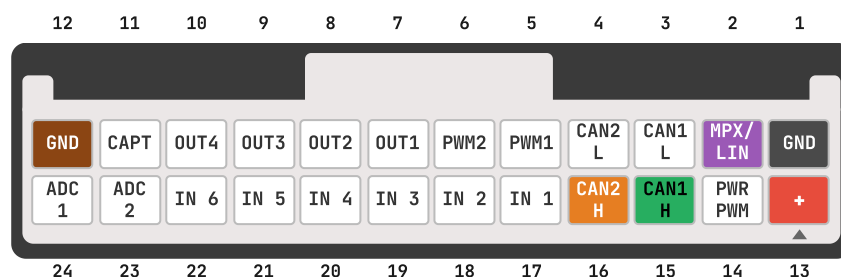


U1 v5.x board

The U1 v5 board is the base of GoSwap CAN adapters. Its 24-pin connector carries power, OUT and PWM outputs, six IN inputs, two CAN buses, an MPX bus and ADC inputs. What each pin does in your adapter is set by its firmware, and the polarity of outputs and inputs – by jumpers on the board. All U1 adapters are pin-compatible at the connector, provided all jumpers are soldered correctly.

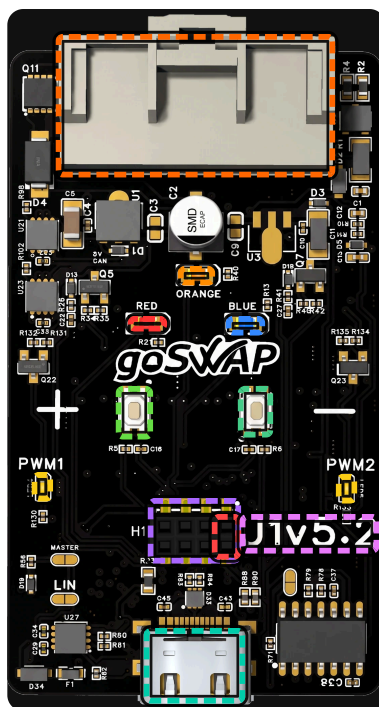
How to tell the revision. The revision is printed in large letters on the top side of the board, next to the logo: U1v5, U1v5.1 or U1v5.2. It is marked on the photo below as “Board revision”.

Connector



NAME	DESCRIPTION	NAME	DESCRIPTION
1 GND	Ground (black wire)	24 ADC1	ADC input, max 5 V ADCx IN – input, active on + or on ground with pull-up
13 +12V	Ignition (red wire)	23 ADC2	
14 PWR PWM [+]	Power output (positive)	17 IN1	Digital input with configurable polarity IN5, IN6 CAPT – frequency capture
5 PWM1 [–]	Signal outputs (negative) PWMx IN – input, active on ground	18 IN2	
6 PWM2 [–]		19 IN3	
PWM1 IN [–]		20 IN4	
PWM2 IN [–]		21 IN5	
		22 IN6	
7 OUT1	500 mA outputs with configurable polarity OUTx IN – input, active on +12 V · OUTx ADC – voltage measurement 0...14 V	IN5 CAPT	CAN1 digital bus
8 OUT2		15 CAN1 H	
OUT1 IN [+]		4 CAN2 L	CAN2 digital bus
OUT2 IN [+]		16 CAN2 H	
OUT1 ADC		2 MPX	MPX, K-Line or LIN bus – one at a time: the adapter firmware sets which Can also work as an input or an output
OUT2 ADC		2 K-LINE	
9 OUT3	Signal input (positive) +5V – 5 V sensor supply (from v5.1)	LIN	Sensor ground (brown wire)
OUT3 IN [+]		12 GND	
OUT4 IN [+]			
OUT3 ADC			
OUT4 ADC			
11 CAPT [+]			
+5V			

Board — top side



● Red LED

Operation indicator. What the colour means depends on the adapter — see its manual.

● Orange LED

Same on every adapter: 10 blinks — communication error. Anything else depends on the adapter — see its manual.

● Blue LED

Operation indicator. What the colour means depends on the adapter — see its manual.

● USB port

USB Type-C — updates and setup via the configurator.

● Programming connector

Connector for flashing the firmware at the factory.

● + button

Manual adapter setup: hold the button while powering on and the adapter enters a setup mode; in that mode a press increases the value. What is set and how is in your adapter's manual.

● - button

Manual adapter setup: hold the button while powering on and the adapter enters a setup mode; in that mode a press decreases the value. What is set and how is in your adapter's manual.

● Settings reset connector

Only for older adapters without the configurator: reset to factory settings with a jumper at power-on. When it works, all LEDs blink rapidly.

● Main connector

24-pin connector for vehicle wiring: power, CAN, inputs/outputs.

● Board revision

The label on the board is its revision: U1v5, U1v5.1 or U1v5.2.

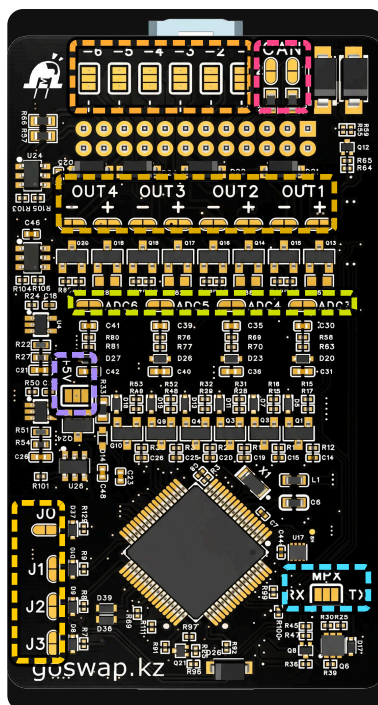
● Yellow LED PWM1

LED PWM1 blinks together with the PWM1 output. It lights up only when a device is connected to the output: the output switches it to ground. With nothing connected the LED stays off — this is not a fault.

● Yellow LED PWM2

LED PWM2 blinks together with the PWM2 output. It lights up only when a device is connected to the output: the output switches it to ground. With nothing connected the LED stays off — this is not a fault.

Board — bottom side



● J jumpers (J0-J3)

What they switch on is set by the adapter firmware – for example, the fan type. Which ones to solder is in your adapter’s manual.

● IN jumpers

Polarity of inputs IN1...IN6 – one jumper per input: [+] or [–].

● OUT jumpers

Polarity of outputs OUT1...OUT4: [+] or [–].

● OUT ADC jumpers

Let an OUT1...OUT4 output work as an input that measures 0...14 V. Prepared at the factory for a specific adapter.

● CAN jumpers

Built-in 120 Ω resistor for the CAN1 or CAN2 bus. When to solder it – see “Jumpers”.

● MPX jumpers

Multiplex bus RX/TX. RX is soldered by default.

● CAPT / +5V jumper

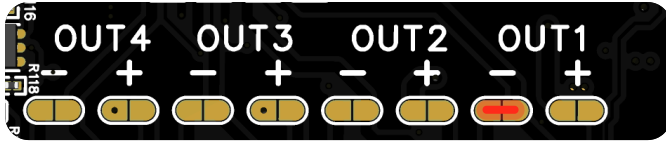
Sets how the CAPT pin (11) works: soldered towards “+5V” – a 5 V output to power sensors (never connect +12 V to the pin then); the other way – a frequency capture input. Soldered at assembly for the specific adapter.

Jumpers

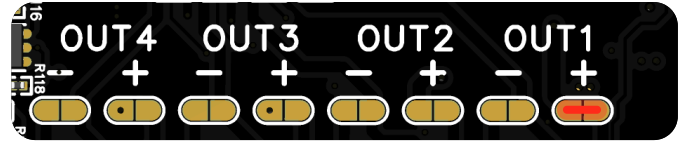
Which jumpers to solder for your adapter is in its manual. This page lists every jumper on the board.

OUT jumpers

OUT [+] / [-] jumpers change the polarity of the output signal: [+] – the output supplies +12 V, [-] – it pulls the pin to ground.



OUT1 [-] switches to ground

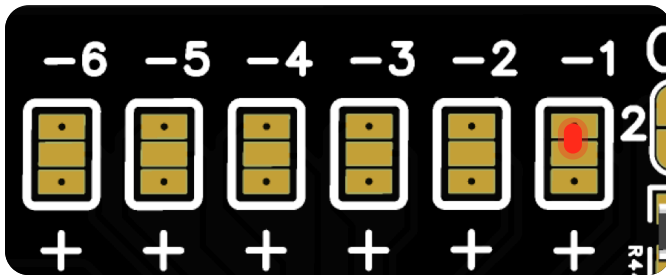


OUT1 [+] supplies +12 V

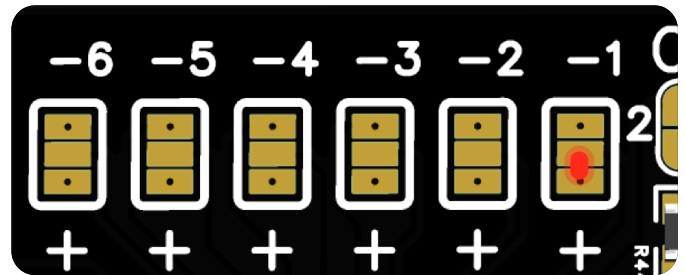
Do not solder both jumpers on the same channel!

IN jumpers

IN [+] / [-] jumpers change the polarity of the input signal: [+] – the input triggers on +12 V, [-] – on a short to ground.



IN1 [-] active on ground

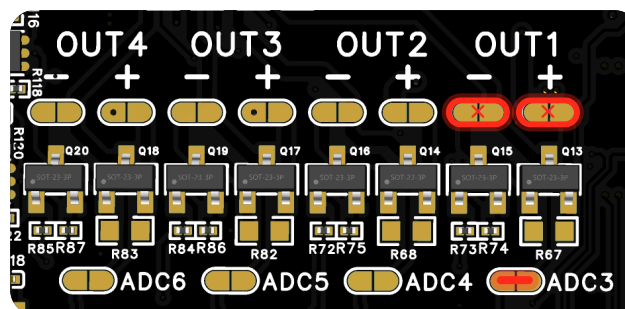


IN1 [+] active on +12 V

Output as input · ADCn OUTn

An output can work as an input: the “ADCn OUTn” jumper connects the pin to a 0...14 V voltage meter, with the OUTn [+] and OUTn [-] jumpers left open. Such a board is prepared at the factory for a specific adapter.

OUT1 IN



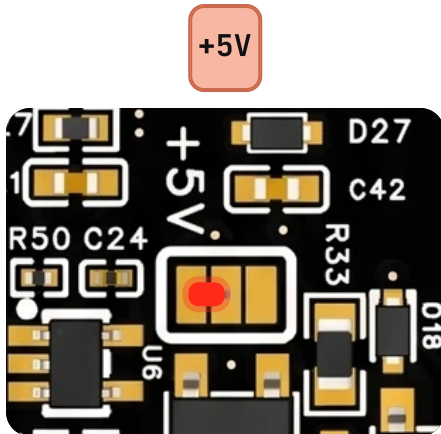
ADC3 OUT1 soldered, OUT1 [+] and OUT1 [-] removed (crosses) · connector pin 7

Do not solder the OUT1 [+] and OUT1 [-] jumpers – the input will read incorrectly.

The other outputs work the same way: OUT2 – ADC4, OUT3 – ADC5, OUT4 – ADC6.

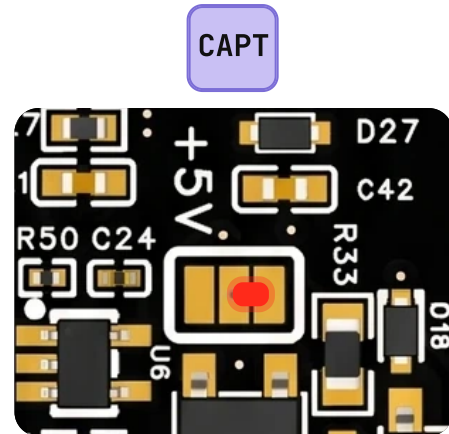
CAPT / +5V jumper

Pin 11 works in one of two ways, chosen by a three-pad jumper on the bottom side of the board. CAPT is a frequency input: engine speed, vehicle speed. +5V is a 5 V output to power sensors. The middle pad is the pin itself: it is soldered either to the pad by the “+5V” label or to the other one. It is soldered at assembly for the specific adapter. The jumper is on boards from revision v5.1; v5 does not have it.



+5 V output: the middle pad soldered to the pad by the “+5V” label · connector pin 11

With the jumper at +5V, never connect +12 V to pin 11!

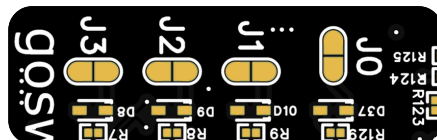


CAPT input: the middle pad soldered to the one away from the “+5V” label · connector pin 11

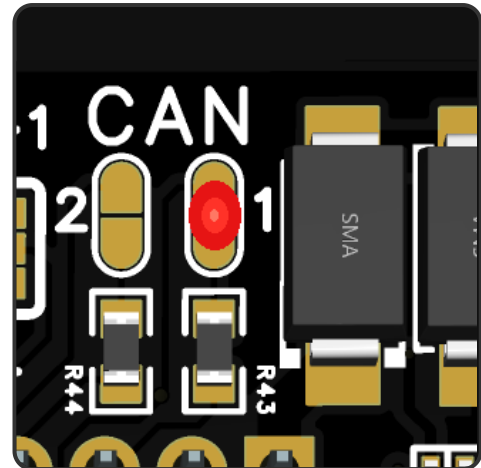
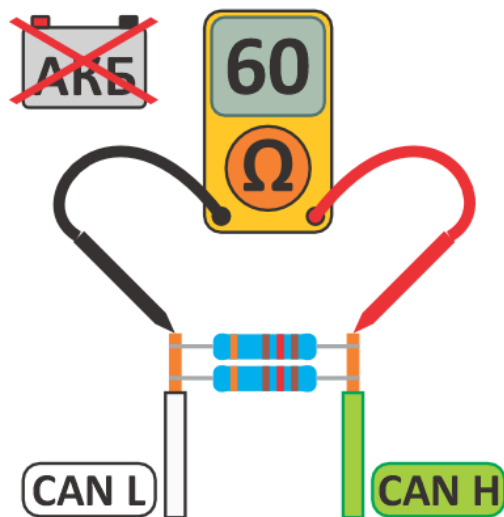
The CAPT input is positive-triggered [+]: it captures the frequency of a signal that supplies a voltage. It does not see the wire being switched to ground.

J0...J3 jumpers

What these jumpers switch on is set by the adapter firmware: for example, on fan adapters the fan type is chosen by soldering J1...J3. Which ones to solder is in your adapter’s manual. J0 appeared in revision v5: earlier boards have only J1...J3.



| CAN termination jumper



For proper CAN mode operation, the resistance between CAN H and CAN L wires must be 60 Ω. Measure resistance with the adapter connected and battery disconnected. The adapter has a built-in 120 Ω resistor – solder the CAN1 or CAN2 jumper if needed – for the bus the adapter is connected to.

Question about wiring? Call or message us on WhatsApp: +7 747 505 1212