

# Configuration Sheet

## Universal Programmable Transmitters P5201

### with Circuit Isolation

This user selectable configuration can be changed by the NPT-02 set-up program or in the factory.

Company: ..... Address: .....

Model No.: .....

1.   <b>Text note saved in transmitter (max. 32 characters ASCII CP-1250)</b>	
<input type="checkbox"/> TN '.....'	
2.   <b>Input setting</b>	
<input type="checkbox"/> R01 Resistance sensor (0 to 400 Ohm) without conversion to temperature	<input type="checkbox"/> R71 Current input -15 to +60 $\mu$ A **
<input type="checkbox"/> R02 Resistance sensor (0 to 4000 Ohm) without conversion to temperature	<input type="checkbox"/> R72 Current input -150 to +600 $\mu$ A **
<input type="checkbox"/> R03 Potentiometer (total resistance 40 to 400 Ohm, 0 to 100 %)	<input type="checkbox"/> R73 Current input -1500 to +6000 $\mu$ A **
<input type="checkbox"/> R04 Potentiometer (total resistance 400 to 4000 Ohm, 0 to 100 %)	<input type="checkbox"/> R74 Current input -6 to +24 mA **
<input type="checkbox"/> R05 Voltage sensor (-15 to +60 mV) without conversion to temperature	<input type="checkbox"/> R75 Current input -15 to +60 mA **
<input type="checkbox"/> R06 Difference of two resistance sensors (max. total resistance 40 to 400 Ohm) *	<input type="checkbox"/> R81 Voltage input -250 to +1000 mV **
<input type="checkbox"/> R07 Difference of two resistance sensors (max. total resistance 400 to 4000 Ohm) *	<input type="checkbox"/> R82 Voltage input -2.5 to +10 V **
<input type="checkbox"/> R11 Pt100 (-200 to +850 °C) with linearization	<input type="checkbox"/> R85 Potentiometer (max. resistance 0.4 to 25 kOhm) *****
<input type="checkbox"/> R12 Pt500 (-200 to +850 °C) with linearization	<input type="checkbox"/> R91 Customer linearization for resistance sensor (0 to 400 Ohm) *
<input type="checkbox"/> R13 Pt1000 (-200 to +850 °C) with linearization	<input type="checkbox"/> R92 Customer linearization for resistance sensor (0 to 4000 Ohm) *
<input type="checkbox"/> R14 Ni100 (-60 to +250 °C) with linearization	<input type="checkbox"/> R93 Customer linearization for potentiometer (R <= 400 Ohm) *
<input type="checkbox"/> R15 Ni1000 (-60 to +250 °C) with linearization	<input type="checkbox"/> R94 Customer linearization for potentiometer (R <= 4000 Ohm) *
<input type="checkbox"/> R51 Thermocouple "J" (-200 to +1000 °C) with linearization	<input type="checkbox"/> R95 Customer linearization for other voltage sensor (Thermocouple -15 to +60 mV) *
<input type="checkbox"/> R52 Thermocouple "K" (-200 to +1300 °C) with linearization	<input type="checkbox"/> R96 Customer linearization for difference of two resistance sensors (max. total resistance 400 Ohm) *
<input type="checkbox"/> R53 Thermocouple "N" (-200 to +1300 °C) with linearization	<input type="checkbox"/> R97 Customer linearization for difference of two resistance sensors (max. total resistance 4000 Ohm) *
<input type="checkbox"/> R54 Thermocouple "R" (-50 to +1700 °C) with linearization	
<input type="checkbox"/> R55 Thermocouple "S" (-50 to +1700 °C) with linearization	
<input type="checkbox"/> R56 Thermocouple "T" (-250 to +400 °C) with linearization	
<input type="checkbox"/> R57 Thermocouple "B" (0 to +1800 °C) with linearization from 50 °C	
<input type="checkbox"/> R58 Thermocouple "E" (-200 to +800 °C) with linearization	
<input type="checkbox"/> R59 Thermocouple "L" (-200 to +900 °C) with linearization	
3.   <b>Sensor connection</b>	
<input type="checkbox"/> C1 Two-wire connection of resistance sensor compensation of wire resistance C1R ..... Ohm [C1R 0 Ohm]	<b>For input setting</b> R01, R02, R11-15, R91, R92
<input type="checkbox"/> C2 Three-wire connection of resistance sensor	R01, R02, R11-15, R91, R92
<input type="checkbox"/> C3 <b>Four-wire connection of resistance sensor</b>	R01, R02, R11-15, R91, R92
<input type="checkbox"/> C4 Connection of potentiometer without wire resistance compensation	R03, R04, R93, R94, R85
<input type="checkbox"/> C5 Connection of potentiometer with wire resistance compensation	R03, R04, R93, R94, R85
<input type="checkbox"/> C6 Connection of voltage sensor or TC without compensation of cold junction temperature constant value of cold junction compensation different from 0 °C C6T ..... °C [C6T 0 °C]	R05, R51-59, R71-75, R81, R82, R95
<input type="checkbox"/> C7 Connection of TC with compensation of cold junction temperature	R51-59, R95
<input type="checkbox"/> C8 Connection of two two-wire resistance sensors compensation of wire resistance C8R ..... Ohm [C8R 0 Ohm]	R06, R07, R11-15, R96, R97
4.   <b>Measuring range</b>	
Lower range value RL .....*** [RL -200 °C]	Lower range output value ROL .....**** [ROL 4 mA]
Upper range value RH .....*** [RH 850 °C]	Upper range output value ROH .....**** [ROH 20 mA]
5.   <b>Correction of sensor errors</b>	
Sensor error at lower range value LE .....*** [LE 0 °C]	
Sensor error at upper range value HE .....*** [HE 0 °C]	
6.   <b>Definition of lower range value of output</b>	
Start of range of output signal ROL .....[4 mA (H, L0-L3, S versions) or 0 mA (L4 version) or 0 V (L5 version)]	
7.   <b>Definition of upper range value of output</b>	
End of range of output signal ROH .....[20 mA (H, L0-L4, S versions) or 10 V (L5 version)]	
8.   <b>Damping</b>	
DP ..... s (in range 0.5 to 60 s) [DP 4 s]	
9.   <b>Transmitter or sensor error indication</b>	
<input type="checkbox"/> ECL Error current below 3.6 mA (H, L0-L3, S versions) or 0 mA (L4 version) or 0 V (L5 version)	
<input type="checkbox"/> ECH <b>Error current above 21 mA (H, L0-L4, S versions) or 10.5 V (L5 version)</b>	
<input type="checkbox"/> ER1 Relay 1 switch on (only with SNE option - both comparators disabled)	
<input type="checkbox"/> ER2 Relay 2 switch on (only with SNE or S1E options - comparator 2 disabled)	
10.   <b>Watching of limits - komparators</b>	
<input type="checkbox"/> SNE No watching of limits (standard configuration with H10, H11, L00 and L01 versions)	
<input type="checkbox"/> S1E Apply only limit comparator 1 (standard configuration with L10 and L11 versions)	
<input type="checkbox"/> S2E Apply limit comparators 1 and 2 (standard configuration with L20, L21, L30, L31, S10, S11, S20 and S21 versions)	
Note: The output of a limit comparator is either a relay switch (if it is included in a particular version) or error current signal. Switched-on error current is either > 21 mA (H, L0-L4, S versions), >10.5 V (L5 version) or <3.6 mA (H, L0-L3, S versions), 0 mA (L4 version), 0 V (L5 version) (see item 9 - Transmitter or sensor error indication). Display then indicates error 7. If you do not allow the comparator to influence the current signal (items 11.4/12.4) no error is displayed on the display when the comparator is on.	

## Configuration Sheet for Universal Programmable Transmitters P5201 with Circuit Isolation

<b>11.   Limit comparator 1</b>	
11.1 Switch limit value	S1L ..... <b>*** [S1L 850 °C]</b>
11.2 Switch limit hysteresis	S1H ..... <b>*** [S1H 0.5 °C]</b>
11.3 Comparator switching mode	
<input type="checkbox"/> M1N	<b>Normal</b>
<input type="checkbox"/> M1I	Reverse
11.4 Error current control	
<input type="checkbox"/> EC1U	Indicate switch on of comparator by error output current
<input type="checkbox"/> EC1N	<b>Without influence on current signal</b>
11.5 Relay status with transmitter error or sensor error	
<input type="checkbox"/> D1O	<b>Switch off</b>
<input type="checkbox"/> D1C	Switch on
11.6 Switch status during supply fall-out (Can be set by a switch on the transmitter.)	
<input type="checkbox"/> F1U	No change
<input type="checkbox"/> F1C	Switch on
<input type="checkbox"/> F1O	<b>Switch off</b>
<b>12.   Limit comparator 2</b>	
12.1 Switch limit value	S2L ..... <b>*** [S2L 850 °C]</b>
12.2 Switch limit hysteresis	S2H ..... <b>*** [S2H 0.5 °C]</b>
12.3 Comparator switching mode	
<input type="checkbox"/> M2N	<b>Normal</b>
<input type="checkbox"/> M2I	Reverse
12.4 Error current control	
<input type="checkbox"/> EC2U	Indicate switch on of comparator by error output current
<input type="checkbox"/> EC2N	<b>Without influence on current signal</b>
12.5 Relay status with transmitter error or sensor error	
<input type="checkbox"/> D2O	<b>Switch off</b>
<input type="checkbox"/> D2C	Switch on
12.6 Switch status during supply fall-out (Can be set by a switch on the transmitter.)	
<input type="checkbox"/> F2U	No change
<input type="checkbox"/> F2C	Switch on
<input type="checkbox"/> F2O	<b>Switch off</b>
<b>13.   Changing of transmitter configuration by set-up unit</b>	
<input type="checkbox"/> SPE	<b>Enabled</b>
<input type="checkbox"/> SPD	Disabled
<b>14.   Communication specifications</b>	
14.1 Transmitter address 0 to 32	ADR ..... <b>[ADR0]</b>
14.2 Data transmission speed	
<input type="checkbox"/> BR6	600 Bd
<input type="checkbox"/> BR12	1200 Bd
<input type="checkbox"/> BR24	<b>2400 Bd</b>
<input type="checkbox"/> BR48	4800 Bd
<input type="checkbox"/> BR96	9600 Bd
<input type="checkbox"/> BR192	19200 Bd
Maximum speed of communication cable KA-01 is 2400 Bd.	
14.3 Parity	
<input type="checkbox"/> PN	None
<input type="checkbox"/> PO	<b>Odd parity</b>
<input type="checkbox"/> PE	Even parity
<b>15.   Customer linearization</b>	
Linearization chart includes up to 64 pairs X and Y values in required range which are equally shared over the range. X values must be within a chosen base range.	
<b>16.   Standard configuration</b>	
Range -200 to +850 °C, damping 4 s, error current > 21 mA, zero error at lower and upper range values, limit switches: switch limit value 1 (2) 850 °C, switch limit hysteresis 1 (2) 0.5 °C, without influence on current signal, normal switch mode, no change of switch status during supply fall-out	
<b>Legend</b>	
* Linearization chart in required range must be added	
** Not for version Hxx, Lx0 and Sx0, it is not possible to change configuration of input setting and sensor connection by NPT-02	
*** Units according to chosen base range (°C, Ohm, mV, customer specified)	
**** Units according to output signal	
***** Not for version Hx0, Lx0, Sx0, Hxx; It is not possible to change configuration of input and sensor connection by NPT-02 set-up program	
..... Enter numerical value or explanatory text	
<input type="checkbox"/> Choose one option with a cross	
<b>[Bold text]</b> Presetting (if it is not customer specified)	