INDIVIDUAL HYDRAULICS

Short description of the module:

The electronics are designed for actuating proportional hydraulic valves with regulated control current and defined current ripple.
The frequency of the current ripple can be chosen from 125 Hz, 250 Hz or 500 Hz.
The module is designed for operation in 12 VDC and 24 VDC systems. Switching from 12 VDC to 24 VDC is done automatically with an input voltage over 16 VDC.
The maximum output current is 2000mA with 12 VDC and 1000mA at 24 VDC. The values for the minimum and maximum current can be programmed and can be stored permanently.
The current regulator can be switched between operating modes for proportional solenoids with 750 mA and proportional solenoids with 900 mA, to maintain optimal control.

The module is equipped for operation with a proportional control (Joystick, proportional rocker, etc.) with a control voltage of approximately 0.5 -4.5V, whereby approximately 2.5V corresponds with the center position. The precise values for center position, distance and direction can be programmed.
A supply voltage of 5V (max. 100mA) is generated in the module and provided for the proportional control encoder.

Cable break:
Control voltage values under 0.25V and over 4.75V are treated as faults (cable break recognition). In this case, the outputs are switched off immediately. If the electronics are in programming mode, it is aborted immediately. The fault is indicated by both LEDs flashing quickly and simultaneously.
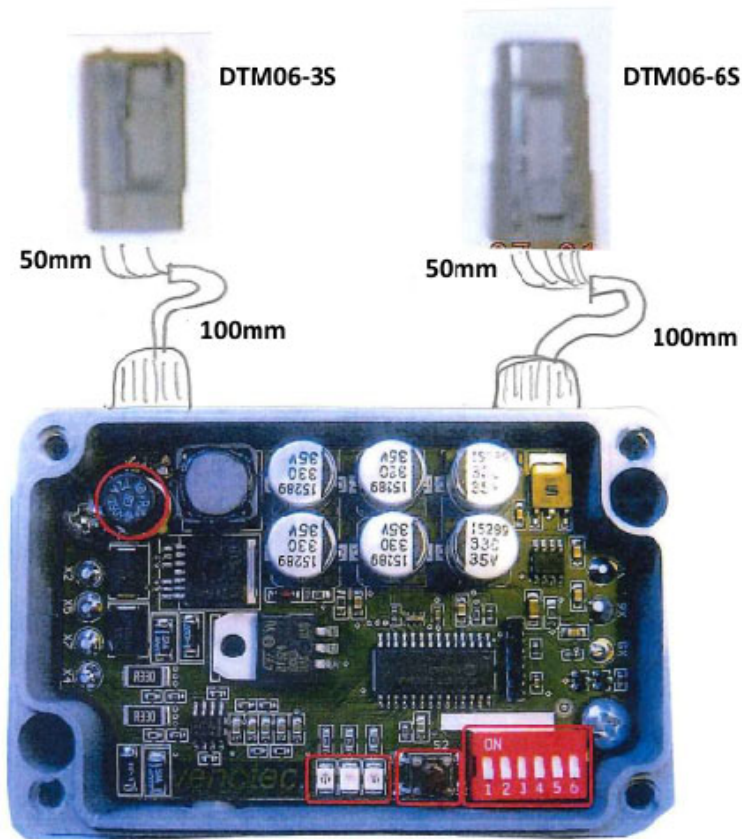
Overvoltage
The electronics are equipped with overvoltage protection. With an input voltage of over 36V, the internal microfuse is triggered via the protective circuit, which interrupts the inflow.

Terminal assignments:

DTM06-3S

Pin	power line	designation
1	grau	5V supply for joystick (maximum 100mA)
2	braun	control voltage input for joystick (0,5..4,5V)
3	schwarz	Minus supply voltage joystick

DTM06-6S

Pin	powerline	designation
1	rot	Plus supply voltage (12V/24V)
2	weiß	Puls valve 1
3	blau	Minus valve 2
4	schwarz	Minus supply voltage
5	braun	Minus valve 1
6	grau	Plus valve 2

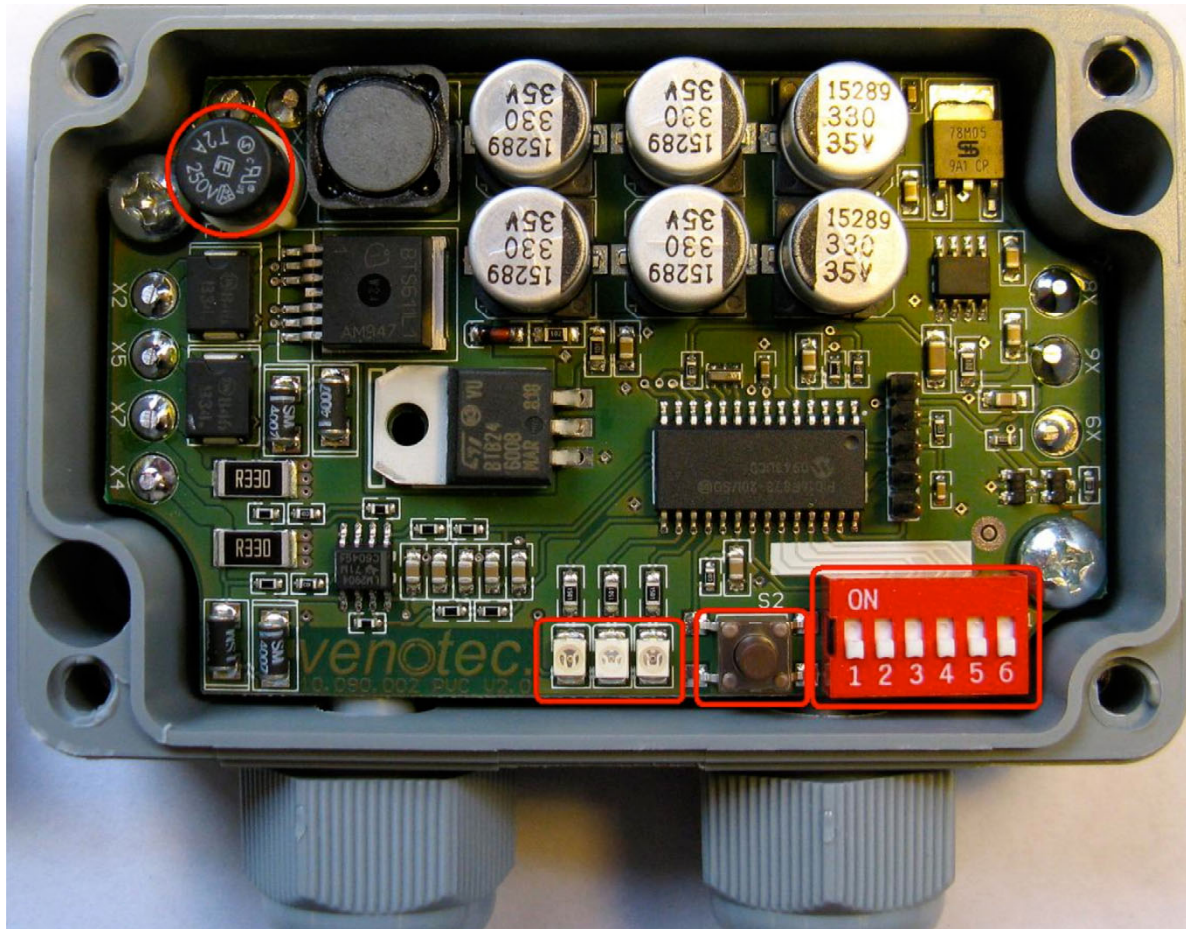INDIVIDUAL HYDRAULICS

Fig.1: Positions of operational and display elements:
    Top left: Microfuse 2A slow (orderNo. 311.201.000.6)

    Under: (from left to right)   LED1= not in use, LED2 =green,   LED3= red
                                     Programming Key
                                     6-fold DIP switch (5 and 6 nit in use)

DIP switch allocation:

DIP1:DIP2	Frequency setting:	
	DIP1 Off : DIP2 Off	500 Hz
	DIP1 Off : DIP2 On	500 Hz
	DIP1 On : DIP2 Off	250 Hz
	DIP1 On : DIP2 On	125 Hz
DIP3:	Change of control characteristics and max. current (where appropriate, consult manufacturer)	
	DIP3 On: 0,8 A	
	DIP3 Off: 1 A	
DIP4:	Programming:	
	DIP4 On: Joystick distance programming	
	DIP4 Off: Valve flow programming	
DIP5 and DIP6	not in use	

Comment: All dip switches in fig. 1 are in the "Off" position

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Programming the joystick distance:

In this case, switch DIP4 must be in position "On".
- To start programming, hold the button pressed down on the module for approximately 3 seconds until the red LED is illuminated. The red LED is always the sign of an activated programming mode.
  - o   The green LED goes out and flashes once every 2 seconds.
- Move the joystick to the center position and actuate the button once briefly.
  - o   The green LED flashes twice every 2 seconds now.
- Hold the joystick on the stop in the desired direction for valve 2 and press the button briefly.
  - o   The green LED flashes three times every 2 seconds now.
- Hold the joystick on the stop in the other direction and press the button briefly.
  - o   The green LED goes out and the red LED flashes quickly. The joystick values can be tested now but are not yet saved.

To *Save*, hold the button pressed for approximately 2 seconds until the green LED is illuminated. The values are now stored permanently.
To *Abort*, press the button briefly. The controller resets all values.

Programming the valve currents:

In this case, switch DIP4 must be in position "Off". *The joystick distance must already have been programmed.*
- To start programming, hold the button pressed down on the module for approximately 3 seconds until the red LED is illuminated. The red LED is always the sign of an activated programming mode.
  - o   The green LED is illuminated and goes out briefly once every 2 seconds.
- Move the joystick out until the current at which the valve just starts to open is achieved and hold it there (optional movement). Now, press the button briefly.
  - o   The green LED is illuminated and goes out briefly twice every 2 seconds.
- Move the joystick out until the maximum desired current is achieved and is held there (optional movement). Now, press the button briefly.
  - o   The green LED goes out and the red LED flashes quickly. The valve flow values can not be tested but are not yet sorted. The flow valves are set equally for both values.

To *Save*, hold the button pressed for approximately 2 seconds until the green LED is illuminated. The values are now stored permanently.
To *Abort*, press the button briefly. The controller resets all values.
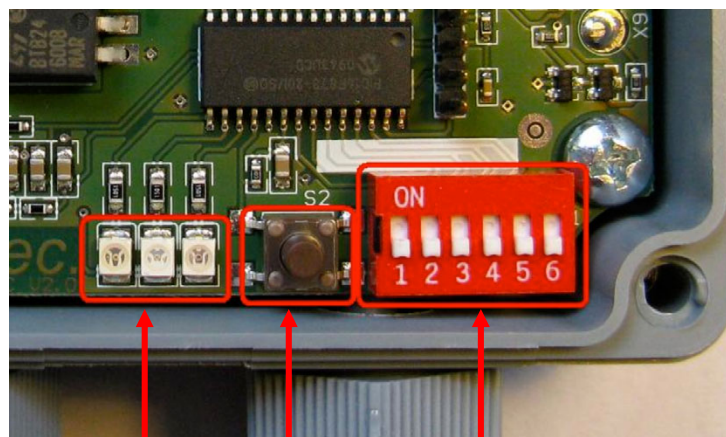
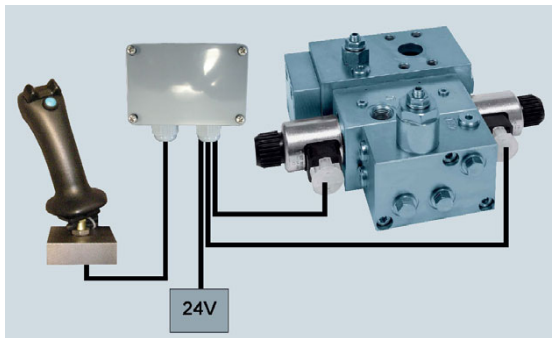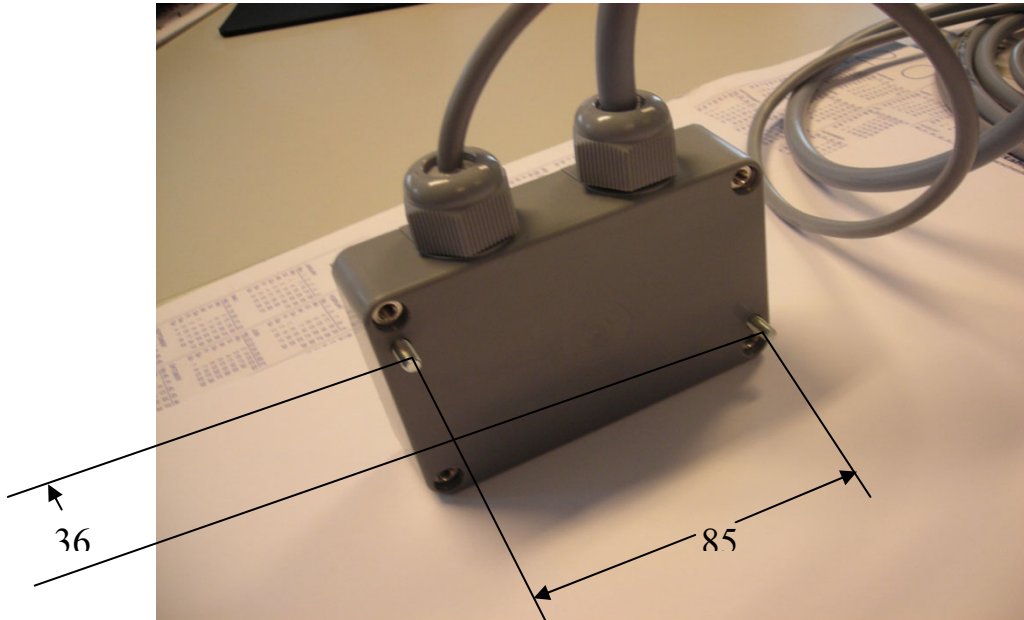LEDs   Programming Key   6-fold DIP switch

Fastening: 2x M4

Figure: Actuation from proportional flow control valve