SIEMENS

Data sheet 7MH4960-2AA01



SIMATIC S7-1200 or Stand Alone, SIWAREX WP231, single-channel legal-for-trade weighing module for platform or hopper scales with analog load cells / strain gauges (full bridges), 4xDl, 4xDQ, 1xAQ, 1xRS485, 1xEthernet, 1xLC load cell interface (1-4mV/V)), attention: for legal-for-trade applications please follow the local laws applying in the country of verification! Detailed load cell diagnostics with digital junction box SIWAREX DB (7MH5001-0AD20 or 7MH5001-0AD01)

General information	
Product type designation	SIWAREX WP231
Firmware version	
 FW update possible 	Yes
Installation type/mounting	
Rail mounting	Yes; Standard - DIN rail
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
 Rated value (DC) 	24 V
 permissible range, lower limit (DC) 	19.2 V
 permissible range, upper limit (DC) 	28.8 V
Short-circuit protection	Yes
 Reverse polarity protection 	Yes
Input current	
Current consumption, max.	200 mA
from backplane bus 5 V DC, typ.	3 mA
Power loss	
Power loss, typ.	4.5 W
Digital inputs	
Number of digital inputs	4
Digital inputs, parameterizable	Yes
Input voltage	
Type of input voltage	DC
 Rated value (DC) 	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
Digital outputs	
Number of digital outputs	4
Short-circuit protection	Yes
Switching capacity of the outputs	
with resistive load, max.	0.5 A
Output voltage	
 Type of output voltage 	DC
Rated value (DC)	24 V
Output delay with resistive load	
• "0" to "1", max.	25 μs
• "1" to "0", max.	150 µs

Total current of the outputs		
 Current per channel, max. 	0.5 A	
Current per module, max.	4 A	
Cable length		
shielded, max.	500 m	
unshielded, max.	150 m	
Analog outputs		
Number of analog outputs	1	
Output ranges, current		
• 0 to 20 mA	Yes	
• 4 mA to 20 mA	Yes	
Load impedance (in rated range of output)		
with current outputs, max.	600 Ω	
Cable length		
• shielded, max.	100 m	
Analog value generation for the outputs		
Integration and conversion time/resolution per channel		
• Resolution with overrange (bit including sign), max.	16 bit	
Encoder		
Connection of signal encoders		
 For strain gauges (full bridges) with 4-conductor connection 	Yes	
 For strain gauges (full bridges) with 6-conductor connection 	Yes	
• Resistance of full bridge, min.	40 $\Omega;$ when using SIWAREX IS: 50 ohm for 7MH4710-5BA; 105 ohm when using 7MH4710-5CA	
Resistance of full bridge, max.	4 100 Ω	
Interfaces		
Number of RS 485 interfaces	1; SIWATOOL V7 or SIWAREX DB or SIEBERT remote display	
1. Interface		
Interface types		
• RS 485	Yes	
2. Interface		
Interface types		
RJ 45 (Ethernet)	Yes	
Number of ports	1	
Interface types		
RS 485		
Transmission rate, max.	115.2 bit/s	
Cable length, max.	1 000 m; ≤ 115 kbps, shielded cable	
Interrupts/diagnostics/status information		
Diagnostics function	Yes; Diagnostic alarm	
Substitute values connectable	Yes	
Alarms		
Diagnostic alarm	Yes; Parameterizable	
Hardware interrupt	Yes; Parameterizable	
Diagnoses		
Monitoring the supply voltage	Yes	
Wire-break	Yes	
Short-circuit	Yes	
Diagnostics indication LED		
• DIAG LED	Yes	
for status of the inputs	Yes	
for status of the outputs	Yes	
for maintenance	Yes	
Integrated Functions		
Counter	No	
Load cell		
Non-automatic weighing instrument	NAWI	
Sampling rate	100 Hz	
Resolution of input signal	±1 000 000 parts pro mV/V	

Common mode voltage, max. SV Common mode voltage, max. SO m, when using the SIWAREX 7MH4702-8AG cable Measuing name —————————————————————————————————	Common mode voltage, min.	0 V
Acade length, max. Measuring binotions		
Measuring functions Measuring range I mV/V to +1 mV/V2 mV/V to +2 mV/V2 mV/V to +4 mV/V	-	
Messuring range		500 III, WHEN USING THE STWAREX TWIN4/02-0AG Cable
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Degree and class of protection IP degree of protection	Isolation	
P20		707 V DC (type test)
Standards, approvals, certificates CE mark CE mark Yes; CE marking / EC Declaration of Conformity Cultus Poss UL 508 (industrial Control Equipment), CSA C22.2 No. 142 (Process Control Equipment) FM approval Yes RCM (formerly C-TICK) Yes RCA pproval Fall height, max. Ambient conditions Free fall Fall height, max. 1 m; five times, in product package Ambient confish installation, min. horizontal installation, max. horizontal installation, max. horizontal installation, max. vertical installation, max. horizontal installation, max. hor	Degree and class of protection	
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Control Equipment Yes	CE mark	Yes; CE marking / EC Declaration of Conformity
RCM (formerly C-TICK)	cULus	
KC approval	FM approval	Yes
## Ambient conditions	RCM (formerly C-TICK)	Yes
Free fall	KC approval	Yes
Fall height, max. Ambient temperature during operation	Ambient conditions	
Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. 60 °C Ambient temperature during storage/transportation • min. • max. 70 °C Air pressure acc. to IEC 60068-2-13 • Operation, min. • Operation, min. • Operation, min. • Storage/transport, min. • Storage/transport, max. 1 080 hPa Altitude during operation relating to sea level • Ambient air temperature-barometric pressure-altitude Vibrations • Vibration resistance during operation acc. to IEC 60068-2-6 Shock testing • Lested according to IEC 60068-2-7 Yes; 150 m/s², 11 ms Mechanics/material Enclosure material (front) • Plastic Dimensions Width 70 mm Height 100 mm Depth Weights Weight, approx. 280 g	Free fall	
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Air pressure acc. to IEC 60068-2-13		
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Mechanics/material Enclosure material (front) plastic • Plastic Yes Dimensions Width 70 mm Height 100 mm Depth 75 mm Weights Weight, approx. 280 g	<u> </u>	Voc: 150 m/o² 11 mg
Enclosure material (front) Plastic Plastic Yes Dimensions Width 70 mm Height 100 mm Depth 75 mm Weights Weight, approx. 280 g		165, 100 11/5", 11 1115
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Dimensions Width 70 mm Height 100 mm Depth 75 mm Weights Weight, approx.		
Width 70 mm Height 100 mm Depth 75 mm Weights Weight, approx. 280 g		Yes
Height 100 mm Depth 75 mm Weights Weight, approx.		
Depth 75 mm Weights Weight, approx. 280 g	Width	70 mm
Weights Weight, approx. 280 g	Height	100 mm
Weight, approx. 280 g	Depth	75 mm
* ''	Weights	
Classifications	Weight, approx.	280 g
	Classifications	

	Version	Classification
eClass	14	27-24-22-05
eClass	12	27-24-22-05
eClass	9.1	27-24-22-05
eClass	9	27-24-22-05
eClass	8	27-24-22-05
eClass	7.1	27-24-22-05
eClass	6	27-24-22-05
ETIM	9	EC001422
ETIM	8	EC001422
ETIM	7	EC001422

Approvals / Certificates

General Product Approval

For use in hazardous locations







Metrological Approval

<u>KC</u>



For use in hazardous locations

Environment

Miscellaneous



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