

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

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

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

### Product image



### 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 pc(s).
Replacement parts	<a href="#">1350930000</a> <a href="#">2068620000</a> <a href="#">1562260000</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
Mounting dimension - height	128 mm	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	Customer calibration: $\pm 0.01\%$ FSR (100 ppm), $\pm 1\%$ FSR (with interference)		
Conversion time	5 - 800 ms, parameterisable		
Individual channel diagnosis	Yes		
Input filter	10 ms		
Input type	Type 1 in acc. with IEC 61131-2, Type 3 in acc. with IEC 61131-2		
Input value	Differential, to evaluate a strain gauge full-bridge		
Measurement range	$\pm 150$ mV		
Module diagnosis	Yes		
Number of analogue inputs	2		
Permissible sensor load	85 ... 5000 $\Omega$		
Resolution	24 bit per channel		
Sensor connection	4-wire, 6-wire, parameterisable		
Sensor supply	max. 10 mA		
Sensor supply	nominal	10 mA	
	min.	0 mA	
	max.	10 mA	
Short-circuit-proof	Yes		
Supported sensor sensitivity	0.5 mV - 30 V, parameterisable		
Temperature coefficient	< 10 ppm/K		

## digital inputs

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

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## Technical data

## 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		

## 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)	35 mA	Current consumption from I <sub>sys</sub> , typ.	8 mA
Voltage supply	24 V DC +20 %/ -15 %, via the system bus		

## System data

Configuration interface	Micro USB 2.0	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	Galvanic isolation	500 V DC between the current paths
Interface	u-remote system bus	Module type	Analogue input module
Parameter data	14 Byte	Process data	10 Byte
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

Creation date February 20, 2023 4:57:01 PM CET

Catalogue status 03.02.2023 / We reserve the right to make technical changes.

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## Technical data

### Environmental Product Compliance

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

### 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> <a href="#">Lloyds Register certificate</a> <a href="#">DNV/GL certificate</a> <a href="#">ABS certificate</a> <a href="#">RINA certificate</a> <a href="#">Bureau Veritas - Type Approval Certificate</a> <a href="#">PRS (Polish Register of Shipping)</a> <a href="#">NIPPON KAIJI KYOKAI Certificate</a> <a href="#">DEMKO 15ATEX1525X</a> <a href="#">UKCA Declaration of Conformity - EN</a> <a href="#">CE Declaration of Conformity - DE</a>
Engineering Data	<a href="#">CAD data – STEP</a> <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 – Archive firmware UR20-2AI-SG-24-DIAG</a> <a href="#">Firmware – Current firmware UR20-2AI-SG-24-DIAG</a>
User Documentation	<a href="#">MAN_U-REMOTE_DE</a> <a href="#">MAN_U-REMOTE_EN</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>

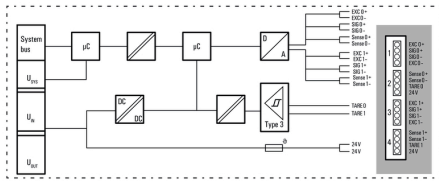
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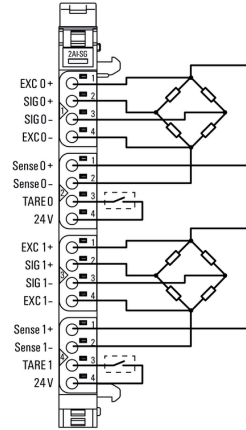
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**Drawings**

**Block diagram**



**Connection diagram**



**Explanation of abbreviations**

**Strain gauge module**



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## Accessories

## Accessories

**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.	<a href="#">1339920000</a>	Cover, ,
GTIN (EAN)	4050118144727	
Qty.	20 pc(s).	
Type	UR20-EBK-ACC	Version
Order No.	<a href="#">1346610000</a>	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.	<a href="#">1747350000</a>	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.	<a href="#">1323710000</a>	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.	<a href="#">1341610000</a>	Dekafix, Terminal marker, 5 x 8 mm, Pitch in mm (P): 8.00
GTIN (EAN)	4050118146059	Weidmueller, To customer specification
Qty.	100 pc(s).	

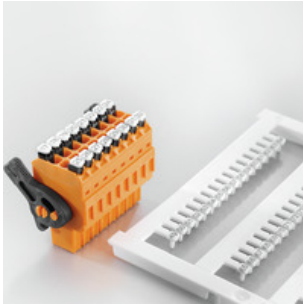
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**Accessories**

**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.	<a href="#">1323700000</a>		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.	<a href="#">0330800000</a>		
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.	<a href="#">051450000</a>	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.	<a href="#">051451000</a>	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.	<a href="#">791506000</a>	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.	<a href="#">038340000</a>	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.	<a href="#">1341630000</a>		Dekafix, Terminal marker, 5 x 8 mm, Pitch in mm (P): 8.00
GTIN (EAN)	4050118145946		Weidmueller, white
Qty.	500 pc(s).		

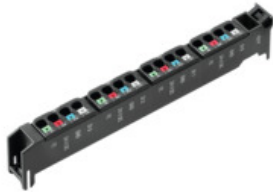
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**Replacement parts****Electronic modules****General ordering data**

Type	UR20-EM-1990070000-SP	Version
Order No.	<a href="#">1562260000</a>	Replacement part
GTIN (EAN)	4050118367195	
Qty.	5 pc(s).	

**Plugkit****General ordering data**

Type	UR20-PK-1990070000-SP	Version
Order No.	<a href="#">2068620000</a>	Replacement part
GTIN (EAN)	4050118416916	
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.	<a href="#">1350930000</a>	Replacement part , Flange-mounted housing	Cardboard
GTIN (EAN)	4050118402735		box
Qty.	5 pc(s).		