

## UR20-4AI-UI-DIF-16-DIAG

Weidmüller Interfaces GmbH & Co. KG

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### Product image



### Inputs can be parameterised; up to 3-wire + FE; accuracy 0.1% FSR

Analogue input modules of the u-remote system are available in many variants with different resolutions and wiring solutions.

Variants are available with 12- and 16-bit resolution, which record up to 4 analogue sensors with +/-10 V, +/-5 V, 0...10 V, 0...5 V, 2...10 V, 1...5 V, 0...20 mA or 4...20 mA with maximum accuracy. Each plug-in connector can optionally connect sensors with 2- or 3-wire technology. The parameters for the measurement range can be individually set for each channel. In addition, each channel has its own status LED. A special variant for Weidmüller interface units enables current measurements with 16-bit resolution and maximum accuracy for 8 sensors at a time (0...20 mA or 4...20 mA).

The module electronics supply the connected sensors with power from the input current path ( $U_{IN}$ ).

### General ordering data

|                   |  |
|-------------------|--|
| Version           | Remote I/O module, IP20, 4-channel, Analog signals, Input, Current/Voltage, 16 Bit |
| Order No.         | <a href="#">1993880000</a>   |
| Type              | UR20-4AI-UI-DIF-16-DIAG  |
| GTIN (EAN)        | 4050118378894  |
| Qty.              | 1 pc(s).   |
| Replacement parts | <a href="#">1350930000</a> <a href="#">2446190000</a> <a href="#">2446200000</a>   |

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 76 mm   | Depth (inches)  | 2.992 inch |
| Height     | 120 mm  | Height (inches) | 4.724 inch |
| Width      | 11.5 mm | Width (inches)  | 0.453 inch |
| Net weight | 90 g    |                 |            |

## Temperatures

|                             |                   |                             |                   |
|-----------------------------|-------------------|-----------------------------|-------------------|
| Storage temperature         | -40 °C ... +85 °C | Operating temperature       | -20 °C ... +60 °C |
| Operating temperature, min. | -20 °C            | Operating temperature, max. | 60 °C             |

## analogue inputs

|                              |   |        |  |
|------------------------------|---|--------|--|
| Accuracy                     | 0.1% FSR  |        |  |
| Common mode range            | min.  | -30 V  |  |
|                              | max.  | 30 V   |  |
| Conversion time              | 1 ms  |        |  |
| Individual channel diagnosis | Yes   |        |  |
| Input type                   | Differential input  |        |  |
| Input value                  | Voltage U (0...5 V, ±5 V, 0...10 V, ±10 V, 1...5 V, 2...10 V), Current I (0...20 mA, 4...20 mA) |        |  |
| Internal resistance I        | 18 Ω  |        |  |
| Internal resistance U        | 100 kΩ  |        |  |
| Module diagnosis             | Yes   |        |  |
| Number of analogue inputs    | 4   |        |  |
| Resolution                   | 16 Bit  |        |  |
| Reverse polarity protection  | Yes   |        |  |
| Sensor connection            | 2-wire, 3-wire, 4-wire  |        |  |
| Sensor supply                | Yes   |        |  |
| Sensor supply                | min.  | 0      |  |
|                              | max.  | 500 mA |  |
|                              | nominal   | 500    |  |
| Short-circuit-proof          | Yes   |        |  |

## Connection data

|  |                      |  |                      |
|--|----------------------|--|----------------------|
| Type of connection                                   | PUSH IN              | Wire connection cross section, finely stranded, max. | 1.5 mm <sup>2</sup>  |
| Wire connection cross section, finely stranded, min. | 0.14 mm <sup>2</sup> | Wire cross-section, finely stranded, max. (AWG)      | AWG 16               |
| Wire cross-section, finely stranded, min. (AWG)      | AWG 26               | Wire cross-section, solid, max.                      | 1.5 mm <sup>2</sup>  |
| Wire cross-section, solid, max. (AWG)                | AWG 16               | Wire cross-section, solid, min.                      | 0.14 mm <sup>2</sup> |
| Wire cross-section, solid, min. (AWG)                | AWG 26               |  |                      |

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## Technical data

## General data

|                          |  |                           |  |
|--------------------------|--|---------------------------|--|
| Air humidity (operation) | 10% to 95%, non-condensing as per DIN EN 61131-2   | Air humidity (storage)    | 10% to 95%, non-condensing as per DIN EN 61131-2                       |
| Air humidity (transport) | 10% to 95%, non-condensing as per DIN EN 61131-2   | Air pressure (operation)  | ≥ 795 hPa (height ≤ 2000 m) as per DIN EN 61131-2                      |
| Air pressure (storage)   | 1013 hPa (height 0 m) to 700 hPa (height 3000 m) as per DIN EN 61131-2   | Air pressure (transport)  | 1013 hPa (height 0 m) to 700 hPa (height 3000 m) as per DIN EN 61131-2 |
| Pollution severity       | 2  | Rail                      | TS 35  |
| Shock                    | 15 g over 11 ms, half sinus wave, acc. to IEC 60068-2-27   | Surge voltage category    | II   |
| Test voltage             | 500 V  | UL 94 flammability rating | V-0  |
| Vibration resistance     | 5 Hz ≤ f ≤ 8.4 Hz: 3.5-mm amplitude as per IEC 60068-2-6, 8.4 Hz ≤ f ≤ 150 Hz: 1 g acceleration as per IEC 60068-2-6 |                           |  |

## Power supply

|   |              |  |  |
|---|--------------|--|--|
| Current consumption from I <sub>IN</sub> (the respective power segment) | 33 mA + load | Current consumption from I <sub>sys</sub> , typ. | 8 mA                                     |
| Reverse polarity protection   | Yes          | Voltage supply                                   | 24 V DC +20 %/ -15 %, via the system bus |

## System data

|                    |                                    |  |   |
|--------------------|------------------------------------|--|---|
| Diagnostic data    | 1 Bit                              | Field bus protocol                     | PROFINET IRT, PROFINET RT, PROFIBUS DP-V1, EtherCAT, Modbus/TCP, EtherNet/IP, CANopen, DeviceNet, POWERLINK, CC-Link, CC-Link IE TSN, IEC 61162-450 |
| Galvanic isolation | 500 V DC between the current paths | Interface                              | u-remote system bus   |
| Module type        | Analogue input module              | Transmission speed of system bus, max. | 48 Mbit   |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC001596    | ETIM 7.0    | EC001596    |
| ETIM 8.0    | EC001596    | ECLASS 9.0  | 27-24-26-01 |
| ECLASS 9.1  | 27-24-26-01 | ECLASS 10.0 | 27-24-26-01 |
| ECLASS 11.0 | 27-24-26-01 | ECLASS 12.0 | 27-24-26-01 |

## Environmental Product Compliance

|            |                                      |
|------------|--------------------------------------|
| REACH SVHC | Lead 7439-92-1                       |
| SCIP       | 82327f13-cd27-455a-ab5b-a62e1996dcf8 |

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**Technical data**

**Approvals**

Approvals



|                           |            |
|---------------------------|------------|
| ROHS                      | Conform    |
| UL File Number Search     | UL Website |
| Certificate no. (cULus)   | E141197    |
| Certificate no. (cULusEX) | E223527    |

**Downloads**

|   |   |
|---|---|
| Approval/Certificate/Document of Conformity | <a href="#">Compass safe distance certificate</a><br><a href="#">Lloyds Register certificate</a><br><a href="#">DNV/GL certificate</a><br><a href="#">ABS certificate</a><br><a href="#">RINA certificate</a><br><a href="#">Bureau Veritas - Type Approval Certificate</a><br><a href="#">PRS (Polish Register of Shipping)</a><br><a href="#">NIPPON KAIJI KYOKAI Certificate</a><br><a href="#">DEMKO 15ATEX1525X</a><br><a href="#">CCC certificate</a><br><a href="#">UKCA Declaration of Conformity - EN</a><br><a href="#">CE Declaration of Conformity - DE</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a><br><a href="#">Compatibility information – Combinability of UR20</a>  |
| Engineering Data                            | <a href="#">WSCAD</a>   |
| Product Change Notification                 | <a href="#">Release-Notes - Firmware</a>  |
| Software                                    | <a href="#">Firmware – Current firmware UR20-4AI-UI-DIF-16-DIAG</a><br><a href="#">Firmware – Archive firmware UR20-4AI-UI-DIF-16-DIAG</a>  |
| User Documentation                          | <a href="#">MAN_U-REMOTE_DE</a><br><a href="#">MAN_U-REMOTE_EN</a>  |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>  |

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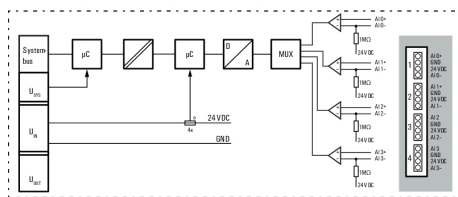
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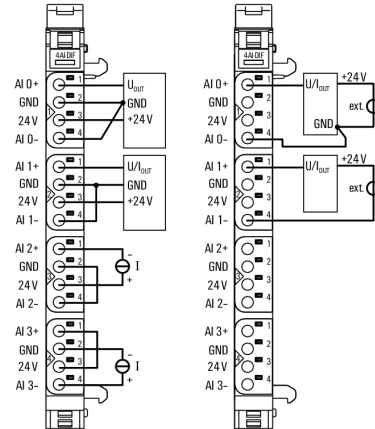
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Drawings

Block diagram



Connection diagram [info@weidmueller.com](mailto:info@weidmueller.com)



Explanation of abbreviations

Analogue input modules

