

Designator	Comment	Description	Footprint	Quantity	From	Price ea	Comments
<b>Inverter Controller Assembly BOM</b>							
Blank PCB		WG39Rev6		1			
C1, 2	22n	Film capacitor	2.54mm (0.2")	2			50/63V
C3	22n	Ceramic	2.54mm (0.2")	1			50/63V
C4	1u	Monolithic or Film	2.54mm (0.2")	1			50/63V
C5, 6	220n	Monolithic	2.54mm (0.2")	2			50/63V
C7, 9, C10 - C13, 15, C19, 21, 22, 26, 28	100n	Monolithic	2.54mm (0.2")	12			50/63V
C8	10u	Tantalum	0.2" or 0.1"	1			From 6 - 35V ok
C14, 23	10n	Ceramic	2.54mm (0.2")	2			50/63V
C16, 20	4u7	Tantalum	0.2" or 0.1"	2			From 6 - 35V ok
C17, 18	1u	Monolithic	2.54mm (0.2")	2			50/63V any value from 100n is ok
C24	220u 63V	Electrolytic	RBV/10_0/5_0	1			
C25, 27	100u 16V	Electrolytic	RBV/6_3/2_5	2			
D1, 2, 3, 5, 6, 12, 13	1N4148	Diode	DO-35	7			
D8	16V 1W	Zener Diode	DO-41	1			
D9	5V6 1W	Zener Diode	DO-41	1			
D10, 11, 14, 15	1N4004	Diode	DO-41	4			
J1	4 Pin Pluggable	Terminal block	5.08mm Pitch	1	Digikey		
J2, 4	2 Way Terminal	Terminal Block	5.08mm Pitch	2	Digikey		
J3	6 Way Pin Strip	Header strip	2.54mm Pitch	1			
J5, 6	8 Way Pin Strip	Header strip	2.54mm/0.1"	2			
J7	6 Pin Pluggable	Terminal block	5.08mm Pitch	1	Digikey		
J8 - J11	3 Way Pin Strip	Header strip	2.54mm/0.1"	4			
LD1	GRN LED	5mm	LED/5V	1			
LD2	RED LED	5mm	LED/5V	1			
PS1	12V Regulator	K78U12-500	75Vin to 12V 0.5A	1	Digikey	\$4.65	Omit and use external 12V supply?
PS2	5V Regulator	LMO78_05-0.5	LMO78_05-0.5	1	Digikey	\$2.77	Switching regulator. The Mini360 from Ali could also be used here
Q1	2N3906 or equiv.	PNP Transistor	TO92/100/CBE	1			any PNP but Check pinout
Q2	2N3904 or equiv.	NPN Transistor	TO92/100/CBE	1			any NPN but Check pinout
Q3, 4, 6, 10	BS170 or equiv.	N Channel	TO92/100/DGS	4	Digi/E14		Substitute fets ok Check pinout
Q5, 7, 8, 9	WGP30N10V	NCH 100V 30A	TO-220FETV	4	LCSC		Any min60V Fet @ min5A is ok
R1, 2	100K	0.25-0.6W Axial	10mm (0.4" pitch)	2			
R3	270R	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R4, 5, 9, R48 - R51	10K	0.25-0.6W Axial	10mm (0.4" pitch)	7			
R6, 10, 12, 22, 23, 36, R44, 53	100K	0.25-0.6W Axial	10mm (0.4" pitch)	8			
R7	680K	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R8	65K	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R11	47K	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R13	33R	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R14	180R	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R15, 30, 32, 43, 46, 47	1K	0.25-0.6W Axial	10mm (0.4" pitch)	6			
R16	100R	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R17	470R	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R18 - R21, 24, 28, 29, R33, 34, 37, 38	4K7	0.25-0.6W Axial	10mm (0.4" pitch)	11			
R25	5K1	0.25-0.6W Axial	10mm (0.4" pitch)	1			
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R26, 35, 45, 52, 56	2K2	0.25-0.6W Axial	10mm (0.4" pitch)	5			
R27	27K	0.25-0.6W Axial	10mm (0.4" pitch)	1			
R31	0R		10mm (0.4" pitch)	1			whoops was in the variac. Just link it or use any value from 1R to 10K
R39 - 42	47R	0.25-0.6W Axial	10mm (0.4" pitch)	4			
R54, 55	220R	0.25-0.6W Axial	10mm (0.4" pitch)	2			
RV1	10K (top adjust)	Multi turn trimpot	3296Y	1		\$3.87	Digikey!! Get 10 at Ali for less!
RV2	5K (top adjust)	Multi turn trimpot	3296Y	1		\$3.87	Digikey!! Get 10 at Ali for less!
T1	ZMPT107-1	2mA - 2mA 1KV	TV31D	1	LCSC	56c	
U1, 2, 5	MCP6002	Dual Op Amp	8 Pin DIP	3	Digikey	90c	or MCP602 or MCP617
U3	NANO PCB		30Pin Nano Module	1	Ali		
U6	SN74AC86N	Quad 2-Input XOR	DIP14/300	1	Digikey	95c	
U7	FOD817D	4-Pin Optocoupler	DIP4/300	1	Digikey	65c	
<b>LCD Assembly</b>							
Blank PCB		WG41Rev1					
LCD	2004	Green ?	~ 98 x 60mm	1	Ali	~\$4 +Del.	20 Character 4 line LCD
U1	NANO PCB		30Pin Nano Module	1	Ali		
R1	50 - 100K	single turn trimpot	3306P or similar	1	Digikey	~78c	
C1	100n		2.54mm (0.2")				Optional, fit if display not stable
3P - 3P	2 x 3 pin females	wired connector	F - F, 3 x 0.1"		Ali		L=300mm, 10 for \$4.25
The 2 x 15 pin strip connectors supplied with the Nano will all be used for the assembly 6 + 6 + 3 & 6 + 4 + 3 + 2 = 30 pins							
Note J1 can be soldered vertically or horizontally							