



The transmitters series **RU-1...**, **RU-2...**, and **RU-4** in single, double and quadruple version are proposed for signal conversion from resistive temperature sensors Pt100, Pt500, Pt1000, Ni1000, Ni10000 and resistive sensors OV100 (0 to 100 Ω) and OV105 (5 to 105 Ω) to the standard voltage signal 0 to 10 V. The output signal has got a linear temperature or resistance dependence. The transmitters are according to the type variant supplied by 24 V DC or AC. The transmitters are not equipped with galvanic separation between input and output signals. The given degree of ingress protection and possibility of fitting on the mounting bar DIN TS 35 determinate the transmitters for use in the distribution cases, boards and panels.

### Summary of types

TYPE	INPUT	TYPE	INPUT	TYPE	INPUT	POWER SUPPLY
RU-1P-DC	Pt100	RU-2P-DC	2xPt100	RU-4P-DC	4xPt100	18 to 30 Vss
RU-1PA-DC	Pt1000	RU-2PA-DC	2xPt1000	RU-4PA-DC	4xPt1000	18 to 30 Vss
RU-1PB-DC	Pt500	RU-2PB-DC	2xPt500	RU-4PB-DC	4xPt500	18 to 30 Vss
RU-1L-DC	Ni1000/5000 ppm	RU-2L-DC	2xNi1000/5000 ppm	RU-4L-DC	4xNi1000/5000 ppm	18 to 30 Vss
RU-1S-DC	Ni1000/6180 ppm	RU-2S-DC	2xNi1000/6180 ppm	RU-4S-DC	4xNi1000/6180 ppm	18 to 30 Vss
RU-1J-DC	Ni891/6371 ppm	RU-2J-DC	2xNi891/6371 ppm	RU-4J-DC	4xNi891/6371 ppm	18 to 30 Vss
RU-1SA-DC	Ni10000/6180 ppm	RU-2SA-DC	2xNi10000/6180 ppm	RU-4SA-DC	4xNi10000/6180 ppm	18 to 30 Vss
RU-1RT-DC	OV100 three-wire	RU-2RT-DC	2xOV100 three-wire	RU-4RT-DC	4xOV100 three-wire	18 to 30 Vss
RU-1RD-DC	OV100 two-wire	RU-2RD-DC	2xOV100 two-wire	RU-4RD-DC	4xOV100 two-wire	18 to 30 Vss
RU-1RTA-DC	OV105 three-wire	RU-2RTA-DC	2xOV105 three-wire	RU-4RTA-DC	4xOV105 three-wire	18 to 30 Vss
RU-1RDA-DC	OV105 two-wire	RU-2RDA-DC	2xOV105 two-wire	RU-4RDA-DC	4xOV105 two-wire	18 to 30 Vss
RU-1P-AC	Pt100	RU-2P-AC	2xPt100	RU-4P-AC	4xPt100	24 V/50 Hz±10%
RU-1PA-AC	Pt1000	RU-2PA-AC	2xPt1000	RU-4PA-AC	4xPt1000	24 V/50 Hz±10%
RU-1PB-AC	Pt500	RU-2PB-AC	2xPt500	RU-4PB-AC	4xPt500	24 V/50 Hz±10%
RU-1L-AC	Ni1000/5000 ppm	RU-2L-AC	2xNi1000/5000 ppm	RU-4L-AC	4xNi1000/5000 ppm	24 V/50 Hz±10%
RU-1S-AC	Ni1000/6180 ppm	RU-2S-AC	2xNi1000/6180 ppm	RU-4S-AC	4xNi1000/6180 ppm	24 V/50 Hz±10%
RU-1J-AC	Ni891/6371 ppm	RU-2J-AC	2xNi891/6371 ppm	RU-4J-AC	4xNi891/6371 ppm	24 V/50 Hz±10%
RU-1SA-AC	Ni10000/6180 ppm	RU-2SA-AC	2xNi10000/6180 ppm	RU-4SA-AC	4xNi10000/6180 ppm	24 V/50 Hz±10%
RU-1RT-AC	OV100 three-wire	RU-2RT-AC	2xOV100 three-wire	RU-4RT-AC	4xOV100 three-wire	24 V/50 Hz±10%
RU-1RD-AC	OV100 two-wire	RU-2RD-AC	2xOV100 two-wire	RU-4RD-AC	4xOV100 two-wire	24 V/50 Hz±10%
RU-1RTA-AC	OV105 three-wire	RU-2RTA-AC	2x OV105 three-wire	RU-4RTA-AC	4xOV105 three-wire	24 V/50 Hz±10%
RU-1RDA-AC	OV105 two-wire	RU-2RDA-AC	2x OV105 two-wire	RU-4RDA-AC	4xOV105 two-wire	24 V/50 Hz±10%

### Main technical parameters

Transmitter type	RU-1P...; RU-2P...; RU-4P...	RU-xL ; RU-xS; RU-xJ	RU-1R...; RU-2R...; RU-4R...
Output signal $U_v$	1, 2 or 4 x (0 to 10 V)	1, 2 or 4 x (0 to 10 V)	1, 2 or 4 x (0 to 10 V)
Input signal measuring range	-30 to 60°C	-30 to 60°C	0 to 100 Ω
	0 to 100°C	0 to 35°C	for RT a RD
	0 to 200°C	0 to 100°C	5 to 105 Ω
	0 to 400°C	0 to 150°C	for RTA a RDA
	0 to 600°C	0 to 250°C	
Ambient temperature	-25 to 60°C	-25 to 60°C	-25 to 60°C
Relative humidity	< 80 %	< 80 %	< 80 %
Measurement error	< 0,8 %	< 0,8 %	< 0,8 %
Current consumption	< 10 mA	< 10 mA	< 10 mA
Load resistance	> 50 kΩ	> 50 kΩ	> 50 kΩ
Sensing element break	$U_v > 14 V$	$U_v > 14 V$	$U_v > 14 V$
Sensing element short	$U_v \sim 0 V$	$U_v \sim 0 V$	$U_v \sim 0 V$

### Mounting and putting into service

The transmitter has to be fastened with the help of a holder on the mounting bar DIN TS 35. First we set the upper mandrel of transmitter box holder on the upper bar edge and with the help of a screwdriver push out the lower arrestment mandrel lock. We pull the lower box part to the bar and then free the lock. The transmitter is fastened now. We connect the inputs, outputs and power supply into the respective clamps. We recommend the connecting cable with the wires cross section 0,35...2 mm<sup>2</sup>, for the active signals with the screening mantle.

### How to order the transmitter

There have to be given the number of pieces and the type of temperature or resistance transmitter in the order.  
 E. g: **5 pieces transmitter RU-2P.2-DC**

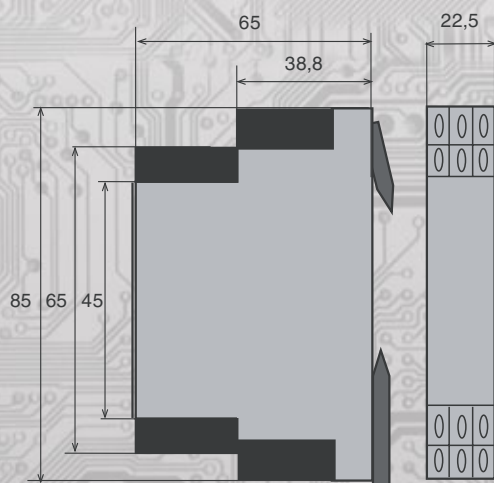
i. e. transmitter for **2x Pt100** input, measuring range **0 až 100°C**, with DC power supply.

transmitter type      temperature range  
 (order number)

Transmitter type	RU-xP, RU-xPA, RU-xPB	Order number	RU-xL, RU-xS, RU-xJ	Order number
Temperature range	-30 to 60°C	1	-30 to 60°C	1
	0 to 100°C	2	0 to 35°C	2
	0 to 200°C	3	0 to 100°C	3
	0 to 400°C	4	0 to 150°C	4
	0 to 600°C	5	0 to 250°C	5
	200 to 600°C	6		

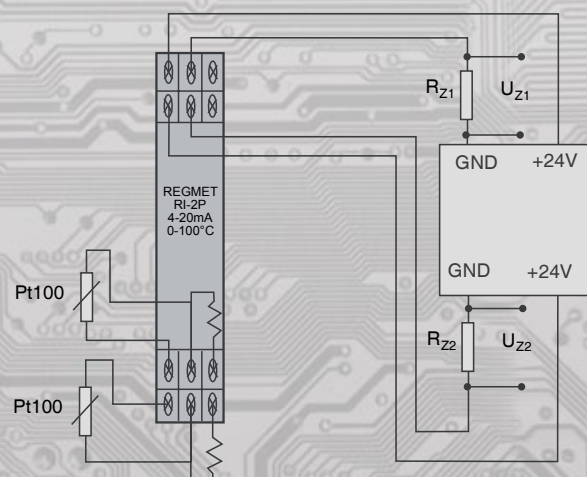
### Single or double version - RU-1..., RU-2...

#### Dimensions



#### Transmitter connection into the circuit

This holds for the RU-2P-DC; connection with a compensation loop

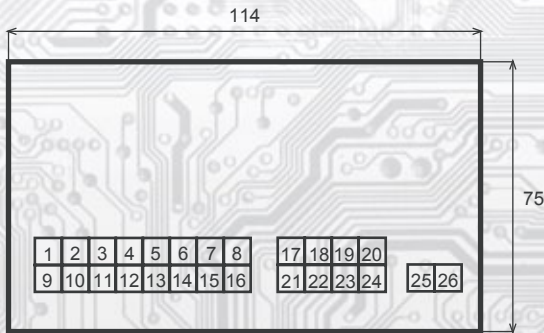


#### Remark

1) Transmitters with the supply 24 V AC - terminal board number 5 is connect with GND.

Quadruple version - RU-4...

### Wiring diagram



### Input - Output connection:

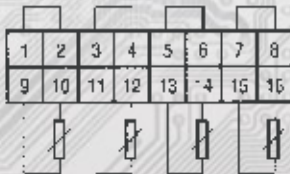
Channel	Inputs	Outputs
1	1, 2, 9, 10	17
2	3, 4, 11, 12	18
3	5, 6, 13, 14	19
4	7, 8, 15, 16	20

### Supply voltage connection:

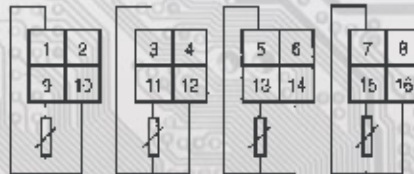
DC: 26 - GND (loop - pole)  
25 -  $U_{cc}$  (loop + pole)  
21, 22, 23, 24 - GND

AC: 25, 26 - supply 24 V ~ Terminal board 26 is connect with GND.  
21, 22, 23, 24 - GND

Two-wire connection Pt100



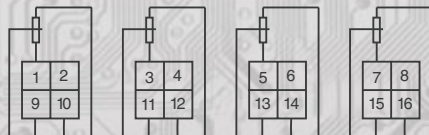
Three-wire connection Pt100



Connection with a compensation loop



Three-wire connection OV100 and OV105



Two-wire connection Ni1000, Pt1000, OV 100, OV 105

