

# Operating instructions

## Proppas control module PGS01

(Art. No. 109535898)

### 1 Intended purpose

The control module PGS01 converts the simple switching function **Gas + On/Off** or **Gas - On/Off** – as used by a manual control system or a winch remote control for speed control of the motor – into a continuous control variable. By means of jumpers, different control variables with positive or negative characteristics can be selected. In the set-up menu (Section 5), the start value and end value and control time can be adjusted - see Section 3.

### 2 Mounting and connecting up

Mount the module at a suitable place in the vehicle using the mounting strap on the housing. Plug in the cable using the 6-pole Molex connector with the pins allocated as shown in the table.

Contact No. 6-pole Molex	Wire colour	Description
1	pink	+12 V
2	brown	Masse, 0 V
5	yellow	Gas+ (G+)
6	green	Gas- (G-)
4	grey	PE (+12 V)
3	white	Prop-output

Programming input

### 3 Control variables and characteristics

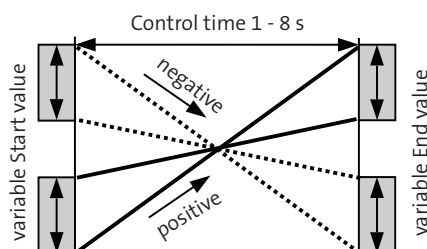
#### 3.1 Control variables

- Voltage (0 to 4.9 V) with load towards 0 V
- Current source (0 to -20 mA) with load towards 0 V
- Current sink (0 to 20 mA) with load towards +12 V

Characteristic	Voltage source	Current source	Current sink
Positive	0 to 4.9 V	0 to -20 mA	0 to 20 mA
Negative	4.9 to 0 V	-20 to 0 mA	20 to 0 mA

#### 3.2 Control characteristics

- Characteristic positive
- Characteristic negative
- Control time



#### 3.3 Factory settings

Unless otherwise agreed, the following values are set at the factory:

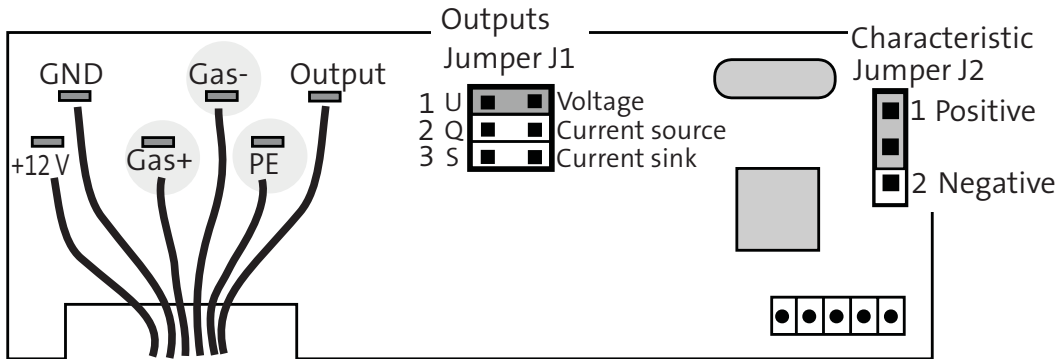
- Control variable: voltage 1 to 4 V
- Characteristic: positive
- Control time: 3 seconds

If required the start value, end value and control time can be changed; also with the housing closed (Section 5).

## 4 Changing control variables and characteristics

To change the output to the control variables 'current source' or 'current sink' with positive or negative characteristic, the jumpers have to be changed. To do this, however, the circuit board must first be removed from the housing.

### 4.1 Circuit board



### 4.2 Development of the circuit board

Undo the module mounting, unplug the connection cable and then unscrew the 4 fixing bolts to remove the plastic cover. Press off the cover outwards by pushing a screwdriver through the holes in the cover. Put the circuit board down on a clean surface.

### 4.3 Coding of the Jumpers

Insert the jumpers for the required operating mode in the appropriate positions according to the table below:

Pos.	Output	Characteristic	
		Positive	Negative
1	Voltage	J1-1 + J2-1	J1-1 + J2-2
2	Current source	J1-2 + J2-1	J1-2 + J2-2
3	Current sink	J1-3 + J2-1	J1-3 + J2-2

#### Control options at the output using a multimeter (voltmeter/ammeter):

##### Output voltage - Jumper J1, Pos. 1:

Connect a voltmeter with measuring range > 5 V between the output and GND.

##### Current source - Jumper J1, Pos. 2:

Connect an ammeter with measuring range > 25 mA between output and GND (0 V).

##### Current sink - Jumper J1, Pos. 3:

Connect an ammeter with measuring range > 25 mA between output and +12 V.

(The characteristic can be changed from positive to negative for each of the three control variables.)

#### Characteristic:

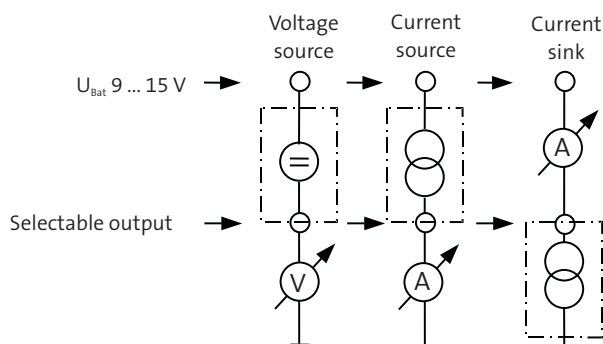
##### J2 Pos. Jumpers 1 - Characteristic positive

##### J2 Pos. 2 Jumpers - Characteristic negative

After setting the jumpers, push the circuit board back into the housing, making sure that the seal is in the right place, and taking care not to tighten the 4 fixing screws too tightly.

## 5 Menu for setting the control profile

As described in Section 4, and conform to the diagram below, connect the voltmeter or ammeter to the output and set the desired control characteristic.



During set-up, the programming input **PE** in each menu point **MP** must as specified either be switched on, i.e. connected to  $+U_{bat}$  or switched off, i.e. left open.

After a menu point has been activated, the programming input must first be switched off before a new value is entered.

### 5.1 Setting the start value, end value and control time

- Switch on the winch remote control with receiver and transmitter. **Make the settings using the Gas+ / Gas- buttons on the transmitter and the programming input on the Proppas module.**
- When activating each menu point, setting must begin within 10 seconds, otherwise the program returns automatically to normal operation.
- For a sensitive setting of the start value, end value and control time, the control variable changes only slowly.

#### 5.1.1 Setting the start value Menu point MP1

Connect input **PE** for longer than 1 second to  $U_{bat}$  and at the same time hold down the G- button on the transmitter for at least 10 seconds until the control variable (current or voltage) changes for 1 second in each case **once** between the min and max value. Release the G- button and switch off **PE**.

Now set the desired start value of the control variable using the G+ / G- buttons on the transmitter. Select the next menu point within 10 seconds, otherwise the program returns automatically to normal operation.

#### 5.1.2 Setting the end value Menu point MP2

Connect input **PE** for longer than 1 second to  $U_{bat}$  until the control variable (current or voltage) for 1 second in each case changes **twice** between the min and max value and thus displays menu point MP2. Switch off **PE**. Set the desired end value of the control variable using the G+ / G- buttons on the transmitter.

#### 5.1.3 Setting the control time Menu point MP3

Connect input **PE** for longer than 1 second to the voltage, until the control variable (current or voltage) for 1 second in each case changes **three times** between the min and max value and then finally stops at half the maximum value. Switch off **PE**.

Every time the **PE** button is pressed, the control time is increased in steps of 1 second to the max. value of 8 seconds. To show the button is working correctly, the start value changes briefly each time. If the Gas + button is pressed 8-times or more, then the control time will be set to the max. 8 seconds.

## 6 Skipping menu points using the programming input

You move from one menu point to the next, and then from menu point 3 back to normal operation again, by switching the programming input on and then off again for more than 1 second in each case. You must wait until the toggling between the max. and min. values has finished to get to the respective menu point, as only then can the desired value be set or the menu point exited.

## 7 Return from the menu to normal operation

The return to normal operation from any of the three menu points occurs automatically, if no button is pressed for 10 seconds or more and the programming input **PE** is switched off. From menu point MP3 you can also return directly to normal operation if **PE** is switched on and off again for longer than 1 second.

## 8 Using the Progas function

Leave the programming input **PE** open. The Gas+ / Gas- buttons on the transmitter can be used to change the control variable with the programmed control time between the starting value and end value. The programmed start value, end value and control time also remain stored when the module is switched off. When the Progas module is switched on, the start value is always shown first.

By pressing the Gas+ button twice, the control value jumps directly to the preset end value; by pressing the Gas- button twice, it jumps directly to the preset start value.



With negative characteristics the start value is generally higher than the end value.

## 9 Data

Supply voltage	9 to 15 V
Input current	< 40 mA
voltage output	0 to 4.9 V at $\geq 6.8 \text{ k}\Omega$
Output current source / sink	0 to > -20 mA / 0 to < 20 machine at $\leq 270 \Omega$
max. sum of R-load x I	< $U_{\text{bat}} - 1.5 \text{ V}$
Step size	0.4% of the max. possible range
Variation start/end value:	0 to 48% / 60 to 100% of the max. range
Housing size (LxBxH)	
without mounting strap	(112x37x47) mm
with mounting strap	(112x37x66) mm