UV07 Datasheet

UV07 is the heart of a **Usevolt** control system. It is a control handle which includes all necessary electronics for controlling hydraulic valves directly regardless of the valve manufacturer. Thus it needs to be accompanied only by **UV0D** to create a control system which is easy to install and intuitive to use.

UV07 control handle is designed to be reliable. The joystick sensors are magnetic HAL-effect sensors, which do not have mechanical, wearable components.

- Operating temperature -30 … +80 ^{o}C
- CAN 2.0B interface
- Durable aluminum enclosure
- Designed for 12V and 24V operation
- 10 proportional PWM power outputs with current sense or with 5 ratiometric analog voltage outputs for driving Danfoss PVG (PVEM) valves.
- 3 analog voltage inputs
- 1 digital voltage input pair
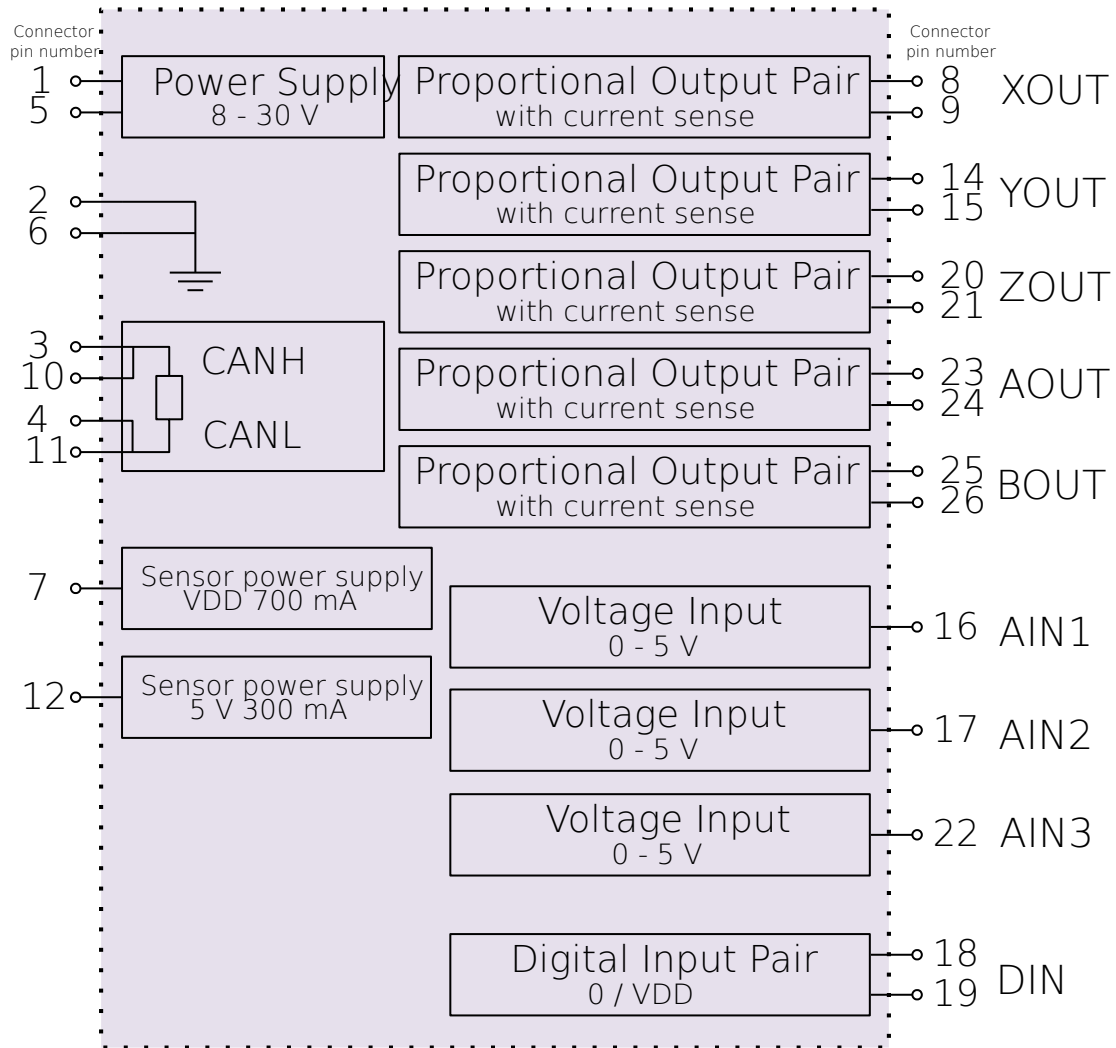- 1 analog current input 0 - 20 mA

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Technical Specifications

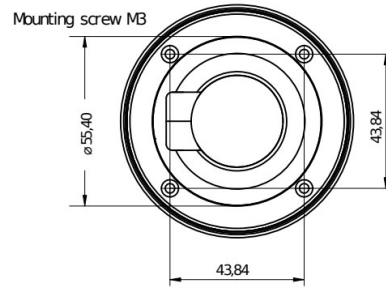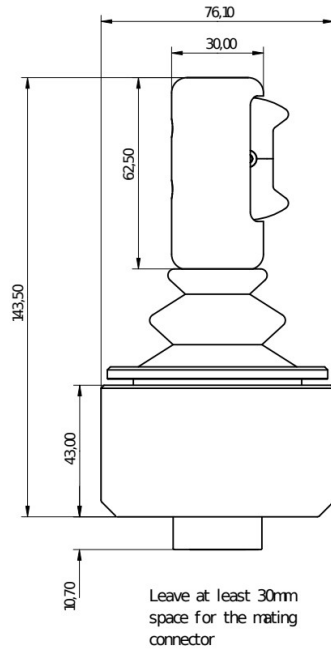|	
Voltage	8 - 30 VDC
Protection	Over voltage & Reverse voltage External 15 A fuse required
Current Consumption	Logic 20 mA, outputs up to 10 A
Mating Connector	Superseal 3-1437290-7
Interface	1 x CAN-bus 2.0B
Material	Aluminum, brass, ABS, POM
Programming language	C, with open source **uv_hal** library
IP-rating	IP65
Microcontroller	32-bit ARM Cortex-M3
Memory	256 KB Application flash memory 36 kB RAM memory
Outputs	10 x proportional high-side PWM output with current sense **or** 5 ratiometric analog voltage outputs & switched power output
Output max current / voltage	2500 mA / 0 - 80% U_{dc}
Inputs	3 x analog voltage input 1 x digital voltage input pair

System Diagram

UV071

Connector
pin number

Pin	Block	Pin	Output

1
5 — Power Supply 8 - 30 V

Proportional Output Pair — with current sense — 8 / 9 XOUT

2
6 (ground)

Proportional Output Pair — with current sense — 14 / 15 YOUT

3
10 — CANH

Proportional Output Pair — with current sense — 20 / 21 ZOUT

4
11 — CANL

Proportional Output Pair — with current sense — 23 / 24 AOUT

Proportional Output Pair — with current sense — 25 / 26 BOUT

7 — Sensor power supply VDD 700 mA

12 — Sensor power supply 5 V 300 mA

Voltage Input 0 - 5 V — 16 AIN1

Voltage Input 0 - 5 V — 17 AIN2

Voltage Input 0 - 5 V — 22 AIN3

Digital Input Pair 0 / VDD — 18 / 19 DIN

System diagram for UV07 supplied with proportional current outputs

Input / Output type	Description
Proportional Output Pair	Proportional output pair is a high-side driver used to directly control two-directional hydraulic valves. The output pin should be connected to the hydraulic valve's coil, while the other end of the coil should be connected to vehicle ground. One proportional output pair has two pins that can be used to drive 2 coils as required by two-directional hydraulic valve. Note that only one of the pins can drive coil (be active) at any time. All proportional output pairs have internal current sense as well as internal short circuit and overheat protection. They operate as dual 0 - 2200 mA PWM power outputs.
Voltage Input 0 - 5 V	The 0 - 5 V voltage inputs are analog inputs that can measure the input voltage in the range of 0 - 5 V. Despite the internal over voltage protection, connecting any higher-than 5 V voltages to these pins should be avoided. The voltage inputs have internal 30 kΩ pull-down resistor.
Digital Input Pair 0 / VDD	The digital input pair consists of 2 digital voltage inputs that are supply voltage tolerant. They can be used as inputs for, for example, switches to control additional outputs. Only one of the two pins can be active at one time. If both pins are active, the logical state of the Digital input is read as non-active. The digital input pair can be configured to be active-high or active-low, with internal pull-down or pull-up resistor enabled, respectively.

Physical Dimensions

76,10

30,00

62,50

143,50

43,00

10,70

Leave at least 30mm
space for the mating
connector

Mounting screw M3

⌀55,40

43,84

43,84

Created by: OU	Title: UV07 Dimensions			
Supplementary information: Copyright Usevolt Oy		Size: A3	Sheet: 1/1	Scale: 1
All dimensions in millimeters		Part number: 1		
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