



Line/ Load Reactors

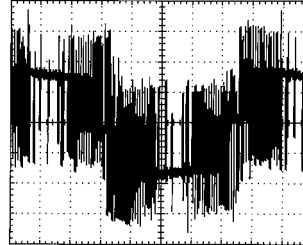


Line / Load Reactors 280V-600V

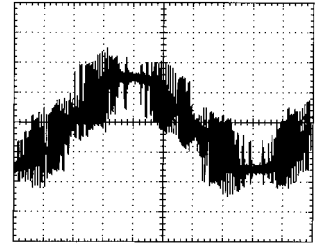
Motor Protection

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.

Without Reactor



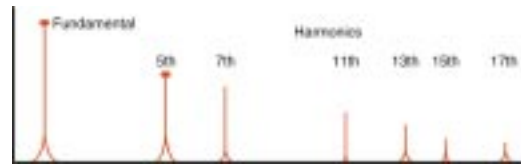
With 5% Impedance Reactor



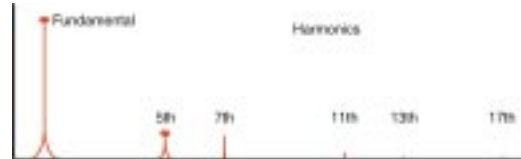
Harmonic Reduction

Because all standard 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 reduction of harmonic distortion

Typical Harmonic Distortion of PWM Inverter Without Reactor



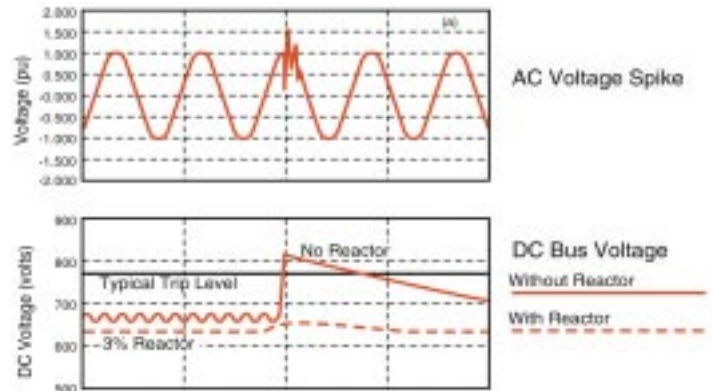
Typical Harmonic Distortion of PWM Inverter With 5% Impedance Reactor



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.

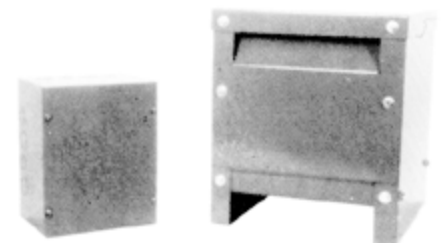
Voltage spikes on the AC power lines cause elevation of the DC Bus voltage which may cause the inverter to "trip-off" and indicate an over-voltage protection condition. Use reactors to absorb these line spikes and offer protection to the rectifiers and DC Bus capacitors while minimizing nuisance tripping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



Reactor Part Number	Type	W	H	D	WGT. (LBS)	NEMA 1 Enclosure
37G012XX, 37G01801, 37G01802	Wall Mount	8	8	6	7	CAB8
37G01803, 37G025XX, 37G035XX, 37G045XX, 37G055XX, 37G080XX, 37G100XX, 37G130XX, 37G160XX, 37G200XX, 37G25001	Floor	13	13	13	31	CAB13
37G25002, 37G25003, 37G320XX, 37G400XX, 37G500XX, 37G600XX	Floor	17	24	17	45	CAB17
37G750XX	Floor	24	30	24	83	CAB24

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 part number from "0" to "1". Example 37G 00802 becomes 37G 00812





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%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00401	00801	00801	01201	01801	02501	03501	04501	05501	08001	10001	13001
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00402	00802	00802	01202	01802	02502	03502	04502	05502	08002	10002	13002
240 Volts	3%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00401	00801	00801	01201	01801	02501	03501	04501	05501	08001	08001	10001
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00402	00802	00802	01202	01802	02502	03502	04502	05502	08002	08802	10002
380 Volts	2%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00204	00402	00401	00802	00801	01201	01801	02501	03501	04501	04501	08001
50/60 HZ	4%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00201	00404	00402	00803	00802	01202	01802	02502	03502	04502	04502	08002
400 Volts	2%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00201	00402	00402	00802	00801	01201	01801	02501	03501	04501	04501	05501
50/60 HZ	4%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00202	00404	00403	00803	00802	01202	01802	02502	03502	04502	04502	05502
415 Volts	2%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00201	00402	00402	00802	00801	01201	01801	02501	03501	04501	04501	05501
50/60 HZ	4%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00202	00404	00403	00803	00802	01202	01802	02502	03502	04502	04502	05502
480 Volts	3%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00201	00201	00402	00402	00802	01202	01802	02502	03502	03502	04502	05502
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00202	00202	00403	00403	00803	01203	01803	02503	03503	03503	04503	05503
600 Volts	3%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00202	00202	00403	00403	00803	00802	01202	01802	02502	02502	03502	04502
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	00203	00203	00404	00404	00804	00803	01203	01803	02503	02503	03503	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%	37G	37G	37G	37G	37G	37G	37G	37G	37G					
	Impedance	16001	20001	25001	32001	40001	50001	60001	75001						
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G					
	Impedance	16002	20002	25002	32002	40002	50002	60002	75002						
240 Volts	3%	37G	37G	37G	37G	37G	37G	37G	37G	37G					
	Impedance	13001	16001	20001	25001	32001	40001	50001	60001	75001					
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G					
	Impedance	13002	16002	20002	25002	32002	40002	50002	60002	75002					
380 Volts	2%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G		
	Impedance	08001	10001	10001	16001	20001	25001	32002	40001	40001	50001	60001	75002		
50/60 HZ	4%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G		
	Impedance	08002	10002	10002	16002	20002	25002	32003	40002	40002	50002	60002	75003		
400 Volts	2%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G		
	Impedance	08001	08001	10001	13001	20002	25002	32002	32001	40001	50001	50002	75002		
50/60 HZ	4%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G		
	Impedance	08002	08002	10002	13002	20003	25003	32003	32002	40002	50002	60003	75003		
415 Volts	2%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	
	Impedance	08001	08001	10001	13001	20002	20002	25001	32001	32001	40001	50001	50001	75002	75002
50/60 HZ	4%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	
	Impedance	08002	08002	10002	13002	20003	20003	25002	32002	40002	50002	50002	75003	75003	
480 Volts	3%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	
	Impedance	08002	08002	10002	13002	16002	20002	25002	32002	40002	50002	50002	60002	75002	
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	
	Impedance	08003	08003	10003	13003	16003	20003	25003	32003	40003	50003	50003	60003	75003	
600 Volts	3%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	05502	08002	08002	10002	13002	16002	20002	25002	32002	40002	40002	50002	60002	75002
50/60 HZ	5%	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G	37G
	Impedance	05503	08003	08003	10003	13003	16003	20003	25003	32003	40003	40003	50003	60003	75003

Consult Factory

For input or Output of Adjustable Speed Drive/Inverter Systems

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 current rating of the reactor (See Next Page).

* For higher or lower current ratings, consult factory.

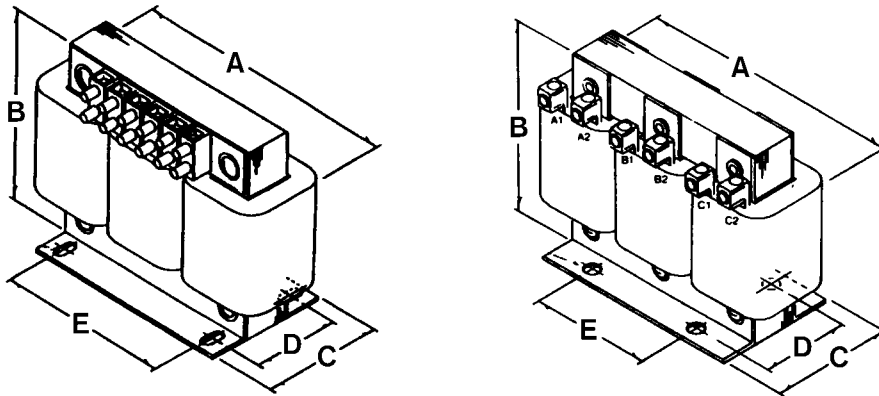
* For other voltages or frequencies, consult factory. Single phase reactors are also available, consult factory for proper selection.



Line/ Load Reactors

3-Phase Reactors: Line/Load Specifications Table

600 Volts, 50/60 Hz (Open Type)												
Open Type Part* Number	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	CAB
37G00201	2	3	12.0mh	7.5	112/4.4	102/4.0	74/2.8	50/2.0	36/1.44	1.8/4	37G00211	
37G00202	2	3	20.0mh	11.3	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	1.8/4	37G00212	
37G00203	2	3	32.0mh	16	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	1.8/4	37G00213	
37G00204	2	3	6.0mh	10.7	112/4.4	102/4.0	69/2.7	44/1.73	36/1.44	1.4/3	37G00214	
37G00401	4	6	3.0mh	14.5	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	1.8/4	37G00411	
37G00402	4	6	6.5mh	20	112/4.4	102/4.0	74/2.9	50/2.0	36/1.44	2.3/4	37G00412	
37G00403	4	6	9.0mh	20	112/4.4	102/4.0	79/3.1	54/2.1	36/1.44	1.8/5	37G00413	
37G00404	4	6	12.0mh	21	112/4.4	102/4.0	91/3.6	66/2.6	36/1.44	2.7/6	37G00414	
37G00801	8	12	1.5mh	19.5	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	3.1/7	37G00811	CAB-8
37G00802	8	12	3.0mh	29	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	3.2/8	37G00812	
37G00803	8	12	5.0mh	25.3	152/6.0	122/4.8	86/3.4	63/2.5	50/2.0	5.0/11	37G00813	
37G00804	8	12	7.5mh	28	152/6.0	122/4.8	86/3.4	63/2.5	50/2.0	5.9/13	37G00814	
37G01201	12	18	1.25mh	26	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	4.0/9	37G01211	
37G01202	12	18	2.5mh	31	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	4.5/10	37G01212	
37G01203	12	18	4.2mh	41	152/6.0	122/4.8	94/3.7	70/2.75	50/2.0	8.1/18	37G01213	
37G01801	18	27	0.8mh	36	152/6.0	122/4.8	79/3.1	54/2.1	50/2.0	4.0/9	37G01811	
37G01802	18	27	1.5mh	43	152/6.0	122/4.8	86/3.4	53/2.5	50/2.0	5.4/12	37G01812	
37G01803	18	27	2.5mh	43	183/7.2	145/5.7	97/3.8	66/2.6	76/3.0	7.3/16	37G01813	
37G02501	25	37.5	0.5mh	48	183/7.2	142/5.6	86/3.4	60/2.3	76/3.0	5.0/11	37G02511	
37G02502	25	37.5	1.2mh	52	183/7.2	142/5.6	86/3.4	60/2.3	76/3.0	6.3/14	37G02512	
37G02503	25	37.5	1.8mh	61	183/7.2	145/5.7	97/3.8	66/2.6	76/3.0	8.1/18	37G02513	
37G03501	35	52.5	0.4mh	49	183/7.2	142/5.6	97/3.8	66/2.6	76/3.0	6.3/14	37G03511	
37G03502	35	52.5	0.8mh	54	183/7.2	145/5.7	97/3.8	66/2.6	76/3.0	7.3/16	37G03512	
37G03503	35	52.5	1.2mh	54	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	14/30	37G03513	
37G04501	45	67.5	0.3mh	54	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	10/23	37G04511	
37G04502	45	67.5	0.7mh	62	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	13/28	37G04512	
37G04503	45	67.5	1.2mh	65	229/9.0	178/7.0	135/5.3	93/3.6	76/3.0	18/39	37G04513	
37G05501	55	82.5	0.25mh	64	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	11/24	37G05511	
37G05502	55	82.5	0.50mh	67	229/9.0	178/7.0	122/4.8	80/3.2	76/3.0	12/27	37G05512	
37G05503	55	82.5	0.85mh	71	229/9.0	178/7.0	142/5.6	99/3.9	76/3.0	18/41	37G05513	
37G08001	80	120	0.20mh	82	274/10.8	208/8.2	142/5.6	88/3.5	92/3.6	19/43	37G08011	CAB-13
37G08002	80	120	0.40mh	86	274/10.8	211/8.3	142/5.6	88/3.5	92/3.6	23/51	37G08012	
37G08003	80	120	0.70mh	96	274/10.8	213/8.4	160/6.3	117/4.6	82/3.6	25/55	37G08013	
37G10001	100	150	0.15mh	94	274/10.8	211/8.3	142/5.6	88/3.5	92/3.6	21/47	37G10011	
37G10002	100	150	0.30mh	84	274/10.8	208/8.2	147/5.8	93/3.6	92/3.6	23/51	37G10012	
37G10003	100	150	0.45mh	108	274/10.8	213/8.4	160/6.3	106/4.2	92/3.6	33/74	37G10013	
37G13001	130	195	0.10mh	108	229/9.0	179/7.04	124/4.9	80/3.16	76/3	13/29	37G13011	
37G13002	130	195	0.20mh	180	274/10.8	213/8.4	171/6.75	93/3.66	92/3.63	26/57	37G13012	
37G13003	130	195	0.30mh	128	274/10.8	213/8.4	184/7.25	106/4.16	92/3.63	29/64	37G13013	
37G16001	160	240	0.075mh	116	274/10.8	213/8.4	146/5.75	80/3.16	92/3.63	18/40	37G16011	
37G16002	160	240	0.150mh	149	274/10.8	213/8.4	152/6	88/3.47	92/3.63	22/50	37G16012	
37G16003	160	240	0.230mh	138	274/10.8	213/8.4	181/7.13	106/4.16	92/3.63	31/67	37G16013	
37G20001	200	300	0.055mh	124	274/10.8	213/8.4	152/6	106/4.16	92/3.63	22/48	37G20011	
37G20002	200	300	0.110mh	168	274/10.8	213/8.4	216/8.5	112/4.41	92/3.63	31/67	37G20012	
37G20003	200	300	0.185mh	146	274/10.8	267/10.5	237/9.35	150/5.91	92/3.63	46/100	37G20013	
37G25001	250	375	0.045mh	154	274/10.8	208/8.17	184/7.25	106/4.16	92/3.63	31/68	37G25011	
37G25002	250	375	0.090mh	231	366/14.4	356/14	210/8.25	131/5.16	117/4.6	49/106	37G25012	
37G25003	250	375	0.150mh	219	366/14.4	356/14	288/11.35	148/5.82	117/4.6	64/140	37G25013	
37G32001	320	480	0.040mh	224	366/14.4	356/14	168/6.6	129/5.07	117/4.6	50/110	37G32011	
37G32002	320	480	0.075mh	264	375/14.75	356/14	257/10.13	149/5.88	117/4.6	57/125	37G32012	
37G32003	320	480	0.125mh	351	366/14.4	356/14	330/13	181/7.13	117/4.6	86/190	37G32013	
37G40001	400	600	0.030mh	231	366/14.4	356/14	254/10	131/5.16	117/4.6	46/100	37G40011	
37G40002	400	600	0.060mh	333	394/15.5	356/14	292/11.5	172/6.76	117/4.6	71/155	37G40012	CAB-17
37G40003	400	600	0.105mh	293	394/15.5	356/14	368/14.5	184/7.26	117/4.6	91/200	37G40013	
37G50001	500	750	0.025mh	266	394/15.5	356/14	267/10.5	140/5.5	117/4.6	55/120	37G50011	
37G50002	500	750	0.050mh	340	394/15.5	356/14	330/13	172/6.76	117/4.6	82/180	37G50012	
37G50003	500	750	0.085mh	422	394/15.5	356/14	375/14.75	248/9.76	117/4.6	132/290	37G50013	
37G60001	600	900	0.020mh	307	394/15.5	356/14	279/11	168/6.66	117/4.6	73/160	37G60011	
37G60002	600	900	0.040mh	414	394/15.5	356/14	356/14	172/6.76	117/4.6	96/210	37G60012	
37G60003	600	840	0.065mh	406	394/15.5	356/14	394/15.5	235/9.26	117/4.6	132/290	37G60013	
37G75001	750	1125	0.015mh	427	559/22	508/20	254/10	168/6.63	183/7.2	91/200	37G75011	CAB-24
37G75002	750	1125	0.029mh	630	559/22	508/20	317/12.5	197/7.76	183/7.2	141/310	37G75012	
37G75003	750	1125	0.048mh	552	559/22	508/20	376/14.8	242/9.51	183/7.2	183/400	37G75013	



Outline Dimensions

All GE Line \ Load Reactors are supplied with field wiring terminals, as illustrated. Units rated 80 amperes or below are supplied with the international terminal block as shown. Reactors rated above 80 amperes through 400 amperes are supplied with solid copper box lugs. Larger reactors are supplied with copper tab type terminals. Refer to these outline drawings and the table for reactor dimensions.



3-PHASE REACTORS

Product Specification

AGENCY APPROVALS:

UL-506, File E191687 Component Recognized (1 amp – 1200 amps)
UL-508, File E191686 Component Recognized (1 amp – 1200 amps)
Class H, 180 C, UL Recognized Insulation System
VDE 0550 Compliant Construction
CE Marked

MATERIAL:

CORE STEEL: Grain oriented electromagnetic steel, Grade M6, 29 Gauge.

WINDINGS: MW35C and MW36C solid copper conductor. (200 C)

ENCLOSURES: Sheet steel in accordance with UL, NEMA, and CSA requirements. Grey color.

BRACKETS: ASTM structural steel or structural aluminum

TERMINATIONS: 1 – 80 amps - Finger proof terminal block (except 37G08003 which has solid copper box lugs)
81 - 400 amps - Solid copper box lugs
401 + amps - Copper tab terminals

SHEET INSULATION: DuPont Nomex 410 (220 C)

EPOXY: Epic Resin Type 0118 (220 C)

CONSTRUCTION:

CORE: Three phase high grade laminations. Single air gap per leg typical. Multiple air gaps available and used as required.

WINDINGS: UL approved for 4000 volts rms dielectric strength (5600 volts peak) coil – to coil and coil- to – core. Fully insulated from core by UL approved insulation materials and wrapped with high grade insulating tapes for maximum isolation. All windings through 80 amps include end turn triple insulation to maintain touch – proof construction

ASSEMBLY: Windings are assembled onto EI laminations, secured in place and epoxy impregnated for minimum noise and maximum strength.

COLOR: Royal Blue

TESTING: Electronic Turns Count (Zero Tolerance)
Inductance
Hi-Pot 4000 Volts rms (5600 volts peak)
Mechanical Inspection

AUDIBLE NOISE: GE Line/Load Reactors are designed for minimum noise operation. Core and coil construction, flux density control, harmonic compensation as well as our epoxy impregnation process assure minimal audible noise radiation. Although our reactors are typically “quiet”, waveforms vary by drive type and application and therefore some installations can experience audible noise in the reactor.

HARMONIC COMPENSATION:

All reactors are compensated for the additional currents and high frequencies caused by the presence of harmonics. The reactor fundamental current rating indicates the typical full load fundamental current and is also the fundamental current on which the inductance is based to provide the desired circuit impedance. This current rating relates to the motor full load ampere rating. The maximum continuous current rating (thermal current rating) is the absolute continuous current rating of the reactor including both fundamental and harmonic currents. This current relates to the true rms drive input current rating. Full inductance (100%) is assured all the way up to 150% of the nominal (fundamental) current rating.

IGBT PROTECTION:

All reactors are specially designed to be protected from IGBT waveforms (fast dv/dt, high peak voltage and high switching frequency). The general dielectric strength of the reactor is 4000 volts rms (UL approved). The first turn and last turn are triple insulated offering protection for 16,000 volts. This is consistent with the dv/dt rating of an inverter duty motor. The reactors are designed to handle switching frequencies up to 20 KHz without any derating.



**HARMONIC
ATTENUATION:**

Our unique harmonic compensation assures maximum circuit inductance in the presence of complex waveforms and can be relied upon to minimize input total harmonic current distortion (THID). Our standard reactors will typically reduce 6-pulse rectifier input current harmonics to the following levels, based on full load conditions:

3% reactor alone	45% or less THID
5% reactor alone	35% or less THID
3% AC reactor + 3% DC link choke	33% or less THID
5% AC reactor + 3% DC link choke	28% or less THID
<i>(DC link choke inductance is equivalent AC impedance)</i>	

CHARACTERISTICS:

IMPEDANCE AT FUNDAMENTAL CURRENT RATING:	1-1/2%, 3% or 5%
IMPEDANCE BASIS:	Fundamental current rating
CONTINUOUS CURRENT:	150% of fundamental rating (UL approved): designated I_m
OVERLOAD RATING:	200% of fundamental for 30 minutes (UL verified) 300% of fundamental for 1 minute
MAXIMUM SYSTEM VOLTAGE:	600 Volts
MAXIMUM SWITCHING FREQUENCY:	20 Khz
INSULATION SYSTEM:	Class H (180 C or better)
TEMPERATURE RISE:	115 C (average)
AMBIENT TEMPERATURE:	45 C (maximum)
ALTITUDE (MAXIMUM):	1000 meters
FUNDAMENTAL FREQUENCY:	50/60 hz
APPROVALS:	CE UL-506 & UL-508
INDUCTANCE CURVE:	100% at 100% current 100% at 150% current 50% at 350% current (minimum)
INDUCTANCE TOLERANCE:	+/- 10%
IMPREGNATION:	High Bond Strength Solventless Epoxy, 200 C UL94HB recognized
DIELECTRIC STRENGTH:	4000 volts rms (5600 volts peak)
IGBT PROTECTION:	16,000 volts per micro-second 20 KHz switching frequency (max)