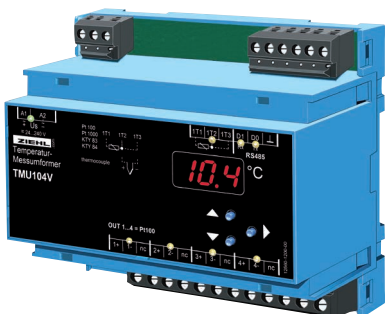


# Measuring Point Multiplier TMU104V

## 1 Input for Temperature Sensors, 4 Outputs Pt100 (RTD)

### TMU104V

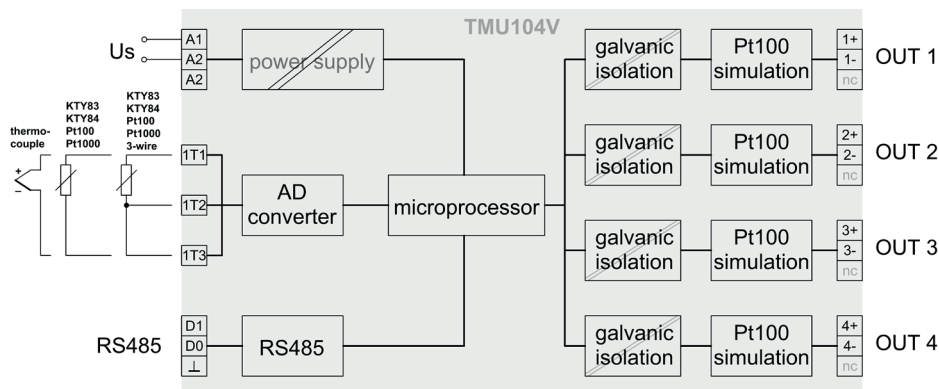


The measuring point multiplier TMU101V measures the temperature at a connected sensor and transduces it into 4 insulated signals Pt 100 (RTD). Via interface RS 485 it can be used as a simulator for up to 4 signals Pt 100.

- Measuring input Pt 100 (RTD), Pt 1000, KTY 83 / 84 in 2- or 3-wire connection
- Measuring input thermocouple (types B, E, J, K, L, N, R, S, T)
- Measuring range -199...+850 °C
- 4 insulated outputs signal Pt 100 (resistance- signal), connection in 2-, 3- or 4-wire
- Digital display, 3 digits, resolution 1 °C (-19.9 ... 99.9 °C: resolution 0,1 °C)
- Storing of MIN- and MAX- values
- Universal supply voltage AC/DC 24-240 V
- Interface RS 485 (protocols ZIEHL and Modbus RTU)
- Housing for DIN-rail or wall-mount, 105 mm wide, mounting height 55 mm

Part number: **T236061**

Block diagram



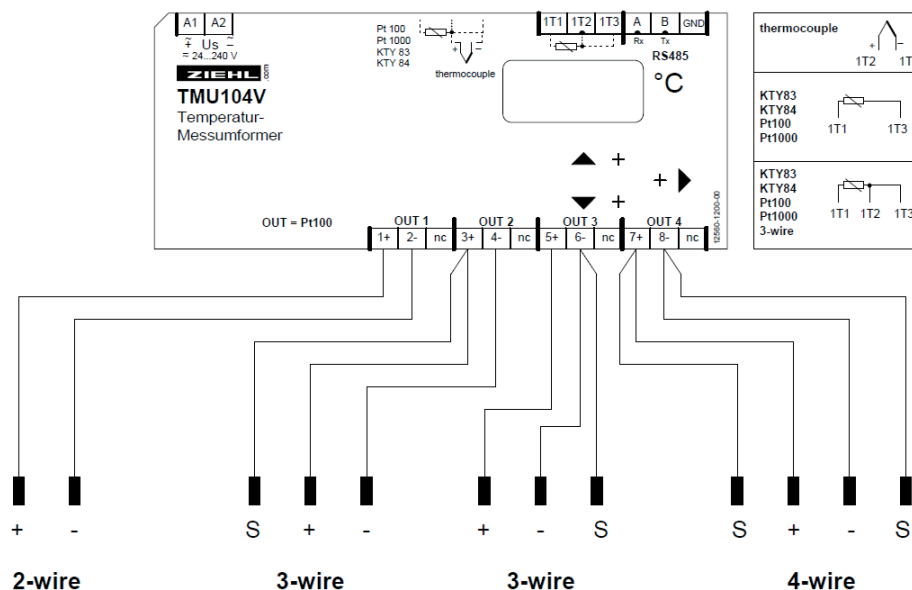
### Measuring Point Multiplier and Transducer:

The temperature of the sensor (resistance or thermocouple), connected to the input, is available as signal Pt 100 (RTD) at 4 insulated outputs. Thus allows the connection of other sensors than Pt 100 to inputs for Pt 100 at other devices.

Normally only one input can be connected to a temperature sensor. With help of TMU104 up to 4 devices (controls, displays, monitoring devices) with inputs Pt 100 can be connected to one sensor at the same time.

### Simulator für Pt 100:

Controlled via interface RS 485 (protocol Modbus RTU) the TMU1004V can simulate up to 4 sensors Pt 100 (RTD). This allows the application in equipment, that makes automatic tests and calibrations at devices and installations with several inputs Pt 100.



Technical Data

Rated supply voltage  $U_s$  AC/ DC 24V - 240V < 2,5 V  
 Tolerance DC 20,4 - 297 V, AC 20-264 V, 50/60 Hz

Sensor input 1T/2T/3T

Pt100 (RTD), Pt1000 nach EN 60751:

Sensor	Measuring range [°C]		Short Circuit [Ω]	Break [Ω]	Resistance of sensor + line[Ω]
	from	to			
Pt100	-199	860	15	400	500
Pt1000	-199	860	150	4000	4100
KTY83	-55	175	150	4000	4100
KTY84	40	150	150	4000	4100

Tolerance  $\pm 0,2$  % of measured value  $\pm 0,5$  K (KTY  $\pm 5$  K)  
 Sensor current  $\leq 0,6$  mA  
 Temperature factor < 0,04°C/K  
 Measuring time 2-wire/3-wire  $\leq 330$  ms/  $\leq 440$  ms

Thermocouples according to EN 60584, DIN 43710:

Type	Measuring range [°C]		Tolerance [°C]
	from	to	
B	0	1820	T > 300 $\pm 2$
E	-270	1000	$\pm 1$
J	-210	1200	$\pm 1$
K	-200	1372	$\pm 2$
L	-200	900	$\pm 1$
N	-270	1300	$\pm 2$
R	-50	1770	$\pm 2$
S	-50	1770	$\pm 2$
T	-270	400	$\pm 1$

Temperature factor  $\pm 0,01$  % /K  
 Measuring error of sensor line + 0,25  $\mu$ V /  $\Omega$   
 Reference junction  $\pm 5$  °C  
 Measuring time  $\leq 440$  ms

Sensor output OUT1...OUT4

Pt100 according to EN60751  
 Reaction time < 10 ms  
 Current range 200  $\mu$ A ... 5 mA  
 Type of connection 2-, 3-, 4-wire  
 Tolerance  $\pm 0,2$  % of simulated value

Test conditions

EN 61010-1  
 Rated impulse voltage 4000 V  
 Overvoltage category III  
 Contamination level 2  
 Rated insulation voltage  $U_i$  300 V  
 ON period 100%  
 Insulation / Test voltage  $U_s$  - OUT1...4, Input, RS 485: DC 3820 V  
 OUT1...4 -Input, RS 485: DC 1000 V  
 OUT1 - OUT2 - OUT3 - OUT4: DC 1000 V  
 Input - RS 485  
 no insulation  
 EMC-Tests EN 61326-1  
 Rated ambient temperature range -20...+65 °C

Housing

Dimensions (w x h x d) Design V6, 105 x 90 x 58 mm  
 Torque 0,5 Nm (3,6 lb.in)  
 Protection Housing/Terminals IP30/IP20  
 Installation Snap mount on rail 35 mm or screws M4  
 Weight app. 200g