

SIEMENS

Product data sheet

6ES7677-1DD10-0BB0



SIMATIC S7-MODULAR EMBEDDED CONTROLLER,
EC31-RTX,
EC31 HW (6ES7677-1DD10-0BA0) WITH 1 GB RAM,
4 GB FLASH DISK AND PREINSTALLED SW:
WINDOWS EMBEDDED STANDARD;
SIMATIC WINAC RTX,
SIMATIC SOFTNET-S7/ LEAN,
INTERFACES: 1. IF: 2X PROFINET,
2. IF: 1X FAST ETHERNET,
3. IF: 2 X USB, MMC SLOT,
DOCUMENTATION ON DVD, RESTORE DVD

General information

Hardware product version	01
Firmware version	V2.0

PC configuration

Computer platform	SIMATIC S7 modular embedded controller
Processor selection	Intel Core Duo 1.2 GHz
Main memory	1 GB RAM
Operating systems	Windows Embedded Standard 2009

Installed software

Control	SIMATIC WinAC RTX 2010
Communication	Yes

Supply voltage

Rated value, 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V

Mains buffering	
Mains/voltage failure stored energy time	5 ms
Input current	
Rated value at 24 V DC	800 mA ; without backplane bus and USB power supply
Power losses	
Power loss, typ.	34 W
Memory	
Memory type	512 KB non-volatile memory for retentive data
Work memory	
integrated	1 Gbyte
CPU processing times	
for bit operations, min.	0.0040 μ s ; typ.
for fixed point arithmetic, min.	0.0030 μ s ; typ.
for floating point arithmetic, min.	0.0040 μ s ; typ.
CPU-blocks	
DB	
Number, max.	Max. code size and max. data size: 4 MB each
Size, max.	64 kbyte
FB	
Number, max.	Max. code size and max. data size: 4 MB each
Size, max.	64 kbyte
FC	
Number, max.	Max. code size and max. data size: 4 MB each
Size, max.	64 kbyte
OB	
Number, max.	Max. code size and max. data size: 4 MB each
Size, max.	64 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	9 ; OB 30-38
Number of process alarm OBs	1 ; OB 40
Number of startup OBs	2 ; OB 100, 102

Number of asynchronous error OBs	7 ; OB 80, 82-85, 86, 88
Number of synchronous error OBs	2 ; OB 121, 122
Nesting depth	
per priority class	24
additional within an error OB	24
Counters, timers and their retentivity	
S7 counter	
Number	2048
Retentivity	
adjustable	Yes
lower limit	0
upper limit	2047
preset	8
Counting range	
adjustable	Yes
lower limit	0
upper limit	999
IEC counter	
present	Yes
Type	SFB
S7 times	
Number	2048
Retentivity	
adjustable	Yes
lower limit	0
upper limit	2047
Time range	
lower limit	10 ms
upper limit	9990 s
IEC timer	
present	Yes
Type	SFB
Data areas and their retentivity	

retentive data area, total	512 KB
Flag	
Number, max.	16 kbyte
of which retentive without battery	MB 0 to MB 16383
Retentivity preset	MB 0 to MB 15
Number of clock memories	8
Data blocks	
Number, max.	Max. code size and max. data size: 4 MB each
Size, max.	64 kbyte
Address area	
I/O address area	
Inputs	16 kbyte
Outputs	16 kbyte
of which, distributed	
Inputs	8 kbyte
Outputs	8 kbyte
Process image	
Inputs, adjustable	16 kbyte
Outputs, adjustable	16 kbyte
Inputs, default	512 byte
Outputs, default	512 byte
Subprocess images	
Number of subprocess images, max.	15
Digital channels	
Inputs	128000
Outputs	128000
Analog channels	
Inputs	8000
Outputs	8000
Time of day	
Clock	
Hardware clock (real-time clock)	Yes
Clock synchronization	

supported	Yes
to PC-CP, slave	Yes
on Ethernet via NTP	Yes
Interfaces	
Number of USB interfaces	2
serial interface	0
Industrial Ethernet	
Industrial Ethernet interface	X1: 2 ports 10/100 Mbit/s (ERTEC-based) X2: 1 port 10/100 Mbit/s
1st interface	
Type of interface	PROFINET
Physics	2x RJ45
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
Number of connection resources	32
Functionality	
PROFINET IO Device	No
PROFINET IO Controller	Yes
PROFINET CBA	Yes
Open IE communication	Yes
PROFINET IO Controller	
Services	
PG/OP communication	Yes
S7 routing	Yes
S7 communication	Yes
Isochronous mode	Yes
Number of connectable IO devices, max.	256
Max. number of connectable IO devices for RT	256
of which in line, max.	256
Number of IO devices with IRT and the option "high flexibility"	256
of which in line, max.	61

Number of IO Devices with IRT and the option "high performance", max.	256
of which in line, max.	64
IRT, supported	Yes
Prioritized startup supported	Yes
Number of IO Devices, max.	32
Activation/deactivation of IO Devices	Yes
Maximum number of IO devices that can be activated/deactivated at the same time.	8
IO Devices changing during operation (partner ports), supported	Yes
Max. number of IO devices per tool	8
Device replacement without swap medium	Yes
Send cycles	Adjustable: 250 µs, 500 µs and 1 ms
Updating times	250 µs - 128 ms (with signal cycle 250 µs); 500 µs - 256 ms (with signal cycle 500 µs); 1 ms - 512 ms (with signal cycle 1 ms)
Address area	
Inputs, max.	16 kbyte
Outputs, max.	16 kbyte
User data per address area, max.	2 kbyte
User data consistency, max.	256 byte
PROFINET CBA	
acyclic transmission	Yes
Cyclic transmission	Yes
Open IE communication	
Open IE communication, supported	Yes
Number of connections, max.	32
Local port numbers used at the system end	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
PROFINET functions	
Detection of accessible nodes, supported	Yes ; DCP
Assignment of the IP address, supported	Yes ; DCP
Assignment of the device name, supported	Yes ; DCP
Topology recognition, supported	Yes ; LLDP, LLDP MIB, SNMP

Extended network diagnostics with Standard MIB II, supported	Yes ; Standard MIB II, SNMP
2nd interface	
Type of interface	Integrated Ethernet interface
Physics	Ethernet RJ45
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	No
Number of connection resources	32
Functionality	
PROFINET IO Controller	No
PROFINET IO Device	No
PROFINET CBA	No
PROFINET functions	
Detection of accessible nodes, supported	Yes ; DCP
Assignment of the IP address, supported	Yes ; DCP
Assignment of the device name, supported	Yes ; DCP
Topology recognition, supported	Yes ; LLDP, LLDP MIB, SNMP
Extended network diagnostics with Standard MIB II, supported	Yes ; Standard MIB II, SNMP
Communication functions	
PG/OP communication	Yes
Global data communication	
supported	No
S7 basic communication	
supported	No
S7 communication	
supported	Yes
as server	Yes
as client	Yes
Open IE communication	
TCP/IP	Yes ; Via integrated PROFINET interface (X1) and loadable FBs
Number of connections, max.	32

Data length, max.	32 kbyte
ISO-on-TCP (RFC1006)	Yes ; Via integrated PROFINET interface (X1) and loadable FBs
Number of connections, max.	32
Data length, max.	32 kbyte
UDP	Yes ; Via integrated PROFINET interface (X1) and loadable FBs
Number of connections, max.	32
Data length, max.	1472 byte
Number of connections	
overall	64
usable for PG communication	
reserved for PG communication	1
usable for OP communication	
reserved for OP communication	1
S7 message functions	
Number of login stations for message functions, max.	62 ; The alarm functions cannot currently be used for central bus modules
Process diagnostic messages	Yes ; Alarm_S
Test commissioning functions	
Status/control	
Status/control variable	Yes
Forcing	
Forcing	No
Diagnostic buffer	
present	Yes
EMC	
Emission of radio interference acc. to EN 55 011	
Limit class A, for use in industrial areas	Yes
Degree and class of protection	
IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
CSA approval	Yes ; Included in cULus

cULus	Yes
C-TICK	Yes
FM approval	Yes
Ambient conditions	
Operating temperature	
Min.	0 °C
max.	50 °C
Storage/transport temperature	
Min.	-40 °C
max.	70 °C
Vibrations	
Operation, checked according to IEC 60068-2-6	Yes
Transport tested checked to IEC 60068-2-6	Yes
Shock test	
checked according to IEC 60068-2-27	Yes
checked according to IEC 60068-2-29	Yes
Shock testing	
checked according to IEC 60068-2-29	Yes
Operation, checked according to IEC 60068-2-29	Operation, tested according to IEC 60068-2-27
Storage/transport, checked to IEC 60068-2-29	Yes
Configuration	
Configuration software	
STEP 7	Yes
programming	
Programming language	
LAD	Yes
FBD	Yes
STL	Yes
SCL	Yes
CFC	Yes
GRAPH	Yes
HiGraph®	Yes
Dimensions	

Width	160 mm
Height	125 mm
Depth	115 mm
Status	Jul 17, 2012