

# General Accessories for AC Drives

## Drives Accessories – Line/Load Reactors

### LR(2) Series Line Reactors

Input line reactors protect the AC drive from transient overvoltage conditions typically caused by utility capacitor switching. They also reduce the harmonics associated with AC drives and are recommended for all installations.

Output line (load) reactors protect the motor insulation against AC drive short circuits and IGBT reflective wave damage, and also allow the motor to run cooler by “smoothing” the motor current waveform. They are recommended for operating “non-inverter-duty” motors, and for any motors where the length of wiring between the AC drive and motor is less than 100 feet. For AC Drive-to-Motor wiring distances over 100 feet, use of the VTF series output filter is recommended.

#### Features:

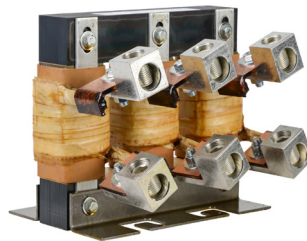
- Universal mounting feet with multiple mounting slots; can replace most reactors using existing mounting holes
- Short-term overload rating: 200% of rated current for 3 minutes maximum
- Overload inductance:  
95% @ 110% load; 80% @ 150% load
- Impedance: ~3%
- 10-year warranty

#### Agency Approvals:

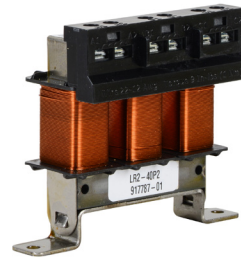
- cULUS listed (E197592)
- CE marked
- RoHS



**LR2-10P2-1PH**

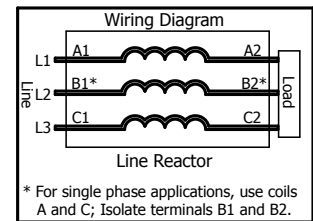


**LR-2100**



**LR2-40P2**

*Typical Line Reactors*



**Wiring**

### LR(2) Series Line/Load Reactors – Compatibility with AutomationDirect AC Drives

- For Reactor compatibility with CFW100 AC Drives, please refer to WEG CFW100 AC Drives - Accessories: [PDF](#).
- For Reactor compatibility with CFW300 AC Drives, please refer to WEG CFW300 AC Drives - Accessories: [PDF](#).
- For Reactor compatibility with CFW500 AC Drives, please refer to WEG CFW300 AC Drives - Accessories: [PDF](#).
- For Reactor compatibility with GS4 AC Drives, please refer to GS4 DURApulse Drives Accessories - Line/Load Reactors: [PDF](#).
- For Reactor compatibility with GS20(X) AC Drives, please refer to GS20(X) Optional Accessories - Line Reactors/VTF Filters: [PDF](#).
- For Reactor compatibility with GS30 AC Drives, please refer to GS20 Optional Accessories - Line Reactors/VTF Filters: [PDF](#).
- For Reactor compatibility with AS3 AC Drives, please refer to AS3 Optional Accessories - Line Reactors/VTF Filters: [PDF](#).

# Drives Accessories – Line/Load Reactors

Line/Load Reactors for AC Drives – LR(2) Series													
Part Number <sup>1</sup>	Price	Max Rated Amps	Induc- tance [mH]	Watt Loss	System Voltage	Weight (lb)	Wire Range	Terminal Torque (lb-in)	Operating Temperature	Storage Temperature	Environment	Drawing Links	
<a href="#">LR2-10P2-1PH-A<sup>34</sup></a>	\$5.73:	10A	1.37	27	110 VAC	1.4	18-12 AWG	10	180°C / 356°F	-40 – 104 °F [-40 – 40 °C]	Humidity: 95% Non-condensing	<a href="#">PDF</a>	
<a href="#">LR2-10P5-1PH-A<sup>34</sup></a>	\$5.74:	12A	0.971	42		4.3	18–12 AWG	20	104°F [40°C] max -40 – 104 °F [-40 – 40 °C]	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>	
<a href="#">LR-22P0-1PH<sup>3</sup></a>	\$8.08:		1.53	24.3								<a href="#">PDF</a>	
<a href="#">LR2-11P0-1PH<sup>23</sup></a>	\$4.09:		16.7A	1.03								53	8
<a href="#">LR2-11P5-1PH<sup>3</sup></a>	\$4.09:	34A	0.342	64		12	<a href="#">PDF</a>						
<a href="#">LR2-20P2<sup>4</sup></a>	\$4.09:	3A	7.4	26.4	230 VAC	1.4	22–12 AWG	9	122°F [50°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>	
<a href="#">LR2-20P2-1PH<sup>34</sup></a>	\$4.09:	3.4A	6.4	23.5								<a href="#">PDF</a>	
<a href="#">LR2-20P5<sup>4</sup></a>	\$4.09:	4.8A	4.6	30.6								<a href="#">PDF</a>	
<a href="#">LR2-20P5-1PH<sup>34</sup></a>	\$4.09:	6.2A	3.56	39								<a href="#">PDF</a>	
<a href="#">LR2-20P7<sup>4</sup></a>	\$4.09:	7.6A	2.9	49		<a href="#">PDF</a>							
<a href="#">LR2-21P0<sup>4</sup></a>	\$4.09:	11A	2	64		3.2						<a href="#">PDF</a>	
<a href="#">LR2-21P5<sup>4</sup></a>	\$4.09:											<a href="#">PDF</a>	
<a href="#">LR2-22P0<sup>4</sup></a>	\$4.09:											<a href="#">PDF</a>	
<a href="#">LR2-21P0-1PH-A<sup>34</sup></a>	\$5.75:						0.2	<a href="#">PDF</a>					
<a href="#">LR2-21P5-1PH-A<sup>34</sup></a>	\$5.76:	11.6A					18-12 AWG	10	180°C / 356°F	-40 – 104 °F [-40 – 40 °C]	Humidity: 95% Non-condensing	<a href="#">PDF</a>	
<a href="#">LR2-23P0<sup>4</sup></a>	\$5.70:	12A	0.971	42		1.4	8	18–4 AWG	20	104°F [40°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>
<a href="#">LR2-22P0-1PH<sup>234</sup></a>	\$4.09:	16.7A	1.03	53		<a href="#">PDF</a>							
<a href="#">LR-25P0</a>	\$8.08:	19A	0.626	48		<a href="#">PDF</a>							
<a href="#">LR2-23P0-1PH<sup>34</sup></a>	\$5.77:			38		<a href="#">PDF</a>							
<a href="#">LR-27P5</a>	\$8.08:	24.2A	0.434	65		12	18–4 AWG	20	180°C / 356°F	-40 – 104 °F [-40 – 40 °C]	Humidity: 95% Non-condensing	<a href="#">PDF</a>	
<a href="#">LR-2010</a>	\$8.08:	30.8A	0.342	96								<a href="#">PDF</a>	
<a href="#">LR-2015</a>	\$8.08:	46.2A	0.22	64	<a href="#">PDF</a>								
<a href="#">LR-2020</a>	\$8.08:	59.4A	0.172	85	<a href="#">PDF</a>								
<a href="#">LR-2025</a>	\$8.08:	74.8A	0.138	94	15	6AWG–2/0 (AL or CU)	120	104°F [40°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>		
<a href="#">LR-2030</a>	\$8.08:	88A	0.116	135	33						<a href="#">PDF</a>		
<a href="#">LR-2040</a>	\$8.08:	114A	0.0886	149	36						<a href="#">PDF</a>		
<a href="#">LR-2050</a>	\$8.08:	143A	0.0699	154	46						<a href="#">PDF</a>		
<a href="#">LR-2060</a>	\$4.09:	169A	0.0624	209	46	6AWG–250MCM	275	104°F [40°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>		
<a href="#">LR-2075</a>	\$4.09:	211A	0.0487	294	52	4AWG–600MCM					500	<a href="#">PDF</a>	
<a href="#">LR-2100</a>	\$4.09:	273A	0.0364	276								<a href="#">PDF</a>	

1. Impedance = 3% for all reactors, except as otherwise noted.

2. Impedance = 5% for reactors marked with this note, but they function as 3% reactors in the ADC drive application.

3. Single-phase line reactors are for use only with single-phase drive inputs. Single-phase line reactors should NOT be installed on the output side of AC drives.

4. Optional mounting accessories are available for these models. See "Line/Load Reactors – Mounting Accessories" section for details.

5. LR-4250 & LR-4300 have dual-connector lugs, and will require multiple conductors per phase of the appropriate size to fit the lugs.

# Drives Accessories – Line/Load Reactors

## Line/Load Reactors for AC Drives – LR(2) Series

Part Number <sup>1</sup>	Price	Max Rated Amps	Induc- tance [mH]	Watt Loss	System Voltage	Weight (lb)	Wire Range	Terminal Torque (lb-in)	Operating Temperature	Storage Temperature	Environment	Drawing Links	
<a href="#">LR2-40P2<sup>4</sup></a>	\$-4glv:	0.7A	31.5	5	460 VAC	1.3	22–12 AWG	9	122°F [50°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>	
<a href="#">LR2-40P3<sup>4</sup></a>	\$-4glx:	0.8A	27.6	6.2								<a href="#">PDF</a>	
<a href="#">LR2-40P5<sup>4</sup></a>	\$-4gly:	1.1A	20	9.7								<a href="#">PDF</a>	
<a href="#">LR2-40P7<sup>4</sup></a>	\$-4glz:	1.6A	13.8	12.1								<a href="#">PDF</a>	
<a href="#">LR2-41P0<sup>4</sup></a>	\$,-4gl]:	2.1A	10.5	25.2		1.2						<a href="#">PDF</a>	
<a href="#">LR2-41P5<sup>4</sup></a>	\$,-4gl[:	3A	7.4	26.4		1.4						<a href="#">PDF</a>	
<a href="#">LR2-42P0<sup>4</sup></a>	\$-4gl_:	3.4A	6.5	23.5								<a href="#">PDF</a>	
<a href="#">LR2-43P0<sup>4</sup></a>	\$-4gl#:	4.8A	4.6	30.6								<a href="#">PDF</a>	
<a href="#">LR2-44P0<sup>4</sup></a>	\$,-04gl!:	6.2A	3.56	39		3						<a href="#">PDF</a>	
<a href="#">LR2-45P0<sup>4</sup></a>	\$-04gl?:	7.6A	2.9	49								<a href="#">PDF</a>	
<a href="#">LR2-47P5<sup>4</sup></a>	\$,-04gl,::	11A	2	64		3.2						<a href="#">PDF</a>	
<a href="#">LR2-4010<sup>4</sup></a>	\$,05,?1:	14A	1.58	77.7		3.3	18-12 AWG	10	180°C / 356°F	-40 – 104 °F [-40 – 40 °C]	Humidity: 95% Non-condensing	<a href="#">PDF</a>	
<a href="#">LR-4015</a>	\$,,008,:]	21A	0.912	65		8	18–4 AWG	20	104°F [40°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>	
<a href="#">LR-4020</a>	\$,,008,:]	27A	0.694	79								<a href="#">PDF</a>	
<a href="#">LR-4025</a>	\$,008,,:]	34A	0.569	96								10	<a href="#">PDF</a>
<a href="#">LR-4030</a>	\$,008,#:	40A	0.469	105									<a href="#">PDF</a>
<a href="#">LR-4040</a>	\$,,008,!:	52A	0.387	114			15	<a href="#">PDF</a>					
<a href="#">LR-4050</a>	\$,008,?:	65A	0.295	169				25				#22–4 AWG	22–16 AWG: 25 14–6 AWG: 30 4 AWG: 35
<a href="#">LR-4060</a>	\$0091c:	77A	0.227	169			<a href="#">PDF</a>						
<a href="#">LR-4075</a>	\$0091d:	96A	0.196	193			33	2/0 – 6AWG (AL or CU)				120	<a href="#">PDF</a>
<a href="#">LR-4100</a>	\$0091e:	124A	0.152	225		46	250kcmil – 6AWG (AL or CU)	275				<a href="#">PDF</a>	
<a href="#">LR-4125</a>	\$,0091f:	156A	0.117	254								<a href="#">PDF</a>	
<a href="#">LR-4150</a>	\$,00091g:	180A	0.103	299								<a href="#">PDF</a>	
<a href="#">LR-4200</a>	\$,-00091i:	240A	0.0839	280		74	(1) 4 AWG – 600kcmil (2) 1/0 – 250kcmil	500				<a href="#">PDF</a>	
<a href="#">LR-4250<sup>5</sup></a>	\$,-00091j:	302A	0.0654	337								<a href="#">PDF</a>	
<a href="#">LR-4300<sup>5</sup></a>	\$,-00091l:	361A	0.0565	381			(2)** 4 AWG – 350kcmil (AL or CU)	275				<a href="#">PDF</a>	
<a href="#">LR2-51P0<sup>4</sup></a>	\$4gn0:	1.7A	16.2	16.2	600 VAC	1.3	22–12 AWG	9	122°F [50°C] max	-40 – 149 °F [-40 – 65 °C]	NEMA: open IP00 no corrosive gases	<a href="#">PDF</a>	
<a href="#">LR2-51P5<sup>4</sup></a>	\$4gn1:	2.4A	11.5	17.2		1.4						<a href="#">PDF</a>	
<a href="#">LR2-52P0<sup>4</sup></a>	\$4gn2:	2.7A	10.2	20.5		1.5						<a href="#">PDF</a>	
<a href="#">LR2-53P0<sup>4</sup></a>	\$4gn3:	3.9A	7.07	30		3.5						<a href="#">PDF</a>	
<a href="#">LR2-54P0<sup>4</sup></a>	\$04gn4:	4.9A	5.63			2.9						<a href="#">PDF</a>	
<a href="#">LR2-55P0<sup>4</sup></a>	\$04gn5:	6.1A	4.52			44						3	<a href="#">PDF</a>
<a href="#">LR2-57P5<sup>4</sup></a>	\$04gn6:	9A	3.1	57		3.2						<a href="#">PDF</a>	
<a href="#">LR2-5010<sup>4</sup></a>	\$,05,?2:	11A	2.454	52.6			18-12 AWG	10	180°C / 356°F	-40 – 104 °F [-40 – 40 °C]	Humidity: 95% Non-condensing	<a href="#">PDF</a>	

1. Impedance = 3% for all reactors, except as otherwise noted.

2. Impedance = 5% for reactors marked with this note, but they function as 3% reactors in the ADC drive application.

3. Single-phase line reactors are for use only with single-phase drive inputs. Single-phase line reactors should NOT be installed on the output side of AC drives.

4. Optional mounting accessories are available for these models. See "Line/Load Reactors – Mounting Accessories" section for details.

5. LR-4250 & LR-4300 have dual-connector lugs, and will require multiple conductors per phase of the appropriate size to fit the lugs.

# Drives Accessories – Line/Load Reactor Mounting Accessories

## LR(2) Series Line/Load Reactors – Mounting Accessories

LR(2) series reactors have different mounting options depending on the model. The models listed below have an integral two-bolt mounting method, and also offer optional mounting adapters that allow other mounting methods.

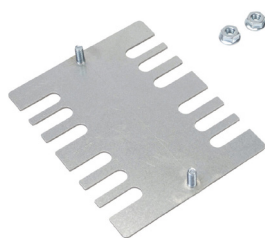
Adapter Plate Kits LR2-AP1 and LR2-AP2 allow for universal panel mounting with these models.

DIN Rail Mounting Kits LR2-DR1 and LR2-DR2 allow DIN rail mounting with these models.

LR2 Series Line Reactor Mounting Adapters			
Part Number	Price	Description	Drawing Links
<a href="#">LR2-AP1</a>	\$-4gl4:	Adapter Plate Kit; includes 2 flange nuts (10-32); Dimensions 4.45" x 2.63"	<a href="#">PDF</a>
<a href="#">LR2-AP2</a>	\$-4gl5:	Adapter Plate Kit; includes 2 flange nuts (10-32); Dimensions 4.45" x 3.51"	<a href="#">PDF</a>
<a href="#">LR2-DR1</a>	\$-4gl2:	DIN Rail Mounting Clips and Hardware Kit; includes 2 screws (M5-0.8 x 8mm), 2 washers, 2 clips	<a href="#">PDF</a>
<a href="#">LR2-DR2</a>	\$-4gl3:	DIN Rail Mounting Plate and Hardware Kit; includes 4 bolts (0.25-20 x 0.50) and 4 flange nuts	<a href="#">PDF</a>



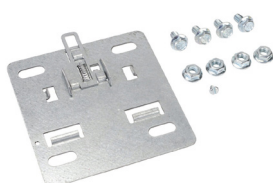
[LR2-AP1](#)



[LR2-AP2](#)



[LR2-DR1](#)



[LR2-DR2](#)

LR2 Line Reactor Mounting Adapter Selection Table				
ADC Line Reactor Part #	Adapter Plate Kits Part #		DIN Rail Mount Kits Part #	
	<a href="#">LR2-AP1</a>	<a href="#">LR2-AP2</a>	<a href="#">LR2-DR1</a>	<a href="#">LR2-DR2</a>
<a href="#">LR2-10P2-1PH-A</a>	•	•	•	
<a href="#">LR2-10P5-1PH-A</a>				•
<a href="#">LR2-20P2</a>	•	•	•	
<a href="#">LR2-20P2-1PH</a>	•	•	•	
<a href="#">LR2-20P5</a>	•	•	•	
<a href="#">LR2-20P5-1PH</a>				•
<a href="#">LR2-20P7</a>				•
<a href="#">LR2-21P0</a>				•
<a href="#">LR2-21P5</a>				•
<a href="#">LR2-22P0</a>				•
<a href="#">LR2-21P0-1PH-A</a>				•
<a href="#">LR2-21P5-1PH-A</a>				•
<a href="#">LR2-23P0</a>				•
<a href="#">LR2-4010</a>				•
<a href="#">LR2-40P2</a>	•	•	•	
<a href="#">LR2-40P3</a>	•	•	•	
<a href="#">LR2-40P5</a>	•	•	•	
<a href="#">LR2-40P7</a>	•	•	•	
<a href="#">LR2-41P0</a>	•	•	•	
<a href="#">LR2-41P5</a>	•	•	•	
<a href="#">LR2-42P0</a>	•	•	•	
<a href="#">LR2-43P0</a>	•	•	•	
<a href="#">LR2-44P0</a>				•
<a href="#">LR2-45P0</a>				•
<a href="#">LR2-47P5</a>				•
<a href="#">LR2-51P0</a>	•	•	•	
<a href="#">LR2-51P5</a>	•	•	•	
<a href="#">LR2-52P0</a>	•	•	•	
<a href="#">LR2-53P0</a>				•
<a href="#">LR2-54P0</a>				•
<a href="#">LR2-55P0</a>				•
<a href="#">LR2-57P5</a>				•
<a href="#">LR2-5010</a>				•

# Drives Accessories – Line/Load Reactors One Line

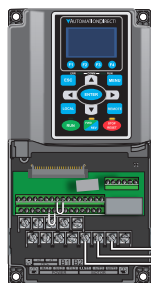
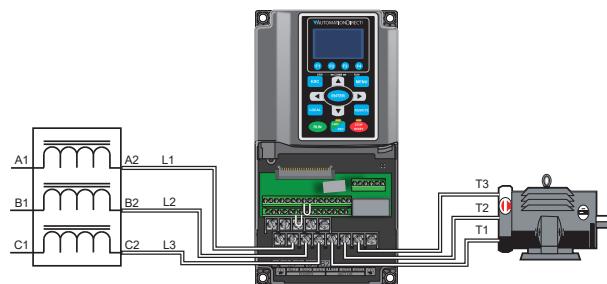
## Line/Load Reactors for AC Drives – Generic One-Line Wiring Examples



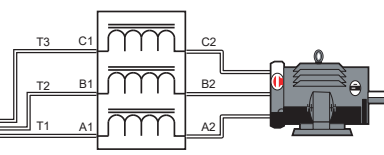
**WARNING: CONSULT THE APPLICABLE DRIVE USER MANUAL BEFORE ACTUALLY WIRING THE DRIVE!**

### Input side of the drive

When installed on the input side of the AC drive, line reactors will reduce line notching, as well as limit current and voltage spikes and surges from the incoming line. The line reactor will also reduce harmonic distortion from the drive onto the line. Units are installed in front of the AC drive as shown.



**Note: Single-phase line reactors should NOT be installed on the output of the AC drive. Use only three-phase reactors on drive outputs, and only for three-phase motors.**



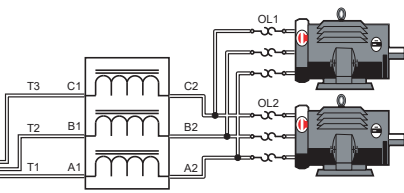
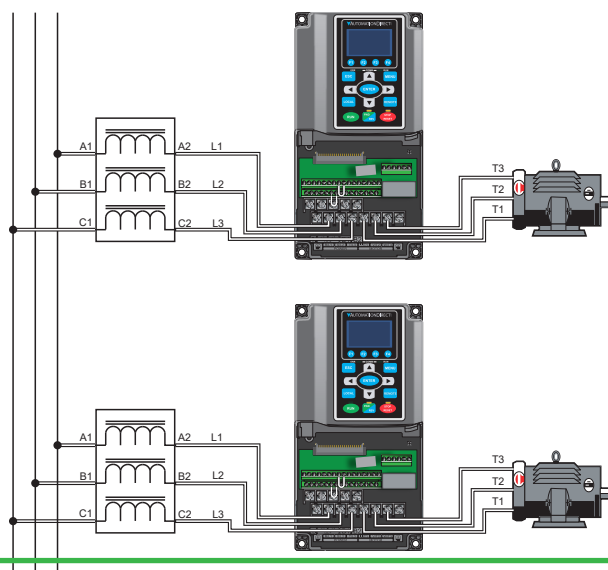
### Output side of the drive

When installed on the output side of the drive, line reactors protect the drive from short circuits at the load. Voltage and current waveforms from the drive are enhanced, reducing motor overheating and noise emissions.

**Note: If installing a line reactor on the output side of the drive, especially with motor lead lengths in excess of 75 feet, lower the drive PWM output carrier frequency to 4kHz in order to protect the line reactor from excess heating and possible damage.**

### Multiple drives

Individual line reactors are recommended when installing multiple drives on the same power line. Individual line reactors eliminate crosstalk between multiple drives and provide isolated protection for each drive for its own specific load.



### Multiple motors

A single reactor can be used for multiple motors on the same drive, if the motors operate simultaneously. Size the reactor based upon the total horsepower of all the motors. Select a reactor with a current rating greater than the sum of the motor full-load currents. Separate thermal overloads for each motor are recommended for use in multi-motor applications.

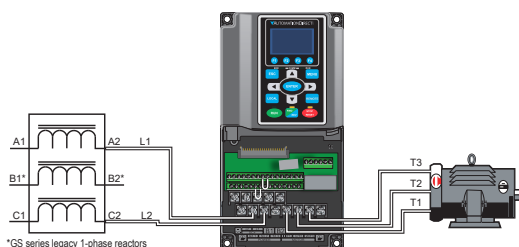
**Note: A single reactor should be used with multiple motors only when the motors will always operate simultaneously.**

### Single-phase applications

Some of the line reactors are listed for use with single-phase input power. Make sure that terminals B1 and B2, if present, are properly insulated before any connections are made.



**WARNING: ENSURE THAT TERMINALS B1 AND B2 ARE PROPERLY INSULATED BEFORE MAKING ANY CONNECTIONS TO SINGLE-PHASE POWER.**



\*GS series legacy 1-phase reactors include a B-phase winding.  
\*LR series 1-phase reactors do not include a B-phase winding.



# Drives Accessories – Output Filters for Multiple AC Drives

## VTF Series Drive Output Filters

Extend the life of your motors and cables by reducing the harmful effects of voltage spikes due to voltage wave reflection. Voltage wave reflection is a function of the voltage rise time (dv/dt) and the length of the motor cables.

AutomationDirect VTF series drive output filters protect motors and cables by combining a patented dampening circuit with a low pass filter to increase the voltage rise time (dt out of dv/dt), thereby preventing voltage spikes from exceeding 1,000V.

The impedance values on each end of the cable run don't match, causing voltage pulses to be reflected back in the direction from which it arrived. As these reflected waves encounter other waves, their values add, causing higher peak voltage.

As wire length or carrier frequency increases, the overshoot peak voltage also increases.

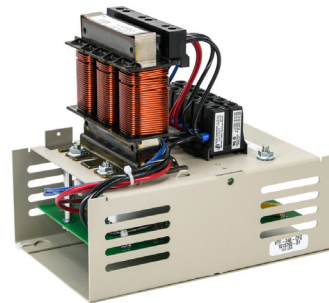
Peak voltages on a 480V system can reach 1,600V, and 2,100V on a 600V system. These high peak voltages can cause a rapid breakdown of motor insulation, leading to motor failure.

### Features:

- Protect cable runs and reduce motor heating, noise, and vibration.
- Prevent motor failure with protection against motor insulation breakdown.
- Reduce Common Mode Noise by a minimum of 30%.
- Improve system productivity and increase bearing life and up-time.
- Protect long motor lead lengths up to 1,000 feet.
- Carrier Frequency: 2–4 kHz
- Efficiency  $\geq 98\%$
- 208 - 600 VAC system compatibility
- Operation up to 60Hz output drive frequency.
- Warranty: One (1) year of useful service, not to exceed 18 months from the date of shipment.
- Over-Load Rating 200% rated current for 2 minutes per hour 150% rated current for 5 minutes per hour.

### Agency Approvals:

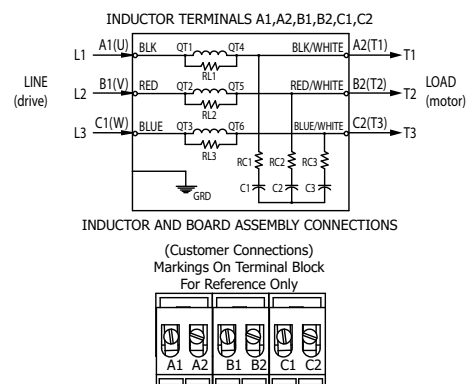
- cUL<sub>US</sub> listed (E197592)



**VTF-246-CFG**



**VTF-246-CFG-N1**



- For CFW100 drive compatibility, please refer to WEG CFW100 AC Drives - Accessories: [PDF](#).
- For CFW300 drive compatibility, please refer to WEG CFW300 AC Drives - Accessories: [PDF](#).
- For CSW500 drive compatibility, please refer to WEG CFW500 AC Drives - Accessories: [PDF](#).
- For GS4 drive compatibility, please refer to GS4 Drives Accessories-Line/Load Reactors: [PDF](#).
- For GS10 drive compatibility, please refer to GS10 Drives Accessories-Line Reactors: [PDF](#).
- For GS20(X) drive compatibility, please refer to GS20(X) Accessories-Line Reactors/VTF Filters: [PDF](#).
- For GS30 drive compatibility, please refer to GS30 Accessories-Line Reactors/VTF Filters: [PDF](#).
- For AS3 drive compatibility, please refer to AS3 Accessories-Line Reactors/VTF Filters: [PDF](#).



Output Filters are impregnated with 100% solid epoxy resin. All insulation varnish systems are rated H (180°C) or class R (220° C), 600V. (Class H up to 110A VTF-246-RUV; Class R from 130A Up VTF-246-SVW)

# Drives Accessories – Output Filters for Multiple AC Drives

Drive Output Filters – VTF Series – for Multiple AC Drives															
Part Number	Price	Filter Specs		Applicable Motor Sizes*				Phases	Watt Loss	Wire Size [AWG]	Terminal Torque [lb-in]	Fasteners	Weight [lb]	Drawing Links	
		Rated Voltage	Max Rated Amps	208V Rated HP	230V Rated HP	460V Rated HP	575V Rated HP								
<a href="#">VTF-46-DE</a>	\$04gn7:	208-600 VAC	2A	-	-	3/4	1	3	75	12-14	10	6/40 x 5/16 flathead	8	<a href="#">PDF</a>	
<a href="#">VTF-246-CFG</a>	\$04gn8:		3A	1/2	1/2	1-1/2	2						8	<a href="#">PDF</a>	
<a href="#">VTF-246-CFG-N1</a>	\$,05,?8:														12
<a href="#">VTF-246-DGH</a>	\$04gn9:		4A	3/4	3/4	2	3						8	<a href="#">PDF</a>	
<a href="#">VTF-24-FH</a>	\$04gna:		6A	1	1-1/2	3	-								80
<a href="#">VTF-24-FH-N1</a>	\$,05,?9:												8A	2	
<a href="#">VTF-246-GJJ</a>	\$04gnb:		12A	3	3	7-1/2	10								95
<a href="#">VTF-246-GJJ-N1</a>	\$,05,?a:												16A	-	
<a href="#">VTF-246-HKL</a>	\$04gnc:		18A	5	-	15	-								4-10
<a href="#">VTF-246-HKL-N1</a>	\$,05,?b:												21A	-	
<a href="#">VTF-24-JL</a>	\$-04gni:		25A	7-1/2	7-1/2	15	20								110
<a href="#">VTF-46-LM</a>	\$-04gnl:												27A	-	
<a href="#">VTF-46-LM-N1</a>	\$,05,?c:		35A	10	10	25	30		130	6-8	17	<a href="#">PDF</a>			
<a href="#">VTF-4-M</a>	\$04gnn:												45A	-	15
<a href="#">VTF-246-KMN</a>	\$04gno:		55A	15	20	40	50		145	1-4	25	<a href="#">PDF</a>			
<a href="#">VTF-246-KMN-N1</a>	\$,05,?e:												80A	20	30
<a href="#">VTF-46-NP</a>	\$04gnd:		110A	30	40	75	100		245	2/0 - 1/0	7/16-20 x 9/16	40			
<a href="#">VTF-46-NP-N1</a>	\$,05,?f:												130A	40	50
<a href="#">VTF-246-LPQ</a>	\$04gne:		160A	-	60	125	150		260	250MCM - 3/0	50	3/8" Hex			
<a href="#">VTF-246-LPQ-N1</a>	\$,05,?g:												200A	-	75
<a href="#">VTF-246-MQR</a>	\$,04gnf:		250A	-	100	200	250		290	Two 2/0	3/16" Hex	54			
<a href="#">VTF-246-MQR-N1</a>	\$,05,?h:												305A	-	-
<a href="#">VTF-246-NRS</a>	\$04gng:		362A	-	150	300	350		325	375	3/8" Hex	90			
<a href="#">VTF-246-NRS-N1</a>	\$,-05,?i:												362A	-	150
<a href="#">VTF-246-PSU</a>	\$04gnh:		362A	-	150	300	350		325	375	3/8" Hex	90			
<a href="#">VTF-246-PSU-N1</a>	\$,005,?k:												362A	-	150
<a href="#">VTF-246-RUV</a>	\$,-004gnj:		362A	-	150	300	350		325	375	3/8" Hex	90			
<a href="#">VTF-246-RUV-N1</a>	\$,;-005,?l:												362A	-	150
<a href="#">VTF-246-SVW</a>	\$,004gnk:		362A	-	150	300	350		325	375	3/8" Hex	90			
<a href="#">VTF-246-SVW-N1</a>	\$,005,?n:												362A	-	150
<a href="#">VTF-246-TWX</a>	\$,005,?d:		362A	-	150	300	350		325	375	3/8" Hex	90			
<a href="#">VTF-246-TWX-N1</a>	\$,005,?o:												362A	-	150
<a href="#">VTF-246-UXY</a>	\$,;-005,?j:	362A	-	150	300	350	325	375	3/8" Hex	90	<a href="#">PDF</a>				
<a href="#">VTF-246-UXY-N1</a>	\$,005,?p:											362A	-	150	300
<a href="#">VTF-246-VYZ</a>	\$,005,?q:	362A	-	150	300	350	325	375	3/8" Hex	90	<a href="#">PDF</a>				
<a href="#">VTF-246-VYZ-N1</a>	\$,005,?s:											362A	-	150	300
<a href="#">VTF-46-ZI</a>	\$,005,?v:	362A	-	150	300	350	325	375	3/8" Hex	90	<a href="#">PDF</a>				
<a href="#">VTF-46-ZI-N1</a>	\$,;-005,?t:											362A	-	150	300
<a href="#">VTF-246-XIO</a>	\$,005,?x:	362A	-	150	300	350	325	375	3/8" Hex	90	<a href="#">PDF</a>				
<a href="#">VTF-246-XIO-N1</a>	\$,005,?u:											362A	-	150	300

\* - Motor HP ratings by voltage are based on NEC currents. For voltages with no HP listed, pick the VTF with max rated amps slightly higher than the application motor amp rating.



Properly sized and applied, the manufacturer guarantees that the VTF will limit motor terminal peak input voltage to 150% of the bus voltage with a wire lead length of 1,000 feet and a carrier frequency of 4 kHz. Maximum lead length and carrier frequency can vary depending on wire lead type. If a properly selected, installed, and loaded VTF filter fails to meet the guaranteed performance levels, the manufacturer will provide the necessary components or replacement filter at no additional charge. The manufacturer does not take responsibility for additional installation or removal costs, to include, but not limited to, replacement of third-party equipment.

Minimum System Requirements for Guarantee – In order to achieve the performance levels as stated in this guarantee, the electrical system must adhere to the following: The VTF must be sized at no more than 110% of the drive output current rating. If the load has a potential for overhauling, the drive must be equipped with braking resistors or other features limiting bus voltage to no more than the level of the peak line voltage. The VTF must be wired no more than 10 feet from the drive.

# GS4 DURAPULSE Accessories – EMI Filters

## Selection Selection (GS4)

The optional EMI Filters listed here are available for use with the GS4 drive. Selection of these accessories is application-specific and may improve drive performance. Additional information regarding filter installation and operation is available in the AutomationDirect white paper, "Applied EMI/RFI Techniques," downloadable from [AutomationDirect.com](http://AutomationDirect.com).

EMI Filters Selection for GS4 AC Drives					
Model*	Description	EMI Filter **	Max Power kW [max/ph]	Max Torque kg-cm [lb-in]	SCCR Rating (kA)
<a href="#">GS4-21P0</a>	230V 1ph/3ph 1.0 hp	<a href="#">KMF325A</a>	20.8 [6]	17.7 [2]	5
<a href="#">GS4-22P0</a>	230V 1ph/3ph 2.0 hp				
<a href="#">GS4-23P0</a>	230V 1ph/3ph 3.0 hp				
<a href="#">GS4-25P0</a>	230V 1ph/3ph 5.0 hp				
<a href="#">GS4-27P5</a>	230V 1ph/3ph 7.5 hp	<a href="#">KMF370A</a>	58.1 [16.8]	44.2 [5]	5
<a href="#">GS4-2010</a>	230V 1ph/3ph 10hp				
<a href="#">GS4-2015</a>	230V 1ph/3ph 15hp				
<a href="#">GS4-4025</a>	460V 3ph 25hp				
<a href="#">GS4-4030</a>	460V 3ph 30hp				
<a href="#">GS4-4040</a>	460V 3ph 40hp	<a href="#">KMF3100A</a>	83 [24]	44.2 [5]	10
<a href="#">GS4-2020</a>	230V 3ph 20hp				
<a href="#">GS4-2025</a>	230V 3ph 25hp				
<a href="#">GS4-2030</a>	230V 3ph 30hp	<a href="#">KMF318A</a>	14.9 [4.3]	17.7 [2]	5
<a href="#">GS4-41P0</a>	460V 3ph 1.0 hp				
<a href="#">GS4-42P0</a>	460V 3ph 2.0 hp				
<a href="#">GS4-43P0</a>	460V 3ph 3.0 hp				
<a href="#">GS4-45P0</a>	460V 3ph 5.0 hp				
<a href="#">GS4-47P5</a>	460V 3ph 7.5 hp				
<a href="#">GS4-4010</a>	460V 3ph 10hp	<a href="#">KMF350A</a>	41.5 [12]	44.2 [5]	10
<a href="#">GS4-4015</a>	460V 3ph 15hp				
<a href="#">GS4-4020</a>	460V 3ph 20hp				
<a href="#">GS4-4050</a>	460V 3ph 50hp	<a href="#">MIF375</a>	62.3 [18]	53.1 [6]	10
<a href="#">GS4-2040</a>	230V 3ph 40hp	<a href="#">MIF3150</a>	124.6 [36]	177 [20]	10
<a href="#">GS4-2050</a>	230V 3ph 50hp				
<a href="#">GS4-4060</a>	460V 3ph 60hp				
<a href="#">GS4-4075</a>	460V 3ph 75hp				
<a href="#">GS4-4100</a>	460V 3ph 100hp				
<a href="#">GS4-2060</a>	230V 3ph 60hp	<a href="#">MIF3400B</a>	332.2 [96]	265.5 [30]	30
<a href="#">GS4-2075</a>	230V 3ph 75hp				
<a href="#">GS4-2100</a>	230V 3ph 100hp				
<a href="#">GS4-4125</a>	460V 3ph 125hp				
<a href="#">GS4-4150</a>	460V 3ph 150hp				
<a href="#">GS4-4175</a>	460V 3ph 175hp				
<a href="#">GS4-4200</a>	460V 3ph 200hp				
<a href="#">GS4-4250</a>	460V 3ph 250hp	<a href="#">MIF3800 &amp; Qty. 3 TOR254</a>	664.3 [192]	265.5 [30]	30
<a href="#">GS4-4300</a>	460V 3ph 300hp				

\* EMI filter selections for GS4-2xxx models are the same whether that particular model is supplied 1-Phase or 3-Phase 230VAC.

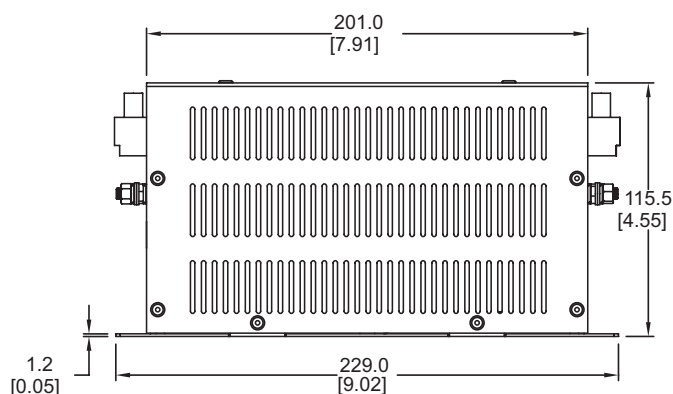
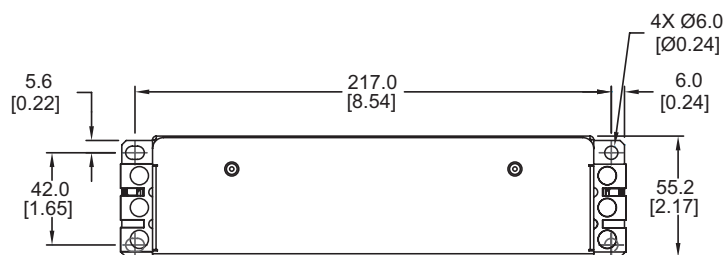
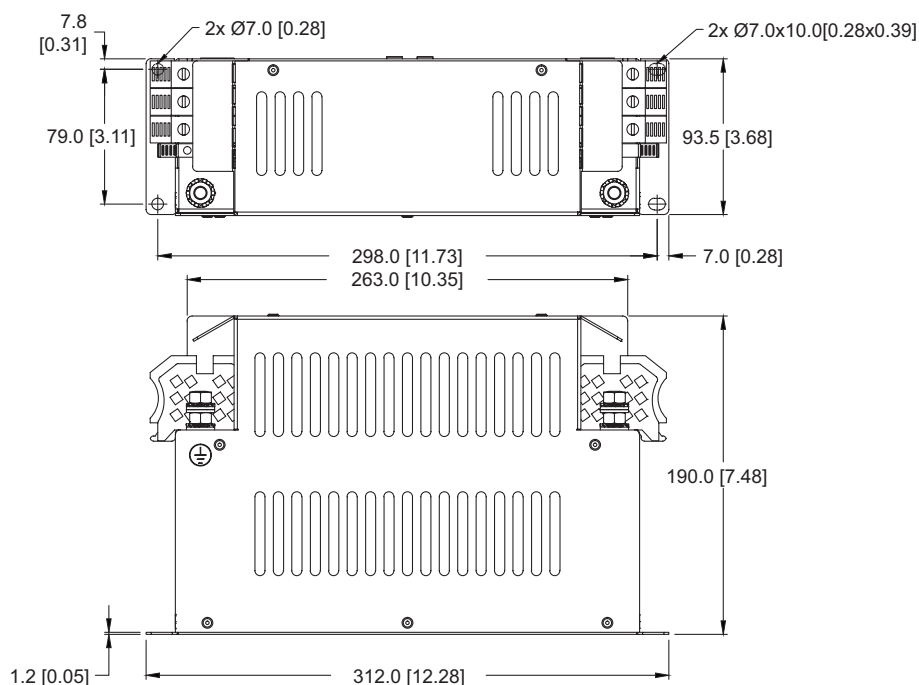
\*\* Part numbers are Roxburgh EMI Filters available from AutomationDirect at the web link embedded with each part number listed above.



# GS4 DURAPULSE Accessories – EMI Filters

## Dimensions

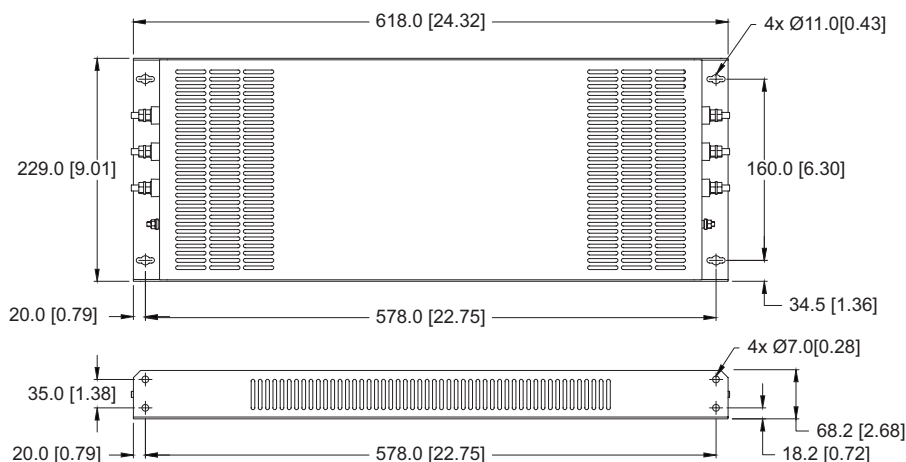
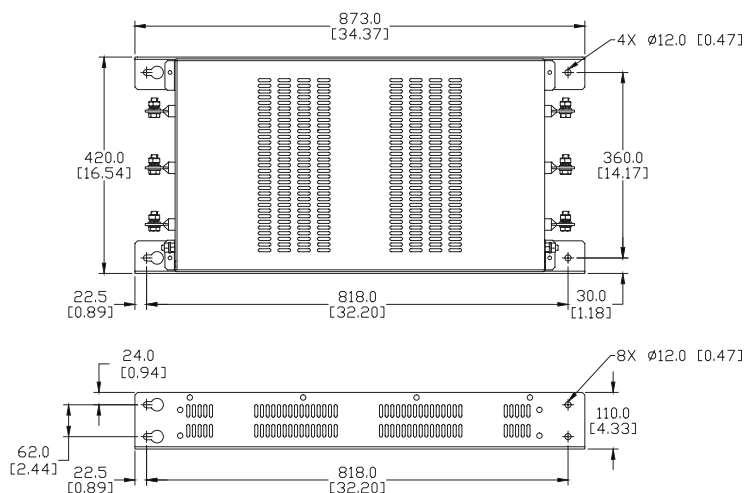
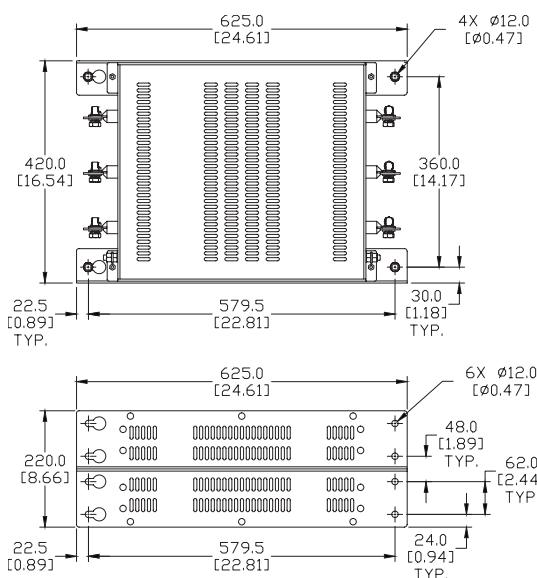
(Units = mm [in])

See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.**KMF318A KMF325A****KMF350A KMF370A KMF3100A**

# GS4 DURAPULSE Accessories – EMI Filters

## Dimensions

(Units = mm [in])

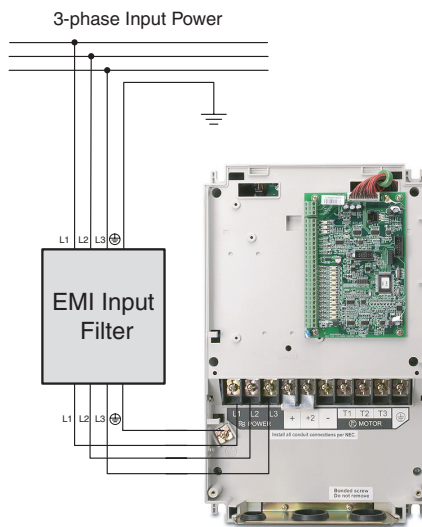
See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.**MIF3150****MIF3400B****MIF3800**

# GS2 & GS3 *DURAPULSE* Accessories – EMI Filters

## Overview

The CE Declaration of Conformity for the GS2 and *DURAPULSE* GS3 AC drives was completed in conjunction with the EMI filters listed. Use the following table to specify the corresponding EMI filter for each AC drive model.

CE compliance requires the use of EMI filters for GS2 and *DURAPULSE* GS3 AC drives. GS1 AC drives have internal EMI filtering, and do not require separate filters.



GS3-4030 shown

EMI Input Filter Specifications						
GS AC Drive 115V / 230V	GS AC Drive 460V / 575V	AC Servo Drive	EMI Filter	Price	Input Power	Dimen- sions
GS2-1xxx	-	SVA-2040 (1-ph) *	<b>20DRT1W3S</b>	Retired	1-phase, 20A	Figure 1
GS2-20P5 (1-ph)		SVA-2100 (1-ph) *				
GS2-21P0 (1-ph)		-				
GS2-22P0 (1-ph)						
GS3-21P0 (1-ph)						
GS3-22P0 (1-ph)						
GS2-23P0 (1-ph)	-	-	<b>32DRT1W3C</b>	Retired	1-phase, 32A	Figure 2
GS3-23P0 (1-ph)						
GS2-25P0	-	-	<b>40TDS4W4B</b>	Retired	3-phase, 40A	Figure 3
GS2-27P5						
-	GS2-41P0	-	<b>11TDT1W4S</b>	Retired	3-phase, 11A	Figure 4
	GS2-42P0					
	GS2-43P0					
-	GS2-45P0	-	<b>17TDT1W44</b>	Retired	3-phase, 17A	Figure 5
	GS2-47P5					
-	GS2-4010	-	<b>26TDT1W4B4</b>	Retired	3-phase, 26A	Figure 6
GS2-20P5 (3-ph)	GS2-5xxx	-	<b>not available</b>	n/a		
GS2-21P0 (3-ph) *	-	SVA-2040 (3-ph) *	<b>10TDT1W4C</b>	Retired	3-phase, 10A	Figure 7
GS2-22P0 (3-ph) *		SVA-2100 (3-ph) *				
GS3-21P0		-				
GS3-22P0						
GS2-23P0 (3-ph) *	-	SVA-2300 (3-ph) *	<b>26TDT1W4C</b>	Retired	3-phase, 26A	Figure 8
GS3-23P0		-				
GS3-25P0						
GS3-27P5		GS3-4020				
GS3-2010	GS3-4025					
GS3-2015	GS3-4030	-	<b>100TDS84C</b>	Retired	3-phase, 100A	Figure 10
GS3-2020	GS3-4040					
-	GS3-4050					
GS3-2025	GS3-4060					
GS3-2030	-	-	<b>150TDS84C</b>	Retired	3-phase, 150A	Figure 11
GS3-2040						
GS3-2050	-	-	<b>180TDS84C</b>	Retired	3-phase, 180A	Figure 12
-	GS3-41P0	-	<b>RF022B43AA</b>	\$;092]:	3-phase, 5.9A	Figure 13
	GS3-42P0					
	GS3-43P0					
-	GS3-45P0	-	<b>RF037B43BA</b>	Retired	3-phase, 11.2A	Figure 14
-	GS3-47P5	-	<b>RF110B43CA</b>	Retired	3-phase, 25A	Figure 15
	GS3-4010					
	GS3-4015					
-	GS3-4075	-	<b>200TDDS84C</b>	Retired	3-phase, 200A	Figure 16
	GS3-4100					

\* EMI filters 10TDT1W4C and 26TDT1W4C mount underneath DURApulse drives, but do NOT mount underneath GS2 drives. They also do NOT mount underneath SureServo AC Servo drives.

\* EMI filters 10TDT1W4C and 26TDT1W4C mount underneath *DURAPULSE* drives, but do NOT mount underneath GS2 drives. They also do NOT mount underneath SureServo AC Servo drives.

# GS2 & GS3 *DURAPULSE* Accessories – EMI Filters

## Dimensions

Figure 1 [ units = mm ]

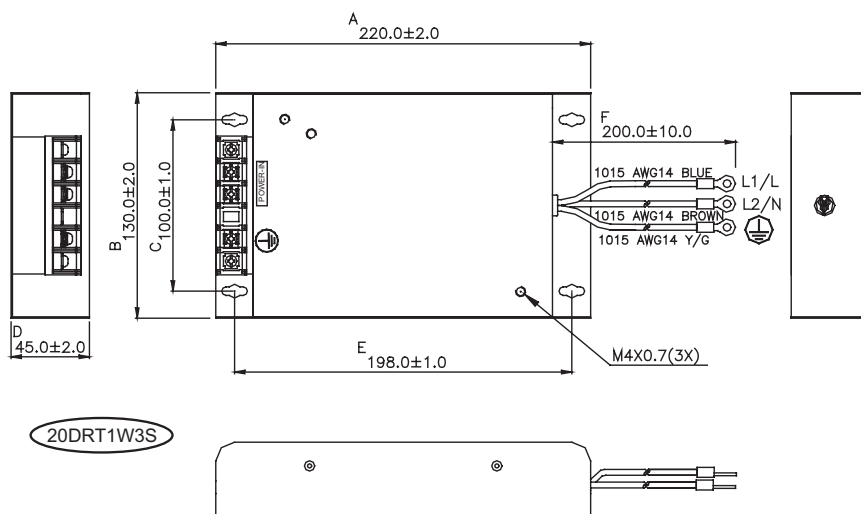


Figure 2 [ units = mm ]

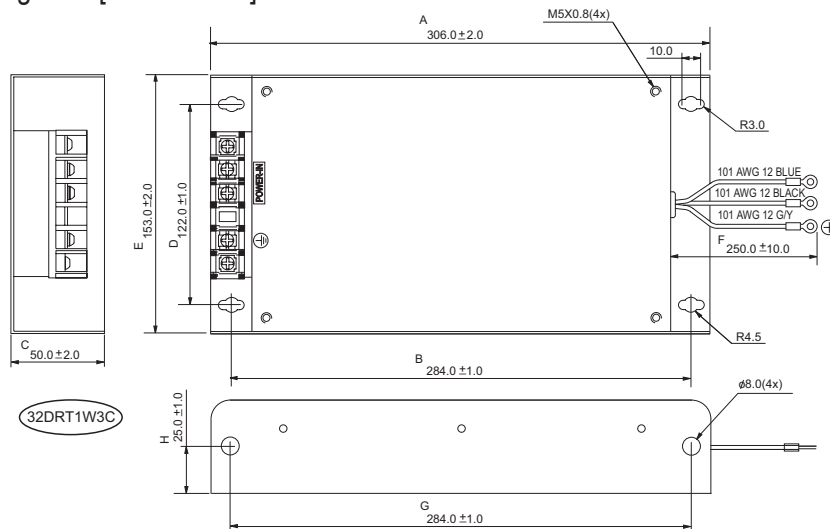
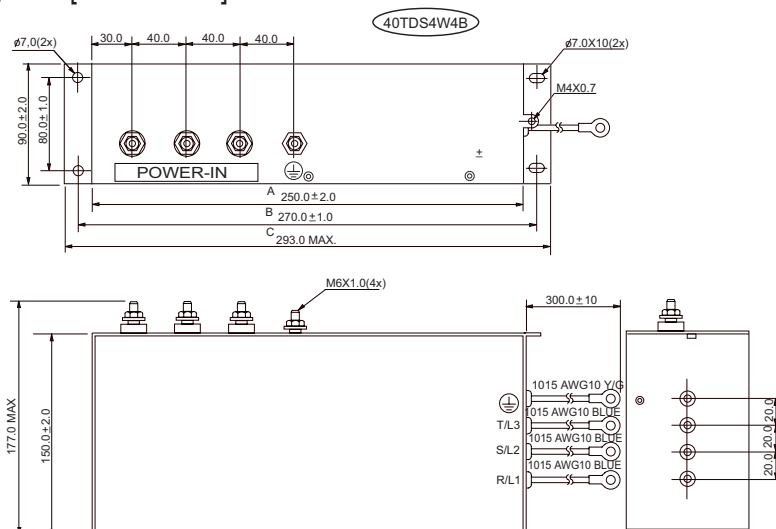


Figure 3 [ units = mm ]



# GS2 & GS3 *DURAPULSE* Accessories – EMI Filters

Figure 4 [ units = mm ]

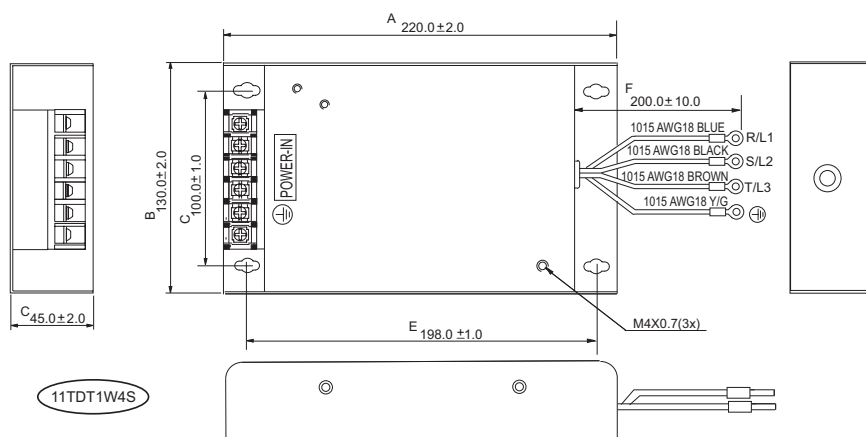


Figure 5 [ units = mm ]

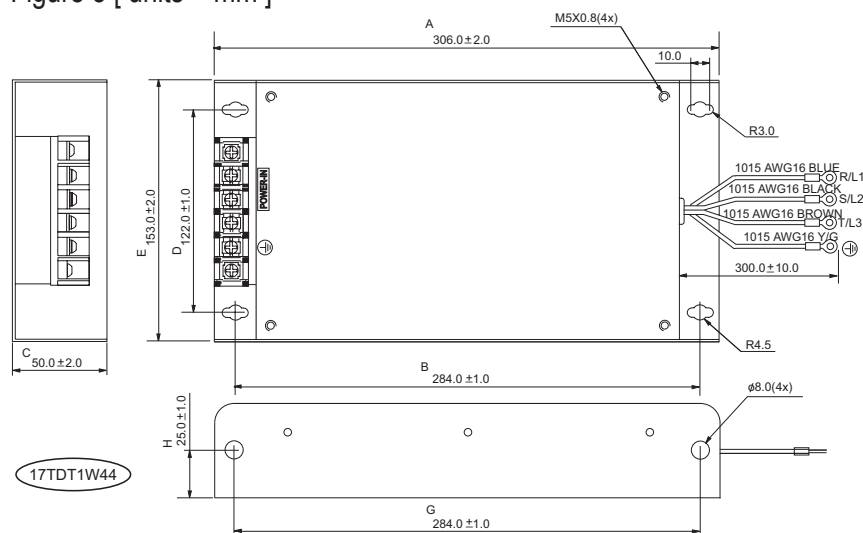
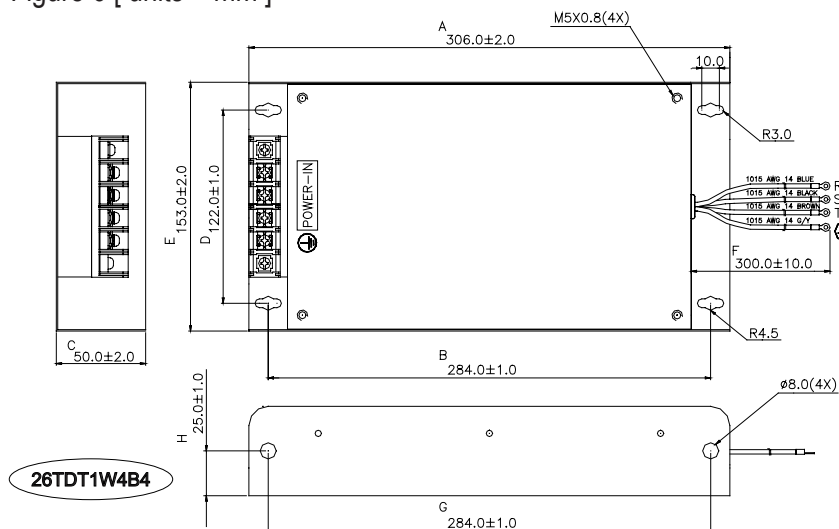


Figure 6 [ units = mm ]



# GS2 & GS3 *DURAPULSE* Accessories – EMI Filters

Figure 7 [ units = mm (in) ]

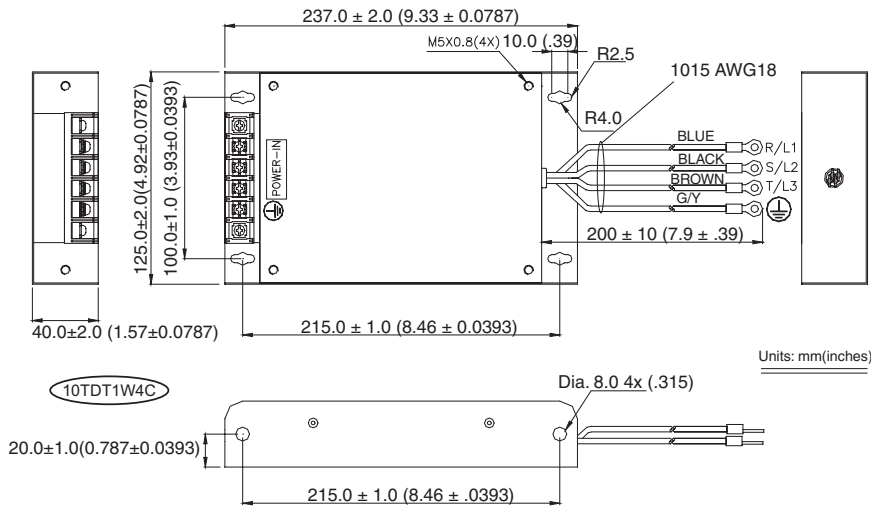


Figure 8 [ units = mm (in) ]

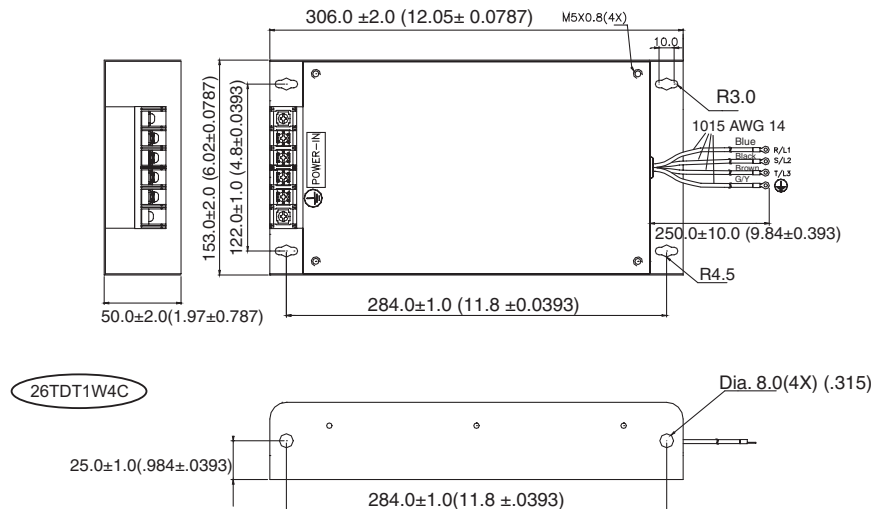


Figure 9 [ units = mm (in) ]

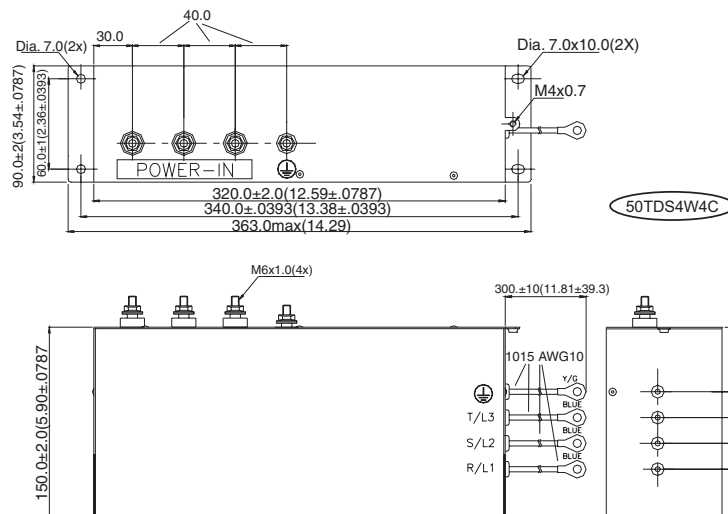




Figure 10 [ units = mm (in) ]

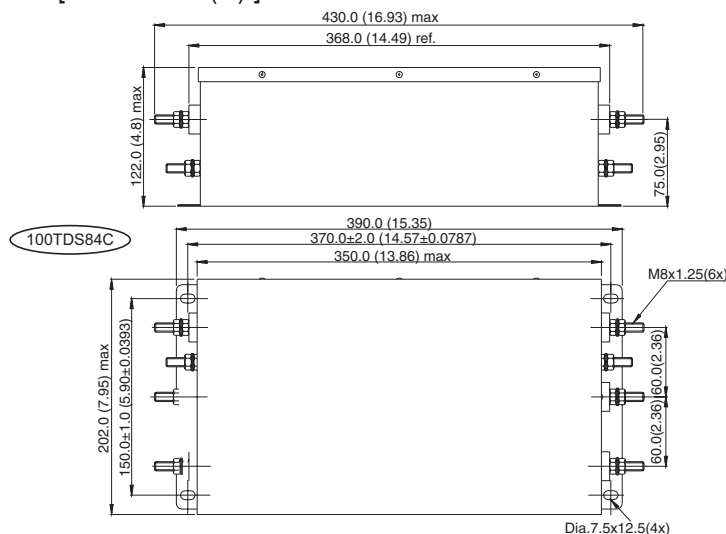


Figure 11 [ units = mm (in) ]

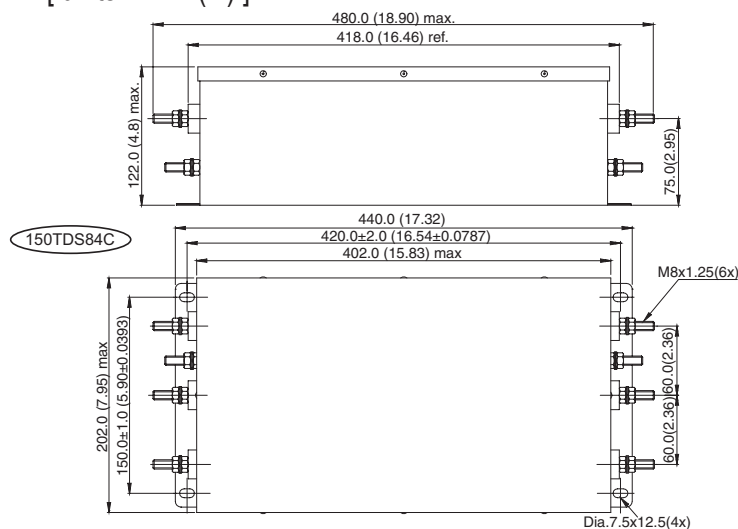
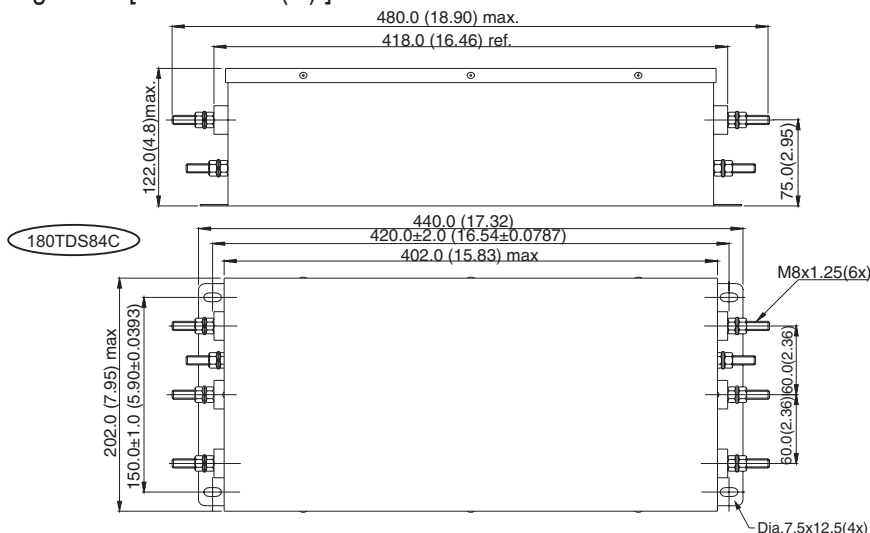


Figure 12 [ units = mm (in) ]



# GS2 & GS3 *DURAPULSE* Accessories – EMI Filters

Figure 13 [ units = mm (in) ]

RF022B43AA

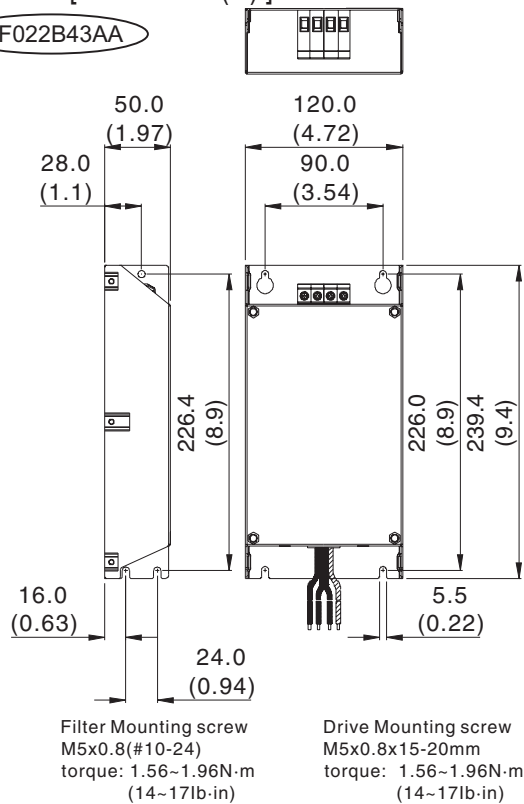


Figure 14 [ units = mm (in) ]

RF037B43BA

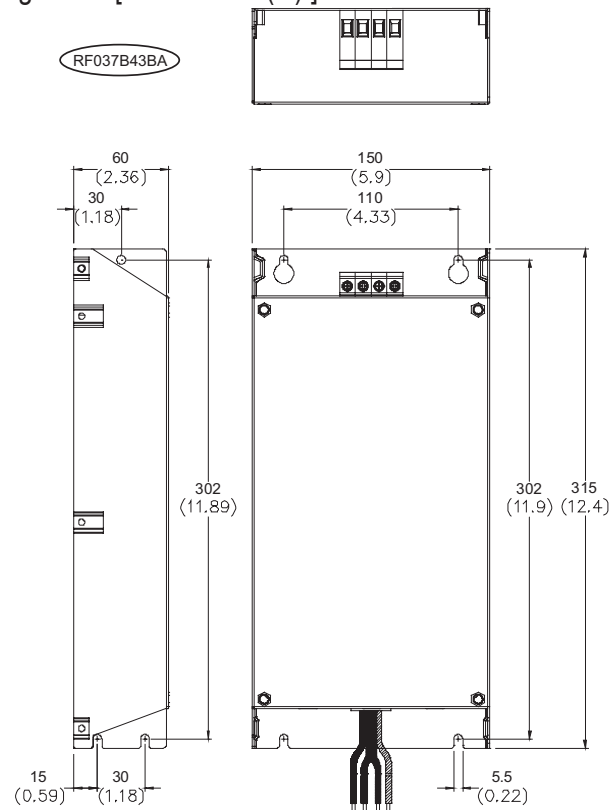


Figure 15 [ units = mm (in) ]

RF110B43CA

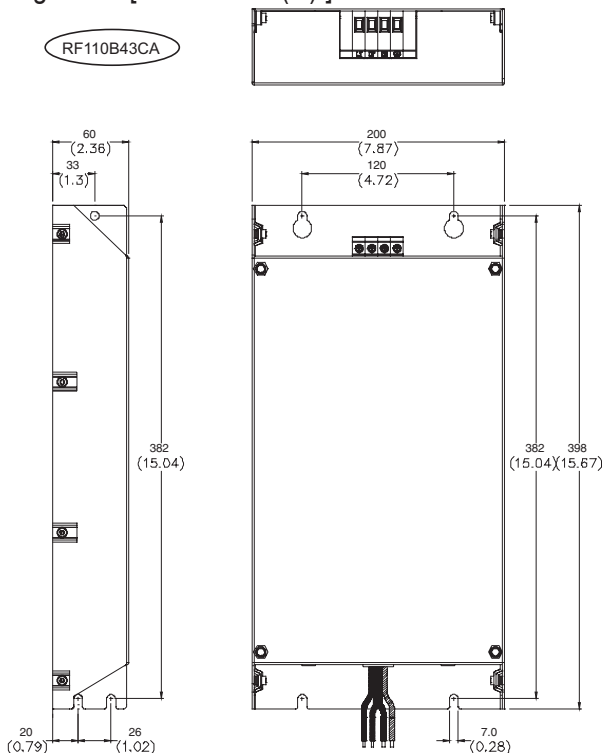
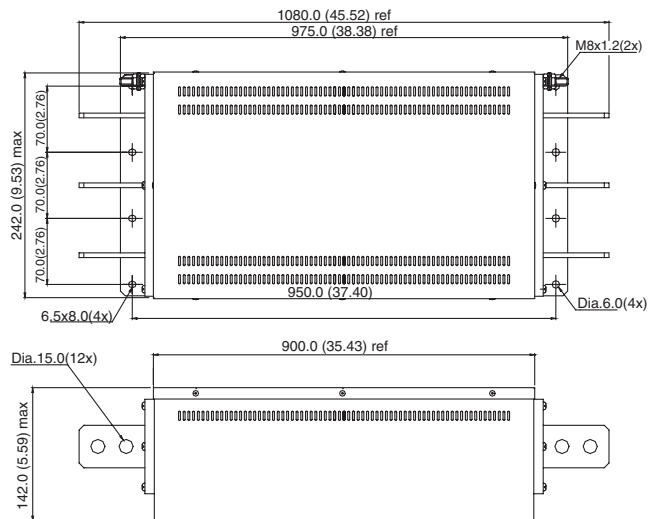


Figure 16 [ units = mm (in) ]

200TDDS84C



# GS/DURAPULSE Accessories – RF Filter

RF Filter for GS1,GS2, GS3/DURAPULSE AC Drives		
Part Number	Price	Drive Model
<b>RF220X00A</b>	\$,051h:	GS1-xxxx GS2-xxxx GS3-xxxx

## Description

Zero phase reactors, (aka RF noise filters) help reduce radiated noise from the inverter wiring. The wiring must go through the opening to reduce the RF component of the electrical noise. Loop the wires three times (four turns) to attain the full RF filtering effect. For larger wire sizes, place multiple zero-phase reactors (up to four) side by side for a greater filtering effect. These are effective for noise reduction on both the input and output sides of the inverter. Attenuation quality is good in a wide range from AM band to 10 Mhz.

## Wiring Method

Wind each wire four times around the core, as shown in diagram A to the right. The reactor must be put at inverter side as closely as possible.

If you are unable to wire as above due to wire size or another aspect of your application, put all wires through four cores in series without winding, as in diagram B to the right.

