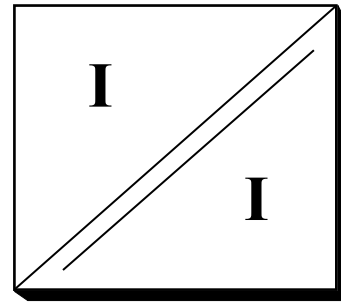# SIGNAL SEPARATOR T924P3

- 4÷20 mA / 4÷20 mA
- 3 independent channels
- accuracy class: 0.05
- galvanic isolation: 2kV
- 12.5mm width enclosure

Module T924P3 contains three independent and isolated passive separators of 4÷20mA signal (in fact separators function from almost 0mA to about 25mA where internal limiting circuit turns on). Factory test isolation voltage equals 2kV.

Every channel of T924P3 module works as constant current transformer - input signal is switched at comparatively high frequency to be passed through a transformer, and magnetic field feedback ensures accurate reproduction of input signal at the output. Typical accuracy within the nominal 4÷20mA signal range, including nonlinearity, does not exceed ±0.02% (for 50Ω load resistance). Some of the energy carried by signal is lost on protection elements and used to supply internal circuitry of a separator, which is seen externally as additional voltage drop that adds to voltage drop on load resistance. This additional voltage drop reaches 3.1V at 20mA. Load resistance affects the accuracy of signal transfer, but in a predictable way – deviation from ideal load resistance of 50Ω (where error is minimal) causes change of gain leading to error of -0.03% at 20mA per every 100Ω increase of load resistance. Load resistance should not exceed 750Ω.

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. 25 mA. Absolute maximum ratings are listed at the end of the data sheet.

Electrical connections:
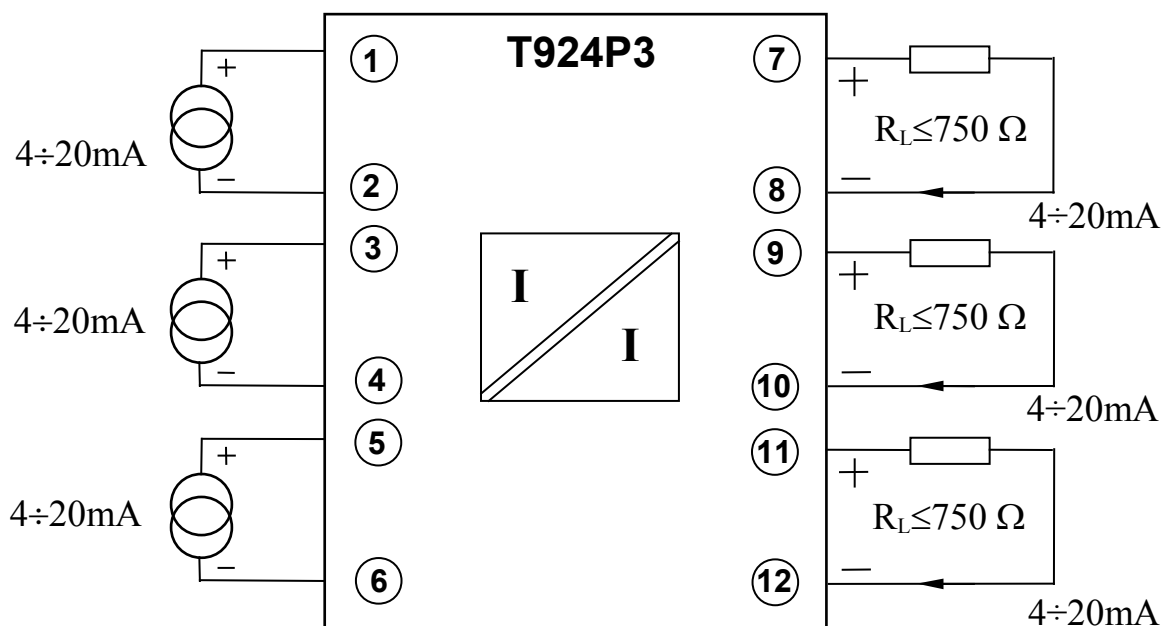
Technical data:

The enclosure, 12.5mm in width and made of self-extinguishing material, may be mounted on standard 35mm 'top-hat' rails. Plug-in connectors make installation and module exchange easy.

Input:	3×input current	$4 \div 20$ mA
	voltage drop (I_{IN}=20mA)	$3.1V + 20mA \times R_L$
Output:	3×output current	$4 \div 20$ mA
	load resistance (R_L)	$\leq 750\ \Omega$
Accuracy class:		0.05
	additional error (I=20mA)	$- 0.03\% \times R_L/100\Omega$
		($\leq 0.1\%$ for $R_L \leq 350\Omega$)
		($\leq 0.2\%$ for $R_L \leq 700\Omega$)
Isolation test voltage:		2 kV
	(input/output and between channels)	

General technical parameters:

frequency band	500 Hz
output noise level	< 50 μA
maximal nonlinearity error	< 0.02 %
temperature coefficient	< 50 ppm/°C
warm-up time	< 1 s
operating temperature range	$-25 \div 60$ °C
storage temperature range	$-40 \div 80$ °C
ambient relative humidity	$5 \div 90$ % (no condensation)
ambient pressure	1000 ± 200 hPa
external magnetic field	$0 \div 400$ A/m
working position	irrelevant
external dimensions	$12.5 \times 99 \times 114.5$ mm^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

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