

UR20-8DI-PN-FSPS-V2

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

www.weidmueller.com

Product image, Similar to illustration



SIL3; OSSD outputs; wire breakage and short-circuit detection

Safety technology is of central importance in industrial automation and machine building. If you want to reduce risks and avoid dangers for people and environment, you need solutions which satisfy stringent requirements and statutory specifications. The safety modules of the u-remote system have key features such as emergency-stop circuits and wire-breakage or short-circuit detection. They meet all SIL 3 requirements according to IEC 62061 and EN ISO 13849-1, category 4, PL e, and support the safe operation of your system.

By safely shutting down the downstream output modules, the safety modules attain maximum safety with optimum control. All input sensors are independently supplied via separate voltage paths and report the current machine status to the control unit. Restarting is either carried out in manual mode or using the autostart function. In addition, Weidmüller safety modules reduce maintenance and service times and improve response times in case of emergency – thanks to a concept of maximum transparency, e.g. using OSSD outputs.

The module electronics supply the connected actuators from the output current path (U_{OUT}).

General ordering data

Version	Remote I/O module, IP20, Safety, Digital signals, 8-channel
Order No.	2464590000
Type	UR20-8DI-PN-FSPS-V2
GTIN (EAN)	4050118479294
Qty.	1 pc(s).
Replacement parts	1350970000 2465950000

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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	88.82 g

Temperatures

Storage temperature	-40 °C ... +85 °C	Operating temperature	-20 °C ... +60 °C
Operating temperature, min.	-20 °C	Operating temperature, max.	60 °C

digital inputs

Individual channel diagnosis	Yes	Input filter	configurable
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	8	Number of digital inputs	8
Reverse polarity protection	Yes	Sensor connection	2-wire, 3-wire, 4-wire
Sensor supply	Yes		

digital outputs

Individual channel diagnosis	Yes	Module diagnosis	Yes
Number	8	Sensor connection	2-wire, 3-wire, 4-wire

Connection data

Number	8	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

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		

Creation date October 31, 2023 7:03:03 PM CET

Catalogue status 28.10.2023 / We reserve the right to make technical changes.

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Power supply

Current consumption from I_{IN} (the respective power segment)	30 mA	Current consumption from I_{OUT} (the respective power segment)	30 mA
Current consumption from I_{sys} , typ.	8 mA	Reverse polarity protection	Yes
Voltage supply	24 V DC +20 %/ -15 %, via the system bus		

Safety characteristics in acc. with EN 61508

Achievable safety level, inputs	Single-channel circuit 1oo1: SIL 2	HFT (hardware fault tolerance), inputs	Single-channel circuit 1oo1: 0, Dual-channel circuit 1oo2: 1
PFD (probability of failure on demand), inputs	Single-channel circuit 1oo1: $8,77 \cdot 10^{-4}$, Dual-channel circuit 1oo2: $1,85 \cdot 10^{-5}$	PFD (probability of failure on demand), outputs	$1,85 \cdot 10^{-5}$
PFH (probability of failure per hour in 1/h), inputs	Single-channel circuit 1oo1: 10^{-8} , Dual-channel circuit 1oo2: $2,17 \cdot 10^{-10}$	Proportion of safety-related outages (SFF)	98 %

Safety characteristics in acc. with EN 62061

Achievable safety level, inputs	Single-channel circuit 1oo1: SILCL 2, Dual-channel circuit 1oo2: SILCL 3	Error response time	Single-channel circuit 1oo1: 10 s
PFH (probability of failure per hour in 1/h), inputs	Single-channel circuit 1oo1: 10^{-8} , Dual-channel circuit 1oo2: $2,94 \cdot 10^{-9}$		

Safety characteristics in acc. with EN ISO 13849

Achievable safety level, inputs	PLd, category 2 (DIN EN ISO 13849-1) / architecture 1oo1 (1 channel), Ple, category 4 (DIN EN ISO 13849-1) / architecture 1oo2 (2 channels)	Diagnostic coverage (DC), inputs	Single-channel circuit 1oo1: 90%, Dual-channel circuit 1oo2: 99%
MTTF	100 a		

System data

Field bus protocol	PROFINET IRT, PROFIBUS DP-V1	Galvanic isolation	500 V DC between the current paths
Interface	u-remote system bus	Module type	Safe input module
Possible connection	2-wire, 4-wire	Transmission speed of system bus, max.	48 Mbit

Classifications

ETIM 6.0	EC001599	ETIM 7.0	EC001599
ETIM 8.0	EC001599	ETIM 9.0	EC001599
ECLASS 9.0	27-24-26-05	ECLASS 9.1	27-24-26-05
ECLASS 10.0	27-24-26-05	ECLASS 11.0	27-24-26-05
ECLASS 12.0	27-24-26-05	ECLASS 13.0	27242605

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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	KC certificate TÜV_certificate_Safety-IO-module.pdf Lloyds Register certificate DNV/GL certificate DEMKO15ATEX1525X UKCA Declaration of Conformity - EN CE Declaration of Conformity - DE
Engineering Data	CAD data – STEP Compatibility information – Combinability of UR20
Product Change Notification	Release-Notes - Firmware
Software	Firmware – Archive firmware UR20-8DI-PN-FSPS-V2 Runtime Software – CPD-Tool (PROFIsafe_parameter-checksum-generator) Library and function block – SISTEMA library 2.0
User Documentation	MAN_U-REMOTE_DE MAN_U-REMOTE_EN MAN_U-REMOTE_FS_DE MAN_U-REMOTE_FS_EN Application notes - PROFISAFE Siemens PLC STEP7 V5.5 EN Application notes - PROFISAFE Siemens PLC TIA-Portal EN Quick start guide – Getting started with PROFINET applications
Catalogues	Catalogues in PDF-format

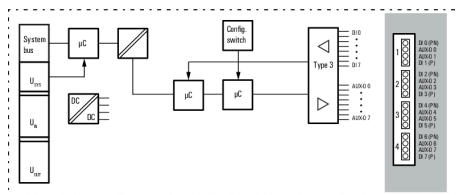
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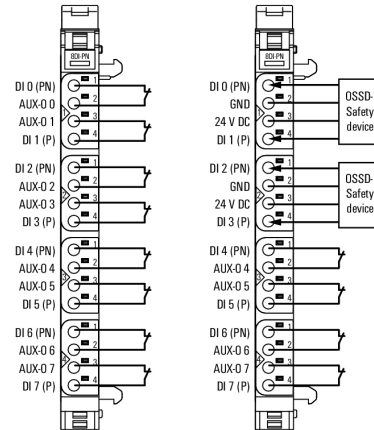
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Drawings

Block diagram



Connection diagram



Explanation of abbreviations

Safe I/O modules

