


1	2	3	4	5	6
<div>BOARD SPECIFICATIONS</div> <div>- Dimensions: 8in by 8in, 0.093in thick, 2oz copper on all layers, ENIG, 4 layers</div> <div>PRESS-FIT NOTES</div> <div>- All other components should be 5mm from the center of the WolfPACK pins</div>					
A					
B					
C					
D					
1	2	3	4	5	6

		[No Variations]	
Title: 7.5kW WolfPACK FM3 Six-Pack Motor Drive			
Drawing No: CRD07500AA12N-FMC			
Date: 04/2023	Size: B	Revision: 1	Sheet 1 of 6

PHOENIX CONTACT 1777561

F1 WURTH 696106003002  
F2 WURTH 696106003002  
F3 WURTH 696106003002

RV3 WURTH 820525511  
RV2 WURTH 820525511  
RV1 WURTH 820525511

A FUSE  
B FUSE  
C FUSE

L1 WURTH 744839047160

C39 1µF 310V  
C38 1µF 310V  
C37 1µF 310V  
R128 820kΩ 0.3W  
R127 820kΩ 0.3W  
R129 820kΩ 0.3W  
C137 1.5nF 760V  
C138 1.5nF 760V  
C139 1.5nF 760V

C40 1µF 310V  
C41 1µF 310V  
C42 1µF 310V  
C136 1.5nF 760V  
C135 1.5nF 760V  
C134 1.5nF 760V

EGND0

A\_FILT  
B\_FILT  
C\_FILT

Recommend 20A fuses. Recommended part number: BEL FUSE INC 0ADKC9200-BE.

The schematic diagram illustrates the power supply section of the MULTICOMP PRO SBR2512W. The input is DC+ (TP1) and DC- (TP3). The DC+ line passes through a fuse RV4 (AMTHERM SL32-5R020-B) and a variable resistor RV5 (AMTHERM SL32-5R020-B) before reaching a bridge rectifier (D1). The bridge rectifier output is connected to a filter capacitor C121 (0.10µF, 25V) and a diode D12 (1N4148WS-7-F). The output is +12V O (TP2) and GND (TP4).

The diagram shows two circuit configurations for a power supply filter. The left configuration, titled "ELECTROLYTIC (DEFAULT)", shows a bridge rectifier with four electrolytic capacitors (C61, C63, C60, C62) connected in a full-bridge configuration. The positive output is labeled "DC+" and the negative output is labeled "DC-". The right configuration, titled "FILM CAPACITORS (ALTERNATIVE)", shows a bridge rectifier with four film capacitors (C57, C59, C58, C60) connected in a full-bridge configuration. The positive output is labeled "DC+" and the negative output is labeled "DC-".

The diagram illustrates a 3-phase motor driver circuit. At the top, a 3-phase bridge rectifier (G1-S1, G2-S2, G3-S3) converts AC input into DC. This DC is then used to power a 3-phase inverter (G4-S4, G5-S5, G6-S6) which drives a 3-phase asynchronous motor (M1). The motor's phases are labeled W, V, and U. A feedback system is implemented using a current sensor (R99, 2mΩ) and a temperature sensor (NTC1, NTC2) connected to a microcontroller (Q2, WOLFSPEED CC8032M12FM3). The microcontroller is also connected to a Phoenix Contact 1777561 terminal block. The power supply is DC+ and DC-.

DC+ 1  
DC- 2

J1

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1777545

**Wolfspeed.**

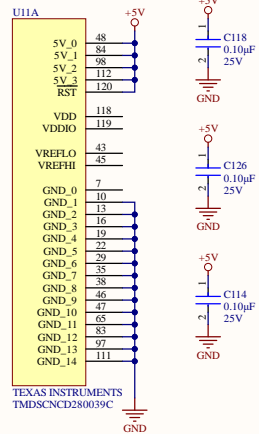
Title: Power Stage - 7.5kW WolfPACK Six-Pack M. Drive

Drawing No: CRD07500AA12N-FMC

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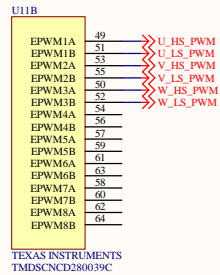
## CONTROLLER

### POWER

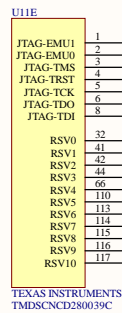


CONNECTOR: SAMTEC HSEC-160-01-L-DV-A-BL

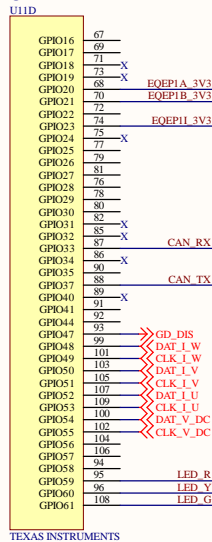
### PWM



### OTHER

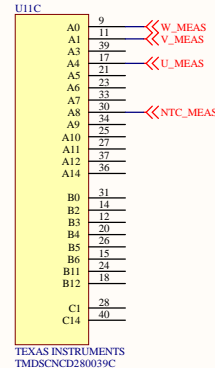


### GPIO



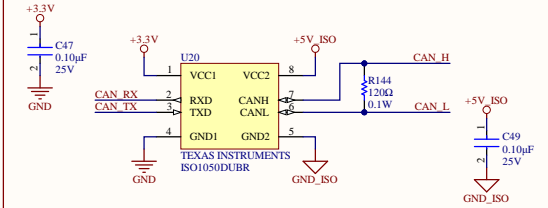
GD\_DIS SIGNAL ACTIVE LOW  
0 = DRIVERS ENABLED, 1 = DRIVERS DISABLED  
Signals labeled with "X" are preferred not to use due to pre-assigned functionality on the controller such as boot-mode selection or on-board LEDs

### ANALOG

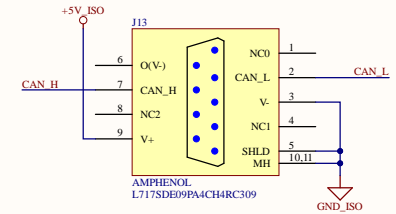


## CAN

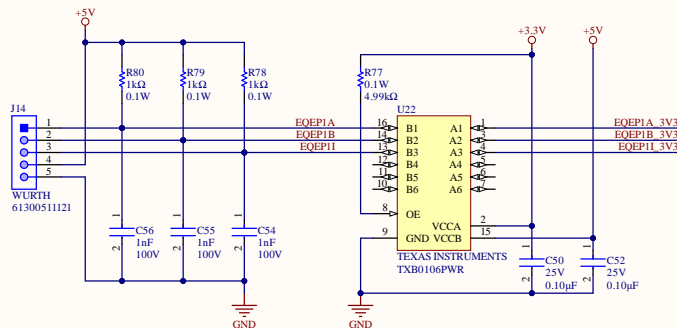
### COMMUNICATION



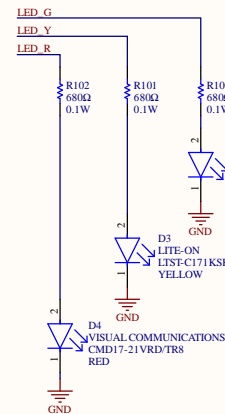
### CONNECTOR



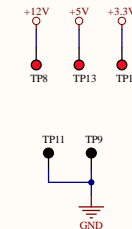
## ENCODER




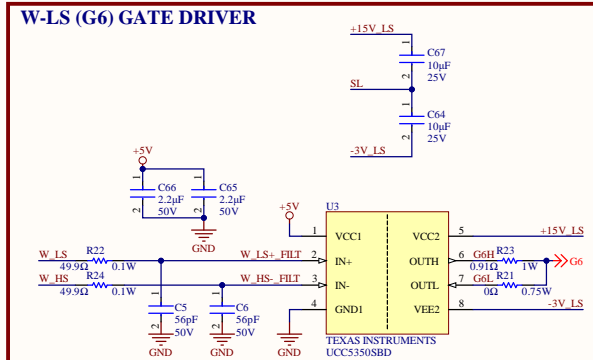
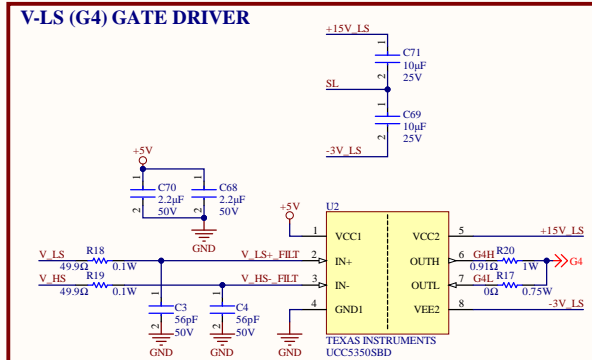
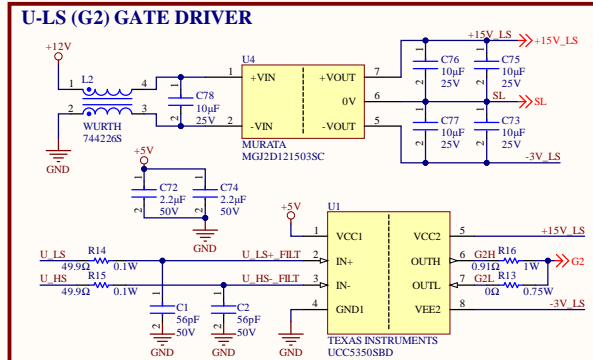
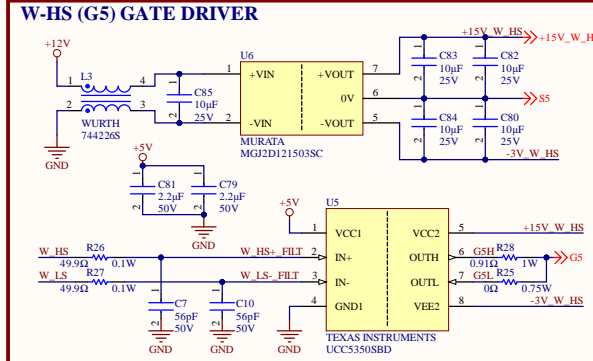
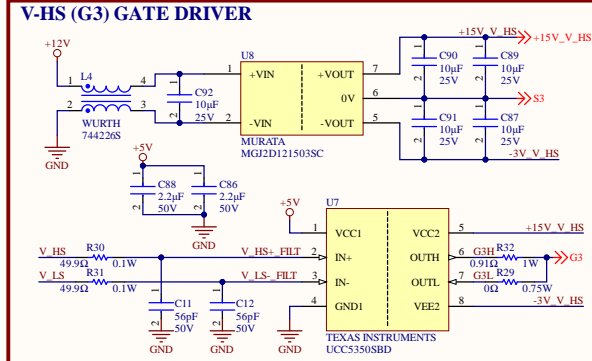
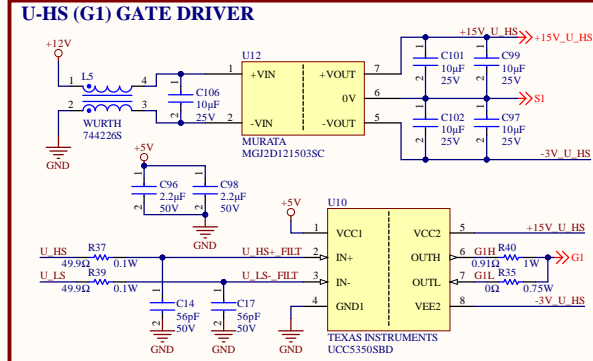
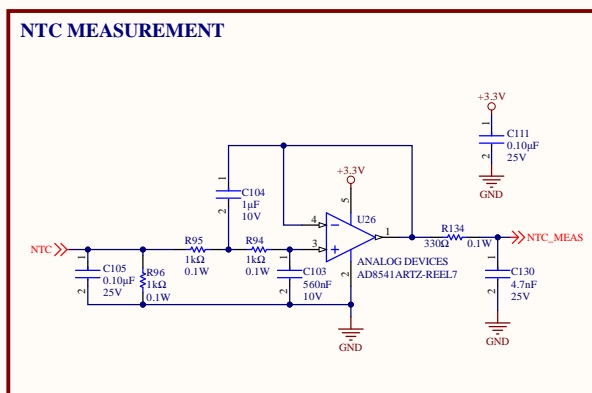
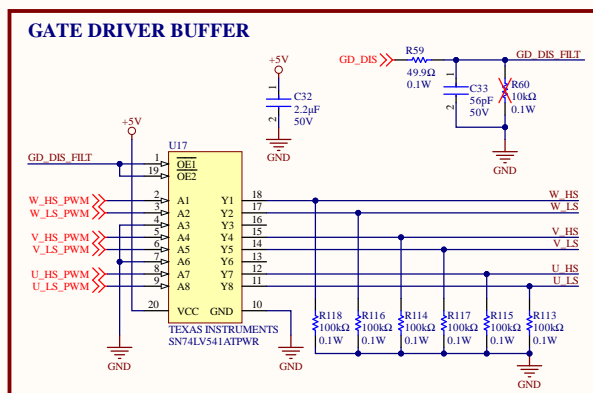
## PROGRAMMABLE LEDS



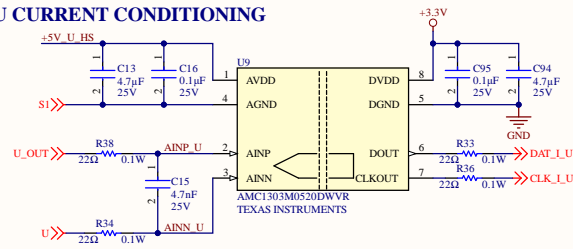
## POWER TEST POINTS



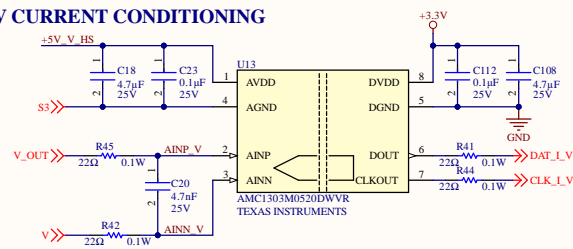
 <b>Wolfspeed</b>		[No Variations]	
Title: Controller - 7.5kW WolfPACK FM3 Six-Pack M. Drive			
Drawing No: CRD07500AA12N-FMC			
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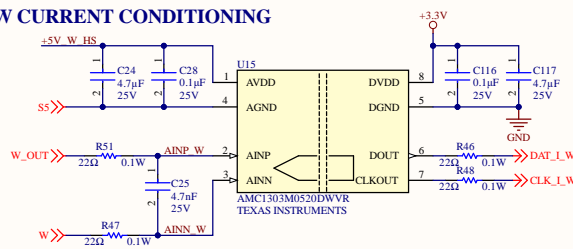
### U CURRENT CONDITIONING



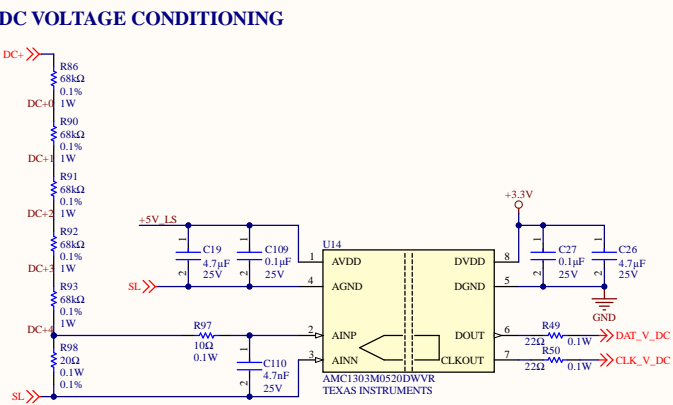
### V CURRENT CONDITIONING



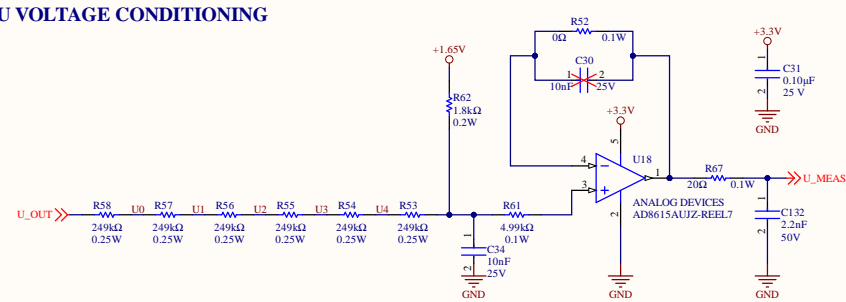
### W CURRENT CONDITIONING



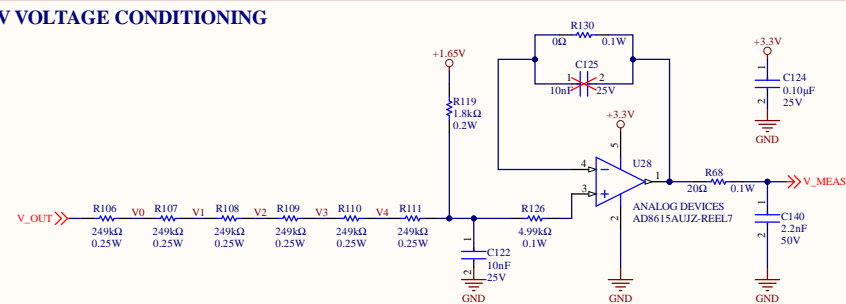
### DC VOLTAGE CONDITIONING



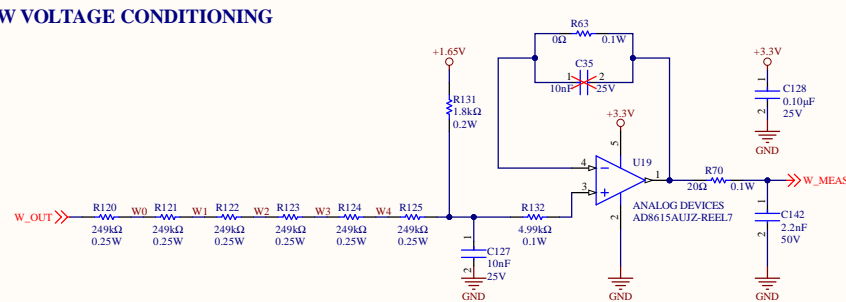
### U VOLTAGE CONDITIONING



### V VOLTAGE CONDITIONING



### W VOLTAGE CONDITIONING



**Wolfspeed**

[No Variations]

Title: Sense - 7.5kW WolfPACK FM3 Six-Pack Motor Drive

Drawing No: CRD07500AA12N-FMC

Date: 04/2023

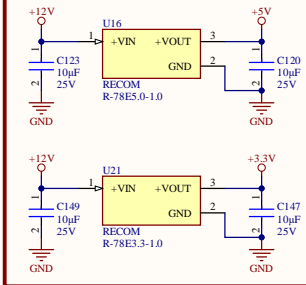
Size: B

Revision: 1

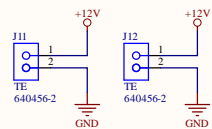
Sheet: 5

d 6

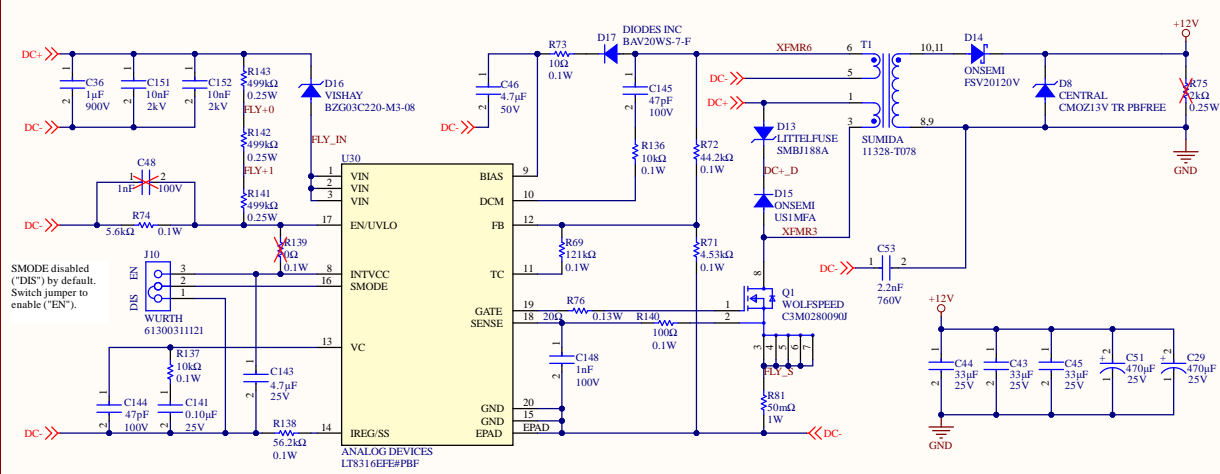
### +3.3V & +5V SUPPLIES



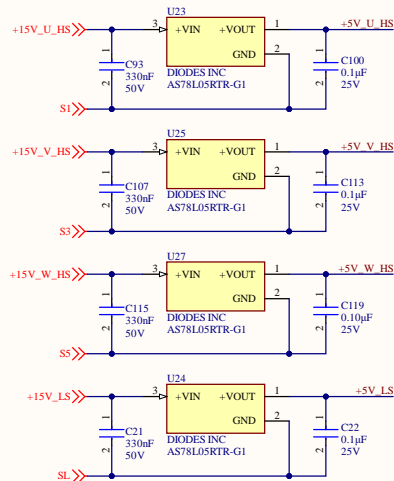
### EXTERNAL FAN POWER



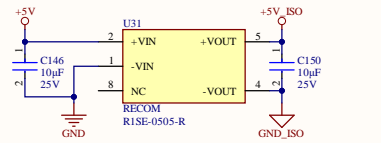
### +12V FLYBACK CONVERTER



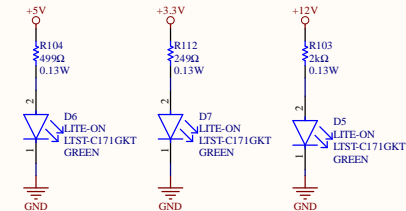
### SIGMA-DELTA POWER SUPPLIES



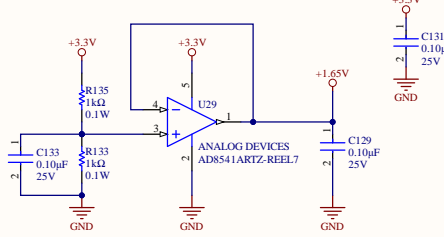
### CAN ISOLATED +5V RAIL



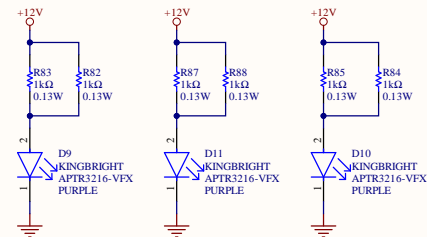
### STATUS LEDS



### +1.5V REFERENCE VOLTAGE



### UNDERGLOW



[No Variations]

Title: Auxiliary Power - 7.5kW WolfPACK 6-Pack M. Drive  
 Drawing No: CRD07500AA12N-FMC  
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