

# LABOR – ASTER

## INDUSTRIAL AUTOMATION



Certyfikat nr QS/14/07



AC 083  
QMS

### UNIVERSAL SEPARATOR with alarm signaling, type S2Us-G

- Rail housing 22,5mm width
- Input and output signal set using code switches
- Ability to supply the input 4÷25mA loop with two-wire transmitter
- Switch-selectable current output 4÷20mA active or passive
- Wide range of supply voltage 22÷240VAC/DC
- Two alarm thresholds with potentiometers regulated switching levels
- Full galvanic insulation of circuits: input, output and power supply

#### APPLICATION:

Separator **S2Us-G** acts as universal separator with user-adjustable standards of input and output signals. Settings of input and output standards 0÷20mA, 4÷20mA, 0÷10V are performed using four code-switches: SW1, SW2, SW3, SW4 placed inside the housing. A two-position switch (SW2) is on the input side and three switches (SW1, SW3, SW4) are located on the output side. The separator can function as a power supply-separator for two-wire converters controlling separator input (terminals 1, 3). Separator output current 4÷20mA can be active or passive. At the passive output, separator controls a 4÷20mA loop, powered with e.g. controller.

A typical application of the separator is a galvanic separation of measurement circuits installed on the object from the central unit. This reduces the impact of object interference on drivers, controllers and recorders, and ensures the safety of these devices isolating their inputs from hazards resulting from cooperation with distant signal sources (lightning, power energy, radio frequency interference, potential differences between the object and central unit). Replacement of any input signal into any output signal makes it easy to fit devices working in various standards.

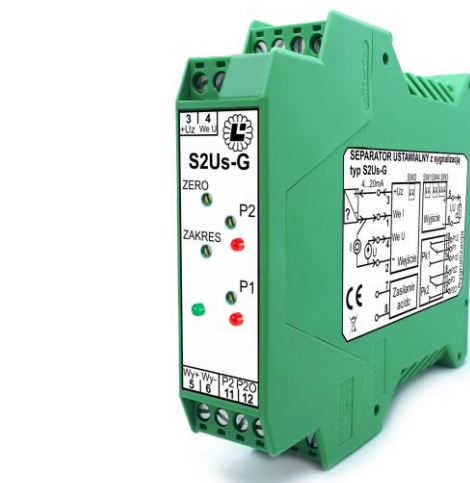
The separator can also be used as a two-tier alarm limit. The switching level is adjusted using P1, P2 potentiometers within full range of input signal.

#### BASIC TECHNICAL PARAMETERS :

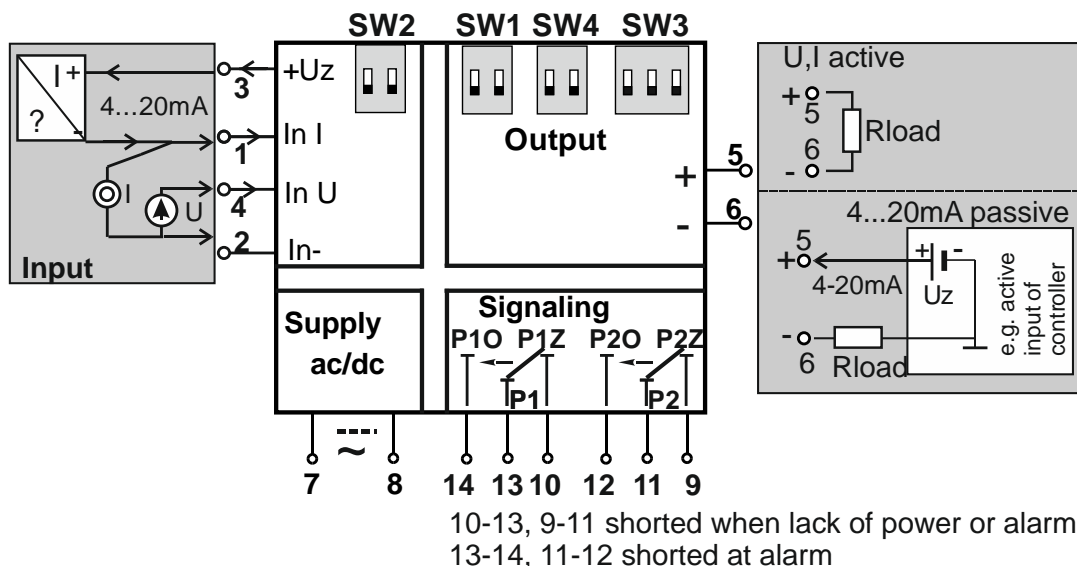
Input signal /  $R_{WE}$  - 0(4)...20mA / 60 $\Omega$  ,  
- 0...10V /  $\geq 100k\Omega$

Supply voltage for input  
current loop 4...20mA  
at 20mA

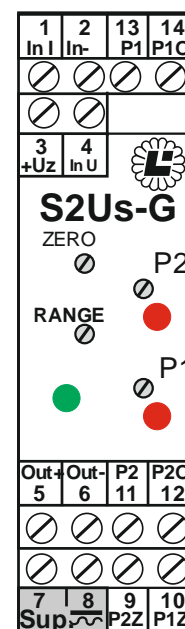
between 'Uz' and 'I' - 17Vdc  
between 'Uz' and 'We-' - 18,3Vdc



Output signal	- 0/4...20mA active, 4...20mA passive, 0...10V set with 3 switches
Load resistance $R_{load}$	- current outputs max 700 $\Omega$ - voltage outputs $\geq 2k\Omega$
Signal outputs P1, P2	- relay contact, switching power 30W (125VAC/ 0,5A, 30VDC/ 1A)
Supply voltage	- 22...240VAC/DC; 2VA (W)
Class	- 0,15%
Nonlinearity	- $\pm 0,05\%$
Temperature drift	- $\pm 0,01\%$ / $^{\circ}C$
Voltage, current or Rload changes error	- $\pm 0,02\%$
Galvanic insulation	- 2kV, 50Hz; mutual between input, output and power supply
Time constant	- 0,2s or other after agreement
„ZERO” and „RANGE” adjustment	- $\pm 8\%$ using potentiometers on the front panel
Switching level control P1, P2	- 0 ÷ 100% of measurement range using potentiometers on the front panel
Hysteresis	- 1.5% of the range
Rail housing:	- 22,5 x 99 x 114,5 mm width x height x depth
Protection level	- IP40
mounting	- on TS35 rail
Operating conditions:	
ambient temperature	- -30...+60 $^{\circ}C$
ambient atmosphere	- dust and corrosive gases free
relative humidity	- do 90%
Safety requirements	- PN-EN 61010-1:2002
EMC requirements	- PN-EN 61000-6-1 PN-EN 61000-6-3



Description of terminals



Front panel view

### Setting the switching thresholds

With the power on and the absence of an input signal, all LEDs lit, and the contacts **10-13** and **9-11** are shorted. Supply the separator and connect to the voltage or current input terminals measurement signal corresponding with the value at which the switching threshold is to achieve. Adjust potentiometer P1 (P2) until the corresponding P1 (P2) LED will turn off.

When threshold is reached the LED, appropriate for a given threshold, will go out and output relays contacts 13-14 (11-12) are shorted.

Both thresholds operate in the same phase. If it is needed to indicate exceeding a threshold when the signal is increasing and exceeding a threshold when the signal is decreasing you should use opposite terminals (e.g. P1-P1Z and P2-P2O). Threshold hysteresis is about 1.5% of the range.

TABLE 1 Setting the in/out standards				Switches position								
Input range	Terminals	Output range	Terminals	SW2		SW1		SW4		SW3		
				1	2	1	2	1	2	1	2	3
4...20mA	+1, -2	0...20mA	+5, -6	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON
4...20mA	+1, -2	4...20mA active	+5, -6	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
4...20mA	+1, -2	0...10V	+5, -6	OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON
4...20mA	+1, -2	4...20mA passive	+5, -6	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
Two-wire converter	+3, -1	0...20mA	+5, -6	OFF	ON	OFF	ON	OFF	OFF	ON	OFF	ON
Two-wire converter	+3, -1	4...20mA active	+5, -6	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
Two-wire converter	+3, -1	0...10V	+5, -6	OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON
Two-wire converter	+3, -1	4...20mA passive	+5, -6	OFF	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
0...20mA	+1, -2	0...20mA	+5, -6	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
0...20mA	+1, -2	4...20mA active	+5, -6	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
0...20mA	+1, -2	0...10V	+5, -6	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	ON
0...20mA	+1, -2	4...20mA passive	+5, -6	ON	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
0...10V	+4, -2	0...20mA	+5, -6	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
0...10V	+4, -2	4...20mA active	+5, -6	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
0...10V	+4, -2	0...10V	+5, -6	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	ON
0...10V	+4, -2	4...20mA passive	+5, -6	ON	OFF	OFF	OFF	ON	ON	OFF	ON	OFF

**HOW TO ORDER:** Adjustable separator with signaling type S2Us-G

Production and distribution:

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