

PDU34P

Datasheet



High power motorsport Power Distribution Unit (PDU) available with 400A continuous rating and 700A available in transient conditions. Combines a robust billet aluminum case and the very latest power driving technology with the highest efficiency in the industry.

The PDU34 is our most advanced power distribution unit yet represents the latest advancements in microprocessor controlled power distribution systems. The PDU34 range offers advanced features such as the ability to sleep and wake via CAN bus messaging or by using hardware pins including the ability to wake/sleep upon the triggering of certain user-specified sensor inputs. The PDU34 comes equipped with an impressive 34 programmable outputs in total, including 10 extremely capable multifunction outputs which can be defined by the user to operate in either discreet high-side or low-side switching, low-side PWM, Half or Full bridge operation. These flexible outputs, as well as the PDU34's 16 input channels, can be used to augment the I/O compliment of any Life Racing ECU product connected using the powerful "slave-link" feature.

Features:

- Schematic based calibration including logic simulation tool
- I/O slaving to an LR ECU
- Low power state woken on physical input, CAN activity, or specific CAN frame

Outputs:

- 34 main Power Outputs, 30 outputs rated to 25A, 4 outputs rated to 13A
 - 10 multifunction high side, low side, PWM, H-Bridge, soft start outputs (peak current 100A)
 - 20 High Side outputs (peak current 125A)
 - Output teaming to support very high current devices
- All outputs short circuit and thermally protected with multi-stage in-rush control
- Combined diagnostic output with reset input
- Up to 64 soft outputs via CAN

Inputs:

- 16 physical switch inputs or, when slaved, general purpose analogue sensor inputs including:
 - 8x frequency measurement inputs (4 optionally bi-polar)
 - software selectable 3k ohm pull-up resistors
 - 4x inputs capable of programmable “wake up” functionality
- Dedicated wake pin
- Up to 64 soft inputs via CAN with configurable validation and debounce time

Interfaces:

- x2 100Mbit/s full duplex Ethernet (can be used as Ethernet switch)
- x3 CAN 2.0B
- RS232C serial interface
- LIN Bus

Power Supply:

- 6.5V to 40V input voltage
- Dedicated 12V logic power input
- Regulated 5V sensor supply output with short circuit protection

Physical:

- x2 Deutsch HDP 16 way Power Connectors
- x1 Deutsch HDP 47way Connector
- x1 M6 Power Stud
- Machined Aluminium enclosure
- 200x110x55mm
- 995g
- Operating Temperature -20 to +115C

Ordering Information:

Description	Part number
PDU34P	PDU-B02
PDU34P Connector Kit	CON-B09

Wiring Information:

Stud

Pin	Gauge	Signal Name	Signal Notes
1	-	+12V Supply	Positive battery supply

Connector 1

Pin	Gauge	Signal Name	Signal Notes
1	12AWG	Output 1	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
2	12AWG	Output 2	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
3	12AWG	Output 3	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
4	12AWG	Output 4	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
5	12AWG	Output 5	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
6	12AWG	Output 6	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
7	12AWG	Output 7	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
8	12AWG	Output 8	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
9	12AWG	Output 9	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
10	12AWG	Output 10	High Side, Low Side, Low Side PWM, Half Bridge, Full Bridge, Soft start ⁽¹⁾⁽²⁾
11	12AWG	Output 11	High Side
12	12AWG	Output 12	High Side
13	12AWG	Output 13	High Side
14	12AWG	Output 14	High Side
15	12AWG	Output 15	High Side
16	12AWG	Power Ground	Negative battery supply

Connector 2

Pin	Gauge	Signal Name	Signal Notes
1	12AWG	Output 16	High Side
2	12AWG	Output 17	High Side
3	12AWG	Output 18	High Side
4	12AWG	Output 19	High Side
5	12AWG	Output 20	High Side
6	12AWG	Output 21	High Side
7	12AWG	Output 22	High Side
8	12AWG	Output 23	High Side
9	12AWG	Output 24	High Side
10	12AWG	Output 25	High Side
11	12AWG	Output 26	High Side
12	12AWG	Output 27	High Side
13	12AWG	Output 28	High Side
14	12AWG	Output 29	High Side
15	12AWG	Output 30	High Side
16	12AWG	Power Ground	Negative battery supply

Wiring Information:

Connector 3

Pin	Gauge	Signal Name	Signal Notes
1	16AWG	OUT #31	High Side
2	22AWG	CAN #01 HI	CAN communication port 120Ω software selectable termination ⁽³⁾
3	22AWG	CAN #01 LO	CAN communication port 120Ω software selectable termination ⁽³⁾
4	16AWG	OUT #32	High Side
5	16AWG	OUT #33	High Side
6	16AWG	OUT #34	High Side
7	22AWG	CAN #02 HI	ECU Slave (terminated)
8	22AWG	CAN #02 LO	ECU Slave (terminated)
9	24AWG	ETHERNET1 RX+	Ethernet communication port 1
10	24AWG	ETHERNET1 RX-	Ethernet communication port 1
11	24AWG	ETHERNET1 TX+	Ethernet communication port 1
12	24AWG	ETHERNET1 TX-	Ethernet communication port 1
13	20AWG	INPUT #01	Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
14	20AWG	INPUT #02	Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
15	20AWG	INPUT #03	Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
16	20AWG	INPUT #04	Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
17	20AWG	INPUT #05	Analogue or frequency; 0-5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
18	20AWG	INPUT #06	Analogue or frequency; 0-5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
19	20AWG	INPUT #07	Analogue or frequency; 0-5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
20	20AWG	INPUT #08	Analogue or frequency; 0-5V, 3kΩ programmable pullup to 5V ⁽⁴⁾
21	20AWG	INPUT #09	Analogue 0-5V, 3kΩ programmable pullup to 5V
22	20AWG	INPUT #10	Analogue 0-5V, 3kΩ programmable pullup to 5V
23	20AWG	INPUT #11	Analogue 0-5V, 3kΩ programmable pullup to 5V
24	20AWG	INPUT #12	Analogue 0-5V, 3kΩ programmable pullup to 5V
25	20AWG	INPUT #13	Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake ⁽⁵⁾
26	20AWG	INPUT #14	Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake ⁽⁵⁾
27	20AWG	INPUT #15	Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake ⁽⁵⁾
28	20AWG	INPUT #16	Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake ⁽⁵⁾
29	20AWG	SENSOR GND	Protected sensor ground
30	20AWG	SENSOR GND	Protected sensor ground
31	20AWG	5V OUT	Regulated 5V sensor supply rail
32	20AWG	12V OUT	Power stud voltage out
33	20AWG	POWER GROUND	Negative battery supply
34	16AWG	POWER GROUND	Negative battery supply
35	20AWG	WAKEUP	Dedicated Wake ⁽⁵⁾
36	20AWG	LOGIC POWER IN	+12V Battery supply; must be connected
37	22AWG	CAN #03 HI	NOT CURRENTLY IN USE
38	22AWG	CAN #03 LO	NOT CURRENTLY IN USE
39	22AWG	LIN	NOT CURRENTLY IN USE
40	22AWG	RS232 RX	RS232 receive
41	22AWG	RS232 TX	RS232 transmit
42	22AWG	COMMS GROUND	Protected communication ground
43	24AWG	ETHERNET2 RX+	Ethernet communication port 2
44	24AWG	ETHERNET2 RX-	Ethernet communication port 2
45	24AWG	ETHERNET2 TX+	Ethernet communication port 2
46	24AWG	ETHERNET2 TX-	Ethernet communication port 2
47	20AWG	WARNING AND RESET SW	Warning output for an LED to ground. Short to ground for manual reset.

Footnotes:

⁽¹⁾PWM, Half Bridge and Full Bridge via ECU slaving only.

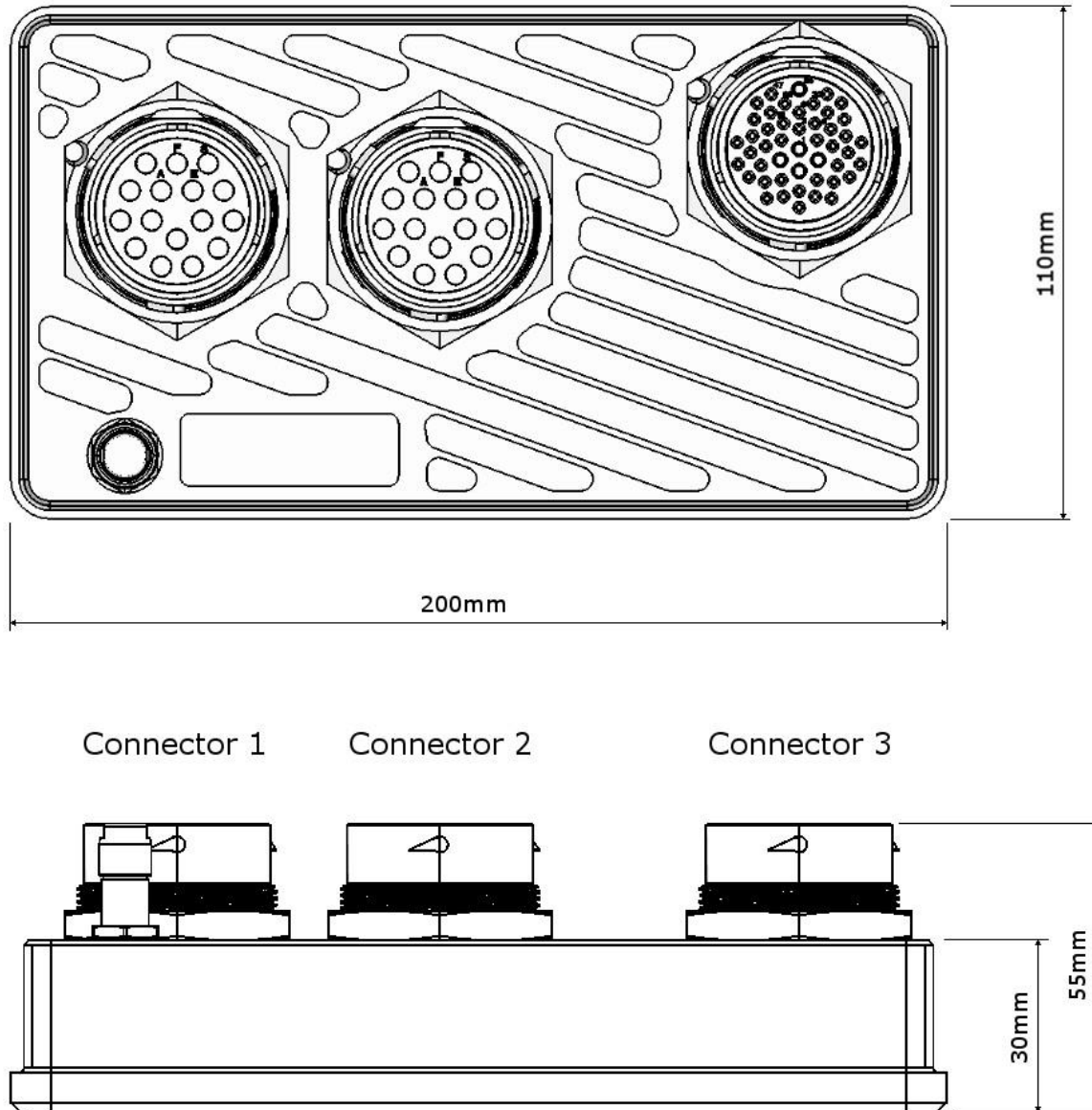
⁽²⁾Full Bridge control is on adjacent pairs only (1+2, 3+4, 5+6, 7+8, 9+10).

⁽³⁾Only active when not in sleep mode. If waking on CAN external termination will be required.

⁽⁴⁾Bipolar and Frequency inputs via ECU slaving only.

⁽⁵⁾Can be calibrated to bring unit out of sleep mode when driven high. Dedicated wake pin always active.

Dimensions:



Warranty and Servicing:

- This equipment comes with a 1 year warranty against manufacturing defects and failures however misuse or damage will not be covered under warranty.
- This PDU contains a battery which can be returned to Life Racing for a replacement, a charge may be made for this service.