

## UR20-1CNT-500

Weidmüller Interface GmbH &amp; Co. KG

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Germany

www.weidmueller.com



Digital counter and communication modules 100/500 kHz; 32-bit counter resolution; individual channel diagnosis Incremental and absolute value encoders have become indispensable in today's automated systems. Developed especially for these applications, Weidmüller offers you various counter modules that can accept an input frequency up to 500 kHz. The synchronous-serial interface (SSI) module allows high precision positioning tasks to be realised with absolute value encoders. The module can be parameterised for listening or master mode operation in order to cope with all fields of application. A module with pulse input is available to you for frequency measurement up to 100 kHz and the UR20-1CNT-500 offers an input that can accept frequencies up to 500 kHz. The UR20-2CNT-100 module has two independent counter inputs; it is supplemented with the UR20-1CNT-100-1DO module with one counter, which however offers additional options thanks to a latch, gate and reset input. This allows external control of the counter. In addition, this module can trigger an immediate event via a digital output using a set reference value. The UR20-1COM-232-485-422 module offers you extended communication options; for example devices can be integrated consistently in u-remote systems via an RS232, RS485 or RS422 interface. The UR20-1COM-SAI-PRO module presents a solution for connecting the control cabinet to the field. This gateway allows the integra-

tion of up to 15 decentral IP67 SAI-PRO Subbus modules per u-remote module.

The module electronics supply the connected sensors with power from the input current path (UIN).

The IO-Link master UR20-4COM-IO-LINK-V2 (older version: UR20-4COM-IO-LINK) supplements the u-remote platform with intelligent sensor technology. With four IO-Link channels (short-circuit-proof, with individual channel and module diagnostics) and support from the web-based u-mation configurator, it enables easy parameterisation and integration of smart field devices.

#### General ordering data

|            |  |
|------------|--|
| Version    | Remote I/O module, IP20, Digital signals, Input, PUSH IN connection, Counter, Single channel |
| Order No.  | <a href="#">1315580000</a>   |
| Type       | UR20-1CNT-500  |
| GTIN (EAN) | 4050118118483  |
| 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      | 87.6 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, 7cI                              |                  |  |
| REACH SVHC                           | Lead 7439-92-1                       |                  |  |
| SCIP                                 | 82327f13-cd27-455a-ab5b-a62e1996dcf8 |                  |  |
| Product Carbon Footprint             | Cradle to gate                       | 8,705 kg CO2 eq. |  |

digital inputs

|                      |                                   |                              |  |
|----------------------|-----------------------------------|------------------------------|--|
| Short-circuit-proof  | Yes                               | Number                       | 1  |
| Sensor supply        | Yes                               | Input filter                 | configurable                                     |
| Max. input frequency | 500 kHz                           | Counter width                | 32 bit   |
| Mode of operation    | Pulse, Direction, 1-, 2-, 4-times | Input type                   | for Type 1 and Type 3 sensors as per IEC 61131-2 |
| Module diagnosis     | Yes                               | Individual channel diagnosis | No   |

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             | Number   | 1                    |
| 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> |

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## Technical data

### 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

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

### System data

|  |                                    |                    |   |
|--|------------------------------------|--------------------|---|
| Module type                                      | Functional module                  | Interface          | u-remote system bus   |
| Galvanic isolation                               | 500 V DC between the current paths | 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/s |                                    |                    |   |

### Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 8.0    | EC001601    | ETIM 9.0    | EC001601    |
| ETIM 10.0   | EC001601    | ECLASS 14.0 | 27-24-26-05 |
| ECLASS 15.0 | 27-24-26-05 |             |             |

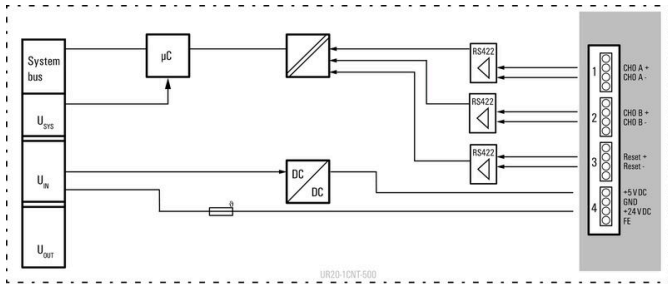
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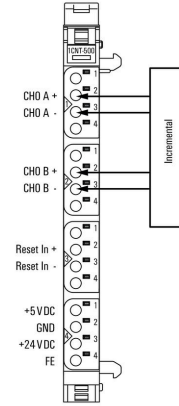
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**Drawings**

**Block diagram**

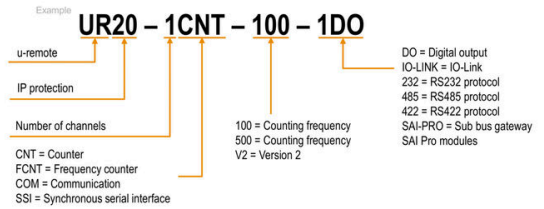


**Connection diagram**



**Explanation of abbreviations**

**Digital counter- and communication- 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-1315580000-SP      | Version |                  |
| Order No.  | <a href="#">1347170000</a> |         | Replacement part |
| GTIN (EAN) | 4050118248371              |         |                  |
| Qty.       | 1 ST                       |         |                  |

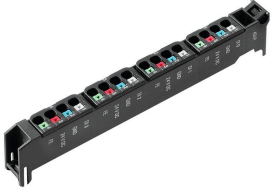
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## Accessories

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### Plugkit



### General ordering data

|            |                            |                  |  |
|------------|----------------------------|------------------|--|
| Type       | UR20-PK-1315580000-SP      | Version          |  |
| Order No.  | <a href="#">1346530000</a> | Replacement part |  |
| GTIN (EAN) | 4050118151237              |                  |  |
| Qty.       | 5 ST                       |                  |  |