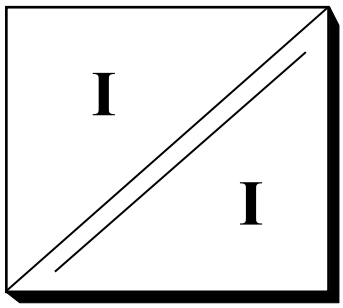
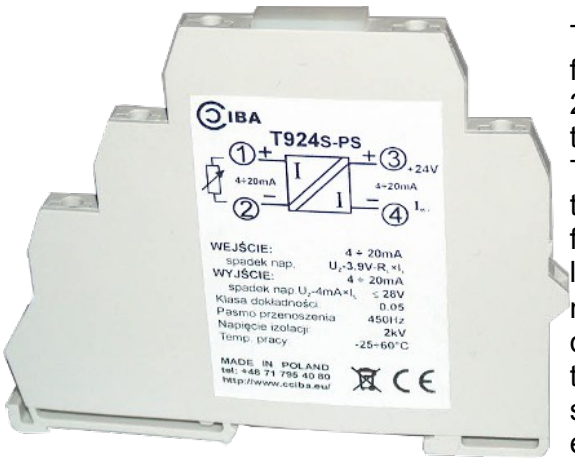
SEPARATOR T924s-PS

- 4÷20mA / 4÷20mA
- supplies 2-wire transmitter on input side
- accuracy class: 0.05
- galvanic isolation 2kV
- thin (6.2mm) enclosure



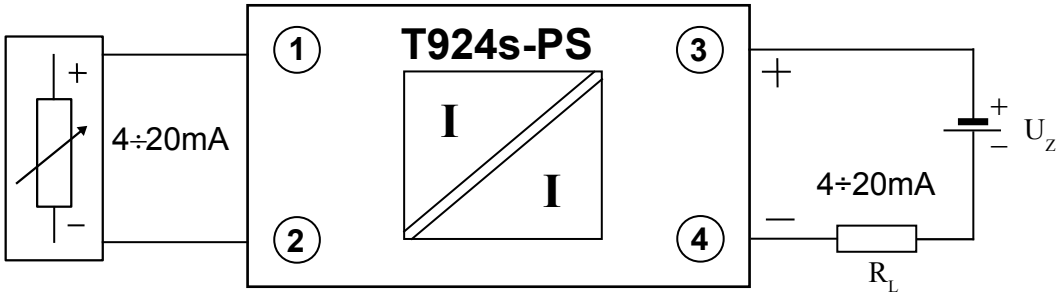


T924s-PS is a passive separator of 4÷20mA signal (in fact, separator operates linearly from 2.5mA to about 25mA where internal limiting circuit turns on). Factory test isolation voltage equals 2kV.

The module works as constant current transformer that carries energy from output to input while magnetic field feedback ensures accurate reproduction of input load current at the output. Base accuracy within the nominal 4÷20mA signal range, including nonlinearity, does not exceed ±0.05%. Some of the energy transfered is lost on protection elements and used to supply internal circuitry of the separator, which is seen externally as additional voltage drop that adds to voltage drop at input. This additional voltage drop reaches 4V at 20mA.

One of the main advantages of the module is a system of overvoltage and overcurrent protections preventing accidental damage during installation or malfunction of other automation elements during exploitation. Both input and output are protected against overvoltage and bias reversal. The input current is limited internally to ca. 25mA which is rare in passive separators. Absolute maximum ratings are listed at the end of the data sheet.

Typical application is presented below – separator is simply inserted into current loop supplying a 4÷20mA transmitter by breaking the 2-wire line and connecting the wires to respective input and output terminals of the separator. Energy suppling the transmitter is transferred to input, while the current forced by transmitter is mirrored at output.



Acceptable voltage drop at separator's output may be as high as 28V but, assuming standard supply voltage U_Z=24V, accounting for 4V internal drop and typical load resistance, R_L=50Ω, there is still about 19V left for the transmitter supply (at $I_{IN}=I_{OUT}$=20mA).

Separator fits into thin, 6.2mm width enclosure, made of self-extinguishing material, which may be mounted on standard 35mm ‘top-hat’ rails.

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Technical data:

Input:	input current	4÷20 mA
	voltage drop (I_{IN}=20mA)	U_Z – 3.9V – (I_{OUT} × R_L)
Output:	output current	4÷20 mA
	voltage drop, U_Z – (4mA × R_L)	≤ 28V
Accuracy class:		0.05
Isolation test voltage:		2 kV

General technical parameters:

frequency band (-3dB, R_L=50Ω)	450 Hz
output noise	< 15 μA_{rms}
maximal nonlinearity error	< 0.02 %
output voltage drop influence (20÷28V)	< 0.01%/V
temperature coefficient	50ppm/°C
warm-up time	< 1 min
operating temperature range	-25÷60 °C
storage temperature range	-40÷80 °C
ambient relative humidity	5÷90 % (no condensation)
ambient pressure	1000±200 hPa
external magnetic field	0÷400 A/m
working position	irrelevant
external dimensions	6.2×80×94mm^3
housing protection type	IP 20

Absolute maximum ratings:

voltage applied to input terminals	100 V
input current (internally limited)	27 mA (at 20ºC)
voltage applied to output terminals	100 V

CE