MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7338-4BC01-0AB0

S7 300 POSITION DETECTION MODULE

Used with the applicable PLC System configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer documentation

© Siemens AG 2007

FM 355-2 temperature control module

www.DataSheet4U.com

Technical specifications (continued)

	6ES7 355-2CH00-0AE0	6ES7 355-2SH00-0AE0
Operational limit in overall temperature range		
• Current, relative to output area	+/- 0.6 %	
• Voltage, relative to input area	+/- 0.6 %; +/-0.6 to +/-0.7%	+/- 0.06 %; +/-0.06 to +/-0.7%
• Current, relative to input area	+/- 0.6 %; +/-0.6 to +/-0.7%	+/- 0,06 %; +/-0.06 to +/-0.7%
• Resistance-type thermometer, relative to input area	+/- 0.6 %; +/-0.6 to +/-0.7%	+/- 0.06 %; +/-0.06 to +/-0.7%
Basic error limit (operational limit at 25 °C)		
• Voltage, relative to output area	+/- 0.4 %	
• Current, relative to output area	+/- 0.5 %	
• Voltage, relative to input area	+/- 0.04 %; +/-0.04 to +/-0.5%	+/- 0.04 %; +/-0.04 to +/-0.5%
• Current, relative to input area	+/- 0.04 %; +/-0.04 to +/-0.5%	+/- 0.04 %; +/-0.04 to +/-0.5%
• Resistance-type thermometer, relative to input area	+/- 0.04 %; +/-0.04 to +/-0.5%	+/- 0.04 %; +/-0.04 to +/-0.5%
Interference voltage suppression for f = n x (fl +/- 1 %), fl = interference frequency		
• Series mode interference (peak value of interference < rated value of input range), min.	40 dB	40 dB
• common mode voltage (USS < 2.5 V) , min.	70 dB	70 dB

	6ES7 355-2CH00-0AE0	6ES7 355-2SH00-0AE0
Control technology		
Number of closed loop controllers	4	4
Status information/ alarms/diagnostics		
Substitute values connectable	Yes; parameterizable	Yes; parameterizable
Isolation		
Isolation checked with	500 V DC	500 V DC
Isolation		
Isolation, controller		
• between the channels	No	No
• between the channels and the backplane bus	Yes; Optocoupler	Yes; Optocoupler
Permissible potential difference		
between inputs and MANA (UCM)	2.5 V DC	2.5 V DC
between M internal and the inputs	75 V DC/ 60 V AC	75 V DC/ 60 V AC
Dimensions and weight		
Width	80 mm	80 mm
Height	125 mm	125 mm
Depth	120 mm	120 mm
Weights		
Weight, approx	470 g	470 g

Ordering data

	Order No.
FM 355-2 C temperature controller module	**6ES7 355-2CH00-0AE0**
With 4 analog outputs for 4 continuous-action controllers	
FM 355-2 S temperature controller module	**6ES7 355-2SH00-0AE0**
With 8 digital outputs for 4 step or pulse controllers	
Front connector	
20-pin, with screw-type terminals	
• 1 unit	**6ES7 392-1AJ00-0AA0**
• 100 units	**6ES7 392-1AJ00-1AB0**
20-pin, with cage clamp terminals	
• 1 unit	**6ES7 392-1BJ00-0AA0**
• 100 units	**6ES7 392-1BJ00-1AB0**
Bus connector	**6ES7 390-0AA00-0AA0**
1 unit (spare part)	
Labeling strip	**6ES7 392-2XX00-0AA0**
10 units (spare part)	

	Order No.
S7-SmartLabel	**2XV9 450-1SL01-0YX0**
Software for machine labeling of modules directly from the STEP 7 project	
Labeling sheets for machine labeling	see "Accessories", page 4/240
Slot number label	**6ES7 912-0AA00-0AA0**
Spare part	
Shield connecting element	**6ES7 390-5AA00-0AA0**
80 mm wide, with 2 rows for 4 terminal elements each	
Terminal elements	
2 units	
For 2 cables with 2 to 6 mm diameter	**6ES7 390-5AB00-0AA0**
For 1 cable with 3 to 8 mm diameter	**6ES7 390-5BA00-0AA0**
For 1 cable with 4 to 13 mm diameter	**6ES7 390-5CA00-0AA0**

www.DataSheet4U.com

© Siemens AG 2007

www.DataSheet4U.com

Overview



- Interface between a maximum of 3 absolute position encoders (SSI) and the CPU.
- To provide the position-encoder values for subsequent processing in the STEP 7 program.
- Enables the programmable controller's direct response to encoder values in moving systems.

Note:

SIMODRIVE Sensor/Motion Connect 500 feature position-measuring systems and preassembled connecting cables for counting and positioning functions.

Additional information is available in the Internet under:

http://www.siemens.com/simatic-technology

Technical specifications

	6ES7 338-4BC01-0AB0
Voltages and currents	
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Current consumption	
from load voltage L+ (without load), max.	10 mA
from backplane bus DC 5 V, max.	160 mA
Power loss, typ.	3 W
Connection point	
required front connectors	20-pin
Digital inputs	
Cable length	
• Cable length, shielded, max.	600 m
Input voltage	
• for signal "0"	-3 to 5 V
• for signal "1"	11 to 30.2 V
Input current	
• for signal "0", max. (permissible quiescent current)	2 mA
• for signal "1", typ.	9 mA
Input delay (for rated value of input voltage)	
• for standard inputs - at "0" to "1", min.	300 µs

	6ES7 338-4BC01-0AB0
Encoder supply	
24 V encoder supply	
• 24 V	Yes; L+ (-0.8 V)
• Output current, max.	900 mA
Encoder	
Number of connectable encoders, max.	3
Connectable encoders	
• Absolute encoder (SSI)	Yes
• 2-wire BEROS	Yes
Encoder signals, absolute encoder (SSI)	
• Cable length, shielded, max.	320 m; 320 m at 125 kHz, 160 m at 250 kHz, 60 m at 500 kHz, 20 m at 1 MHz
Status information/ alarms/diagnostics	
Alarms	
• Diagnostic alarm	Yes
Isolation	
Galvanic isolation	No
Dimensions and weight	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	235 g

www.DataSheet4U.com

© Siemens AG 2007

SM 338 POS input module

www.DataSheet4U.com

Ordering data		Order No.
SM 338 POS input module		**6ES7 338-4BC01-0AB0**
For position sensing with ultra-sonic encoders with Start/Stop interface		
Front connector		
20-pin, with screw contacts		
• 1 unit		**6ES7 392-1AJ00-0AA0**
• 100 units		**6ES7 392-1AJ00-1AB0**
20-pin, with cage clamp terminals		
• 1 unit		**6ES7 392-1BJ00-0AA0**
• 100 units		**6ES7 392-1BJ00-1AB0**
Front door, elevated design	A)	**6ES7 328-0AA00-7AA0**
e.g. for 32-channel modules; for connecting 1.3 mm^2/16 AWG conductors		
SIMATIC Manual Collection	D)	**6ES7 998-8XC01-8YE0**
Electronic manuals on DVD, multilingual: S7-200, S7-300, C7, S7-400, SIMATIC DP (Distributed I/O), SIMATIC PC, SIMATIC PG (Programming device), STEP 7, Engineering Tools, Runtime Software, SIMATIC PCS 7, SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication), SIMATIC Machine Vision, SIMATIC Sensors		

		Order No.
SIMATIC Manual Collection update service for 1 year	D)	**6ES7 998-8XC01-8YE2**
Current "Manual Collection" DVD and the three subsequent updates		
S7-300 manual		
Design, CPU data, module data, instruction list		
German		**6ES7 398-8FA10-8AA0**
English		**6ES7 398-8FA10-8BA0**
French		**6ES7 398-8FA10-8CA0**
Spanish		**6ES7 398-8FA10-8DA0**
Italian		**6ES7 398-8FA10-8EA0**
Signal cable		
Pre-assembled for SSI absolute encoder 6FX2001-5, without Sub-D connector, UL/DESINA		**6FX5 002-2CC12-■■■■**
Length code		see FM 351, page 4/154

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

www.DataSheet4U.com

© Siemens AG 2007

www.DataSheet4U.com

Overview



- For connecting up to 4 drives with analog setpoint interface or pulse-direction interface to a motion control
- Operation with isochronous PROFIBUS DP
- Connectable drives:
  - electrical drives
  - hydraulic drives
  - stepper drives
- Can be used with SIMATIC CPU 31xT-2 DP, SIMATIC Microbox 420-T, SIMOTION C230-2, SIMOTION P350, SIMOTION D4x5
- Can also be used with external encoders

Technical specifications

	6ES7 174-0AA00-0AA0
Supply voltages	
Rated value	
• DC 24 V	Yes
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Current consumption	
Current consumption, max.	500 mA
Power loss, typ.	12 W
Connection point	
required front connectors	40-pin
Isochronous mode	
Isochronouos mode	Yes
shortest clock pulse	1.5 ms
Digital inputs	
Number of digital inputs	10
Cable length	
• Cable length, shielded, max.	100 m
Input voltage	
• for signal "0"	-3 to 5 V
• for signal "1"	15 to 30 V
Input current	
• for signal "0", max. (permissible quiescent current)	3 mA
• for signal "1", typ.	6 mA
Input delay (for rated value of input voltage)	
• for standard inputs - at " to "1", min.	15 µs
Digital outputs	
Number of digital outputs	8
Cable length, shielded, max.	600 m
Short-circuit protection of the output	Yes

	6ES7 174-0AA00-0AA0
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W
Output voltage	
• Rated value (DC)	24 V; L+
• for signal "1", min.	L+ (-3 V)
• for signal "1" (DC), max.	24 V; max. value is equal to feed L+
Output current	
• for signal "1" permissible range for 0 to 60 °C, min.	5 mA
• for signal "1" permissible range for 0 to 60 °C, max.	500 mA
• for signal "0" residual current, max.	0.4 mA
Output delay with resistive load	
• "0" to "1", max.	500 µs
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	1 Hz
Relay outputs	
Number of operating cycles	500,000
Switching capacity of the contacts	
• with resistive load, max.	1 A
Analog outputs	
Number of anlog outputs	4
Output ranges, voltage	
• -10 to +10 V	Yes
Analog value creation	
Integrations and conversion time/resolutionper channel	
• Resolution with overload area (bit including sign), max.	15 Bit

www.DataSheet4U.com