SIEMENS

Product data sheet 6ES7151-7AB00-0AB0

SIMATIC DP, IM151-7 CPU FO FOR ET200S, WORKING MEMORY 48KB (FROM FW V1.13 ON), INTEGR. PROFIBUS DP INTERFACE (FO SIMPLEX CONNECTOR) AS DP SLAVE,
W/O BATTERY

General information	
Hardware product version	04
Firmware version	V1.1
Engineering with	
Programming package	STEP 7 V5.1 or higher
Supply voltage	
24 V DC	Yes
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	
Current output to backplane bus (DC 5 V), max.	700 mA

Power losses	
Power loss, typ.	3.3 W
Power loss, max.	4.5 W
Memory	
Work memory	
integrated	48 kbyte ; as of FW V1.13 48 KB; previously 24 KB
expandable	No
Load memory	
pluggable (MMC)	Yes
pluggable (MMC), max.	2 Mbyte
Data management on MMC (after last programming), min.	10 a
Backup	
present	No
CPU processing times	
for bit operations, min.	0.3 µs
for word operations, min.	1 µs
for fixed point arithmetic, min.	2 µs
for floating point arithmetic, min.	50 µs
for timer/counter operations, min.	12 µs
CPU-blocks	
DB	
Number, max.	127 ; Number range: 1 to 127
Size, max.	8 kbyte
FB	
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 time 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	
adjustable	Yes
lower limit	0
upper limit	63
preset	Z 0 to Z 7
Counting range	
adjustable	Yes
lower limit	0
upper limit	999
IEC counter	
present	Yes
Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	128
Retentivity	
adjustable	Yes
lower limit	0
upper limit	127
preset	No retentivity
Time range	
lower limit	10 ms

upper limit	9990 s
IEC timer	
present	Yes
Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	4736 byte
Flag	
Number, 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	
Number, max.	127 ; Number range: 1 to 127
Size, max.	8 kbyte
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	1536 byte
Outputs	1536 byte
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.
Addressing volume	
Outputs	244 byte
Inputs	244 byte
Hardware configuration	
Number of mounting rails that can be used	1
Max. length of mounting rail	2 m ; Station width: <= 1 m or < 2 m
Number of modules per system, max.	63
Connectable programming devices/PCs	PGs/OPs with STEP 7 connectable via PROFIBUS interface
Time of day	
Clock	
Software clock	Yes
Operating hours counter	
Number	0 ; No
Interfaces	
Interfaces	1x PROFIBUS DP
Number of USB interfaces	0
Number of parallel interfaces	0
Number of other interfaces	1 ; Fiber-optic interface
Supports protocol for PROFINET IO	
Number of PROFINET interfaces	0
PROFIBUS DP	
Node addresses	1 to 125
Cable length, max.	1000 m ; 100 to 1000 m (depending on transmission speed), without repeaters
WLAN	
Number of wireless interfaces	0
1st interface	
Type of interface	Fiber-optic interface and integrated RS 485 interface for programming
Physics	Fiber-optic cable or RS 485
Isolated	No

Power supply to interface (15 to 30 V DC), max.	80 mA ; With RS 485
Functionality	
MPI	No
DP slave	Yes
Point-to-point connection	No
DP slave	
Number of connections	11
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
GSD file	http://www.siemens.de/profibus-gsd
Transmission rate, max.	12 Mbit/s
Transfer memory	
Inputs	64 byte
Outputs	64 byte
Address area, max.	32
User data per address area, max.	32 byte ; Up to max. size of the transfer memory
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/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
of which status variables, max.	30
of which control variables, max.	14
Forcing	
Forcing	Yes
Force, variables	Inputs, outputs
Number of variables, max.	10
Status block	Yes
Single step	Yes
Number of breakpoints	2
Diagnostic buffer	
present	Yes
Number of entries, max.	100
adjustable	No
Isolation	
Isolation checked with	500 V DC
Degree and class of protection	
Type of protection	IP20
Ambient conditions	
Operating temperature	

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	
Programming language	
LAD	Yes
FBD	Yes
STL	Yes
SCL	Yes
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
Program organization	Linear, structured
Software libraries	
Process diagnostics	Yes
Software controller	Yes ; depending on the required memory space and the resulting execution time
System functions (SFC)	Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions
Know-how protection	
User program protection/password protection	Yes
Cycle time monitoring	
lower limit	1 ms
upper limit	6000 ms
adjustable	Yes
preset	150 ms
Dimensions	
Width	60 mm

Height	119.5 mm
Depth	75 mm
Weight	
Weight, approx.	200 g
Status	Jul 17, 2012