

Siemens 6ES7455-0VS00-0AE0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	2 Yes

Description

6ES7455-0VS00-0AE0

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

www.AutoDCSTech.com

- 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

- -80 mV to +80 mV Yes

— Input resistance (-80 mV to +80 mV) 10 M 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 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; 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

www.AutoDCSTech.com

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 k Ω
- with voltage outputs, capacitive load, max. 1 μ F
- 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

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 $\pm 1\%$
- Current, relative to input range, (+/-) ± 0.6 to $\pm 1\%$
- Resistance thermometer, relative to input range, (+/-) ± 0.6 to $\pm 1\%$
- 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

www.AutoDCSTech.com

- 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

www.AutoDCSTech.com