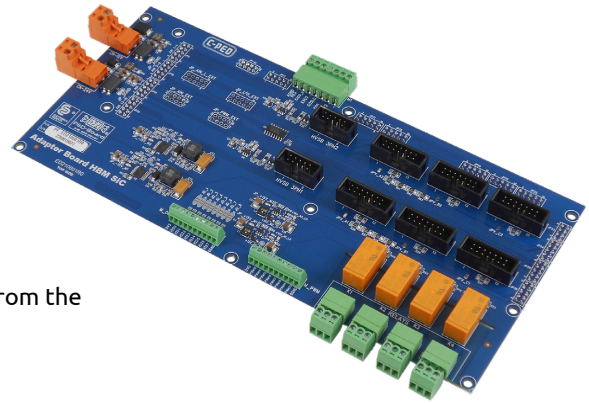


Adapter Board G3e

PN: ED210601R0

Key Technical Features:

- Six fully independent channels, compatible with our electrical PED-Hub gate-driver
- *LabVIEW Starting Project with all signals mapped!*
- Four relay outputs to switch loads and interlocks directly from the board
- Break-out connector for the PED-Board resolver



6 x Channels

- Compatible with PED-Hub electrical gate-drivers
- Full pin & power routing per channel: ± 15 V, 24 V, PWMs, NFLT, RDY, RST, temperature sensor, voltage and current sense

2 x HVSB Connections

- Plug-and-play with our High Voltage Sensing Board (HVSB)
- 6 external voltage inputs available via HVSB
- Onboard +5 V rail and signal routing for measurement lines

4 x Relay outputs

- Coil: 12 V nominal
- Contacts: 2 A @ 30 V DC switching capacity

8 x NTC Temperature Inputs

- 8 inputs, multiplexed into 2 measurement circuits
- Reads 6 internal NTCs from SiC power modules
- 2 extra connections for additional temperature measurements

6 x Independent Current Measurements

- Per-channel current taps: all gate-driver current signals are brought out individually

2 x Independent Voltage Measurements

- Selectable per group: choose 1 voltage input every 3 channels

Resolver Break-Out (PED-Board)

- Direct passthrough of PED-Board resolver pins to external connector

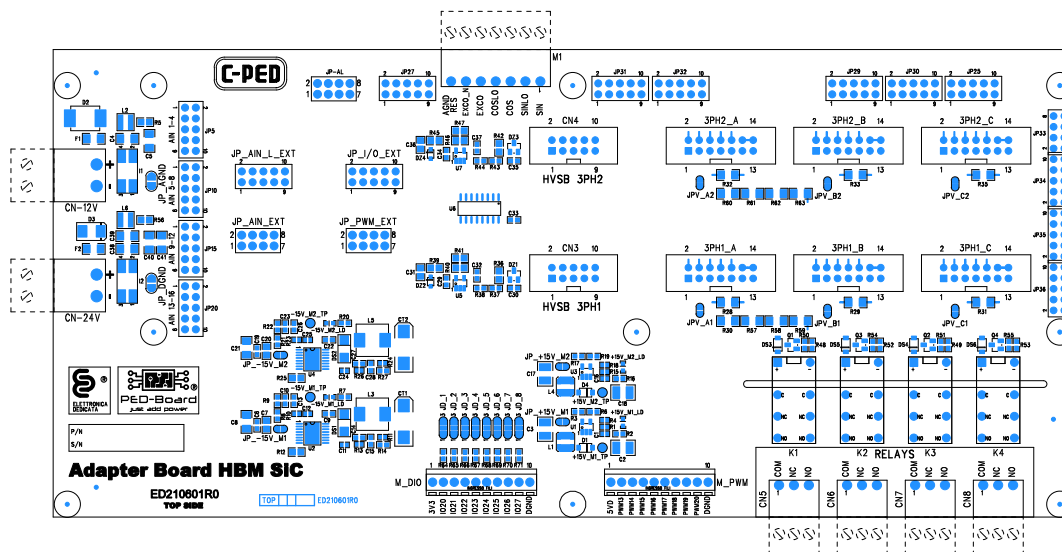
Breaks-out free connections of PED-Board

- 14 x PWMs
- 16 x Digital I/Os (3.3 V): 8 lines feature selectable pull-up/pull-down logic
- 2 x (ADC2) 14 bit channels
- 6 x (ADC3) 10bit channels

Characteristics

| | |
|--|-----------------------------|
| 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 |

Layout

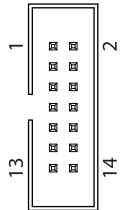
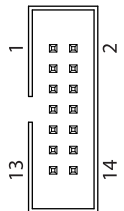
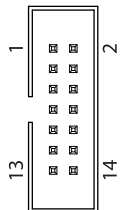


Power Supply

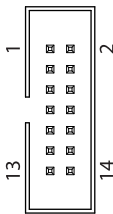
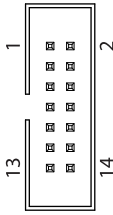
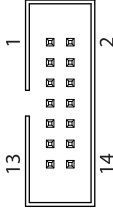
| Connector | Pin | Adapter board |
|------------------------|-----|---------------|
| 2P P5.08mm male | 1 | +12V |
| | 2 | GND |
| 2P P5.08mm male | 1 | +24V |
| | 2 | GND |



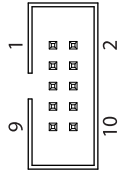
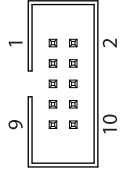
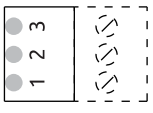
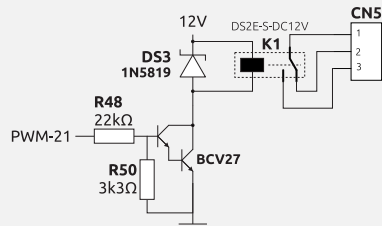
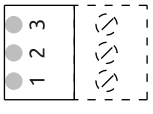
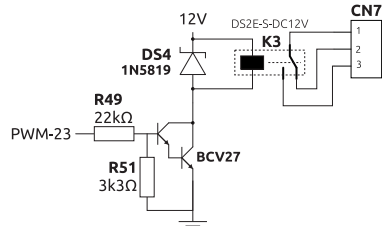
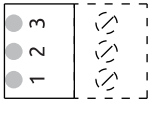
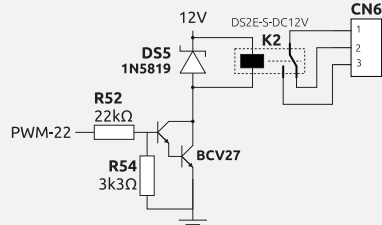
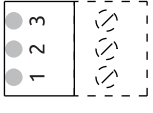
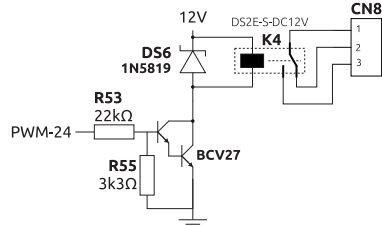
Routing and connections

| Connector | Pin | Adapter board | PED-Board | Note |
|--|-----|---------------|-----------|---|
| 3PH1_A  IDC 2x07 P2.54mm male | 1 | +15V_M1 | - | |
| | 2 | PWM-T_A_3PH1 | PWM-1 | |
| | 3 | -15V_M1 | - | |
| | 4 | FLT_A_3PH1 | I/O_0 | |
| | 5 | VDC_A_3PH1 | AIN-7 | check voltage selection circuit default |
| | 6 | RDY_A_3PH1 | I/O_1 | |
| | 7 | IM_A_3PH1 | AIN-9 | check current measurement circuit |
| | 8 | PWM-B_A_3PH1 | PWM2 | |
| | 9 | +24V | - | |
| | 10 | RST_A_3PH1 | I/O_2 | |
| | 11 | AGND | | |
| | 12 | AGND | | |
| | 13 | T+_A_3PH1 | AIN-17 | check multiplexed temperature circuit |
| | 14 | T-_A_3PH1 | AGND | |
| 3PH1_B  IDC 2x07 P2.54mm male | 1 | +15V_M1 | - | |
| | 2 | PWM-T_B_3PH1 | PWM-3 | |
| | 3 | -15V_M1 | - | |
| | 4 | FLT_B_3PH1 | I/O_3 | |
| | 5 | VDC_B_3PH1 | AIN-7 | check voltage selection circuit default |
| | 6 | RDY_B_3PH1 | I/O_4 | |
| | 7 | IM_B_3PH1 | AIN-10 | check current measurement circuit |
| | 8 | PWM-B_B_3PH1 | PWM-4 | |
| | 9 | +24V | - | |
| | 10 | RST_B_3PH1 | I/O_5 | |
| | 11 | AGND | | |
| | 12 | AGND | | |
| | 13 | T+_B_3PH1 | AIN-17 | check multiplexed temperature circuit |
| | 14 | T-_B_3PH1 | AGND | |
| 3PH1_C  IDC 2x07 P2.54mm male | 1 | +15V_M1 | - | |
| | 2 | PWM-T_C_3PH1 | PWM-5 | |
| | 3 | -15V_M1 | - | |
| | 4 | FLT_C_3PH1 | I/O_6 | |
| | 5 | VDC_C_3PH1 | AIN-7 | check voltage selection circuit default |
| | 6 | RDY_C_3PH1 | I/O_7 | |
| | 7 | IM_C_3PH1 | AIN-11 | check current measurement circuit |
| | 8 | PWM-B_C_3PH1 | PWM-6 | |
| | 9 | +24V | - | |
| | 10 | RST_C_3PH1 | I/O_8 | |
| | 11 | AGND | | |
| | 12 | AGND | | |
| | 13 | T+_C_3PH1 | AIN-17 | check multiplexed temperature circuit |
| | 14 | T-_C_3PH1 | AGND | |

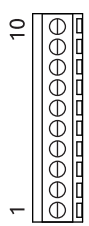
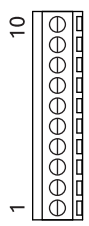
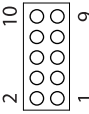
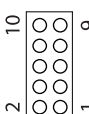


| Connector | Pin | Adapter board | PED-Board | Note |
|--|-----|---------------|-----------|---|
| 3PH2_A  IDC 2x07 P2.54mm male | 1 | +15V_M2 | - | |
| | 2 | PWM-T_A_3PH2 | PWM-7 | |
| | 3 | -15V_M2 | - | |
| | 4 | FLT_A_3PH2 | I/O_9 | |
| | 5 | VDC_A_3PH2 | AIN-8 | check voltage selection circuit default |
| | 6 | RDY_A_3PH2 | I/O_10 | |
| | 7 | IM_A_3PH2 | AIN-12 | check current measurement circuit |
| | 8 | PWM-B_A_3PH2 | PWM-8 | |
| | 9 | +24V | - | |
| | 10 | RST_A_3PH2 | I/O_11 | |
| | 11 | AGND | | |
| | 12 | AGND | | |
| | 13 | T+_A_3PH2 | AIN-18 | check multiplexed temperature circuit |
| | 14 | T-_A_3PH2 | AGND | |
| 3PH2_B  IDC 2x07 P2.54mm male | 1 | +15V_M2 | - | |
| | 2 | PWM-T_B_3PH2 | PWM-9 | |
| | 3 | -15V_M2 | - | |
| | 4 | FLT_B_3PH2 | I/O_12 | |
| | 5 | VDC_B_3PH2 | AIN-8 | check voltage selection circuit default |
| | 6 | RDY_B_3PH2 | I/O_13 | |
| | 7 | IM_B_3PH2 | AIN-13 | check current measurement circuit |
| | 8 | PWM-B_B_3PH2 | PWM-10 | |
| | 9 | +24V | - | |
| | 10 | RST_B_3PH2 | I/O_14 | |
| | 11 | AGND | | |
| | 12 | AGND | | |
| | 13 | T+_B_3PH2 | AIN-18 | check multiplexed temperature circuit |
| | 14 | T-_B_3PH2 | AGND | |
| 3PH2_C  IDC 2x07 P2.54mm male | 1 | +15V_M2 | - | |
| | 2 | PWM-T_C_3PH2 | PWM-11 | |
| | 3 | -15V_M2 | - | |
| | 4 | FLT_C_3PH2 | I/O_15 | |
| | 5 | VDC_C_3PH2 | AIN-8 | check voltage selection circuit default |
| | 6 | RDY_C_3PH2 | I/O_16 | |
| | 7 | IM_C_3PH2 | AIN-14 | check current measurement circuit |
| | 8 | PWM-B_C_3PH2 | PWM-12 | |
| | 9 | +24V | - | |
| | 10 | RST_C_3PH2 | I/O_17 | |
| | 11 | AGND | | |
| | 12 | AGND | | |
| | 13 | T+_C_3PH2 | AIN-18 | check multiplexed temperature circuit |
| | 14 | T-_C_3PH2 | AGND | |

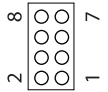
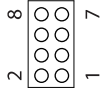
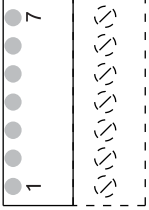


| Connector | Pin | Adapter board | PED-Board | Note |
|--|-----|---------------|-----------|--|
| CN3 HVSBB 3PH1  IDC 2x05 P2.54mm male | 1 | - | AIN-1P | Directly fed from PED-Board to connector |
| | 2 | - | AIN-1N | |
| | 3 | - | AIN-2P | |
| | 4 | - | AIN-2N | |
| | 5 | - | AIN-3P | |
| | 6 | - | AIN-3N | |
| | 7 | - | AGND | |
| | 8 | - | +5 VA | |
| | 9 | - | DGND | |
| | 10 | - | + 5VD | |
| CN4 HVSBB 3PH2  IDC 2x05 P2.54mm male | 1 | - | AIN-4P | Directly fed from PED-Board to connector |
| | 2 | - | AIN-4N | |
| | 3 | - | AIN-5P | |
| | 4 | - | AIN-5N | |
| | 5 | - | AIN-6P | |
| | 6 | - | AIN-6N | |
| | 7 | - | AGND | |
| | 8 | - | +5 VA | |
| | 9 | - | DGND | |
| | 10 | - | + 5VD | |
| CN5 RELAY K1  3POS P3.5mm | 1 | COM | PWM-21 |  |
| | 2 | NC | | |
| | 3 | NO | | |
| CN6 RELAY K2  3POS P3.5mm | 1 | COM | PWM-23 |  |
| | 2 | NC | | |
| | 3 | NO | | |
| CN7 RELAY K3  3POS P3.5mm | 1 | COM | PWM-22 |  |
| | 2 | NC | | |
| | 3 | NO | | |
| CN8 RELAY K4  3POS P3.5mm | 1 | COM | PWM-24 |  |
| | 2 | NC | | |
| | 3 | NO | | |

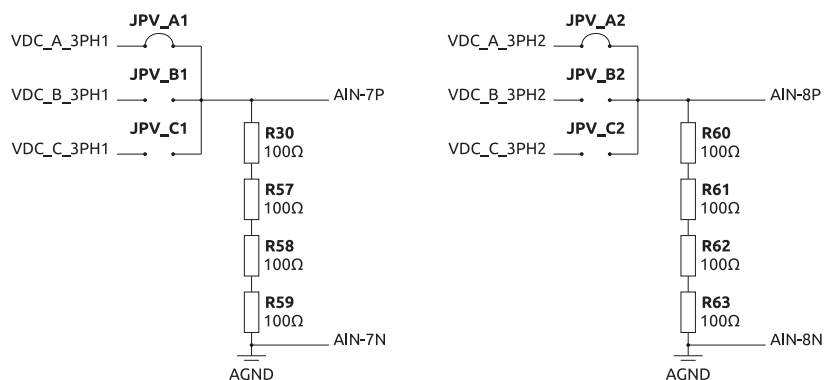


| Connector | Pin | Adapter board | PED-Board | Note |
|---|-----|---------------|-----------|--|
| M_PWM  10POS P2.54mm | 1 | - | 5VD | Directly fed from PED-Board to connector |
| | 2 | - | PWM-13 | |
| | 3 | - | PWM-14 | |
| | 4 | - | PWM-15 | |
| | 5 | - | PWM-16 | |
| | 6 | - | PWM-17 | |
| | 7 | - | PWM-18 | |
| | 8 | - | PWM-19 | |
| | 9 | - | PWM-20 | |
| | 10 | - | DGND | |
| M_DIO  10POS P2.54mm | 1 | - | 3V3 | Directly fed from PED-Board to connector |
| | 2 | - | I/O_20 | |
| | 3 | - | I/O_21 | |
| | 4 | - | I/O_22 | |
| | 5 | - | I/O_23 | |
| | 6 | - | I/O_24 | |
| | 7 | - | I/O_25 | |
| | 8 | - | I/O_26 | |
| | 9 | - | I/O_27 | |
| | 10 | - | DGND | |
| JP_I/O_EXT  Strip 2x05 P2.54mm Not mouted | 1 | - | I/O_28 | Directly fed from PED-Board to connector |
| | 2 | - | I/O_29 | |
| | 3 | - | I/O_30 | |
| | 4 | - | I/O_31 | |
| | 5 | - | I/O_32 | |
| | 6 | - | I/O_33 | |
| | 7 | - | I/O_34 | |
| | 8 | - | I/O_35 | |
| | 9 | - | 3V3 | |
| | 10 | - | DGND | |
| JP_AIN_L_EXT  Strip 2x05 P2.54mm Not mouted | 1 | EX_TMP1 | AIN-17 | check multiplexed temperature circuit |
| | 2 | EX_TMP2 | AIN-18 | check multiplexed temperature circuit |
| | 3 | - | AIN-19 | Directly fed from PED-Board to connector |
| | 4 | - | AIN-20 | |
| | 5 | - | AIN-21 | |
| | 6 | - | AIN-22 | |
| | 7 | - | AIN-23 | |
| | 8 | - | AIN-24 | |
| | 9 | - | AGND | |
| | 10 | - | +5VA | |

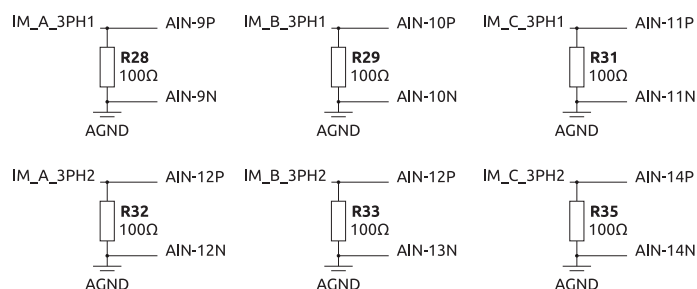


| Connector | Pin | Adapter board | PED-Board | Note |
|---|-----|---------------|-----------------|--|
| JP_PWM_EXT  8POS P2.54mm | 1 | - | PWM-25 | Directly fed from PED-Board to connector |
| | 2 | - | PWM-26 | |
| | 3 | - | PWM-27 | |
| | 4 | - | PWM-28 | |
| | 5 | - | PWM-29 | |
| | 6 | - | PWM-30 | |
| | 7 | - | +5VD | |
| | 8 | - | DGND | |
| JP_AIN_EXT  8POS P2.54mm | 1 | +15V_M1 | - | Directly fed from PED-Board to connector |
| | 2 | -15V_M1 | - | |
| | 3 | - | AIN-15P | |
| | 4 | - | AIN-15N | |
| | 5 | - | AIN-16P | |
| | 6 | - | AIN-16N | |
| | 7 | - | AGND | |
| | 8 | - | AGND | |
| M1  7POS P3.5mm | 1 | - | SIN_RESOLVER | Directly fed from PED-Board to connector |
| | 2 | - | SINLO_RESOLVER | |
| | 3 | - | COS_RESOLVER | |
| | 4 | - | COSLO_RESOLVER | |
| | 5 | - | EXCO_RESOLVER | |
| | 6 | - | EXCO_n_RESOLVER | |
| | 7 | - | AGND_RES | |

Voltage selection circuit



Current measurement circuit



Multiplexed temperature circuit

