

SIMATIC S7-300, CONTROL MODULE FM 355 S, 4 CHANNELS, STEP AND PULSE, 4 AI + 8 DI + 8 DO INCL. MULTI-LANG CONFIG. PACK., MANUAL AND GETTING STARTED (GER/EN/FR/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.                       | 270 mA; typ. 220 mA |
| from backplane bus 5 V DC, max.                                 | 75 mA; typ. 50 mA   |
| Power loss                                                      |                     |
| Power loss, typ.                                                | 5.5 W               |
| Power loss, max.                                                | 6.9 W               |
| Digital inputs                                                  |                     |
| Number of digital inputs                                        | 8                   |
| Input characteristic curve in accordance with IEC 61131, type 2 | Yes                 |
| Input voltage                                                   |                     |

|                                                         |                 |
|---------------------------------------------------------|-----------------|
| • Rated value (DC)                                      | 24 V            |
| • for signal "0"                                        | -3 to +5V       |
| • for signal "1"                                        | 13 to 30V       |
| <b>Input current</b>                                    |                 |
| • for signal "1", typ.                                  | 7 mA            |
| <b>Cable length</b>                                     |                 |
| • shielded, max.                                        | 1 000 m         |
| • unshielded, max.                                      | 600 m           |
| <b>Digital outputs</b>                                  |                 |
| Number of digital outputs                               | 8               |
| Short-circuit protection                                | Yes; Electronic |
| Limitation of inductive shutdown voltage to             | L+ (-1.5 V)     |
| Controlling a digital input                             | Yes             |
| <b>Switching capacity of the outputs</b>                |                 |
| • on lamp load, max.                                    | 5 W             |
| <b>Load resistance range</b>                            |                 |
| • lower limit                                           | 240 Ω           |
| • upper limit                                           | 4 kΩ            |
| <b>Output voltage</b>                                   |                 |
| • for signal "1", min.                                  | L+ (-2.5 V)     |
| <b>Output current</b>                                   |                 |
| • for signal "1" rated value                            | 100 mA          |
| • for signal "1" permissible range for 0 to 60 °C, min. | 5 mA            |
| • for signal "1" permissible range for 0 to 60 °C, max. | 150 mA          |
| • for signal "0" residual current, max.                 | 0.5 mA          |
| <b>Parallel switching of two outputs</b>                |                 |
| • for logic links                                       | Yes             |
| <b>Switching frequency</b>                              |                 |
| • with resistive load, max.                             | 100 Hz          |
| • with inductive load, max.                             | 0.5 Hz          |
| • on lamp load, max.                                    | 100 Hz          |
| <b>Total current of the outputs (per group)</b>         |                 |
| all mounting positions                                  |                 |
| — up to 60 °C, max.                                     | 400 mA          |
| <b>Cable length</b>                                     |                 |
| • shielded, max.                                        | 1 000 m         |
| • unshielded, max.                                      | 600 m           |
| <b>Analog inputs</b>                                    |                 |
| Number of analog inputs                                 | 4               |

|                                                                       |                |
|-----------------------------------------------------------------------|----------------|
| permissible input voltage for voltage input (destruction limit), max. | 30 V           |
| permissible input current for current input (destruction limit), max. | 40 mA          |
| <b>Input ranges</b>                                                   |                |
| • Voltage                                                             | Yes            |
| • Current                                                             | Yes            |
| • Thermocouple                                                        | Yes            |
| • Resistance thermometer                                              | Yes            |
| <b>Input ranges (rated values), voltages</b>                          |                |
| • 0 to +10 V                                                          | Yes            |
| • Input resistance (0 to 10 V)                                        | 100 k $\Omega$ |
| • -1.75 V to +11.75 V                                                 | Yes            |
| • Input resistance (-1.75 V to +11.75 V)                              | 100 k $\Omega$ |
| • -80 mV to +80 mV                                                    | Yes            |
| • Input resistance (-80 mV to +80 mV)                                 | 10 M $\Omega$  |
| <b>Input ranges (rated values), currents</b>                          |                |
| • 0 to 20 mA                                                          | Yes            |
| • Input resistance (0 to 20 mA)                                       | 50 $\Omega$    |
| • 0 to 23.5 mA                                                        | Yes            |
| • Input resistance (0 to 23.5 mA)                                     | 50 $\Omega$    |
| • -3.5 mA to +23.5 mA                                                 | Yes            |
| • Input resistance (-3.5 mA to +23.5 mA)                              | 50 $\Omega$    |
| • 4 mA to 20 mA                                                       | Yes            |
| • Input resistance (4 mA to 20 mA)                                    | 50 $\Omega$    |
| <b>Input ranges (rated values), thermocouples</b>                     |                |
| • Type B                                                              | Yes            |
| • Input resistance (Type B)                                           | 10 M $\Omega$  |
| • Type J                                                              | Yes            |
| • Input resistance (type J)                                           | 10 M $\Omega$  |
| • Type K                                                              | Yes            |
| • Input resistance (Type K)                                           | 10 M $\Omega$  |
| • Type R                                                              | Yes            |
| • Input resistance (Type R)                                           | 10 M $\Omega$  |
| • Type S                                                              | Yes            |
| • Input resistance (Type S)                                           | 10 M $\Omega$  |
| <b>Input ranges (rated values), resistance thermometer</b>            |                |
| • Pt 100                                                              | Yes            |
| • Input resistance (Pt 100)                                           | 10 M $\Omega$  |
| <b>Thermocouple (TC)</b>                                              |                |
| <b>Temperature compensation</b>                                       |                |
| — internal temperature compensation                                   | Yes            |

|                                                                                                     |                                                                                                    |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| — external temperature compensation with Pt100                                                      | Yes                                                                                                |
| <b>Characteristic linearization</b>                                                                 |                                                                                                    |
| • parameterizable                                                                                   | Yes                                                                                                |
| — for thermocouples                                                                                 | Type B, J, K, R, S                                                                                 |
| — for resistance thermometer                                                                        | Pt100 (standard)                                                                                   |
| <b>Cable length</b>                                                                                 |                                                                                                    |
| • shielded, max.                                                                                    | 200 m; 50 m at 80 mV and thermocouples                                                             |
| <b>Analog value generation</b>                                                                      |                                                                                                    |
| Measurement principle                                                                               | integrating                                                                                        |
| <b>Integration and conversion time/resolution per channel</b>                                       |                                                                                                    |
| • Resolution with overrange (bit including sign), max.                                              | 14 bit; 12 bit or 14 bit, parameterizable                                                          |
| • Conversion time (per channel)                                                                     | 16.67 ms; for 12 bit: 16 2/3 ms for 60 Hz, 20 ms for 50 Hz; for 14 bit: 100 ms for 50 Hz and 60 Hz |
| <b>Settling time</b>                                                                                |                                                                                                    |
| • for resistive load                                                                                | 0.1 ms                                                                                             |
| • for capacitive load                                                                               | 3.3 ms                                                                                             |
| • for inductive load                                                                                | 0.5 ms                                                                                             |
| <b>Encoder</b>                                                                                      |                                                                                                    |
| <b>Connection of signal encoders</b>                                                                |                                                                                                    |
| • for voltage measurement                                                                           | Yes                                                                                                |
| • for current measurement as 4-wire transducer                                                      | Yes                                                                                                |
| <b>Connectable encoders</b>                                                                         |                                                                                                    |
| • 2-wire sensor                                                                                     | Yes                                                                                                |
| — permissible quiescent current (2-wire sensor), max.                                               | 1.5 mA                                                                                             |
| <b>Errors/accuracies</b>                                                                            |                                                                                                    |
| Linearity error (relative to input range), (+/-)                                                    | 0.05 %                                                                                             |
| Temperature error (relative to input range), (+/-)                                                  | 0.005 %/K                                                                                          |
| <b>Operational error limit in overall temperature range</b>                                         |                                                                                                    |
| • Voltage, relative to input range, (+/-)                                                           | 0.6 %; +/-0.6 to +/-1 %                                                                            |
| • Current, relative to input range, (+/-)                                                           | 0.6 %; +/-0.6 to +/-1 %                                                                            |
| • Resistance thermometer, relative to input range, (+/-)                                            | 0.6 %; +/-0.6 to +/-1 %                                                                            |
| <b>Basic error limit (operational limit at 25 °C)</b>                                               |                                                                                                    |
| • Voltage, relative to input range, (+/-)                                                           | 0.4 %; 80 mV: +/-0.6%; 250 to 1000 mV: +/-0.4%; 2.5 to 10 V: +/-0.6%; 3.2 to 20 mA: +/-0.5%        |
| • Current, relative to input range, (+/-)                                                           | 0.4 %; +/-0.4 to +/-0.6 %                                                                          |
| • Resistance thermometer, relative to input range, (+/-)                                            | 0.4 %; +/-0.4 to +/-0.6 %                                                                          |
| 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.
- Common mode interference (USS < 2.5 V) , min.

40 dB

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
- between the channels and backplane bus

No

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

**last modified:**

10/28/2016