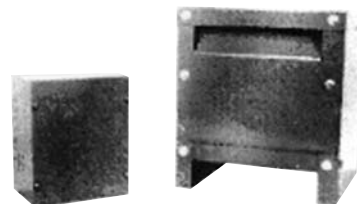
All GE Line/Load Reactors are available as either open type or in a NEMA Type 1 general purpose enclosure. To order a reactor mounted in a cabinet simply change the second to last digit of the product number from "0" to "1". Example 37G 00802 becomes 37G 00812.



Typical Harmonic Distortion of PWM Inverter Without Reactor



With 5% Impedance Reactor



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Line/Load Reactors

Up to 600V

Section 20

Selection Table* 600 Volts, 50/60 Hertz (open Type)

Ratings	HP/kw	1/75	1.5/1.1	2/1.5	3/2.2	5/3.7	7.5/5.5	10/7.5	15/11	20/15	25/18.5	30/22	40/30
208 Volts	3% Impedance	37G 00401	37G 00801	37G 00801	37G 01201	37G 01801	37G 02501	37G 03501	37G 04501	37G 05501	37G 08001	37G 10001	37G 13001
	5% Impedance	37G 00402	37G 00802	37G 00802	37G 01202	37G 01802	37G 02502	37G 03502	37G 04502	37G 05502	37G 08002	37G 10002	37G 13002
240 Volts	3% Impedance	37G 00401	37G 00801	37G 00801	37G 01201	37G 01801	37G 02501	37G 03501	37G 04501	37G 05501	37G 08001	37G 08001	37G 10001
	5% Impedance	37G 00402	37G 00802	37G 00802	37G 01202	37G 01802	37G 02502	37G 03502	37G 04502	37G 05502	37G 08002	37G 08802	37G 10002
380 Volts	2% Impedance	37G 00204	37G 00402	37G 00401	37G 00802	37G 00801	37G 01201	37G 01801	37G 02501	37G 03501	37G 04501	37G 04501	37G 08001
	4% Impedance	37G 00201	37G 00404	37G 00402	37G 00803	37G 00802	37G 01202	37G 01802	37G 02502	37G 03502	37G 04502	37G 04502	37G 08002
400 Volts	2% Impedance	37G 00201	37G 00402	37G 00402	37G 00802	37G 00801	37G 01201	37G 01801	37G 02501	37G 03501	37G 04501	37G 04501	37G 05501
	4% Impedance	37G 00202	37G 00404	37G 00403	37G 00803	37G 00802	37G 01202	37G 01802	37G 02502	37G 03502	37G 04502	37G 04502	37G 05502
415 Volts	2% Impedance	37G 00201	37G 00402	37G 00402	37G 00802	37G 00801	37G 01201	37G 01801	37G 02501	37G 03501	37G 04501	37G 04501	37G 05501
	4% Impedance	37G 00202	37G 00404	37G 00403	37G 00803	37G 00802	37G 01202	37G 01802	37G 02502	37G 03502	37G 04502	37G 04502	37G 05502
480 Volts	3% Impedance	37G 00201	37G 00201	37G 00402	37G 00402	37G 00802	37G 01202	37G 01802	37G 02502	37G 03502	37G 03502	37G 04502	37G 05502
	5% Impedance	37G 00202	37G 00202	37G 00403	37G 00403	37G 00803	37G 01203	37G 01803	37G 02503	37G 03503	37G 03503	37G 04503	37G 05503
600 Volts	3% Impedance	37G 00202	37G 00202	37G 00403	37G 00403	37G 00803	37G 00802	37G 01202	37G 01802	37G 02502	37G 02502	37G 03502	37G 04502
	5% Impedance	37G 00203	37G 00203	37G 00404	37G 00404	37G 00804	37G 00803	37G 01203	37G 01803	37G 02503	37G 02503	37G 03503	37G 04503

*For maximum continuous current ratings refer to Specifications on next page.

Ratings	HP/kw	50/37.5	60/45	75/55	100/75	125/93	150/112	200/150	250/187	300/225	350/262	400/300	500/375	600/450	750/550
208 Volts	3% Impedance	37G 16001	37G 20001B14	37G 25001B14	37G 32001B14	37G 40001B14	37G 50001	37G 60001	37G 75001						
	5% Impedance	37G 16002	37G 20002B14	37G 25002B14	37G 32002B14	37G 40002B14	37G 50002	37G 60002	37G 75002						
240 Volts	3% Impedance	37G 13001	37G 16001	37G 20001B14	37G 25001B14	37G 32001B14	37G 40001B14	37G 50001	37G 60001	37G 75001					
	5% Impedance	37G 13002	37G 16002	37G 20002B14	37G 25002B14	37G 32002B14	37G 40002B14	37G 50002	37G 60002	37G 75002					
380 Volts	2% Impedance	37G 08001	37G 10001	37G 10001	37G 16001	37G 20001B14	37G 25001B14	37G 32002B14	37G 40001B14	37G 40001B14	37G 50001	37G 60001	37G 75002		
	4% Impedance	37G 08002	37G 10002	37G 10002	37G 16002	37G 20002B14	37G 25002B14	37G 32003B14	37G 40002B14	37G 40002B14	37G 50002	37G 60002	37G 75003		
400 Volts	2% Impedance	37G 08001	37G 08001	37G 10001	37G 13001	37G 20002B14	37G 25002B14	37G 32002B14	37G 32001B14	37G 40001B14	37G 50001	37G 50002	37G 75002		
	4% Impedance	37G 08002	37G 08002	37G 10002	37G 13002	37G 20003B14	37G 25003B14	37G 32003B14	37G 32002B14	37G 40002B14	37G 50002	37G 60003	37G 75003		
415 Volts	2% Impedance	37G 08001	37G 08001	37G 10001	37G 13001	37G 20002B14	37G 20002B14	37G 25001B14	37G 32001B14	37G 40001B14	37G 50001	37G 50001	37G 75002	37G 75002	
	4% Impedance	37G 08002	37G 08002	37G 10002	37G 13002	37G 20003B14	37G 20003B14	37G 25002B14	37G 32002B14	37G 40002B14	37G 50002	37G 50002	37G 75003	37G 75003	
480 Volts	3% Impedance	37G 08002	37G 08002	37G 10002	37G 13002	37G 16002	37G 20002B14	37G 25002B14	37G 32002B14	37G 40002B14	37G 50002	37G 50002	37G 60002	37G 75002	
	5% Impedance	37G 08003	37G 08003	37G 10003	37G 13003	37G 16003	37G 20003B14	37G 25003B14	37G 32003B14	37G 40003B14	37G 50003	37G 50003	37G 60003	37G 75003	
600 Volts	3% Impedance	37G 05502	37G 08002	37G 08002	37G 10002	37G 13002	37G 16002	37G 20002B14	37G 25002B14	37G 32002B14	37G 40002B14	37G 40002B14	37G 50002	37G 60002	37G 75002
	5% Impedance	37G 05503	37G 08003	37G 08003	37G 10003	37G 13003	37G 16003	37G 20003B14	37G 25003B14	37G 32003B14	37G 40003B14	37G 40003B14	37G 50003	37G 60003	37G 75003

Consult Factory

For Input or Output of Adjustable Speed Drive/Inverter Systems

*For higher or lower current ratings, consult factory.

*For other voltages or frequencies, consult factory. Single phase reactors are also available, consult factory for proper selection.

This table is suitable for selection of both input and output reactors because their harmonic compensation and IGBT protection allow them to be used in either application. Specific current and inductance ratings are indicated on next page. Consult factory for any special applications (higher current, motor rating different than controller rating, etc.)

Select GE Line/Load reactors based upon motor horsepower, (or kilowatts) and voltage. Verify that the motor full load ampere rating is within the fundamental current rating of the reactor, and the drive/inverter rating is within the maximum continuous rating of the reactor (See next page).



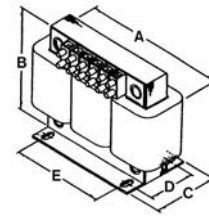
Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Line/Load Reactors

3-Phase Reactors: Line/Load Specifications Table

Section 20



600 Volts, 50/60 hz (Open Type)

Open Type Product Number	List Price, Open Type GO-52	Fundamental Amps	Max. Amps	Inductance	Watts Loss	A mm/in.	B mm/in.	C mm/in.	D mm/in.	E mm/in.	Open Type Wgt. Kg/Lbs.	NEMA 1 Enclosure Style	List Price, NEMA GO-52
37G00201	\$188.00	2	3	12.0mh	7.5	112/4.4	102/4.0	74/2.8	50/2.0	36/1.44	1.8/4	CAB-8	\$350.00
37G00202	\$198.00	2	3	20.0mh	11.3	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	1.8/4	CAB-8	\$362.00
37G00203	\$226.00	2	3	32.0mh	16	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	1.8/4	CAB-8	\$390.00
37G00204	\$164.00	2	3	6.0mh	10.7	112/4.4	102/4.0	69/2.7	44/1.73	36/1.44	1.4/3	CAB-8	\$326.00
37G00401	\$190.00	4	6	3.0mh	14.5	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	1.8/4	CAB-8	\$352.00
37G00402	\$196.00	4	6	6.5mh	20	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	2.3/4	CAB-8	\$360.00
37G00403	\$204.00	4	6	9.0mh	20	112/4.4	102/4.0	79/3.1	54/2.1	36/1.44	1.8/5	CAB-8	\$368.00
37G00404	\$234.00	4	6	12.0mh	21	112/4.4	102/4.0	91/3.6	66/2.6	36/1.44	2.7/6	CAB-8	\$400.00
37G00801	\$200.00	8	12	1.5mh	19.5	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	3.1/7	CAB-8	\$364.00
37G00802	\$224.00	8	12	3.0mh	29	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	3.2/8	CAB-8	\$388.00
37G00803	\$306.00	8	12	5.0mh	25.3	152/6.0	122/4.8	86/3.4	63/2.5	50/2.0	5.0/11	CAB-8	\$474.00
37G00804	\$314.00	8	12	7.5mh	28	152/6.0	122/4.8	86/3.4	63/2.5	50/2.0	5.9/13	CAB-8	\$484.00
37G01201	\$236.00	12	18	1.25mh	26	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	4.0/9	CAB-8	\$402.00
37G01202	\$250.00	12	18	2.5mh	31	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	4.5/10	CAB-8	\$416.00
37G01203	\$360.00	12	18	4.2mh	41	152/6.0	122/4.8	94/3.7	70/2.75	50/2.0	8.1/18	CAB-8	\$532.00
37G01801	\$308.00	18	27	0.8mh	36	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	4.0/9	CAB-8	\$476.00
37G01802	\$316.00	18	27	1.5mh	43	152/6.0	122/4.8	86/3.4	53/2.5	50/2.0	5.4/12	CAB-8	\$486.00
37G01803	\$418.00	18	27	2.5mh	43	183/7.2	145/5.7	97/3.8	66/2.6	76/3.0	7.3/16	CAB-13V	\$690.00
37G02501	\$322.00	25	37.5	0.5mh	48	183/7.2	142/5.6	86/3.4	60/2.3	76/3.0	5.0/11	CAB-13V	\$590.00
37G02502	\$364.00	25	37.5	1.2mh	52	183/7.2	142/5.6	86/3.4	60/2.3	76/3.0	6.3/14	CAB-13V	\$634.00
37G02503	\$430.00	25	37.5	0.8mh	61	183/7.2	145/5.7	97/3.8	66/2.6	76/3.0	8.1/18	CAB-13V	\$704.00
37G03501	\$364.00	35	52.5	0.4mh	49	183/7.2	142/5.6	97/3.8	66/2.6	76/3.0	6.3/14	CAB-13V	\$634.00
37G03502	\$382.00	35	52.5	0.8mh	54	183/7.2	145/5.7	97/3.8	66/2.6	76/3.0	7.3/16	CAB-13V	\$654.00
37G03503	\$570.00	35	52.5	1.2mh	54	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	14/30	CAB-13V	\$850.00
37G04501	\$480.00	45	67.5	0.3mh	54	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	10/23	CAB-13V	\$756.00
37G04502	\$504.00	45	67.5	0.7mh	62	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	13/28	CAB-13V	\$782.00
37G04503	\$668.00	45	67.5	1.2mh	65	229/9.0	178/7.0	136/5.3	93/3.6	76/3.0	18/39	CAB-13V	\$954.00
37G05501	\$508.00	55	82.5	0.26mh	64	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	11/24	CAB-13V	\$786.00
37G05502	\$532.00	55	82.5	0.50mh	67	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	12/27	CAB-13V	\$810.00
37G05503	\$676.00	55	82.5	0.85mh	71	229/9.0	178/7.0	142/5.6	99/3.9	76/3.0	18/41	CAB-13V	\$962.00
37G08001	\$590.00	80	120	0.20mh	82	274/10.8	208/8.2	142/5.6	88/3.5	92/3.6	19/43	CAB-13V	\$872.00
37G08002	\$624.00	80	120	0.40mh	86	274/10.8	211/8.3	142/5.6	88/3.5	92/3.6	23/51	CAB-13V	\$908.00
37G08003	\$1098.00	80	120	0.70mh	96	274/10.8	213/8.4	160/6.3	117/4.6	82/3.6	25/55	CAB-13V	\$1404.00

*To order a reactor mounted in NEMA 1 enclosure simply change the second to last digit of the product number from "0" to "1".



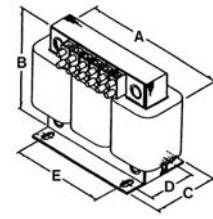
For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Line/Load Reactors

3-Phase Reactors: Line/Load Specifications Table

Section 20



600 Volts, 50/60 hz (Open Type)

Open Type Product Number	List Price, Open Type GO-52	Fundamental Amps	Max. Amps	Inductance	Watts Loss	A mm/in.	B mm/in.	C mm/in.	D mm/in.	E mm/in.	Open Type Wgt. Kg/Lbs.	NEMA 1 Enclosure Style	List Price, NEMA GO-52
37G10001	\$794.00	100	150	0.15mh	94	274/10.8	211/8.3	142/5.6	88/3.5	92/3.6	21/47	CAB-13V	\$1086.00
37G10002	\$872.00	100	150	0.30mh	84	274/10.8	208/8.2	147/5.8	93/3.6	92/3.6	23/51	CAB-13V	\$1168.00
37G10003	\$1282.00	100	150	0.45mh	108	274/10.8	213/8.4	160/6.3	106/4.2	92/3.6	33/74	CAB-13V	\$1598.00
37G13001	\$880.00	130	195	0.10mh	108	229/9.0	179/7.04	124/4.9	80/3.16	76/3	13/29	CAB-13V	\$1176.00
37G13002	\$992.00	130	195	0.20mh	180	274/10.8	213/8.4	171/6.75	93/3.66	92/3.63	26/57	CAB-13V	\$1294.00
37G13003	\$1310.00	130	195	0.30mh	128	274/10.8	213/8.4	184/7.25	106/4.16	92/3.63	29/64	CAB-13V	\$1628.00
37G16001	\$1098.00	160	240	0.075mh	116	274/10.8	213/8.4	146/5.75	80/3.16	92/3.63	18/40	CAB-13V	\$1404.00
37G16002	\$1226.00	160	240	0.150mh	149	274/10.8	213/8.4	152/6	88/3.47	92/3.63	22/50	CAB-13V	\$1540.00
37G16003	\$1474.00	160	240	0.230mh	138	274/10.8	213/8.4	181/7.13	106/4.16	92/3.63	31/67	CAB-13V	\$1800.00
37G20001B14	\$1178.00	200	300	0.055mh	124	274/10.8	213/8.4	152/6	106/4.16	92/3.63	22/48	CAB-13V	\$1488.00
37G20002B14	\$1436.00	200	300	0.110mh	168	274/10.8	213/8.4	216/8.5	112/4.41	92/3.63	31/67	CAB-13V	\$1760.00
37G20003B14	\$1800.00	200	300	0.185mh	146	274/10.8	267/10.5	237/9.35	150/5.91	92/3.63	46/100	CAB-13V	\$2142.00
37G25001B14	\$1334.00	250	375	0.045mh	154	274/10.8	208/8.17	184/7.25	106/4.16	92/3.63	31/68	CAB-13V	\$1652.00
37G25002B14	\$2080.00	250	375	0.090mh	231	366/14.4	356/14	210/8.25	131/5.16	117/4.6	49/106	CAB-17V	\$2866.00
37G25003B14	\$3190.00	250	375	0.150mh	219	366/14.4	356/14	288/11.35	148/5.82	117/4.6	64/140	CAB-17V	\$4032.00
37G32001B14	\$2102.00	320	480	0.040mh	224	366/14.4	356/14	168/6.6	129/5.07	117/4.6	50/110	CAB-17V	\$2890.00
37G32002B14	\$2432.00	320	480	0.075mh	264	375/14.75	356/14	257/10.13	149/5.88	117/4.6	57/125	CAB-17V	\$3236.00
37G32003B14	\$3410.00	320	480	0.125mh	351	366/14.4	356/14	330/13	181/7.13	117/4.6	86/190	CAB-17V	\$4264.00
37G40001B14	\$2294.00	400	600	0.030mh	231	366/14.4	356/14	254/10	131/5.16	117/4.6	46/100	CAB-17V	\$3092.00
37G40002B14	\$3416.00	400	600	0.060mh	333	394/15.5	356/14	292/11.5	172/6.76	117/4.6	71/155	CAB-17V	\$4270.00
37G40003B14	\$4182.00	400	600	0.105mh	293	394/15.5	356/14	368/14.5	184/7.26	117/4.6	91/200	CAB-17V	\$5074.00
37G50001B14	\$2452.00	500	750	0.025mh	266	394/15.5	356/14	267/10.5	140/5.5	117/4.6	55/120	CAB-17V	\$3256.00
37G50002	\$3614.00	500	750	0.050mh	340	394/15.5	356/14	330/13	172/6.76	117/4.6	82/180	CAB-1726C	\$5438.00
37G50003	\$4854.00	500	700	0.085mh	422	394/15.5	356/14	375/14.75	248/9.76	117/4.6	132/290	CAB-1726C	\$6738.00
37G60001	\$2992.00	600	900	0.020mh	307	394/15.5	356/14	279/11	168/6.66	117/4.6	73/160	CAB-1726C	\$4784.00
37G60002	\$4230.00	600	900	0.040mh	414	394/15.5	356/14	356/14	172/6.76	117/4.6	96/210	CAB-1726C	\$6084.00
37G60003	\$6714.00	600	840	0.065mh	406	394/15.5	356/14	394/15.5	235/9.26	117/4.6	132/290	CAB-1726C	\$8692.00
37G75001	\$4734.00	750	1125	0.015mh	427	559/22	508/20	254/10	168/6.63	183/7.2	91/200	CAB-30B26C	\$6614.00
37G75002	\$6118.00	750	1125	0.029mh	630	559/22	508/20	317/12.5	197/7.76	183/7.2	141/310	CAB-30B26C	\$8066.00
37G75003	\$8690.00	750	1125	0.048mh	552	559/22	508/20	376/14.8	242/9.51	183/7.2	183/400	CAB-30B26C	\$10714.00

*To order a reactor mounted in NEMA 1 enclosure simply change the second to last digit of the product number from "0" to "1".



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Matrix Series D Harmonic Filters

Section 20

Matrix Harmonic filters provide broadband reduction of harmonics. Matrix Harmonic Filters not only offer better performance over other broad band filtering and 18-pulse harmonic reduction techniques, they are also suitable for a wider range of applications. Matrix Harmonic Filters can be installed in either variable or constant torque drive applications and can be applied on either diode or SCR rectifiers. For any application other than variable torque applications, it is suggested that you contact the factory for filter selection.

Typical Applications

Use Matrix Harmonic filters to minimize harmonic current distortion in these and other 6-pulse rectifier applications:

- Fans and Pumps
- Water Treatment Facilities
- HVAC Systems
- AC or DC Motor Drives
- Rectifier type welders
- Induction Heating Equipment
- UPS Equipment
- Elevators

Matrix Filter enables most AC drive systems to comply with the voltage and current distortion limits outlined in IEEE 519. A complete harmonic analysis and product selection tool is available on the internet. Go to geelectrical.com and select Products, select Capacitors, choose Matrix Harmonic Filter and then select Energy Savings Calculator and Harmonic Estimator.

Matrix Harmonic Filters are multi-stage low pass filters specially configured to avoid the attraction of harmonics from other sources on a shared power system. Matrix filters will not cause power system resonance. However, the configuration of the filter requires that only drives or equivalent loads be loaded on the output of a Matrix harmonic filter. One filter can be used with multiple drives. However, if there is a drive bypass circuit, there must be one filter per drive and the filter and drive combination must be bypassed.

Matrix Harmonic Filters are available in a NEMA 1, NEMA 3R or as a modular design preassembled onto panels for subsequent assembly into customer supplied cabinet.

Product Specifications

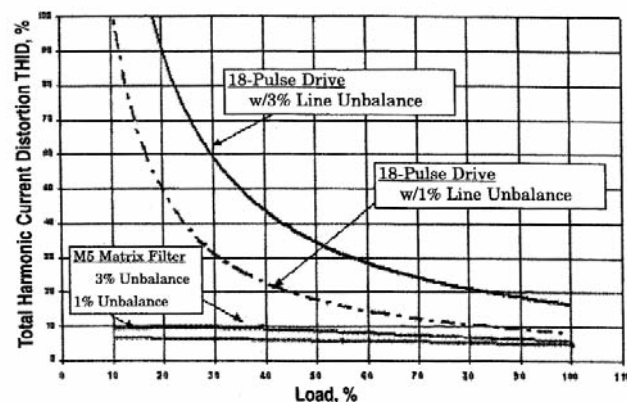
- Input Voltage 480 Volts +/- 10%
- Ambient Temperature:
 - Storage – 40°C to 90°C
 - Operating – 40°C to 40°C
- Altitude: 1000 meters maximum
- UL approved – File E191686 for U.S. and Canada

Minimum System Requirements to Achieve Performance Levels

- Source Impedance: 1.5% minimum to 5% maximum
- System voltage: 480 volts (line to line) +/- 10%
- Frequency: 60 Hz +/- .75 Hz
- Balanced Line Voltage: within 1%
- Background Voltage Distortion: 0% THVD

The Matrix D Filters typically achieve 5% THID at full load and guarantee worst case current distortion at any load between 0% and 100%, will be 8% THID or less at the filter input terminals. The Matrix D Series is typically used in place of applications requiring harmonic mitigation associated with 12- or 18-pulse rectifiers. The chart below compares the performance of Matrix D Filters to 18-pulse rectifiers in real world applications, which include line voltage unbalance of 1% to 3% and loading conditions from 0% to 100%.

Matrix D Filter performs better than 18-pulse in normal operating conditions.



Matrix D vs. 18-pulse



Capacitors, Arresters and Harmonic Filters

Matrix Series D Harmonic Filters

Section 20

Selection Table

Matrix D, 480 VAC, 60 HZ, Three Phase, Variable Torque

Applications

Select Matrix filters based on the horsepower (or kilowatt) rating for the adjustable speed drive or the combined current rating of all motors to be connected to the load side of the filter. For constant torque, DC drive or other applications consult factory for proper filter selection.

Source Impedance

If the source impedance is less than 1.5% impedance, it is required that an input reactor of at least 1.5% impedance be added in order to have guaranteed performance level. For best value and performance it is recommended that a 3% line reactor be used whenever the source impedance is less than 1.5%.

General Purpose Enclosure Style

480 Volts, 60 Hz

Amps	HP	NEMA 1 & NEMA 2 Drip Proof	List Price GO-52A	Enclosure	Wt. (Lbs.)	NEMA 3R Weather Resistant	List Price GO-52A	Enclosure	Wt. (Lbs.)	Figure
6	3	37GMDG0006D	\$1409.00	CAB-12C2	76	37GMDW0006D	\$1578.00	CAB-12C3	86	Figure 1
8	5	37GMDG0008D	\$1442.00	CAB-12C2	79	37GMDW0008D	\$1610.00	CAB-12C3	89	Figure 1
11	7.5	37GMDG0011D	\$1477.00	CAB-12C2	83	37GMDW0011D	\$1646.00	CAB-12C3	93	Figure 1
14	10	37GMDG0014D	\$1527.00	CAB-12C2	89	37GMDW0014D	\$1695.00	CAB-12C3	99	Figure 1
21	15	37GMDG0021D	\$1839.00	CAB-12C2	100	37GMDW0021D	\$2008.00	CAB-12C3	110	Figure 1
27	20	37GMDG0027D	\$1876.00	CAB-12C2	115	37GMDW0027D	\$2045.00	CAB-12C3	125	Figure 1
34	25	37GMDG0034D	\$2168.00	CAB-12C2	126	37GMDW0034D	\$2337.00	CAB-12C3	136	Figure 1
44	30	37GMDG0044D	\$2280.00	CAB-12C2	138	37GMDW0044D	\$2449.00	CAB-12C3	148	Figure 1
52	40	37GMDG0052D	\$2655.00	CAB-17C2	190	37GMDW0052D	\$2840.00	CAB-17C3	199	Figure 2
66	50	37GMDG0066D	\$3055.00	CAB-17C2	219	37GMDW0066D	\$3240.00	CAB-17C3	228	Figure 2
83	60	37GMDG0083D	\$3326.00	CAB-17C2	241	37GMDW0083D	\$3511.00	CAB-17C3	250	Figure 2
103	75	37GMDG0103D	\$3483.00	CAB-17C2	244	37GMDW0103D	\$3668.00	CAB-17C3	253	Figure 2
128	100	37GMDG0128D	\$4716.00	CAB-26C2	385	37GMDW0128D	\$5022.00	CAB-26C3	406	Figure 3
165	125	37GMDG0165D	\$5116.00	CAB-26C2	441	37GMDW0165D	\$5422.00	CAB-26C3	462	Figure 3
208	150	37GMDG0208D	\$5708.00	CAB-26C2	461	37GMDW0208D	\$6015.00	CAB-26C3	482	Figure 3
240	200	37GMDG0240D	\$5730.00	CAB-26C2	467	37GMDW0240D	\$6036.00	CAB-26C3	488	Figure 3
320	250	37GMDG0320D	\$9669.00	CAB-26D2	663	37GMDW0320D	\$9975.00	CAB-26D3	794	Figure 4
403	300	37GMDG0403D	\$10864.00	CAB-26D2	706	37GMDW0403D	\$11170.00	CAB-26D3	838	Figure 4
482	400	37GMDG0482D	\$11501.00	CAB-26D2	800	37GMDW0482D	\$11808.00	CAB-26D3	931	Figure 4
636	500	37GMDG0636D	\$15484.00	CAB-30D2	1205	37GMDW0636D	\$15837.00	CAB-30D3	1247	Figure 5
786	600	37GMDG0786D	\$17000.00	CAB-30D2	1416	37GMDW0786D	\$17353.00	CAB-30D3	1458	Figure 5

480 Volts, 60 Hz

Amps	HP	Open Panel	List Price GO-52A	Weight (Lbs.)	HMR Size (in.)	Capacitor Assemblies Size (in.)
6	3	37GMDP0006D	\$921.00	22	11.3"H x 6"W x 6.2"D	4.8"H x 4.8"W x 7.3"D
8	5	37GMDP0008D	\$957.00	24	11.3"H x 6"W x 6.3"D	4.8"H x 4.8"W x 7.3"D
11	7.5	37GMDP0011D	\$1005.00	29	12.4"H x 7.2"W x 5.7"D	4.8"H x 4.8"W x 8.2"D
14	10	37GMDP0014D	\$1051.00	35	12.4"H x 7.3"W x 6.3"D	4.8"H x 4.8"W x 8.2"D
21	15	37GMDP0021D	\$1263.00	46	15.8"H x 9"W x 6.5"D	5.6"H x 5.6"W x 7.3"D
27	20	37GMDP0027D	\$1353.00	61	15.8"H x 9"W x 7"D	5.6"H x 5.6"W x 8.2"D
34	25	37GMDP0034D	\$1586.00	72	15.8"H x 9"W x 7.5"D	5.6"H x 5.6"W x 8.7"D
44	30	37GMDP0044D	\$1721.00	84	15.8"H x 9"W x 8"D	5.6"H x 5.6"W x 7.3"D
52	40	37GMDP0052D	\$2113.00	125	16.5"H x 12.3"W x 9.6"D	5.6"H x 5.6"W x 7.3"D
66	50	37GMDP0066D	\$2450.00	154	16.5"H x 12.3"W x 10.7"D	8"H x 7.3"W x 12"D
83	60	37GMDP0083D	\$2785.00	176	16.5"H x 12.3"W x 11.3"D	8"H x 7.3"W x 12"D
103	75	37GMDP0103D	\$2951.00	180	16.5"H x 12.3"W x 11"D	8"H x 7.3"W x 12"D
128	100	37GMDP0128D	\$3726.00	217	23"H x 15.3"W x 11.3"D	12"H x 7.3"W x 12"D
165	125	37GMDP0165D	\$4126.00	273	23"H x 15.3"W x 11.5"D	12"H x 7.3"W x 12"D
208	150	37GMDP0208D	\$4650.00	292	23"H x 15.3"W x 12"D	15"H x 7.3"W x 12"D
240	200	37GMDP0240D	\$4726.00	298	23"H x 15.3"W x 12.4"D	15"H x 7.3"W x 12"D
320	250	37GMDP0320D	\$7054.00	464	35.5"H x 18"W x 20.2"D	15"H x 7.3"W x 12"D 8"H x 7.3"W x 12"D
403	300	37GMDP0403D	\$8401.00	508	35.5"H x 18"W x 22.5"D	12"H x 7.3"W x 12"D 15"H x 7.3"W x 12"D
482	400	37GMDP0482D	\$9068.00	602	35.5"H x 18"W x 23"D	15"H x 7.3"W x 12"D 15"H x 7.3"W x 12"D
636	500	37GMDP0636D	\$11942.00	873	35.5"H x 24"W x 23.5"D	12"H x 8.1"W x 12"D 15"H x 7.3"W x 12"D 15"H x 7.3"W x 12"D
786	600	37GMDP0786D	\$13410.00	1082	35.5"H x 24"W x 24"D	15"H x 7.3"W x 12"D 15"H x 7.3"W x 12"D 5.6"H x 5.6"W x 7.3"D



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Matrix Series D Harmonic Filters

Section 20

Outlines and Dimensions

CAB-12C, 6-44 Amps

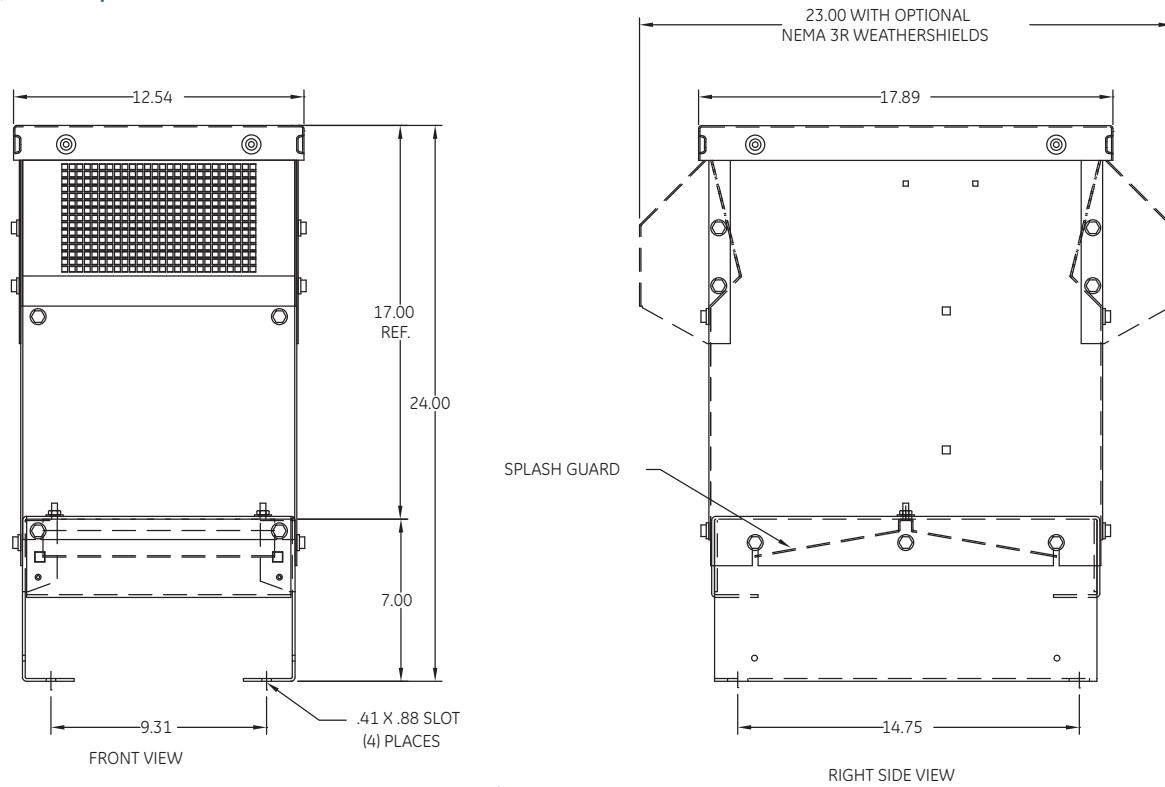


Figure 1 6-44 Amps

CAB-17C, 52-103 Amps

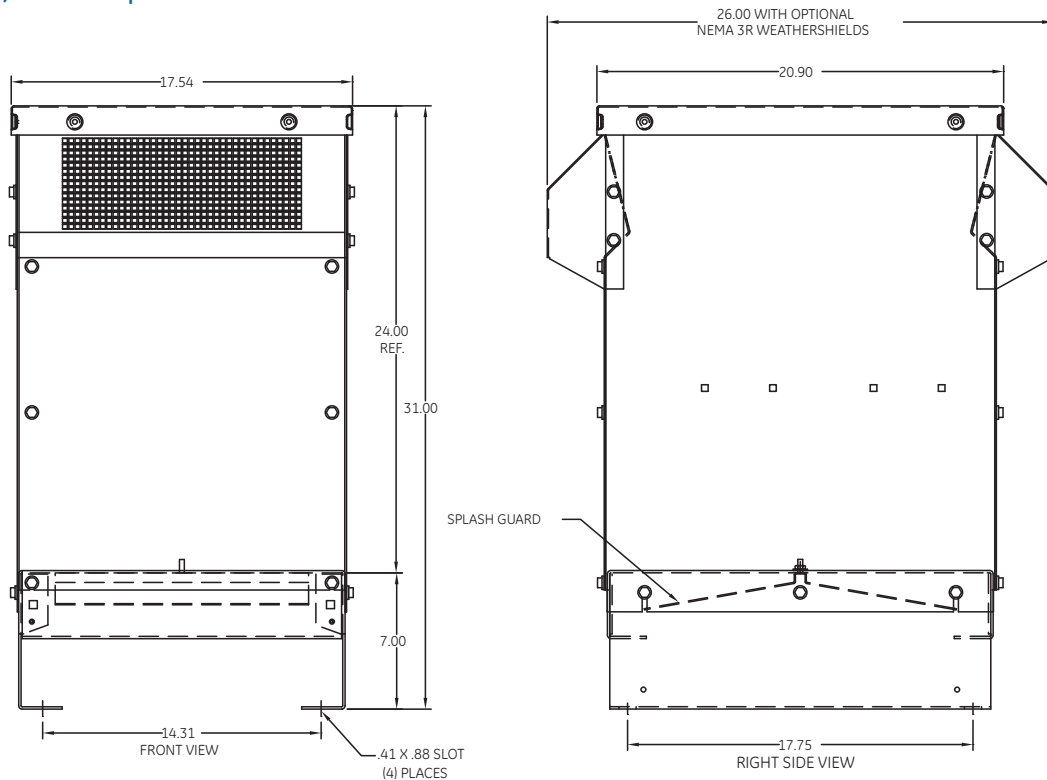


Figure 2 52-103 Amps



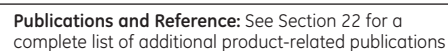
For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Outlines and Dimensions

CAB-26C, 128-240 Amps



CAB-26D, 320-482 Amps



Matrix Series D Harmonic Filters

Outlines and Dimensions

CAB-30D, 636-786 Amps

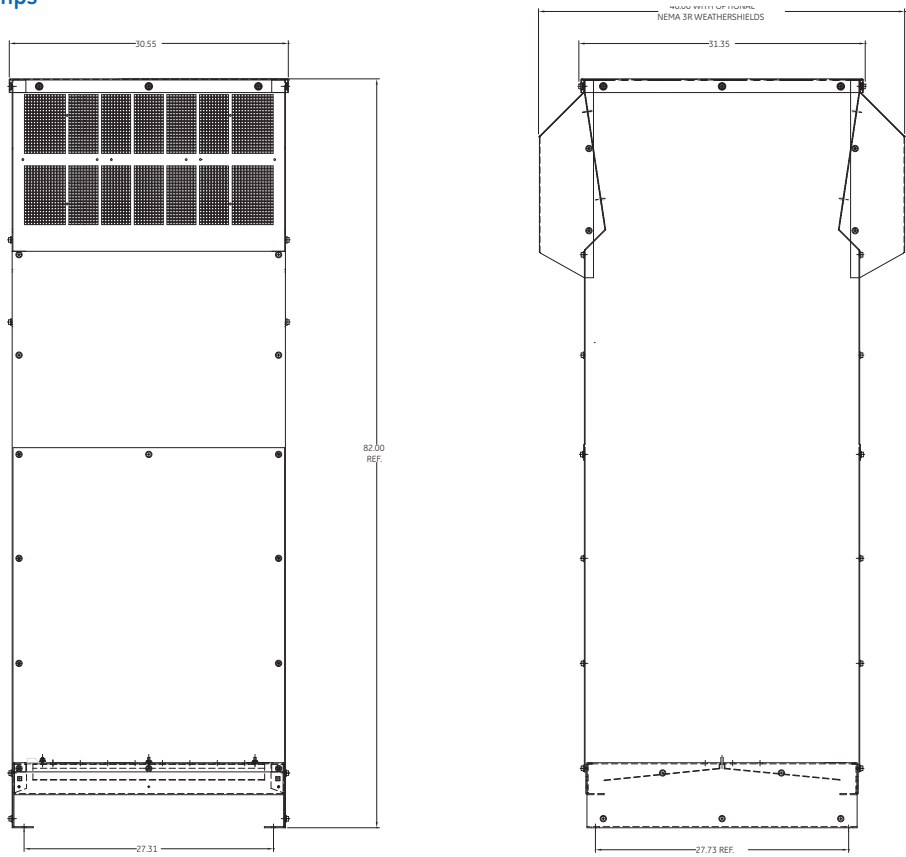


Figure 5 636-786 Amps



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Protective Capacitors for AC Rotating Machines

Surge Protection for AC Generators, Synchronous Condensers and Large Motors

Section 20

Protective capacitors offer surge protection for AC generators, synchronous condensers and large motors.

Dielektrol® is the GE non-PCB power capacitor dielectric system, developed to provide an environmentally acceptable product with superior performance and reliability.

Protective capacitors contain a film dielectric and hermetically sealed bushings, which permit mounting of capacitors in an upright position or on the side. GE Surge Capacitors protect the winding insulation by reducing the steepness of wave fronts applied to or reflected within the machine windings.

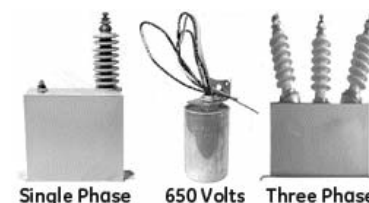
Features and Benefits

- Surge protection for AC Generators, synchronous condensers and large motors
- Time proven GE HAZY film foil dielectric system
- Dielektrol® Non-PCB insulating fluid
- Provides Turn-to-Turn insulation protection by reducing steepness of wave fronts applied to or reflected within the machine
- Used in combination with TRANQUELL® station arresters for optimum protection
- Protective capacitors contain a film dielectric and hermetically sealed bushings, which permit mounting of capacitors in an upright position or on the side.
- Altitude: 0 to 18,000 feet

Dielektrol® Non-PCB Dielectric Protective Capacitors with Internal Discharge Resistors—Indoor or Outdoor Mounting

Voltage Rating rms Volts L-L	Maximum Voltage rms Volts L-L	Product Number 50/60 HZ	List Price, 2.4-24kV GO-412	Poles per Unit	Microfarads per Pole	Approx. Net Weight	
						Lb	Kg
0-650	715	9L18BBB301	Refer to page 20-51 for dimensions	3	1.0	4	1.8
2400	2640	18L0015WH	\$1164.00	3	0.5	36	16.5
4160	4576	18L0015WH	\$1164.00	3	0.5	36	16.5
6900	7590	18L0019WH	\$868.00	1	0.5	29	13
7200	7960	18L0065WH	\$1280.00	3	0.5	35	16
13800	15180	18L0009WH	\$1208.00	1	0.25	33	15
13800	15180	18L0012WH	\$2140.00	3	0.25	66	30
24000	26400	18L0010WH	\$1988.00	1	0.125	57	26
24940	—	18L0070WH	\$2480.00	1	0.25	75	34
750*	—	18L0004WH	\$935.00	1	4	12	5.5
3900*	—	18L0005WH	\$931.00	1	4	46	20.9
13800	15180	18L0051WH	\$1325.00	1	0.5	49	22.3
13800	15180	18L0060WH	\$2200.00	1	0.25	32	14.5
6900	7590	18L0061WH	\$1582.00	1	0.5	30	13.6
4160	4576	18L0062WH	\$2117.00	3	0.5	36	16.4

*18L0004WH and 18L0005WH are rated for DC Applications



Protective Capacitors

For other mounting arrangements contact the factory. 2400 and 4160 volt designs are identical and use the same product number. All units are provided with CSA labels.

Units are not intended for upside down mounting except for product numbers **18L0060WH, 18L0061WH, and 18L0062WH.**

For up-to-date Capacitor Outline Drawings go to the web at www.ge-energy.com/ecatalog/html/index



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Protective Capacitors for AC Rotating Machines

Surge Protection for AC Generators, Synchronous Condensers and Large Motors

Section 20

Protective Capacitors for AC Rotating Machines Guide for Superseded Models

Superseded Model Number	Present Model Number	Capacitor Voltage Rating	# Poles	Superseded Model Number	Present Model Number	Capacitor Voltage Rating	# Poles	Superseded Model Number	Present Model Number	Capacitor Voltage Rating	# Poles
18F107	18L0015WH	4160	3	18L15WH	18L0015WH	2400	3	9L18BCG301	18L0015WH	4160	3
18F107G3	18L0019WH	4160	1	18L19RH	18L0019WH	6900	1	9L18BCG302	18L0065WH	7200	3
18F26	18L0019WH	2400	1	18L19UH	18L0019WH	6900	1	9L18BCJ101	18L0019WH	6900	1
18F26G2	18L0019WH	2400	1	18L19WH	18L0019WH	6900	1	9L18BCL101	18L0009WH	13800	1
18F27	Discontinued	2400	2	18L65UH	18L0065WH	7200	3	9L18BCM101	18L0010WH	24000	1
18F270G2	18L0010WH	24000	1	18L65WH	18L0065WH	7200	3	9L18CCE301	18L0015WH	2400	3
18F27G2	Discontinued	2400	2	18L6RH2	18L0015WH	2400	3	9L18CCG301	18L0015WH	4160	3
18F28	18L0015WH	2400	3	18L9RH	18L0009WH	13800	1	9L18CCG302	18L0065WH	7200	3
18F29	18L0019WH	4800	1	18L9UH	18L0009WH	13800	1	9L18CCJ101	18L0019WH	6900	1
18F29G2	18L0019WH	4800	1	18L9WH	18L0009WH	13800	1	9L18CCJ301	18L0015WH	6900	3
18F30	18L0019WH	6900	1	9CL1B20	18L0015WH	2400	3	9L18CCL101	18L0009WH	13800	1
18F30G2	18L0019WH	6900	1	9CL1B22	18L0019WH	4800	1	9L18CCM101	18L0010WH	24000	1
18F35	Discontinued	11500	1	9CL1B23	18L0019WH	6900	1	9L18DCE301	18L0015WH	2400	3
18F35G2	Discontinued	11500	1	9CL1B24	Discontinued	11500	1	9L18DCG301	18L0015WH	4160	3
18F451	18L0009WH	13800	1	9CL1B25	18L0009WH	13800	1	9L18DCG302	18L0065WH	7200	3
18F451G5	18L0009WH	13800	1	9L18ACE101	18L0019WH	2400	1	9L18DCJ101	18L0019WH	6900	1
18F467	18L0010WH	24000	1	9L18ACE201	Discontinued	2400	2	9L18DCL101	18L0009WH	13800	1
18F58	18L0015WH	4160	3	9L18ACE301	18L0015WH	2400	3	9L18DCM101	18L0010WH	24000	1
18F585	18L0015WH	2400	3	9L18ACG101	18L0019WH	4160	1	9L18DCM102	18L0010WH	24000	1
18F586	18L0015WH	4160	3	9L18ACG301	18L0015WH	4160	3	9L18ECE301	18L0015WH	2400	3
18F59	18L0009WH	13800	1	9L18ACH101	18L0019WH	4800	1	9L18ECG301	18L0015WH	4160	3
18L10RH	18L0010WH	24000	1	9L18ACH301	Discontinued	4800	3	9L18ECG302	18L0065WH	7200	3
18L10WH	18L0010WH	24000	1	9L18ACJ101	18L0019WH	6900	1	9L18ECJ101	18L0019WH	6900	1
18L15RH2	18L0015WH	4160	3	9L18ACK101	Discontinued	11500	1	9L18FCG301	18L0015WH	4160	3
18L15RJ2	18L0065WH	7200	3	9L18ACL101	18L0009WH	13800	1	9L18FCG302	18L0065WH	7200	3
18L15UJ	18L0015WH	4160	3	9L18ACM101	18L0010WH	24000	1	9LA6A29	Discontinued	300	
18L15WH	18L0015WH	4160	3	9L18BCE301	18L0015WH	2400	3	9LA6B1	18L0010WH	24000	1



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Fixed Motor and Pump Capacitors (Type GEM™ OFW)

Section 20

Outdoor Weatherproof

1-15 kVAR 240 Volts

1-30 kVAR 480 Volts

Three-phase Delta, 60 Hertz

Description

These Type GEM™ capacitors are designed primarily for the motor requirements of oil field and other pumping installations. Their application, however, may be extended to other motor applications installed indoor or outdoor. Type GEM™ OFW capacitors feature multiple cells which are assembled in parallel in a NEMA 3 enclosure. Each capacitor cell features the patented GE Pressure Sensitive Interrupter (PSI) that protects against cell rupture. The metallized polypropylene film dielectric system provides an instantaneous self-healing action and greatly reduced energy losses.

Discharge resistors are included to reduce voltage to 50 volts or less within one minute of de-energization. A 4 ft., 4-conductor flexible cable is provided for easy installation.

Type GEM™ capacitors offer high reliability and long life. They are suitable for operation over a temperature range of -40°C to +46°C. GEM™ also features Diektrol® impregnant which is a biodegradable Class IIIB combustible fluid.



Type OFW Motor Capacitor

1-30 kVAR

kVAR	Product Number	List Price Each, GO-410	Cable Size	Dimensions (See Fig. 1)					
				A		B		Approx. Weight	
				Inch	mm	Inch	mm	Lbs.	Kg
240 Volts									
1	65L550TL1	\$202.00	12	5.90	150	3.18	81	7.5	3.4
1.5	65L551TL1	\$202.00	12	5.90	150	3.18	81	7.5	3.4
2	65L552TL1	\$202.00	12	5.90	150	3.18	81	7.5	3.4
2.5	65L553TL1	\$202.00	12	5.90	150	3.18	81	7.8	3.5
3	65L554TL1	\$202.00	12	5.90	150	3.18	81	7.8	3.5
4	65L555TL1	\$202.00	12	5.90	150	3.18	81	8.5	3.9
5	65L556TL1	\$212.00	12	5.90	150	3.18	81	8.5	3.9
6	65L557TL1	\$228.00	8	5.94	151	5.54	141	10.2	4.6
7.5	65L558TL1	\$272.00	8	5.94	151	5.54	141	11.7	5.3
10	65L559TL1	\$344.00	8	5.94	151	5.54	141	11.7	5.3
12.5	65L560TL1	\$370.00	8	5.94	151	8.15	207	14.9	6.8
15	65L561TL1	\$378.00	8	5.94	151	8.15	207	14.9	6.8
480 Volts									
1	65L550TA1	\$140.00	12	5.90	150	3.18	81	7.5	3.4
1.5	65L551TA1	\$140.00	12	5.90	150	3.18	81	7.5	3.4
2	65L552TA1	\$140.00	12	5.90	150	3.18	81	7.5	3.4
2.5	65L553TA1	\$140.00	12	5.90	150	3.18	81	7.5	3.4
3	65L554TA1	\$140.00	12	5.90	150	3.18	81	7.5	3.4
4	65L555TA1	\$140.00	12	5.90	150	3.18	81	7.5	3.4
5	65L556TA1	\$148.00	12	5.90	150	3.18	81	7.5	3.4
6	65L557TA1	\$156.00	12	5.90	150	3.18	81	7.8	3.5
7.5	65L558TA1	\$173.00	12	5.90	150	3.18	81	8.5	3.9
10	65L559TA1	\$198.00	12	5.90	150	3.18	81	8.5	3.9
12.5	65L560TA1	\$201.00	12	5.90	150	3.18	81	8.5	3.9
15	65L561TA1	\$206.00	8	5.94	151	5.54	141	11.7	5.3
17.5	65L562TA1	\$219.00	8	5.94	151	5.54	141	11.7	5.3
20	65L563TA1	\$228.00	8	5.94	151	5.54	141	11.7	5.3
22.5	65L564TA1	\$244.00	8	5.94	151	5.54	141	11.7	5.3
25	65L565TA1	\$250.00	8	5.94	151	5.54	141	11.7	5.3
27.5	65L566TA1	\$269.00	8	5.94	151	8.15	207	14.9	6.8
30	65L567TA1	\$282.00	8	5.94	151	8.15	207	14.9	6.8

Note: To determine kVAR at 208V, multiply kVAR at 240V by .75.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Dimensions

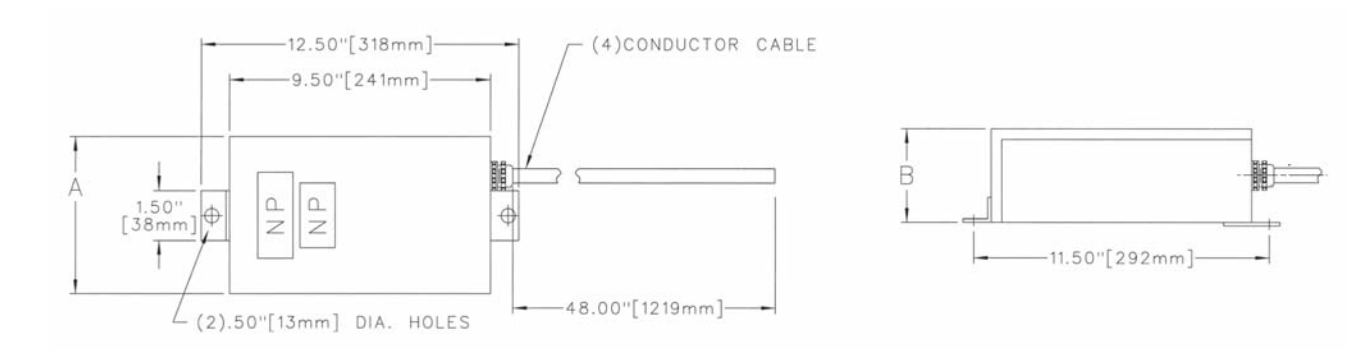


Figure 1

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3-Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

Description

Type GEM™ Capacitors feature multiple cells which are assembled in parallel in an enclosure suitable for both indoor and outdoor applications (NEMA 12 and NEMA 3). Each capacitor cell features the patented GE Pressure Sensitive Interrupter (PSI) that protects against cell rupture. The metallized polypropylene film dielectric system provides an instantaneous self-healing action and greatly reduced energy losses. GEM™ capacitors include discharge resistors to reduce voltage to 50 volts or less within one minute of de-energization. GEM™ also features Dielektrol® impregnant which is a biodegradable Class IIIB combustible fluid.

GEM™ capacitors offer high reliability and long life. They are suitable for operation over a temperature range of -40°C to +46°.

The GEM™ assemblies are UL Listed and CSA labeled.



Typical Type GEM™, cover removed

NOTE: Replacement EDT/EWT Equipments including 55L series capacitors are available on request. Please contact the factory. (For New Equipments use the 65L Series.)

Line Fuses/Blown Fuse Lights

To be specified by customer. Order by appropriate basic product number plus suffix for a complete product number.

NOTE: NEC Article 460-8B requires capacitors to have overcurrent protection in all ungrounded conductors—except if connected on the load side of a motor overload protective device.

Mounting

GEM™ 65L800 series can be mounted upright on any level surface, such as a floor, top of a motor control center, or directly to any wall with brackets provided.

GEM™ 65L900 series equipments can also be mounted upright on any level surface. An adapter kit is required for wall mounting. Order the wall mounting kit by product number 186C323600005, **List Price \$85.00, GO-410.**

Line Connection and Cable Entrance

Line connection and cable entrance on Figure 1 equipments must be made through the right end panel. For all other equipment figures the entrance may be made through either end panel (after first punching out the appropriate size hole).

Replacement Fuses

Unit Rating		Fuse Amps	Fuse Class	Product Number	List Price GO-410
Volts	3-ph ¹ kVAR				
240	1-5	30	MIDGET	147A781600030	\$11.00
240	6-15	100	T	147A781600028	\$24.00
240	17.5-40	200	T	147A781600029	\$24.00
480	1-12.5	30	MIDGET	147A781600030	\$11.00
480	15-32.5	100	T	147A781600028	\$24.00
480	35-100	200	T	147A781600029	\$24.00
600	1-15	30	MIDGET	147A781600026	\$11.00
600	17.5-40	100	T	147A781600028	\$24.00
600	42.5-60	200	T	147A781600029	\$24.00

Note: Obsolete fuses 147A781600024 and 147A781600025 used in 65L3___, 65L6___, and 37F6___ assemblies have been replaced by fuse kit 308A318700001, **List Price \$48.00, GO-410.**

¹Refer to factory for single-phase fuses.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3-Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

1.0-50 kVAR, 240 Volts

240 Volt, 3-phase Delta								240 Volt, 1-phase						Fig. No. (See page 20-22)	Approx. Weight	
kVAR	Basic Product No.	No Fuses ¹		3 Fuses ¹		3 Fuses, 3 Lights ¹		No Fuses		Fuses		Fuses & Lights			Lbs	Kg
		Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410			
1.0	65L800	TL1	\$181.00	TN1	\$201.00	TQ1	\$231.00	TX1	\$181.00	TY1	\$201.00	TZ1	\$231.00	1	9	4.1
1.5	65L801	TL1	\$181.00	TN1	\$201.00	TQ1	\$231.00	TX1	\$181.00	TY1	\$201.00	TZ1	\$231.00	1	9	4.1
2.0	65L802	TL1	\$181.00	TN1	\$201.00	TQ1	\$231.00	TX1	\$181.00	TY1	\$201.00	TZ1	\$231.00	1	9	4.1
2.5	65L803	TL1	\$181.00	TN1	\$201.00	TQ1	\$231.00	TX1	\$181.00	TY1	\$201.00	TZ1	\$231.00	1	9	4.1
3.0	65L804	TL1	\$181.00	TN1	\$201.00	TQ1	\$231.00	TX1	\$181.00	TY1	\$201.00	TZ1	\$231.00	1	9	4.1
4.0	65L805	TL1	\$181.00	TN1	\$201.00	TQ1	\$231.00	TX1	\$181.00	TY1	\$201.00	TZ1	\$231.00	1	10	4.5
5.0	65L806	TL1	\$199.00	TN1	\$219.00	TQ1	\$249.00	TX1	\$199.00	TY1	\$219.00	TZ1	\$249.00	1	10	4.5
6.0	65L807	TL1	\$229.00	TN1	\$273.00	TQ1	\$303.00	TX1	\$229.00	TY1	\$249.00	TZ1	\$269.00	1	11	5.0
7.5	65L808	TL1	\$251.00	TN1	\$295.00	TQ1	\$325.00	TX1	\$251.00	TY1	\$271.00	TZ1	\$291.00	1	15	6.8
10.0	65L809	TL1	\$302.00	TN1	\$346.00	TQ1	\$376.00	TX1	\$302.00	TY1	\$322.00	TZ1	\$342.00	1	15	6.8
12.5	65L810	TL2	\$361.00	TN2	\$405.00	TQ2	\$435.00	TX1	\$361.00	TY1	\$381.00	TZ1	\$401.00	1	19	8.6
15.0	65L811	TL2	\$412.00	TN2	\$456.00	TQ2	\$486.00	TX1	\$412.00	TY1	\$432.00	TZ1	\$452.00	2	19	8.6
17.5	65L812	TL2	\$467.00	TN2	\$511.00	TQ2	\$541.00	TX1	\$467.00	TY1	\$487.00	TZ1	\$507.00	2	22	10.0
20.0	65L813	TL2	\$514.00	TN2	\$558.00	TQ2	\$588.00	TX1	\$514.00	TY1	\$534.00	TZ1	\$554.00	2	22	10.0
22.5	65L814	TL2	\$566.00	TN2	\$610.00	TQ2	\$640.00	TX1	\$566.00	TY1	\$586.00	TZ1	\$606.00	2	32	14.5
25.0	65L815	TL2	\$602.00	TN2	\$646.00	TQ2	\$676.00	TX1	\$602.00	TY1	\$622.00	TZ1	\$642.00	2	32	14.5
27.5	65L816	TL2	\$675.00	TN2	\$719.00	TQ2	\$749.00	TX1	\$675.00	TY1	\$695.00	TZ1	\$715.00	3	32	14.5
30.0	65L817	TL2	\$730.00	TN2	\$774.00	TQ2	\$804.00	TX1	\$730.00	TY1	\$750.00	TZ1	\$770.00	3	32	14.5
32.5	65L818	TL2	\$800.00	TN2	\$844.00	TQ2	\$874.00	TX1	\$800.00	TY1	\$820.00	TZ1	\$840.00	3	36	16.4
35.0	65L819	TL2	\$858.00	TN2	\$902.00	TQ2	\$932.00	TX1	\$858.00	TY1	\$878.00	TZ1	\$898.00	3	38	17.3
37.5	65L820	TL2	\$913.00	TN2	\$957.00	TQ2	\$987.00	TX1	\$913.00	TY1	\$933.00	TZ1	\$953.00	3	38	17.3
40.0	65L821	TL2	\$968.00	TN2	\$1012.00	TQ2	\$1042.00	TX1	\$946.00	TY1	\$988.00	TZ1	\$1008.00	3	38	17.3
42.5	65L822	TL2	\$1022.00	TN2	\$1109.00	TQ2	\$1169.00							3	38	17.3
45.0	65L823	TL2	\$1095.00	TN2	\$1183.00	TQ2	\$1243.00							3	38	17.3
47.5	65L824	TL2	\$1107.00	TN2	\$1195.00	TQ2	\$1255.00							3	38	17.3
50.0	65L825	TL2	\$1120.00	TN2	\$1208.00	TQ2	\$1268.00							3	38	17.3

¹See Note on page 20-15 referring to NEC Article 460-8B.

EXAMPLE: 240V, 3-phase, 25 kVAR, with 3 fuses and 3 blown fuse lights:

Product Number: 65L815TQ2, Price: **\$676.00**

Note: To determine kVAR at 208V, multiply kVAR at 240V by .75.

Consult factory for additional Single-phase designs.

See page 20-22 for outline diagrams and dimensions.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3-Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

42.5-550 kVAR, 240 Volts

240 Volt, 3-phase Delta								240 Volt, 1-phase						Fig. No. (See page 20-23)	Approx. Weight	
kVAR	Basic Product No.	No Fuses ¹		3 Fuses ¹		3 Fuses, 3 Lights ¹		No Fuses		Fuses		Fuses & Lights			Lbs	Kg
		Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410			
55.0	65L904	TL3	\$1235.00	TN3	\$1323.00	TQ3	\$1383.00	TX2	\$1235.00	TY2	\$1275.00	TZ2	\$1315.00	4	87	39.5
60.0	65L905	TL3	\$1351.00	TN3	\$1439.00	TQ3	\$1499.00	TX2	\$1351.00	TY2	\$1391.00	TZ2	\$1431.00	4	87	39.5
65.0	65L906	TL3	\$1466.00	TN3	\$1554.00	TQ3	\$1614.00	TX2	\$1466.00	TY2	\$1506.00	TZ2	\$1546.00	4	87	39.5
70.0	65L907	TL3	\$1581.00	TN3	\$1669.00	TQ3	\$1729.00	TX2	\$1581.00	TY2	\$1621.00	TZ2	\$1661.00	4	89	40.5
75.0	65L908	TL3	\$1695.00	TN3	\$1783.00	TQ3	\$1843.00	TX2	\$1695.00	TY2	\$1735.00	TZ2	\$1775.00	4	89	40.5
80.0	65L909	TL3	\$1808.00	TN3	\$1896.00	TQ3	\$1956.00	TX2	\$1808.00	TY2	\$1848.00	TZ2	\$1888.00	4	89	40.5
85.0	65L910	TL3	\$2010.00	TN3	\$2142.00	TQ3	\$2232.00	TX2	\$2010.00	TY2	\$2070.00	TZ2	\$2130.00	4	89	40.5
90.0	65L911	TL3	\$2231.00	TN3	\$2363.00	TQ3	\$2453.00	TX2	\$2231.00	TY2	\$2291.00	TZ2	\$2351.00	4	89	40.5
95.0	65L912	TL3	\$2320.00	TN3	\$2452.00	TQ3	\$2542.00	TX2	\$2320.00	TY2	\$2380.00	TZ2	\$2440.00	4	89	40.5
100.0	65L913	TL3	\$2410.00	TN3	\$2542.00	TQ3	\$2632.00	TX2	\$2410.00	TY2	\$2470.00	TZ2	\$2530.00	4	89	40.5
110.0	65L914	TL3	\$2593.00	TN3	\$2725.00	TQ3	\$2815.00	TX2	\$2593.00	TY2	\$2653.00	TZ2	\$2713.00	5	136	61.8
120.0	65L915	TL3	\$2777.00	TN3	\$2909.00	TQ3	\$2999.00	TX2	\$2777.00	TY2	\$2837.00	TZ2	\$2897.00	5	136	61.8
125.0	65L916	TL3	\$2940.00	TN3	\$3116.00	TQ3	\$3236.00	TX2	\$2940.00	TY2	\$3020.00	TZ2	\$3100.00	5	136	61.8
130.0	65L917	TL3	\$3040.00	TN3	\$3216.00	TQ3	\$3336.00	TX2	\$3040.00	TY2	\$3120.00	TZ2	\$3200.00	5	142	64.5
140.0	65L918	TL3	\$3141.00	TN3	\$3317.00	TQ3	\$3437.00	TX2	\$3141.00	TY2	\$3221.00	TZ2	\$3301.00	5	148	67.3
150.0	65L919	TL3	\$3368.00	TN3	\$3544.00	TQ3	\$3664.00	TX2	\$3368.00	TY2	\$3448.00	TZ2	\$3528.00	5	148	67.3
160.0	65L920	TL3	\$3598.00	TN3	\$3774.00	TQ3	\$3894.00	TX2	\$3598.00	TY2	\$3678.00	TZ2	\$3758.00	6	181	82.3
170.0	65L921	TL3	\$3800.00	TN3	\$4020.00	TQ3	\$4170.00	TX2	\$3800.00	TY2	\$3900.00	TZ2	\$4000.00	6	181	82.3
175.0	65L922	TL3	\$4100.00	TN3	\$4320.00	TQ3	\$4470.00	TX2	\$4100.00	TY2	\$4200.00	TZ2	\$4300.00	6	186	84.5
180.0	65L923	TL3	\$4300.00	TN3	\$4520.00	TQ3	\$4670.00	TX2	\$4300.00	TY2	\$4400.00	TZ2	\$4500.00	6	186	84.5
190.0	65L924	TL3	\$4600.00	TN3	\$4820.00	TQ3	\$4970.00	TX2	\$4600.00	TY2	\$4700.00	TZ2	\$4800.00	6	191	86.8
200.0	65L925	TL3	\$4700.00	TN3	\$4920.00	TQ3	\$5070.00	TX2	\$4700.00	TY2	\$4800.00	TZ2	\$4900.00	6	196	89.1
210.0	65L926	TL3	\$4946.00	TN3	\$5166.00	TQ3	\$5316.00							7	230	104.5
220.0	65L927	TL3	\$5329.00	TN3	\$5349.00	TQ3	\$5499.00							7	230	104.5
230.0	65L928	TL3	\$5512.00	TN3	\$5532.00	TQ3	\$5682.00							7	235	106.8
240.0	65L929	TL3	\$5695.00	TN3	\$5715.00	TQ3	\$5865.00							7	240	109.1
250.0	65L930	TL3	\$5878.00	TN3	\$5898.00	TQ3	\$6048.00							7	245	111.4

¹See Note on page 20-15 referring to NEC Article 460-8B.
Consult factory for additional Single-phase designs.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3 - Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

1.0-100 kVAR, 480 Volts

480 Volt, 3-phase Delta								480 Volt, 1-phase						Fig. No. (See page 20-22)	Approx. Weight	
kVAR	Basic Product No.	No Fuses ¹		3 Fuses ¹		3 Fuses, 3 Lights ¹		No Fuses		Fuses		Fuses & Lights				
		Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410		Lbs	Kg
1.0	65L800	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
1.5	65L801	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
2.0	65L802	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
2.5	65L803	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
3.0	65L804	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
4.0	65L805	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
5.0	65L806	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
6.0	65L807	TA1	\$161.00	TC1	\$181.00	TE1	\$211.00	TR1	\$161.00	TS1	\$181.00	TT1	\$211.00	1	9	4.1
7.5	65L808	TA1	\$174.00	TC1	\$194.00	TE1	\$224.00	TR1	\$174.00	TS1	\$194.00	TT1	\$224.00	1	10	4.5
10.0	65L809	TA1	\$181.00	TC1	\$201.00	TE1	\$231.00	TR1	\$181.00	TS1	\$201.00	TT1	\$231.00	1	10	4.5
12.5	65L810	TA1	\$218.00	TC1	\$238.00	TE1	\$268.00	TR1	\$218.00	TS1	\$238.00	TT1	\$268.00	1	10	4.5
15.0	65L811	TA1	\$247.00	TC1	\$291.00	TE1	\$321.00	TR1	\$247.00	TS1	\$267.00	TT1	\$287.00	1	13	5.9
17.5	65L812	TA1	\$269.00	TC1	\$313.00	TE1	\$343.00	TR1	\$269.00	TS1	\$289.00	TT1	\$309.00	1	13	5.9
20.0	65L813	TA1	\$287.00	TC1	\$331.00	TE1	\$361.00	TR1	\$287.00	TS1	\$307.00	TT1	\$327.00	1	13	5.9
22.5	65L814	TA1	\$309.00	TC1	\$353.00	TE1	\$383.00	TR1	\$309.00	TS1	\$329.00	TT1	\$349.00	1	13	5.9
25.0	65L815	TA1	\$320.00	TC1	\$364.00	TE1	\$394.00	TR1	\$320.00	TS1	\$340.00	TT1	\$360.00	1	13	5.9
27.5	65L816	TA1	\$342.00	TC1	\$386.00	TE1	\$416.00	TR1	\$342.00	TS1	\$362.00	TT1	\$382.00	2	19	8.6
30.0	65L817	TA1	\$357.00	TC1	\$401.00	TE1	\$431.00	TR1	\$357.00	TS1	\$377.00	TT1	\$397.00	2	19	8.6
32.5	65L818	TA1	\$379.00	TC1	\$423.00	TE1	\$453.00	TR1	\$379.00	TS1	\$399.00	TT1	\$419.00	2	19	8.6
35.0	65L819	TA1	\$397.00	TC1	\$441.00	TE1	\$471.00	TR1	\$397.00	TS1	\$417.00	TT1	\$437.00	2	19	8.6
37.5	65L820	TA1	\$419.00	TC1	\$463.00	TE1	\$493.00	TR1	\$419.00	TS1	\$439.00	TT1	\$459.00	2	19	8.6
40.0	65L821	TA1	\$441.00	TC1	\$485.00	TE1	\$515.00	TR1	\$441.00	TS1	\$461.00	TT1	\$481.00	2	22	10.0
42.5	65L822	TA1	\$467.00	TC1	\$511.00	TE1	\$541.00	TR1	\$467.00	TS1	\$487.00	TT1	\$507.00	2	22	10.0
45.0	65L823	TA1	\$489.00	TC1	\$533.00	TE1	\$563.00	TR1	\$489.00	TS1	\$509.00	TT1	\$529.00	2	22	10.0
47.5	65L824	TA1	\$496.00	TC1	\$540.00	TE1	\$570.00	TR1	\$496.00	TS1	\$516.00	TT1	\$536.00	2	22	10.0
50.0	65L825	TA1	\$503.00	TC1	\$547.00	TE1	\$577.00	TR1	\$503.00	TS1	\$523.00	TT1	\$543.00	2	22	10.0
55.0	65L826	TA1	\$536.00	TC1	\$580.00	TE1	\$610.00	TR1	\$536.00	TS1	\$556.00	TT1	\$576.00	3	32	14.5
60.0	65L827	TA1	\$565.00	TC1	\$609.00	TE1	\$639.00	TR1	\$565.00	TS1	\$585.00	TT1	\$605.00	3	32	14.5
65.0	65L828	TA1	\$610.00	TC1	\$654.00	TE1	\$684.00	TR1	\$610.00	TS1	\$630.00	TT1	\$650.00	3	32	14.5
70.0	65L829	TA1	\$657.00	TC1	\$701.00	TE1	\$731.00	TR1	\$657.00	TS1	\$677.00	TT1	\$697.00	3	33	15.0
75.0	65L830	TA1	\$705.00	TC1	\$749.00	TE1	\$779.00	TR1	\$705.00	TS1	\$725.00	TT1	\$745.00	3	33	15.0
80.0	65L831	TA1	\$752.00	TC1	\$796.00	TE1	\$826.00	TR1	\$752.00	TS1	\$772.00	TT1	\$792.00	3	38	17.2
85.0	65L832	TA1	\$804.00	TC1	\$848.00	TE1	\$878.00	TR1	\$804.00	TS1	\$824.00	TT1	\$844.00	3	38	17.2
90.0	65L833	TA1	\$840.00	TC1	\$884.00	TE1	\$914.00	TR1	\$840.00	TS1	\$860.00	TT1	\$880.00	3	38	17.2
95.0	65L834	TA1	\$886.00	TC1	\$930.00	TE1	\$960.00	TR1	\$886.00	TS1	\$906.00	TT1	\$926.00	3	38	17.2
100.0	65L835	TA1	\$932.00	TC1	\$976.00	TE1	\$1006.00	TR1	\$932.00	TS1	\$952.00	TT1	\$972.00	3	38	17.2

¹ See Note on page 20-15 referring to NEC Article 460-8B.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3 - Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

110-500 kVAR, 480 Volts

480 Volt, 3-phase Delta								480 Volt, 1-phase						Fig. No. (See page 20-23)	Approx. Weight	
KVAR	Basic Product No.	No Fuses ¹		3 Fuses ¹		3 Fuses, 3 Lights ¹		No Fuses		Fuses		Fuses & Lights			Lbs	Kg
		Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410			
110.0	65L914	TA2	\$1095.00	TC2	\$1183.00	TE2	\$1243.00	TR2	\$1095.00	TS2	\$1135.00	TT2	\$1175.00	4	87	39.5
120.0	65L915	TA2	\$1170.00	TC2	\$1258.00	TE2	\$1318.00	TR2	\$1170.00	TS2	\$1210.00	TT2	\$1250.00	4	87	39.5
125.0	65L916	TA2	\$1210.00	TC2	\$1298.00	TE2	\$1358.00	TR2	\$1210.00	TS2	\$1250.00	TT2	\$1290.00	4	87	39.5
130.0	65L917	TA2	\$1250.00	TC2	\$1338.00	TE2	\$1398.00	TR2	\$1250.00	TS2	\$1290.00	TT2	\$1330.00	4	87	39.5
140.0	65L918	TA2	\$1330.00	TC2	\$1418.00	TE2	\$1478.00	TR2	\$1330.00	TS2	\$1370.00	TT2	\$1410.00	4	89	40.8
150.0	65L919	TA2	\$1390.00	TC2	\$1478.00	TE2	\$1538.00	TR2	\$1390.00	TS2	\$1430.00	TT2	\$1470.00	4	89	40.8
160.0	65L920	TA2	\$1485.00	TC2	\$1573.00	TE2	\$1633.00	TR2	\$1485.00	TS2	\$1525.00	TT2	\$1565.00	4	99	44.9
170.0	65L921	TA2	\$1565.00	TC2	\$1653.00	TE2	\$1713.00	TR2	\$1565.00	TS2	\$1605.00	TT2	\$1645.00	4	99	44.9
175.0	65L922	TA2	\$1605.00	TC2	\$1693.00	TE2	\$1753.00	TR2	\$1605.00	TS2	\$1645.00	TT2	\$1685.00	4	99	44.9
180.0	65L923	TA2	\$1640.00	TC2	\$1728.00	TE2	\$1788.00	TR2	\$1640.00	TS2	\$1680.00	TT2	\$1720.00	4	99	44.9
190.0	65L924	TA2	\$1720.00	TC2	\$1808.00	TE2	\$1868.00	TR2	\$1720.00	TS2	\$1760.00	TT2	\$1800.00	4	99	44.9
200.0	65L925	TA2	\$1790.00	TC2	\$1878.00	TE2	\$1938.00	TR2	\$1790.00	TS2	\$1830.00	TT2	\$1870.00	4	99	44.9
210.0	65L926	TA2	\$1860.00	TC2	\$1992.00	TE2	\$2082.00	TR2	\$1860.00	TS2	\$1920.00	TT2	\$1980.00	5	136	61.7
220.0	65L927	TA2	\$1935.00	TC2	\$2067.00	TE2	\$2157.00	TR2	\$1935.00	TS2	\$1995.00	TT2	\$2055.00	5	136	61.7
230.0	65L928	TA2	\$2015.00	TC2	\$2147.00	TE2	\$2237.00	TR2	\$2015.00	TS2	\$2075.00	TT2	\$2135.00	5	136	61.7
240.0	65L929	TA2	\$2095.00	TC2	\$2227.00	TE2	\$2317.00	TR2	\$2095.00	TS2	\$2155.00	TT2	\$2215.00	5	138	62.6
250.0	65L930	TA2	\$2165.00	TC2	\$2297.00	TE2	\$2387.00	TR2	\$2165.00	TS2	\$2225.00	TT2	\$2285.00	5	138	62.6
260.0	65L931	TA2	\$2250.00	TC2	\$2382.00	TE2	\$2472.00	TR2	\$2250.00	TS2	\$2310.00	TT2	\$2370.00	5	142	64.4
270.0	65L932	TA2	\$2330.00	TC2	\$2462.00	TE2	\$2552.00	TR2	\$2330.00	TS2	\$2390.00	TT2	\$2450.00	5	143	64.9
280.0	65L933	TA2	\$2410.00	TC2	\$2542.00	TE2	\$2632.00	TR2	\$2410.00	TS2	\$2470.00	TT2	\$2530.00	5	148	67.1
290.0	65L934	TA2	\$2490.00	TC2	\$2622.00	TE2	\$2712.00	TR2	\$2490.00	TS2	\$2550.00	TT2	\$2610.00	5	148	67.1
300.0	65L935	TA2	\$2565.00	TC2	\$2697.00	TE2	\$2787.00	TR2	\$2565.00	TS2	\$2625.00	TT2	\$2685.00	5	148	67.1
325.0	65L936	TA2	\$2833.00	TC2	\$3009.00	TE2	\$3129.00	TR2	\$2833.00	TS2	\$2913.00	TT2	\$2993.00	6	181	82.1
350.0	65L937	TA2	\$3120.00	TC2	\$3296.00	TE2	\$3416.00	TR2	\$3120.00	TS2	\$3200.00	TT2	\$3280.00	6	186	84.4
375.0	65L938	TA2	\$3350.00	TC2	\$3526.00	TE2	\$3646.00	TR2	\$3350.00	TS2	\$3430.00	TT2	\$3510.00	6	191	86.6
400.0	65L939	TA2	\$3580.00	TC2	\$3756.00	TE2	\$3876.00	TR2	\$3580.00	TS2	\$3660.00	TT2	\$3740.00	6	196	88.9
425.0	65L940	TA2	\$3788.00	TC2	\$4008.00	TE2	\$4158.00	TR2	\$3788.00	TS2	\$3888.00	TT2	\$3988.00	7	230	104.3
450.0	65L941	TA2	\$4015.00	TC2	\$4235.00	TE2	\$4385.00	TR2	\$4015.00	TS2	\$4115.00	TT2	\$4215.00	7	235	106.6
475.0	65L942	TA2	\$4180.00	TC2	\$4400.00	TE2	\$4550.00	TR2	\$4180.00	TS2	\$4280.00	TT2	\$4380.00	7	240	108.9
500.0	65L943	TA2	\$4345.00	TC2	\$4565.00	TE2	\$4715.00	TR2	\$4345.00	TS2	\$4445.00	TT2	\$4545.00	7	245	111.1

¹See Note on page 20-15 referring to NEC Article 460-8B.

EXAMPLE: 480V, 3-phase, 50 kVAR, with 3 fuses no lights:

Product Number: 65L825TC1, Price: **\$547.00**



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3-Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

1.0-100 kVAR, 600 Volts

600 Volt, 3-phase Wye								Fig. No. (See page 20-22)	Approx. Weight	
kVAR	Basic Product No.	No Fuses ¹		3 Fuses ¹		3 Fuses, 3 Lights ¹			Lbs	Kg
		Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410			
1.0	65L800	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	9	4.1
1.5	65L801	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	9	4.1
2.0	65L802	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	9	4.1
2.5	65L803	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	9	4.1
3.0	65L804	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	9	4.1
4.0	65L805	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	9	4.1
5.0	65L806	TF1	\$152.00	TH1	\$172.00	TK1	\$202.00	1	10	4.5
6.0	65L807	TF1	\$167.00	TH1	\$187.00	TK1	\$217.00	1	10	4.5
7.5	65L808	TF1	\$178.00	TH1	\$198.00	TK1	\$228.00	1	10	4.5
10.0	65L809	TF2	\$185.00	TH2	\$205.00	TK2	\$235.00	1	12	5.4
12.5	65L810	TF2	\$222.00	TH2	\$242.00	TK2	\$272.00	1	12	5.4
15.0	65L811	TF2	\$251.00	TH2	\$271.00	TK2	\$301.00	1	13	5.9
17.5	65L812	TF2	\$280.00	TH2	\$324.00	TK2	\$354.00	1	13	5.9
20.0	65L813	TF2	\$302.00	TH2	\$346.00	TK2	\$376.00	1	13	5.9
22.5	65L814	TF2	\$320.00	TH2	\$364.00	TK2	\$394.00	1	13	5.9
25.0	65L815	TF2	\$342.00	TH2	\$386.00	TK2	\$416.00	1	13	5.9
27.5	65L816	TF2	\$361.00	TH2	\$405.00	TK2	\$435.00	2	19	8.6
30.0	65L817	TF2	\$372.00	TH2	\$416.00	TK2	\$446.00	2	19	8.6
32.5	65L818	TF2	\$412.00	TH2	\$456.00	TK2	\$486.00	2	19	8.6
35.0	65L819	TF2	\$430.00	TH2	\$474.00	TK2	\$504.00	2	19	8.6
37.5	65L820	TF2	\$448.00	TH2	\$492.00	TK2	\$522.00	2	19	8.6
40.0	65L821	TF2	\$467.00	TH2	\$511.00	TK2	\$541.00	2	22	10.0
42.5	65L822	TF2	\$485.00	TH2	\$529.00	TK2	\$559.00	2	22	10.0
45.0	65L823	TF2	\$503.00	TH2	\$547.00	TK2	\$577.00	2	22	10.0
47.5	65L824	TF2	\$523.00	TH2	\$567.00	TK2	\$597.00	2	22	10.0
50.0	65L825	TF2	\$544.00	TH2	\$588.00	TK2	\$618.00	2	22	10.0
55.0	65L826	TF2	\$584.00	TH2	\$628.00	TK2	\$658.00	3	32	14.5
60.0	65L827	TF2	\$624.00	TH2	\$668.00	TK2	\$698.00	3	32	14.5
65.0	65L828	TF2	\$644.00	TH2	\$732.00	TK2	\$792.00	3	32	14.5
70.0	65L829	TF2	\$681.00	TH2	\$769.00	TK2	\$829.00	3	33	15.0
75.0	65L830	TF2	\$747.00	TH2	\$835.00	TK2	\$895.00	3	33	15.0
80.0	65L831	TF2	\$809.00	TH2	\$897.00	TK2	\$957.00	3	38	17.3
85.0	65L832	TF2	\$860.00	TH2	\$948.00	TK2	\$1008.00	3	38	17.3
90.0	65L833	TF2	\$912.00	TH2	\$1000.00	TK2	\$1060.00	3	38	17.3
95.0	65L834	TF2	\$951.00	TH2	\$1039.00	TK2	\$1099.00	3	38	17.3
100.0	65L835	TF2	\$990.00	TH2	\$1078.00	TK2	\$1138.00	3	38	17.3

¹ See Note on page 20-15 referring to NEC Article 460-8B.



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Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3-Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

65-500 kVAR, 600 Volts

600 Volt, 3-phase Wye								Fig. No. (See page 20-23)	Approx. Weight	
KVAR	Basic Product No.	No Fuses ¹		3 Fuses ¹		3 Fuses, 3 Lights ¹			Lbs	Kg
		Suffix	List Price GO-410	Suffix	List Price GO-410	Suffix	List Price GO-410			
110.0	65L914	TF3	\$1095.00	TH3	\$1183.00	TK3	\$1243.00	4	87	39.5
120.0	65L915	TF3	\$1170.00	TH3	\$1258.00	TK3	\$1318.00	4	87	39.5
125.0	65L916	TF3	\$1190.00	TH3	\$1322.00	TK3	\$1412.00	4	87	39.5
130.0	65L917	TF3	\$1230.00	TH3	\$1362.00	TK3	\$1452.00	4	87	39.5
140.0	65L918	TF3	\$1310.00	TH3	\$1442.00	TK3	\$1532.00	4	89	40.5
150.0	65L919	TF3	\$1370.00	TH3	\$1502.00	TK3	\$1592.00	4	99	45.0
160.0	65L920	TF3	\$1465.00	TH3	\$1597.00	TK3	\$1687.00	4	99	45.0
170.0	65L921	TF3	\$1545.00	TH3	\$1677.00	TK3	\$1767.00	4	99	45.0
175.0	65L922	TF3	\$1585.00	TH3	\$1717.00	TK3	\$1807.00	4	99	45.0
180.0	65L923	TF3	\$1620.00	TH3	\$1752.00	TK3	\$1842.00	4	99	45.0
190.0	65L924	TF3	\$1680.00	TH3	\$1856.00	TK3	\$1976.00	4	99	45.0
200.0	65L925	TF3	\$1750.00	TH3	\$1926.00	TK3	\$2046.00	4	99	45.0
210.0	65L926	TF3	\$1840.00	TH3	\$2016.00	TK3	\$2136.00	5	136	61.8
220.0	65L927	TF3	\$1915.00	TH3	\$2091.00	TK3	\$2211.00	5	136	61.8
230.0	65L928	TF3	\$1995.00	TH3	\$2171.00	TK3	\$2291.00	5	136	61.8
240.0	65L929	TF3	\$2075.00	TH3	\$2251.00	TK3	\$2371.00	5	138	62.7
250.0	65L930	TF3	\$2125.00	TH3	\$2345.00	TK3	\$2495.00	5	138	62.7
260.0	65L931	TF3	\$2210.00	TH3	\$2430.00	TK3	\$2580.00	5	142	64.5
270.0	65L932	TF3	\$2290.00	TH3	\$2510.00	TK3	\$2660.00	5	143	65.0
280.0	65L933	TF3	\$2370.00	TH3	\$2590.00	TK3	\$2740.00	5	148	67.3
290.0	65L934	TF3	\$2450.00	TH3	\$2670.00	TK3	\$2820.00	5	148	67.3
300.0	65L935	TF3	\$2525.00	TH3	\$2745.00	TK3	\$2895.00	6	148	67.3
325.0	65L936	TF3	\$2768.00	TH3	\$2988.00	TK3	\$3138.00	6	181	82.3
350.0	65L937	TF3	\$3011.00	TH3	\$3231.00	TK3	\$3381.00	6	186	84.5
370.0	65L938	TF3	\$3254.00	TH3	\$3474.00	TK3	\$3624.00	6	191	86.8
400.0	65L939	TF3	\$3497.00	TH3	\$3717.00	TK3	\$3867.00	6	196	89.1
425.0	65L940	TF3	\$3740.00	TH3	\$3960.00	TK3	\$4110.00	7	230	104.5
450.0	65L941	TF3	\$3983.00	TH3	\$4203.00	TK3	\$4353.00	7	235	106.8
475.0	65L942	TF3	\$4226.00	TH3	\$4446.00	TK3	\$4596.00	7	240	109.1
500.0	65L943	TF3	\$4469.00	TH3	\$4689.00	TK3	\$4839.00	7	245	111.4

¹See Note on page 20-15 referring to NEC Article 460-8B.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Section 20

240, 480, 600 Volts

Top View:

- Total width: 60" (152mm)
- Total depth: 7.00" (177.8mm)
- Distance from left edge to centerline of mounting holes: 3.94" (100.1mm)
- Distance between centerlines of mounting holes: 4.62" (117.4mm)
- Hole type: (2) .406" (10.3mm) Dia Holes

Front View:

- Total height: 8.00" (203.2mm)
- Distance from bottom edge to centerline of mounting holes: 4.00" (101.6mm)
- Distance between centerlines of mounting holes: 1.88" (47.8mm)
- Slot specification: (4) .312" (7.9mm) x .500" (12.7mm) Slots

Side View:

- Depth: 6.12" (155.5mm)
- Height from base to slot level: 6.00" (152.4mm)
- Light Location indicated by sun symbols
- Base offset: 1.00" (25.4mm)

Bottom View:

- Total width: 10.90" (274.3mm)
- Offset from side walls to slot level: .90" (22.9mm)

Technical drawing of the front view of a rectangular panel with dimensions in inches and millimeters. The panel has a central rectangular area with a width of 10.89 inches (274.3mm) and a height of 23.38 inches (593.9mm). The top edge features two .60 inch (15.2mm) wide slots, each containing a .406 inch (10.3mm) diameter hole. The top edge also has a 3.94 inch (100.1mm) wide section on the left and a 7.00 inch (177.8mm) wide section on the right. The bottom edge has a 12.38 inch (314.5mm) wide section on the left and a 6.00 inch (152.4mm) wide section on the right. The right edge has a 6.12 inch (155.5mm) wide section. The panel is mounted on a base with a 1.00 inch (25.4mm) wide section. The panel is labeled "Light Location" and "(4) .312 inch (7.9mm) x .500 inch (12.7mm) Slots".



Rev. 1/08
Prices and data subject
to change without notice

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof NEMA 12 and Outdoor Weatherproof NEMA 3

Single Phase or 3 - Phase

1.0-500 kVAR, 60 Hertz

240, 480, 600 Volts

Dimensions

Front View

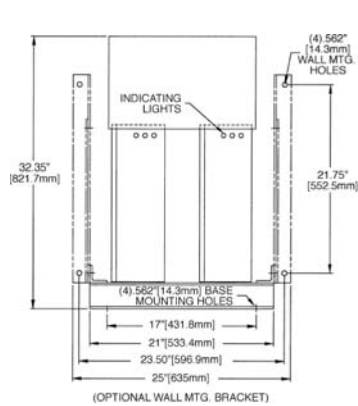


Fig. 4. 65L9__

Side View

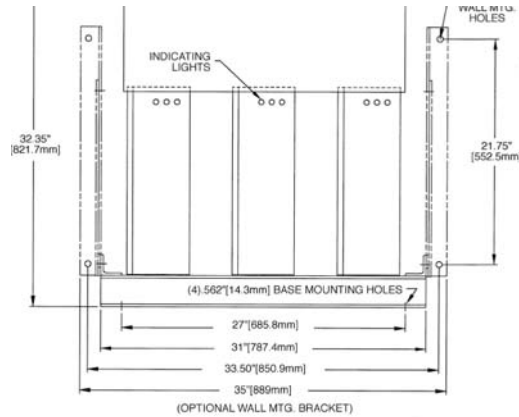


Fig. 5. 65L9__

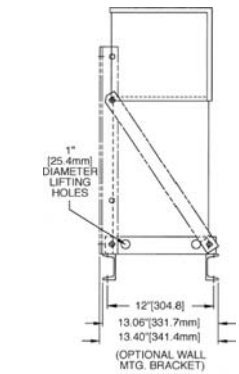


Fig. 8. All 65L9__ units

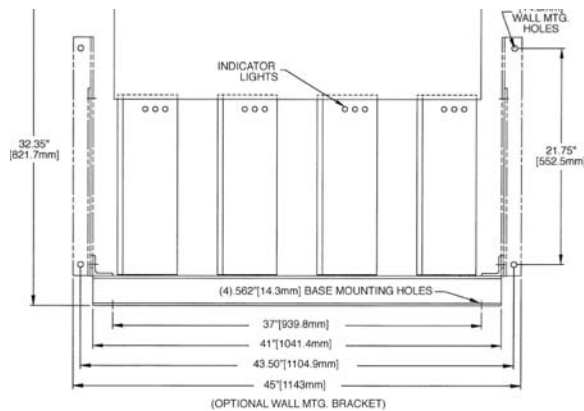


Fig. 6. 65L9__

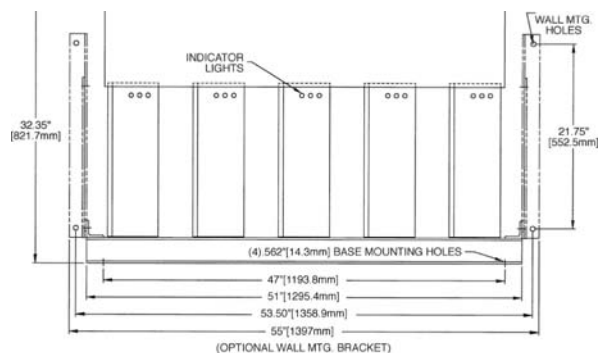


Fig. 7. 65L9__



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction with Harmonic Filter Equipment

Metal-Enclosed (GEMTRAP)

Section 20

Application

The proliferation of electronic equipment used to improve efficiencies and provide more reliable performance causes harmonics on power systems. Equipment such as variable speed AC and DC drives, uninterruptible power supplies, switching power supplies and other solid state controls or devices inject non-linear components into what was a linear system. The application of power factor correction capacitor systems can create unwanted increases in harmonic voltage and current unless the capacitors are properly applied with reactors, in series with the capacitor, to suppress harmful harmonics.

GE's line of fixed, harmonically suppressed capacitors permits the installation of power factor correction capacitors on systems with nonlinear components. The GEMTRAP system can be tuned to any desired frequency but is normally tuned to the 4.7th harmonic.

Design

The installation of this system is application specific. Contact the GE Sales office or the factory to ensure that the proper combination of capacitors and reactors is used. Misapplication may result without proper guidance.

Engineering Specifications Fixed Power Factor Capacitor Equipment

Applicable Standards

—NEMA, IEEE/ANSI, NEC

Ratings

- 240V, 25 to 50 kVAR; 3 ph
- 480 V, 25 to 200 kVAR; 3 ph
- 600 V; 25 to 200 kVAR; 3 ph

Capacitor Cell

—Industrial Rated Capacitor cells

Equipment Construction

- Enclosure and wiring hood:
 - Indoor/outdoor gasketed heavy gauge steel. Finished with a zinc rich primer and an ANSI #70 enamel overcoat. Louvered panels around reactors for protection and cooling.
- Mounting:
 - Floor mounting.
- Capacitor Fuses:
 - UL recognized, designed specifically for capacitor applications. Rated 600 VAC, 200kAIC. Fast acting and current limiting; allows clearing action of capacitors while protecting from catastrophic failures. Three phase fusing standard.
- Aluminum Connecting Bus for Parallel Cells
- Input Connections:
 - Listed Cu/Al Mechanical wire connectors, sized for kVAR requirements, mounted on top of bus for easy access.
- Harmonic Reactor

Options

- Blown fuse lights
- Consult factory for larger kVAR requirements
- Consult factory for custom applications and designs



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Fixed Low Voltage Power Factor Correction with Harmonic Filter Equipment

Section 20

Metal-Enclosed (GEMTRAP)

Three-phase, 60Hz

240, 480, 600 Volts

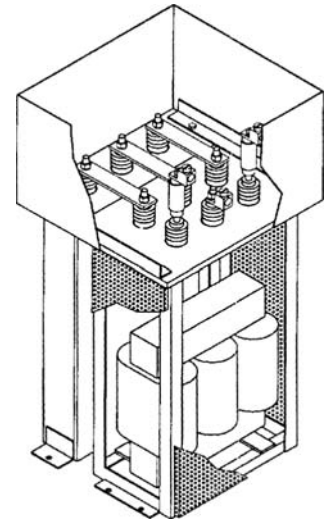
NEMA 1 Enclosure

Normally tuned for the 4.7th Harmonic

Can be tuned to any desired frequency.

Note: Do not apply Harmonic Filters without a detailed analysis of the power system.

Volts	kVAR	Basic Product No.	Caps with Reactors Incl (3) Fuses		Suffix	With Lights		Apprx. Wt. Lbs. (kg)
			Fig.	List Price, GO-410		List Price, GO-410		
240	25	38FH1025D333F	1	\$4100.00	L	\$4260.00	195 (88)	
240	35	38FH2035D333F	2	\$7500.00	L	\$7660.00	341 (155)	
240	40	38FH2040D333F	2	\$7600.00	L	\$7760.00	346 (157)	
240	45	38FH2045D333F	2	\$7700.00	L	\$7860.00	351 (160)	
240	50	38FH2050D333F	2	\$7800.00	L	\$7960.00	356 (162)	
480	25	38FH1025F333F	1	\$3750.00	L	\$3910.00	159 (72)	
480	30	38FH1030F333F	1	\$3150.00	L	\$3310.00	191 (87)	
480	40	38FH1040F333F	1	\$3200.00	L	\$3360.00	197 (90)	
480	50	38FH1050F333F	1	\$3250.00	L	\$3410.00	202 (92)	
480	75	38FH1075F333F	1	\$4125.00	L	\$4285.00	235 (107)	
480	80	38FH1080F333F	1	\$4000.00	L	\$4160.00	263 (120)	
480	100	38FH1100F333F	1	\$4500.00	L	\$4660.00	279 (127)	
480	120	38FH2120F333F	2	\$7800.00	L	\$7960.00	424 (195)	
480	125	38FH2125F333F	2	\$6875.00	L	\$7035.00	447 (203)	
480	140	38FH2140F333F	2	\$7700.00	L	\$7860.00	500 (227)	
480	150	38FH2150F333F	2	\$8250.00	L	\$8410.00	514 (234)	
480	175	38FH2175F333F	2	\$8750.00	L	\$8910.00	524 (238)	
480	200	38FH2200F333F	2	\$8400.00	L	\$8560.00	568 (258)	
600	25	38FH1025H333F	1	\$3750.00	L	\$3910.00	159 (72)	
600	30	38FH1030H333F	1	\$3150.00	L	\$3310.00	191 (87)	
600	40	38FH1040H333F	1	\$3200.00	L	\$3360.00	196 (89)	
600	50	38FH1050H333F	1	\$3250.00	L	\$3410.00	196 (89)	
600	75	38FH1075H333F	1	\$4125.00	L	\$4285.00	245 (111)	
600	80	38FH1080H333F	1	\$4000.00	L	\$4160.00	248 (113)	
600	100	38FH1100H333F	1	\$4500.00	L	\$4660.00	271 (123)	
600	120	38FH2120H333F	2	\$7800.00	L	\$7960.00	484 (220)	
600	125	38FH2125H333F	2	\$6875.00	L	\$7035.00	487 (221)	
600	140	38FH2140H333F	2	\$7700.00	L	\$7860.00	495 (225)	
600	150	38FH2150H333F	2	\$8250.00	L	\$8410.00	500 (227)	
600	175	38FH2175H333F	2	\$8750.00	L	\$8910.00	526 (239)	
600	200	38FH2200H333F	2	\$8400.00	L	\$8560.00	552 (251)	

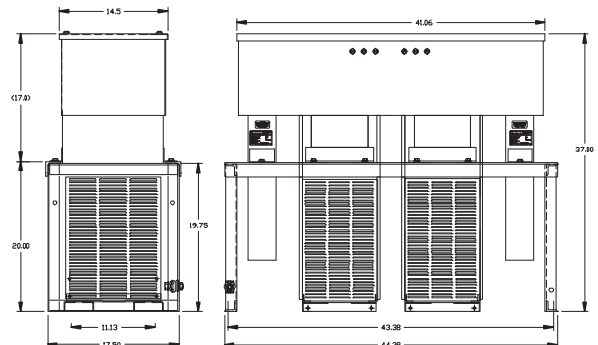
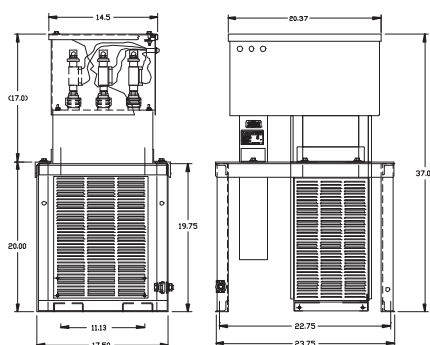


System Analysis Requirements

Primary	Volts
Transformer: L - L	kVA
Secondary	Volts
Transformer:	kVA
Transformer impedance	%
Fundamental Freq.	Hz
Total System Load	KW
Power Factor:	
Existing:	%
Desired	%

Include One-Line diagram, if available
Harmonic Analysis: Voltage/Current Spectrum

Outline Dimensions (inches)



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Automatic Fast-Switching LV Power Factor Correction Capacitors

GEMATIC® Quick Response

Section 20

Fast Response, Transient-Free Reactive Power Compensation Systems

- Ultra Fast Response (UFR): A real-time, transient-free system used to compensate extremely rapid loads within one cycle (typically 5-16 mSec).
- Fast Response (FR): A fast, transient-free system, used to compensate any load within 3-4 seconds.

Advantages

- Ultra Fast Response (UFR) and Fast Response (FR):
 - Transient-free capacitor group switching, using electronic switching elements
 - Prevent damage to sensitive electronic equipment
 - Saves energy
 - Harmonic filtration
 - Accurate power factor control, even in the presence of harmonics
 - Dramatically increases the life expectancy of switching elements and capacitors
 - Considerably lower temperature rise of capacitors and inductors due to unique scan feature
 - Built-in three phase network analyzer, measuring all network parameters including harmonics
 - Unique self-testing and comprehensive reporting feature
 - Power IQ
- Ultra Fast Response (UFR) (in addition to the above):
 - Cycle-by-cycle reactive power compensation (total acquisition time of 5-16 mSec)
 - Prevents voltage drop and flickering
 - Used for Real Time applications, such as spot welding and motor start-up
 - Enhances capacity of local generator systems, such as diesel and windmill generators
 - Combination of one to three single-phase systems available for unbalanced loads

Types Available

- Basic Systems: Include iron core reactors to limit the inrush current with either:
 - Detuned Systems: Include iron core reactors that detune the network to prevent resonance and absorb up to 50% of the 5th harmonic, or
 - Tuned Systems: Individually designed to absorb the 5th and 7th harmonics



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Capacitors, Arresters and Harmonic Filters

Automatic Fast-Switching LV Power Factor Correction Capacitors

GEMATIC® Quick Response

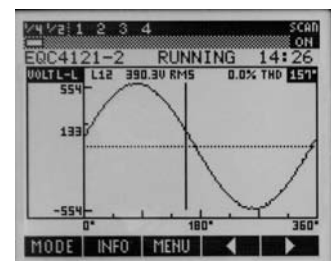
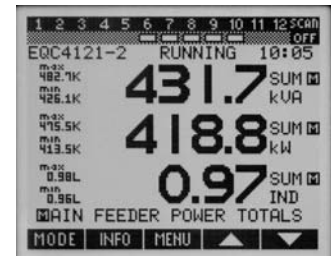
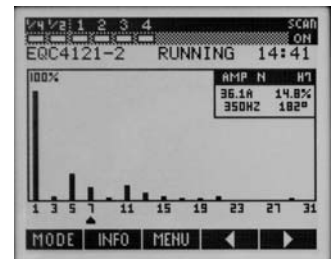
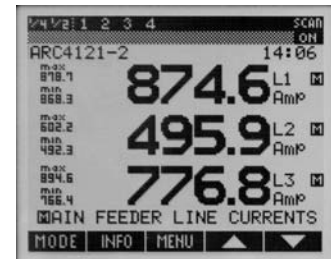
Section 20

Controller Specifications

Power Supply	115/230V, 50/60 Hz
LCD Display Size	94 x 76 mm
LCD Display Resolution	Graphic 160 x 128 pixels
LCD Display Type	FSTN, LED backlight
Frequency	45 to 65 Hz
Power Consumption	10 VA
Operating Temperature	-20° to +55°C
9 Analog Channels	3 current channels for mains load 2 current channels for Equalizer cabinet 4 voltage channels
Communications	RS485/422 communications port
Protocol	ELCOM, Modbus/RTU
Alarm	Voltage free N.O./N.C. relay, max 2A @ 250 Vac
Protection Class	IP 40
Dimensions	144 x 144 x 138 mm
Weight	1.4kg
Storage Temperature	-25° to 70°C
Electromagnetic Compatibility	EN50081-2, EN50082-2, EN55011, EN61000-4-2/3/4/5, ENV50204, EN50141
Safety Standards	EN61010-1, EN50439-1, UL508

Controller Features

Parameter	Phases	Loads	Measurement Level			
			1	2	3	4
Frequency	Common	Mains	•	•	•	•
Phase Current	L1, L2, L3	Mains, Load, Cap.	•	•	•	•
Neutral Current	Neutral	Mains	•	•	•	•
Phase to Phase Current	L1-2, L2-3, L3-1	Mains, Load	•	•	•	•
Phase Voltage	L1, L2, L3	Mains	•	•	•	•
Neutral Voltage	Neutral	Mains	•	•	•	•
Phase to Phase Voltage	L1-2, L2-3, L3-1	Mains	•	•	•	•
Active Power (kW)	L1, L2, L3, Total	Mains	•	•	•	•
Reactive Power (kVAR)	L1, L2, L3, Total	Mains, Load, Cap.	•	•	•	•
Apparent Power (kVA)	L1, L2, L3, Total	Mains, Load, Cap.	•	•	•	•
Power Factor	L1, L2, L3, Total	Mains, Load, Cap.	•	•	•	•
Time of use (TOU) — in, out, net, total:						
Active Energy (kWh)	Total	Mains	•	•	•	•
Reactive Energy (kVARh)	Total	Mains	•	•	•	•
THD at Phase Current	L1, L2, L3	Mains, Load, Cap.	•	•	•	•
THD at Neutral Current	Neutral	Mains	•	•	•	•
THD at Phase to Phase Current	L1-2, L2-3, L3-1	Mains, Load	•	•	•	•
THD at Phase Voltage	L1, L2, L3	Mains	•	•	•	•
THD at Neutral Voltage	Neutral	Mains	•	•	•	•
THD at Phase to Phase Voltage	L1-2, L2-3, L3-1	Mains	•	•	•	•
Harmonics of Phase Current	L1, L2, L3	Mains, Load, Cap.	•	•	•	•
Harmonics of Neutral Current	Neutral	Mains	•	•	•	•
Harmonics of Ph. to Ph. Current	L1-2, L2-3, L3-1	Mains, Load	•	•	•	•
Harmonics of Phase Voltage	L1, L2, L3	Mains	•	•	•	•
Harmonics of Neutral Voltage	Neutral	Mains	•	•	•	•
Harmonics of Ph. to Ph. Voltage	L1-2, L2-3, L3-1	Mains	•	•	•	•
Waveforms of Phase Current	L1, L2, L3	Mains, Load, Cap.	•	•	•	•
Waveforms of Neutral Current	Neutral	Mains	•	•	•	•
Waveforms of Ph. to Ph. Current	L1-2, L2-3, L3-1	Mains	•	•	•	•
Waveforms of Phase Voltage	L1, L2, L3	Mains	•	•	•	•
Waveforms of Neutral Voltage	Neutral	Mains	•	•	•	•
Waveforms of Ph. to Ph. Voltage	L1-2, L2-3, L3-1	Mains	•	•	•	•
System Log			•	•	•	•
Event Log			•	•	•	•
Data Log (future)			•	•	•	•



Typical Screens



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

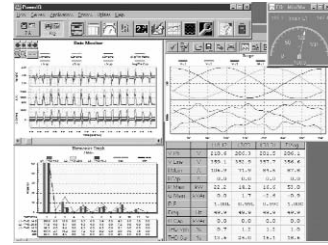
Automatic Fast-Switching LV Power Factor Correction Capacitors

GEMATIC® Quick Response

Section 20

Power IQ Measurement and Analysis Software

This software displays the system status as well as the measurement results on numerous screens running under Windows. All network parameters, including harmonics up to the 63rd, can be recorded at preselected intervals. The duration of the recording is only limited to the size of the computer's hard disk. The software can be set to record data based on selected triggers of various network parameters, such as voltage sags and/or current spikes. The system records before and after the trigger event. The software has intranet and internet support.



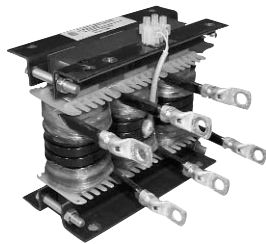
Iron Core Tuned or Detuned Reactor



Capacitors



Capacitor/Reactor Module



Iron Core Limiting Capacitors



Switching Module



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For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Automatic Fast-Switching LV Power Factor Correction Capacitors

GEMATIC® Quick Response

Section 20

Features

- Design
 - Steel sheet cabinet
- Enclosure Finish
 - Epoxy powder coated, in gray (RAL 7032)
 - Internal parts rust proof aluzinc
- Rated Voltage
 - 400V/50 Hz and 480V/60 Hz
 - Other voltage values are available upon request
- Output rating
 - Refer to table
 - Other output ratings are available upon request
- Capacitors
 - Low loss, self-healing, IEC 831-1/2
- Ambient Temperature
 - +40°C max short time
 - +35°C average in 24 hours
 - +20°C annual average
 - -10°C low limit
- Protection class: IP 20. Standards:
 - Electromagnetic—EN50081-2, EN50082-2, EN55011
 - Compatibility—EN61000-4-2/3/4/5, ENV50204, ENV501 41
 - Safety Standards—EN61010-1, EN50439-1, UL508

Standard Balanced Systems for 480V/60 Hz Networks

- Systems with inrush limiting reactors
- Detuned systems with tuning frequency of 245 Hz (4.08th Harmonic at 480Vac/60 Hz) up to 100kVAR per group at 400V/50 Hz
- Tuned systems with tuning frequency of 282 Hz (4.7th Harmonic at 480Vac/60 Hz)

Non-Standard Systems (550V-1000V 50/60 Hz or 100V-240V 50/60 Hz)

- With circuit breaker or load breaker
- With or without busbar connection
- Single cabinet
- Dual door single cabinet
- Mechanical structure and dimensions of larger systems are available upon request

Option Packages

F	Reactors
G	Lights and Reactors
W	Lights, Breaker and Reactors

For pricing, contact One-Stop or Factory.

GEMATIC® Quick Response Ultra Fast Response (UFR) (5-16 mSec) requires special application for selection and sizing. Contact factory for application assistance.

GEMATIC® Quick Response – Fast Response (3-4 sec.)

Product Number	Output (kVAR) 480V/60 Hz	Output per Step (kVAR) 480V/60 Hz	Ratio	Cabinet Dimensions W x D x H	
				(mm)	(in)
38FE3156F315F	156	31	1:2:2	1400 x 600 x 2100	55 x 24 x 83
38FE3187F385F	187	37.5	1:2:2	1400 x 600 x 2100	55 x 24 x 83
38FE3219F315F	219	31	1:2:4	1400 x 600 x 2100	55 x 24 x 83
38FE3250F505F	250	50	1:2:2	1400 x 600 x 2100	55 x 24 x 83
38FE3262F385F	262	37.5	1:2:4	1400 x 600 x 2100	55 x 24 x 83
38FE3312F635F	312	62.5	1:2:2	1400 x 600 x 2100	55 x 24 x 83
38FE3375F755F	375	75	1:2:2	1400 x 600 x 2100	55 x 24 x 83
38FE3437F635F	437	62.5	1:2:4	1400 x 600 x 2100	55 x 24 x 83
38FE3450FF05F	450	150	1:1:1	1400 x 600 x 2100	55 x 24 x 83
38FE4525F755F	525	75	1:2:2	1600 x 600 x 2100	63 x 24 x 83
38FE4600FF05F	600	150	1:1:1	1600 x 600 x 2100	63 x 24 x 83
38FE6600FA05F	600	100	1:1:1	2200 x 600 x 2100	87 x 24 x 83
38FE6687F635F	687	62.5	1:2:2	2200 x 600 x 2100	87 x 24 x 83
38FE6750FC55F	750	125	1:1:1	2200 x 600 x 2100	87 x 24 x 83
38FE6825F755F	825	75	1:2:2	2200 x 600 x 2100	87 x 24 x 83
38FE6900FF05F	900	150	1:1:1	2200 x 600 x 2100	87 x 24 x 83
38FE9B25FC55F	1125	125	1:1:1	3000 x 600 x 2100	118 x 24 x 83
38FE9D50FF05F	1350	150	1:1:1	3000 x 600 x 2100	118 x 24 x 83
38FECF00FC55F	1500	125	1:1:1	3800 x 600 x 2100	150 x 24 x 83
38FECI00FF05F	1800	150	1:1:1	3800 x 600 x 2100	150 x 24 x 83



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Automatic LV Power Factor Correction Capacitors

Section 20

Type GEMATIC® Compact and GEMATIC® Select
Three-phase, 60 Hertz
240, 480, 600 Volts

Description

GEMATIC® multi-step power factor control equipment automatically maintains desired power factor level, adjusting to system load requirements in selected kVAR steps. The solid-state control responds to a current signal from the optional current transformer and to a voltage signal from a potential transformer included in the equipment.

GEMATIC® equipments feature capacitors with a metallized dielectric system providing a self-healing action and reduced energy losses. The biodegradable impregnant is a class IIIB combustible fluid. Discharge resistors reduce the voltage to 50 volts or less within one minute of de-energization. The capacitor cells are 3 phase and are designed for 110% of rated voltage, 135% of rated current, and, 135% of rated kVAR.

The power factor controller requires a CT signal for operation. The CT primary should be sized for the **total phase current** to be compensated (capacitor current and load current). Typically, the total phase current should be 50% to 80% of the CT primary rating. The CT secondary is rated 5A. The CT is connected to one phase of the equipment and the factory installed PT is connected across the other two phases.

GEMATIC® equipment includes:

- Solid-state multi-step power factory controller with digital display and indication of loss of kVAR or blown fuse
- Three phase self-healing metallized capacitors
- Stage contactors
- Potential transformer
- Plated copper bus
- Three fuses for each stage
- Modular construction easily uprated
- UL and C-UL Listed

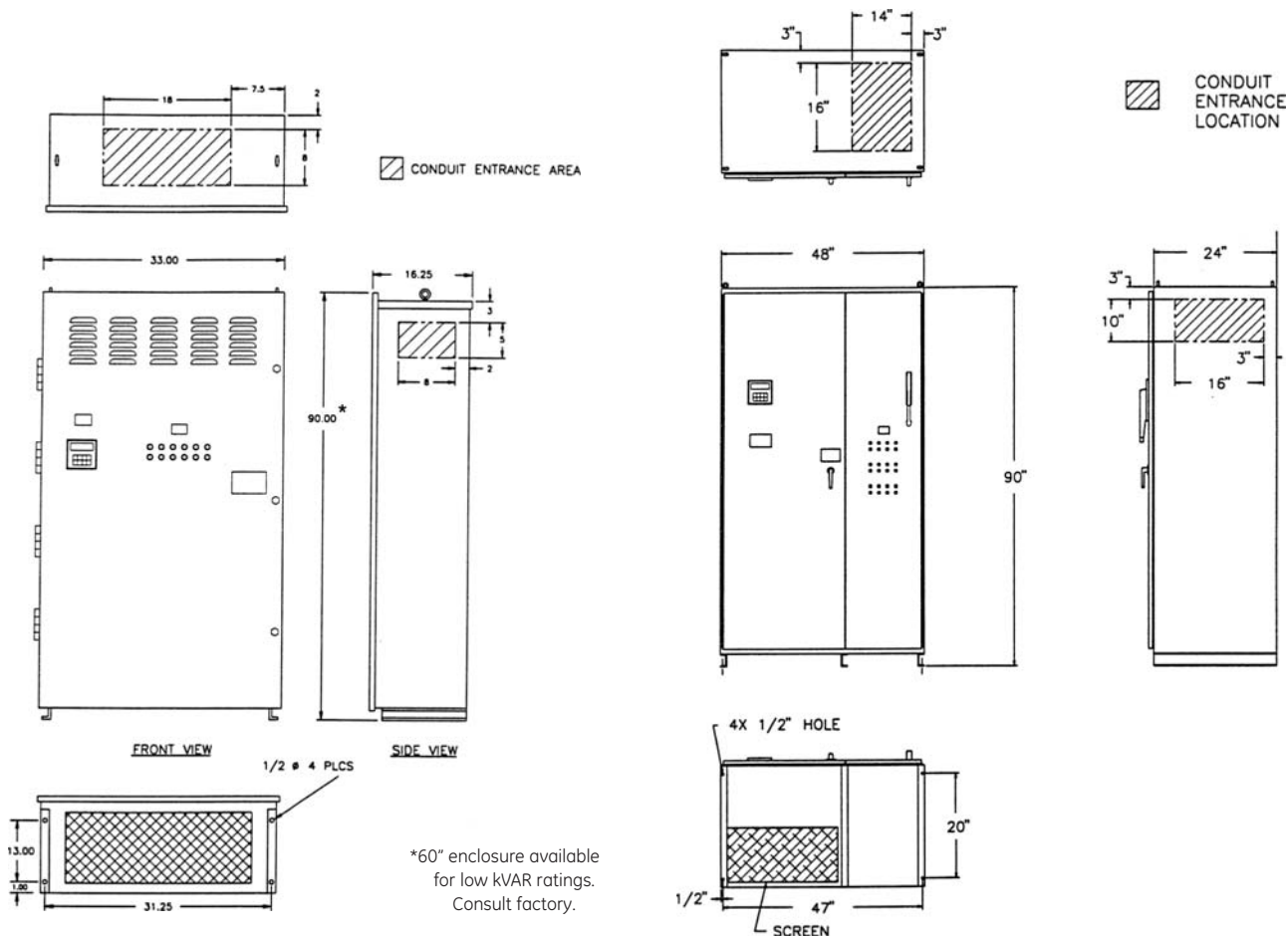
Additional Features

GEMATIC® Compact

- NEMA 1 enclosure
- 50 kAIC bracing
- Optional breaker (600 amp 35kAIC maximum)
- Optional blown fuse indicating lights

GEMATIC® Select

- NEMA 1 enclosure (NEMA 12 available)
- 75 kAIC bracing (100 kAIC available)
- Optional breaker
- Optional blown fuse indicating lights



GEMATIC® Compact

GEMATIC® Select



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Capacitors, Arresters and Harmonic Filters

Automatic LV Power Factor Correction Capacitors

Section 20

Type GEMATIC® Compact and GEMATIC® Select
Three Phase, 60 Hertz
240, 480, 600 Volts

GEMATIC® Compact 240 volts

kVAR	Basic Product No.	kVAR/Step	List Price GO-410	Suffix "L" (Indicating Lights) List Price GO-410	*Suffix "B" Circuit Breaker List Price GO-410	*Breaker Rating
40	37FJ2040D20	20	\$6500.00	\$115.00	\$2069.00	400
60	37FJ3060D20	20	\$7013.00	\$159.00	\$2069.00	400
80	37FJ4080D20	20	\$7534.00	\$210.00	\$2069.00	400
100	37FJ5100D20	20	\$8065.00	\$259.00	\$2069.00	400
120	37FJ6120D20	20	\$8577.00	\$314.00	\$2820.00	600

GEMATIC® Compact 480/600 volts

kVAR	Basic Product No.	kVAR/ Step	List Price GO-410	Suffix "L" (Indicating Lights) List Price GO-410	*480 V Breaker Rating	*Suffix "B" 480 V Circuit Breaker List Price GO-410	*600 V Breaker Rating	*Suffix "B" 600 V Circuit Breaker List Price GO-410
50	37FJ2050F25	25	\$6154.00	\$115.00	400	\$2069.00	400	\$2069.00
75	37FJ2075F25	25	\$6208.00	\$115.00	400	\$2069.00	400	\$2069.00
100	37FJ3100F25	25	\$6349.00	\$159.00	400	\$2069.00	400	\$2069.00
125	37FJ3125F25	25	\$6731.00	\$159.00	400	\$2069.00	400	\$2069.00
150	37FJ3150F50	50	\$7026.00	\$159.00	400	\$2069.00	400	\$2069.00
175	37FJ4175F25	25	\$7372.00	\$210.00	400	\$2069.00	400	\$2069.00
200	37FJ4200F50	50	\$7692.00	\$210.00	400	\$2069.00	400	\$2069.00
225	37FJ5225F25	25	\$8026.00	\$259.00	600	\$2820.00	400	\$2069.00
250	37FJ5250F50	50	\$8397.00	\$259.00	600	\$2820.00	400	\$2069.00
275	37FJ6275F25	25	\$8782.00	\$314.00	600	\$2820.00	600	\$2820.00
300	37FJ6300F50	50	\$9162.00	\$314.00	600	\$2820.00	600	\$2820.00

GEMATIC® Select 240 volts

Example of GEMATIC® Select Product Number. 300kVAR, 480V, with Lights, Breaker and copper bus, 37FC6300F505R0.

kVAR	Basic Product No.	kVAR/Step	List Price GO-410	Suffix "L" (Indicating Lights) List Price GO-410	*Suffix "B" Circuit Breaker List Price GO-410	Breaker Rating
100	37FC4100D255	25	\$10428.00	\$333.00	\$2069.00	400
125	37FC5125D255	25	\$11481.00	\$413.00	\$2820.00	600
150	37FC6150D255	25	\$12536.00	\$500.00	\$2820.00	600
175	37FC7175D255	25	\$13717.00	\$583.00	\$3809.00	800
200	37FC8200D255	25	\$14772.00	\$666.00	\$3809.00	800
225	37FC9225D255	25	\$15827.00	\$749.00	\$6098.00	1000
250	37FC10250D255	25	\$16882.00	\$916.00	\$6098.00	1000
300	37FC12300D255	25	\$18990.00	\$999.00	\$6098.00	1200



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Automatic LV Power Factor Correction Capacitors

Section 20

Type GEMATIC® Compact and GEMATIC® Select
Three Phase, 60 Hertz
240, 480, 600 Volts

GEMATIC® Select 480/600 volts

kVAR	Basic Product No.	kVAR/ Step	List Price GO-410	Suffix "L" (Indicating Lights) List Price GO-410	480V Breaker Rating	Suffix "B" 480 V Circuit Breaker List Price GO-410	600V Breaker Rating	Suffix "B" 600 V Circuit Breaker List Price GO-410
100	37FC3100F255	25	\$9067.00	\$250.00	400	\$2069.00	400	\$2069.00
125	37FC3125F255	25	\$9168.00	\$250.00	400	\$2069.00	400	\$2069.00
150	37FC3150F505	50	\$9301.00	\$250.00	400	\$2069.00	400	\$2069.00
175	37FC4175F255	25	\$10071.00	\$333.00	400	\$2069.00	400	\$2069.00
200	37FC4200F505	50	\$10157.00	\$333.00	400	\$2069.00	400	\$2069.00
225	37FC5225F255	25	\$11059.00	\$413.00	600	\$2820.00	400	\$2069.00
250	37FC5250F505	50	\$11142.00	\$413.00	600	\$2820.00	400	\$2069.00
275	37FC6275F255	25	\$12045.00	\$500.00	600	\$2820.00	600	\$2820.00
300	37FC6300F505	50	\$12131.00	\$500.00	600	\$2820.00	600	\$2820.00
325	37FC7325F255	25	\$13034.00	\$583.00	600	\$2820.00	600	\$2820.00
350	37FC7350F505	50	\$13118.00	\$583.00	800	\$3809.00	600	\$2820.00
375	37FC8375F255	25	\$14021.00	\$666.00	800	\$3809.00	600	\$2820.00
400	37FC8400F505	50	\$14105.00	\$666.00	800	\$3809.00	600	\$2820.00
425	37FC9425F255	25	\$15008.00	\$749.00	800	\$3809.00	800	\$3809.00
450	37FC9450F505	50	\$15092.00	\$749.00	1000	\$6098.00	800	\$3809.00
475	37FCA475F255	25	\$15995.00	\$833.00	1000	\$6098.00	800	\$3809.00
500	37FCA500F505	50	\$16079.00	\$833.00	1000	\$6098.00	800	\$3809.00
525	37FCB525F255	25	\$16982.00	\$916.00	1000	\$6098.00	800	\$3809.00
550	37FCB550F505	50	\$17066.00	\$916.00	1200	\$6098.00	800	\$3809.00
575	37FCC575F255	25	\$17969.00	\$999.00	1200	\$6098.00	1000	\$6098.00
600	37FCC600F505	50	\$18053.00	\$999.00	1200	\$6098.00	1000	\$6098.00

CT, 600V, split core, 4" x 7" window

Ratio	Product Number	List Price GO-410
Multitap w/ Ratio 800/1200/1500/2000/ 2200/2500/3000 : 5	XT0-69752-0105G	\$350.00
4000 : 5	XT0-69752-0011G	\$400.00

For 600 volts, replace second "F" in the basic product number with an "H". (e.g. 37FC3100F255 becomes 37FC3100H255).

For NEMA 12 enclosure, replace "C" in the basic product number with "O", **Price Adder, \$750.00, GO-410** (e.g., 37FC8400F505 becomes 37FO8400F505). For bottom entry last digit of Product Number changes from "5" to "6" (e.g., 37FC8400F505 becomes 37FC8400F506).

Option Packages

Suffix	Option
L	Indicating Lights
B	Breaker
R	Lights & Breaker

Note: Add only one suffix letter to the end of product numbers

For breakers add the following code for standard breaker option

Current Rating	kAIC Rating	Code for Standard Breaker Option
400	35	00003
600	35	00006
800	50	00009
1000	50	0000C
1200	50	0000F
1600	65	0000L
2000	65	0000N
2500	100	0000Q
3000	100	0000T



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Automatic LV Power Factor Correction Capacitors and Harmonic Filter Equipment

Section 20

Type GEMATIC® Custom

The GEMATIC® Custom offers power factor correction with the flexibility of including harmonic filter reactors initially or adding them later if they are required.

Many of today's power systems require modern solutions to power factor correction. The rapid increase in variable speed drive use and other solid state devices has resulted in severe harmonic loads on power systems. GE has 10 years experience in preventing the occurrence of non-sinusoidal resonance. Successful integration in tuned L-C networks solves the problem of parallel resonance.

GEMATIC® Custom automatic power factor correction systems with 3-phase harmonic suppression reactors are application specific. Accordingly, each installation requires specific information to aid GE application engineers in designing each system to meet your requirements. This information should include, but not be limited to, kVAR requirements, transformer size and impedance, kVAsc of the transformer, and a harmonic profile of your system. Load characteristic at the time of the survey and worst case should also be included.

The GEMATIC® Custom systems may be configured for the addition of harmonic suppression reactors in the future to meet the imminent needs of your system. This reduces initial investment and provides a ready made retrofit package. This system provides total flexibility in achieving maximum automatic power factor correction. Please contact the local GE sales office or the GE factory for any assistance with your particular power factor correction and harmonic suppression needs.

Applicable Standards

—NEMA, IEEE/ANSI, NEC

GEMATIC® Custom Optional Features

- Outdoor NEMA 3R enclosure
- 100 kAIC bus bracing
- Main breaker
- Iron core reactors
- Blown fuse indicating lights

GEMATIC® Custom includes

- Solid-state multi-step power factor controller with digital display and indication of loss of kVAR or blown fuse
- Three phase self-healing metallized capacitors
- Stage contactors
- Three fuses for each stage
- Potential transformer
- Plated copper bus, 75 kAIC bracing
- NEMA 1 enclosure
- UL and cUL listed

Ratings

- 240 V; up to 300 kVAR
- 480 V and 600 V; up to 1500 kVAR
- For larger kVAR ratings, contact factory

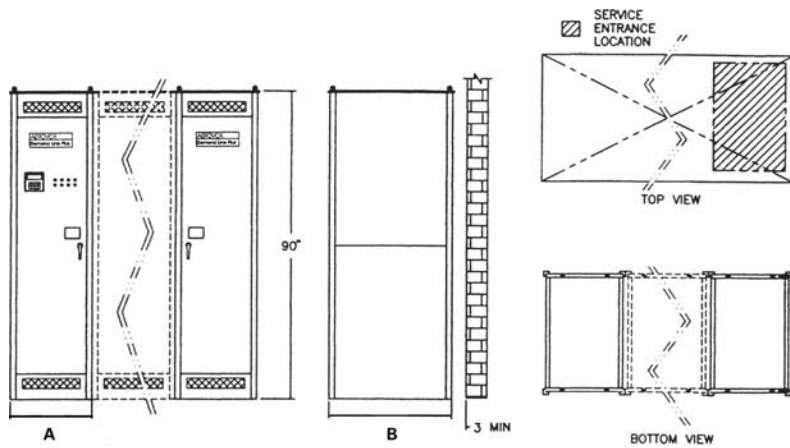


Capacitors, Arresters and Harmonic Filters

Automatic LV Power Factor Correction Capacitors and Harmonic Filter Equipment

Outline Dimensions (inches)

Section 20



GEMATIC® Custom

Three-phase, 60 Hz NEMA 1 or 3R Enclosure supplied with or without reactors tuned to the 4.7th Harmonic.

Option	Suffix
Lights	L
Breaker	B
Reactors	F
Lights and Breaker	R
Lights and Reactors	G
Lights, Breaker, and Reactors	W
Breaker and Reactors	K

Section Dimensions	A	B
NEMA 1	25"	35"
NEMA 3R	24	36

Optional Features: R—Outdoor NEMA 3R Enclosure (Change prefix 38FP to 38FR)

Selection Table 240 Volts

Options—List Price GO-410, Each									
Total kVAR	Product Number	kVAR/ Step	Basic List Price, GO-410	Suffix L Blown Fuse Lts.	Suffix F Harmonic Reactors	Suffix B Circuit Breaker	Circuit Breaker 240 Volt Rating—Amps	Prefix R NEMA 3R	Enclosure Width (# of Sections)
100	38FP3100D255	25	\$12097.00	\$225.00	\$5092.00	\$3673.00 ¹	400	\$423.00	1
150	38FP6150D255	25	\$14820.00	\$450.00	\$7638.00	\$2820.00	600	\$423.00	2
200	38FP5200D255	25	\$20311.00	\$375.00	\$10184.00	\$3809.00	800	\$423.00	2
225	38FP5225D255	25	\$21673.00	\$375.00	\$11457.00	\$6098.00	1000	\$423.00	2
250	38FP5250D505	50	\$23034.00	\$375.00	\$12730.00	\$6098.00	1000	\$423.00	2
300	38FP6300D505	50	\$28338.00	\$450.00	\$15276.00	\$6098.00	1200	\$423.00	2

Selection Table 480/600 Volts

To order 600 Volt, change second "F" in product number to "H". (e.g. 38FP4400FA05 becomes 38FP4400HA05)

Options—List Price GO-410, Each											
Total kVAR	Product Number	kVAR/ Step	Basic List Price, GO-410	Suffix L Blown Fuse Lts.	Suffix F Harmonic Reactors	Circuit Breaker 480 Volts Rating	Suffix B Circuit Breaker	Circuit Breaker 600 Volts Rating	Suffix B Circuit Breaker	Prefix R NEMA 3R	Enclosure Width (# of Sections)
300	38FP3300FA05	100	\$11425.00	\$225.00	\$4387.00	600	\$4024.00 ¹	600	\$4024.00 ¹	\$377.00	1 ²
350	38FP4350F505	50	\$13859.00	\$300.00	\$6623.00	800	\$3809.00	600	\$2820.00	\$423.00	2
400	38FP4400FA05	100	\$14568.00	\$300.00	\$6718.00	800	\$3809.00	600	\$2820.00	\$423.00	2
450	38FP5450F505	50	\$18649.00	\$375.00	\$8349.00	1000	\$6098.00	800	\$3809.00	\$423.00	2
500	38FP5500FA05	100	\$19358.00	\$375.00	\$8254.00	1000	\$6098.00	800	\$3809.00	\$423.00	2
550	38FP6550F505	50	\$20603.00	\$450.00	\$9885.00	1200	\$6098.00	800	\$3809.00	\$423.00	2
600	38FP6600FA05	100	\$21313.00	\$450.00	\$9980.00	1200	\$6098.00	1000	\$6098.00	\$423.00	2
650	38FP7650F505	50	\$23693.00	\$525.00	\$11515.00	1600	\$7976.00 ¹	1200	\$7702.00 ¹	\$423.00	2 ²
700	38FP7700FA05	100	\$24402.00	\$525.00	\$11611.00	1600	\$7976.00 ¹	1200	\$7702.00 ¹	\$423.00	2 ²
750	38FP8750F505	50	\$25648.00	\$600.00	\$13246.00	1600	\$6372.00	1200	\$6098.00	\$635.00	3
800	38FP8800FA05	100	\$26357.00	\$600.00	\$13342.00	1600	\$6372.00	1600	\$6372.00	\$635.00	3
850	38FP9850F505	50	\$30438.00	\$675.00	\$14877.00	1600	\$6372.00	1600	\$6372.00	\$635.00	3
900	38FP9900FA05	100	\$31147.00	\$675.00	\$14972.00	2000	\$6474.00	1600	\$6372.00	\$635.00	3
950	38FPA950F505	50	\$32393.00	\$750.00	\$16508.00	2000	\$6474.00	1600	\$6372.00	\$635.00	3
1000	38FPAA00FA05	100	\$33102.00	\$750.00	\$16603.00	2000	\$6474.00	2000	\$6474.00	\$635.00	3
1100	38FPBB00FA05	100	\$33347.00	\$825.00	\$18234.00	2500	\$18857.00 ¹	2000	\$8078.00 ¹	\$635.00	3 ²
1200	38FPCC00FA05	100	\$37011.00	\$900.00	\$19965.00	2500	\$17253.00	2000	\$6474.00	\$846.00	4
1300	38FPDD00FA05	100	\$41801.00	\$975.00	\$21595.00	2500	\$17253.00	2500	\$17253.00	\$846.00	4
1400	38FPEE00FA05	100	\$43756.00	\$1050.00	\$23226.00	3000	\$17807.00	2500	\$17253.00	\$846.00	4
1500	38FPFF00FA05	100	\$45711.00	\$1050.00	\$24957.00	3000	\$19411.00 ¹	2500	\$18857.00 ¹	\$846.00	4 ²

¹Price includes cabinet adder for breaker.

For ratings not listed consult factory.

Add breaker code suffix shown on page 20-32 GEMATIC compact and select.

For reverse entry last digit of Product Number changes from "5" to "7."

²Enclosure width increases by one section with breaker.

For bottom entry "5" changes to "6" and "7" changes to "8."

Bottom entry may change equipment width. Consult factory or e-catalog for dimension and pricing of bottom entry.

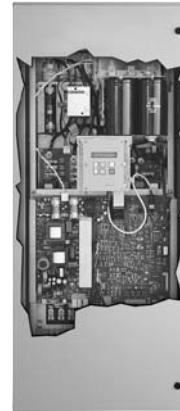


For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

GE GEMACTIVE Active Harmonic Filter

- Dynamic current injection for harmonic cancellation and power factor correction
- Reduces harmonics for IEEE 519 (1992) standard compliance
- Decreases harmonic related overheating of cables, switchgear and transformers
- Reduces downtime caused by nuisance thermal tripping of protective devices
- Increases electrical network reliability and reduces operating costs
- Compensates each phase independently
- UL and CSA approved
- Parallel connection allows for easy retrofit and installation of multiple units for large networks
- Filters to the 50th harmonic
- Filters entire network or specific loads depending on installation point
- Response to load fluctuations begins in 40 microseconds with 8 milliseconds for full response to step load changes
- IGBT based power electronic technology
- 50, 100 and 300A models for 208 to 480V, 50/60 Hz three-phase networks

GE GEMACTIVE reduces problematic harmonic levels and provides instantaneous power factor correction. Cost savings result from reduced downtime and maintenance. In addition, over-sizing of distribution equipment to provide for harmonics and poor power factor can be avoided. GE GEMACTIVE dynamically corrects power quality by providing: Active Harmonic Filtration, Resonance Prevention, Power Factor Correction and Dynamic VAR Compensation.



Dynamic VAR Compensation by GEMACTIVE

Large inductive inrush currents typically cause voltage sags that result in reduced productivity, poor process quality and possible downtime due to undervoltage tripping of devices. GEMACTIVE is able to inject peak current at two and a half times its rms current rating for one cycle. For many applications this level of compensation eliminates visible flicker and improves voltage regulation resulting in better productivity and quality.

GEMACTIVE Sizing

A harmonic study is not required to select the size of the GEMACTIVE installation. This is because when GEMACTIVE is installed it becomes a lower impedance path for harmonics than the existing power supply. For sizing, please contact GE. To expedite the product selection process, please have a single line diagram and/or details of the application including sizes of transformers, non-linear and linear loads, and any existing filters and capacitors.

Active Filter Three-phase 60/50Hz

Table with 4 columns: Current Rating, Enclosure Type, 240/480V Product Number, List Price GO-410B. Rows include ratings of 50, 100, and 300 with NEMA 1 and Chassis enclosure options.

Current Transformers

Table with 3 columns: Ratio, Product Number, List Price GO-410B. Rows include ratios of 500:5A, 1000:5A, 3000:5A, and 5000:5A.

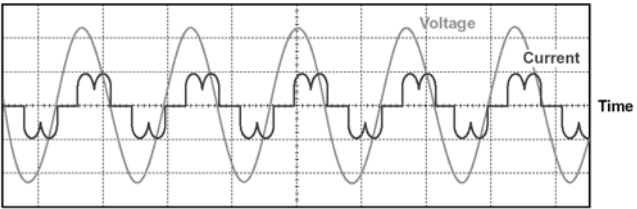
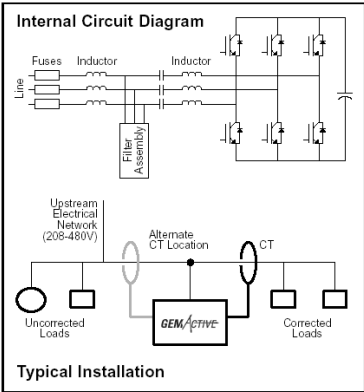


Fig. 1: Non-linear current waveform with poor power factor

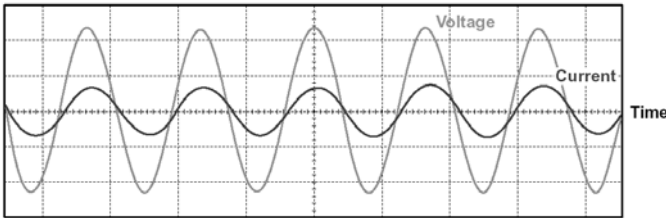


Fig. 2: Corrected Current waveform with improved power factor and reduced harmonic content after Active Harmonic Filter Installation

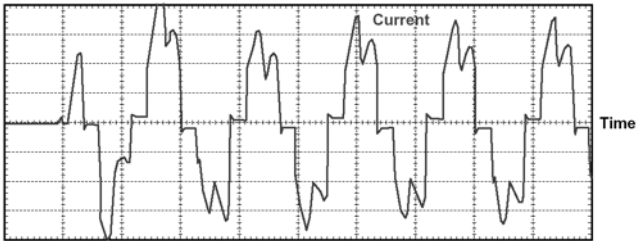


Fig. 3: Inrush Current without Active Harmonic Filter

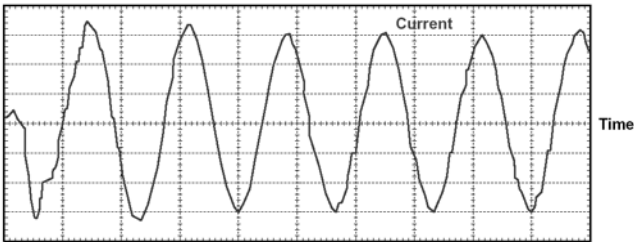


Fig. 4: Inrush Current with Active Harmonic Filter

Capacitors, Arresters and Harmonic Filters

Fixed MV Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof and Outdoor Weatherproof

25-900 kVAR, 60 Hz

2400, 4160, 4800 Volts

1.0-200 kVAR, 240 Volt

Application

Type HWT equipments are suitable for use on indoor or outdoor primary circuits where small amounts of kVAR are required. They may be installed at load centers or directly at the terminals of 2300 and 4000 volt motors. Permissible ambient temperatures are -40° to $+45^{\circ}\text{C}$. Discharge resistors in each capacitor reduce the voltage to 50 volts or less within 5 minutes of de-energization.

Type HWT equipments contain less than three gallons of flammable liquid in a single container and therefore do not require installation in a vault to meet the NEC.

Line Terminals

Solderless connectors are provided on each phase:

Assembly	Connector Size
One unit	#10 - #4
Two unit	#14 - 1/0
Three unit	#6 - 250 kcmil

Fuses

Protection is provided by 50,000 ampere interrupting capacity current limiting fuses. A pop-up button on the fuse gives visual indication of a blown fuse. GE recommends the use of three fuses for the most complete protection against terminal-to-terminal and terminal-to-ground failures on grounded systems. Two fuses are sufficient to provide protection against terminal-to-terminal failures on ungrounded systems.

Blown Fuse Lights

Blown fuse lights provide a positive **external** indication of an operated fuse. A glowing light makes inspection of capacitors easy, effective, and safe. A 120 VAC source must be supplied externally. When ordered with this option, the HWT assembly is supplied with one light per capacitor.

For higher voltage designs, contact factory or consult e-catalog.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Fixed MV Power Factor Correction Capacitors

Section 20

Complete Assemblies Including Terminal Box, Fuses and Mounting Frame

kVar	2400 Volt Assemblies Product Number	4160 Volt Assemblies Product Number	4800 Volt Assemblies Product Number	List Price GO-410A	Fig. No.	2400 Volt Assemblies Product Number	4160 Volt Assemblies Product Number	4800 Volt Assemblies Product Number	List Price GO-410A	Fig. No.	Approx. Wt.		Dimensions					
													C		E		F	
											Lb	(kg)	in.	(mm)	in.	(mm)	in.	(mm)
Individual Units—With Terminal Box and 2 Fuses Per Unit						Individual Units—With Terminal Box and 3 Fuses Per Unit												
25	37F0520411	37F0523411	37F0526411	\$708.00	1	37F0520431	37F0523431	37F0526431	\$807.00	4	64	(29)	27.68	(703)	6.96	(177)	—	—
50	37F0520412	37F0523412	37F0526412	\$757.00	1	37F0520432	37F0523432	37F0526432	\$856.00	4	64	(29)	27.68	(703)	6.96	(177)	—	—
75	37F0520413	37F0523413	37F0526413	\$805.00	1	37F0520433	37F0523433	37F0526433	\$904.00	4	64	(29)	27.68	(703)	6.96	(177)	—	—
100	37F0520414	37F0523414	37F0526414	\$937.00	1	37F0520434	37F0523434	37F0526434	\$1140.00	4	69	(31)	29.44	(748)	8.71	(221)	—	—
125	37F0520415	37F0523415	37F0526415	\$1009.00	1	37F0520435	37F0523435	37F0526435	\$1212.00	4	76	(35)	30.18	(767)	9.46	(240)	0.75	(19)
150	37F0520416	37F0523416	37F0526423	\$1091.00	1	37F0520436	37F0523436	37F0526443	\$1326.00	4	81	(37)	32.68	(830)	11.96	(304)	0.50	(13)
175	37F0520418	37F0523418	37F0526425	\$1173.00	1	37F0520438	37F0523438	37F0526445	\$1376.00	4	86	(39)	33.35	(847)	12.63	(321)	0.17	(4)
200	37F0520417	37F0523417	37F0526424	\$1258.00	1	37F0520437	37F0523437	37F0526444	\$1461.00	4	92	(42)	33.35	(847)	12.63	(321)	0.17	(4)
225	37F0520419	37F0523419	37F0526426	\$1950.00	1	37F0520439	37F0523439	37F0526446	\$2320.00	4	103	(47)	36.06	(916)	18.33	(466)	0.88	(22)
250	37F0520420	37F0523420	37F0526427	\$1984.00	1	37F0520440	37F0523440	37F0526447	\$2354.00	4	103	(47)	36.06	(916)	18.33	(466)	0.88	(22)
275	37F0520421	37F0523421	37F0526428	\$2067.00	1	37F0520441	37F0523441	37F0526448	\$2437.00	4	114	(52)	39.06	(992)	18.33	(466)	—	—
300	—	37F0523422	37F0526429	\$2149.00	1	—	37F0523442	37F0526449	\$2519.00	4	114	(52)	39.06	(992)	18.33	(466)	—	—
Two Units Interconnected—With Terminal Box, 2 Fuses Per Unit and Mounting Frame						Two Units Interconnected—With Terminal Box, 3 Fuses Per Unit and Mounting Frame												
300	37F0521415	—	—	\$2328.00	2	37F0521435	—	—	\$2618.00	5	149	(68)	33.43	(849)	12.70	(323)	—	—
325	37F0521416	37F0524416	37F0527420	\$2403.00	2	37F0521436	37F0524436	37F0527440	\$2773.00	5	154	(70)	33.43	(849)	12.70	(323)	—	—
350	37F0521417	37F0524417	37F0527417	\$2473.00	2	37F0521437	37F0524437	37F0527437	\$2843.00	5	159	(72)	33.43	(849)	12.70	(323)	—	—
375	37F0521419	37F0524419	37F0527421	\$2525.00	2	37F0521439	37F0524439	37F0527441	\$2895.00	5	165	(75)	33.43	(849)	12.70	(323)	—	—
400	37F0521418	37F0524418	37F0527418	\$2646.00	2	37F0521438	37F0524438	37F0527438	\$3016.00	5	171	(78)	33.43	(849)	12.70	(323)	—	—
425	37F0521420	37F0524420	37F0527422	\$3050.00	2	37F0521440	37F0524440	37F0527442	\$3588.00	5	181	(82)	39.18	(995)	18.45	(469)	—	—
450	37F0521421	37F0524421	37F0527423	\$3131.00	2	37F0521441	37F0524441	37F0527443	\$3669.00	5	192	(87)	39.18	(995)	18.45	(469)	—	—
475	37F0521422	37F0524422	37F0527424	\$3200.00	2	37F0521442	37F0524442	37F0527444	\$3738.00	5	192	(87)	39.18	(995)	18.45	(469)	—	—
500	37F0521423	37F0524423	37F0527425	\$3327.00	2	37F0521443	37F0524443	37F0527445	\$3865.00	5	192	(87)	39.18	(995)	18.45	(469)	—	—
525	37F0521424	37F0524424	37F0527426	\$3373.00	2	37F0521444	37F0524444	37F0527446	\$3911.00	5	203	(92)	39.18	(995)	18.45	(469)	—	—
550	37F0521425	37F0524425	37F0527427	\$3458.00	2	37F0521445	37F0524445	37F0527447	\$3996.00	5	214	(97)	39.18	(995)	18.45	(469)	—	—
575	—	37F0524426	37F0527428	\$3545.00	2	—	37F0524446	37F0527448	\$4083.00	5	214	(97)	39.18	(995)	18.45	(469)	—	—
600	—	37F0524427	37F0527429	\$3610.00	2	—	37F0524447	37F0527449	\$4148.00	5	214	(97)	39.18	(995)	18.45	(469)	—	—
Three Units Interconnected—With Terminal Box, 2 Fuses Per Unit and Mounting Frame						Three Units Interconnected—With Terminal Box, 3 Fuses Per Unit and Mounting Frame												
575	37F0522422	—	—	\$3694.00	3	37F0522442	—	—	\$4549.00	6	248	(113)	33.43	(849)	12.70	(323)	—	—
600	37F0522421	—	—	\$3744.00	3	37F0522441	—	—	\$4649.00	6	254	(115)	33.43	(849)	12.70	(323)	—	—
625	37F0522423	37F0525423	37F0528422	\$3794.00	3	37F0522443	37F0525443	37F0528442	\$4749.00	6	265	(120)	39.18	(995)	18.45	(469)	—	—
650	37F0522424	37F0525424	37F0528423	\$3805.00	3	37F0522444	37F0525444	37F0528443	\$4906.00	6	276	(125)	39.18	(995)	18.45	(469)	—	—
675	37F0522425	37F0525425	37F0528424	\$3957.00	3	37F0522445	37F0525445	37F0528444	\$5066.00	6	287	(130)	39.18	(995)	18.45	(469)	—	—
700	37F0522426	37F0525426	37F0528425	\$4070.00	3	37F0522446	37F0525446	37F0528445	\$5729.00	6	298	(130)	39.18	(995)	18.45	(469)	—	—
725	37F0522427	37F0525427	37F0528426	\$4476.00	3	37F0522447	37F0525447	37F0528446	\$5824.00	6	298	(130)	39.18	(995)	18.45	(469)	—	—
750	37F0522428	37F0525428	37F0528427	\$4597.00	3	37F0522448	37F0525448	37F0528447	\$5922.00	6	298	(130)	39.18	(995)	18.45	(469)	—	—
775	37F0522429	37F0525429	37F0528428	\$5019.00	3	37F0522449	37F0525449	37F0528448	\$6075.00	6	309	(135)	39.18	(995)	18.45	(469)	—	—
800	37F0522430	37F0525430	37F0528429	\$5074.00	3	37F0522450	37F0525450	37F0528449	\$6211.00	6	320	(140)	39.18	(995)	18.45	(469)	—	—
825	37F0522431	37F0525431	37F0528430	\$5128.00	3	—	37F0525451	37F0528450	\$6352.00	6	331	(145)	39.18	(995)	18.45	(469)	—	—
850	—	37F0525432	37F0528431	\$5262.00	3	—	37F0525452	37F0528451	\$6434.00	6	331	(145)	39.18	(995)	18.45	(469)	—	—
875	—	37F0525433	37F0528432	\$5423.00	3	—	37F0525453	37F0528452	\$6632.00	6	331	(145)	39.18	(995)	18.45	(469)	—	—
900	—	37F0525434	37F0528433	\$5592.00	3	—	37F0525454	37F0528453	\$6774.00	6	331	(145)	39.18	(995)	18.45	(469)	—	—

Blown Fuse Light Option

List Price Adder, GO-410A

	2 Fuses per Unit	3 Fuses per Unit
1 Unit Assembly	\$310.00	\$375.00
2 Unit Assembly	\$620.00	\$750.00
3 Unit Assembly	\$930.00	\$1125.00

To order Blown Fuse Light option add "100" to the last 3 digits of the standard product numbers above.

Example: 37F0524436 becomes 37F0524536. Add the appropriate list price adder from the chart to the left.

For units tested and labeled per CSA Standard, add 037 suffix.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Fixed MV Power Factor Correction Capacitors

Section 20

Enclosed Indoor Dustproof and Outdoor Weatherproof

25-900 kVAR, 60 Hz

2400, 4160, 4800 Volt

Dimensions

HWT Assemblies Including Terminal Box, 2 Fuses Per Unit and Mounting Frame

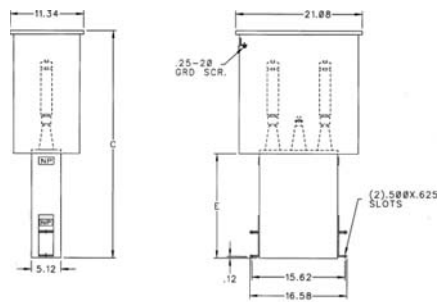


Fig. 1

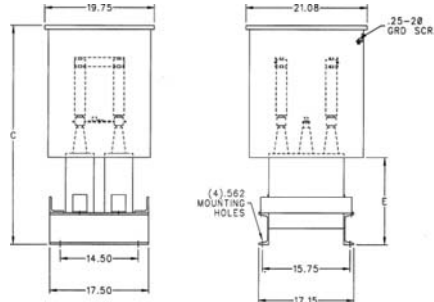


Fig. 2

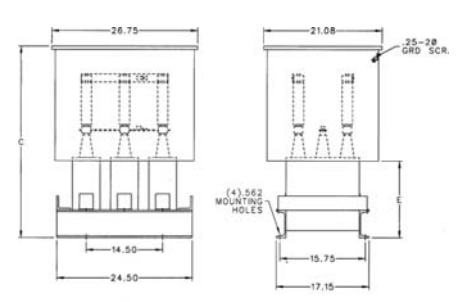


Fig. 3

HWT Assemblies Including Terminal Box, 3 Fuses Per Unit and Mounting Frame

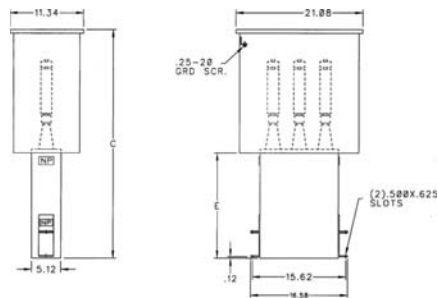


Fig. 4

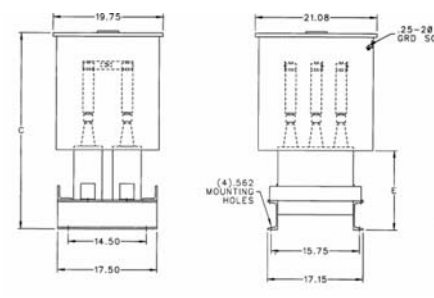


Fig. 5

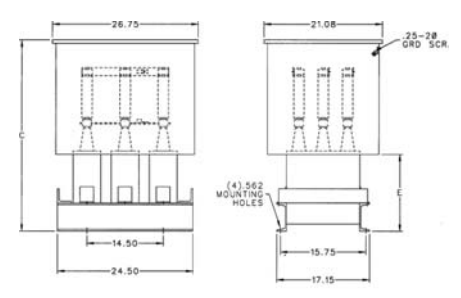


Fig. 6

Replacement Capacitor Units¹ and Fuses²

kVAR	2400 volts			4160 volts			4800 volts			List Price GO-410A	
	Capacitor Product No.	Fuse Dwg. No. 115A1614 Product No.	Amps	Capacitor Product No.	Fuse Dwg. No. 115A1614 Product No.	Amps	Capacitor Product No.	Fuse Dwg. No. 115A1614 Product No.	Amps	Capacitor Units	Fuse
25	52L301WS60	00153	35	52L302WS60	00156	18	52L303WS61	00156	18	\$373.00	\$81.00
50	51L301WS60	00153	35	51L302WS60	00156	18	51L303WS60	00156	18	\$414.00	\$81.00
75	51L304WS60	00153	35	51L305WS60	00156	18	51L306WS60	00156	18	\$444.00	\$81.00
100	54L303WS60	00154	75	54L304WS60	00158	50	54L305WS60	00166	25	\$504.00	\$150.00
125	54L306WS60	00154	75	54L307WS60	00158	50	54L310WS60	00166	25	\$545.00	\$150.00
150	54L308WS60	00154	75	54L309WS60	00158	50	54L403WS60	00158	50	\$638.00	\$150.00
175	54L317WS60	00154	75	54L313WS60	00158	50	54L311WS60	00158	50	\$757.00	\$150.00
200	58L302WS60	00155	100	58L303WS60	00158	50	58L424WS60	00158	50	\$778.00	\$150.00
225	16L0153WS3	00155	100	16L0156WS3	00158	50	16L0160WS3	00158	50	\$823.00	\$150.00
250	16L0154WS3	00155	100	16L0157WS3	00171	75	16L0161WS3	00158	50	\$863.00	\$150.00
275	16L0155WS3	00155	100	16L0158WS3	00171	75	16L0162WS3	00171	75	\$903.00	\$150.00
300				16L0159WS3	00171	75	16L0163WS3	00171	75	\$945.00	\$150.00

¹When replacing rack mounted RS or US unit with WS unit, ask for bracket adapters. Order two 251A639700051 and two 115A189300009 at NO CHARGE.

²Top and Bottom fuse adapters needed, one each per fuse: Order Product No. 308A390100001 \$17.60 List, GO-410A.

This is a kit that contains one top and one bottom adapter.

For units tested and labeled per CSA Standard, add 037 suffix.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

High Voltage Capacitor Units, Single and Three-Phase

Section 20

Standard Duty

(Film/Foil Designs w/Diektrol®)

50-600 kVAR, 60 Hertz

2400-24,940 Volts

Film/Foil Diektrol® is the GE non-PCB low loss power capacitor dielectric system, developed to provide lower operating costs and greatly enhanced fuse coordination for the prevention of case ruptures. The Diektrol® insulating liquid is a Class IIIB combustible fluid.

—These capacitors are designed to meet ANSI Std 18

—Units for special applications (i.e. system harmonics) or other non-standard capacitors, contact Product Department or visit www.ge.com/energy

—CSA labeling available upon request

Single Phase Standard Ratings and Product Numbers¹

Voltage	BIL	50 kVAR		100 kVAR		150 kVAR		200 kVAR	
		1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing
2400	95	51L221WC62	51L201WC62	54L221WC62	54L201WC62	54L521WC62	54L501WC62	58L121WC62	58L101WC62
2770	95	51L222WC29	51L202WC29	54L222WC69	54L202WC69	54L522WC69	54L502WC69	58L122WC70	58L102WC70
4160	95	51L223WC70	51L203WC70	54L223WC70	54L203WC70	54L523WC70	54L503WC70	58L123WC70	58L103WC70
4800	95	51L224WC70	51L204WC70	54L224WC70	54L204WC70	54L524WC62	54L504WC62	58L124WC62	58L104WC62
6640	95	51L225WC70	51L205WC70	54L225WC70	54L205WC70	54L525WC70	54L505WC70	58L125WC70	58L105WC70
7200	95	51L226WC70	51L206WC70	54L226WC70	54L206WC70	54L526WC70	54L506WC70	58L126WC70	58L106WC70
7620	95	51L227WC70	51L207WC70	54L227WC70	54L207WC70	54L527WC70	54L507WC70	58L127WC70	58L107WC70
7960	95	51L228WC70	51L208WC70	54L228WC70	54L208WC70	54L528WC70	54L508WC70	58L128WC70	58L108WC70
8320	95	51L235WC70	51L215WC70	54L235WC70	54L215WC70	54L535WC70	54L515WC70	58L129WC70	58L109WC70
9960	95	51L234WC70	51L214WC70	54L234WC70	54L214WC70	54L534WC70	54L514WC70	58L130WC70	58L110WC70
12470	95	51L229WC70	51L209WC70	54L229WC70	54L209WC70	54L529WC70	54L509WC70	58L131WC70	58L111WC70
13280	95	51L230WC70	51L210WC70	54L230WC70	54L210WC70	54L530WC70	54L510WC70	58L132WC70	58L112WC70
13800	95	51L231WC70	51L211WC70	54L231WC70	54L211WC70	54L531WC70	54L511WC70	58L133WC70	58L113WC70
14400	95	51L232WC70	51L212WC70	54L232WC70	54L212WC70	54L532WC70	54L512WC70	58L134WC70	58L114WC70
19920	150	51L255WC62	-	54L255WC62	-	54L555WC70	-	58L155WC70	-
21600	150	51L256WC62	-	54L256WC62	-	54L556WC70	-	58L156WC70	-

Voltage	BIL	300 kVAR		400 kVAR		500 kVAR		600 kVAR	
		1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing
2400	95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2770	95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4160	95	59L123WC70	59L103WC70	98L123WC59	98L103WC59	N/A	N/A	N/A	N/A
4800	95	59L124WC62	59L104WC62	98L124WC62	98L104WC62	N/A	N/A	N/A	N/A
6640	95	59L125WC70	59L105WC70	98L125WC60	98L105WC60	98L525WC60	98L505WC60	98L585WC60	98L565WC60
7200	95	59L126WC62	59L106WC62	98L126WC63	98L106WC63	98L526WC62	98L506WC62	98L586WC60	98L566WC60
7620	95	59L127WC70	59L107WC70	98L127WC70	98L107WC70	98L527WC70	98L507WC70	98L587WC70	98L567WC70
7960	95	59L128WC70	59L108WC70	98L128WC70	98L108WC70	98L528WC70	98L508WC70	98L588WC70	98L568WC70
8320	95	59L129WC70	59L109WC70	98L129WC70	98L109WC70	98L529WC70	98L509WC70	98L589WC70	98L569WC70
9960	95	59L130WC70	59L110WC70	98L130WC70	98L110WC70	98L530WC70	98L510WC70	98L590WC69	98L570WC69
12470	95	59L131WC70	59L111WC70	98L131WC70	98L111WC70	98L531WC70	98L511WC70	98L591WC70	98L571WC70
13280	95	59L132WC70	59L112WC70	98L132WC70	98L112WC70	98L532WC70	98L512WC70	98L592WC62	98L572WC62
13800	95	59L133WC70	59L113WC70	98L133WC70	98L113WC70	98L533WC60	98L513WC60	98L593WC62	98L573WC62
14400	95	59L134WC62	59L114WC62	98L134WC62	98L114WC62	98L534WC62	98L514WC62	98L594WC62	98L574WC62
19920	150	59L155WC70	-	98L155WC62	-	98L555WC61	-	98L595WC60	-
21600	150	59L156WC60	-	98L156WC62	-	98L556WC61	-	98L596WC60	-

¹Larger kVAR units, extra creep options and other voltages are available. Consult factory for product numbers and pricing.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

High Voltage Capacitor Units, Single- and Three-Phase

Section 20

Heavy Duty

Film/Foil Designs w/Dielektrol®)

50-600 kVAR, 60 Hertz

2400-24,940 Volts

GE Heavy Duty all-film capacitors are designed, manufactured, and tested to meet the requirements of all applicable ANSI/IEEE, NEMA, and IEC standards. In addition they are designed to exceed the requirements of these standards in terms of continuous rms and peak overvoltage withstand capabilities. They are good for 125% continuous rms overvoltage capability and 135% peak overvoltage capability. These capacitors are suitable for industrial power systems that have higher voltages or harmonic loads. CSA Labeling available upon request and 50 HZ designs also available upon request.

GE Heavy Duty 125% Continuous Overvoltage Capability Product Numbers

Voltage	BIL	50 KVAR		100 KVAR		150KVAR		200KVAR	
		1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing
2400	95	51L221WC10	51L201WC10	54L221WC10	54L201WC10	54L521WC10	54L501WC10	58L121WC10	58L101WC10
2770	95	51L222WC10	51L202WC10	54L222WC10	54L202WC10	54L522WC10	54L502WC10	58L122WC10	58L102WC10
4160	95	51L223WC10	51L203WC10	54L223WC10	54L203WC10	54L523WC10	54L503WC10	58L123WC10	58L103WC10
4800	95	51L224WC10	51L204WC10	54L224WC10	54L204WC10	54L524WC10	54L504WC10	58L124WC10	58L104WC10
6640	95	51L225WC10	51L205WC10	54L225WC10	54L205WC10	54L525WC10	54L505WC10	58L125WC10	58L105WC10
7200	95	51L226WC10	51L206WC10	54L226WC10	54L206WC10	54L526WC10	54L506WC10	58L126WC10	58L106WC10
7620	95	51L227WC10	51L207WC10	54L227WC10	54L207WC10	54L527WC10	54L507WC10	58L127WC10	58L107WC10
7960	95	51L228WC10	51L208WC10	54L228WC10	54L208WC10	54L528WC10	54L508WC10	58L128WC10	58L108WC10
8320	95	51L235WC10	51L215WC10	54L235WC10	54L215WC10	54L535WC10	54L515WC10	58L129WC10	58L109WC10
9960	95	51L234WC10	51L214WC10	54L234WC10	54L214WC10	54L534WC10	54L514WC10	58L130WC10	58L110WC10
12470	95	51L229WC10	51L209WC10	54L229WC10	54L209WC10	54L529WC10	54L509WC10	58L131WC10	58L111WC10
13280	95	51L230WC10	51L210WC10	54L230WC10	54L210WC10	54L530WC10	54L510WC10	58L132WC10	58L112WC10
13800	95	51L231WC10	51L211WC10	54L231WC10	54L211WC10	54L531WC10	54L511WC10	58L133WC10	58L113WC10
14400	95	51L232WC10	51L212WC10	54L232WC10	54L212WC10	54L532WC10	54L512WC10	58L134WC10	58L114WC10
19920	150	51L255WC10	-	54L255WC10	-	54L555WC10	-	58L155WC10	-
21600	150	51L256WC10	-	54L256WC10	-	54L556WC10	-	58L156WC10	-

Voltage	BIL	300 KVAR		400 KVAR		500 KVAR	
		1 Bushing	2 Bushing	1 Bushing	2 Bushing	1 Bushing	2 Bushing
2400	95	N/A	N/A	N/A	N/A	N/A	N/A
2770	95	N/A	N/A	N/A	N/A	N/A	N/A
4160	95	59L123WC10	59L103WC10	98L123WC10	98L103WC10	N/A	N/A
4800	95	59L124WC10	59L104WC10	98L124WC10	98L104WC10	N/A	N/A
6640	95	59L125WC10	59L105WC10	98L125WC10	98L105WC10	98L525WC10	98L505WC10
7200	95	59L126WC10	59L106WC10	98L126WC10	98L106WC10	98L526WC10	98L506WC10
7620	95	59L127WC10	59L107WC10	98L127WC10	98L107WC10	98L527WC10	98L507WC10
7960	95	59L128WC10	59L108WC10	98L128WC10	98L108WC10	98L528WC10	98L508WC10
8320	95	59L129WC10	59L109WC10	98L129WC10	98L109WC10	98L529WC10	98L509WC10
9960	95	59L130WC10	59L110WC10	98L130WC10	98L110WC10	98L530WC10	98L510WC10
12470	95	59L131WC10	59L111WC10	98L131WC10	98L111WC10	98L531WC10	98L511WC10
13280	95	59L132WC10	59L112WC10	98L132WC10	98L112WC10	98L532WC10	98L512WC10
13800	95	59L133WC10	59L113WC10	98L133WC10	98L113WC10	98L533WC10	98L513WC10
14400	95	59L134WC10	59L114WC10	98L134WC10	98L114WC10	98L534WC10	98L514WC10
19920	150	59L155WC10	-	98L155WC10	-	98L555WC10	-
21600	150	59L156WC10	-	98L156WC10	-	98L556WC10	-



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

High Voltage Capacitor Units, Single- and Three-Phase

Section 20

For up to date Capacitor Outline Drawings go to the web:

- Go to <http://www.ge-energy.com/ecatalog/html/index>
- Select Capacitors and input voltage, kVAR, and number of bushings
- Click search to bring up matches
- Select the appropriate match by clicking on the product number; this will pull up information on the capacitor with the opportunity to select additional resources where an outline drawing can be selected

Single-Phase Unit Prices

List Price Each, GO 411 Standard BIL

kVar	Bushings	Standard Duty			Heavy Duty		
		15,000 Volts and Below Except 2770 Volts	2770 Volt Units	Above 15,000 Volts	15,000 Volts and Below Except 2400 & 2770 Volts	2400 & 2770 Volt Units	Above 15,000 Volts
50	1	\$485.00	\$549.00	\$575.00	\$606.00	\$659.00	\$719.00
	2	\$514.00	\$577.00	-	\$643.00	\$692.00	-
100	1	\$549.00	\$614.00	\$585.00	\$686.00	\$737.00	\$731.00
	2	\$577.00	\$641.00	-	\$721.00	\$769.00	-
150	1	\$614.00	\$693.00	\$706.00	\$768.00	\$832.00	\$883.00
	2	\$641.00	\$721.00	-	\$801.00	\$865.00	-
200	1	\$693.00	\$832.00	\$738.00	\$866.00	\$998.00	\$923.00
	2	\$721.00	\$859.00	-	\$901.00	\$1031.00	-
300	1	\$832.00	-	\$886.00	\$1040.00	-	\$1108.00
	2	\$859.00	-	-	\$1074.00	-	-
400	1	\$998.00	-	\$1051.00	\$1248.00	-	\$1314.00
	2	\$1024.00	-	-	\$1280.00	-	-
500	1	\$1155.00	-	\$1208.00	\$1444.00	-	\$1510.00
	2	\$1180.00	-	-	\$1475.00	-	-
600	1	\$1355.00	-	\$1418.00	-	-	-
	2	\$1381.00	-	-	-	-	-



50-600 Kvar, 2400-24940 Volt
Single-Phase Capacitor



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

High Voltage Capacitor Units, Single- and Three-Phase

Three-Phase Units and Accessories

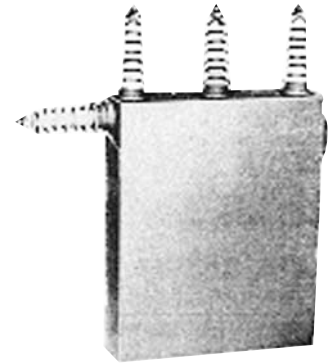
Section 20

Three Phase Cantilever Mount Units

These three-phase capacitor units use the same technology as our single-phase units and when mounted directly to a pole offer a convenient single piece alternative to a multi-unit pole mount rack.

Standard Ratings and Product Numbers

Voltage	BIL (kV)	300 kVAR		400 kVAR	
		3 - Bushing Grounded Wye	4 - Bushing Ungrounded Wye	3 - Bushing Grounded Wye	4 - Bushing Ungrounded Wye
4160/2400	95	59L603WC40	59L623WC40	98L603WC40	98L623WC40
12470/7200	95	59L611WC41	59L631WC41	98L611WC48	98L631WC48
13200/7620	95	59L612WC40	59L632WC40	98L612WC48	98L632WC48
13800/7960	95	59L613WC40	59L633WC40	98L613WC48	98L633WC48
14400/8320	95	59L614WC40	59L634WC40	98L614WC48	98L634WC48



Ungrounded Wye
Three-Phase Capacitor

Three-Phase Unit Prices

kVAR	List Price Each, GO-411	
	3-Bushing	4-Bushing
300	\$2420.00	\$2670.00
400	\$3550.00	\$3800.00

Pole Mounted Racks Factory Assembled—Welded

Total Unit Capacity	95kV-BIL		125kV-BIL	
	Product Number	List Price GO-411B	Product Number	List Price GO-411B
3	33F10AA002	\$345.00	33F24AA004	\$365.00
6	33F10BA002	\$390.00	33F26BA004	\$410.00
9	33F10CA002	\$435.00	33F26CA004	\$455.00
12	33F10DA002	\$480.00	33F26DA004	\$500.00

Fuse Holders

Product Number	kV	Rating		List Price GO-411B
		Current	Interrupting	
31F2807001	15	50	3600 amp. Sym	\$34.00
31F2808001	23	25	3600/1800 amp. Sym	\$36.00
115A161500041	8	100	7400 amp. Sym	\$128.00
115A161500049	25	50	1800 amp. Sym	\$162.00

Field Assembly—Bolted¹

Total Capacity # of Units	BIL	Product Number	List Price GO-411B
3	95	39F0083004	\$200.00
3	125	39F0083015	\$220.00
6	95	39F0086010	\$225.00
6	125	39F0086011	\$245.00

¹ Field assembly racks are for fixed applications only and will not support the addition of switches.

Bird Caps/Wildlife Protectors

Description	Product Number	List Price GO-411B
Capacitor Bird Caps with Sleeve	614A507000101	\$8.00

Flipper Springs

Drawing Number	Application	List Price GO-411B
248A695400001	Upright	\$8.00
248A695400002	Edgemount	\$8.00

HV Fuses and Fuse Links

Drawing Number	EEI-NEMA	List Price GO-411B
115A162000078	8T	\$10.50
115A162000079	10T	\$10.50
115A162000080	12T	\$10.50
115A162000063	15T	\$10.50
115A162000081	20T	\$10.50
115A162000035	25T	\$10.50
115A162000053	30T	\$10.50
115A162000036	40T	\$10.50
115A162000043	50K	\$10.50
115A162000024	65K	\$10.50
115A162000059	80K	\$18.50
115A162000025	100K	\$18.50



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters High Voltage Pole-Mounted, Open Stack-Rack and Metal Enclosed Equipment

Section 20

Pole-type Equipment
150-3600 kVAR, 60 Hertz
Open Stack-rack Banks
1200 kVAR and above, 60 Hertz

Metal Enclosed
2.4 through 38kV
150 kVAR and above

Pole Mounted Equipment Description

These equipments are pre-wired, factory assembled, and shipped ready for pole installation with single-phase units. Racks are of welded structural aluminum and are suitable for mounting switches and junction box and cable assembly. Lightning arresters and/or potential transformers can also be mounted.

Required Data for Pole-Type Quotation:

The following questions must be answered before contacting the factory for a quotation.

1. Total kVAR? _____
2. Line-to-line (system) voltage? _____
3. Line-to-neutral voltage? _____
4. Bank connection — Delta, Grounded Wye, or Floating Wye? _____
5. Fixed or switched? _____
(check one)
 - a. Fixed expandable (switches later) _____
 - b. Fixed nonexpandable (no switches later) _____
 - c. Switch type (vacuum or oil) _____
6. Number of capacitor bushings (1 or 2)? _____ BIL (Basic Insulation Level) _____
7. Options (specify):
 - a. Current transformer
 - b. Potential transformer
 - c. Lightning arresters
 - d. Switching controls (example: voltage, current, kVAR, time controls)
 - e. Other. Please specify _____

Open Stack-Rack Equipment Description

This application is most popular for large blocks of three-phase Kilovar. Capacitor units and individual fuses are installed in welded aluminum racks, either upright or edge-mount. Racks are shipped ready for field installation with base and inter-rack insulators, substructure, interconnecting bus wire and other accessories for a three-phase equipment.

Harmonic filter banks are available. Submit complete specifications including harmonic currents and voltages.

Required Data for Stack-Rack Quotation:

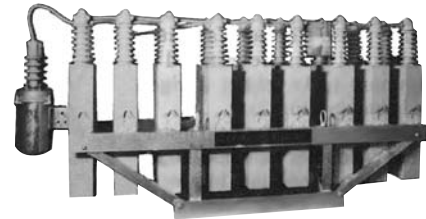
The following questions must be answered before contacting the factory for a quotation.

1. Total kVAR? _____
2. Line-to-line (system) voltage? _____
3. Bank connection — Floating Wye, Grounded Wye, Delta, or Double Wye¹? _____
4. Fixed or switched²? _____
 - a. If switched, how many steps? _____
 - b. If switched, how many kVAR per step? _____
5. Is substructure required (8 ft. standard)? _____
6. Space limitations (if any). Please specify _____
7. Options (specify):
 - a. Current transformer
 - b. Potential transformer
 - c. Ground switch (phase, neutral, both)
 - d. Other. Please specify _____
8. When optional apparatus is requested, state the available short circuit current for proper sizing of the options.

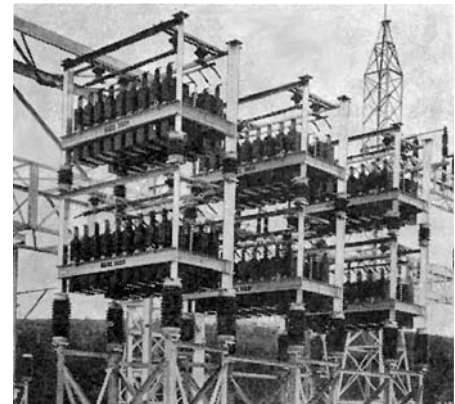
¹Three-phase, 60 Hertz is assumed. Specify if different.

²If switched:

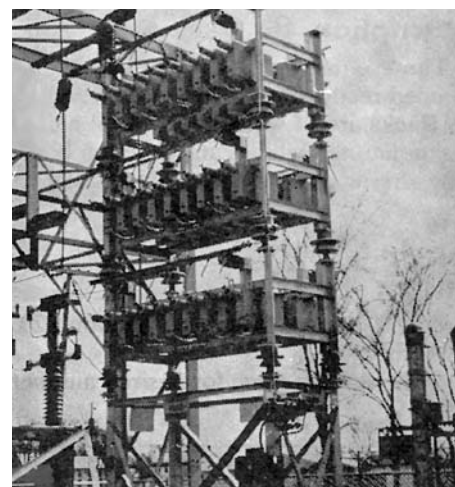
- a. Supply specification on switch requested.
- b. Advise if any parallel banks and ratings.



Typical in-line pole-type equipment,
single-phase units



Upright stack-rack equipment



Edgemount stack-rack equipment



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters High Voltage Pole-Mounted, Open Stack-Rack and Metal Enclosed Equipment

Metal Enclosed Capacitor Banks

2.4 thru 38KV

Section 20

These power factor correction equipments are metal enclosed for indoor and outdoor installations. These banks can be located on a distribution feeder as a small padmount or at the workstation site. Banks are shipped ready for installation. Banks can be provided with the following options: oil or vacuum switching, automatic control and protection, stainless steel housing, custom colors, key mechanical or electrical interlocks, capacitor removal device, NEMA 1, 3R, 4, 4X or 12 enclosures.



Metal Enclosed Cabinet

Required Data for Metal Enclosed Quotation:

The following questions must be answered before contacting the factory for a quotation.

1. Total kVAR? _____
2. Line-to-line (system) voltage? _____
3. Bank connection - Floating Wye, Grounded Wye, Delta, or Double Wye ? _____
When in doubt Floating Wye is typically the best choice to avoid fault protection issues
4. Fixed or switched? _____
 - a. If switched do you want automatic control? _____
 - b. If switched, how many steps? _____
 - c. If switched, how many kVAR per step? _____
5. Space or access limitations (if any). Please specify _____
6. Type of Enclosure (Indoor or Outdoor; is Stainless Steel required)
7. Options (specify):
Incoming Air Disconnect _____
Main Incoming fuses (capacitors will be individually fused as standard practice) _____
Ground switch (phase, neutral, both) _____
Power factor Controller (see 4a above) _____
Key Interlocks _____
Blown fuse Detection System _____
Control Power Transformer _____
Arresters - Distribution, Intermediate or Station class _____
Incoming Breaker _____
Power Quality Meter _____
Overload protection (Yes or No) _____
Overvoltage protection (Yes or No) _____
Relay requirements (class, type, brand, other please specify) _____
Other. Please specify _____
8. When optional apparatus is requested, state the available short circuit current for proper sizing of the options. _____
9. Harmonic Filter Bank (Yes or No) _____
If yes, tuning point (5th, 7th, 11th, ...) _____



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Application

Single-pole, remote-control, outdoor oil switch is a completely self-contained, motor-operated, nonautomatic device. Application is the switching of line or station capacitor banks.

Oil Switches—Motor Operated¹

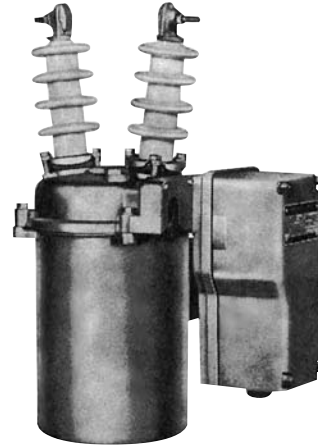
Number of Poles	Rating	Product Number	List Price GO-411A	Weight	
				Lb	Kg
1	14.4 kV, 200A, 95 kV BIL	115A165700023	\$581.00	37	16.7
3 ²	14.4 kV, 200A, 95 kV BIL	9F90DBF342	\$1997.00	120	54.0
1	24.9 Grd Y/14.4 kV, 200A 125 kV BIL, 17" Creep	115A165700024	\$660.00	38	17.1
3 ²	24.9 Grd Y/14.4 kV, 200A 125 kV BIL, 17" Creep	9F90DCF342	\$2236.00	126	56.7
1	34.5 Grd Y/19.92 kV, 60A or 24.9 Grd Y/14.4 kV, 200A 150 kV BIL, 17" Creep	115A165700027	\$663.00	38	17.1
3 ²	34.5 Grd Y/19.92 kV, 60A or 24.9 Grd Y/14.4 kV, 200A 150 kV BIL, 17" Creep	9F90DF342	\$2242.00	126	56.7

¹ Each switch equipped with its own motor, and 5-pin receptacle.

² Junction box and cable assembly available List each, GO-411A \$265.00.
For 3 Pole assembly product number 223B2230BA013.

Data and Load Switching

- Drive-motor Data
 - Rating: 120 volts, 50/60 Hertz, a-c
(240 volts, 50/60 Hertz, a-c, also available)
 - Running Current: 3 amperes
 - Operating Time: approximately 3 seconds open, 3 seconds close
- Switch Data and Ratings
 - Oil-tank Capacity: 1.5 gallons
 - Maximum Momentary Rating: 9000 rms amperes asymmetrical
 - One-second Rating: 6000 rms amperes symmetrical
 - Make-and-latch Rating: 9000 rms amperes asymmetrical
 - Maximum Peak-inrush Rating: 12,000 amperes



Motor Operated Switch

Capacitive Load Switching (Maximum)

Maximum three-phase, 60 Hertz rating to be switched.

Amperes	BIL	L-L Volts	kVAR	Amperes	BIL	Volts	kVAR
200	95	2400	600	200	110 125	24900 Grd Wye	6000
		4160	1050				
		4800	1250				
		7200	1850				
		7960	2100				
	125	12470	3250	60	125	34500 Grd Wye	2700
		13200	3450				
		13800	3600				
		14400	3600				

Optional Items

Item No.	For Single Pole Switch	List Price GO-411A
1	Disconnect plug for receptacle, Model No. 9F90AAW027	\$51.00
2	Bushing Caps, Model No. 115A168500591	\$15.00



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

OEM High Energy Surge Protectors

9L10K Series
120-600 Volt Ratings

Section 20

This HESP design is intended for mounting in OEM equipment or in an existing enclosure to offer protection against internally and externally generated surges. UL-1449, Second Edition Recognized Component designed and tested according to ANSI/IEEE C62.41 and C62.45.

Features

Energy Capability Options: This high energy capability option permits survivability in demanding environments and a lower clamping level for better protection.

High Surge Current Capability: The 76mm HESP protective elements are designed and tested at 100kA per mode.

Parallel or Series Connection: Unfused protectors are suitable for series connection in circuits rated up to 100 amps continuous, and T-connection (parallel) with no limitation on continuous load current.

The ability to connect the units in the series configuration offers optimum protection. This connection keeps lead length inductive voltage to a minimum and provides the lowest protective levels for each rating.

Dependable Protection: The unique zinc oxide "valve" element inside each arrester gives you improved overvoltage protection. These tough elements are designed so that they can handle surge after surge without trouble, breakdown, or repairs. Your TRANQUELL® arrester's protective ability will remain unchanged throughout its service life.



Common Mode Protection Option: In addition to normal mode protection (L-L and L-N), HESP offers common mode protection (L-G and N-G) for 3-phase wye and single-phase 1 or 2 pole devices. This optional protection is recommended for devices remotely located from the system neutral to ground bond.

9L10K Series is direct replacement for superseded 9L10M Series.

Selection and Ratings

Nominal Voltage and Configuration (Volts, rms)	Max. Continuous Operating Voltage (Volts, rms)	1 second Temporary Overvoltage (Volts, rms)	Diagram Figure page 20-48	Energy Rating (Joules per Phase)	UL-1449, Second Edition Suppressed Voltage Rating (SVR) with 6 leads				Product Number ¹	List Price GO-57
					L-N	N-G ²	L-G ^{2,3}	L-L		
120, 1 Phase 2 Wire	Line-Neutral 138	L-N 183	1	960 2688	400 400	330 330	- -	- -	9L10KAA112 9L10KAA132NO	\$1622.00 \$2377.00
208 WYE/120 3 Phase, 4 Wire	Line-Neutral 138 Line-Line 239	L-N 183 L-L317	3, 4	960 2688	400 400	330 330	700 700	700 700	9L10KAB314 ⁴ 9L10KAB334NO	\$1864.00 \$3573.00
120/240 1 Phase, 3 Wire	Line-Neutral 138 Line-Line 276	L-N 183 L-L367	2	960 2688	400 400	400 400	700 700	700 700	9L10KAC113 9L10KAC133NO	\$1622.00 \$2681.00
240/480 1 Phase, 3 Wire	Line-Neutral 276 Line-Line 552	L-N 367 L-L 734	2	1920 5376	700 700	700 700	1200 1200	1200 1200	9L10KAD113 9L10KAD133NO	\$2103.00 \$3255.00
240, 1 Phase 2 Wire	Line-Neutral 276	L-N 367	1	1920 5376	700 700	700 700	- -	- -	9L10KAE112 9L10KAE132NO	\$1572.00 \$1772.00
240 Delta 3 Phase, 3 Wire	Line-Line 276	L-L 367	5, 6	1920 5376	- -	- -	700 700	1200 1200	9L10KAF313 ⁴ 9L10KAF333NO	\$2124.00 \$4054.00
240 WYE/138 3 Phase, 4 Wire	Line-Neutral 158 Line-Line 276	L-N 211 L-L 366	3, 4	1108 3102	400 400	400 400	800 800	800 800	9L10KAG314 ⁴ 9L10KAG334NO	\$1864.00 \$3534.00
480, 1 Phase 2 Wire	Line-Neutral 552	L-N 734	1	3840 10752	1500 1500	1500 1500	- -	- -	9L10KAJ112 9L10KAJ132NO	\$1643.00 \$1841.00
480 Delta 3 Phase, 3 Wire	Line-Line 552	L-L 734	5, 6	3840 10752	- -	- -	800 800	1500 1500	9L10KAK313 ⁴ 9L10KAK333NO	\$1772.00 \$3833.00
480 WYE/277 3 Phase, 4 Wire	Line-Neutral 318 Line-Line 552	L-N 424 L-L 734	3, 4	2216 6205	800 800	800 800	1500 1500	1500 1500	9L10KAL314 ⁴ 9L10KAL334NO	\$1961.00 \$3964.00

¹Add \$70.00 list for optional Common Mode Protection and change the product numbers as follows: for single-phase devices substitute 2 in the 8th position of the product number. For 3-phase WYE devices substitute 4 in the 8th position of the product number.

²N-G and L-G values for WYE product numbers are only applicable to those units with the optional common mode protection.

³For service entry applications where the neutral and ground are bonded, the L-G rating is equivalent to the L-N rating.

⁴Units indicated are not UL approved.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

OEM High Energy Surge Protectors

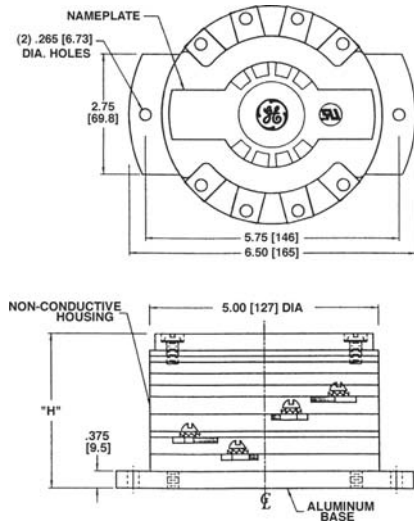
9L10K Series

120 – 600 Volt Ratings

Section 20

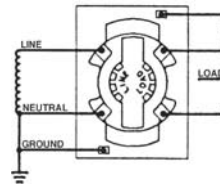
Connection Diagrams

4-terminal device shown
Dimensions (in/mm)



Product Number	"H" Dimension	
	inches	mm
9L10KAA112	1.75	44.5
9L10KAA132NO	2.00	50.8
9L10KAB314	2.75	69.9
9L10KAB334NO	3.38	85.9
9L10KAC113	2.50	63.5
9L10KAC133NO	3.00	76.2
9L10KAD113	2.50	63.5
9L10KAD133NO	3.00	76.2
9L10KAE112	1.75	44.5
9L10KAE132NO	2.25	57.2
9L10KAF313	2.25	57.2
9L10KAF333NO	3.75	95.3
9L10KAG314	2.75	69.9
9L10KAG334NO	3.38	85.9
9L10KAJ112	1.75	44.5
9L10KAJ132NO	2.25	57.2
9L10KAK313	2.25	57.2
9L10KAK333NO	3.75	95.3
9L10KAL314	2.88	73.2
9L10KAL334NO	4.38	111.3
9L10KAM313	2.62	66.5
9L10KAM333NO	4.50	114.3
9L10KAN314	2.88	73.2
9L10KAN334NO	4.38	111.3

Series Connection
Max. Continuous Current:
100A/Phase



"T" Connection
Max. Continuous Current:
Unlimited

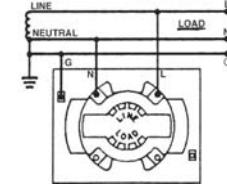


Fig. 1 Single Phase 2 or 3 Wire

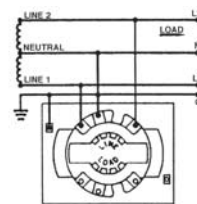
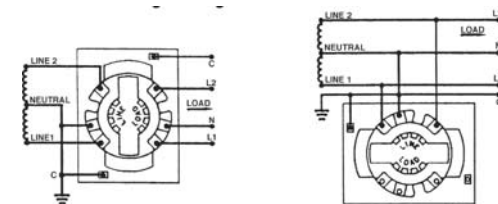


Fig. 2 Single Phase 3 or 4 Wire

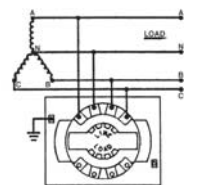
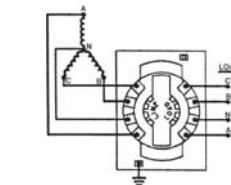


Fig. 3 Three Phase Wye Ungrounded

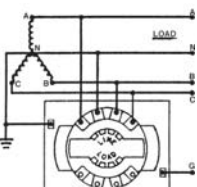
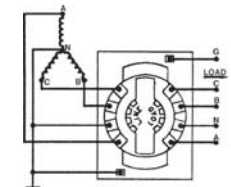


Fig. 4 Three Phase Wye/4 or 5 Wire/GND Neutral

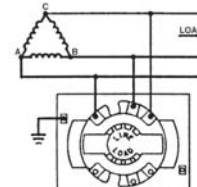
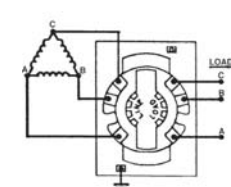


Fig. 5 Three Phase Delta/Ungrounded

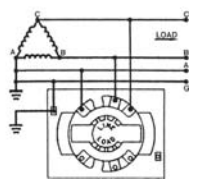
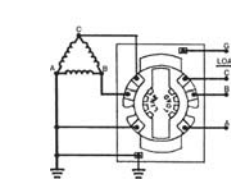


Fig. 6 Three Phase Delta/One Phase Grounded



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Capacitors, Arresters and Harmonic Filters

TRANQUELL® Motor Surge Protector

Section 20

Motor and Generator Surge Protection Equipment

Three-Phase, 60 Hz

2400 through 24,000 Volt Ratings

NEMA 12/3R Enclosure

Description

TRANQUELL® MOTOR SURGE PROTECTOR provides surge protection for AC rotating machines including motors and generators. They are typically applied directly at the motor terminals and consist of GE TRANQUELL® Station Class arresters connected in parallel with GE Dielektrol® Protective Capacitor(s). The arresters protect the major insulation to ground by limiting the amplitude of applied impulse waves or reflections within the machine windings, while the protective capacitor(s) reduce the steepness of wave fronts. Studies indicate that this dual protection approach results in significant reduction of lightning stresses imposed on rotating machines and contribute to increased security against failures and downtime costs. Enclosure is suitable for indoor and outdoor applications.

How to Select

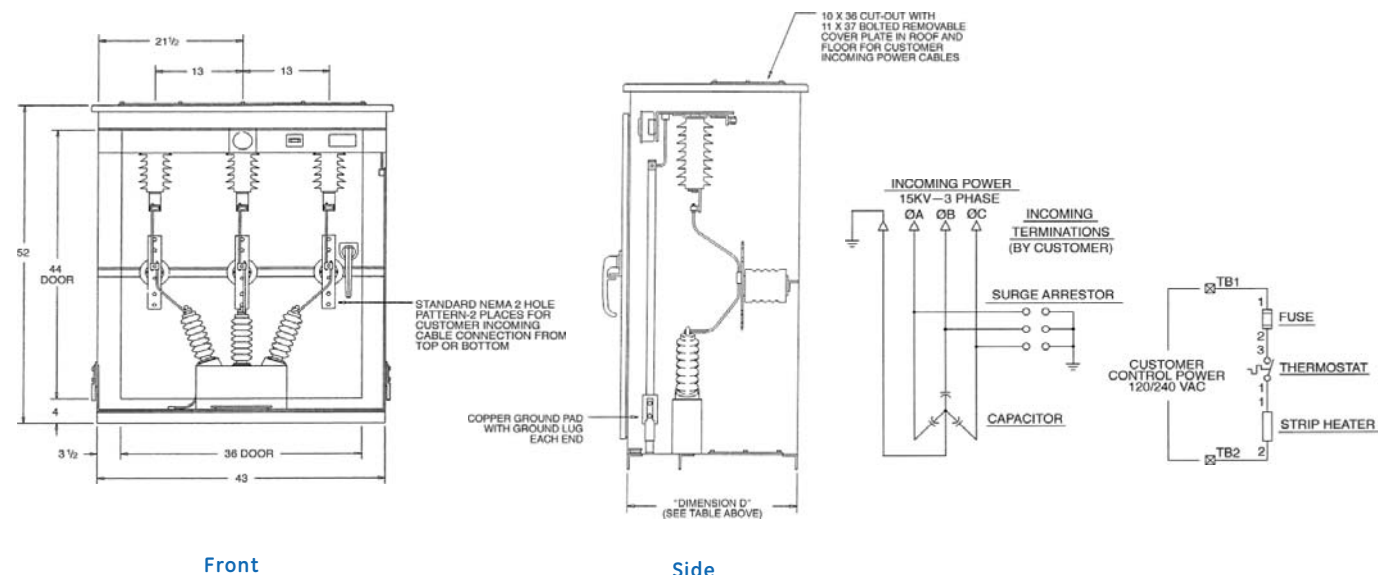
1. Determine the nominal system voltage and connection at the equipment being protected (Line-to-Line voltage, delta or wye, grounded or ungrounded).
2. Select product number (column 2 or 3) based on the line to line voltage (column 1).

Selection Table

Voltage Rating rms Volts (L-L)	Product No. Delta & Ungrounded Neutral Systems	Product No. Grounded Neutral Systems	List Price Each, GO-412A	Arrester Rating kV rms	Arrester MCOV kV rms	Capacitor Microfarads per Pole µF	Dimension "D" (side view)	Weight lbs
2400	38F2401	—	\$8426.00	3	2.55	0.5	23"	300
4160	38F2402	—	\$8469.00	6.0	5.1	0.5	23"	300
—	—	38F2403	\$8426.00	3	2.55	0.5	23"	300
4800	38F2404	—	\$9457.00	6	5.1	0.5	23"	300
6900	38F2405	—	\$9929.00	9.0	7.65	0.5	23"	300
7200	38F2406	—	\$8646.00	9	7.65	0.5	23"	300
13200	38F2407	—	\$9669.00	18	15.3	0.25	23"	300
—	—	38F2408	\$9523.00	10	8.4	0.25	23"	300
13800	38F2409	—	\$9669.00	18	15.3	0.25	23"	300
—	—	38F2410	\$9531.00	12	10.2	0.25	23"	300
24000	38F2411	—	\$11553.00	27	22.0	0.125	36"	350
—	—	38F2412	\$11283.00	21	17.0	0.125	36"	350

Contact factory for other ratings.

Dimensions: (inches)



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Secondary Surge Arresters and Protective Capacitors

120-650 Vac
Series 9L15F

Section 20

Assures Service Continuity

The GE TRANQUELL® secondary arrester is specifically designed to protect utility, agricultural, and industrial installations and equipment in the 120-650 volt range from overvoltages caused by lightning discharges. It is available for both single- and three-phase application.

Applications that provide ideal installations for this arrester are:

- Exposed secondary circuits
- Watt hour meters
- Station auxiliary equipment and circuits
- Motors and control circuits
- Distribution transformer secondaries

Dependable Protection

The unique metal oxide element inside each TRANQUELL® arrester gives you improved overvoltage protection. These tough elements are designed so that they can handle surge after surge without trouble, breakdown, or repairs. Your arrester's protective ability will remain unchanged throughout its service life.

Secondary Arresters – Indoor or Outdoor Mounting

UL and CSA Listed - For Knockout or Bracket Mounting

Circuit Voltage Rating rms	Max. Permissible Line-to-Ground Voltage rms	No. of Poles	Net Weight (lbs/Kg)	Product Number ¹	List Price GO-58
120	175	2	1.0/0.4	9L15FCB001	\$62.50
650	650	1	1.0/0.4	9L15ECA001	\$44.00
650	650	2	1.0/0.4	9L15ECB001	\$58.00
650	650	3	1.0/0.4	9L15ECC001	\$72.00

Non-PCB Secondary Protective Capacitors—Indoor or Outdoor Mounting

Circuit Voltage Rating rms	Max. Permissible Line-to-Ground Voltage rms	No. of Poles	Net Weight (lbs/Kg)	Product Number ¹	List Price GO-58
0-650	650	3	4.00/1.8	9L18BBB301	\$152.00

¹Quantity break pricing applies; consult factory or your GE sales representative.

Secondary Surge Arrester Protective Characteristics

Discharge Voltage kV Crest (8 x 20 Microsecond Current Wave)				Discharge Capabilities 8 x 20 microsecond	Energy Handling Capability
1.5 kA	5.0 kA	10.0 kA	20.0 kA		
2.2	2.6	2.9	3.5	20,000 amp	900 joules per pole

Fusing

To minimize the possibility of violent rupture in the unlikely event of electrical failure of the arrester, current limiting fuses are recommended for all applications above 120 volts. A fuse must be installed in series with each pole of the arrester (i.e. each black wire). See Fuse Selection table below. The GEH-4982C instruction book shipped with each arrester also includes fusing guidelines.

Fuse Selection – For 9L15E Series (above 120V)

Arrester Location	Maximum Lightning Impulse ^{2,3}	Fuse Rating ⁴
A Long Branch Circuit more than 20m from Service Entrance with wires #14-10	200A	30 A; 600 V U.L. Class T 200,000 A Interrupt
B Major Feeders and Short Branch Circuits less than 20m from Service Entrance	3 kA 8x20 μs	30 A; 600 V U.L. Class T 200,000 A Interrupt
C Outside and Service Entrance	10 kA 4x10 μs	30 A; 600 V U.L. Class T 200,000 A Interrupt

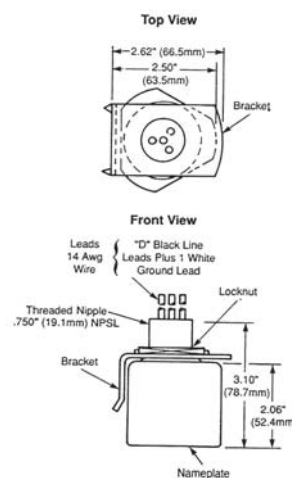


Figure 1
TRANQUELL® Arrester

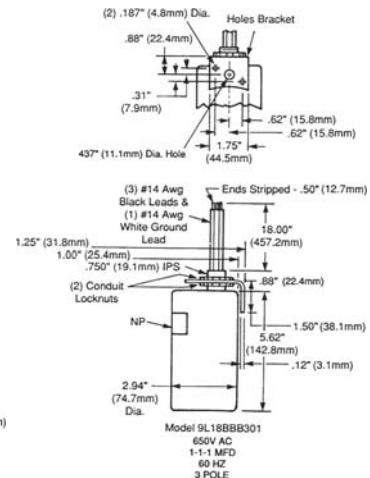


Figure 2
Protective Capacitor⁵

²Maximum impulse expected as described in ANSI/IEEE C62.41 for systems with medium exposure to surges. Arresters have been design tested to impulses as high as 20 kA, 8x20μs.

³Design tests for secondary arresters as required by ANSI/IEEE standards are limited to a maximum of 10 kA, 4x10μs impulses.

⁴UL Class CC (Midget) 30 A fuses are also satisfactory for locations A and B.

⁵Secondary capacitor is a 3-pole device that can be applied with 1- and 2-pole arresters by connecting the corresponding black leads and tying off the unused leads.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

TRANQUELL® Station Arresters

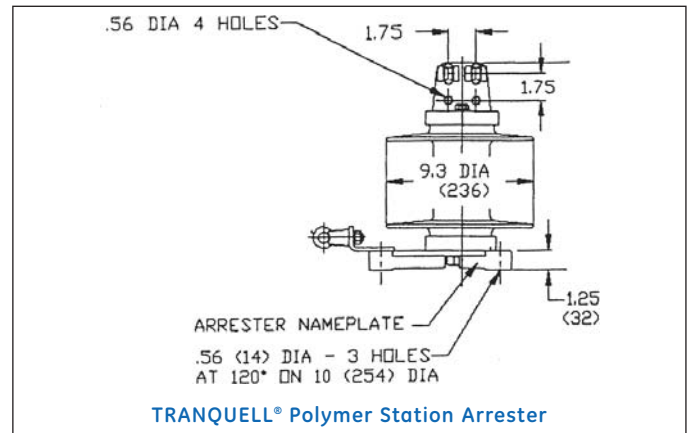
Polymer and Porcelain High-Voltage
Indoor and Outdoor Service

Product Description

TRANQUELL® XE porcelain and XEP polymer station arresters provide both excellent protective characteristics and temporary overvoltage capability. Gapless construction results in a design which is simple, reliable and economical while offering excellent fault current capability to meet the most demanding service conditions. The GE arrester is based on the field-proven metal oxide disks known for maintaining stable characteristics. Station arresters are designed and manufactured in accordance with the latest revision of ANSI/IEEE C62.11.

Porcelain and Polymer Arresters (Station Class)

for both Indoor and Outdoor Mounting (2.7-612 kVrms)



Normally Used on System Voltage Class (L-L)											
Maximum ¹ Continuous Voltage Capability (L-N) kVrms			High Impedance ² Grounded, Ungrounded (Delta) or Temporarily Neutral System		Product Number (Gray Porcelain) ⁴		Product Number (Gray Silicone) ⁴	Product Number (Gray Polymer) ⁴			
Arrester Rating	Porc	Poly	Ungrounded Circuits	Solidly Grounded Neutral System kVrms	Metal Top for Indoor or Outdoor Mounting	Porcelain Top for Indoor or Cubicle Mounting	Metal Top for Indoor or Outdoor Mounting	List Price GO-53/54	4-hole NEMA Pad Upright Mounting for Indoor or Outdoor	Eyebolt Terminal for Indoor or Outdoor Upright Mounting ³	List Price GO-53/54
3	2.55		2.4	4.16	9L11ZGA003S	9L11ZGB003S		\$750.00	9L11XPA003S	9L11XPB003S	\$590.00
6	5.1		4.8	-	9L11ZGA006S	9L11ZGB006S		\$779.00	9L11XPA006S	9L11XPB006S	\$609.00
9	7.65	7.85	7.2	12.47	9L11ZGA009S	9L11ZGB009S		\$878.00	9L11XPA009S	9L11XPB009S	\$625.00
10	8.4		7.62	13.2	9L11ZGA010S	9L11ZGB010S		\$898.00	9L11XPA010S	9L11XPB010S	\$638.00
12	10.2		7.97	13.8	9L11ZGA012S	9L11ZGB012S		\$939.00	9L11XPA012S	9L11XPB012S	\$733.00
15	12.7		13.8 ²	20.78	9L11ZGA015S	9L11ZGB015S		\$1294.00	9L11XPA015S	9L11XPB015S	\$796.00
18	15.3		13.8	24.94	9L11ZGA018S	9L11ZGB018S		\$1310.00	9L11XPA018S	9L11XPB018S	\$893.00
21	17		-	24.94	9L11ZGA021S	9L11ZGB021S		\$1418.00	9L11XPA021S	9L11XPB021S	\$932.00
24	19.5		23 ²	-	9L11ZGA024S	9L11ZGB024S		\$1439.00	9L11XPA024S	9L11XPB024S	\$983.00
27	22		23	34.5	9L11ZGA027S	9L11ZGB027S		\$1737.00	9L11XPA027S	9L11XPB027S	\$1170.00
30	24.4		-	34.5	9L11ZGA030S	-		\$1737.00	9L11XPA030S	9L11XPB030S	\$1231.00
36	29		34.5 ²	-	9L11ZGA036S	-		\$1890.00	9L11XPA036S	9L11XPB036S	\$1338.00
39	31.5		34.5	-	9L11ZGA039S	-		\$2140.00	9L11XPA039S	9L11XPB039S	\$1495.00
45	36.5		41.6	-	9L11ZGA045S	-		\$2392.00	9L11XPA045S	9L11XPB045S	\$1596.00
48	39		46 ²	-	9L11ZGA048S	-		\$2430.00	9L11XPA048S	9L11XPB048S	\$1730.00
54	42		-	69	9L11ZTA054S	-	9L11HMA054S	\$2459.00	9L11XPA054S	9L11XPB054S	\$1817.00
60	48		-	69	9L11ZTA060S	-	9L11HMA060S	\$2596.00	9L11XPA060S	9L11XPB060S	\$1938.00
66	53		69	-	9L11ZTA066S	-		\$3032.00	9L11XPA066S	9L11XPB066S	\$2028.00
72	57		69	-	9L11ZTA072S	-	9L11HMA072S	\$3173.00	9L11XPA072S	9L11XPB072S	\$2037.00
90	74	70	-	115	9L11ZTA090S	-	9L11HMA090S	\$3765.00	9L11XPA090S	9L11XPB090S	\$2614.00
96	76		-	115	9L11ZTA096S	-	9L11HMA096S	\$3914.00	9L11XPA096S	9L11XPB096S	\$2934.00
108	84		115	138	9L11SXA108S	-		\$4727.00	9L11XPA108S	9L11XPB108S	\$3199.00
108	88		115	138	9L11ZTA108S	-	9L11HMA108S	\$4727.00	-	-	--
120	98		115	138/161	9L11ZTA120S	-	9L11HMA120S	\$4973.00	9L11XPA120S	9L11XPB120S	\$3454.00
132	106		138	161	9L11ZTA132S	-	9L11HMA132S	\$5519.00	9L11XPA132S	9L11XPB132S	\$3784.00
144	115		138/161	161	9L11ZTA144S	-	9L11HMA144S	\$6071.00	9L11XPA144S	9L11XPB144S	\$3988.00
168	131		161	-	9L11ZTA168S	-	9L11HMA168S	\$7197.00	9L11XPA168S	9L11XPB168S	\$5729.00
172	140		-	230	9L11ZTA172S	-	9L11HMA172S	\$7734.00	9L11XPA172S	9L11XPB172S	\$5550.00
180	144		-	230	9L11ZTA180S	-	9L11HMA180S	\$8012.00	9L11XPA180S	9L11XPB180S	\$6025.00
192	152		-	230	9L11ZTA192S	-	9L11HMA192S	\$8364.00	9L11XPA192S	9L11XPB192S	\$6285.00
228	180		230	-	9L11ZTA228S	-		\$9154.00	9L11XPA228S	9L11XPB228S	\$6862.00
240	194		230	-	9L11ZTA240S	-		\$10179.00	-	-	--
258	209		For Nominal 345 kV Systems		9L11ZTA258S	-	9L11HMA258S	\$10903.00	-	-	--
264	212		For Nominal 345 kV Systems		9L11ZTA264S	-	9L11HMA264S	\$11195.00	-	-	--
276	220		For Nominal 345 kV Systems		9L11ZTA276S	-	9L11HMA276S	\$11836.00	-	-	--
288	234		For Nominal 345 kV Systems		9L11ZTA288S	-		\$13363.00	-	-	--
294	237		For Nominal 345 kV Systems		9L11ZTA294S	-		\$14225.00	-	-	--
300	243		For Nominal 345 kV Systems		9L11ZTA300S	-		\$14717.00	-	-	--
312	245		For Nominal 345 kV Systems		9L11ZTA312S	-	9L11HMA312S	\$15829.00	-	-	--
300	243		For Nominal 400 kV Systems		9L11ZTA300S	-		\$14717.00	-	-	--
312	245		For Nominal 400 kV Systems		9L11ZTA312S	-		\$15829.00	-	-	--
336	264		For Nominal 400 kV Systems		9L11ZTA336S	-		\$17505.00	-	-	--
360	288		For Nominal 400 kV Systems		9L11ZTA360S	-		\$19774.00	-	-	--
396	318		For Nominal 400 kV Systems		9L11ZTA396S	-	9L11HMA396S	\$28182.00	-	-	--
420	335		For Nominal 400 kV Systems		9L11ZTA420S	-	9L11HMA420S	\$30261.00	-	-	--
396	318		For Nominal 500 kV Systems		9L16GNS396S	-		\$44241.00	-	-	--
420	335		For Nominal 500 kV Systems		9L16GNS420S	-		\$46471.00	-	-	--
444	353		For Nominal 500 kV Systems		9L16GNS444S	-		\$48466.00	-	-	--
588	470		For Nominal 765 kV Systems		9L16GNS588S	-		\$79664.00	-	-	--
612	485		For Nominal 765 kV Systems		9L16GNS612S	-		\$84433.00	-	-	--

¹TRANQUELL® Arresters are designed to be operated at voltages equal to or less than their continuous capability as stated in column 2.

²Application of specified rating is permissible for ungrounded or resistance grounded systems where a single phase ground may be tolerated for a substantial period of time not to exceed the arrester's overvoltage capability.

³For underhung (or upside down) mounting, with eyebolt terminal on the bottom, change letter B of the product number to E.

⁴Special Ratings available on request.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Station Arresters

Porcelain High-Voltage
Indoor and Outdoor Service

Section 20

Porcelain, Metal Top Station Arrester Dimensions, Leakage Distances, Mounting Clearances and Weights

Product Number	MCOV (kV)	Mounting Clearance ¹									
		"X" Overall Height		Leakage Dist		Phase to Phase		Phase To Ground		Weight	
		in	mm	in	mm	in	mm	in	mm	lb	kg
9L11ZGA003S	2.55	19.13	485.9	6.2	157.48	12	304.8	6	152.4	65	29.5
9L11ZGA006S	5.10	19.13	485.9	6.2	157.48	12	304.8	7	177.8	65	29.5
9L11ZGA009S	7.65	19.13	485.9	6.2	157.48	13	330.2	7	177.8	66	30
9L11ZGA010S	8.40	19.13	485.9	6.2	157.48	13	330.2	8	203.2	66	30
9L11ZGA012S	10.20	21.13	536.7	11.1	281.94	14	355.6	8.5	215.9	72	32.7
9L11ZGA015S	12.70	21.13	536.7	11.1	281.94	14	355.6	8.5	215.9	73	33.2
9L11ZGA018S	15.30	24.13	612.9	20	508	16	406.4	9	228.6	80	36.4
9L11ZGA021S	17	24.13	612.9	20	508	16	406.4	9	228.6	81	36.8
9L11ZGA024S	19.50	24.13	612.9	20	508	17	431.8	11	279.4	82	37.3
9L11ZGA027S	22	28.13	714.5	31.7	805.18	18	457.2	12	304.8	90	40.9
9L11ZGA030S	24.40	28.13	714.5	31.7	805.18	18	457.2	12	304.8	91	41.4
9L11ZGA036S	29	28.13	714.5	31.7	805.18	20	508	14	355.6	93	42.3
9L11ZGA039S	31.50	31.88	809.8	41	1041.4	21	533.4	14	355.6	105	47.7
9L11ZGA045S	36.50	31.88	809.8	41	1041.4	21	533.4	15	381	107	48.6
9L11ZGA048S	39	31.88	809.8	41	1041.4	22	558.8	15	381	109	49.5
9L11ZTA054S	42	38.13	968.5	60	1524	24	609.6	18	457.2	180	81.8
9L11ZTA060S	48	38.13	968.5	60	1524	25	635	19	482.6	185	84.1
9L11ZTA066S	53	44.1	1120.1	80	2032	26	660.4	20	508	220	100
9L11ZTA072S	57	44.13	1120.9	80	2032	26	660.4	20	508	220	100
9L11ZTA090S	74	50.63	1286.0	101	2565.4	35	889	29	736.6	260	118.2
9L11ZTA096S	76	50.63	1286.0	101	2565.4	37	939.8	31	787.4	265	120.5
9L11SKA108S	84	57.13	1451.1	122	3098.8	38	965.2	32	812.8	280	127.3
9L11ZTA108S	88	57.13	1451.1	122	3098.8	39	990.6	33	838.2	285	129.5
9L11ZTA120S	98	57.13	1451.1	122	3098.8	42	1066.8	36	914.4	290	131.8
9L11ZTA132S	106	76.63	1946.4	140	3556	44	1117.6	38	965.2	395	179.5
9L11ZTA144S	115	82.63	2098.8	160	4064	51	1295.4	46	1168.4	425	193.2
9L11ZTA168S	131	89.13	2263.9	181	4597.4	59	1498.6	54	1371.6	465	211.4
9L11ZTA172S	140	89.13	2263.9	181	4597.4	78	1981.2	59	1498.6	475	215.9
9L11ZTA180S	144	89.13	2263.9	181	4597.4	83	2108.2	64	1625.6	480	218.2
9L11ZTA192S	152	96.13	2441.7	202	5130.8	83	2108.2	67	1701.8	515	234.1
9L11ZTA228S	180	108.63	2759.2	244	6197.6	92	2336.8	73	1854.2	590	268.2
9L11ZTA240S	194	108.63	2759.2	244	6197.6	103	2616.2	85	2159	595	269.2
9L11ZTA258S	209	128.13	3254.5	262	6654.8	111	2819.4	92	2336.8	700	318.2
9L11ZTA264S	212	133.63	3394.2	282	7162.8	116	2946.4	96	2438.4	725	329.5
9L11ZTA276S	220	133.63	3394.2	282	7162.8	120	3048	100	2540	730	331.8
9L11ZTA288S	234	140.63	3571.2	303	7696.2	128	3251.2	106	2692.4	775	352.3
9L11ZTA294S	237	140.63	3571.2	303	7696.2	130	3302	110	2794	786	357.3
9L11ZTA300S	243	140.63	3571.2	303	7696.2	130	3302	110	2794	785	356.8
9L11ZTA312S	245	147.13	3737.1	324	8229.6	130	3302	110	2794	800	363.6
9L11ZTA336S	264	150.1	3812.5	340	8636	-	-	-	-	765	347
9L11ZTA360S	288	160.13	4067.3	366	9296.4	-	-	-	-	815	370.5
9L11ZTA396S	318	192.1	4879.3	425	10795	-	-	-	-	1010	459.1
9L11ZTA420S	335	-	-	-	-	-	-	-	-	-	-

Porcelain Top Station Arrester

Product Number	MCOV (kV)	"X" Overall Height		Leakage Dist		Mounting Clearance ¹				Weight	
						Phase to Phase		Phase To Ground			
		in	mm	in	mm	in	mm	lb	kg		
9L11ZGB003S	2.55	12.0	304.8	11.1	281.94	11	279.4	5.5	139.7	35	15.9
9L11ZGB006S	5.10	12.0	304.8	11.1	281.94	11	279.4	5.5	139.7	40	18.2
9L11ZGB009S	7.65	12.0	304.8	11.1	281.94	11	279.4	5.5	139.7	40	18.2
9L11ZGB010S	8.40	12.0	304.8	11.1	281.94	11	279.4	5.5	139.7	40	18.2
9L11ZGB012S	10.20	12.0	304.8	11.1	281.94	11	279.4	6.5	165.1	42	19.1
9L11ZGB015S	12.70	16.25	412.75	20	508	11	279.4	7.5	190.5	50	22.7
9L11ZGB018S	15.30	16.25	412.75	20	508	11	279.4	9	228.6	50	22.7
9L11ZGB021S	17.00	16.25	412.75	20	508	11	279.4	9	228.6	51	23.2
9L11ZGB024S	19.50	16.25	412.75	20	508	11	279.4	9	228.6	52	23.6
9L11ZGB027S	22.00	28.13	714.5	31.7	805.18	18	457.2	12	304.8	60	27.3

¹These are recommended minimum clearances only and as such are not intended to take precedence over existing construction codes or specifications.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Station Arresters

Porcelain High-Voltage
Indoor and Outdoor Service

Section 20

Porcelain, Metal Top Station Arrester – Insulation Characteristics

Product Number	Duty Cycle (kV)	MCOV (kV)	Leakage Dist		Strike		Minimum 1.2 x 50µs Withstand (kV crest)	Minimum Power Frequency Withstand (kVrms)	
			in	mm	in	mm		Wet (10 sec)	Dry (1 min)
9L11ZGA003S	3	2.55	6.2	157.48	6	152.4	60	20	21
9L11ZGA006S	6	5.10	6.2	157.48	7	177.8	75	24	27
9L11ZGA009S	9	7.65	6.2	157.48	7	177.8	95	30	32
9L11ZGA010S	10	8.40	6.2	157.48	8	203.2	95	30	32
9L11ZGA012S	12	10.20	11.1	281.94	8.5	215.9	110	45	50
9L11ZGA015S	15	12.70	11.1	281.94	8.5	215.9	110	45	50
9L11ZGA018S	18	15.30	20	508	9	228.6	110	45	50
9L11ZGA021S	21	17	20	508	9	228.6	150	60	70
9L11ZGA024S	24	19.50	20	508	11	279.4	150	60	70
9L11ZGA027S	27	22	31.7	805.18	12	304.8	150	60	70
9L11ZGA030S	30	24.40	31.7	805.18	12	304.8	200	80	95
9L11ZGA036S	36	29	31.7	805.18	14	355.6	200	80	95
9L11ZGA039S	39	31.50	41	1041.4	14	355.6	250	100	120
9L11ZGA045S	45	36.50	41	1041.4	15	381	250	100	120
9L11ZGA048S	48	39	41	1041.4	15	381	250	100	120
9L11ZTA054S	54	42	60	1524	18	457.2	194	81	NA ¹
9L11ZTA060S	60	48	60	1524	19	482.6	221	91	NA ¹
9L11ZTA066S	66	53	80	2032	29.5	749.3	262	108	NA ¹
9L11ZTA072S	72	57	80	2032	20	508	262	108	NA ¹
9L11ZTA090S	90	74	101	2565.4	29	736.6	337	139	NA ¹
9L11ZTA096S	96	76	101	2565.4	31	787.4	348	144	NA ¹
9L11SXA108S	108	84	122	3098.8	32	812.8	404	166	NA ¹
9L11ZTA108S	108	88	122	3098.8	33	838.2	404	166	NA ¹
9L11ZTA120S	120	98	122	3098.8	36	914.4	448	190	NA ¹
9L11ZTA132S	132	106	140	3556	38	965.2	486	205	NA ¹
9L11ZTA144S	144	115	160	4064	46	1168.4	524	223	NA ¹
9L11ZTA168S	168	131	181	4597.4	54	1371.6	598	253	NA ¹
9L11ZTA172S	172	140	181	4597.4	59	1498.6	637	271	NA ¹
9L11ZTA180S	180	144	181	4597.4	64	1625.6	658	278	NA ¹
9L11ZTA192S	192	152	202	5130.8	67	1701.8	693	296	NA ¹
9L11ZTA228S	228	180	244	6197.6	73	1854.2	821	348	NA ¹
9L11ZTA240S	240	194	244	6197.6	71	1803.4	885	375	NA ¹
9L11ZTA258S	258	209	262	6654.8	92	2336.8	952	424	NA ¹
9L11ZTA264S	264	212	282	7162.8	96	2438.4	966	429	NA ¹
9L11ZTA276S	276	220	282	7162.8	100	2540	1001	447	NA ¹
9L11ZTA288S	288	234	303	7696.2	91.5	2324.1	1069	474	NA ¹
9L11ZTA294S	294	237	303	7696.2	91.5	2324.1	1082	480	NA ¹
9L11ZTA300S	300	243	303	7696.2	91.5	2324.1	1100	492	NA ¹
9L11ZTA312S	312	245	324	8229.6	110	2794	1119	496	NA ¹

¹Minimum Dry Power Withstand not required by ANSI.

Porcelain Top Station Arrester – Insulation Characteristics

Product Number	Duty Cycle (kV)	MCOV (kV)	Leakage Dist		Strike		Minimum 1.2 x 50µs Withstand (kV crest)	Minimum Power Frequency Withstand (kVrms)	
			in	mm	in	mm		Wet (10 sec)	Dry (1 min)
9L11ZGB003S	3	2.55	11.1	281.94	5.5	139.7	60	20	21
9L11ZGB006S	6	5.10	11.1	281.94	5.5	139.7	75	24	27
9L11ZGB009S	9	7.65	11.1	281.94	5.5	139.7	95	30	35
9L11ZGB010S	10	8.40	11.1	281.94	5.5	139.7	95	30	35
9L11ZGB012S	12	10.20	11.1	281.94	6.5	165.1	110	45	50
9L11ZGB015S	15	12.70	20	508	7.5	190.5	110	45	50
9L11ZGB018S	18	15.30	20	508	9	228.6	110	45	50
9L11ZGB021S	21	17.00	20	508	9	228.6	150	60	70
9L11ZGB024S	24	19.50	20	508	9	228.6	150	60	70
9L11ZGB027S	27	22.00	28.5	723.9	16.5	419.1	150	60	70



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Station Arresters

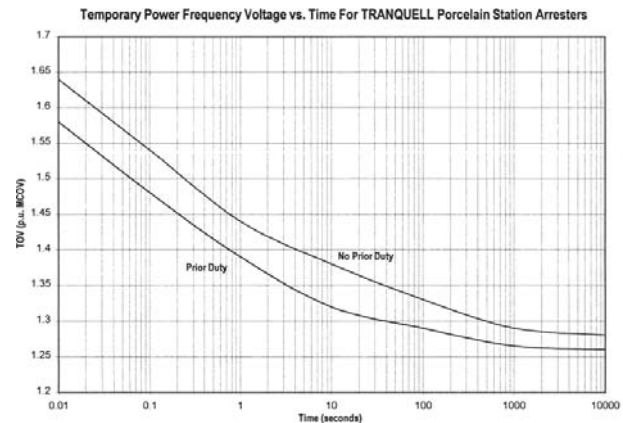
Porcelain High-Voltage
Indoor and Outdoor Service

Section 20

Porcelain Station Arrester – Protective Characteristics

Product Number	Rated Voltage kV	MCOV kV	0.5μsec 10kA Max IR-kV	Switching Surge Max IR-kV ¹	8/20 Maximum Discharge Voltage					
					1.5kA	3kA	5kA	10kA	20kA	40kA
9L11ZGA003S	3	2.55	9.1	6.3	6.9	7.2	7.5	8	9	10.3
9L11ZGA006S	6	5.10	17.9	12.4	13.6	14.2	14.8	15.8	17.7	20.3
9L11ZGA009S	9	7.65	26.6	18.4	20.2	21.1	22	23.5	26.4	30.2
9L11ZGA010S	10	8.40	29.3	20.3	22.2	23.3	24.2	25.9	29.1	33.3
9L11ZGA012S	12	10.20	35.5	24.6	26.9	28.2	29.4	31.4	35.2	40.4
9L11ZGA015S	15	12.70	44.2	30.6	33.5	35.1	36.6	39.1	43.9	50.3
9L11ZGA018S	18	15.30	53.3	36.8	40.4	42.3	44.1	47.1	52.8	60.6
9L11ZGA021S	21	17	59.1	40.9	44.8	46.9	48.9	52.3	58.7	67.2
9L11ZGA024S	24	19.50	67.8	46.9	51.4	53.8	56.1	60	67.3	77.1
9L11ZGA027S	27	22	76.5	52.9	58	60.8	63.3	67.7	75.9	87
9L11ZGA030S	30	24.40	84.9	58.7	64.3	67.4	70.3	75.1	84.2	96.5
9L11ZGA036S	36	29	101	69.7	76.4	80	83.4	89.2	100	115
9L11ZGA039S	39	31.50	110	75.8	83	86.9	90.6	96.9	109	125
9L11ZGA045S	45	36.50	128	88.3	96.8	102	106	113	127	146
9L11ZGA048S	48	39	136	93.8	103	108	113	120	135	155
9L11ZTA054S	54	42	135	100	107	112	117	125	136	151
9L11ZTA060S	60	48	150	111	119	125	130	139	151	168
9L11ZTA066S	66	53	167	123	132	138	144	154	167	186
9L11ZTA072S	72	57	178	132	141	148	154	165	179	199
9L11ZTA090S	90	74	238	176	188	198	206	220	239	265
9L11ZTA096S	96	76	238	176	188	198	206	220	239	265
9L11SXA108S	108	84	269	199	213	224	233	249	270	300
9L11ZTA108S	108	88	275	203	218	228	238	254	276	306
9L11ZTA120S	120	98	306	235	242	254	265	283	307	341
9L11ZTA132S	132	106	332	254	263	276	287	307	333	370
9L11ZTA144S	144	115	360	276	285	299	312	333	361	402
9L11ZTA168S	168	131	416	319	330	346	360	385	418	464
9L11ZTA172S	172	140	438	336	347	363	379	405	439	488
9L11ZTA180S	180	144	450	345	357	374	390	416	452	502
9L11ZTA192S	192	152	476	365	377	395	412	440	477	531
9L11ZTA228S	228	180	568	436	450	472	492	526	570	634
9L11ZTA240S	240	194	606	484	480	503	524	560	608	676
9L11ZTA258S	258	209	659	526	522	547	570	609	661	735
9L11ZTA264S	264	212	662	528	524	550	573	612	664	738
9L11ZTA276S	276	220	687	548	544	570	594	635	689	766
9L11ZTA288S	288	234	728	581	577	605	630	673	731	812
9L11ZTA294S	294	237	743	593	589	617	643	687	746	829
9L11ZTA300S	300	243	759	606	601	630	657	702	762	846
9L11ZTA312S	312	245	773	617	612	641	668	714	775	862
9L11ZTA336S	336	272	833	665	659	690	719	767	835	929
9L11ZTA360S	360	294	933	734	732	771	798	849	945	1053
9L11ZTA396S	396	318	1139	816	822	861	897	959	1055	--
9L11ZTA420S	420	335	1278	901	900	945	986	1058	1164	--

¹Based on 500A surge of 45μs time to crest through 88kV MCOV, 1kA surge of 45μs time to crest for 98kV≤MCOV≤194kV, and 2kA surge of 45μs time to crest for MCOV greater than 194kV.



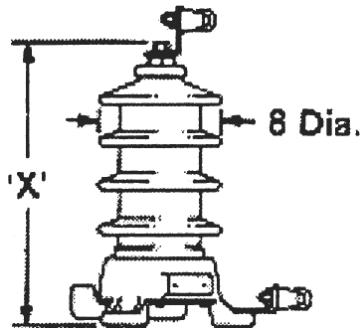
For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

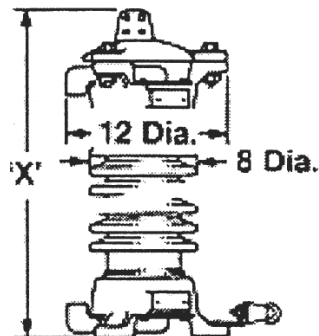
TRANQUELL® Station Arresters

Porcelain High-Voltage
Indoor and Outdoor Service

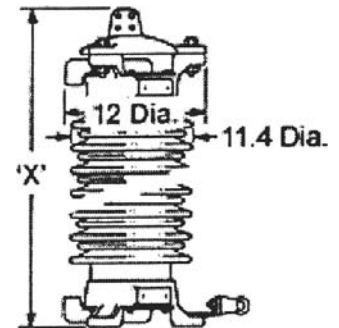
Section 20



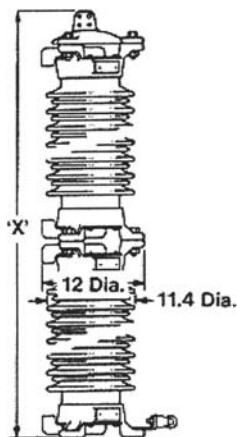
9L11ZGBO##S Series
Rated Voltage 3-27kV



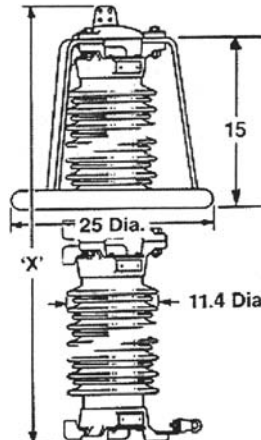
9L11ZGAO##S Series
Rated Voltage 3-48kV



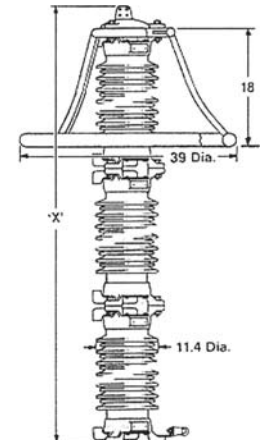
9L11ZTA###S Series
Rated Voltage 54-120kV



9L11ZTA###S Series
Rated Voltage 132-168kV



9L11ZTA###S Series
Rated Voltage 172-228kV



9L11ZTA###S Series
Rated Voltage 240-312kV



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Station Arresters

Polymer High-Voltage
Indoor and Outdoor Service

Section 20

Polymer Station Arrester – Weights and Dimensions

Product Number		Rated Voltage (kVrms)	MCOV (kVrms)	Overall Height ²		Mounting Clearance ¹		Weight	
4-hole NEMA Pad Line Terminal	Single Eyebolt Line Terminal			in	mm	Center Line to Center Line (in.)	Center Line to Ground (in.)	Lbs.	kg
9L11XPA003S	9L11XPB003S	3	2.55	10.2	259.1	12.3	7.7	20.3	9.2
9L11XPA006S	9L11XPB006S	6	5.1	10.2	259.1	12.3	7.7	20.8	9.4
9L11XPA009S	9L11XPB009S	9	7.65	10.2	259.1	12.3	7.7	21.3	9.7
9L11XPA010S	9L11XPB010S	10	8.4	10.2	259.1	12.3	7.7	21.6	9.8
9L11XPA012S	9L11XPB012S	12	10.2	12.8	325.1	12.3	7.7	25.2	11.4
9L11XPA015S	9L11XPB015S	15	12.7	12.8	325.1	12.3	7.7	25.8	11.7
9L11XPA018S	9L11XPB018S	18	15.3	12.8	325.1	12.3	7.7	26.3	11.9
9L11XPA021S	9L11XPB021S	21	17	18.2	462.3	12.3	7.7	33.6	15.2
9L11XPA024S	9L11XPB024S	24	19.5	18.2	462.3	12.3	8	34.2	15.5
9L11XPA027S	9L11XPB027S	27	22	18.2	462.3	12.3	8.8	34.7	15.7
9L11XPA030S	9L11XPB030S	30	24.4	18.2	462.3	12.3	9.6	35.2	16
9L11XPA036S	9L11XPB036S	36	29	18.2	462.3	13.8	11	36.5	19.5
9L11XPA039S	9L11XPB039S	39	31.5	23.5	596.9	14.6	11.8	43.5	19.7
9L11XPA045S	9L11XPB045S	45	36.5	23.5	596.9	16.3	13.5	44.4	20.1
9L11XPA048S	9L11XPB048S	48	39	23.5	596.9	17	14.2	45.2	20.5
9L11XPA054S	9L11XPB054S	54	42	28.8	731.5	18.6	15.8	52.6	23.9
9L11XPA060S	9L11XPB060S	60	48	28.8	731.5	20.6	17.8	53.6	24
9L11XPA066S	9L11XPB066S	66	53	32.3	820.4	22.6	19.2	54.6	24.8
9L11XPA072S	9L11XPB072S	72	57	34.0	863.6	23.4	20.6	76.7	34.8
9L11XPA090S	9L11XPB090S	90	70	44.6	1132.8	27	24.5	77	37.4
9L11XPA096S	9L11XPB096S	96	76	44.6	1132.8	30.5	28	80	38.2
9L11XPA108S	9L11XPB108S	108	84	55.3	1404.6	44.5	36.5	98.9	44.9
9L11XPA120S	9L11XPB120S	120	98	55.3	1404.6	49	41	101	45.8
9L11XPA132S	9L11XPB132S	132	106	55.3	1404.6	53	45	105	53.3
9L11XPA144S	9L11XPB144S	144	115	65.8	1671.3	56	48	120.1	54.5
9L11XPA168S	9L11XPB168S	168	131	84.4	2143.8	74.0	60.0	152	69.5
9L11XPA172S	9L11XPB172S	172	140	84.4	2143.8	77.0	63.0	152	69.5
9L11XPA180S	9L11XPB180S	180	144	84.4	2143.8	78.0	64.0	152	70
9L11XPA192S	9L11XPB192S	192	152	84.4	2143.8	84.0	70.0	152	70
9L11XPA228S	9L11XPB228S	228	180	112.2	2849.9	94.0	80.0	201	92.3

¹Center line to center line is equivalent to phase-to-phase; center line to ground is equivalent to phase-to-ground.

These are recommended minimum clearances only and as such are not intended to take precedence over existing construction codes or specifications.

²Overall height of 9L11XPB0**S arresters is determined by subtracting 0.63 in or 15.9 mm from listed overall height.

Polymer Station Arrester – Protective Characteristics 9L11XPAxxxS and 9L11XPBxxxS

Rated Voltage (kVrms)	MCOV (kVrms)	0.5µsec, 10kA Max. IR (kVcrest)	500A Switching Surge Max IR (kVcrest)	8/20µs Maximum Discharge Voltage - kVcrest						Insulation Withstand			
										Creep		Strike	
				1.5kA	3kA	5kA	10kA	20kA	40kA	in	mm	in	mm
3	2.55	8.4	6.0	6.4	6.7	7.1	7.6	8.4	9.6	23	584.2	7.7	195.6
6	5.1	16.7	11.9	12.8	13.5	14.1	15.2	16.8	19.1	23	584.2	7.7	195.6
9	7.65	25	17.8	19.2	20.2	21.1	22.7	25.1	28.3	23	584.2	7.7	195.6
10	8.4	27.8	19.8	21.4	22.5	23.5	25.3	28.0	31.8	23	584.2	7.7	195.6
12	10.2	33.3	23.7	25.6	26.9	28.1	30.3	33.5	38.1	31	787.4	7.7	195.6
15	12.7	41.7	29.7	32.0	33.7	35.2	37.9	42.0	47.6	31	787.4	7.7	195.6
18	15.3	50.1	35.6	38.4	40.4	42.3	45.5	50.4	57.2	31	787.4	7.7	195.6
21	17	56.3	40.1	43.2	45.5	47.6	51.2	56.7	64.4	46	1168.4	7.7	195.6
24	19.5	63.9	45.5	49.1	51.6	54.0	58.1	64.3	73.0	46	1168.4	8.0	203.2
27	22	72.9	51.9	56.0	58.9	61.6	66.3	73.4	83.3	46	1168.4	8.8	223.5
30	24.4	80.4	57.2	61.7	64.9	67.9	73.1	80.9	91.9	46	1168.4	9.6	243.8
36	29	95.9	68.3	73.6	77.4	81.0	87.2	96.5	109.6	46	1168.4	11.0	279.4
39	31.5	104.2	74.2	80.0	84.1	88.0	94.7	104.8	119.0	62	1574.8	11.8	299.7
45	36.5	120.9	86.1	92.8	97.6	102.1	109.9	121.7	138.1	62	1574.8	13.5	342.9
48	39	128.7	91.6	98.8	103.9	108.7	117.0	129.5	147.1	62	1574.8	14.2	360.7
54	42	144.4	102.8	110.9	116.6	122.0	131.3	145.3	165.0	78	1981.2	15.8	401.3
60	48	163.5	116.4	125.5	132	138	148.6	164.5	186.8	78	1981.2	17.8	452.1
66	53	179.9	128	138.1	145.2	151.8	163.5	181	205.5	78	1981.2	27.0	685.8
72	57	191.8	136.6	147.3	154.9	162	174.4	193.1	219.2	92	2336.8	20.6	523.2
90	70	241.8	172.1	185.6	195.2	204.2	219.8	243.3	276.3	124	3149.6	24.5	622.3
96	76	257.4	183.2	197.6	207.8	217.4	234	259	294.1	124	3149.6	28.0	711.2
108	84	288.9	205.6	221.8	233.2	244	262.6	290.7	330.1	156	3962.4	36.5	927.1
120	98	326.9	241.3	251	263.9	276.1	297.2	329	373.6	156	3962.4	41.0	1041.4
132	106	352	252	270	284	298	317	353	404	186	4724.4	45.0	1143.0
144	115	386.1	285	296.5	311.7	326.1	351	388.6	441.2	186	4724.4	48.0	1219.2
168	131	445	330	343	363	380	409	446	503	234	5943.6	60.0	1524.0
172	140	455	338	351	372	389	419	457	516	234	5943.6	63.0	1600.2
180	144	476	354	367	389	407	438	478	539	234	5943.6	64.0	1625.6
192	152	508	377	391	415	434	467	509	575	234	5943.6	70.0	1778.0
228	180	604	448	465	493	516	556	607	684	312	7924.8	80.0	2032



For more product information, go to www.ge.com/energy, click on “Products and Services” and then “Products.”
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Silicone Station Arresters Protective Characteristics

Product Number	Rated Voltage kVrms	MCOV kVrms	Maximum 0.5µs Discharge Voltage ¹ kV	Maximum Switching Surge Protective Level At Classifying Current Levels kV ²	Maximum Discharge Voltage Using an 8/20 Current Wave-kV					
					1.5kA	3kA	5kA	10kA	20kA	40kA
9L11HMA054S	54	42	133	94	103	108	113	121	131	146
9L11HMA060S	60	48	152	107	118	124	129	138	150	166
9L11HMA072S	72	57	181	127	140	147	153	164	178	198
9L11HMA090S	90	70	222	156	172	181	188	201	218	243
9L11HMA090S	90	74	235	165	182	191	199	213	231	256
9L11HMA096S	96	76	241	170	187	196	205	218	237	263
9L11HMA108S	108	84	266	187	207	217	226	241	262	291
9L11HMA108S	108	88	279	196	217	227	237	253	274	305
9L11HMA120S	120	98	311	228	241	253	264	282	305	340
9L11HMA132S	132	106	336	247	261	274	285	305	330	367
9L11HMA144S	144	115	365	268	283	297	310	330	358	399
9L11HMA168S	168	131	416	305	323	338	353	376	408	454
9L11HMA172S	172	140	444	326	345	362	377	402	436	485
9L11HMA180S	180	144	457	335	355	372	388	414	449	499
9L11HMA192S	192	152	482	354	374	393	409	437	473	527
9L11HMA228S	228	180	571	419	443	465	485	517	561	624
9L11HMA258S	258	209	663	519	515	540	563	601	651	724
9L11HMA264S	264	212	673	526	522	548	571	609	660	735
9L11HMA276S	276	220	698	546	542	568	592	632	685	762
9L11HMA312S	312	245	777	608	603	633	660	704	763	849
9L11HMA396S	396	318	1009	790	783	821	856	914	991	1102
9L11HMA420S	420	335	1063	832	825	865	902	963	1043	1161
9L11HMA444S	444	353	1120	876	869	912	950	1014	1100	1223

Silicone Station Arresters Dimensions and Mounting

Product Number	Duty Cycle kV rms	Maximum Continuous Operating Voltage kV rms	Height (in.)	Minimum Leakage Distance	Minimum Mounting Spacing on Center ³		Net Weight (Lbs.)
					Phase to Phase In-line (in.)	Phase to Ground (in.)	
9L11HMA054S	54	42	38.1	83	17	21	104
9L11HMA060S	60	48	38.1	83	19	23	107
9L11HMA072S	72	57	38.1	83	23	28	112
9L11HMA090S	90	70	44.4	113	28	34	125
9L11HMA090S	90	74	44.4	113	30	36	130
9L11HMA096S	96	76	44.4	113	30	37	128
9L11HMA108S	108	84	52.1	142	34	41	141
9L11HMA108S	108	88	52.1	142	35	42	144
9L11HMA120S	120	98	52.1	142	39	47	149
9L11HMA132S	132	106	58.8	171	42	51	167
9L11HMA144S	144	115	58.8	171	46	55	172
9L11HMA168S	168	131	76.9	196	52	63	231
9L11HMA172S	172	140	76.9	196	63	82	257
9L11HMA180S	180	144	76.9	196	65	84	257
9L11HMA192S	192	152	83.2	225	68	88	262
9L11HMA228S	228	180	90.9	254	79	101	291
9L11HMA258S	258	209	105.3	313	108	150	349
9L11HMA264S	264	212	105.3	313	109	151	351
9L11HMA276S	276	220	105.3	313	102	134	330
9L11HMA312S	312	245	129.7	367	112	146	406
9L11HMA396S	396	318	151.8	455	161	222	539
9L11HMA420S	420	335	158.5	484	168	230	564
9L11HMA444S	444	353	165.2	514	165	218	532

¹ Maximum discharge voltage for an impulse current wave which produces a voltage wave cresting in 0.5 µs. Discharge Currents are 10kA for 42-353 kV MCOV. This can be used for coordination where front-of-wave sparkover formerly was used.

² Discharge voltages are based on a 500A surge of 45 µs time to crest through 88kV MCOV and a 1000A surge of 45 µs to crest through 180 kV MCOV and 2000A through 245 kV MCOV.

³ Minimum clearances are based on arrester protective levels and should be increased when necessary to meet local requirements for spacing of energized equipment.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Station Arresters

Section 20

Polymer High-Voltage
Indoor and Outdoor Service

Polymer Arresters (Station Class)

for both Indoor and Outdoor Mounting (2.7-72 kVrms)

9L11XPMxxxS, 9L11XPNxxxS, and 9L11XPTxxxS

Pressure Relief Capability: 40 kA rms

Energy Handling Capability: 6.0kJ/kV mCOV

Cantilever Strength: 4,000 inch-pounds, rated ultimate cantilever moment

Arrester Rating kVrms	Maximum Continuous Voltage Capability (L-N) kVrms	Product Number (Gray Polymer)				
		4-hole NEMA Pad for Indoor or Outdoor Upright Mounting	Eyebolt Terminal for Indoor or Outdoor Upright Mounting	List Price GO-53/54	Indoor or cubicle Terminal Mounting	List Price GO-53/54
2	2.2	9L11XPN002S	9L11XPT002S	\$561.00	9L11XPM002S	\$536.00
3	2.55	9L11XPN003S	9L11XPT003S	\$561.00	9L11XPM003S	\$536.00
4	3.7	9L11XPN004S	9L11XPT004S	\$581.00	9L11XPM004S	\$554.00
5	4.2	9L11XPN005S	9L11XPT005S	\$581.00	9L11XPM005S	\$554.00
6	5.1	9L11XPN006S	9L11XPT006S	\$581.00	9L11XPM006S	\$554.00
7	6.1	9L11XPN007S	9L11XPT007S	\$594.00	9L11XPM007S	\$567.00
8	6.9	9L11XPN008S	9L11XPT008S	\$594.00	9L11XPM008S	\$567.00
9	7.65	9L11XPN009S	9L11XPT009S	\$594.00	9L11XPM009S	\$567.00
10	8.4	9L11XPN010S	9L11XPT010S	\$607.00	9L11XPM010S	\$580.00
12	10.2	9L11XPN012S	9L11XPT012S	\$666.00	9L11XPM012S	\$666.00
15	12.7	9L11XPN015S	9L11XPT015S	\$759.00	9L11XPM015S	\$759.00
18	15.3	9L11XPN018S	9L11XPT018S	\$891.00	9L11XPM018S	\$891.00
21	17	9L11XPN021S	9L11XPT021S	\$931.00	9L11XPM021S	\$931.00
24	19.5	9L11XPN024S	9L11XPT024S	\$937.00	9L11XPM024S	\$981.00
27	22	9L11XPN027S	9L11XPT027S	\$1166.00	9L11XPM027S	\$1166.00
30	24.4	9L11XPN030S	9L11XPT030S	\$1172.00	9L11XPM030S	\$1228.00
36	29	9L11XPN036S	9L11XPT036S	\$1275.00	9L11XPM036S	\$1335.00
39	31.5	9L11XPN039S	9L11XPT039S	\$1424.00		
45	36.5	9L11XPN045S	9L11XPT045S	\$1520.00		
48	39	9L11XPN048S	9L11XPT048S	\$1649.00		
54	42	9L11XPN054S	9L11XPT054S	\$1730.00		
60	48	9L11XPN060S	9L11XPT060S	\$1846.00		
72	57	9L11XPN072S	9L11XPT072S	\$2033.00		

For weight, dimensional and other technical information, please visit the Arresters section of www.ge.com/energy

Polymer Arresters (Station Class)—Protective Characteristics 9L11XPMxxxS, 9L11XPNxxxS and 9L11XPTxxxS

for both Indoor and Outdoor Mounting (2.7-72 kVrms)

9L11XPMxxxS, 9L11XPNxxxS, and 9L11XPTxxxS

Pressure Relief Capability: 40 kA rms

Energy Handling Capability: 6.0kJ/kV mCOV

Cantilever Strength: 4,000 inch-pounds, rated ultimate cantilever moment

Product Number		Rating voltage		0.5 μ sec 10 kA		Switching Surge		Maximum Discharge Voltage - kV crest					
9L11XPNxxxS ¹		kV rms	mCOV	kV rms	Max IR-kV crest	Max IR-kV crest		1.5 kA	3 kA	5 kA	10 kA	20 kA	40 kA
9L11XPT003S	3	2.55			8.5	6.3		6.7	7.1	7.4	8	8.9	10
9L11XPT006S	6	5.1			16.9	12.5		13.4	14.2	14.8	16	17.7	20
9L11XPT009S	9	7.65			25.3	18.7		20.1	21.2	22.2	23.9	26.5	29.8
9L11XPT010S	10	8.4			27.6	20.5		21.9	23.1	24.2	26.1	28.9	32.5
9L11XPT012S	12	10.2			33.5	24.9		26.6	28.1	29.4	31.7	35.1	39.5
9L11XPT015S	15	12.7			42.2	31.3		33.5	35.4	37	39.9	44.2	49.8
9L11XPT018S	18	15.3			50.5	37.5		40.1	42.4	44.3	47.8	52.9	59.6
9L11XPT021S	21	17			55.3	41		43.9	46.3	48.5	52.3	57.9	65.2
9L11XPT024S	24	19.5			67	49.7		53.2	56.2	58.8	63.4	70.2	79.1
9L11XPT027S	27	22			75.9	56.3		60.2	63.6	66.6	71.8	79.5	89.5
9L11XPT030S	30	24.4			82.9	61.5		65.8	69.5	72.7	78.4	86.8	98
9L11XPT036S	36	29			101	74.6		79.8	84.3	88.2	95.1	105	119
9L11XPT039S	39	31.5			105.8	78.5		84	88.7	92.8	100.1	110.8	124.8
9L11XPT045S	45	36.5			122.3	90.7		97.1	102.5	107.3	115.7	128.1	144.3
9L11XPT048S	48	39			134	99.4		106.4	112.3	117.5	126.8	140.4	158.1
9L11XPT054S	54	42			144	106.8		114.3	120.7	126.3	136.2	150.8	169.8
9L11XPT060S	60	48			161.6	119.9		128.3	135.5	141.7	152.9	169.3	191
9L11XPT072S	72	57			195	144.7		154.9	163.6	171.1	184.6	204	230

For weight, dimensional and other technical information, please visit the Arresters section of www.ge.com/energy

¹9L11XPNxxxS & 9L11XPMxxxS, the electrical characteristics in this table are applicable to these catalog numbers.

Outline drawings can be downloaded from the GE Arrester, E-Catalog on the web.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Intermediate Arresters

Polymer High Voltage
Indoor and Outdoor Service

Section 20

Product Description

TRANQUELL® XEP polymer intermediate arresters provide both excellent protective characteristics and temporary overvoltage capability. Gapless construction results in a design which is simple, reliable, and economical while offering excellent fault current capability to meet the most demanding service conditions. The GE TRANQUELL® arrester is based on the field-proven metal oxide disks known for maintaining stable characteristics. TRANQUELL® intermediate arresters are designed and manufactured in accordance with the latest revision of ANSI/IEEE C62.11 and IEC 99-4.



9L12PPA Polymer

Polymer Arresters (Intermediate-Class)

for both Indoor and Outdoor Mounting (3-144 kVrms)

Arrester Rating kVrms	Maximum Continuous Operating Voltage Capability ¹ (L-N) kVrms	Normally Used on System Voltage Class (L-L)		Product Number (Gray Polymer)		List Price GO-50
		High Impedance Grounded, Ungrounded (Delta), or temporarily ungrounded circuits	Solidly Grounded Neutral Systems kVrms	4-hole NEMA Pad for Indoor or Outdoor Upright Mounting	Eyebolt Terminal for Indoor or Outdoor Upright Mounting ²	
3	2.55	2.4	4.16	9L12PPA003S	9L12PPB003S	\$487.00
6	5.1	4.8	-	9L12PPA006S	9L12PPB006S	\$500.00
9	7.65	7.2	12.47	9L12PPA009S	9L12PPB009S	\$517.00
10	8.4	7.62	13.2	9L12PPA010S	9L12PPB010S	\$521.00
12	10.2	7.97	13.8	9L12PPA012S	9L12PPB012S	\$576.00
15	12.7	13.8 ³	20.78	9L12PPA015S	9L12PPB015S	\$634.00
18	15.3	13.8	24.94	9L12PPA018S	9L12PPB018S	\$647.00
21	17	-	24.94	9L12PPA021S	9L12PPB021S	\$657.00
24	19.5	23 ³	-	9L12PPA024S	9L12PPB024S	\$720.00
27	22	23	34.5	9L12PPA027S	9L12PPB027S	\$800.00
30	24.4	-	34.5	9L12PPA030S	9L12PPB030S	\$823.00
36	29	34.5 ³	-	9L12PPA036S	9L12PPB036S	\$872.00
39	31.5	34.5	-	9L12PPA039S	9L12PPB039S	\$911.00
45	36.5	41.6	-	9L12PPA045S	9L12PPB045S	\$880.00
48	39	41.2	-	9L12PPA048S	9L12PPB048S	\$966.00
54	42	-	69	9L12PPA054S	9L12PPB054S	\$1084.00
60	48	-	69	9L12PPA060S	9L12PPB060S	\$1248.00
72	57	69	-	9L12PPA072S	9L12PPB072S	\$1420.00
90	70	-	115	9L12PPA090S	9L12PPB090S	\$2017.00
96	76	-	115	9L12PPA096S	9L12PPB096S	\$2312.00
108	88	115	138	9L12PPA108S	9L12PPB108S	\$2473.00
120	98	115	138/161	9L12PPA120S	9L12PPB120S	\$2726.00
132	106	138	161	9L12PPA132S	9L12PPB132S	\$3351.00
144	115	138/161	161	9L12PPA144S	9L12PPB144S	\$3408.00

¹TRANQUELL® Arresters are designed to be operated at voltages equal to or less than their continuous capability as stated in column 2.

²For underhung or upside down mounting with eyebolt terminal on the bottom change the letter B of the catalog number to E.

³Application of specified rating is permissible for ungrounded or resistance grounded systems where a single phase ground may be tolerated for a substantial period of time not to exceed the TRANQUELL® arresters overvoltage capability.



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Intermediate Arresters

Polymer High Voltage
Indoor and Outdoor Service

Section 20

Polymer Intermediate Arrester Protective Characteristics 9L12PPAxxxS and 9L12PPBxxxS

Rated Voltage (kVrms)	MCOV (kVrms)	0.5µsec, 10kA Max. IR (kVcrest)	500A Switching Surge Max IR (kVcrest)	8/20µs Maximum Discharge Voltage - kVcrest						Creep		Strike		Insulation Withstand		
				1.5kA	3kA	5kA	10kA	20kA	40kA	in	mm	in	mm	Min 1.2x50µs (kV crest)	Wet 10 sec (kVrms)	Dry 1 min (kVrms)
3	2.55	8.6	6.4	6.8	7.2	7.5	8.1	9	10.1	15.4	391.16	3.3	83.82	100	40	60
6	5.1	17.1	12.7	13.6	14.4	15	16.2	17.9	20.2	15.4	391.16	3.2	81.28	100	40	60
9	7.65	25.8	19.1	20.5	21.6	22.6	24.4	27	30.4	15.4	391.16	3.3	83.82	100	40	60
10	8.4	28.4	21.1	22.6	23.8	24.9	26.9	29.8	33.5	15.4	391.16	3.5	88.9	100	40	60
12	10.2	34.1	25.3	27.1	28.6	29.9	32.3	35.8	40.3	15.4	391.16	3.5	88.9	165	70	100
15	12.7	42.9	31.8	34.1	36	37.6	40.6	44.9	50.6	30.8	782.32	4.8	121.92	165	70	100
18	15.3	51.6	38.3	40.9	43.2	45.2	48.8	54	60.9	30.8	782.32	5.2	132.08	165	70	100
21	17	56.9	42.2	45.1	47.7	49.9	53.8	59.6	67.1	30.8	782.32	6.2	157.48	165	70	100
24	19.5	68.3	50.6	54.2	57.2	59.9	64.6	71.5	80.6	30.8	782.32	6.2	157.48	230	105	140
27	22	77.4	57.4	61.4	64.9	67.9	73.2	81	91.3	46.2	1173.48	8.2	208.28	230	105	140
30	24.4	85.3	63.3	67.7	71.5	74.8	80.7	89.3	101	46.2	1173.48	8.4	213.36	230	105	140
36	29	102	76	81.3	85.9	89.8	96.9	107	121	46.2	1173.48	8.4	213.36	310	140	180
39	31.5	108.4	80.4	86.1	90.9	95.1	102.6	113.6	127.9	61.6	1564.64	11.4	289.56	310	140	180
45	36.5	125.1	92.8	99.3	104.9	109.8	118.4	131.1	147.6	61.6	1564.64	11.4	289.56	390	180	230
48	39	136.6	101.3	108.4	114.5	119.8	129.2	143	161.1	61.6	1564.64	11.4	289.56	390	180	230
54	42	147.9	109.7	117.4	125	129.7	139.9	154.9	174.5	77.0	1955.8	14.4	365.76	450	220	260
60	48	165	122.4	131	138.3	144.7	156.1	172.8	195	77.0	1955.8	14.4	365.76	450	220	260
72	57	199	147.7	158.1	166.9	174.6	188.4	209	235	92.4	2346.96	18.4	467.36	520	250	300
90	70	250	185.7	198.7	209.8	219.5	236.8	262	295	108	2743.2	43.3	1099.82	580	320	400
96	76	261.7	194.1	207.7	219.4	229.5	247.6	274.1	308.8	108	2743.2	43.3	1099.82	580	320	400
108	88	296	219.5	234.9	248.1	259.6	280	310	349.2	108	2743.2	43.3	1099.82	580	320	400
120	98	327.7	243	260.1	274.7	287.4	310	343.2	386.6	162	4114.8	56.1	1424.94	831	335	543
132	106	375.2	278.3	297.8	314.5	329.1	355	393	443	162	4114.8	56.1	1424.94	831	335	543
144	115	392	290.9	311.3	328.7	343.9	371	411	463	162	4114.8	56.1	1424.94	831	335	543

Polymer Intermediate Arrester Weights and Dimensions

Product Number		Rated Voltage (kVrms)	MCOV (kVrms)	"X" Height		Mounting Clearance ¹			Weight	
4-hole NEMA Pad Line Terminal	Single Eyebolt Line Terminal			inches	mm	Phase to Phase (in)	Phase to Phase (mm)	Phase to Ground (in)	lb	kg
9L12PPA003S	9L12PPB003S	3	2.55	6.8	172.7	4.4	111.8	3.3	6.2	2.8
9L12PPA006S	9L12PPB006S	6	5.1	6.8	172.7	4.6	116.8	3.2	6.2	2.8
9L12PPA009S	9L12PPB009S	9	7.65	6.8	172.7	4.7	119.4	3.3	6.2	2.8
9L12PPA010S	9L12PPB010S	10	8.4	6.8	172.7	4.9	124.5	3.5	6.2	2.8
9L12PPA012S	9L12PPB012S	12	10.2	6.8	172.7	4.9	124.5	3.5	6.2	2.8
9L12PPA015S	9L12PPB015S	15	12.7	12.2	309.9	6.2	157.5	4.8	10.0	4.5
9L12PPA018S	9L12PPB018S	18	15.3	12.2	309.9	6.6	167.6	5.2	10.0	4.5
9L12PPA021S	9L12PPB021S	21	17	12.2	309.9	7.6	193.0	6.2	10.0	4.5
9L12PPA024S	9L12PPB024S	24	19.5	12.2	309.9	7.6	193.0	6.2	10.0	4.5
9L12PPA027S	9L12PPB027S	27	22	17.6	447.0	9.6	243.8	8.2	13.5	6.1
9L12PPA030S	9L12PPB030S	30	24.4	17.6	447.0	9.8	248.9	8.4	13.5	6.1
9L12PPA036S	9L12PPB036S	36	29	17.6	447.0	9.8	248.9	8.4	13.5	6.1
9L12PPA039S	9L12PPB039S	39	31.5	23.0	584.2	12.8	325.1	11.4	17.0	7.7
9L12PPA045S	9L12PPB045S	45	36.5	23.0	584.2	12.8	325.1	11.4	17.0	7.7
9L12PPA048S	9L12PPB048S	48	39	23.0	584.2	12.8	325.1	11.4	17.0	7.7
9L12PPA054S	9L12PPB054S	54	42	28.4	721.4	15.8	401.3	14.4	19.6	8.9
9L12PPA060S	9L12PPB060S	60	48	28.4	721.4	15.8	401.3	14.4	19.6	8.9
9L12PPA072S	9L12PPB072S	72	57	33.8	858.5	19.8	502.9	18.4	23.1	10.5
9L12PPA090S	9L12PPB090S	90	70	44.0	1117.6	40	1016.0	33	52	23.6
9L12PPA096S	9L12PPB096S	96	76	44.0	1117.6	42	1066.8	35	53	24.0
9L12PPA108S	9L12PPB108S	108	88	44.0	1117.6	46	1168.4	39	54	24.5
9L12PPA120S	9L12PPB120S	120	98	66.5	1689.1	51	1295.4	44	67.5	30.6
9L12PPA132S	9L12PPB132S	132	106	66.5	1689.1	55	1397.0	47	67.5	30.6
9L12PPA144S	9L12PPB144S	144	115	66.5	1689.1	58	1473.2	50	67.5	30.6

¹These clearances are recommended minimum clearances only and as such are not intended to take precedence over existing construction codes or specifications.
Placement of the units should be such that they do not physically touch each other.



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Intermediate Arresters

Polymer High Voltage
Indoor and Outdoor Service

Section 20

Polymer Arresters (Intermediate Class)

for both Indoor and Outdoor Mounting (2.7-72 kVrms)

9L12PPMxxxS and 9L12PPTxxxS

Pressure Relief Capability: 16.1 kA rms Energy Handling Capability: 3.6kJ/kV mCOV

Cantilever Strength: 3,000 inch-pounds, rated ultimate cantilever moment

Arrester Rating kVrms	Maximum Continuous Voltage Capability (L-N) kVrms	Eyebolt Terminal for Indoor or Outdoor Upright Mounting	Product Number (Gray Polymer)		Indoor or cubicle Terminal Mounting	List Price GO-50
			List Price GO-50			
2	2.2	9L12PPT002S	\$487.00		9L12PPM002S	\$443.00
3	2.55	9L12PPT003S	\$487.00		9L12PPM003S	\$443.00
4	3.7	9L12PPT004S	\$487.00		9L12PPM004S	\$443.00
5	4.2	9L12PPT005S	\$501.00		9L12PPM005S	\$456.00
6	5.1	9L12PPT006S	\$501.00		9L12PPM006S	\$456.00
7	6.1	9L12PPT007S	\$516.00		9L12PPM007S	\$472.00
8	6.9	9L12PPT008S	\$516.00		9L12PPM008S	\$472.00
9	7.65	9L12PPT009S	\$516.00		9L12PPM009S	\$472.00
10	8.4	9L12PPT010S	\$520.00		9L12PPM010S	\$476.00
12	10.2	9L12PPT012S	\$604.00		9L12PPM012S	\$560.00
15	12.7	9L12PPT015S	\$635.00		9L12PPM015S	\$591.00
18	15.3	9L12PPT018S	\$646.00		9L12PPM018S	\$602.00
21	17	9L12PPT021S	\$657.00		9L12PPM021S	\$613.00
24	19.5	9L12PPT024S	\$721.00		9L12PPM024S	\$677.00
27	22	9L12PPT027S	\$800.00		9L12PPM027S	\$756.00
30	24.4	9L12PPT030S	\$822.00		9L12PPM030S	\$778.00
36	29	9L12PPT036S	\$871.00		9L12PPM036S	\$827.00
39	31.5	9L12PPT039S	\$911.00		-	-
45	36.5	9L12PPT045S	\$924.00		-	-
48	39	9L12PPT048S	\$966.00		-	-
54	42	9L12PPT054S	\$1138.00		-	-
60	48	9L12PPT060S	\$1310.00		-	-
72	57	9L12PPT072S	\$1420.00		-	-

Polymer Arresters (Intermediate Class)—Protective Characteristics 9L12PPTxxxS and 9L12PPMxxx2

Product Number	Rating voltage kV rms	mCOV rms	0.5 µsec 10 kA Max IR-kV crest	Switching Surge Max IR-kV crest	Maximum Discharge Voltage - kV crest					
					1.5 kA	3 kA	5 kA	10 kA	20 kA	40 kA
9L12PPT002S ¹	2.7	2.2	9.9	6.6	7.2	7.8	8.2	9.1	10.4	12.3
9L12PPT003S	3	2.55	9.9	6.6	7.2	7.8	8.2	9.1	10.4	12.3
9L12PPT004S	4.5	3.7	20	13.3	14.6	15.7	16.6	18.4	21	24.8
9L12PPT005S	5.1	4.2	20	13.3	14.6	15.7	16.6	18.4	21	24.8
9L12PPT006S	6	5.1	20	13.3	14.6	15.7	16.6	18.4	21	24.8
9L12PPT007S	7.5	6.1	26.8	17.8	19.5	21	22.2	24.5	28.1	33.2
9L12PPT008S	8.5	6.9	26.8	17.8	19.5	21	22.2	24.5	28.1	33.2
9L12PPT009S	9	7.65	26.8	17.8	19.5	21	22.2	24.5	28.1	33.2
9L12PPT010S	10	8.4	29.5	19.6	21.5	23.1	24.4	27	31	36.6
9L12PPT012S	12	10.2	35.5	23.6	25.9	27.9	29.4	32.5	37.3	44
9L12PPT015S	15	12.7	44.2	29.4	32.2	34.7	36.7	40.5	46.5	54.8
9L12PPT018S	18	15.3	53.4	35.5	38.9	41.9	44.3	48.9	56.1	66.2
9L12PPT021S	21	17	60.7	40.3	44.3	47.6	50.3	55.6	63.8	75.3
9L12PPT024S	24	19.5	70.9	47.1	51.7	55.6	58.7	64.9	74.4	87.9
9L12PPT027S	27	22	78.6	52.2	57.3	61.7	65.2	72	82.6	97.5
9L12PPT030S	30	24.4	88.5	58.7	64.5	69.4	73.3	81	92.9	110
9L12PPT036S	36	29	105	69.7	76.5	82.4	87	96.1	110	130
9L12PPT039S	39	31.5	115	76.5	84	90	95	105	120.5	142.5
9L12PPT045S	45	36.5	133.5	88.5	97.5	105	110.5	122	140	165.5
9L12PPT048S	48	39	142	94.5	103.5	111.5	118	130	149.5	176
9L12PPT054S	54	42	160.5	107	117	126	133	147	169	199
9L12PPT060S	60	48	175	116	127.5	137.5	145	160	183.5	217
9L12PPT072S	72	57	214	142.5	156	168	177.5	196	225	265.5

For weight, dimensional and other technical information, please visit the Arresters section of www.ge.com/energy

¹9L12PPMxxxS, the electrical characteristics in this table are applicable to these product numbers. Outline drawings can be downloaded from <http://www.ge-energy.com/ecatalog/html/index>



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

TRANQUELL® Intermediate Arresters

Polymer High Voltage
Indoor and Outdoor Service

Section 20

Dimensions and Mounting

Product Number	Ratings Voltage kV rms	MCOV	"X" Dimension (In.)	Leakage Distance (In.)	Minimum Mounting Spacing on Center (In.)		Net Weight (Lbs.)
					Ph-Ph	Ph-Grd	
9L12PPT002S	2.7	2.2	4.5	8	4.4	3.3	5.1
9L12PPT003S	2.7	2.55	4.5	8	4.4	3.3	5.1
9L12PPT004S	4.5	3.7	6.9	15.4	4.6	3.2	5.8
9L12PPT005S	5.1	4.2	6.9	15.4	4.6	3.2	5.8
9L12PPT006S	6	5.1	6.9	15.4	4.6	3.2	5.8
9L12PPT007S	7.5	6.1	6.9	15.4	4.7	3.3	5.8
9L12PPT008S	8.5	6.9	6.9	15.4	4.7	3.3	5.8
9L12PPT009S	9	7.65	6.9	15.4	4.7	3.3	5.8
9L12PPT010S	10	8.4	6.9	15.4	4.9	3.5	5.8
9L12PPT012S	12	10.2	6.9	15.4	4.9	3.5	5.8
9L12PPT015S	15	12.7	9.9	26	6.2	4.8	8.8
9L12PPT018S	18	15.3	9.9	26	6.6	5.2	8.8
9L12PPT021S	21	17.0	9.9	26	7.6	6.2	8.8
9L12PPT024S	24	19.5	12.2	30.8	7.6	6.2	9.1
9L12PPT027S	27	22.0	18.6	52	9.6	8.2	14.8
9L12PPT030S	30	24.4	18.6	52	9.8	8.4	14.8
9L12PPT036S	36	29.0	18.6	52	9.8	8.4	14.8
9L12PPT039S	39	31.5	18.6	52	12.8	11.4	14.8
9L12PPT045S	45	36.5	27.1	78	12.8	11.4	20.8
9L12PPT048S	48	39.0	27.1	78	12.8	11.4	20.8
9L12PPT054S	54	42.0	27.1	78.0	15.8	14.4	20.8
9L12PPT060S	60	48.0	27.1	78.0	15.8	14.4	20.8
9L12PPT072S	72	57.0	36	104	19.8	18.4	26.8

*9L12PPMxxxxs, the electrical characteristics in this table are applicable to these catalog numbers.
Outline drawings can be downloaded from <http://www.ge-energy.com/ecatalog/html/index>



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

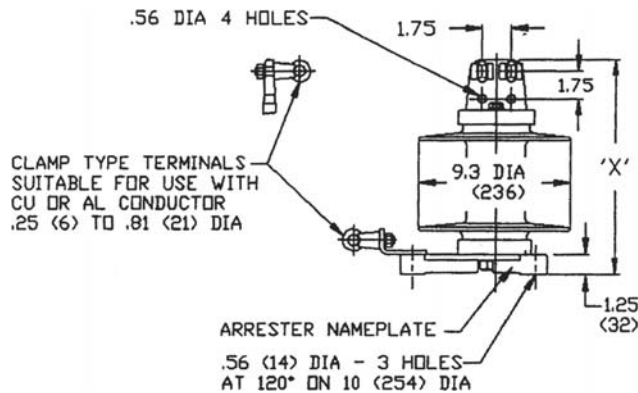


Fig. 1 - Polymer Station Arrester - 9L11XPAXxxS
3kV through 96kV

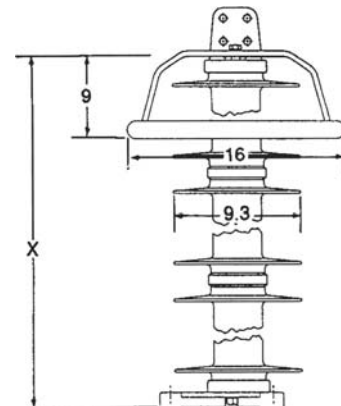


Fig. 2 - Polymer Station Arrester - 9L11XPAXxxS
108kV through 228kV

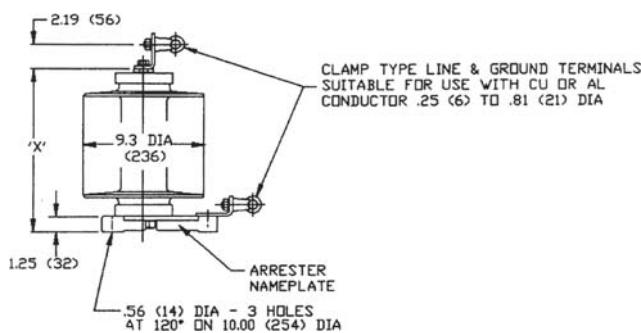


Fig. 3 - Polymer Station Arrester - 9L11XPBxxS
3kV through 7kV

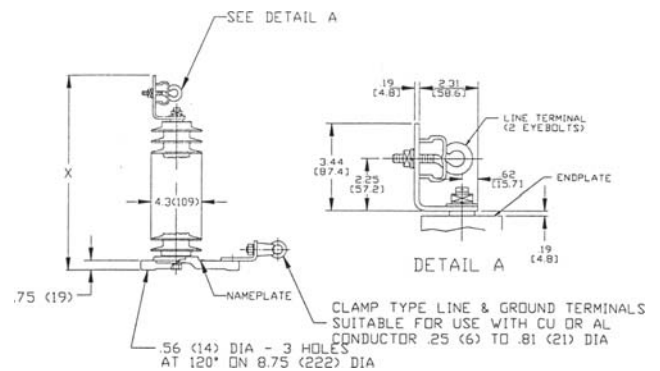


Fig. 4 - Polymer Intermediate Arrester - 9L12PPAXxxS
3kV through 72kV

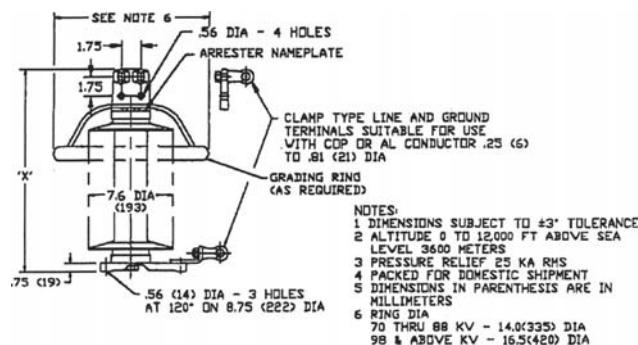


Fig. 5 - Polymer Intermediate Arrester - 9L12PPAXxxS
90kV through 144kV

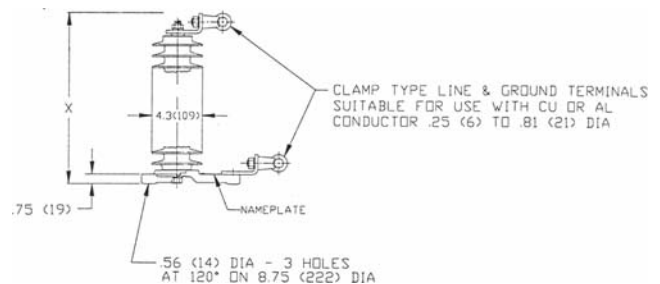


Fig. 6 - Polymer Intermediate Arrester - 9L12PPBxxS
3kV through 72kV



Capacitors, Arresters and Harmonic Filters

Station and Intermediate Class Arresters

Section 20

Accessories

Terminals and Mounting Brackets

The energy capability for GE Surge Arresters is defined based upon Switching Surges, 2 milliseconds, transmission line discharges, with multiple discharges over a one-minute period and with current amplitudes that are no greater than listed below. Based upon this definition GE arresters have an energy capability as follows:

Distribution, Intermediate and Station Arrester – Application

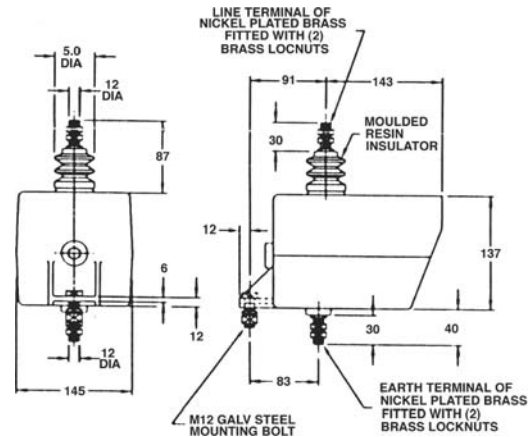
Arrester Rated Voltage (kV rms)	Housing Type	Arrester Type	Max. Current for Energy Rating (Amps)	Energy (kJ/kV of MCOV)
3-36 kV	Polymer	Heavy Duty Distribution	450	1.8
3-36 kV	Polymer	Riser Pole	650	2.2
3.0 - 144 kV	Polymer	Intermediate	650	6
3.0 - 144 kV	Polymer	Station	1000	9
3.0 - 48 kV	Porcelain	Station	1000	9
54 - 360 kV	Porcelain	Station	1500	13
396 - 612 kV	Porcelain	Station	2400	17

To provide assurance that all disks used in GE arresters have this capability, we perform a Low Current Long Duration Strength Test on 100% of our disks applying the above energies. We apply two groups of three shots per group. Each shot is a square wave, which is 2 milliseconds wide. We allow 15 to 20 seconds between shots, three are applied within 60 seconds, and we allow the disk to cool between the two groups of three shots. This is followed by three shots of a half sine wave, which is 14 milliseconds wide with 15 to 20 seconds between shots. These tests weed out any weak disks and provide assurance that the disks used in the final product are indeed capable of withstanding the energy claimed.

GE arresters exceed the requirements of Seismic Zone 2 and have Cantilever Strengths and fault current capabilities as follows:

Discharge Counters, Insulating Bases and Brackets

Description	Weight		Product Number	List Price GO-76A
	lbs	kgs		
Discharge Counter	6.6	3.0	9L26FBE005E	\$1155.00
Discharge Counter with leakage current ammeter	7.7	3.5	9L26FBE012E	\$1449.00
Description -3 included, 1 for each foot of the arrester				
Insulating Base for Polymer Intermediate arresters and Porcelain Station arresters 3-48kV rated voltage	5	2.27	9L11LW804S	\$180.00
Insulating Base for Polymer Station arrester	5	2.27	9L11LW805S	\$200.00
Insulating Base for Porcelain Station arrester (54-360 kV rated voltage)	47	21.4	9L11LW807E	\$483.00
Insulating Base for Porcelain EHV arresters (>360kV)	47	21.4	9L16AAW110S	\$525.00



Details of Discharge Counter,
Models 9L26FBE005E and 9L26FBE012E (Dimensions in mm)

Distribution, Intermediate and Station Arrester – Application

Arrester Rated Voltage (kV rms)	Housing Type	Arrester Type	Rated Ultimate Cantilever Strength		Maximum Working Cantilever Strength		Fault Current Capability (kA sym)
			in-lbs	N-m	in-lbs	N-m	
3 - 36 kV	Polymer	Normal Duty Distribution	1,500	169	600	68	10
3 - 36 kV	Polymer	Heavy Duty Distribution	3,000	339	1,200	136	20
3 - 36 kV	Polymer	Riser Pole	4,000	452	1,600	181	20
3.0 - 72 kV	Polymer	Intermediate	4,000	452	2,000	226	20
3.0 - 144 kV	Polymer	Intermediate	10,000	1,130	5,000	565	20
3.0 - 144 kV	Polymer	Station	20,000	2,260	10,000	1,130	80
3.0 - 48 kV	Porcelain	Station - Metal Top	70,000	7,909	28,000	3,163	65
54 - 360 kV	Porcelain	Station	150,000	16,947	60,000	6,779	93
396 - 612 kV	Porcelain	Station	200,000	22,596	80,000	9,038	65

GE arresters are manufactured in an ISO 9002 certified facility (File #A3803, issued January 19, 1995).



For more product information, go to www.ge.com/energy, click on "Products and Services" and then "Products."
For up-to-date outline drawings, go to <http://www.ge-energy.com/ecatalog/html/index>

Capacitors, Arresters and Harmonic Filters

Distribution and Riser Pole Arresters

Section 20

9L20 Polymer Distribution

9L27 Polymer Riser Pole

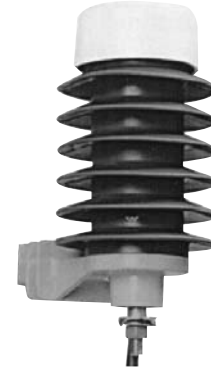
0-12,000 ft. Altitude

Product Description

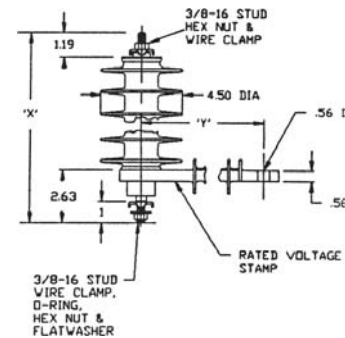
The GE TRANQUELL® distribution and riser pole polymer line of surge arrester products provide excellent protective characteristics, temporary overvoltage capability, and switching surge energy withstand to power systems of voltages less than 46 kV rms. GE polymer arresters are ideally suited for application in both indoor and outdoor situations. They are designed and manufactured in accordance with the latest revision of ANSI/IEEE C62.11 and IEC 99-4.

Application Guide – Nominal System Suggested Arrester Rating

Line-to-Line Voltage	4 Wire Multi-Grounded Neutral System	3 Wire Delta or WYE ¹	
		Low Impedance Ground	High Impedance or Ungrounded
4160	3	6	6
4800	6	6	6
6640	6	6	9
7200	6	9	9
7620	6	9	9
8320	6	9	10
9960	9	9	12
11000	9	10	12
11500	9	10	15
12000	9	12	15
12470	9	12	15
13200	10	12	15
13800	10	12	18
14400	12	15	18
17250	15	15	21
19750	15	18	21
20780	15	18	24
22860	18	21	27
24940	18	24	30
26400	21	24	30
27700	21	27	30
34500	27	30	36
36200	27	36	-



TRANQUELL® distribution arrester, rated 10 kV, with disconnector)



3-36 kV rms Polymer Heavy Duty Distribution Arresters 9L20

Note: kV rating fills positions 9 and 10 (**) of product number

Product Number	Insulating		Bird Cap	X-Arm Bracket	Xformer Bracket	18" Line Lead	Ground Strap	List Price GO-55											
	Bracket	Disconnect						3kV	6kV	9kV	10kV	12kV	15kV	18kV	21kV	24kV	27kV	30kV	36kV
9L20AXX0**AHS	X	X		X				\$109.00	\$111.00	\$125.00	\$129.00	\$144.00	\$167.00	\$179.00	\$223.00	\$238.00	\$260.00	\$288.00	\$315.00
9L20AXXA**AHS	X	X	X	X				\$111.00	\$113.00	\$127.00	\$132.00	\$146.00	\$169.00	\$181.00	\$225.00	\$240.00	\$263.00	\$290.00	\$317.00
9L20AXXA4**AHS	X	X	X	X		X		\$113.00	\$115.00	\$129.00	\$134.00	\$148.00	\$171.00	\$184.00	\$227.00	\$242.00	\$265.00	\$292.00	\$319.00
9L20AXA0**AHS	X	X		X		X		\$111.00	\$113.00	\$127.00	\$132.00	\$146.00	\$169.00	\$181.00	\$225.00	\$240.00	\$263.00	\$290.00	\$317.00
9L20AXX0**XHS	X	X						\$98.00	\$100.00	\$115.00	\$119.00	\$134.00	\$156.00	\$169.00	\$213.00	\$227.00	\$250.00	\$277.00	\$304.00
9L20AXX4**XHS	X	X	X					\$100.00	\$100.00	\$117.00	\$121.00	\$136.00	\$159.00	\$171.00	\$215.00	\$229.00	\$252.00	\$279.00	\$306.00
9L20AXA4**XHS	X	X	X			X		\$102.00	\$104.00	\$119.00	\$123.00	\$138.00	\$161.00	\$173.00	\$217.00	\$231.00	\$254.00	\$281.00	\$308.00
9L20AXA0**XHS	X	X				X		\$100.00	\$102.00	\$117.00	\$121.00	\$136.00	\$159.00	\$171.00	\$215.00	\$229.00	\$252.00	\$279.00	\$306.00
9L20AXX0**BHS	X	X			X			\$109.00	\$111.00	\$125.00	\$129.00	\$144.00	\$167.00	\$179.00	\$217.00	\$231.00	\$254.00	\$281.00	\$310.00
9L20AXX4**BHS	X	X	X		X			\$111.00	\$113.00	\$127.00	\$132.00	\$146.00	\$169.00	\$171.00	\$175.00	\$219.00	\$233.00	\$256.00	\$283.00
9L20AHA4**BHS	X	X	X	X		X	X	\$109.00	\$111.00	\$125.00	\$129.00								
9L20AHX4**BHS	X	X	X		X		X	\$107.00	\$109.00	\$123.00	\$127.00								
9L20AHX0**BHS	X	X			X		X	\$104.00	\$107.00	\$121.00	\$125.00								
9L20AFA4**BHS	X	X	X	X		X	X					\$144.00	\$167.00	\$179.00	\$223.00	\$238.00	\$260.00	\$288.00	\$315.00
9L20AFX4**BHS	X	X	X	X		X	X					\$142.00	\$165.00	\$177.00	\$221.00	\$236.00	\$258.00	\$285.00	\$312.00
9L20AFX0**BHS	X	X			X		X					\$140.00	\$163.00	\$175.00	\$219.00	\$233.00	\$256.00	\$283.00	\$310.00
9L20BX0**XHS	X							\$86.00	\$88.00	\$102.00	\$107.00	\$121.00	\$144.00	\$156.00	\$200.00	\$215.00	\$238.00	\$265.00	\$292.00
9L20FX0**XHS								\$73.00	\$75.00	\$90.00	\$94.00	\$109.00	\$132.00	\$144.00	\$188.00	\$202.00	\$225.00	\$252.00	\$279.00



Publications and Reference: See Section 22 for a complete list of additional product-related publications

Capacitors, Arresters and Harmonic Filters

Distribution and Riser Pole Arresters

Section 20

9L20 Polymer Distribution
9L27 Polymer Riser Pole
0-12,000 ft. Altitude

3-36kV rms 9L27 Polymer Riser Pole Arresters

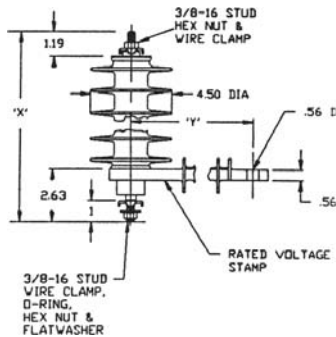
Product Number	Insulating Bracket	Disconnect	Bird Cap	X-Arm Bracket	List Price GO-51											
					3 kV	6 kV	9 kV	10 kV	12 kV	15 kV	18 kV	21 kV	24 kV	27 kV	30 kV	36 kV
9L27HXX**XHS	X	X	X		\$104.00	\$111.00	\$117.00	\$123.00	\$148.00	\$173.00	\$184.00	\$227.00	\$248.00	\$248.00	\$281.00	\$354.00
9L27HXX**AHS	X	X	X	X	\$113.00	\$119.00	\$125.00	\$132.00	\$156.00	\$181.00	\$192.00	\$236.00	\$256.00	\$256.00	\$290.00	\$362.00

Heavy Duty Distribution Arresters 9L20 – Protective Characteristics

Rating Voltage kV rms	MCOV kV rms	0.5 µsec 10kA Max. IrR kV Crest	Switching Surge Max IR-kVCrest	8/20 Maximum Discharge Voltage (kV) Crest					
				1.5kA	3kA	5kA	10kA	20kA	40kA
3	2.55	10.6	7.6	8	8.5	9	9.9	11.1	13.2
6	5.1	21.3	15.3	15.9	17	18	19.8	22.3	26.5
9	7.65	31.2	22.4	23.3	24.9	26.4	29	32.6	38.8
10	8.4	34	24.4	25.4	27.1	28.8	31.6	35.6	42.3
12	10.2	40.4	29	30.3	32.3	34.2	37.6	42.3	50.3
15	12.7	51.4	36.9	38.5	41.1	43.5	47.8	53.5	64
18	15.3	60.6	43.5	45.4	48.4	51.3	56.4	63.5	75.5
21	17	68.3	49	51.1	54.5	57.8	63.5	71.4	85.5
24	19.5	81.9	58.8	61.3	65.6	69.3	76.2	85.7	102
27	22	91.9	65.9	68.8	73.4	77.8	85.5	96.2	114.4
30	24.4	101.1	72.5	75.7	80.7	85.5	94	105.8	125.8
36	29	121.4	87	97.9	97	102.7	112.9	127	151.1

Heavy Duty Distribution Arresters 9L20 – Insulation and Physical Characteristics

Rating Voltage kV rms	MCOV kV rms	Creep		Strike		Min 1.2 x 50µs Withstand (kV Crest)	Min Power Frequency (kV rms)		Mounting Clearance "x" Overall Height		Center Line to Center Line		Center Line to Ground		Weights (unit only)	
		in	mm	in	mm		Dry (1 sec)	Wet (10 sec)	in	mm	in	mm	in	mm	lbs	kgs
3	2.55	8	203	4.9	124	50	35	25	6.8	173	4.8	122	3	76	2.6	1
6	5.1	15.4	391	4.9	124	75	45	35	7.62	194	5.0	127	3.4	86	2.6	1
9	7.65	15.4	391	4.9	124	75	45	35	8.72	221	5.6	142	4	102	2.6	1
10	8.4	15.4	391	4.9	124	75	45	35	8.72	221	5.8	147	4.2	107	2.6	1
12	10.2	15.4	391	6.5	165	125	65	45	9.3	236	7.5	191	5.5	140	5.6	3
15	12.7	26	660	6.5	165	125	65	45	11.62	295	8.5	216	6.5	165	5.6	3
18	15.3	26	660	6.5	165	125	65	45	11.62	295	9.5	241	7.5	191	5.6	3
21	17	26	660	6.5	165	125	65	45	12.42	315	10.0	254	8	203	5.6	3
24	19.5	30.8	782	10	254	160	90	65	15.32	389	12.0	305	10	254	8.9	4
27	22	52	1321	10	254	160	90	65	16.42	417	13.0	330	11	279	8.9	4
30	24.4	52	1321	10	254	160	90	65	19.92	506	13.6	345	12	305	8.9	4
36	29	52	1321	14	356	160	90	65	19.32	491	16.2	411	14.5	368	12.2	6



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Capacitors, Arresters and Harmonic Filters

Distribution and Riser Pole Arresters

Section 20

9L20 Polymer Distribution

9L27 Polymer Riser Pole

0-12,000 ft. Altitude

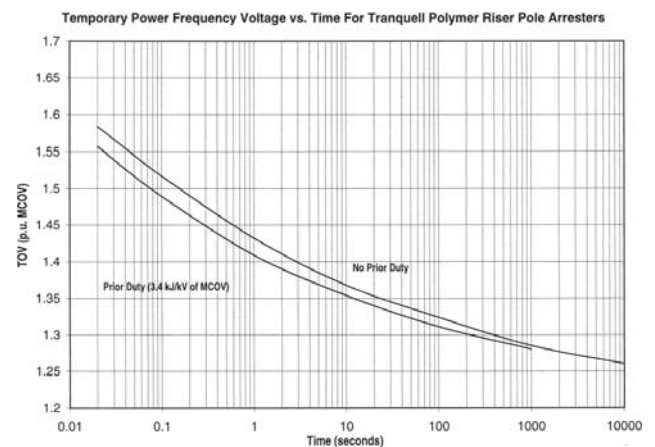
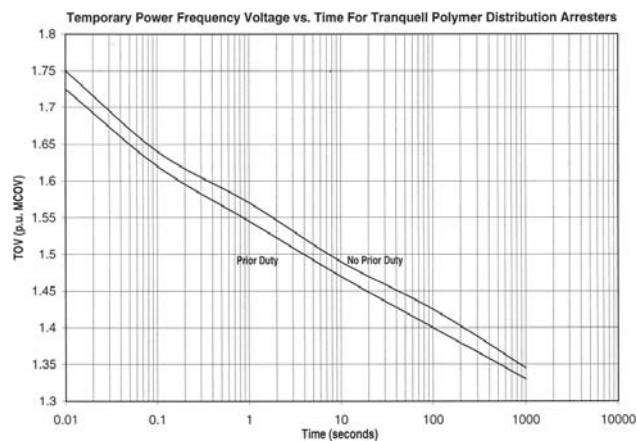
Riser Pole Arresters 9L27 – Protective Characteristics

Rating Voltage kV rms	MCOV kV rms	0.5 usec 10kA Max. IrR kV Crest	Switching Surge Max IR-kVCrest	8/20 Maximum Discharge Voltage (kV) Crest					
				1.5kA	3kA	5kA	10kA	20kA	40kA
3	2.55	8.7	5.8	6.5	7	7.4	8.1	9	10.6
6	5.1	17.4	11.7	13	14	14.7	16.2	18.1	21.1
9	7.65	25.7	17.5	19.3	21	21.9	24	27	31.6
10	8.4	28.5	19.2	21.2	23	24	26.5	29.8	34.8
12	10.2	34.8	23.3	25.9	28	29.4	32.3	36.2	42.2
15	12.7	43.1	29.1	32.3	35	36.6	40.2	45.1	52.7
18	15.3	51.4	34.9	38.6	41.9	43.8	48	54	63.2
21	17	57.6	38.7	42.8	46.4	48.6	53.6	60.2	70.5
24	19.5	68.8	46.6	51.6	55.9	58.5	64.2	72.1	84.3
27	22	77.1	52.4	57.9	62.9	65.7	72	81	94.8
30	24.4	85.5	57.6	63.5	69	72	79.5	89.4	104.4
36	29	102.8	69.8	77.2	83.8	87.6	96	108	126.6

Riser Pole Arresters 9L27 – Insulation and Physical Characteristics

Rating Voltage kV rms	MCOV kV rms	Creep		Strike		Min 1.2 x 50µs Withstand (kV Crest)	Min Power Frequency (kV rms)		Mounting Clearance "x" Overall Height		Center Line to Center Line		Center Line to Ground		Weights (unit only)	
		in	mm	in	mm		Dry (1 sec)	Wet (10 sec)	in	mm	in	mm	in	mm	lbs	kgs
3	2.55	8	203	4.9	124	50	35	25	6.8	173	4.8	122	3	76	2.6	1
6	5.1	15.4	391	4.9	124	75	45	35	7.62	194	5.0	127	3.4	86	2.6	1
9	7.65	15.4	391	4.9	124	75	45	35	8.72	221	5.6	142	4	102	2.6	1
10	8.4	15.4	391	4.9	124	75	45	35	8.72	221	5.8	147	4.2	107	2.6	1
12	10.2	15.4	391	6.5	165	125	65	45	9.3	236	7.5	191	5.5	140	5.6	3
15	12.7	26	660	6.5	165	125	65	45	11.62	295	8.5	216	6.5	165	5.6	3
18	15.3	26	660	6.5	165	125	65	45	11.62	295	9.5	241	7.5	191	5.6	3
21	17	26	660	6.5	165	125	65	45	12.42	315	10.0	254	8	203	5.6	3
24	19.5	30.8	782	10	254	160	90	65	15.32	389	12.0	305	10	254	8.9	4
27	22	52	1321	10	254	160	90	65	16.42	417	13.0	330	11	279	8.9	4
30	24.4	52	1321	10	254	160	90	65	19.92	506	13.6	345	12	305	8.9	4
36	29	52	1321	14	356	160	90	65	19.32	491	16.2	411	14.5	368	12.2	6

Temporary Overvoltage Curves



Publications and Reference: See Section 22 for a complete list of additional product-related publications

[illegible]