Data sheet

ACT20M-RTI-AO-S

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

www.weidmueller.com

Product image



ACT20M: The slim solution

- Safe and space-saving (6 mm) isolation and conversion
- Quick installation of the power supply unit using the CH20M mounting rail bus
- Easy configuration via DIP switch or FDT/DTM software
- Extensive approvals such as ATEX, IECEX, GL, DNV
- High interference resistance

General ordering data

Version	Temperature converter, With galvanic isolation, Input : Temperature, PT100, Output : I / U
Order No.	1375510000
Type	ACT20M-RTI-AO-S
GTIN (EAN)	4050118259667
Qty.	1 items

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Technical data

Approvals

Approvals	
ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E337701

Dimensions and weights

Depth	114.3 mm	Depth (inches)	4.5 inch
Height	112.5 mm	Height (inches)	4.4291 inch
Width	6.1 mm	Width (inches)	0.2402 inch
Net weight	89 g		

Temperatures

Storage temperature	-40 °C...85 °C	Operating temperature	-25 °C...70 °C
Humidity at operating temperature	0...95 % (no condensation)	Humidity	40 °C / 95 % rel. humidity, no condensation

Probability of failure

MTBF	152 a

Environmental Product Compliance

RoHS Compliance Status	Compliant with exemption
RoHS Exemption (if applicable/known)	7a, 7cI
REACH SVHC	Lead 7439-92-1
SCIP	2f6dd957-421a-46db-a0c2-cf1609156924

Input

Sensor	PT100 (2-/3-/4- wire)	Number inputs	1
Line resistance in measuring circuit	≤ 50 Ω	Temperature input range	Configurable, PT100: -200...+850 °C, min. measurement range 10°C (RTD)
Influence of the sensor cable resistance	<0.002 Ω/Ω (@ 3/4-wire)		

Output

Number of outputs	1	load impedance voltage	≥ 10 kΩ
Load impedance current	≤ 600 Ω	Wire break detection	Yes, Configurable, 3.5 mA / 23 mA / none
Type	active, connected control must be passive	Output voltage, note	configurable, 0(2)...10 V, 0(1)...5 V
Output current	configurable, 0...20 mA, 4...20 mA	Output signal limit	<4 mA (average), <60 mA (pulse current), low duty cycle

General data

Accuracy	absolute accuracy: <±0.05 % of the measurement range, Basic accuracy: <±0.1°C
Protection degree	IP20

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Supply voltage	24 V DC ±30 % at terminal or via CH20M rail bus	
Step response time	Configurable, ≤ 30 ms, <300 ms	
Mounting rail	TS 35	
Temperature coefficient	≤0.01 % of the measurement range/°C or 0.02 °C/°C	
Delivery state	Setting parameters	Input
	Configuration	0 °C
	Setting parameters	Bandwidth
	Configuration	50 Hz
	Setting parameters	Output 1
	Configuration	0...20 mA
	Setting parameters	Output 2
	Configuration	0...20 mA
	Setting parameters	Sensor error detection
	Configuration	enabled
	Setting parameters	Step response time
	Configuration	< 30 ms
	Setting parameters	Noise suppression
	Configuration	enabled
Nominal power consumption	0.5 VA	
Configuration	DIP switch	
Operating altitude	≤ 2000 m	
Power consumption, max.	0.7 W	
Power consumption, typ.	0.49 W	
Delivery state	Input: 0 °C // Bandwidth: 50 Hz // Output 1: 0...20 mA // Output 2: 0...20 mA // Sensor error detection: enabled // Step response time: < 30 ms // Noise suppression: enabled	
Included in delivery	Instruction sheet	

Insulation coordination

EMC standards	IEC 61326-1	Surge voltage category	II
Pollution severity	2	Galvanic isolation	3-way isolator
Insulation voltage	2.5 kVeff /1 min.	Rated voltage	300 Veff

Data for Ex applications (ATEX)

Marking	II 3 G Ex nA IIC T4 Gc	IECEx - gas labelling	Ex nA IIC T4 Gc, Standard: IEC 60079-0-15
Installation location	Device installed in safe area, zone 2		

Connection data

Type of connection	Screw connection	Tightening torque, min.	0.4 Nm
Tightening torque, max.	0.6 Nm	Clamping range, rated connection	2.5 mm²
Clamping range, min.	0.5 mm²	Clamping range, max.	2.5 mm²
Wire connection cross section AWG, min.	AWG 30	Wire connection cross section AWG, max.	AWG 14

EMC conformity and approvals

EMC standards	IEC 61326-1	Standards	IEC 61010-1

Part description

Product description	The ACT20M-RTI-AO-S configurable temperature transducer isolates and converts analogue signals. An analogue RTD input signal (Type Pt100) is linearly converted into an analogue output signal and galvanically isolated. The power supply is galvanically isolated from the input and output (3-way isolation) and this is done with direct wiring or over the Weidmüller rail bus.

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Classifications

ETIM 8.0	EC002919	ETIM 9.0	EC002919
ETIM 10.0	EC002919	ECLASS 14.0	27-21-01-29
ECLASS 15.0	27-21-01-29		

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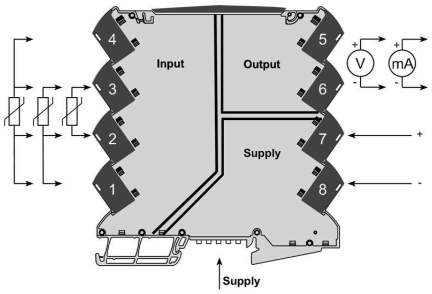
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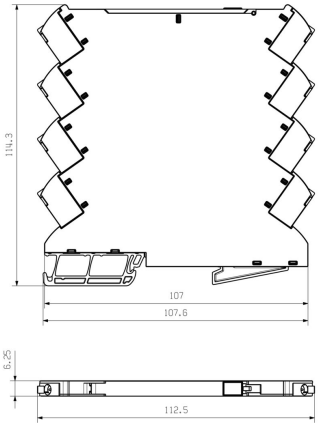
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Drawings

Connection diagram



Dimensional drawing



DIP switch setting

Temperature range [°C]
Pt100: -200...+850 °C

	S1	S2										S2										S2									
RTD sensor type	1 2 3	Min. Temp.	1	2	3	4	Max. Temp.	5	6	7	8	9	10	Max. Temp.	5	6	7	8	9	10	Max. Temp.	5	6	7	8	9	10				
Pt100 2 wire	■	-200					0							105	■		■			■	375	■		■			■				
Pt100 3 wire	■	-180				■	5						■	110	■		■				400	■		■		■					
Pt100 4 wire	■ ■	-150			■		10					■		115	■		■		■	■	425	■		■		■	■				
		-100			■	■	15					■	■	120	■		■	■			450	■		■	■						
Output	4 5 6	-50		■			20				■			125	■		■	■		■	500	■		■	■	■					
0...20 mA		-25		■		■	25				■		■	130	■		■	■	■		550	■		■	■	■	■				
4...20 mA	■	-10		■	■		30				■	■		135	■		■	■	■	■	600	■		■	■	■	■	■			
0...10 V	■	-5		■	■	■	35				■	■	■	140	■		■	■	■		650	■		■	■	■					
2...10 V	■ ■	0	■				40			■				145	■		■	■	■	■	700	■		■	■	■		■			
0...5 V	■ ■ ■	5	■			■	45			■			■	150	■		■	■	■		750	■		■	■	■		■			
1...5 V	■ ■ ■	10	■		■		50			■		■		160	■		■	■	■	■	800	■		■	■	■	■				
		20	■		■	■	55			■	■	■	■	170	■		■	■	■	■	850	■		■	■	■	■				
Sensor error detection	7	25	■	■			60			■	■	■		180	■		■	■	■	■											
none		50	■	■		■	65			■	■	■	■	190	■		■	■	■	■											
enabled	■	100	■	■	■		70			■	■	■	■	200	■		■	■	■	■											
		200	■	■	■	■	75			■	■	■	■	225	■		■	■	■	■											
Output error level	8						80			■	■	■	■	250	■		■	■	■	■											
downscale							85			■	■	■	■	275	■		■	■	■	■											
upscale	■						90			■	■	■	■	300	■		■	■	■	■											
							95			■	■	■	■	325	■		■	■	■	■											
Noise suppression	9						100			■	■	■	■	350	■		■	■	■	■											
50 Hz																															
60 Hz	■																														
Response time	10																														
< 30 ms																															
300 ms	■																														

■ = ON

example for DIP switch setting
(with ACT20M tool software)



Additional power supply option via bus

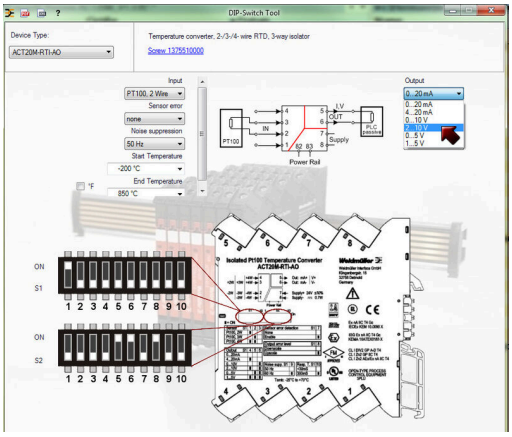
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Drawings



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