SIEMENS

productdatablad 6ES7151-8AB00-0AB0

SIMATIC DP,
IM151-8 PN/DP CPU FOR ET200S,
128 KB WORKING MEMORY,
INT. PROFINET INTERFACE (WITH THREE RJ45 PORTS)
AS IO-CONTROLER,
W/O BATTERY MMC REQUIRED

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Supply voltage	
24 V DC	Ja
Voedingsspanning / bij DC / nominale waarde / minimaal	20,4 V
Voedingsspanning / bij DC / nominale waarde / maximaal	28,8 V
Productfunctie / bescherming tegen onjuiste polariteit	Ja
Mains buffering	
Mains/voltage failure buffering time	5 ms
Input current	
Inrush current, max.	1,8 A
Spanningen en stromen / I^2t	0,21 $A^2 \cdot s$
from supply voltage 1L+, max.	380 mA
Output current	
Current output to backplane bus (5 V DC), max.	700 mA
Power loss	
Werkelijk vermogensverlies / typisch	5,5 W
Memory	
Work memory	
integrated	128 kbyte

expandable	Nee
Size of retentive memory for retentive data blocks	64 kbyte
Load memory	
Plug-in (MMC)	Ja
Plug-in (MMC), max.	8 Mbyte
Data management on MMC (after last programming), min.	10 a
Backup	
present	Ja
CPU processing times	
for bit operations, typ.	0,1 µs
for word operations, typ.	0,2 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	3 µs
CPU-blocks	
Number of blocks (total)	1024
DB	
Number, max.	511
Size, max.	64 kbyte
FB	
Number, max.	1024
Size, max.	64 kbyte
FC	
Number, max.	1024
Size, max.	64 kbyte
OB	
Size, max.	64 kbyte
Number of free cycle OBs	1
Number of time alarm OBs	1
Number of delay alarm OBs	1
Number of time interrupt OBs	1
Number of process alarm OBs	1
Number of DPV1 alarm OBs	3
Number of startup OBs	1
Number of asynchronous error OBs	6
Number of synchronous error OBs	2
Nesting depth	
per priority class	16
additional within an error OB	4

Counters, timers and their retentivity	
S7 counter	
Number	256
of which retentive without battery	
adjustable	Ja
lower limit	0
upper limit	255
Retentivity	
adjustable	Ja
lower limit	0
upper limit	255
Counting range	
adjustable	Ja
lower limit	0
upper limit	999
IEC counter	
present	Ja
S7 times	
Number	256
of which retentive without battery	
adjustable	Ja
lower limit	0
upper limit	255
Retentivity	
adjustable	Ja
lower limit	0
upper limit	255
Time range	
lower limit	10 ms
upper limit	9990 s
IEC timer	
present	Ja
Data areas and their retentivity	
Flag	
Number, max.	256 byte
Retentivity available	Ja
Number of clock memories	8
Data blocks	

Number, max.	511
Size, max.	64 kbyte
Retentivity adjustable	Ja
Local data	
per priority class, max.	510 byte
Address area	
I/O address area	
Inputs	2048 byte
Outputs	2048 byte
of which distributed	
Inputs	2048 byte
Outputs	2048 byte
Process image	
Inputs, adjustable	2048 byte
Outputs, adjustable	2048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Digital channels	
Inputs	16336
Outputs	16336
Inputs, of which central	496
Outputs, of which central	496
Analog channels	
Inputs	1021
Outputs	1021
Inputs, of which central	124
Outputs, of which central	124
Hardware configuration	
Number of modules per system, max.	63
Mounting rail	
Number of mounting rails that can be used	1
Time of day	
Clock	
Hardware clock (real-time clock)	Ja
battery-backed and synchronizable	Ja
Deviation per day, max.	10 s
Backup time	6 wk
Operating hours counter	

Number	1
retentive	Ja
Clock synchronization	
supported	Ja
to MPI, master	Nee
to MPI, slave	Nee
to DP, master	Ja
to DP, slave	Ja
in AS, master	Nee
in AS, slave	Nee
on Ethernet via NTP	Ja
Interfaces	
Aantal interfaces / conform USB	0
Number of parallel interfaces	0
Aantal interfaces / overige	0
PROFINET IO	
Aantal interfaces / conform PROFINET	1
WLAN	
Aantal interfaces / conform Wireless	0
1. Interface	
isolated	Ja
integrated switch	Ja
Number of ports	3
automatic detection of transmission rate	Ja
Autonegotiation	Ja
Autocrossing	Ja
Functionality	
MPI	Nee
DP master	Nee
DP slave	Nee
PROFINET IO Device	Nee
PROFINET IO Controller	Ja
PROFINET CBA	Ja
Open IE communication	Ja
Communicatiefunctie / Webserver	Ja
Point-to-point connection	Nee
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s

Number of connectable IO Devices, max.	128
Number of connectable IO Devices for RT, max.	128
of which in line, max.	128
Number of IO Devices with IRT and the option "high flexibility"	128
of which in line, max.	61
IRT, supported	Ja
Prioritized startup supported	Ja
Number of IO Devices, max.	32
Activation/deactivation of IO Devices	Ja
Number of IO Devices that can be simultaneously activated/deactivated, max.	8
IO Devices changing during operation (partner ports), supported	Ja
Number of IO Devices per tool, max.	8
Device replacement without swap medium	Ja
Services	
PG/OP communication	Ja
Routing	Ja
S7 communication	Ja
Isochronous mode	Nee
Open IE communication	Ja
Address area	
Inputs, max.	2 kbyte
Outputs, max.	2 kbyte
User data consistency, max.	254 byte
PROFINET CBA	
acyclic transmission	Ja
cyclic transmission	Ja
Open IE communication	
Open IE communication, supported	Ja
Number of connections, max.	8
2. Interface	
isolated	Ja
Functionality	
MPI	Nee
DP master	Ja
DP slave	Nee
PROFINET IO Controller	Nee
PROFINET IO Device	Nee

PROFINET CBA	Nee
Open IE communication	Nee
Web server	Nee
Point-to-point connection	Nee
DP master	
Number of connections, max.	12
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	32
Services	
PG/OP communication	Ja
Routing	Ja
Global data communication	Nee
S7 basic communication	Ja
S7 communication	Ja
S7 communication, as client	Nee
S7 communication, as server	Ja
Equidistance mode support	Ja
Isochronous mode	Nee
SYNC/FREEZE	Ja
Activation/deactivation of DP slaves	Ja
Direct data exchange (slave-to-slave communication)	Ja
DPV1	Ja
Address area	
Inputs, max.	2048 byte
Outputs, max.	2048 byte
User data per DP slave	
Inputs, max.	244 byte
Outputs, max.	244 byte
Isochronous mode	
Isochronous mode (application synchronized up to terminal)	Nee
Communication functions	
PG/OP communication	Ja
Data record routing	Ja
Global data communication	
supported	Nee
S7 basic communication	
supported	Ja
User data per job, max.	76 byte

User data per job (of which consistent), max.	76 byte
S7 communication	
supported	Ja
as server	Ja
as client	Ja
User data per job, max.	180 byte
User data per job (of which consistent), max.	64 byte
S5 compatible communication	
supported	Nee
Standard communication (FMS)	
supported	Nee
Open IE communication	
TCP/IP	Ja
Number of connections, max.	8
Data length for connection type 01H, max.	1460 byte
Data length for connection type 11H, max.	8192 byte
ISO-on-TCP (RFC1006)	Ja
Number of connections, max.	8
Data length, max.	8192 byte
UDP	Ja
Number of connections, max.	8
Data length, max.	1472 byte
Web server	
supported	Ja
Number of HTTP clients	5
PROFINET CBA (at set setpoint communication load)	
Setpoint for the CPU communication load	50 %
Number of remote interconnection partners	32
Number of functions, master/slave	30
Total of all master/slave connections	1000
Data length of all incoming connections master/slave, max.	4000 byte
Data length of all outgoing connections master/slave, max.	4000 byte
Number of device-internal and PROFIBUS interconnections	500
Data length of device-internal und PROFIBUS interconnections, max.	4000 byte
Data length per connection, max.	1400 byte
Remote interconnections with acyclic transmission	
Sampling frequency: Sampling time, min.	500 ms

Number of incoming interconnections	100
Number of outgoing interconnections	100
Data length of all incoming interconnections, max.	2000 byte
Data length of all outgoing interconnections, max.	2000 byte
Data length per connection, max.	1400 byte
Remote interconnections with cyclic transmission	
Transmission frequency: Transmission interval, min.	1 ms
Number of incoming interconnections	200
Number of outgoing interconnections	200
Data length of all incoming interconnections, max.	2000 byte
Data length of all outgoing interconnections, max.	2000 byte
Data length per connection, max.	250 byte
HMI variables via PROFINET (acyclic)	
Number of stations that can log on for HMI variables (PN OPC/iMap)	3
HMI variable updating	500 ms
Number of HMI variables	200
Data length of all HMI variables, max.	2000 byte
PROFIBUS proxy functionality	
supported	Ja
Number of linked PROFIBUS devices	16
Data length per connection, max.	240 byte
Number of connections	
overall	12
usable for PG communication	11
reserved for PG communication	1
adjustable for PG communication, min.	1
adjustable for PG communication, max.	11
usable for OP communication	11
reserved for OP communication	1
adjustable for OP communication, min.	1
adjustable for OP communication, max.	11
usable for S7 basic communication	10
reserved for S7 basic communication	0
adjustable for S7 basic communication, min.	0
adjustable for S7 basic communication, max.	10
usable for S7 communication	10
adjustable for S7 communication, max.	10
total number of instances, max.	32

usable for routing	4
S7 message functions	
Number of login stations for message functions, max.	12
Process diagnostic messages	Ja
simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
Status block	Ja
Single step	Ja
Number of breakpoints	2
Status/control	
Status/control variable	Ja
Number of variables, max.	30
of which status variables, max.	30
of which control variables, max.	14
Forcing	
Forcing	Ja
Number of variables, max.	10
Diagnostic buffer	
present	Ja
Number of entries, max.	500
adjustable	Nee
of which powerfail-proof	100
Interrupts/diagnostics/status information	
Alarms	
Alarms	Ja
Diagnostic messages	
Productfunctie / diagnosefunctie	Ja
Diagnostics indication LED	
Bus activity PROFINET P1-LINK (green)	Ja
Bus activity PROFINET P2-LINK (green)	Ja
Bus activity PROFINET P3-LINK (green)	Ja
Bus fault BF-PN (red)	Ja
Maintenance information MT (yellow)	Ja
Group error SF (red)	Ja
Monitoring 24 V voltage supply ON (green)	Ja
Galvanic isolation	
between load voltage and all other switching components	Ja
between PROFIBUS DP and all other circuit components	Ja

Degree and class of protection	
Beschermingsklasse IP	IP20
Configuration	
Configuration software	
STEP 7	Ja
Programming	
Nesting levels	8
Programming language	
LAD	Ja
FBD	Ja
STL	Ja
SCL	Ja
CFC	Ja
GRAPH	Ja
HiGraph®	Ja
Know-how protection	
User program protection/password protection	Ja
Cycle time monitoring	
lower limit	1 ms
upper limit	6000 ms
adjustable	Ja
preset	150 ms
Dimensions	
Breedte	120 mm
Hoogte	119,5 mm
Diepte	75 mm
Weights	
Weight, approx.	320 g
Status	28-jul-2014