PED-Board

just add power

General Inverter Adapter Board V1

for PED-Board®

HARDWARE and USER MANUAL

ped-board.com

I. Limited Warranty

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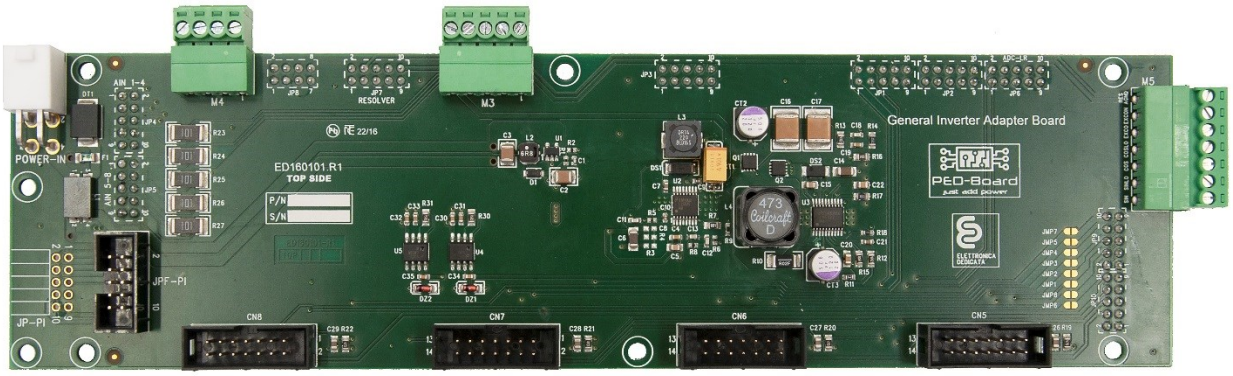
General Inverter Adapter Board – V1 • GIAB-V1



Features

- **16 x PWM channels (CN5, CN6, CN7, CN8)**
  - **0÷15 V or 0÷5V selectable voltage swing**
  - **Direct LED driving capability for optocoupled gate driver**
- **4 x Digital I/O (CN5, CN6, CN7, CN8)**
- **5 x external current or voltage measures (M4, M3)**
- **3 x differential inputs**
  - **Direct connection to the High Voltage Sensing Board (HVSB)**
- **Resolver port (M5)**
- **2 x direct temperature measurement (CN6, CN7)**

Custom configuration for default setup for orders of 5 units or more.

Table of contents

II. Electrical specifications

Recommended input voltage supply	12	V	POWER-IN
Input voltage supply range	±10%		Respect to Vin
No reverse voltage protection			
Input current	2.0	A	Max current at Vin
Storage temperature (IEC 60068-2-1, IEC 60068-2-2)	-40 to 85 °C		
Operating temperature	-25 to 60 °C		
Operating humidity (IEC 60068-2-56)	10 to 90% RH, noncondensing		
Storage humidity (IEC 60068-2-56)	5 to 95% RH, noncondensing		
Maximum altitude	5000	m	
Pollution Degree (IEC 60664)	2		

Do not apply an input voltage higher than 14V at the Vin terminal with respect to GND.

- *Main power supply and auxiliary connectors*

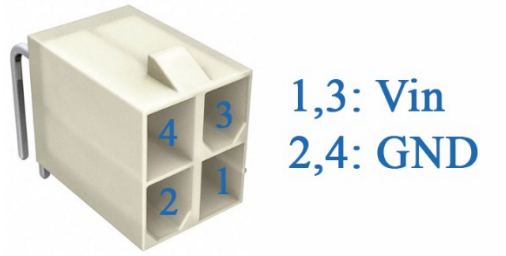


Figure 1. Pinout of the main power connector.

Mate connector DIGIKEY code WM3701-ND, manufacturer Molex. Pin DIGIKEY code WM2501-ND, manufacturer MOLEX.

III. GIAB-V1 Connectors

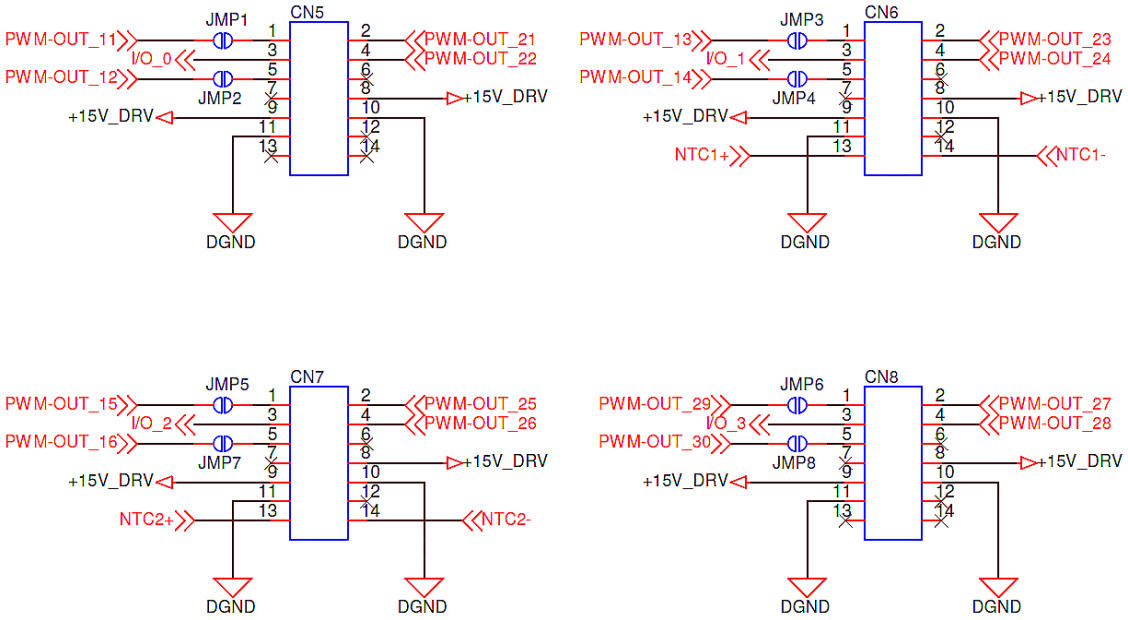


Figure 2. Pinout of CN5, CN6, CN7 and CN8.
I/O_0, I/O_1, I/O_2, I/O_3 have an on-board 3.3V pull-up resistor and are routed to the PED-Board according to Figure 3. Those I/Os are connected directly to the FPGA pins on the PDC-Board.
+15V_DRV can be used to directly supply the gate driving circuits; consider a maximum current of 1.3A (total).
NTC1+ routed to AIN17_L, NTC2+ routed to AIN18_L (see Figure 5). On board constant current generator is provided. Voltage is clamped at 5.1V to avoid damages to the PED-Board ADC3 system.

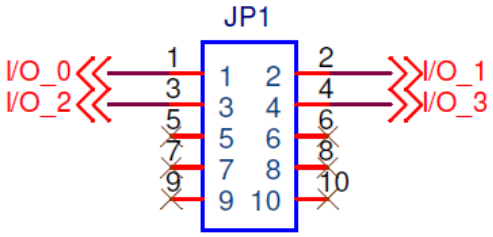


Figure 3. JP1 pinout.

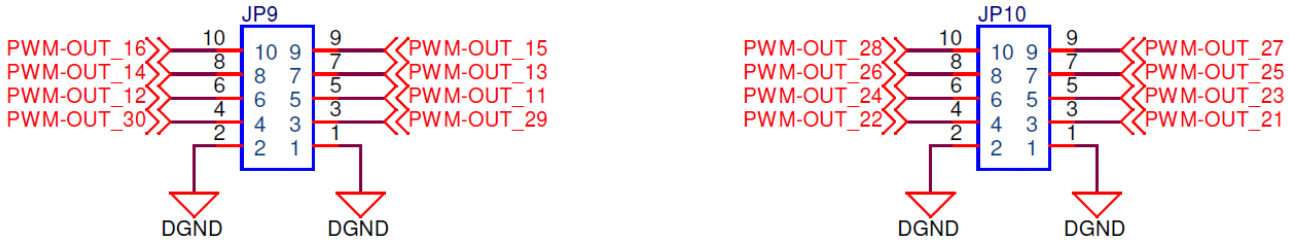


Figure 4. Pinout of the PWM connectors JP9 and JP10, which route the PWM signal from the PED-Board.

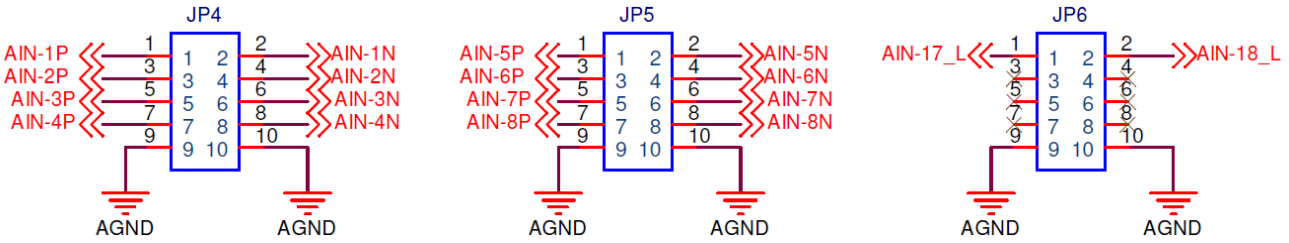


Figure 5. Pinout of the ADCs connectors. Channel names are as in the PED-Board HUM.

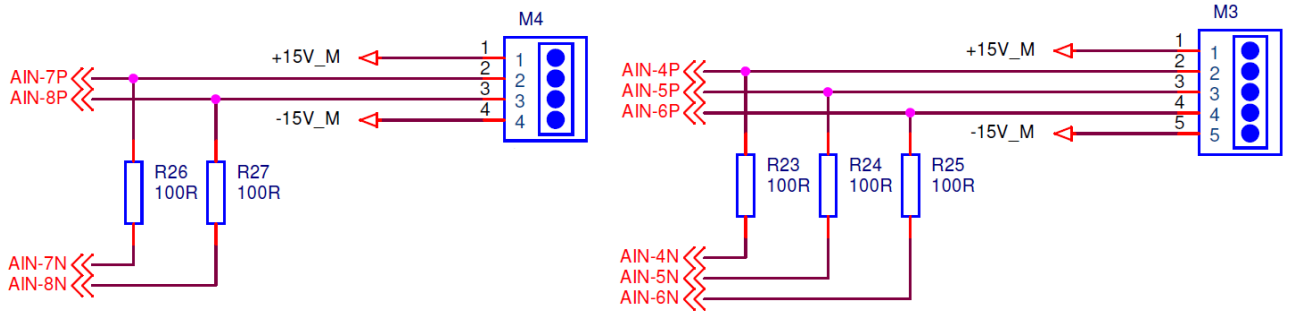


Figure 6. Connectors for external current/voltage measures. ±15V maximum current is 500.0mA (total).

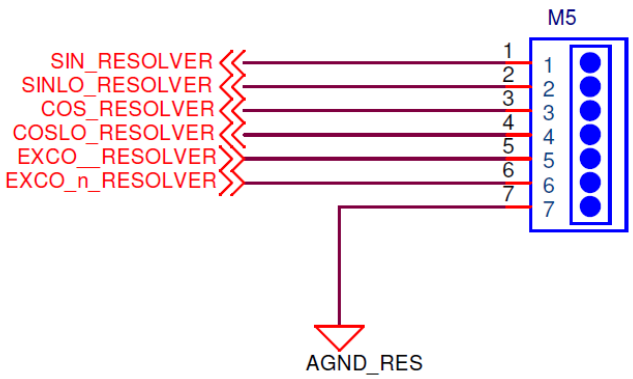


Figure 7. Resolver connector.

IV. Mechanical dimensions

GIAB-V1 size is 241.0mm x 75.3mm.

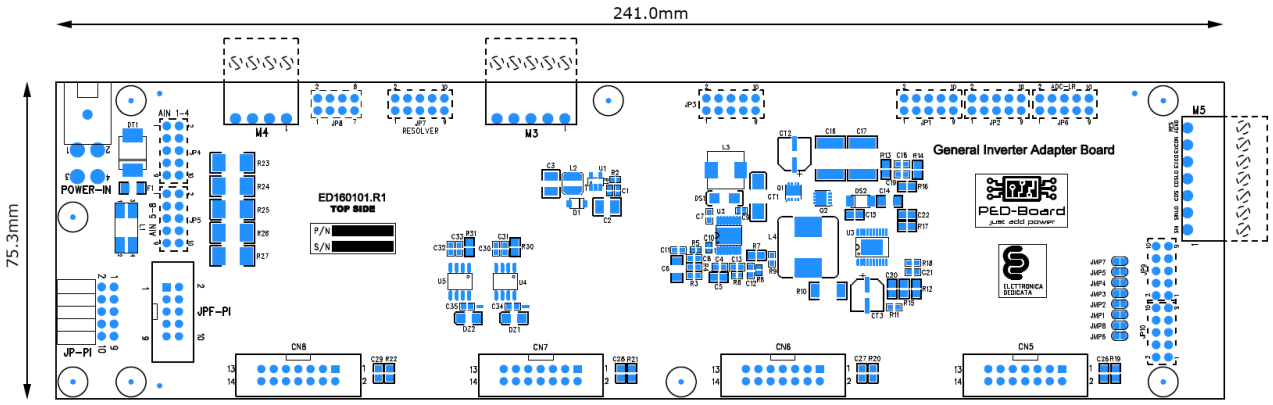


Figure 8. GIAB-V1 mechanics.

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