

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
Parallel switching of two outputs	
• for logic links	Yes
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
• on lamp load, max.	100 Hz
Total current of the outputs (per group)	
all mounting positions	
— up to 60 °C, max.	400 mA
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	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	
• Voltage	Yes
• Current	Yes
• Thermocouple	Yes
• Resistance thermometer	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	100 k Ω
• -1.75 V to +11.75 V	Yes
• Input resistance (-1.75 V to +11.75 V)	100 k Ω
Input ranges (rated values), currents	
• 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
Input ranges (rated values), thermocouples	
• Type B	Yes
• Input resistance (Type B)	10 M Ω
• Type E	Yes
• Input resistance (Type E)	10 M Ω
• Type J	Yes
• Input resistance (type J)	10 M Ω
• Type K	Yes
• Input resistance (Type K)	10 M Ω
• Type R	Yes
• Input resistance (Type R)	10 M Ω
• Type S	Yes
• Input resistance (Type S)	10 M Ω
Input ranges (rated values), resistance thermometer	
• Pt 100	Yes
• Input resistance (Pt 100)	10 M Ω
Thermocouple (TC)	
Temperature compensation	
— internal temperature compensation	Yes
— external temperature compensation with Pt100	Yes

Characteristic linearization	
<ul style="list-style-type: none"> parameterizable — for thermocouples — for resistance thermometer 	Yes Type B, E, J, K, R, S Pt100 (standard)
Cable length	
<ul style="list-style-type: none"> shielded, max. 	200 m; 50 m at 80 mV and thermocouples
Analog value generation for the inputs	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> Resolution with overrange (bit including sign), max. Conversion time (per channel) 	14 bit 100 ms; At 50/60 Hz
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> for voltage measurement for current measurement as 4-wire transducer 	Yes Yes
Connectable encoders	
<ul style="list-style-type: none"> 2-wire sensor — permissible quiescent current (2-wire sensor), max. 	Yes 1.5 mA
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.05 %
Temperature error (relative to input range), (+/-)	0.005 %/K
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> Voltage, relative to input range, (+/-) Current, relative to input range, (+/-) Resistance thermometer, relative to input range, (+/-) 	0.06 %; ±0.06 to ±0.7% 0.06 %; ±0.06 to ±0.7% 0.06 %; ±0.06 to ±0.7%
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> Voltage, relative to input range, (+/-) Current, relative to input range, (+/-) Resistance thermometer, relative to input range, (+/-) 	0.04 %; ±0.04 to ±0.5 % 0.04 %; ±0.04 to ±0.5 % 0.04 %; ±0.04 to ±0.5 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
<ul style="list-style-type: none"> 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	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
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