

LABOR – ASTER

INDUSTRIAL AUTOMATION



VOLTAGE CONVERTER TYPE U-S2

- Measurement of current $I \leq 5 \text{ A dc}$ or voltage $U \leq 500 \text{ V dc}$
- **Possibility of polarized input and output $\pm$, e.g. $\pm$**
- Full galvanic separation of the circuits

APPLICATION:

The converter U-S2 is designed to convert small increases of voltage or current DC to standard signal (e.g. 4...20mA).

The user can calibrate the beginning and the span of the range by potentiometers (ZERO and SPAN) which are places on the front panel of the converter.

After agreement any supply voltage can be realized ($18 \div 230 \text{ V DC}$ or AC).

BASIC TECHNICAL PARAMTERES

Input signal

- possible signals with $\pm$ polarization (e.g. $\pm 10 \text{ V}$, $\pm 20 \text{ mA}$ etc.)
- voltage - $\Delta U_{\min} = 5 \text{ mV}$, $\Delta U_{\max} = 500 \text{ V dc}$
 - current - $\Delta I_{\min} = 1 \mu\text{A}$, $\Delta I_{\max} = 5 \text{ A dc}$

Input resistance

- voltage input - $\geq 250 \text{ k}\Omega$ (10M Ω on request)
for 10M Ω check [U-S2-OK](#)
- current input - typically shunt 0,05W

Output signal

- any standard is for housing 12.5mm, for housing with a width of 22.5mm possible $\pm$ output (e.g. $\pm 10 \text{ V}$, $\pm 20 \text{ mA}$ etc.) and max power 2W

Load resistance

- output 0...5mA - 0...3k Ω
- output 0(4)...20mA - 0...800 Ω
- voltage output - $> 2 \text{ k}\Omega$

Output current max.

- 25mA

Class

- 0.1% standard
- 0.2% for atypical output signal of power $> 0.4 \text{ W}$

Nonlinearity

- $\pm 0.03\%$

Temperature drift

- for $\Delta I \leq 3 \mu\text{A}$, $\Delta U \leq 3 \text{ mV}$ - 0.02%/°C

- for $\Delta I > 3 \mu\text{A}$, $\Delta U > 3 \text{ mV}$ - 0.01%/°C

for thermocouples

- 0.03%/°C

Time constant

- 0.2s (or according to the order from range 0.05...1s)

Galvanic separation

isolation test voltage

- all circuits mutually separated
- 2kV, 50Hz or equivalent

Supply voltage

- version L - 230V, 50Hz

version W12.5 or W22.5

- 24Vdc/60mA (20...28V dc)
- or according to the order from range 18-230Vac/dc

Housing

- U-S2-L - rail 40mm IP40
- U-S2-W22.5 - rail 22.5mm IP20
- U-S2-W12.5 - rail 12.5mm IP20

Mounting

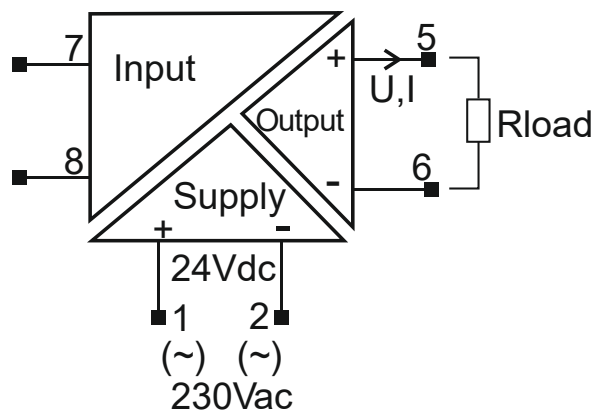
- on rail TS35



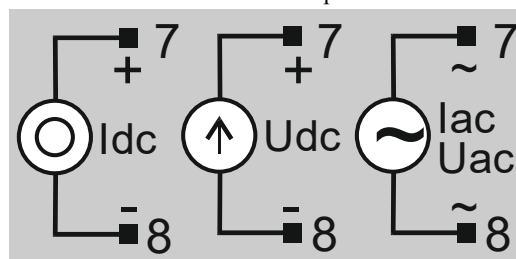
housing
12.5mm

housing
22.5mm

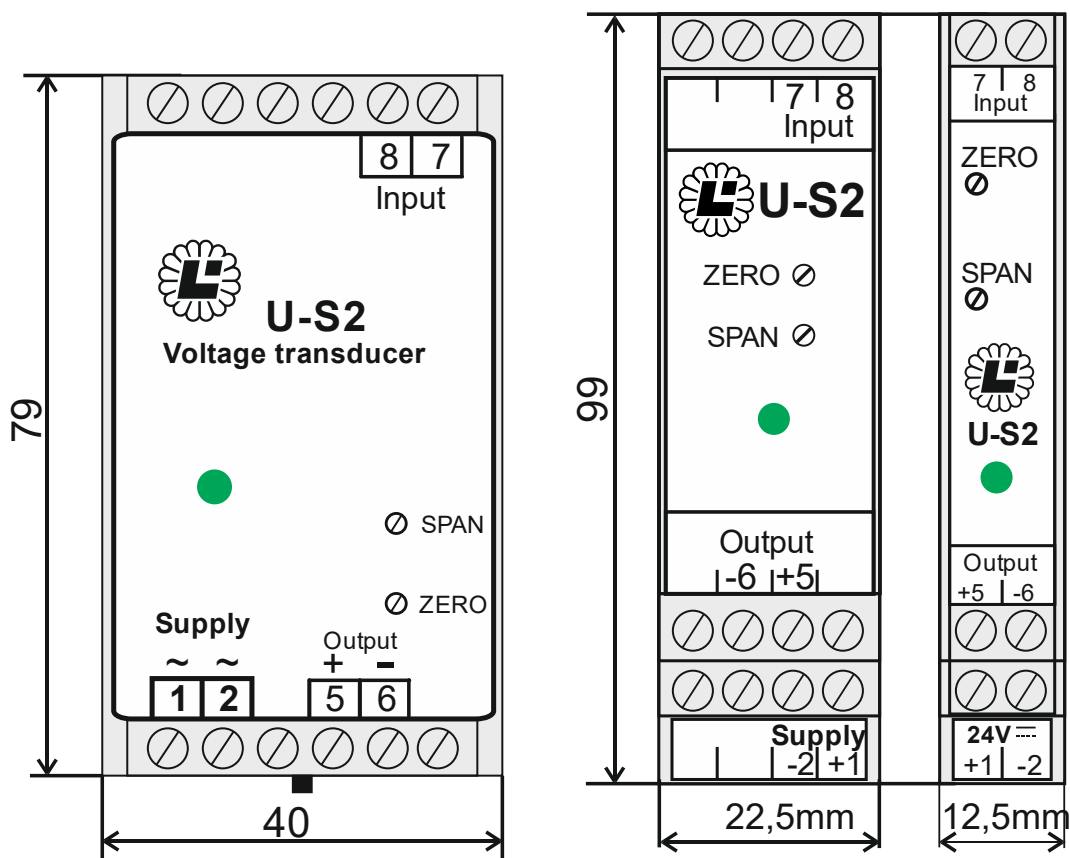
housing
40mm



Functional diagram of the U-S2 converter.
Terminals description.



Input connection



For unusual in/out signals
terminals 5,6,7,8 position
can be different than shown above

U-S2-L
supply 230Vac

U-S2-W22,5
supply 24Vdc

U-S2-W12,5
supply 24Vdc

HOW TO ORDER:

Housing: _____
L - rail housing, width 40mm,
for supply 230Vac
W12,5 - rail housing, width 12,5mm,
for supply 24dc, for standard output signals
W22,5 - rail housing, width 22,5mm,
for supply 24Vdc, for output signals +/-
 Power supply: 24Vdc, 230Vac or other _____
 Input range: _____
 Output range: _____
 1 - 0...5mA ; 2 - 0...20mA
 3 - active 4...20mA
 4 - 0...5V ; 5 - 0...10V;
 6 - 1...5V ; 7 - other non standard (describe)
 8 - passive 4...20mA

Order example :

- 1). Converter of the voltage, housing 22,5, supply 24V, input 0-5Adc, output 0-10V type
U-S2 – W12,5 – 24V – (0-5Adc) – 5

Production and distribution:

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The manufacturer reserves the right to make changes to the product. Issue 08/2025