

## UR20-4AI-UI-16

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmuller.com



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 (UIN).

## General ordering data

|            |  |
|------------|--|
| Version    | Remote I/O module, IP20, 4-channel, Analog signals, Input, Current/Voltage, 16 Bit |
| Order No.  | <a href="#">131562000</a>  |
| Type       | UR20-4AI-UI-16   |
| GTIN (EAN) | 4050118118551  |
| Qty.       | 1 items  |

Technical data

Approvals

Approvals



|                           |                            |
|---------------------------|----------------------------|
| ROHS                      | Conform                    |
| UL File Number Search     | <a href="#">UL Website</a> |
| Certificate no. (cULus)   | E141197                    |
| Certificate no. (cULusEX) | E223527                    |

Dimensions and weights

|                             |         |                 |             |
|-----------------------------|---------|-----------------|-------------|
| Depth                       | 76 mm   | Depth (inches)  | 2.9921 inch |
| Height                      | 120 mm  | Height (inches) | 4.7244 inch |
| Width                       | 11.5 mm | Width (inches)  | 0.4528 inch |
| Mounting dimension - height | 128 mm  | Net weight      | 89 g        |

Temperatures

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

Environmental Product Compliance

|                                      |                                      |                  |  |
|--------------------------------------|--------------------------------------|------------------|--|
| RoHS Compliance Status               | Compliant with exemption             |                  |  |
| RoHS Exemption (if applicable/known) | 7a, 7cl                              |                  |  |
| REACH SVHC                           | Lead 7439-92-1                       |                  |  |
| SCIP                                 | 82327f13-cd27-455a-ab5b-a62e1996dcf8 |                  |  |
| Product Carbon Footprint             | Cradle to gate                       | 8,684 kg CO2 eq. |  |

analogue inputs

|                               |  |        |  |
|-------------------------------|--|--------|--|
| Short-circuit-proof           | Yes  |        |  |
| Reverse polarity protection   | Yes  |        |  |
| Response time / fallback time | <50 ms   |        |  |
| Accuracy                      | 0.1% FSR   |        |  |
| Type                          | 1. U (0...5 V, 0...10 V, 1...5 V, 2...10 V, ±10 V), 2. I (0-20 mA or 4-20 mA), Adjustable input for current or voltage |        |  |
| Resolution                    | 16 Bit   |        |  |
| Sensor supply                 | Yes  |        |  |
| Conversion time               | 1 ms   |        |  |
| Sensor supply                 | min.   | 0 mA   |  |
|                               | nominal  | 750 mA |  |
|                               | max.   | 750 mA |  |
| Module diagnosis              | Yes  |        |  |
| Individual channel diagnosis  | No   |        |  |
| Internal resistance U         | 100 kΩ   |        |  |
| Sensor connection             | 2-wire, 3-wire, 3-wire + FE  |        |  |
| Number analogue inputs        | 4  |        |  |

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## Technical data

Internal resistance I 41.2 Ω

## Connection data

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

## General data

|                          |  |                           |  |
|--------------------------|--|---------------------------|--|
| 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 | UL 94 flammability rating | V-0  |
| Test voltage             | 500 V  | Surge voltage category    | II   |
| Pollution severity       | 2  | Mounting rail             | TS 35  |
| Air pressure (operation) | ≥ 795 hPa (height ≤ 2000 m) as per DIN EN 61131-2  | Air humidity (transport)  | 10% to 95%, non-condensing 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   | Air pressure (storage)    | 1013 hPa (height 0 m) to 700 hPa (height 3000 m) as per DIN EN 61131-2 |
| 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                       |
| Shock                    | 15 g over 11 ms, half sinus wave, acc. to IEC 60068-2-27   |                           |  |

## Power supply

|   |                     |  |  |
|---|---------------------|--|--|
| Reverse polarity protection                                 | Yes                 | Supply voltage                                   | 24 V DC +20 %/ -15 %, via the system bus |
| Current consumption from IIN (the respective power segment) | 25 mA + sensor feed | Current consumption from I <sub>sys</sub> , typ. | 8 mA                                     |

## System data

|                    |   |  |                     |
|--------------------|---|--|---------------------|
| Module type        | Analogue input module   | Interface                              | u-remote system bus |
| Galvanic isolation | 500 V DC between the current paths  | Process data                           | 8 Byte              |
| 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 | Transmission speed of system bus, max. | 48 Mbit             |
| Parameter data     | 14 Byte   | Diagnostic data                        | 1 Bit               |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 8.0    | EC001596    | ETIM 9.0    | EC001596    |
| ETIM 10.0   | EC001596    | ECLASS 14.0 | 27-24-26-01 |
| ECLASS 15.0 | 27-24-26-01 |             |             |

## Technical data

### Tender specification sheets

#### Long specification

Analogue input module  
4AI-UI-16 4-channel  
analogue input module,  
positively switching  
Connection system: PUSH-  
IN Potentials on plugs:  
analogue input, 24 VDC  
and 0 V of the input path,  
FE Dimensions (HxWxD):  
120 mm (with lever: 128  
mm), 11.5 mm, 76 mm  
Module status: display  
via collective message,  
LED at the top of the  
module Channel status:  
indication directly at the  
contact point Weight:  
88.6 g Module diagnosis:  
yes Individual channel  
diagnosis: no Reverse-  
polarity protection: yes  
Operating temperature:  
-20°C - +60°C Process  
data: 4 bits Diagnostic  
data: 1 bits Galvanic  
isolation: between  
field and system bus  
Supply voltage: 24 VDC  
+25% / -15% Internal  
current consumption:  
8 mA Supply current  
consumption: 25 mA +  
sensor feed Accuracy:  
0.1% FSR Resolution:  
16 bits Conversion time:  
1 ms Input parameters:  
voltage or current Internal  
resistance U: 100 kΩ  
Internal resistance I: 41.2  
Ω Brand: Weidmüller Type:  
UR20-4AI-UI-16

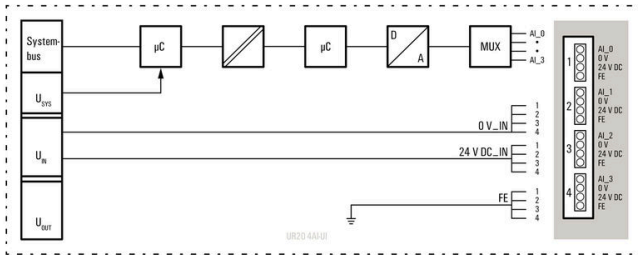
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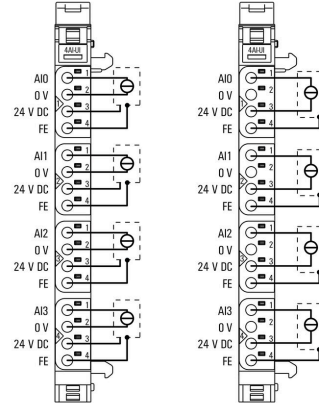
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Drawings

Block diagram



Connection diagram



Explanation of abbreviations

Analogue input modules



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## Accessories

### Accessories



#### System accessory

Discover a wide range of accessories for your u-remote system - the ideal addition to make your applications even more efficient and flexible.

### General ordering data

|            |                            |                |
|------------|----------------------------|----------------|
| Type       | UR20-EBK-ACC               | Version        |
| Order No.  | <a href="#">1346610000</a> | End bracket, , |
| GTIN (EAN) | 4050118151596              |                |
| Qty.       | 5 ST                       |                |

|            |                            |          |
|------------|----------------------------|----------|
| Type       | UR20-SM-ACC                | Version  |
| Order No.  | <a href="#">1339920000</a> | Cover, , |
| GTIN (EAN) | 4050118144727              |          |
| Qty.       | 20 ST                      |          |

### Blank



### General ordering data

|            |                            |  |
|------------|----------------------------|--|
| Type       | PM 2.7/2.6 MC NE WS        | Version  |
| Order No.  | <a href="#">1323710000</a> | OMNIMATE Signal - series PM, Pusher markers, 2.7 x 2.6 mm, Pitch |
| GTIN (EAN) | 4050118126778              | in mm (P): 3.50 Weidmueller, white                               |
| Qty.       | 960 ST                     |  |

### Custom printing



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## Accessories

## General ordering data

|            |                            |   |  |
|------------|----------------------------|---|--|
| Type       | PM 2.7/2.6 MC SDR          | Version   |  |
| Order No.  | <a href="#">1323700000</a> | OMNIMATE Signal - series PM, Pusher markers, 2.7 x 2.6 mm, Pitch in mm (P): 3.50 Weidmueller, To customer specification |  |
| GTIN (EAN) | 4050118126761              |   |  |
| Qty.       | 192 ST                     |   |  |
| Type       | DEK 5/8-11.5 MC SDR        | Version   |  |
| Order No.  | <a href="#">1341610000</a> | Dekafix, Terminal marker, 5 x 8 mm, Pitch in mm (P): 8.00 Weidmueller, To customer specification                        |  |
| GTIN (EAN) | 4050118146059              |   |  |
| Qty.       | 100 ST                     |   |  |

## Blank



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 NE WS      | Version  |  |
| Order No.  | <a href="#">1341630000</a> | Dekafix, Terminal marker, 5 x 8 mm, Pitch in mm (P): 8.00 Weidmueller, white |  |
| GTIN (EAN) | 4050118145946              |  |  |
| Qty.       | 500 ST                     |  |  |

## 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  |  |
| Order No.  | <a href="#">0330800000</a> | Terminal rail, Accessories, Aluminium, untreated, Width: 2000 mm, Height: 35 mm, Depth: 7.5 mm |  |
| GTIN (EAN) | 4008190100650              |  |  |
| Qty.       | 40 M                       |  |  |

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## Accessories

### 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.  | <a href="#">1747350000</a> | Terminal rail, Accessories, Stainless steel 1.4301, untreated, Width: |  |
| GTIN (EAN) | 4032248003372              | 2000 mm, Height: 35 mm, Depth: 7.5 mm                                 |  |
| Qty.       | 40 M                       |   |  |

### 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 2M/ST/ZN         | Version   |  |
| Order No.  | <a href="#">0383400000</a> | Terminal rail, Accessories, Steel, galvanic zinc plated and passivated, |  |
| GTIN (EAN) | 4008190088026              | Width: 2000 mm, Height: 35 mm, Depth: 7.5 mm                            |  |
| Qty.       | 40 M                       |   |  |
| Type       | TS 35X7.5/LL 2M/ST/ZN      | Version   |  |
| Order No.  | <a href="#">0514500000</a> | Terminal rail, Accessories, Steel, galvanic zinc plated and passivated, |  |
| GTIN (EAN) | 4008190046019              | Width: 2000 mm, Height: 35 mm, Depth: 7.5 mm                            |  |
| Qty.       | 40 M                       |   |  |
| Type       | TS 35X7.5/LL 1M/ST/ZN      | Version   |  |
| Order No.  | <a href="#">0514510000</a> | Terminal rail, Accessories, Steel, galvanic zinc plated and passivated, |  |
| GTIN (EAN) | 4008190116620              | Width: 1000 mm, Height: 35 mm, Depth: 7.5 mm                            |  |
| Qty.       | 20 M                       |   |  |
| Type       | TS 35X7.5/LL 2M/ST/SZ      | Version   |  |
| Order No.  | <a href="#">7915060000</a> | Terminal rail, Accessories, Steel, galvanic zinc plated and passivated, |  |
| GTIN (EAN) | 4032248296279              | Width: 2000 mm, Height: 35 mm, Depth: 7.5 mm                            |  |
| Qty.       | 40 M                       |   |  |

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## Accessories

### Crimping tools



Crimping tools for wire end ferrules, with and without plastic collars

- Ratchet guarantees precise crimping
- Release option in the event of incorrect operation

### General ordering data

|            |                            |         |  |
|------------|----------------------------|---------|--|
| Type       | PZ 2.5 S                   | Version |  |
| Order No.  | <a href="#">2903690000</a> |         | 0.14mm <sup>2</sup> , 2.5mm <sup>2</sup> , Trapezoidal crimp |
| GTIN (EAN) | 4099986027008              |         |  |
| Qty.       | 1 ST                       |         |  |

### Basic modules



### General ordering data

|            |                            |         |   |
|------------|----------------------------|---------|---|
| Type       | UR20-BM-SP                 | Version |   |
| Order No.  | <a href="#">1350930000</a> |         | Replacement part , Flange-mounted housing |
| GTIN (EAN) | 4050118402735              |         |   |
| Qty.       | 5 ST                       |         |   |

### Electronic modules



### General ordering data

|            |                            |         |                  |
|------------|----------------------------|---------|------------------|
| Type       | UR20-EM-1315620000-SP      | Version |                  |
| Order No.  | <a href="#">1347200000</a> |         | Replacement part |
| GTIN (EAN) | 4050118248340              |         |                  |
| Qty.       | 1 ST                       |         |                  |

## Accessories

### Plugkit



### General ordering data

|            |                            |                  |  |
|------------|----------------------------|------------------|--|
| Type       | UR20-PK-1315620000-SP      | Version          |  |
| Order No.  | <a href="#">1484020000</a> | Replacement part |  |
| GTIN (EAN) | 4050118293630              |                  |  |
| Qty.       | 5 ST                       |                  |  |