SIEMENS

Data sheet 6ES7151-7AB00-0AB0



*** Spare part *** SIMATIC DP, IM151-7 CPU FO for ET200S, RAM 48 KB (FW V1.13 or higher), with integrated PROFIBUS DP interface (FOC Simplex connector) as DP slave, without battery

General information	
HW functional status	04
Firmware version	V1.1
Engineering with	
● Programming package	STEP 7 V5.1 or higher
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes; against destruction
Input current	
Inrush current, max.	3.5 A
from supply voltage 1L+, max.	250 mA
Output current	
for backplane bus (5 V DC), max.	700 mA
Power loss	
Power loss, typ.	3.3 W
Storage	
Work memory	
● Integrated	48 kbyte; as of FW V1.13 48 KB; previously 24 KB
● expandable	No
Load memory	
● Plug-in (MMC)	Yes
● Plug-in (MMC), max.	2 Mbyte
● Data management on MMC (after last programming), min.	10 a
Backup	
● present	No
CPU processing times	
for bit operations, typ.	0.3 µs
for word operations, typ.	1 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	50 µs
for timer/counter operations, typ.	12 µs
CPU-blocks	
DB	
● Number, max.	127; Number range: 1 to 127
● Size, max.	8 kbyte
FB	

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● Number, max.	128; Number range: 0 to 127
● Size, max.	8 kbyte
FC	
● Number, max.	128; Number range: 0 to 127
● Size, max.	8 kbyte
OB	
● Size, max.	8 kbyte
● Number of free cycle OBs	1; OB 1
● Number of time alarm OBs	1; OB 10
● Number of delay alarm OBs	1; OB 20
● Number of cyclic interrupt OBs	1; OB 35
● Number of process alarm OBs	1; OB 40
● Number of startup OBs	1; OB 100
● Number of asynchronous error OBs	4; OB 80, 82, 85, 86
Nesting depth	
● per priority class	8
● additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
● Number	64
Retentivity	
— can be set	Yes
— preset	Z 0 to Z 7
Counting range	
— can be set	Yes
— lower limit	0
— upper limit	999
IEC counter	
● present	Yes
● Type	SFB
● Number	Unlimited (limited only by RAM capacity)
S7 timer	
● Number	128
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
● present	Yes
● Type	SFB
● Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	4 736 byte
Flag	
● Size, max.	256 byte
● Retentivity available	Yes; MB 0 to MB 255
● Retentivity preset	MB 0 to MB 15
● Number of clock memories	8; 1 memory byte
Data blocks	
● Retentivity adjustable	Yes; Max. 8 DB, 4096 data bytes in total
● Retentivity preset	No retentivity
Local data	
● per priority class, max.	256 byte; Local data max.: 1536 byte
Address area	
I/O address area	
● Inputs	1 536 byte
● Outputs	1 536 byte

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of which distributed	
— Inputs	64 byte
— Outputs	64 byte
Process image	
• Inputs	128 byte
• Outputs	128 byte
Digital channels	
• Inputs	248; max.
• Outputs	248; max.
Analog channels	
• Inputs	124; max.
• Outputs	124; max.
Address space per module	
• Inputs	244 byte
• Outputs	244 byte
Hardware configuration	
connectable programming devices/PCs	PGs/OPs with STEP 7 connectable via PROFIBUS interface
Number of modules per system, max.	63
Mounting rail	
• Number of mounting rails that can be used	1
• Length of mounting rail, max.	2 m; Station width: ≤ 1 m or < 2 m
Time of day	
Clock	
• Software clock	Yes
Operating hours counter	
• Number	0; No
Interfaces	
Interfaces/bus type	1x PROFIBUS DP
1. Interface	
Interface type	Fiber-optic interface and integrated RS 485 interface for programming
Isolated	No
Interface types	
• RS 485	Yes
• Output current of the interface, max.	80 mA; With RS 485
Protocols	
• MPI	No
• PROFIBUS DP device	Yes
• Point-to-point connection	No
PROFIBUS DP device	
• Number of connections	11
• GSD file	http://www.siemens.com/profibus-gsd
• Transmission rate, max.	12 Mbit/s
• Address area, max.	32
• User data per address area, max.	32 byte; Up to max. size of the transfer memory
Services	
— PG/OP communication	Yes
— Routing	No
— Global data communication	No
— S7 basic communication	Yes; as server
— S7 communication	Yes; as server
— S7 communication, as client	No
— S7 communication, as server	Yes
— Direct data exchange (slave-to-slave communication)	Yes
Transfer memory	
— Inputs	64 byte
— Outputs	64 byte
Interface types	
RS 485	

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● Cable length, max.	1 000 m; 100 to 1 000 m (depending on transmission speed), without repeaters
Protocols	
Open IE communication	
● TCP/IP	No
PROFIBUS DP	
● Number of node addresses, max.	1 to 125 permitted
Communication functions	
PG/OP communication	Yes
Global data communication	
● supported	No
S7 basic communication	
● supported	Yes; as server
● User data per job, max.	76 byte
● User data per job (of which consistent), max.	32 byte; with I_PUT/I_GET
S7 communication	
● supported	Yes
● as server	Yes
● as client	No
● User data per job, max.	160 kbyte
● User data per job (of which consistent), max.	32 byte
S5 compatible communication	
● supported	No
Standard communication (FMS)	
● supported	No
S7 message functions	
Process diagnostic messages	Yes; ALARM_S, ALARM_SQ
Test commissioning functions	
Status block	Yes
Single step	Yes
Number of breakpoints	2
Status/control	
● Status/control variable	Yes
● Variables	Inputs, outputs, memory bits, DB, times, counters
● Number of variables, max.	
— of which status variables, max.	30
— of which control variables, max.	14
Forcing	
● Forcing	Yes
● Forcing, variables	Inputs, outputs
● Number of variables, max.	10
Diagnostic buffer	
● present	Yes
● Number of entries, max.	100
— can be set	No
Isolation	
Isolation tested with	500 V DC
Ambient conditions	
Ambient temperature during operation	
● min.	0 °C
● max.	60 °C
Configuration	
Configuration software	
● STEP 7	Yes; as of V5.1
● STEP 7 Lite	Yes; V2.0 or higher
Programming	
● Command set	Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions
● Nesting levels	8

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● Program organization	Linear, structured
● System functions (SFC)	Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
Software libraries	
— Process diagnostics	Yes
— Software controller	Yes; depending on the required memory space and the resulting execution time
Know-how protection	
● User program protection/password protection	Yes
Cycle time monitoring	
● lower limit	1 ms
● upper limit	6 000 ms
● can be set	Yes
● preset	150 ms
Dimensions	
Width	60 mm
Height	119.5 mm
Depth	75 mm
Weights	
Weight, approx.	200 g

Classifications

	Version	Classification
eClass	16	27-24-26-07
eClass	14	27-24-26-07
eClass	12	27-24-26-07
eClass	9.1	27-24-26-07
eClass	9	27-24-26-07
eClass	8	27-24-26-07
eClass	7.1	27-24-26-07
eClass	6	27-24-26-07
ETIM	10	EC001603
ETIM	9	EC001603
ETIM	8	EC001603
ETIM	7	EC001603
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Miscellaneous







China RoHS

EMV



For use in hazardous locations



FM







Maritime application



Maritime application

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KR (Korean Register of Shipping)

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