

## UR20-2AI-SG-24-DIAG

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany

[www.weidmueller.com](http://www.weidmueller.com)



2-channel module for u-remote load cell analysis Measuring bridges in the form of strain gauges are used to measure weight, torque or oscillation. Fast or exact measurements are often required here, for example when it comes to determining computational data. The strain gauge module from u-remote provides an accuracy of up to 0.01% with two 24-bit resolution channels. Calibration and gauging enable industrial applications. A tare function can be triggered per channel, processes are optimised and costs reduced. The Calibration by an independent body can be performed easily via the u-remote web server. User-friendly calibration via the web server has a password protection as well as documentation functionality in order to secure settings. The u-remote strain gauge module enables the parallel analysis of measurement data from up to four load cells on a single channel.

### General ordering data

Version	Remote I/O module, IP20, Analog signals, Input, PUSH IN connection
Order No.	<a href="#">1990070000</a>
Type	UR20-2AI-SG-24-DIAG
GTIN (EAN)	4050118374902
Qty.	1 items

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## 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	90 g

## Temperatures

Storage temperature	-40 °C ... +85 °C	Operating temperature	-20 °C...60 °C
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## 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	8,848 kg CO2 eq.	

## analogue inputs

Short-circuit-proof	Yes		
Accuracy	Customer calibration: $\pm 0.01\%$ FSR (100 ppm), $\pm 1\%$ FSR (with interference)		
Resolution	24 bit per channel		
Sensor supply	max. 10 mA		
Conversion time	5 - 800 ms, parameterisable		
Temperature coefficient	<5 ppm/K		
Input filter	10 ms		
Input type	Type 1 in acc. with IEC 61131-2, Type 3 in acc. with IEC 61131-2		
Sensor supply	min.	0 mA	
	nominal	10 mA	
	max.	10 mA	
Module diagnosis	Yes		
Individual channel diagnosis	Yes		
Measurement range	$\pm 150$ mV		
Input value	Differential, to evaluate a strain gauge full-bridge		
Permissible sensor load	85 ... 5000 $\Omega$		
Supported sensor sensitivity	0.5 mV - 30 V, parameterisable		
Sensor connection	4-wire, 6-wire, parameterisable		
Number analogue inputs	2		

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## Technical data

### digital inputs

Short-circuit-proof	Yes						
Number of digital inputs	2						
Sensor supply	max. 10 mA						
Input filter	10 ms						
Input type	Type 1 in acc. with IEC 61131-2, Type 3 in acc. with IEC 61131-2						
Sensor supply	<table border="1"> <tr> <td>min.</td> <td>0 mA</td> </tr> <tr> <td>nominal</td> <td>10 mA</td> </tr> <tr> <td>max.</td> <td>10 mA</td> </tr> </table>	min.	0 mA	nominal	10 mA	max.	10 mA
min.	0 mA						
nominal	10 mA						
max.	10 mA						
Input voltage, high	> 11 V						
Module diagnosis	Yes						
Input voltage, low	<5 V						
Individual channel diagnosis	Yes						
Sensor connection	4-wire, 6-wire, parameterisable						

### 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

Supply voltage	24 V DC +20 %/ -15 %, via the system bus	Current consumption from IIN (the respective power segment)	35 mA
Current consumption from Isys, 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	10 Byte

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## Technical data

Configuration interface	Micro USB 2.0	Field bus protocol	PROFINET IRT, PROFINET RT, PROFIBUS DP-V1, EtherCAT, Modbus/TCP, EtherNet/IP, CANopen, DeviceNet, POWERLINK, CC-Link, CC-Link IE TSN
Transmission speed of system bus, max.	48 MBit/s	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		

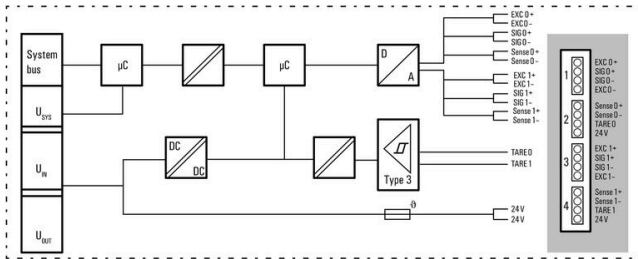
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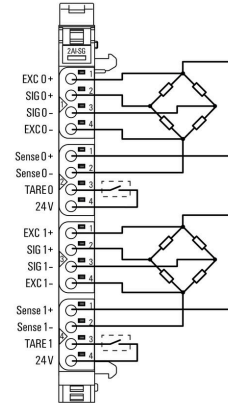
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Drawings

Block diagram

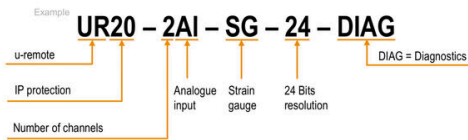


Connection diagram



Explanation of abbreviations

Strain gauge module



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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		

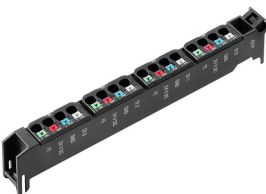
## Basic modules



## 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		

## Plugkit



## General ordering data

Type	UR20-PK-1990070000-SP	Version	
Order No.	<a href="#">2068620000</a>		Replacement part
GTIN (EAN)	4050118416916		
Qty.	5 ST		

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## Accessories

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### Electronic modules



### General ordering data

Type	UR20-EM-1990070000-SP	Version	
Order No.	<a href="#">1562260000</a>	Replacement part	
GTIN (EAN)	4050118367195		
Qty.	1 ST		