

UR20-4DI-4DO-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 (UOUT).

General ordering data

Version	Remote I/O module, IP20, Safety, Digital signals, 4-channel
Order No.	2464570000
Type	UR20-4DI-4DO-PN-FSPS-V2
GTIN (EAN)	4050118479270
Qty.	1 items

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Technical data

Approvals

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ROHS	Conform
UL File Number Search	UL Website
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	89.7 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, 7cI		
REACH SVHC	Lead 7439-92-1		
SCIP	82327f113-cd27-455a-ab5b-a62e1996dcf8		
Product Carbon Footprint	Cradle to gate	8,853 kg CO2 eq.	

digital inputs

Short-circuit-proof	Yes	Reverse polarity protection	Yes
Number	4	Number of digital inputs	4
Sensor supply	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
Module diagnosis	Yes	Input voltage, low	<5 V
Individual channel diagnosis	Yes		

digital outputs

Short-circuit-proof	Yes	Number	4
Number of digital outputs	4	Feedback-free	No
Output current per channel, max.	0.5 A	Module diagnosis	Yes
Individual channel diagnosis	Yes	Response time of the protective circuit (current limiting)	<100µs
Actuator connection	2-wire	Output current per module, max.	2 A

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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	4
Wire cross-section, solid, max.	1.5 mm ²	Wire cross-section, solid, min.	0.14 mm ²
Wire connection cross section, finely stranded, max.	1.5 mm ²	Wire connection cross section, finely stranded, min.	0.14 mm ²

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 I _{sys} , typ.	8 mA	Current consumption from IO _{UT} (the respective power segment)	20 mA + load

Safety characteristics in acc. with EN 61508

PFD (probability of failure on demand), inputs	Single-channel circuit 1oo1: 8,77*10 ^{#4} , Dual-channel circuit 1oo2: 1,85*10 ^{#5}	PFD (probability of failure on demand), outputs	1,85*10 ^{#5}
Achievable safety level, outputs	SIL 3	PFH (probability of failure per hour in 1/h), outputs	2,17*10 ^{#10}
Achievable safety level, inputs	Single-channel circuit 1oo1: SIL 2; Dual-channel circuit 1oo2: SIL 3	PFH (probability of failure per hour in 1/h), inputs	Single-channel circuit 1oo1: 10 ^{#8} , Dual-channel circuit 1oo2: 2,17*10 ^{#10}
HFT (hardware fault tolerance), inputs	Single-channel circuit 1oo1: 0, Dual-channel circuit 1oo2: 1	Proportion of safety-related outages (SFF)	98 %
HFT (hardware fault tolerance), outputs	1		

Safety characteristics in acc. with EN 62061

PFH (probability of failure per hour in 1/h), inputs	Single-channel circuit 1oo1: 10 ^{#8} , Dual-channel circuit 1oo2: 2,94*10 ^{#9}	PFH (probability of failure per hour in 1/h), outputs	5,56*10 ^{#9}
Achievable safety level, inputs	Single-channel circuit 1oo1: SILCL 2, Dual-	Error response time	Single-channel circuit 1oo1: 5 s

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	channel circuit 1oo2: SILCL 3		
Achievable safety level, outputs	SIL 3		

Safety characteristics in acc. with EN ISO 13849

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

System data

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

Classifications

ETIM 8.0	EC001599	ETIM 9.0	EC001599
ETIM 10.0	EC001599	ECLASS 14.0	27-24-26-05
ECLASS 15.0	27-24-26-05		

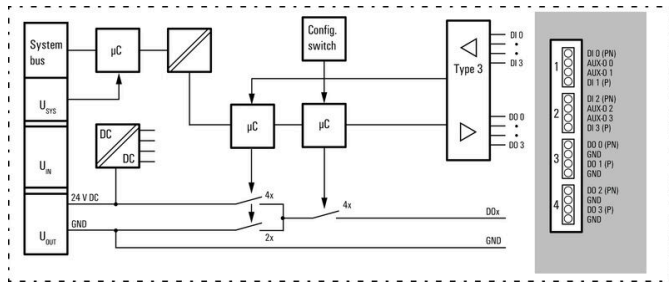
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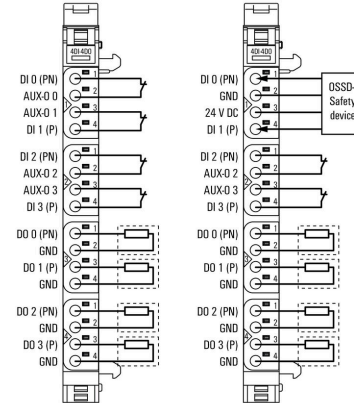
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Drawings

Block diagram



Connection diagram



Explanation of abbreviations

Safe I/O modules

