

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

Weidmüller Interface GmbH & Co. KG

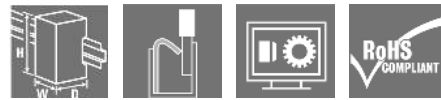
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

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. | 1993880000 |
| Type | UR20-4AI-UI-DIF-16-DIAG |
| GTIN (EAN) | 4050118378894 |
| Qty. | 1 pc(s). |
| Replacement parts | 1350930000 2446190000 2446200000 |

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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 | nominal | 500 | |
| | min. | 0 | |
| | max. | 500 mA | |
| Short-circuit-proof | Yes | | |

Connection data

| | | | |
|--|----------------------|--|----------------------|
| Type of connection | PUSH IN | Wire connection cross section, finely stranded, max. | 1.5 mm ² |
| Wire connection cross section, finely stranded, min. | 0.14 mm ² | 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 ² |
| Wire cross-section, solid, max. (AWG) | AWG 16 | Wire cross-section, solid, min. | 0.14 mm ² |
| 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 _{IN} (the respective power segment) | 33 mA + load | Current consumption from I _{sys} , 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 | Compass safe distance certificate Lloyds Register certificate DNV/GL certificate ABS certificate RINA certificate Bureau Veritas - Type Approval Certificate PRS (Polish Register of Shipping) NIPPON KAIJI KYOKAI Certificate DEMKO 15ATEX1525X CCC certificate UKCA Declaration of Conformity - EN CE Declaration of Conformity - DE |
| Engineering Data | CAD data – STEP Compatibility information – Combinability of UR20 |
| Engineering Data | WSCAD |
| Product Change Notification | Release-Notes - Firmware |
| Software | Firmware – Current firmware UR20-4AI-UI-DIF-16-DIAG Firmware – Archive firmware UR20-4AI-UI-DIF-16-DIAG |
| User Documentation | MAN_U-REMOTE_DE MAN_U-REMOTE_EN |
| Catalogues | Catalogues in PDF-format |

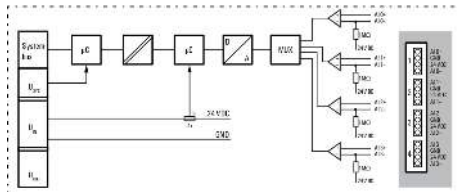
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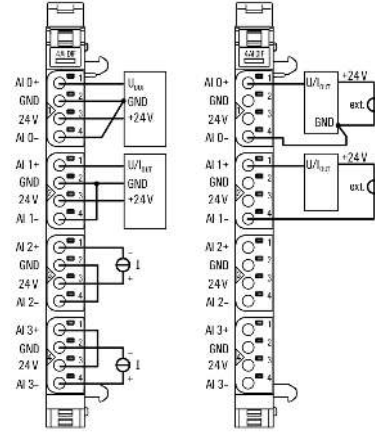
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Drawings

Block diagram

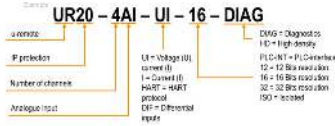


Connection diagram



Explanation of abbreviations

Analogue input modules



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Accessories

Accessories

**Potential-distribution modules; system accessory**

A wide range of accessory modules is available for individual requirements of machine and plant engineering. Various potential distribution modules are available for the supply of sensors with 2- to 4-wire connection technology directly from the remote I/O system. These offer 16 "PUSH IN" potential points and supply your application with any auxiliary potential available. An empty module, where the system bus and voltage supply are looped through, allows you to plan expansion slots in a system and to start these up without any interruptions if required.

General ordering data

| | | |
|------------|----------------------------|----------------|
| Type | UR20-SM-ACC | Version |
| Order No. | 1339920000 | Cover, , |
| GTIN (EAN) | 4050118144727 | |
| Qty. | 20 pc(s). | |
| Type | UR20-EBK-ACC | Version |
| Order No. | 1346610000 | End bracket, , |
| GTIN (EAN) | 4050118151596 | |
| Qty. | 5 pc(s). | |

Stainless steel

Stainless steel is a collective term for all types of steel (alloys) with a high degree of purity and corrosion resistance.

General ordering data

| | | |
|------------|----------------------------|--|
| Type | TS 35X7.5 2M/CRN | Version |
| Order No. | 1747350000 | Rail, TS 35, TS 35 x 7.5, without slot, Stainless steel, rust-proof, |
| GTIN (EAN) | 4032248003372 | Stainless steel 1.4301, untreated |
| Qty. | 2 m | |

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Accessories

Blank



General ordering data

| Type | PM 2.7/2.6 MC NE WS | Version |
|------------|----------------------------|---|
| Order No. | 1323710000 | OMNIMATE Signal - series PM, Pusher markers, 2.7 x 2.6 mm, Pitch in |
| GTIN (EAN) | 4050118126778 | mm (P): 3.50 Weidmueller, white |
| Qty. | 960 pc(s). | |

Custom printing



The Dekafix (DEK) marker is the universal marker for all conductor and plug-in connectors as well as for electronic sub-assemblies. The system is ideal for short number sequences and covers a wide range of ready-printed markers.

Strips for fast installation in only one work step. The printing is easy to read, rich in contrast and available in various widths.

- Large range of ready-to-use markers
- Strips for fast installation
- Terminal markers, suitable for all Weidmüller cable connectors
- Available as blank MultiCard or with standard printing

For custom printing: Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

General ordering data

| Type | DEK 5/8-11.5 MC SDR | Version |
|------------|----------------------------|---|
| Order No. | 1341610000 | Dekafix, Terminal marker, 5 x 8 mm, Pitch in mm (P): 8.00 |
| GTIN (EAN) | 4050118146059 | Weidmueller, To customer specification |
| Qty. | 100 pc(s). | |

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Accessories

Custom printing



General ordering data

| | | | |
|------------|----------------------------|---------|---|
| Type | PM 2.7/2.6 MC SDR | Version | OMNIMATE Signal - series PM, Pusher markers, 2.7 x 2.6 mm, Pitch in |
| Order No. | 1323700000 | | mm (P): 3.50 Weidmueller, To customer specification |
| GTIN (EAN) | 4050118126761 | | |
| Qty. | 192 pc(s). | | |

Aluminum



Aluminum has the second best electrical conductivity after copper. One advantage is low weight, anMiscellaneous is outstanding corrosion protection.

General ordering data

| | | | |
|------------|----------------------------|---------|--|
| Type | TS 35X7.5 2M/AL/BK | Version | Rail, TS 35, TS 35 x 7.5, without slot, Aluminium, untreated |
| Order No. | 0330800000 | | |
| GTIN (EAN) | 4008190100650 | | |
| Qty. | 2 m | | |

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Accessories

Steel



Steel DIN rails are the most widespread on the market. Among metal DIN rails, they have the lowest shortcircuit protection, similar to stainless steel.

General ordering data

| | | |
|------------|---------------------------|--|
| Type | TS 35X7.5/LL 2M/ST/ZN | Version |
| Order No. | 051450000 | Rail, TS 35, TS 35 x 7.5, with slot, Steel, galvanic zinc plated and passivated |
| GTIN (EAN) | 4008190046019 | |
| Qty. | 2 m | |
| Type | TS 35X7.5/LL 1M/ST/ZN | Version |
| Order No. | 051451000 | Rail, TS 35, TS 35 x 7.5, with slot, Steel, galvanic zinc plated and passivated |
| GTIN (EAN) | 4008190116620 | |
| Qty. | 1 m | |
| Type | TS 35X7.5/LL 2M/ST/SZ | Version |
| Order No. | 791506000 | Rail, TS 35, TS 35 x 7.5, with slot, Steel, galvanic zinc plated and passivated |
| GTIN (EAN) | 4032248296279 | |
| Qty. | 2 m | |
| Type | TS 35X7.5 2M/ST/ZN | Version |
| Order No. | 038340000 | Rail, TS 35, TS 35 x 7.5, without slot, Steel, galvanic zinc plated and passivated |
| GTIN (EAN) | 4008190088026 | |
| Qty. | 2 m | |

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Accessories

Blank



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General ordering data

| | | | |
|------------|----------------------------|---------|---|
| Type | DEK 5/8-11.5 MC NE WS | Version | |
| Order No. | 1341630000 | | Dekafix, Terminal marker, 5 x 8 mm, Pitch in mm (P): 8.00 |
| GTIN (EAN) | 4050118145946 | | Weidmueller, white |
| Qty. | 500 pc(s). | | |

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Replacement parts

Electronic modules



General ordering data

| | | |
|------------|----------------------------|------------------|
| Type | UR20-EM-1993880000-SP | Version |
| Order No. | 2446190000 | Replacement part |
| GTIN (EAN) | 4050118459562 | |
| Qty. | 1 pc(s). | |

Plugkit



General ordering data

| | | |
|------------|----------------------------|------------------|
| Type | UR20-PK-1993880000-SP | Version |
| Order No. | 2446200000 | Replacement part |
| GTIN (EAN) | 4050118459579 | |
| Qty. | 5 pc(s). | |

Data sheet

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Replacement parts

Basic modules



General ordering data

| Type | UR20-BM-SP | Version | Packaging |
|------------|----------------------------|---|-----------|
| Order No. | 1350930000 | Replacement part , Flange-mounted housing | Cardboard |
| GTIN (EAN) | 4050118402735 | | box |
| Qty. | 5 pc(s). | | |