



SIMATIC S7-300, temperature Control Unit FM 355-2S, 4 channels, Step and pulse, 4 AI+8 DI+8 DO incl. multi-language configuration package, Manual and Getting Started (de, de, fr, en it) on CD-ROM

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
Input current	
• for signal "1", typ.	7 mA
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Digital outputs	
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
Switching capacity of the outputs	
• on lamp load, max.	5 W
Load resistance range	
• lower limit	240 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-2.5 V)
Output current	
• for signal "1" rated value	0.1 A
• 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.	20 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 kΩ
• -1.75 V to +11.75 V	Yes
— Input resistance (-1.75 V to +11.75 V)	100 kΩ
<b>Input ranges (rated values), currents</b>	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	50 Ω
• 0 to 23.5 mA	Yes
— Input resistance (0 to 23.5 mA)	50 Ω
• -3.5 mA to +23.5 mA	Yes
— Input resistance (-3.5 mA to +23.5 mA)	50 Ω
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 Ω
<b>Input ranges (rated values), thermocouples</b>	
• Type B	Yes
— Input resistance (Type B)	10 MΩ
• Type E	Yes
— Input resistance (Type E)	10 MΩ
• Type J	Yes
— Input resistance (type J)	10 MΩ
• Type K	Yes
— Input resistance (Type K)	10 MΩ
• Type R	Yes
— Input resistance (Type R)	10 MΩ
• Type S	Yes
— Input resistance (Type S)	10 MΩ
<b>Input ranges (rated values), resistance thermometer</b>	
• Pt 100	Yes
— Input resistance (Pt 100)	10 MΩ
<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, E, 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 for the inputs</b>	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	14 bit
<b>Encoder</b>	
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
<b>Errors/accuracies</b>	
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.06 %; ±0.06 to ±0.7%
• Current, relative to input range, (+/-)	0.06 %; ±0.06 to ±0.7%
• Resistance thermometer, relative to input range, (+/-)	0.06 %; ±0.06 to ±0.7%
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 %
<b>Interrupts/diagnostics/status information</b>	
Substitute values connectable	Yes; Parameterizable
<b>Integrated Functions</b>	
Counter	No
Control technology	
• Number of closed-loop controllers	4
<b>Potential separation</b>	
Potential separation controller	
• between the channels	No
• between the channels and backplane bus	Yes; Optocoupler
<b>Isolation</b>	
Isolation tested with	500 V DC
<b>connection method</b>	
required front connector	2x 20-pin
<b>Dimensions</b>	
Width	80 mm
Height	125 mm
Depth	120 mm
<b>Weights</b>	
Weight, approx.	470 g

**last modified:** 3/12/2024 