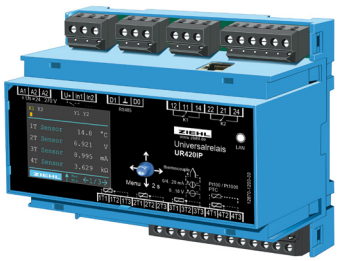
# Universal-Relay Type UR420IP

## Monitoring Relay for Temperatures and analog Signals
## 2 Limits, IP-interface, built-in Webserver



### UR840IP



**Part numbers:**

| | |
|---|---|
| UR420IP | **T224354** |
| ER6  | **T224386** |

**Web-IO universal limit value relay with Ethernet interface, built-in web server and 4 inputs for temperature sensors or other analog signals.**
The UR420IP can be connected to the internet or an intranet and operated via TCP/IP from a normal PC with a suitable browser. The device can simultaneously evaluate and monitor up to 4 different input signals. Each of the 2 output relays can be assigned up to 4 limit values, one per input. If a limit value is reached, an alarm is triggered and a relay switches.

Example: Alarm 1 is activated when a temperature is exceeded at sensor input 3 (e.g. Pt 100) or the signal from a pressure transmitter (e.g. 4-20 mA) at input 5 falls below a limit value. The device also has an RS485 interface (Modbus RTU).

Applications:
The UR420IP is used to advantage wherever the following features are required
- monitor up to 4 different analogue measured values
- and transfer them to the Internet
- Measured value query and remote maintenance via intranet/internet

Displays and controls:
- LCD display and joystick for querying measured values and operation

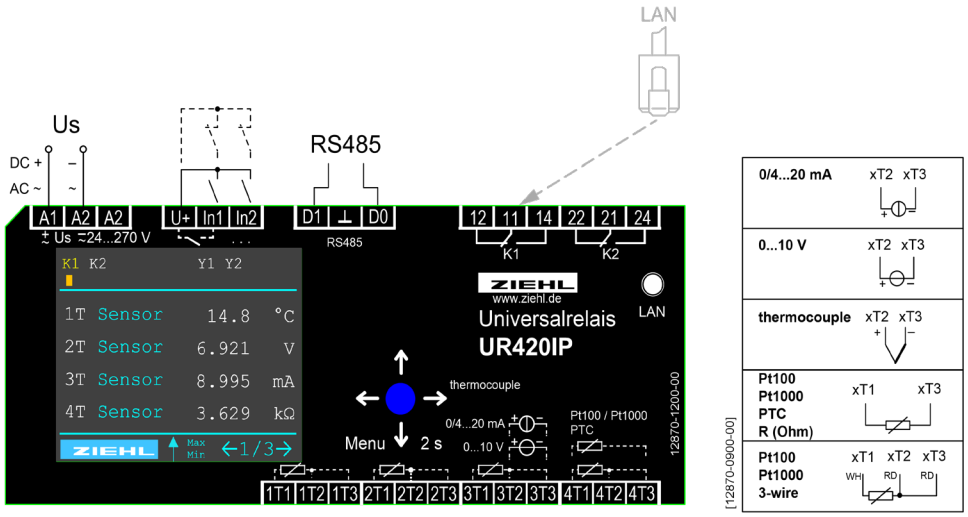
4 Measuring inputs (every input individually programmable):
- Pt 100 (RTD), Pt 1000 in 2- or 3-wire connection
- PTC-sensors (thermistors)
- Thermocouples type B, E, J, K, L, N, R, S, T
- DC 0-10 V, DC 0/4-20 mA
- Resistance 500 Ohm, resistance 30 kOhm
- Virtual sensors: linking of measured values (difference, MIN/MAX)
- 2 digital inputs with programmable functions

2 Alarms/Output Relays
- 2 relays (potential-free changeover contacts)
- Remote switching command for relays via Ethernet
- individually programmable for each alarm:
  - one limit value per measurement input/virtual sensor (switching and reset value)
  - switching and switch-back delay
  - Remote control of the relays (on/off) via browser
  - 2 out of x, alarm only if limit value is reached in 2 sensors

Interfaces:
- Ethernet interface (http and modbus)
  - Modbus TCP protocol for reading data (port adjustable)
- RS485 interface for reading data with Modbus (RTU)

Connected to internet via web browser
- Measured values, min/max values with date/time stamp
- Simulation of measured values
- status of the alarms
- Configuration of the inputs (name, type, compensation, scaling and unit)
- Configuration of alarms (limit values, relay function, ...)
- Data logging of measured values for each input, with time stamp
- Logging interval adjustable from 10 seconds to 30 minutes.
- alarm logging
- network configuration and system settings
- User management and password protection
- Real-time clock with time server synchronization, power reserve 7 days

Accessory: Installation frame ER6 for panel mount



# Technical Data UR420IP

## Rated supply voltage Us

| | |
|---|---|
| Tolerance | AC/DC 24-240 V, 0/50/60 Hz < 3 W < 7VA<br>DC 20,4...297 V AC 20...264 V |

## Relay outputs

| | |
|---|---|
| Switching voltage | 2 x 1 change over contact (CO)<br>max. AC 300 V, DC 300 V |
| Type of contact | Typ 2 (see "general technical information") |

## Digital inputs

approx. DC 18 V / 3,5 mA

## Sensor inputs

Pt 100, Pt 1000 according to EN 60 751:

| | Measuring range °C | | short-circuit Ohm | Interruption Ohm | Resistance sensor + resistance line Ohm |
|---|---|---|---|---|---|
| Sensor | min | max | < | > | max |
| Pt 100 | -199,9 | 800,0 | 15 | 400 | 500 |
| Pt 1000 | -199,9 | 800,0 | 150 | 4000 | 4100 |
| PTC | | 20 | 20000 | | |
| | | | | | |

| | |
|---|---|
| Accuracy | ± 0,5 % of measured value ± 1 K |
| Sensor current | ≤ 1 mA |
| Measuring cicle / measuring time / tM | < 1 s depending on number and type jof connected sensors |

Thermocouples according to EN 60 584, DIN 43 710

| Type Sensor | Measuring range °C Min | Max | Accuracy |
|---|---|---|---|
| B | 0,0 | 1820,0 | ≤ ± 2 °C T > 300 °C |
| E | -270,0 | 1000,0 | ≤ ± 1 °C |
| J | -210,0 | 1200,0 | ≤ ± 1 °C |
| K | -200,0 | 1372,0 | ≤ ± 2 °C |
| L | -200,0 | 900,0 | ≤ ± 1 °C |
| N | -270,0 | 1300,0 | ≤ ± 2 °C |
| R | -50,0 | 1770,0 | ≤ ± 2 °C |
| S | -50,0 | 1770,0 | ≤ ± 2 °C |
| T | -270,0 | 400,0 | ≤ ± 1 °C |

| | |
|---|---|
| Thermal drift | < 0,01 % /K |
| Measuring error of sensor line | + 0,25 µV / Ω |
| Accuracy of summing point | < ± 5 °C |

Inputs for voltage and current

| | Resistance Input Ohm | | Input signal max. | Accuracy from Full Scale |
|---|---|---|---|---|
| 0 - 10 V | 12 k Ω | 27 V | < 0,1 % | |
| 0/4...20 mA | 18 Ω | 100 mA | < 0,5 % | |
| Thermal drift | | < 0,02 %/ K | | |

Measuring of resistance PTC, 500 Ω, 30 kΩ :

| | |
|---|---|
| Accuracy 0,0...500,0 Ω | < 0,2 % of measured value ± 0,5 Ω |
| Accuracy 0,000...30,000 kΩ | < 0,5 % of measured value ± 2 Ω |
| Measuring current | ≤ 0,6 mA |

## Housing

| | |
|---|---|
| Housing / Installation Frame | Design V6 / Front mounting kit ER6, 6 TE |
| Dimensions (w x h x d) | 105 x 90 x 58 mm, mounting height 55 mm |
| Protection housing/terminals | IP 30/ IP 20 |
| Attachment | DIN-rail 35 mm according to EN 60715 or screws M4 (with 2 extra bars) |
| Weight | approx. 250 g |