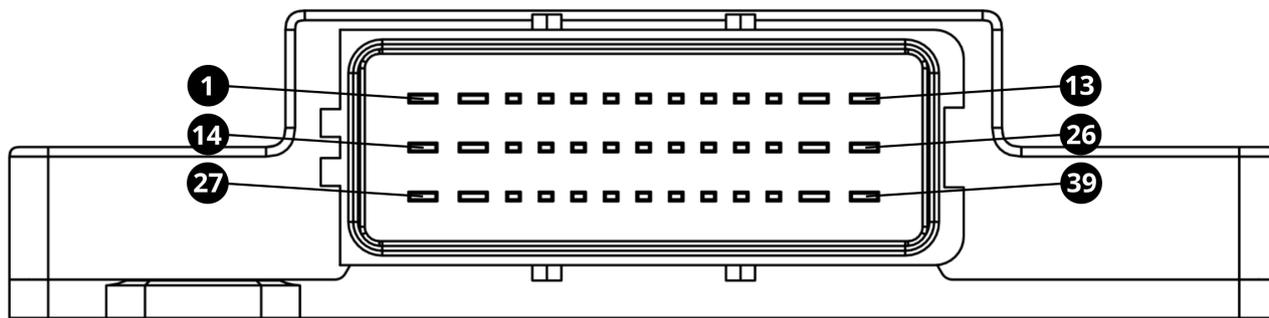


## PMU-24 DL Pinout v1.0

Device view:



Connector part numbers:

Connector series	Sicma / FCI 39 Positions	
Terminal 1.5 mm	211CC2S2160P	13-17 AWG
Terminal 2.8 mm	211CC3S2120	14-16 AWG
Terminal 2.8 mm	211CC3S3120	10-12 AWG

### Power pins

Name	Count	Description
+12V battery	1	Main power supply connection for outputs and PMU itself. Connected through the stud in the middle of the device.
+12V sw	1	+12V signal input to switch the PMU on or off. Should be connected to +12V after the ignition switch.
Ground	1	Ground connection for the device supply current, elements connected to inputs and flyback return path. Connect to the supply ground using the thickest and shortest connection possible to provide good flyback current path.
+5V output	1	+5V sensor supply. Can provide up to 500 mA of current.

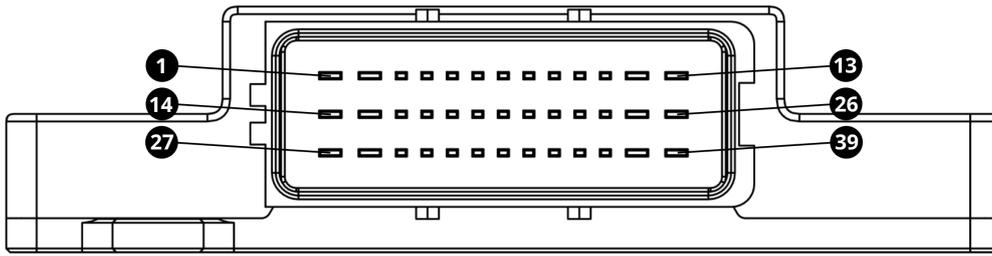
### Communication pins

Name	Count	Description
CAN1H/L	2	CAN bus, fixed 1 Mbps, used for communication with PC and peripheral devices. Communication with PC software can only be done through this CAN bus. No internal termination resistor. External termination is required. Fully configurable communication.
CAN2H/L	2	CAN bus, configurable speed, used for communication with peripheral devices. Configurable speed: 125, 250, 500, and 1000 kbps. Software controlled termination resistor. Fully configurable communication

Input pins		
Name	Count	Description
Input A1-A8	8	<p>Analog signal input.</p> <p>Input for analog signals (voltage). Analog signals must be connected between these inputs and ground. Pull resistor can be selected through software, independently for every input. The available options are 1M<math>\Omega</math> pull down, 10k<math>\Omega</math> pull down and 10k<math>\Omega</math> pull up.</p> <p>Measurement frequency: 500 Hz. Measurement resolution: 10 bit. Measurement voltage range: 0-5 V. Maximum input voltage: 20 V.</p>
Input A9-A16 (shared with Output O17-O24)	8	<p>Analog signal input or power output.</p> <p>Input for analog signals (voltage). Analog signals must be connected between these inputs and ground. Those pins can be configured as input or output in the software. Pull resistor can be selected through software, independently for every input. The available options are 1M<math>\Omega</math> pull down, 10k<math>\Omega</math> pull down and 10k<math>\Omega</math> pull up.</p> <p>Measurement frequency: 500 Hz. Measurement resolution: 12 bit. Measurement voltage range: 0-20 V. Maximum input voltage: 30 V.</p>

Output pins		
Name	Count	Description
Output O1-O5 Output O12-O16	10	<p>25 A high side outputs.</p> <p>Power outputs that can be disconnected (Hi-Z) or connected to the supply voltage (+12 V). Outputs can be connected in parallel to increase current capabilities. Configurable overcurrent protection. Short circuit/overtemperature protection. Current measurement. Outputs O1 and O16 have integrated high power flyback diodes. PWM capability.</p> <p>Minimum current measured: 0.5 A typical (2 A max). Maximum current measured: 120 A. Maximum peak current: 120 A. Maximum peak current time: 2s. Maximum constant current: 25 A. Minimum PWM frequency: 4 Hz. Maximum PWM frequency: 400 Hz. Voltage measurement range: 0-16 V. Turn off voltage clamp: 36 V.</p>
Output O6-O11	6	<p>15 A high side outputs.</p> <p>Power outputs that can be disconnected (Hi-Z) or connected to the supply voltage (+12 V). Outputs can be connected in parallel to increase current capabilities. Configurable overcurrent protection. Short circuit/overtemperature protection. Current measurement. Integrated flyback diode. Output O8 has additional functionality to allow wipers motor braking.</p> <p>Minimum current measured: 0.2 A. Maximum current measured: 60 A. Maximum peak current: 120 A. Maximum peak current time: 2s. Maximum constant current: 15 A. Voltage measurement range: 0-16 V.</p>

Output pins		
Name	Count	Description
Output O17-O24 (shared with Input A9-A16)	8	<p>7 A high side outputs.</p> <p>Power outputs that can be disconnected (Hi-Z) or connected to the supply voltage (+12 V). Those pins can be configured as input or output in the software.</p> <p>Outputs can be connected in parallel to increase current capabilities.</p> <p>Configurable overcurrent protection.</p> <p>Short circuit/overtemperature protection.</p> <p>Current measurement.</p> <p>Integrated flyback diode.</p> <p>PWM capability.</p> <p>Minimum current measured: 0.1 A.            Maximum current measured: 25 A.            Maximum peak current: 70 A.            Maximum peak current time: 2s.            Maximum constant current: 7 A.            Minimum PWM frequency: 4 Hz.            Maximum PWM frequency: 100 Hz.            Voltage measurement range: 0-20 V.</p>

**Device view:**


Pin	Name	Description
1	Output O13	25 A high side output.
2	Output O12	25 A high side output.
3	Output O11	15 A high side output.
4	Output O10	15 A high side output.
5	Output O9	15 A high side output.
6	Input A9 / Output O17	Analog signal input or 7 A high side output. Selectable in software.
7	+12V sw	+12V signal input to switch the PMU on or off.
8	Input A14 / Output O22	Analog signal input or 7 A high side output. Selectable in software.
9	Output O8 (wipers)	15 A high side output. Additional functionality for wipers motor braking.
10	Output O7	15 A high side output.
11	Output O6	15 A high side output.
12	Output O5	25 A high side output.
13	Output O4	25 A high side output.
14	Output O14	25 A high side output.
15	+5V output	+5V sensor supply.
16	Input A2	Analog signal input.
17	Input A4	Analog signal input.
18	Input A6	Analog signal input.
19	Input A8	Analog signal input.
20	Input A11 / Output O19	Analog signal input or 7 A high side output. Selectable in software.
21	Input A13 / Output O21	Analog signal input or 7 A high side output. Selectable in software.
22	Input A16 / Output O24	Analog signal input or 7 A high side output. Selectable in software.
23	CAN1H (PC comm)	CAN bus, fixed 1Mbps, used for communication with PC and peripheral devices.
24	CAN2H	CAN bus, configurable speed, used for communication with peripheral devices.
25	Ground	Device ground
26	Output O3	25 A high side output.
27	Output O15	25 A high side output.
28	Output O16	25 A high side output.
29	Input A1	Analog signal input.
30	Input A3	Analog signal input.
31	Input A5	Analog signal input.
32	Input A7	Analog signal input.
33	Input A10 / Output O18	Analog signal input or 7 A high side output. Selectable in software.
34	Input A12 / Output O20	Analog signal input or 7 A high side output. Selectable in software.
35	Input A15 / Output O23	Analog signal input or 7 A high side output. Selectable in software.
36	CAN1L (PC comm)	CAN bus, fixed 1Mbps, used for communication with PC and peripheral devices.
37	CAN2L	CAN bus, configurable speed, used for communication with peripheral devices.
38	Output O1	25 A high side output.
39	Output O2	25 A high side output.

Document revision history:

Revision	Date	Changes
1.0	2023-09-27	- first public version