

# TENSIOTRON<sup>®</sup> TS 621

## Precision strain gauge measuring amplifier



The **TENSIOTRON<sup>®</sup> 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 and long-term stability as well as 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: adaptor 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 0-20mA / 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		<b>0,1</b>
Sensors to be connected: - strain gauge, full bridge	$\Omega$	admissible connection impedance $\geq 150$
Bridge excitation voltage - referenced to ground (GND)	V DC V DC	$10 \pm 0,5 \%$ $\pm 5$
Nominal gain $G_{nom}$		667
Nominal measuring range $U_{sig}$	mV	$\pm 15$
Calibration range referenced to $G_{nom}$	%	38 to 100 to 580
Adjustment range zero @ $G_{nom}$ - fine approx. - coarse approx.	% <sup>1</sup> % <sup>1</sup>	$\pm 20$ $\pm 60$
Input impedance	$\Omega$	$10^{10}$
Cut-off frequency (- 3 dB)	Hz	approx. 70
Standard output - voltage output $V_{out}$ (@ $G_{nom} \cdot U_{sig}$ )  <b>OPTION</b> additional output: - <b>D</b> damped voltage output $V_{dout}$ Bessel low-pass-filter 5 <sup>th</sup> order (configuration via DIP switch)  - <b>A</b> current output - bipolar - unipolar - unipolar (configuration via DIP switch)  - <b>X</b> 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 Hz  mA mA mA  V V	0 to $\pm 10$ , max. 10 mA  0 to $\pm 10$ , max. 10 mA $f_C = 0,5 / 5 / 10 / 20$  0 to $\pm 20$ , admissible load 0 to 500 $\Omega$ 0 to + 20, admissible load 0 to 500 $\Omega$ 4 to + 20, admissible load 0 to 500 $\Omega$  $V_{out}^* = 2 / 3 / 4 / 5 \cdot V_{out}$ 0 to $\pm 10$ , 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

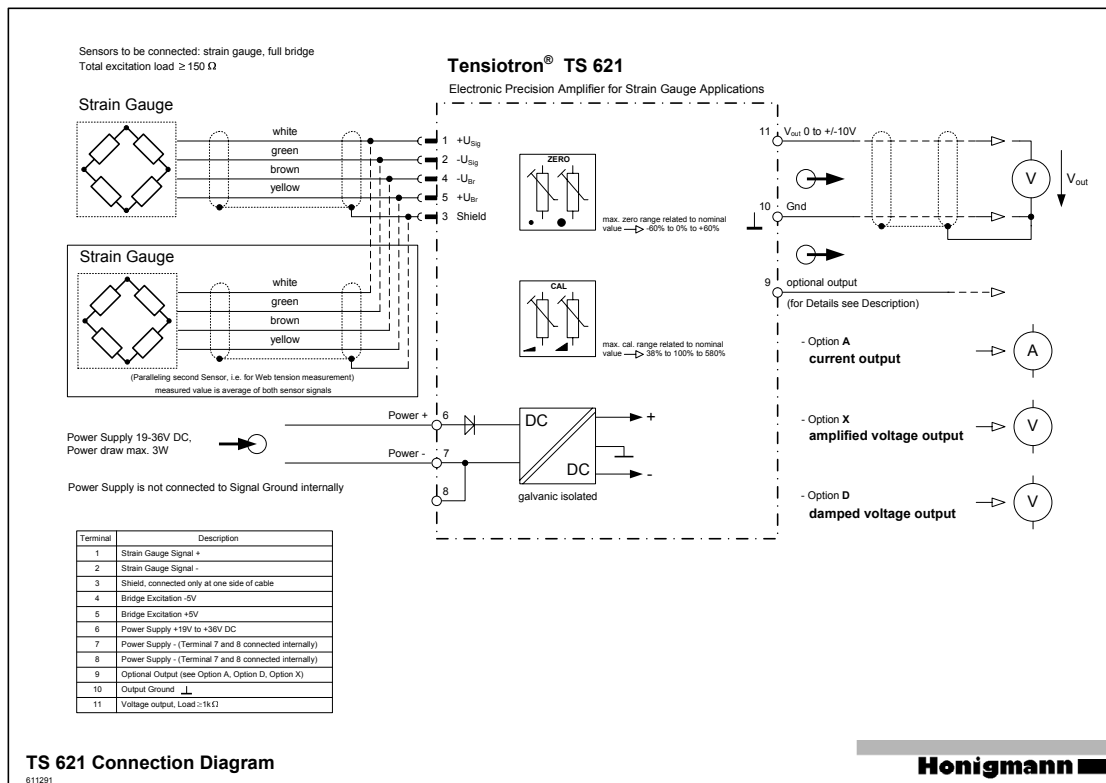
Temperature influence per 10 °C - on zero at amplifier output - on calibration	mV % <sup>1</sup>	< 10 (@ G <sub>nom</sub> ) < 0,05
Supply voltage Power consumption	V DC W	19 to 36 max. 3  integrated DC-DC converter for galvanic isolation between supply voltage and measurement circuit
Amplifier connection		screw terminals for flexible cable 0,2 to 2,5 mm <sup>2</sup>
Sensor connection		plug with screw terminals for flexible cable 0,08 to 1,5 mm <sup>2</sup>
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

<sup>1</sup> of final value

Explanation of grammalogue:

f<sub>C</sub> ⇒ Cut-off frequency  
G<sub>nom</sub> ⇒ Nominal gain  
U<sub>sig</sub> ⇒ Input voltage

V<sub>out</sub> ⇒ Voltage at standard output  
V<sub>out</sub>\* ⇒ Voltage at optional output with select. amplification factor  
V<sub>dout</sub> ⇒ Voltage at optional damped output



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