



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"> <li>FW update possible</li> </ul>	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"> <li>Rated value (DC)</li> <li>permissible range, lower limit (DC)</li> <li>permissible range, upper limit (DC)</li> <li>Short-circuit protection</li> <li>Reverse polarity protection</li> </ul>	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"> <li>Type of input voltage</li> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>	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"> <li>with resistive load, max.</li> </ul>	0.5 A
Output voltage	
<ul style="list-style-type: none"> <li>Type of output voltage</li> <li>Rated value (DC)</li> </ul>	DC 24 V
Output delay with resistive load	
<ul style="list-style-type: none"> <li>"0" to "1", max.</li> </ul>	25 µs

• "1" to "0", max.	150 $\mu$ s
<b>Total current of the outputs</b>	
• Current per channel, max.	0.5 A
• Current per module, max.	4 A
<b>Cable length</b>	
• shielded, max.	500 m
• unshielded, max.	150 m
<b>Analog outputs</b>	
Number of analog outputs	1
<b>Output ranges, current</b>	
• 0 to 20 mA	Yes
• 4 mA to 20 mA	Yes
<b>Load impedance (in rated range of output)</b>	
• with current outputs, max.	600 $\Omega$
<b>Cable length</b>	
• shielded, max.	100 m
<b>Analog value generation for the outputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
• 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 $\Omega$
<b>Interfaces</b>	
Number of RS 485 interfaces	1; SIWATOOL V7 or SIWAREX DB or SIEBERT remote display
<b>1. Interface</b>	
<b>Interface types</b>	
• RS 485	Yes
<b>2. Interface</b>	
<b>Interface types</b>	
• RJ 45 (Ethernet)	Yes
• Number of ports	1
<b>Interface types</b>	
<b>RS 485</b>	
• Transmission rate, max.	115.2 bit/s
• Cable length, max.	1 000 m; $\leq$ 115 kbps, shielded cable
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes; Diagnostic alarm
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes; Parameterizable
• Hardware interrupt	Yes; Parameterizable
<b>Diagnoses</b>	
• Monitoring the supply voltage	Yes
• Wire break	Yes
• Short-circuit	Yes
<b>Diagnostics indication LED</b>	
• DIAG LED	Yes
• for status of the inputs	Yes
• for status of the outputs	Yes
• for maintenance	Yes
<b>Integrated Functions</b>	
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
<b>Measuring functions</b>	
<b>Measuring range</b>	
— -1 mV/V to +1 mV/V	Yes
— -2 mV/V to +2 mV/V	Yes
— -4 mV/V to +4 mV/V	Yes
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
• between the channels and backplane bus	Yes
<b>Potential separation digital outputs</b>	
• between the channels and backplane bus	Yes
<b>Potential separation analog outputs</b>	
• between the channels and the power supply of the electronics	Yes
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<b>Standards, approvals, certificates</b>	
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
<b>Ecological footprint</b>	
• environmental product declaration	Yes
<b>Global warming potential</b>	
— 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
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Fall height, max.	1 m; five times, in product package
<b>Ambient temperature during operation</b>	
• horizontal installation, min.	-10 °C
• horizontal installation, max.	40 °C
• vertical installation, min.	-10 °C
• vertical installation, max.	60 °C
<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Altitude during operation relating to sea level</b>	
• Ambient air temperature-barometric pressure-altitude	1 080 ... 795 hPa (-1 000 ... 5 000 m above sea level)
<b>Vibrations</b>	
• Vibration resistance during operation acc. to IEC 60068-	5 ... 8.4 Hz / 3.5 mm, 8.4 ... 150 Hz / 1 g; For wall mounting: 9 ... 29

2-6	Hz / 1.5 mm, 29 ... 200 Hz / 5 g
• Operation, tested according to IEC 60068-2-6	Yes
<b>Shock testing</b>	
• tested according to IEC 60068-2-27	Yes; 150 m/s <sup>2</sup> , 11 ms
<b>Mechanics/material</b>	
Enclosure material (front)	plastic
• Plastic	Yes
<b>Dimensions</b>	
Width	70 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	280 g
<b>Classifications</b>	

	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**



[China RoHS](#)



[Metrological Approval](#)



**For use in hazardous locations      Environment**



[Miscellaneous](#)



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