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Data sheet 6ES7455-0VS00-0AE0



Figure similar

SIMATIC S7-400, control module FM 455 C, 16 channels, continuous, 8/16 AI + 16 DI+ 16 AO

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.	440 mA; typ. 370 mA
Power loss	
Power loss, typ.	12 W
Power loss, max.	17.3 W
Digital inputs	
Number of digital inputs	16
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
Analog inputs	
Number of analog inputs	16; With thermocouples or 2-wire connection; 8 with Pt 100 or 4-wire connection
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 kΩ
● -1.75 V to +11.75 V	Yes
— Input resistance (-1.75 V to +11.75 V)	100 kΩ
● -80 mV to +80 mV	Yes

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— Input resistance (-80 mV to +80 mV)	10 MΩ
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 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
Input ranges (rated values), resistance thermometer	
● Pt 100	Yes
— Input resistance (Pt 100)	10 MΩ
Thermocouple (TC)	
Temperature compensation	
— internal temperature compensation	Yes; Parameterizable
— external temperature compensation with Pt100	Yes; Parameterizable
Characteristic linearization	
● parameterizable	Yes
— for thermocouples	Type B, 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	16
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
● -20 mA 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 for the inputs	
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	14 bit; 12 bit or 14 bit, parameterizable
Analog value generation for the outputs	

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Settling time	
● for resistive load	0.1 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	
Operational error limit in overall temperature range	
● Voltage, relative to input range, (+/-)	±0.6 to ±1%
● Current, relative to input range, (+/-)	±0.6 to ±1%
● Resistance thermometer, relative to input range, (+/-)	±0.6 to ±1%
● 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, (+/-)	±0.4 to ±0.6 %
● Current, relative to input range, (+/-)	±0.4 to ±0.6 %
● Resistance thermometer, relative to input range, (+/-)	±0.4 to ±0.6 %
● Voltage, relative to output range, (+/-)	0.4 %
● Current, relative to output range, (+/-)	0.5 %
Interrupts/diagnostics/status information	
Substitute values connectable	Yes; Parameterizable
Integrated Functions	
Control technology	
● Number of closed-loop controllers	16; With thermocouples or 2-wire connection; 8 with Pt 100 or 4-wire connection
Potential separation	
Potential separation controller	
● between the channels	No
● between the channels and backplane bus	Yes; Optocoupler
Isolation	
Isolation tested with	500 V DC
connection method	
required front connector	2x 48-pin
Dimensions	
Width	50 mm
Height	290 mm
Depth	210 mm
Weights	
Weight, approx.	1 400 g

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