



SIMATIC S7-300, Digital output SM 322, Isolated 16 DO, 120/230 V AC, 1 A, 1x 20-pole

Figure similar

General information	
Product function	
Protection function	
Engineering with	
Integrated drive control	
Operating mode	
Operator control and monitoring	
Process images	
User administration	
Alarms	
Recipes/user archives	
Display	
Line display	
Resolution (pixels)	
Control elements	
Input device	
Keyboard fonts	
Touch operation	
Connection type	
Special operator controls	
Frame size/design	
Ergonomics	
Supply voltage	
Line frequency	
Mains filter	
Load voltage 1L+	
Load voltage 2L+	
Load voltage L1	
<ul style="list-style-type: none"> • Rated value (AC) • permissible range, lower limit (AC) • permissible range, upper limit (AC) 	230 V; 120/230 V AC 79 V 264 V
Auxiliary voltage 1L+, load voltage 2L+	
Input voltage	
Input voltage acc. to VDE	
Input voltage acc. to UL	
Line frequency	

Input current	
from load voltage L1 (without load), max.	2 mA
from backplane bus 5 V DC, max.	200 mA
Output current	
horizontal installation	
vertical installation	
Encoder supply	
Output current	
5 V encoder supply	
24 V encoder supply	
Additional 24 V encoder supply	
Power loss	
Power loss, typ.	8.6 W
Memory	
Work memory	
Working memory for additional functions	
Battery	
Design	
CPU-blocks	
DB	
FB	
FC	
Counters, timers and their retentivity	
S7 counter	
IEC counter	
S7 times	
Data areas and their retentivity	
Flag	
Address area	
I/O address area	
of which distributed	
per integrated IO subsystem	
Process image	
Subprocess images	
Digital channels	
Analog channels	
Addressing volume	
Hardware configuration	
Formation of potential groups	
Module exchange	
Interface modules	
Number of DP masters	
Number of IO Controllers	
Number of operable FMs and CPs (recommended)	
Expansion modules	
Rack	
Submodules	
Selection of BaseUnit for connection variants	
PtP CM	
Time of day	
Clock	
Operating hours counter	
Time switching clocks	
Digital inputs	
Number of simultaneously controllable inputs	
all mounting positions	

horizontal installation	
Digital input functions, parameterizable	
Input voltage	
Input current	
for 10 k switched contact	
Internal preparation time	
Input delay (for rated value of input voltage)	
for standard inputs	
for interrupt inputs	
Encoder connection	
Connection method	
Digital outputs	
Number of digital outputs	16
Short-circuit protection	Yes; Fuse 8 A, 250 V; per group
• required current for fuse shutdown, min.	40 A
• Response time, max.	300 ms
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	4 NEMA compliant
Spare fuses	8 A / quick response
Digital output functions, parameterizable	
Control supply voltage	
Switching capacity of the outputs	
• on lamp load, max.	50 W
Trend key points E	
Output voltage	
• for signal "1" (at max. current), min.	L1 (-1.5 V)
• for signal "1" (at min. current), min.	L1 (-8.5 V)
Output current	
• for signal "1" rated value	1 A
• for signal "1" permissible range for 0 to 40 °C, min.	10 mA
• for signal "1" permissible range for 0 to 40 °C, max.	1 A
• for signal "1" permissible range for 40 to 60 °C, min.	10 mA
• for signal "1" permissible range for 40 to 60 °C, max.	0.5 A
• for signal "1" minimum load current	10 mA
• for signal "1" permissible surge current, max.	20 A; with 2 half waves
• for signal "0" residual current, max.	2 mA
Parallel switching of two outputs	
• for uprating	No
• for redundant control of a load	Yes; only outputs of the same group
Switching frequency	
• with resistive load, max.	10 Hz
• with inductive load, max.	0.5 Hz
• with inductive load (acc. to IEC 60947-5-1, AC15), max.	0.5 Hz
• on lamp load, max.	1 Hz
Total current of the outputs	
horizontal installation	
Total current of the outputs (per group)	
all mounting positions	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	2 A
vertical installation	
— up to 40 °C, max.	2 A
Total current of the outputs (per module)	
all mounting positions	
horizontal installation	
Pulse output (passive)	

Frequency output	
Integrated high-speed cams	
Connection method	
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Analog inputs	
Input ranges	
Measuring range	
Input ranges (rated values), voltages	
Input ranges (rated values), currents	
Input ranges (rated values), thermocouples	
Input ranges (rated values), resistance thermometer	
Input ranges (rated values), resistors	
Input ranges (rated values), strain gauges (full bridges)	
Thermocouple (TC)	
Characteristic linearization	
Analog outputs	
Output ranges, voltage	
Output ranges, current	
Connection of actuators	
Load impedance (in rated range of output)	
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
Encoder	
Connection of signal encoders	
Connectable encoders	
Incremental encoder	
Encoder signals, incremental encoder (symmetrical)	
Encoder signals, incremental encoder (asymmetrical)	
Encoder signals, absolute encoder (SSI)	
Encoder signals, IEPE	
Drive axis	
EC motor	
Errors/accuracies	
Operational error limit in overall temperature range	
Basic error limit (operational limit at 25 °C)	
Power electronics	
Control of heating elements	
Load connection type	
Setpoint input	
Heating power	
Interfaces	
Video interfaces	
Touch interfaces	
MPI	
PROFIBUS DP	
PROFIBUS PA	
Supports protocol for PROFINET IO	
PROFINET functions	
Industrial Ethernet	
Point-to-point connection	
Integrated protocol driver	
Telegram length, max.	
Transmission rate, 20 mA (TTY)	

Transmission rate, RS 422/485
Transmission speed, RS 232
Signals
ET-Connection
EtherNet/IP
AS-Interface
WLAN
1. Interface
Interface types
Protocols
MPI
PROFIBUS DP master
Services
PROFIBUS DP slave
PROFINET IO Controller
Services
Update time for IRT
PROFINET IO Device
Services
PROFINET CBA
Open IE communication
CAN
BACnet
2. Interface
Interface types
Protocols
PROFIBUS DP master
Services
PROFIBUS DP slave
PROFINET IO Controller
Services
Update time for IRT
PROFINET IO Device
Services
PROFINET CBA
3. Interface
Interface types
Protocols
PROFIBUS DP master
Services
PROFIBUS DP slave
PROFINET IO Controller
PROFINET IO Device
Services
PROFINET CBA
4. Interface
Interface types
Protocols
PROFIBUS DP master
PROFINET IO Controller
Interface types
RJ 45 (Ethernet)
RS 232
RS 485
RS 422
USB port
Protocols

Protocols (USB)	
Protocols (Ethernet)	
WEB characteristics	
Protocols (terminal link)	
Number of connections	
PROFINET IO Device	
Redundancy mode	
SIMATIC communication	
EtherNet/IP	
Services	
Updating times	
Redundancy mode	
Open IE communication	
Web server	
PROFIBUS DP	
PROFdrive	
DALI	
Integrated protocols	
Freeport	
3964 (R)	
OPC UA	
Communication functions	
Global data communication	
S7 basic communication	
S7 communication	
LOGO! communication	
S5 compatible communication	
Standard communication (FMS)	
PROFINET CBA (at set setpoint communication load)	
Remote interconnections with acyclic transmission	
Remote interconnections with cyclic transmission	
iPAR server	
Number of connections	
Test commissioning functions	
Status/control	
Forcing	
Diagnostic buffer	
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Fuse blown or load voltage missing
Alarms	
• Diagnostic alarm	No
Diagnoses	
• Wire-break	No
• Short-circuit	No
• Fuse blown	Yes
• missing load voltage	No
Diagnostics indication LED	
• Rated load voltage PWR (green)	No
• Fuse OK FSG (green)	Yes; Red LED for fuse
• Group error SF (red)	Yes
• Status indicator digital output (green)	Yes
Integrated Functions	
Monitoring functions	
Safety monitoring functions	
Counting functions	
Load cell	
Position detection	
Control technology	

Step-by-step controllers
Pulse generator
Measuring functions
Operating mode for measured value acquisition
Measuring range
Accuracy
Measuring inputs for voltage
Measuring inputs for current
Measuring inputs for current (Rog. or I/U converter)
Error limits
Counter
Counting mode
External gate counters
Counter input 5 V
Counter input 24 V
Drive interface
Signal Input
Potential separation
Potential separation digital inputs
Potential separation digital outputs
• between the channels, in groups of
• between the channels and backplane bus
8
Yes; Optocoupler
Potential separation analog inputs
Potential separation analog outputs
Potential separation channels
Potential separation valve outputs
Potential separation counter
Potential separation controller
Isolation
Isolation tested with
4 000 V DC
EMC
Interference immunity against discharge of static electricity
Interference immunity against high-frequency electromagnetic fields
Interference immunity to cable-borne interference
Interference immunity against voltage surge
Interference immunity against conducted variable disturbance induced by high-frequency fields
Interference immunity to magnetic fields
Emission of radio interference acc. to EN 55 011
Emission of radio interference acc. to EN 55 022
Standards, approvals, certificates
Highest safety class achievable in safety mode
Highest safety class achievable for safety-related tripping of standard modules
Highest safety class achievable for deactivated dark test
Use in hazardous areas
Marine approval
Ambient conditions
Free fall
Ambient temperature during operation
Operation (vertical installation)
Air pressure acc. to IEC 60068-2-13
Vibrations
Shock testing
Resistance
Coolants and lubricants
Fire resistance
Pollutant concentrations
Hardware requirement

Processor	
Graphic	
Operating systems	
pre-installed operating system	
Runs under operating system	
Software	
Preinstalled	
Software functions	
Multi-user system	
Runtime software	
Runtime	
Block	
Adjustable parameters	
Configuration	
Configuration	
Configuration software	
Script languages (Runtime)	
Programming	
Programming language	
Configuration examples	
Software libraries	
Know-how protection	
Access protection	
Languages	
Online languages	
Functionality under WinCC (TIA Portal)	
Multiproject	
Message system	
Recipe management	
Variables	
Images	
Image objects	
Complex image objects	
Attributes for dynamic objects	
Lists	
Archiving	
Filters	
Security	
Data carrier support	
Logging through printer	
Character sets	
Transfer (upload/download)	
Process coupling	
Functions	
Functionality under WinCC Unified	
Parameter set management (recipes)	
Image objects	
Connection method	
required front connector	20-pin
ET-Connection	
Terminals	
Connection I/O signals	
Conductor cross-section in mm ²	
Conductor cross-section acc. to AWG	
Dimensions	
Width	40 mm
Height	125 mm

Depth	120 mm
Weights	
Weight, approx.	275 g
Other	
Data for selecting a voltage transformer	

last modified:

1/16/2021 