

SIMATIC S7-300, TEMPERATURE CONTROL MODULE FM 355-2 C, 4 CHANNELS, CONTIN. 4 AI + 8 DI + 4 AO INCL. MULTI-LANG CONFIG. PACK., MANUAL AND GETTING STARTED (GER/EN/IT) ON CD-ROM



Figure similar

| Supply voltage                                                  |                     |
|-----------------------------------------------------------------|---------------------|
| Load voltage L+                                                 |                     |
| • Rated value (DC)                                              | 24 V                |
| • permissible range, lower limit (DC)                           | 20.4 V              |
| • permissible range, upper limit (DC)                           | 28.8 V              |
| Input current                                                   |                     |
| from load voltage L+ (without load), max.                       | 310 mA; Typ. 260 mA |
| from backplane bus 5 V DC, max.                                 | 75 mA; typ. 50 mA   |
| Power loss                                                      |                     |
| Power loss, typ.                                                | 6.5 W               |
| Power loss, max.                                                | 7.8 W               |
| Digital inputs                                                  |                     |
| Number of digital inputs                                        | 8                   |
| Input characteristic curve in accordance with IEC 61131, type 2 | Yes                 |
| Input voltage                                                   |                     |

|                                                                                                                                                                                                                                                                                                                                  |                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Rated value (DC)</li> <li>• for signal "0"</li> <li>• for signal "1"</li> </ul>                                                                                                                                                                                                         | 24 V<br>-3 to +5V<br>13 to 30V                                                               |
| Input current                                                                                                                                                                                                                                                                                                                    |                                                                                              |
| <ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>                                                                                                                                                                                                                                                         | 7 mA                                                                                         |
| Cable length                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| <ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>                                                                                                                                                                                                                                   | 1 000 m<br>600 m                                                                             |
| Analog inputs                                                                                                                                                                                                                                                                                                                    |                                                                                              |
| Number of analog inputs                                                                                                                                                                                                                                                                                                          | 4                                                                                            |
| permissible input voltage for voltage input (destruction limit), max.                                                                                                                                                                                                                                                            | 20 V                                                                                         |
| permissible input current for current input (destruction limit), max.                                                                                                                                                                                                                                                            | 40 mA                                                                                        |
| Input ranges                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| <ul style="list-style-type: none"> <li>• Voltage</li> <li>• Current</li> <li>• Thermocouple</li> <li>• Resistance thermometer</li> </ul>                                                                                                                                                                                         | Yes<br>Yes<br>Yes<br>Yes                                                                     |
| Input ranges (rated values), voltages                                                                                                                                                                                                                                                                                            |                                                                                              |
| <ul style="list-style-type: none"> <li>• 0 to +10 V</li> <li>• Input resistance (0 to 10 V)</li> <li>• -1.75 V to +11.75 V</li> <li>• Input resistance (-1.75 V to +11.75 V)</li> </ul>                                                                                                                                          | Yes<br>100 k $\Omega$<br>Yes<br>100 k $\Omega$                                               |
| Input ranges (rated values), currents                                                                                                                                                                                                                                                                                            |                                                                                              |
| <ul style="list-style-type: none"> <li>• 0 to 20 mA</li> <li>• Input resistance (0 to 20 mA)</li> <li>• 0 to 23.5 mA</li> <li>• Input resistance (0 to 23.5 mA)</li> <li>• -3.5 mA to +23.5 mA</li> <li>• Input resistance (-3.5 mA to +23.5 mA)</li> <li>• 4 mA to 20 mA</li> <li>• Input resistance (4 mA to 20 mA)</li> </ul> | Yes<br>50 $\Omega$<br>Yes<br>50 $\Omega$<br>Yes<br>50 $\Omega$<br>Yes<br>50 $\Omega$         |
| Input ranges (rated values), thermocouples                                                                                                                                                                                                                                                                                       |                                                                                              |
| <ul style="list-style-type: none"> <li>• Type B</li> <li>• Input resistance (Type B)</li> <li>• Type E</li> <li>• Input resistance (Type E)</li> <li>• Type J</li> <li>• Input resistance (type J)</li> <li>• Type K</li> <li>• Input resistance (Type K)</li> </ul>                                                             | Yes<br>10 M $\Omega$<br>Yes<br>10 M $\Omega$<br>Yes<br>10 M $\Omega$<br>Yes<br>10 M $\Omega$ |

|                                                     |                                        |
|-----------------------------------------------------|----------------------------------------|
| • Type R                                            | Yes                                    |
| • Input resistance (Type R)                         | 10 MΩ                                  |
| • Type S                                            | Yes                                    |
| • Input resistance (Type S)                         | 10 MΩ                                  |
| Input ranges (rated values), resistance thermometer |                                        |
| • Pt 100                                            | Yes                                    |
| • Input resistance (Pt 100)                         | 10 MΩ                                  |
| Thermocouple (TC)                                   |                                        |
| Temperature compensation                            |                                        |
| — internal temperature compensation                 | Yes                                    |
| — external temperature compensation with Pt100      | Yes                                    |
| Characteristic linearization                        |                                        |
| • parameterizable                                   | Yes                                    |
| — for thermocouples                                 | Type B, E, J, K, R, S                  |
| — for resistance thermometer                        | Pt100 (standard)                       |
| Cable length                                        |                                        |
| • shielded, max.                                    | 200 m; 50 m at 80 mV and thermocouples |
| Analog outputs                                      |                                        |
| Number of analog outputs                            | 4                                      |
| Voltage output, short-circuit protection            | Yes                                    |
| Voltage output, short-circuit current, max.         | 25 mA                                  |
| Current output, no-load voltage, max.               | 18 V                                   |
| Output ranges, voltage                              |                                        |
| • 0 to 10 V                                         | Yes                                    |
| • -10 V to +10 V                                    | Yes                                    |
| Output ranges, current                              |                                        |
| • 0 to 20 mA                                        | Yes                                    |
| • 4 mA to 20 mA                                     | Yes                                    |
| Connection of actuators                             |                                        |
| • for voltage output two-wire connection            | Yes                                    |
| • for current output two-wire connection            | Yes                                    |
| Load impedance (in rated range of output)           |                                        |
| • with voltage outputs, min.                        | 1 kΩ                                   |
| • with voltage outputs, capacitive load, max.       | 1 μF                                   |
| • with current outputs, max.                        | 500 Ω                                  |
| • with current outputs, inductive load, max.        | 1 mH                                   |
| Cable length                                        |                                        |
| • shielded, max.                                    | 200 m; 50 m at 80 mV and thermocouples |
| Analog value generation                             |                                        |
| Measurement principle                               | integrating                            |

|                                                                                                     |                            |
|-----------------------------------------------------------------------------------------------------|----------------------------|
| Integration and conversion time/resolution per channel                                              |                            |
| • Resolution with overrange (bit including sign), max.                                              | 14 bit                     |
| • Conversion time (per channel)                                                                     | 100 ms; At 50/60 Hz        |
| Settling time                                                                                       |                            |
| • for resistive load                                                                                | 0.2 ms                     |
| • for capacitive load                                                                               | 3.3 ms                     |
| • for inductive load                                                                                | 0.5 ms                     |
| Encoder                                                                                             |                            |
| Connection of signal encoders                                                                       |                            |
| • for voltage measurement                                                                           | Yes                        |
| • for current measurement as 4-wire transducer                                                      | Yes                        |
| Connectable encoders                                                                                |                            |
| • 2-wire sensor                                                                                     | Yes                        |
| — permissible quiescent current (2-wire sensor), max.                                               | 1.5 mA                     |
| Errors/accuracies                                                                                   |                            |
| Linearity error (relative to input range), (+/-)                                                    | 0.05 %                     |
| Temperature error (relative to input range), (+/-)                                                  | 0.005 %/K                  |
| Linearity error (relative to output range), (+/-)                                                   | 0.05 %                     |
| Temperature error (relative to output range), (+/-)                                                 | 0.02 %/K                   |
| Operational error limit in overall temperature range                                                |                            |
| • Voltage, relative to input range, (+/-)                                                           | 0.6 %; +/-0.6 to +/-0.7%   |
| • Current, relative to input range, (+/-)                                                           | 0.6 %; +/-0.6 to +/-0.7%   |
| • Resistance thermometer, relative to input range, (+/-)                                            | 0.6 %; +/-0.6 to +/-0.7%   |
| • Voltage, relative to output range, (+/-)                                                          | 0.5 %                      |
| • Current, relative to output range, (+/-)                                                          | 0.6 %                      |
| Basic error limit (operational limit at 25 °C)                                                      |                            |
| • Voltage, relative to input range, (+/-)                                                           | 0.04 %; +/-0.04 to +/-0.5% |
| • Current, relative to input range, (+/-)                                                           | 0.04 %; +/-0.04 to +/-0.5% |
| • Resistance thermometer, relative to input range, (+/-)                                            | 0.04 %; +/-0.04 to +/-0.5% |
| • Voltage, relative to output range, (+/-)                                                          | 0.4 %                      |
| • Current, relative to output range, (+/-)                                                          | 0.5 %                      |
| Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$ , $f_1$ = interference frequency |                            |
| • Series mode interference (peak value of interference < rated value of input range), min.          | 40 dB                      |
| • Common mode interference (USS < 2.5 V), min.                                                      | 70 dB                      |
| Interrupts/diagnostics/status information                                                           |                            |
| Substitute values connectable                                                                       | Yes; Parameterizable       |

| Integrated Functions                     |                  |
|------------------------------------------|------------------|
| Control technology                       |                  |
| • Number of closed-loop controllers      | 4                |
| Potential separation                     |                  |
| Potential separation controller          |                  |
| • between the channels                   | No               |
| • between the channels and backplane bus | Yes; Optocoupler |
| Permissible potential difference         |                  |
| Between the inputs and MANA (UCM)        | 2.5 V DC         |
| Isolation                                |                  |
| Isolation tested with                    | 500 V DC         |
| Connection method                        |                  |
| required front connector                 | 2x 20-pin        |
| Dimensions                               |                  |
| Width                                    | 80 mm            |
| Height                                   | 125 mm           |
| Depth                                    | 120 mm           |
| Weights                                  |                  |
| Weight, approx.                          | 470 g            |
| <b>last modified:</b>                    | 10/28/2016       |