

TENSIOTRON® TS 621

Precision Strain Gauge Measurement Amplifier



The **TENSIOTRON® TS 621** electronic strain gauge amplifier combines the highest quality power and signal conditioning capabilities suitable for use with most strain gauge-based sensors, esp. tension measurement.

Best temperature stability, long-term stability and high accuracy are guaranteed by using modern technology.

The **TS 621** delivers superb performance features such as galvanic isolation, removable terminal block for the sensor connections, multiple options and high quality.

Special features:

- Great noise immunity and service reliability for use in rough industrial operation
- Direct input power supply of 24V DC, reverse-polarity protected, providing
 - wide operating input power supply of 19-36V DC, LED indicates power-on status
 - integrated DC-DC converter for galvanic isolation between power supply and measuring circuit (very important to avoid ground loops in combination with secondary electronics)
- Provides a well-regulated power supply for sensor excitation, balanced to ground
- Coarse and fine adjustments for zero and amplification setting
- Screw terminal for power and outputs
- Removable screw terminal plug for the sensor connections
 - available accessory: adapter plug 2/1 (parallel connection of 2 sensors directly at amplifier input)
- Standard: voltage output 0-10V, bipolar

Optional outputs available:

- Option **D** → additional damped voltage output, selectable cut-off frequency 0,5 / 5 / 10 / 20Hz
- Option **A** → additional current output, selectable 0-20 / 4-20mA, unipolar or bipolar
- Option **X** → additional voltage output, selectable amplification factor 2x, 3x, 4x, 5x

Technical Data TS 621

Designation		Tensiotron® TS 621
Design		DIN-rail housing for convenient snap-in installation
Accuracy class		0,1
Sensors to be connected: - strain gauge, full bridge	Ω	admissible connection impedance ≥ 150
Bridge excitation voltage (referenced to ground)	V DC	$10 \pm 0,5 \%$
Nominal gain G_{nom}		667
Nominal measuring range U_{sig}	mV	± 15
Calibration range referenced to G_{nom}	%	38 to 100 to 580
Adjustment range zero @ G_{nom} - fine approx. - coarse approx.	% ¹ % ¹	± 20 ± 60
Input impedance	Ω	10^{10}
Cut-off frequency (- 3 dB)	Hz	approx. 70
Standard output - voltage output V_{out} (@ $G_{nom} \cdot U_{sig}$)	V	0 to ± 10 , max. 10 mA
OPTION additional output: - D damped voltage output V_{dout} Bessel low-pass-filter 5 th order (configuration via DIP switch)	V Hz	0 to ± 10 , max. 10 mA $f_c = 0,5 / 5 / 10 / 15$
- A current output ($f_c = 500$ Hz) - bipolar - unipolar - unipolar (configuration via DIP switch)	mA mA mA	0 to ± 20 , admissible load 0 to 500 Ω 0 to + 20, admissible load 0 to 500 Ω 4 to + 20, admissible load 0 to 500 Ω
- X voltage output with selectable amplification factor X $V_{out}^* = X \cdot V_{out}$ ($f_c = 25$ Hz) voltage output V_{out}^* (configuration via DIP switch)	V V	$V_{out}^* = 2 / 3 / 4 / 5 \cdot V_{out}$ 0 to ± 10 , max. 10 mA
Nominal temperature range	$^{\circ}C$	0 to + 60
Operation temperature range	$^{\circ}C$	0 to + 60
Storage temperature range	$^{\circ}C$	-25 to + 75

Temperature influence per 10 °C - on zero at amplifier output - on calibration	mV % ¹	< 10 (@ G _{nom}) < 0,05
Supply voltage Power consumption	V DC W	19 to 36 max. 3 integrated DC-DC converter for galvanic isolation between supply voltage and measurement circuit
Amplifier connection		screw terminals for flexible cable 0,2 to 2,5 mm ²
Sensor connection		plug with screw terminals for flexible cable 0,08 to 1,5 mm ²
Dimensions (L x W x H)	mm	80 x 25 x 95
Weight	g	approx. 100
Installation		Snap-in installation on DIN-EN mounting rails

¹ of final value

Explanation of grammalogue:

f_C ⇒ Cut-off frequency

G_{nom} ⇒ Nominal gain amplification factor

U_{sig} ⇒ Input voltage

V_{out} ⇒ Voltage at standard output

V_{out}* ⇒ Voltage at optional output with select.

V_{dout} ⇒ Voltage at optional damped output

*Technical execution subject to change without prior notice
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