

# PT100 input 520PTD01

## Data sheet



## Application

The 520PTD01 board is used to connect PT100 temperature transmitter directly. Up to six transmitters can be connected to the board. The measurement range is  $\pm 200\text{ }^{\circ}\text{C}$ .

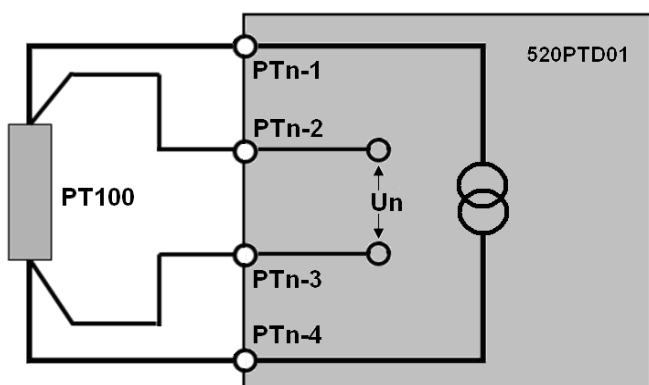


Figure 1: Block diagram 520PTD01

## Characteristics

Basic checks and computing of intensive, cyclical processing functions will already be done on the module and remove therefore the burden from the communication unit. Relevant changes are transmitted as event via the WRB I/O bus.

The 6 differential inputs are not potentially isolated against the RTU500 series power supply.

The 520PTD01 converts the analog signals into 4096 steps (12 bit) for 100 % of the measuring value.

The differential inputs are protected against static and dynamic over-voltages by a protection circuit. A low-pass filter suppresses non line frequency AC disturbance.

Two additional channels are used for automatic zero calibration.

The line frequency is to be configured in the configuration tool. The micro controller uses these configurations parameters to setup the A/D-converter.

Line-frequency	Conversion time per input	Scan cycle per module
60 Hz	70,0 ms	560 ms
50 Hz	80,0 ms	640 ms
16,6 Hz	220 ms	1760 ms

The micro controller controls the A/D converter and executes all of the processing functions of the configured measured values within the conversion time of 80 ms (50 Hz). Furthermore the micro controller is responsible for the communication with the RTU system bus. All configuration characteristics and processing parameters are downloaded from the CMU via the RTU system bus.

In connection with the adapter 520ADD01 the module has a connection to the RTU WRB I/O bus (Wired OR-Bus).

During initialization and operation the module carries out a number of tests. If a fault occurs it is reported to the CMU. All fault conditions impairing the function of the module are displayed as common fault signal with a red LED 'ERR'. A failure of the module is detected by the communication unit.

# Technical data

In addition to the RTU500 series general technical data, the following applies:

Input Channels	
Inputs	6 differential inputs PT100, 2/4 wire connection
Measuring range	± 200 °C
A/D converter resolution:	12 bit = ± 100%
Temp. range	-25 °C ... 150 °C
Overrange	-200 °C ... 200 °C
Accuracy	± 1 °C (-25 °C ... 125 °C) +2 ... -0 °C (125 °C .. 150 °C)
Common mode voltage	Absolute maximum rating ± 150 V DC. Common mode rejection 85 db Power Supply rejection 75 db at 50 Hz
Line frequency (f <sub>N</sub> )	16.7, 50 or 60 Hz

## Current consumption for power supplied via WRB bus

5 V DC	25 mA
15 V DC	10 mA
18 V DC	--
24 V DC	--

## Mechanical layout

Dimensions	35 mm x 98 mm x 117 mm (Width x Height x Depth)
Housing type	Plastic housing (V-0), IP20, RAL 7035 light gray
Mounting	DIN rail mounting EN 50022 TS35: 35 mm x 15 mm or 35 mm x 7.5 mm
Weight	0.16 kg

## Connection type

Process connector	6 x 4 pole 5.08 mm pluggable spring terminals (included in delivery) 0.2... 2.5 mm <sup>2</sup> / AWG 24 - AWG 12
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## Immunity test

Electrostatic discharge IEC 61000-4-2	8 kV air (level 3) / 4 kV contact (level 2) Performance criteria A
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## Immunity test

Radiated Radio-Frequency Electromagnetic Field IEC 61000-4-3	10 V/m (level 3) Performance criteria A
Electrical Fast Transient / Burst IEC 61000-4-4	4 kV (level X) Performance criteria A
Surge IEC 61000-4-5	2 kV (level 3) Performance criteria A
Conducted Disturbances, induced by Radio-Frequency Fields IEC 61000-4-6	10 V (level 3) Performance criteria A

## Environmental conditions

Nominal operating temperature range:	-25°C... 70°C
Start up:	-40 °C
Max. operating temperature, max. 96h:	+85 °C
EN 60068-2-1, -2-2, -2-14	
Relative humidity EN 60068-2-30	5 ... 95 % (non condensing)

## Ordering information

520PTD01 R0001	1KGT024700R0001
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