



SIWAREX WP321 WEIGHING ELECTRONIC (1 CHANNEL) FOR STRAIN GAUGE LOAD CELLS / FULL BRIDGES (1-4 mV/V) FOR SIMATIC ET200SP, FITS to BU-TYPE A0, RS485- INTERFACE FOR CONNECTION OF SIWATOOL OR A REMOTE DISPLAY

| General information                                       |                             |
|-----------------------------------------------------------|-----------------------------|
| Product type designation                                  | TM SIWAREX WP321 ST         |
| HW functional status                                      | FS04                        |
| Firmware version                                          | V1.4.3                      |
| • FW update possible                                      | Yes                         |
| usable BaseUnits                                          | BU type A0                  |
| 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                           | No                          |
| Engineering with                                          |                             |
| • STEP 7 TIA Portal configurable/integrated from version  | STEP 7 V14 or higher        |
| • STEP 7 configurable/integrated from version             | From STEP 7 V5.4 and higher |
| • PROFIBUS from GSD version/GSD revision                  | GSD Revision 5              |
| • PROFINET from GSD version/GSD revision                  | GSDML V2.34                 |
| Supply voltage                                            |                             |
| 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.                                 | 100 mA                      |
| Power                                                     |                             |
| Power available from the backplane bus                    | 70 mW                       |
| Power loss                                                |                             |
| Power loss, typ.                                          | 2 W                         |
| Address area                                              |                             |
| Address space per module                                  |                             |
| • Inputs                                                  | 16 byte                     |
| • Outputs                                                 | 16 byte                     |
| Encoder                                                   |                             |
| Connection of signal encoders                             |                             |
| • For strain gauges (full bridges) with 4-conductor       | Yes                         |

|                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| connection                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>For strain gauges (full bridges) with 6-conductor connection</li> <li>Resistance of full bridge, min.</li> <li>Resistance of full bridge, max.</li> </ul>                                                                                                                                                                                                                | Yes<br><br>40 Ω; when using SIWAREX IS: 50 ohm for 7MH4710-5BA; 105 ohm when using 7MH4710-5CA<br><br>4 100 Ω                                      |
| <b>Errors/accuracies</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                    |
| Linearity error (relative to input range), (+/-)                                                                                                                                                                                                                                                                                                                                                                | 0.01 %                                                                                                                                             |
| Error limit according to DIN 1319-1                                                                                                                                                                                                                                                                                                                                                                             | 0.05 %; of full-scale value                                                                                                                        |
| Temperature coefficient, zero point                                                                                                                                                                                                                                                                                                                                                                             | ≤ ±0.1 μV/K                                                                                                                                        |
| Temperature coefficient, span                                                                                                                                                                                                                                                                                                                                                                                   | ≤ ±5 ppm/K                                                                                                                                         |
| <b>1. Interface</b>                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                    |
| <b>Interface types</b>                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>RS 485</li> </ul>                                                                                                                                                                                                                                                                                                                                                        | Yes; 390 Ω, 220 Ω, 390 Ω connectable termination                                                                                                   |
| <b>Interface types</b>                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                    |
| <b>RS 485</b>                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Transmission rate, max.</li> <li>Cable length, max.</li> </ul>                                                                                                                                                                                                                                                                                                           | 115.2 kbit/s<br>1 000 m; ≤ 115 kbps, shielded cable                                                                                                |
| <b>Interrupts/diagnostics/status information</b>                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    |
| Diagnostics function                                                                                                                                                                                                                                                                                                                                                                                            | Yes; Diagnostic alarm                                                                                                                              |
| Substitute values connectable                                                                                                                                                                                                                                                                                                                                                                                   | No                                                                                                                                                 |
| <b>Alarms</b>                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Diagnostic alarm</li> <li>Hardware interrupt</li> </ul>                                                                                                                                                                                                                                                                                                                  | Yes; Parameterizable<br>Yes; Parameterizable                                                                                                       |
| <b>Diagnoses</b>                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Monitoring the supply voltage</li> <li>Wire-break</li> <li>Short-circuit</li> </ul>                                                                                                                                                                                                                                                                                      | Yes<br>Yes<br>Yes                                                                                                                                  |
| <b>Diagnostics indication LED</b>                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>ERROR LED</li> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>                                                                                                                                                                                                                                                                                                 | Yes; green/red DIAG LED<br>Yes; green PWR LED                                                                                                      |
| <b>Integrated Functions</b>                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                    |
| <b>Load cell</b>                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Non-automatic weighing instrument</li> <li>permissible input signal per verification interval, min.</li> <li>Sampling rate</li> <li>Resolution of input signal</li> <li>Common mode voltage, min.</li> <li>Common mode voltage, max.</li> <li>input resistance of signal line, typ.</li> <li>input resistance of sense line, typ.</li> <li>Cable length, max.</li> </ul> | NAWI<br>0.5 μV/d (d=e)<br>600 Hz<br>±500 000 parts pro mV/V<br>0.25 V<br>4.75 V<br>4 MΩ<br>2 MΩ<br>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; corresponds to a resolution of ±500 000 parts                                                                                                 |
| — -2 mV/V to +2 mV/V                                                                                                                                                                                                                                                                                                                                                                                            | Yes; corresponds to a resolution of ±1 000 000 parts                                                                                               |
| — -4 mV/V to +4 mV/V                                                                                                                                                                                                                                                                                                                                                                                            | Yes; corresponds to a resolution of ±2 000 000 parts                                                                                               |
| <b>Isolation</b>                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    |
| Isolation tested with                                                                                                                                                                                                                                                                                                                                                                                           | 707 V DC (type test)                                                                                                                               |
| <b>Ambient conditions</b>                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                    |
| <b>Ambient temperature during operation</b>                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> </ul>                                                                                                                                                                                                                | -25 °C<br>60 °C<br>-25 °C<br>50 °C                                                                                                                 |
| <b>Altitude during operation relating to sea level</b>                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Installation altitude above sea level, max.</li> </ul>                                                                                                                                                                                                                                                                                                                   | 5 000 m; more than 2 000 m above sea level, the ambient temperature is reduced by -1 °C per 100 m                                                  |

- Ambient air temperature-barometric pressure-altitude

1 080 ... 795 hPa (-1 000 ... 5 000 m above sea level)

#### 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  | 15 mm |
| Height | 57 mm |
| Depth  | 72 mm |

#### Weights

|                 |      |
|-----------------|------|
| Weight, approx. | 31 g |
|-----------------|------|

**last modified:**

2/12/2021 