

DAT210

70250 INVERTER ASSEMBLY

70250 to 3.5 KW

70250-1 for 3.6 KW to 5.5 KW



DAT210 Inverter Assembly
With Power Conditioning Module



DAT210 Inverter Assembly

Version V2f
11/21/17



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Please refer to the DAT 210 or SSD 110 manuals for inverter specific installation and operational details.

SECTION 1.

REASONS FOR SPECIFYING THE ASSEMBLY

The DAT210 inverter component is designed with a single phase line rectifier providing pulsating direct current (DC) to large input filter capacitors. If the line is connected directly to the line input of the inverter, there will be an initial large inrush current to charge the capacitors. This current is only limited by the mains source (wiring and utility transformers) and filter capacitor internal resistance. The effect is particularly pronounced when the inverter is operated from 240 VAC single or 3 phase at power over 1 KVA.

There are three disadvantages to directly connecting the line to the inverter.

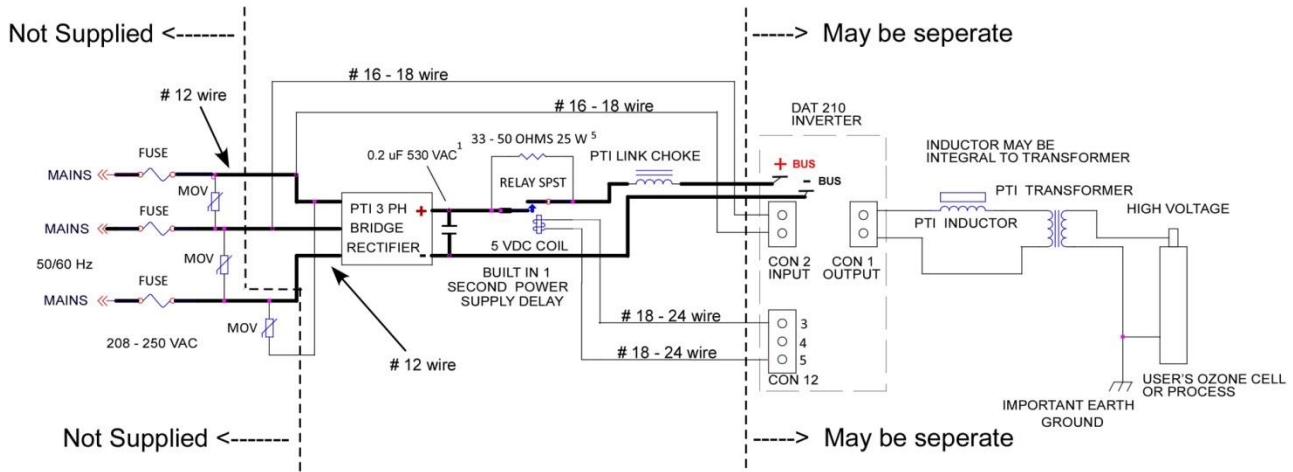
1. High inrush can stress the filter capacitors shortening its life.
2. High inrush currents can stress the safety circuit breakers (and will blow fuses) that may work fine during testing but will deteriorate over time causing nuisance trips.
3. Connecting any rectifier filter capacitor directly to the line causes a strong 3rd harmonic line current causing a 0.6 power factor. Many companies prefer clean (low harmonics) devices in their facility to lessen interference with other more sensitive equipment.

The 70250 inverter assembly solves these problems. A soft-start relay circuit is automatically controlled by the inverter, pre-charge components limit inrush currents and a high current link choke to eliminate the harmonics and correct the power factor to 0.95.

Lastly, the assembly is cost effective by eliminating the need to individually design and mount these essential components.

SECTION 2. Soft start & link choke circuit

Recommended Installation



NOTES:

1. PREFERRED: ASC CAPACITORS U1C1
 2. PREFERRED: CERAMIC RESISTOR HVRAPC U2125A330L
 3. THE DAT210 BRIDGE RECTIFIER IS REMOVED FOR 3 PHASE MAINS AND D.C. POWER.
 4. POLARITY MUST BE FOLLOWED OR SIGNIFICANT DAMAGE WILL OCCUR.
 5. SUPPLIER BLUE CERAMIC RESISTOR IS 4.5 W, CUSTOMER WIRE WOUND 25 W.
- # 12 wire

Section 3 Bill of Materials

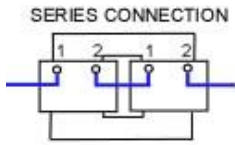
INVERTER 70250 ASSEMBLY

QUANTITY	PART NO.	DESCRIPTION	SOURCE	NOTES
1	AY330KE	Ceramic surge resistor	OHMITE	http://www.digikey.com
1	W9AS1D52-5	30 Amp 5 VDC coil relay	Magnecraft	www.alliedelec.com
1	DF30AA160	30 Amp three phase rectifier	SanRex	516.625.1313 308.284.3611
1		0.2 uF 1600 VDC/530 VAC capacitor	ASC or PTI	www.ascapacitor.com
1	235	14 Amp DC link choke (inductor)	PTI	3.5 KW maximum
1	237	20 Amp DC link choke (inductor)	PTI	> 3.6 KW use the 237
1	DAT210	Inverter to 5.5 KW on the 70250-1 assembly only	PTI	Purchased separately

PTI PARTS	QTY	QTY	QTY	QTY	QTY
P/N 70250 Prewired inverter assembly: Link choke, soft start relay & high inrush resistor, terminal block & mounting plate. For 3 phase mains. Includes all components including the inverter.	1	1	1	1	
P/N 7250-1 Save as above except higher amp link choke rating					1
SP-252-2 resonating inductor, 5 mH, 2 in series = 10 mH	2 B	2 B			
SP-252 transformer, Case 55	1	1			
SP- 303 resonating inductor, 3 mH series connection			1		
SP- 333 transformer, 100	1 Option		1		
SP-291-6 Inductor, 4 mH series, 25 amps			1 Option A	1	2
SP-331, Case 210 6 KVA transformer			1 Option	1	1

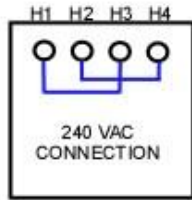
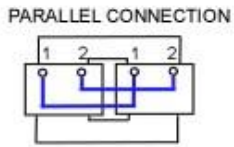
Notes:

1. "A" refers to an inductor series coil connection. "B" is a parallel connection.
2. Options refer to a substitute arrangement if out of stock on the preferred arrangement.



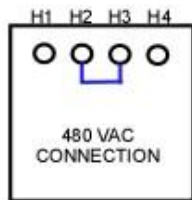
INDUCTOR SPECIFICATION

	SERIES	PARALLEL	AMPS	CORE
SP-252-2	20 mH	5 mH	5/10	SINGLE
SP-303	3 mH	0.75 mH	25/50	DOUBLE
SP-291-6	4 mH	1.0 mH	25/50	TRIPLE

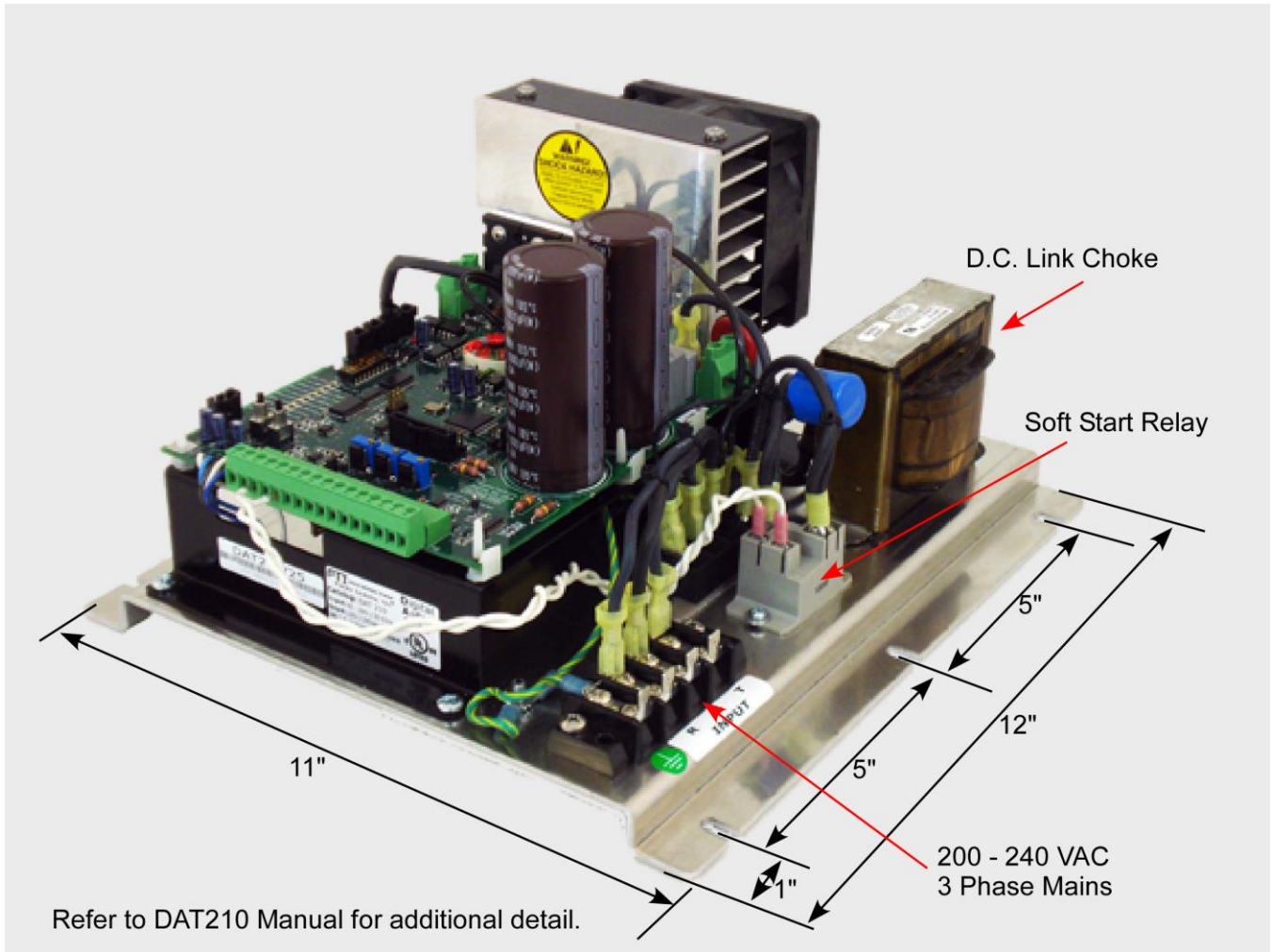


TRANSFORMER SPECIFICATION

	CASE	KVA	KV	CORE
SP-252	50	1	4	LAMINATION
SP-333	100	3	4	TAPE
SP-331	210	8	4	TAPE
SP-324	300	16	4	TAPE



Section 4 Dimensions



Section 5

DISCLAIMER

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