



SIMATIC ET 200SP, TM SIWAREX WP351 HF, calibratable weighing module for automatic dosing-, filling-, checking- and totalizing scales, 3xDI, 3xDQ, 1xCI, 1xRS485, 1xEthernet, 1x LC (1-4mV/V)

General information	
Product type designation	TM SIWAREX WP351 HF
HW functional status	1
Firmware version	V1.0
• FW update possible	Yes
usable BaseUnits	BU type U0
Color code for module-specific color identification plate	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Adjustment of measuring range	Yes; $\pm 0 \dots 4 \text{ mV/V}$
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V15.1
• STEP 7 configurable/integrated from version	- / -
• PROFIBUS from GSD version/GSD revision	GSD as of Revision 5
• PROFINET from GSD version/GSD revision	GSDML V2.34
Supply voltage	
Rated value (DC)	24 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.	140 mA; Without DQ
Power	
Power available from the backplane bus	94.5 mW
Power loss	
Power loss, typ.	1.7 W
Address area	
Address space per module	
• Inputs	32 byte
• Outputs	32 byte
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	type B
Digital inputs	
Number of digital inputs	3

Digital inputs, parameterizable	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Input voltage	
<ul style="list-style-type: none"> Type of input voltage Rated value (DC) for signal "0" for signal "1" permissible voltage at input, min. permissible voltage at input, max. 	24 V DC 24 V < 5 V DC +11 to +30V -30 V 30 V
Input current	
<ul style="list-style-type: none"> for signal "1", typ. 	1.6 mA
Input delay (for rated value of input voltage)	
for technological functions	
— parameterizable	Yes
Cable length	
<ul style="list-style-type: none"> shielded, max. unshielded, max. 	500 m 150 m
Digital outputs	
Number of digital outputs	3
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
Digital output functions, parameterizable	
<ul style="list-style-type: none"> Freely usable digital output 	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 	DC
Output delay with resistive load	
<ul style="list-style-type: none"> "0" to "1", typ. "1" to "0", typ. 	20 μ s 30 μ s
Parallel switching of two outputs	
<ul style="list-style-type: none"> for uprating 	No
Switching frequency	
<ul style="list-style-type: none"> with resistive load, max. 	500 Hz
Total current of the outputs	
<ul style="list-style-type: none"> Current per channel, max. Current per module, max. 	0.5 A; the total current of all outputs \geq 0.6 A, the ambient temperature is reduced by -1 °C per 100 mA 1.5 A; Observe derating
Cable length	
<ul style="list-style-type: none"> shielded, max. unshielded, max. 	500 m 150 m
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> For strain gauges (full bridges) with 4-conductor connection For strain gauges (full bridges) with 6-conductor connection Resistance of full bridge, min. Resistance of full bridge, max. 	Yes Yes 56 Ω ; when using SIWAREX IS 87 ohm for 7MH4710-5BA; 180 ohm when using 7MH4710-5CA 4 100 Ω
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.001 %
Error limit according to DIN 1319-1	0.002 %; of full-scale value
Accuracy class	III
Temperature coefficient, zero point	$\leq \pm 0.015 \mu\text{V/K}$
Temperature coefficient, span	$\leq \pm 5 \text{ ppm/K}$
1. Interface	
Interface types	
<ul style="list-style-type: none"> RS 485 	Yes; Terminated internally with 390 Ω / 220 Ω / 390 Ω
2. Interface	
Interface types	

<ul style="list-style-type: none"> • RJ 45 (Ethernet) • Number of ports 	<p>Yes; 10/100 Mbit/s</p> <p>1</p>
Protocols	
<ul style="list-style-type: none"> • IP protocol • Web server 	<p>Yes; IPv4</p> <p>Yes</p>
Interface types	
RJ 45 (Ethernet)	
<ul style="list-style-type: none"> • Autonegotiation • Autocrossing 	<p>Yes</p> <p>Yes</p>
RS 485	
<ul style="list-style-type: none"> • Transmission rate, max. • Cable length, max. 	<p>115.2 kbit/s</p> <p>1 000 m; ≤ 115 kbps, shielded cable</p>
Protocols	
Web server	
<ul style="list-style-type: none"> • HTTP • HTTPS 	<p>Yes</p> <p>No</p>
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Diagnostic alarm
Substitute values connectable	No
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm • Hardware interrupt 	<p>Yes; Parameterizable</p> <p>Yes; Parameterizable</p>
Diagnoses	
<ul style="list-style-type: none"> • Monitoring the supply voltage • Wire-break • Short-circuit • Group error 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes; green/red DIAG LED</p>
Diagnostics indication LED	
<ul style="list-style-type: none"> • ERROR LED • Monitoring of the supply voltage (PWR-LED) 	<p>Yes; green/red DIAG LED</p> <p>Yes; green PWR LED</p>
Integrated Functions	
Load cell	
<ul style="list-style-type: none"> • Automatic weighing instrument • Non-automatic weighing instrument • fraction of the error limit pi • Number of verification intervals, max. • permissible input signal per verification interval, min. • Sampling rate • Resolution of input signal • Common mode voltage, min. • Common mode voltage, max. • input resistance of signal line, typ. • input resistance of sense line, typ. • Cable length, max. 	<p>SWA/AGFI; SWE/ACI; SKW/SCW; SWT/DTAWI</p> <p>NAWI</p> <p>0.4</p> <p>3x 6 000 d (d=e)</p> <p>0.4 µV/e</p> <p>1 024 Hz</p> <p>±20 000 000 parts at 0 ... 4 mV/V</p> <p>2.8 V</p> <p>7.7 V</p> <p>8 MΩ</p> <p>300 MΩ</p> <p>500 m; when using the SIWAREX 7MH4702-8AG cable</p>
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
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. 	<p>-30 °C</p> <p>60 °C</p> <p>-30 °C</p> <p>50 °C</p>
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude 	<p>5 000 m; more than 2 000 m above sea level, the ambient temperature is reduced by -1 °C per 100 m</p> <p>1 080 ... 533 hPa (-1 000 ... 5 000 m above sea level)</p>

Decentralized operation	
to SIMATIC S7-300	Yes
to SIMATIC S7-400	Yes
to SIMATIC S7-1200	Yes
to SIMATIC S7-1500	Yes
to standard PROFIBUS master	Yes
to standard PROFINET controller	Yes
Dimensions	
Width	20 mm
Height	57 mm
Depth	72 mm
Weights	
Weight, approx.	50 g

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