



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), 4xDI, 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	
<ul style="list-style-type: none"> 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+	
<ul style="list-style-type: none"> Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Short-circuit protection Reverse polarity protection 	24 V 19.2 V 28.8 V Yes 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	
<ul style="list-style-type: none"> Type of input voltage Rated value (DC) for signal "0" for signal "1" 	DC 24 V 5 V DC at 1 mA 15 V DC at 2.5 mA
Digital outputs	
Number of digital outputs	4
Short-circuit protection	Yes
Switching capacity of the outputs	
<ul style="list-style-type: none"> with resistive load, max. 	0.5 A
Output voltage	
<ul style="list-style-type: none"> Type of output voltage Rated value (DC) 	DC 24 V
Output delay with resistive load	
<ul style="list-style-type: none"> "0" to "1", max. "1" to "0", max. 	25 μ s 150 μ s

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 Ω; 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, min.	0 V
• Common mode voltage, max.	5 V
• Cable length, max.	500 m; when using the SIWAREX 7MH4702-8AG cable
Measuring functions	
Measuring range	
— -1 mV/V to +1 mV/V	Yes
— -2 mV/V to +2 mV/V	Yes
— -4 mV/V to +4 mV/V	Yes
Potential separation	
Potential separation digital inputs	
• between the channels and backplane bus	Yes
Potential separation digital outputs	
• between the channels and backplane bus	Yes
Potential separation analog outputs	
• between the channels and the power supply of the electronics	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes; CE marking / EC Declaration of Conformity
cULus	Yes; UL 508 (Industrial Control Equipment), CSA C22.2 No. 142 (Process Control Equipment)
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	174.83 kg
— global warming potential, (during production) [CO2 eq]	32.12 kg
— global warming potential, (during operation) [CO2 eq]	140.99 kg
— global warming potential, (after end of life cycle) [CO2 eq]	1.72 kg
Ambient conditions	
Free fall	
• Fall height, max.	1 m; five times, in product package
Ambient temperature during operation	
• horizontal installation, min.	-10 °C
• horizontal installation, max.	40 °C
• vertical installation, min.	-10 °C
• vertical installation, max.	60 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
• Ambient air temperature-barometric pressure-altitude	1 080 ... 795 hPa (-1 000 ... 5 000 m above sea level)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	5 ... 8.4 Hz / 3.5 mm, 8.4 ... 150 Hz / 1 g; For wall mounting: 9 ... 29 Hz / 1.5 mm, 29 ... 200 Hz / 5 g
• Operation, tested according to IEC 60068-2-6	Yes
Shock testing	
• tested according to IEC 60068-2-27	Yes; 150 m/s ² , 11 ms
Mechanics/material	

Enclosure material (front)	plastic
• Plastic	Yes

Dimensions

Width	70 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx.	280 g
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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	10	EC001422
ETIM	9	EC001422
ETIM	8	EC001422
ETIM	7	EC001422

Approvals / Certificates

General Product Approval	For use in hazardous locations
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[Metrological Approval](#)

[KC](#)



For use in hazardous locations	Environment
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[Miscellaneous](#)



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