

# PT100 / RTD - signal isolator/converter

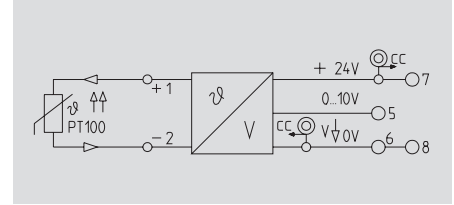
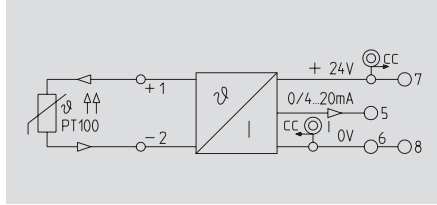
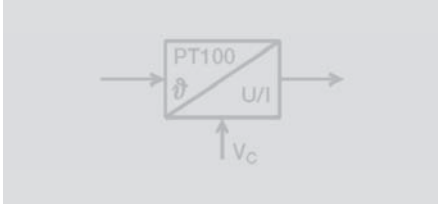
## PT100, 2-Conductor converter

- 2-conductor technology
- Adjustable temperature range  
- 200 °C ... + 800 °C
- Power supply can be cross connected via plug-in jumper

## PT100/2 0(4)...20mA



## PT100/2 0...10V



### Technical data

|   |  |
|---|--|
| <b>Input</b>                              |  |
| Sensor                                    | PT100/2-conductor                            |
| Feed current                              | 1.45 mA                                      |
| <b>Output</b>                             |  |
| Output voltage/Output current             | /0(4)...20 mA                                |
| Load resistance voltage/Current           | / $\lt$ = 600 $\Omega$                       |
| Accuracy                                  | +/-0.5% of measuring range                   |
| <b>General data</b>                       |  |
| Supply voltage/Current consumption        | 24 Vdc +/- 20 %/ $\lt$ 48 mA at Iout = 20 mA |
| Operation temperature/Storage temperature | 0 °C...+55 °C/-20 °C...+85 °C                |
| Approvals                                 | CSA / UL/UR / CE / ESD                       |
| Standards                                 | EN 50178, EN 60751, IEC751                   |
| EMC standards                             | EN 50081, EN50082, EN55011                   |
| <b>Dimensions</b>                         |  |
| Clamping range (rating- / min. / max.)    | mm <sup>2</sup>                              |
| Length x width x height                   | mm   |
| <b>Information</b>                        |  |
| Tu=23°C, single module                    |  |

|                         |                    |                         |                     |
|-------------------------|--------------------|-------------------------|---------------------|
| <b>Screw connection</b> |                    | <b>Tension clamp c.</b> |                     |
| 2.50 / 0.50 / 2.50      | 1.50 / 0.50 / 2.50 | 92.4 x 12.5 x 112.4     | 92.4 x 12.5 x 112.4 |
| Tu=23°C, single module  |                    |                         |                     |

|                         |                    |                         |                     |
|-------------------------|--------------------|-------------------------|---------------------|
| <b>Screw connection</b> |                    | <b>Tension clamp c.</b> |                     |
| 2.50 / 0.50 / 2.50      | 1.50 / 0.50 / 2.50 | 92.4 x 12.5 x 112.4     | 92.4 x 12.5 x 112.4 |
| Tu=23°C, single module  |                    |                         |                     |

### Ordering data

| Temperature input range                            | Type of connection       |
|--|--------------------------|
| Adjustable -200...+800 °C                          | Screw connection         |
| Adjustable -200...+800 °C                          | Tension clamp c.         |
| Special adjustment                                 | Screw connection         |
| Special adjustment                                 | Tension clamp connection |
| 0...100 °C   | Screw connection         |
| 0...100 °C   | Tension clamp connection |
| 0...100 °C   | Screw connection         |
| 0...100 °C   | Tension clamp connection |
| <b>Information</b>                                 |                          |
| Specify temperature range by special calibrations. |                          |

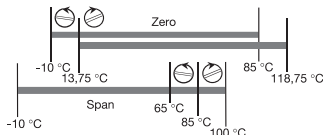
| Type   | Qty. | Order No.  |
|--|------|------------|
| WTS4 PT100/2 C 0/4-20mA                            | 1    | 8432210000 |
| WTS4 PT100/2 C 0/4-20mA                            | 1    | 8432220000 |
| WTS4 PT100/2 C 0/4-20mA variable                   | 1    | 8432219999 |
| WTS4 PT100/2 C 0/4-20mA variable                   | 1    | 8432229999 |
| WTS4 PT100/2 C 0-20mA 0...100C                     | 1    | 8432210001 |
| WTS4 PT100/2 C 0-20mA 0...100C                     | 1    | 8432220001 |
| WTS4 PT100/2 C 4-20mA 0...100C                     | 1    | 8432210011 |
| WTS4 PT100/2 C 4-20mA 0...100C                     | 1    | 8432220011 |
| <b>Information</b>                                 |      |            |
| Specify temperature range by special calibrations. |      |            |

| Type   | Qty. | Order No.  |
|--|------|------------|
| WTS4 PT100/2 V 0-10V                               | 1    | 8432180000 |
| WTS4 PT100/2 V 0-10V                               | 1    | 8432190000 |
| WTS4 PT100/2 V 0-10V variable                      | 1    | 8432189999 |
| WTS4 PT100/2 Vn 0-10V variable                     | 1    | 8432199999 |
| WTS4 PT100/2 V 0-10V 0...100C                      | 1    | 8432180001 |
| WTS4 PT100/2 V 0-10V 0...100C                      | 1    | 8432190001 |
| <b>Information</b>                                 |      |            |
| Specify temperature range by special calibrations. |      |            |

### Application

#### Example for Zero and Span

|                                |             |
|--------------------------------|-------------|
| <b>Temperature adjustment:</b> |             |
| Tmin                           | -10 °C      |
| Span                           | 75...110 °C |
| <b>Span</b>                    |             |
| Span                           | 95 °C       |
| Adjustment of Span             | + 25 %      |



#### Temperature coefficient

Measurement range  $\geq$  200 K  $\leq$  200 ppm / °C (typ. 80 ppm / °C)  
 100K  $\leq$  Measurement range  $\lt$  200 K  $\leq$  225 ppm / °C (typ. 90 ppm / °C)  
 40K  $\leq$  Measurement range  $\lt$  100 K  $\leq$  450 ppm / °C (typ. 180 ppm / °C)

#### Aids

- Voltage supply 24 Vdc, 50 mA
- Simulator for PT 100 or precision-resistance-decade
- Ampere-/voltmeter which can be calibrated to an accuracy of  $\gt$ 0.1% of the end value.

#### Switch position/setting options

|                  | 1 | 2             | 3 | Span           |   |   | 4  | 5 | 6 |
|------------------|---|---------------|---|----------------|---|---|----|---|---|
| 0 °C             | ■ | ■             | ■ | 40 ... 50 °C   | ■ | ■ | ■  | ■ | ■ |
| -10 °C           | ■ | ■             | ■ | 50 ... 75 °C   | ■ | ■ | ■  | ■ | ■ |
| -20 °C           | ■ | ■             | ■ | 75 ... 110 °C  | ■ | ■ | ■  | ■ | ■ |
| -40 °C           | ■ | ■             | ■ | 110 ... 165 °C | ■ | ■ | ■  | ■ | ■ |
| -60 °C           | ■ | ■             | ■ | 165 ... 245 °C | ■ | ■ | ■  | ■ | ■ |
| -80 °C           | ■ | ■             | ■ | 245 ... 360 °C | ■ | ■ | ■  | ■ | ■ |
| -100 °C          | ■ | ■             | ■ | 360 ... 540 °C | ■ | ■ | ■  | ■ | ■ |
| -200 °C          | ■ | ■             | ■ | 540 ... 800 °C | ■ | ■ | ■  | ■ | ■ |
| <b>Output 1)</b> |   |               |   |                |   |   |    |   |   |
| Range            | 7 | <b>PT 100</b> |   |                | 8 | 9 | 10 |   |   |
| 0 ... 20 mA      | ■ | 2 - wire      |   |                | ■ | ■ | ■  |   |   |
| 4 ... 20 mA      | ■ | 3 - wire      |   |                | ■ | ■ | ■  |   |   |
|                  |   | 4 - wire      |   |                | ■ | ■ | ■  |   |   |

1) only modules with current output    ■ = on  
    □ = off

# PT100 / RTD - signal isolator/converter

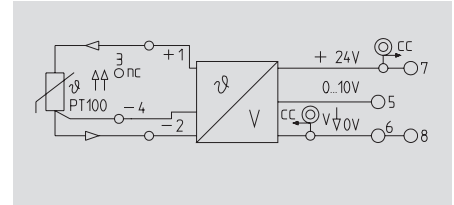
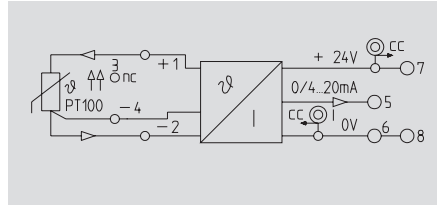
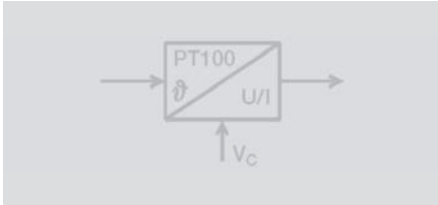
## PT100, 3-Conductor converter

- 3-conductor technology
- Adjustable temperature range  
- 200 °C ...+ 800 °C
- Power supply can be cross connected via plug-in jumper

## PT100/3 0(4)...20mA



## PT100/3 0...10V



### Technical data

|   |  |
|---|--|
| <b>Input</b>                              |  |
| Sensor                                    | PT100/3-conductor                            |
| Feed current                              | 1.45 mA                                      |
| <b>Output</b>                             |  |
| Output voltage/Output current             | /0(4)...20 mA                                |
| Load resistance voltage/Current           | / $\lt$ = 600 $\Omega$                       |
| Accuracy                                  | +/-0.5% of measuring range                   |
| <b>General data</b>                       |  |
| Supply voltage/Current consumption        | 24 Vdc +/- 20 %/ $\lt$ 48 mA at Iout = 20 mA |
| Operation temperature/Storage temperature | 0 °C...+55 °C/-20 °C...+85 °C                |
| Approvals                                 | CSA / UL/UR / CE / ESD                       |
| Standards                                 | EN 50178, EN 60751, IEC751                   |
| EMC standards                             | EN 50081, EN50082, EN55011                   |
| <b>Dimensions</b>                         |  |
| Clamping range (rating- / min. / max.)    | mm <sup>2</sup>                              |
| Length x width x height                   | mm   |
| <b>Information</b>                        |  |
| Tu=23°C, single module                    |  |

|   |  |
|---|--|
| <b>Input</b>                              |  |
| Sensor                                    | PT100/3-conductor                            |
| Feed current                              | 1.45 mA                                      |
| <b>Output</b>                             |  |
| Output voltage/Output current             | 0...10 V/                                    |
| Load resistance voltage/Current           | $\geq$ 1 k $\Omega$ /                        |
| Accuracy                                  | +/-0.5% of measuring range                   |
| <b>General data</b>                       |  |
| Supply voltage/Current consumption        | 24 Vdc +/- 20 %/ $\lt$ 38 mA at Iout = 20 mA |
| Operation temperature/Storage temperature | 0 °C...+55 °C/-20 °C...+85 °C                |
| Approvals                                 | CSA / UL/UR / CE / ESD                       |
| Standards                                 | EN 50178, EN 60751, IEC751                   |
| EMC standards                             | EN 50081, EN50082, EN55011                   |
| <b>Dimensions</b>                         |  |
| Clamping range (rating- / min. / max.)    | mm <sup>2</sup>                              |
| Length x width x height                   | mm   |
| <b>Information</b>                        |  |
| Tu=23°C, single module                    |  |

|   |  |
|---|--|
| <b>Input</b>                              |  |
| Sensor                                    | PT100/3-conductor                            |
| Feed current                              | 1.45 mA                                      |
| <b>Output</b>                             |  |
| Output voltage/Output current             | 0...10 V/                                    |
| Load resistance voltage/Current           | $\geq$ 1 k $\Omega$ /                        |
| Accuracy                                  | +/-0.5% of measuring range                   |
| <b>General data</b>                       |  |
| Supply voltage/Current consumption        | 24 Vdc +/- 20 %/ $\lt$ 38 mA at Iout = 20 mA |
| Operation temperature/Storage temperature | 0 °C...+55 °C/-20 °C...+85 °C                |
| Approvals                                 | CSA / UL/UR / CE / ESD                       |
| Standards                                 | EN 50178, EN 60751, IEC751                   |
| EMC standards                             | EN 50081, EN50082, EN55011                   |
| <b>Dimensions</b>                         |  |
| Clamping range (rating- / min. / max.)    | mm <sup>2</sup>                              |
| Length x width x height                   | mm   |
| <b>Information</b>                        |  |
| Tu=23°C, single module                    |  |

### Ordering data

| Temperature input range   | Type of connection       |
|---------------------------|--------------------------|
| Adjustable -200...+800 °C | Screw connection         |
| Adjustable -200...+800 °C | Tension clamp c.         |
| Special adjustment        | Screw connection         |
| Special adjustment        | Tension clamp connection |
| 0...100 °C                | Screw connection         |
| 0...100 °C                | Tension clamp connection |
| 0...100 °C                | Screw connection         |
| 0...100 °C                | Tension clamp connection |

| Type                             | Qty. | Order No.  |
|----------------------------------|------|------------|
| WTS4 PT100/3 C 0/4-20mA          | 1    | 8432150000 |
| WTS4 PT100/3 C 0/4-20mA          | 1    | 8432160000 |
| WTS4 PT100/3 C 0/4-20mA variable | 1    | 8432159999 |
| WTS4 PT100/3 C 0/4-20mA variable | 1    | 8432169999 |
| WTS4 PT100/3 C 0-20mA 0...100C   | 1    | 8432150001 |
| WTS4 PT100/3 C 0-20mA 0...100C   | 1    | 8432160001 |
| WTS4 PT100/3 C 4-20mA 0...100C   | 1    | 8432150011 |
| WTS4 PT100/3 C 4-20mA 0...100C   | 1    | 8432160011 |

Specify temperature range by special calibrations.

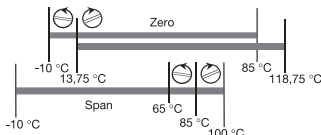
| Type                          | Qty. | Order No.  |
|-------------------------------|------|------------|
| WTS4 PT100/3 V 0-10V          | 1    | 8432090000 |
| WTS4 PT100/3 V 0-10V          | 1    | 8432130000 |
| WTS4 PT100/3 V 0-10V variabel | 1    | 8432099999 |
| WTS4 PT100/3 V 0-10V variabel | 1    | 8432139999 |
| WTS4 PT100/3 V 0-10V 0...100C | 1    | 8432090001 |
| WTS4 PT100/3 V 0-10V 0...100C | 1    | 8432130001 |

Specify temperature range by special calibrations.

### Application

#### Example for Zero and Span

|                                |             |
|--------------------------------|-------------|
| <b>Temperature adjustment:</b> |             |
| Tmin                           | -10 °C      |
| Span                           | 75...110 °C |
| <b>Span</b>                    |             |
| Span                           | 95 °C       |
| Adjustment of Span             | + 25 %      |



#### Temperature coefficient

Measurement range  $\geq$  200 K  $\leq$  200 ppm / °C (typ. 80 ppm / °C)  
 100K  $\leq$  Measurement range  $\lt$  200K  $\leq$  250 ppm / °C (typ. 100 ppm / °C)  
 40K  $\leq$  Measurement range  $\lt$  100K  $\leq$  500 ppm / °C (typ. 200 ppm / °C)

#### Aids

- Voltage supply 24 Vdc, 50 mA
- Simulator for PT 100 or precision-resistance-decade
- Ampere-/voltmeter which can be calibrated to an accuracy of  $\gt$ 0.1% of the end value.

#### Switch position/setting options

| Tmin    | 1 | 2 | 3 | Span           | 4 | 5 | 6 |
|---------|---|---|---|----------------|---|---|---|
| 0 °C    | ■ | ■ | ■ | 40 ... 50 °C   | ■ | ■ | ■ |
| -10 °C  | ■ | ■ | ■ | 50 ... 75 °C   | ■ | ■ | ■ |
| -20 °C  | ■ | ■ | ■ | 75 ... 110 °C  | ■ | ■ | ■ |
| -40 °C  | ■ | ■ | ■ | 110 ... 165 °C | ■ | ■ | ■ |
| -60 °C  | ■ | ■ | ■ | 165 ... 245 °C | ■ | ■ | ■ |
| -80 °C  | ■ | ■ | ■ | 245 ... 360 °C | ■ | ■ | ■ |
| -100 °C | ■ | ■ | ■ | 360 ... 540 °C | ■ | ■ | ■ |
| -200 °C | ■ | ■ | ■ | 540 ... 800 °C | ■ | ■ | ■ |

| Output 1)   |   |
|-------------|---|
| Range       | 7 |
| 0 ... 20 mA | ■ |
| 4 ... 20 mA | ■ |

1) only modules with current output

■ = on  
 □ = off

# PT100 / RTD - signal isolator/converter

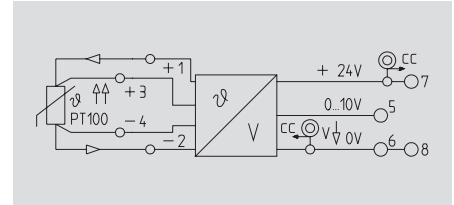
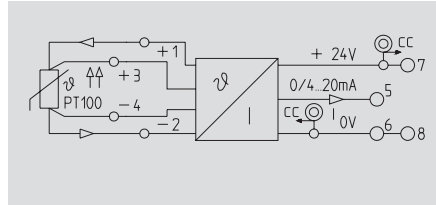
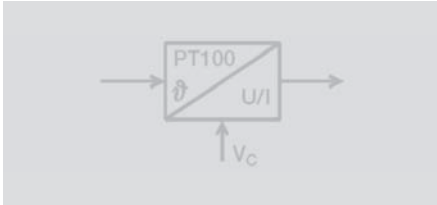
## PT100, 4-Conductor converter

- 4-conductor technology
- Adjustable temperature range  
- 200 °C ... + 800 °C
- Power supply can be cross connected via plug-in jumper

## PT100/4 0(4)...20mA



## PT100/4 0...10V



### Technical data

#### Input

Sensor  
Feed current

#### Output

Output voltage/Output current  
Load resistance voltage/Current  
Accuracy

#### General data

Supply voltage/Current consumption  
Operation temperature/Storage temperature  
Approvals  
Standards  
EMC standards

#### Dimensions

Clamping range (rating- / min. / max.) mm<sup>2</sup>  
Length x width x height mm

#### Information

PT100/4-conductor  
1.45 mA

/0(4)...20 mA

/< = 600 Ω

100K<=MR <600K: 0.1%;MR>=600K: 0.2% of MR

24 Vdc +/- 20 %/< 48 mA at I<sub>out</sub> = 20 mA

0 °C...+55 °C/-20 °C...+85 °C

CSA / UL/UR / CE / ESD

EN 50178, EN 60751, IEC751

EN 50081, EN50082, EN55011

#### Screw connection

2.50 / 0.50 / 2.50  
92.4 x 12.5 x 112.4

#### Tension clamp c.

1.50 / 0.50 / 2.50  
92.4 x 12.5 x 112.4

T<sub>u</sub>=23°C, single module

PT100/4-conductor  
1.45 mA

0...10 V/

>= 1 kΩ/

100K<=MR <600K: 0.1%;MR>=600K: 0.2% of MR

24 Vdc +/- 20 %/< 38 mA at I<sub>out</sub> = 20 mA

0 °C...+55 °C/-20 °C...+85 °C

CSA / UL/UR / CE / ESD

EN 50178, EN 60751, IEC751

EN 50081, EN50082, EN55011

#### Screw connection

2.50 / 0.50 / 2.50  
92.4 x 12.5 x 112.4

#### Tension clamp c.

1.50 / 0.50 / 2.50  
92.4 x 12.5 x 112.4

T<sub>u</sub>=23°C, single module

### Ordering data

| Temperature input range   | Type of connection       |
|---------------------------|--------------------------|
| Adjustable -200...+800 °C | Screw connection         |
| Adjustable -200...+800 °C | Tension clamp c.         |
| Special adjustment        | Screw connection         |
| Special adjustment        | Tension clamp connection |
| 0...100 °C                | Screw connection         |
| 0...100 °C                | Tension clamp connection |
| 0...100 °C                | Screw connection         |
| 0...100 °C                | Tension clamp connection |

#### Information

| Type                             | Qty. | Order No.  |
|----------------------------------|------|------------|
| WTS4 PT100/4 C 0/4-20mA          | 1    | 8432270000 |
| WTS4 PT100/4 C 0/4-20mA          | 1    | 8432280000 |
| WTS4 PT100/4 C 0/4-20mA variable | 1    | 8432279999 |
| WTS4 PT100/4 C 0/4-20mA variable | 1    | 8432289999 |
| WTS4 PT100/4 C 0...20mA 0...100C | 1    | 8432270001 |
| WTS4 PT100/4 C 0...20mA 0...100C | 1    | 8432280001 |
| WTS4 PT100/4 C 4-20mA 0...100C   | 1    | 8432270011 |
| WTS4 PT100/4 C 4-20mA 0...100C   | 1    | 8432280011 |

Specify temperature range by special calibrations

| Type                          | Qty. | Order No.  |
|-------------------------------|------|------------|
| WTS4 PT100/4 V 0-10V          | 1    | 8432240000 |
| WTS4 PT100/4 V 0-10V          | 1    | 8432250000 |
| WTS4 PT100/4 V 0-10V variabel | 1    | 8432249999 |
| WTS4 PT100/4 V 0-10V variabel | 1    | 8432259999 |
| WTS4 PT100/4 V 0-10V 0...100C | 1    | 8432240001 |
| WTS4 PT100/4 V 0-10V 0...100C | 1    | 8432250001 |

Specify temperature range by special calibrations

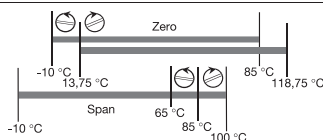
### Application

#### Example for Zero and Span

#### Temperature adjustment:

T<sub>min</sub> -10 °C  
Span 75...110 °C

Span 95 °C  
Adjustment of Span + 25 %



#### Temperature coefficient

Measurement range ≥ 200 K ≤ 200 ppm / °C (typ. 80 ppm / °C)  
100K ≤ Measurement range < 200 K ≤ 225 ppm / °C (typ. 90 ppm / °C)  
40K ≤ Measurement range < 100 K ≤ 450 ppm / °C (typ. 180 ppm / °C)

#### Aids

- Voltage supply 24 Vdc, 50 mA
- Simulator for PT 100 or precision-resistance-decade
- Ampere-voltmeter which can be calibrated to an accuracy of >0.1% of the end value.

#### Switch position/setting options

|         | 1 | 2 | 3 | Span           | 4 | 5 | 6 |
|---------|---|---|---|----------------|---|---|---|
| 0 °C    | ■ | ■ | ■ | 40 ... 50 °C   | ■ | ■ | ■ |
| -10 °C  | ■ | ■ | ■ | 50 ... 75 °C   | ■ | ■ | ■ |
| -20 °C  | ■ | ■ | ■ | 75 ... 110 °C  | ■ | ■ | ■ |
| -40 °C  | ■ | ■ | ■ | 110 ... 165 °C | ■ | ■ | ■ |
| -60 °C  | ■ | ■ | ■ | 165 ... 245 °C | ■ | ■ | ■ |
| -80 °C  | ■ | ■ | ■ | 245 ... 360 °C | ■ | ■ | ■ |
| -100 °C | ■ | ■ | ■ | 360 ... 540 °C | ■ | ■ | ■ |
| -200 °C | ■ | ■ | ■ | 540 ... 800 °C | ■ | ■ | ■ |

| Output 1)   |   | PT 100   |   |    |   |
|-------------|---|----------|---|----|---|
| Range       | 7 | 8        | 9 | 10 |   |
| 0 ... 20 mA | ■ | 2 - wire | ■ | ■  | ■ |
| 4 ... 20 mA | ■ | 3 - wire | ■ | ■  | ■ |
|             |   | 4 - wire | ■ | ■  | ■ |

1) only modules with current output ■ = on □ = off