Data sheet

6ES7515-2RN03-0AB0





SIMATIC S7-1500R, CPU 1515R-2 PN central processing unit with work memory 1 MB for program and 4.5 MB for data, 1st interface: PROFINET RT with 2-port switch, 2nd interface: PROFINET, SIMATIC Memory Card required



General information	
Product type designation	CPU 1515R-2 PN
HW functional status	FS04
Firmware version	V3.1
FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
 Isochronous mode 	No
SysLog	Yes
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	V19 (FW V3.1) / V18 (FW V3.0); with older TIA Portal versions configurable as 6ES7515-2RM00-0AB0
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	8
Mode buttons	2
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Repeat rate, min.	1/s
Input current	
Current consumption (rated value)	0.65 A
Current consumption, max.	0.88 A
Inrush current, max.	1.15 A
I ² t	0.6 A ² ·s
Power	
Infeed power to the backplane bus	12 W
Power consumption from the backplane bus (balanced)	6.2 W
Power loss	
Power loss, typ.	3.6 W
Memory	
Number of slots for SIMATIC memory card	1

SIMATIC memory card required	Yes
Work memory	
integrated (for program)	1 Mbyte
integrated (for data)	4.5 Mbyte
Load memory	
Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
for bit operations, typ.	20 ns
for word operations, typ.	24 ns
	32 ns
for fixed point arithmetic, typ.	
for floating point arithmetic, typ.	128 ns
CPU-blocks	
Number of elements (total)	8 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
 Number range 	Number range: 1 to 59 999
• Size, max.	4.5 Mbyte; For non-optimized block accesses, the max. size of the DB is 64 KB
FB	
Number range	0 65 535
• Size, max.	1 Mbyte
FC	
Number range	0 65 535
• Size, max.	1 Mbyte
ОВ	
• Size, max.	1 Mbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs	20
Number of cyclic interrupt OBs	20; with minimum OB 3x cycle of 10 ms
Number of process alarm OBs	50
Number of DPV1 alarm OBs	3
Number of Startup OBs	100
Number of startup OBs Number of asynchronous error OBs	4
•	
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	
per priority class	24
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
• Number	Any (only limited by the main memory)
Retentivity	, (e,
— adjustable	Yes
	160
Data areas and their retentivity	CAO bis day Assellable makenili
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 472 KB
Flag	and technology data (axes). 472 NB
Flag	
Flag ● Size, max. • Number of clock memories	16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte

Retentivity adjustable Yes		
Received by present to the control of the control	Data blocks	
Local data A per priority class, max. Address area Applications of 10 modules Application of 10 modules Address area I notus I notus		Yes
Address area Number of IO modules **Chiptus** **Chiptu	Retentivity preset	No
Address area Address area Aumber of IO modules A 986; max. number of modules / submodules Bo address area I pupils A 28 kbyte; All outputs are in the process image per integrated IO subsystem —Include (volume) —Include (volume) —Include (volume) —A 8 kbyte —A couputs volume —Include (volume) —A 8 kbyte —A couputs volume) —A 16; A distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integrated system is characterized not only by the communication of the system is characterized not only by the communication of the system is characterized not only by the communication of the system is characterized not only by the communication of the system is characterized not only by the communication of the system is characterized not only by the communication of the system is characterized not only by the integrated as a system is characterized not only by the communication of the system is characterized not only by th	Local data	
Number of ICI modules Number of ICI modules	• per priority class, max.	64 kbyte; max. 16 KB per block
Po address arise	Address area	
Inputs	Number of IO modules	4 096; max. number of modules / submodules
• Outputs sare in the process image per integrated IO subsystem — In profit (volume) 8 kbyte — Outputs (volume) 8 kbyte 8 kbyte — Outputs (volume) 8 kbyte 8 kby	I/O address area	
per integrated IQ Subsystem	• Inputs	32 kbyte; All inputs are in the process image
- Inputs (volume)	Outputs	32 kbyte; All outputs are in the process image
- Outputs (volume) 8 kbyte • Number of subprocess images, max. • Number of distributed I/O systems 15. A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET, but also by the connection of I/O via IE/PB-Links. Number of I/O Controllers • Integrated • Nodules per rack, max. • Nodules per rack, max. • Nodules per rack, max. • S. CPU + 2 PS + 2 CP Time of dry Clock • Type • Backup time • Deviation per day, max. 10 s. Typ: 2 s Operating hours counter • Number • One Ehermet via NTP Ves Timefraces Number of PROFINET interfaces • All of Clements • No Ehermet Via PROFINET interfaces • Linterface Interface types • Linterface • PROFINET IO Controller • PROFINET IO Device • Maker Communication • Open IE communication • Open IE communication • PROFINET IO Controller • PROFINET IO Device • Modia redundancy • Yes; Port user program • No • PROFINET IO Devices, max • Interface time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data - PROFINET Security Class 1 ms to 512 ms 2 linterface 1 ms to 512 ms 2 linterface 1 ms to 512 ms	per integrated IO subsystem	
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Time of day	Rack	
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	— for send cycle of 1 ms	1 ms to 512 ms
Interface types	2. Interface	
	Interface types	

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PROFINET ID device * SIMATIC communication * Open IE communication * Open IE communication * Ves Cybtonally also encrypted * Web server * Ves Redial redundancy * No * Media redundancy * No * Mother profit of the server * Autonogolation * No * Number of connections, max. * Number of connections, max. * Number of connections reserved for ES-MMIWeb * Number of connections reserved for ES-MMIWeb * Number of ST routing paths * Number of ST routing paths * No * PROFINET system redundancy (S2) * PROFINET system redundancy - MRP - MRP MRP interconnection, supported - MRP in MRP interconnection, supported - MRP in No - Switchover time on line break, typ. - Number of stations in the ring, max. * SOO ms; PROFINET MRP - Number of stations in the ring, max. * PROFINET system redundancy - PROFINET system redundancy - MRP - MRP interconnection, supported - Soft communication * PROFINET MRP - Data length, max. - Soveral passive connections per port, supported * So Communication, as server * Yes * ST communication, as server * Yes * ST communication, as dient * Open IE communication * TCPRIP - Data length, max. - UDP multicast * UDP - Data length, max. - UDP multicast * UDP * Data length, max. - UDP multicast * Yes * SNAPP * Yes * SNAPP * Yes * SNAPP * Yes * SNAPP * Yes * PROFINET MRP - No * Data length, max. - UDP multicast * Yes * SNAPP * Yes * SNAPP * Yes * No * PROFINET MRP * SNAPP * Yes * PROFINET MRP * SNAPP * Yes * SNAPP * Y		Vers ID-4
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Open IE communication Ves Optionally also encrypted Ves Ves Ves Ves Ves Ves Ves Ves Ves		
Webs server * Metals aredundancy No Motion functives RJ 45 (Ethernet) * 100 Mbps * Autonegotiation * Ves * Autonegotiation * Autocrossing * Industrial Ethernet status LED * Yes * Autonedotial Ethernet status LED * Yes * No * Number of connections, max. * Number of connections was integrated interfaces of the CPU and connected CPs * Number of connections valintegrated interfaces * Number of connections valintegrated interfaces * Number of stronting paths * No * PROFINET system redundancy (R1) * Media redundancy * MRP Minterconnection, supported * MRP		
RJ.45 (Ement) • 100 Mbps • Autonospitation • Industrial Element status LED Protocols PROFISARIe No Number of connections, max. • Number of connections max. • Number of connections reserved for ESI-Mil/web • Number of connections via integrated interfaces • Number of connections via integrated interfaces • Number of strouting paths Recoundary mode • PROFINET system redundancy (S2) • PROFINET system redundancy (R1) Media redundancy — MRP — Number of stations in the ring, max. • PROFINET system redundancy • PROFINET system redundancy • PROFINET system • PROFINET s		
Interface types ### Autonegotiation ### Auton		
RJ 45 (Ehrenet) 100 Mbps Authoropatiation Authoropatiation Authoropatiation Authoropatiation Authoropatiation Authoropatiation Authoropatiation PROFitsafte No No Number of connections, max. Number of connections, max. Number of connections via integrated interfaces No Number of connections via integrated interfaces No Number of connections via integrated interfaces No Number of SY routing paths Redundancy mode PROFINET system redundancy (S2) PROFINET system redundancy (S2) PROFINET system redundancy (R1) No Media redundancy MRP interconnection, supported Yes; as MRP inign goals according to IEC 62439-2 Edition 2.0 Yes; as MRP inign goals according to IEC 62439-2 Edition 3.0 No		NO
No Maps Autonegotiston Autonessing Autonessin		
Autocrossing Aves Autocrossing Aves Autocrossing Autocro		Vac
Autocrossing Yes Yes Industrial Ethernet status LED Yes Yes Industrial Ethernet status LED Yes Industrial Industrial Ethernet Status LED Yes Industrial Industrial Ethernet Status LED Yes Industrial Ethernet Status LED Yes Industrial Industrial Ethernet Status LED Yes Industrial In		
Industrial Ethernet status LED Yes		
Protocols PROFisate Number of connections, max. Number of connections, reserved for ES/HMI/web Number of connections reserved for ES/HMI/web Number of ST conting paths PROFINET system redundancy (S2) PROFINET system redundancy (R1) Media redundancy —MRP MRP Hinterconnection, supported —MRPD No —Switchover time on line break, typ. —Number of stations in the ring, max. SIMATIC communication PS Communication, as server ST communication, as server ST communication, as client PCPPIP —Data length, max. —several passive connections per port, supported *ISO-on-TCP (RFC 1006) —Data length, max. —DUP muticast *UPP —Data length, max. —DUP muticast *UPP —Data length, max. —Switch length, max. —Swi	-	
PROFIsafe Number of connections, max. Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces 128 Number of S7 routing paths 16 Redundancy mode PROFINET system redundancy (R1) No Media redundancy MRP MRP MRP MRP MRP MRP (Number of stations in the ring, max. SIMATIC communication, as server S7 communication, as server S7 communication, as client No Open IE communication TOPIP Data length, max. S0 children S1 communication TOPIP Data length, max. S0 children S1 communication S1 communication TOPIP Data length, max. S2 chyle; 1 472 bytes for UDP broadcast Yes; max. 118 multicast circuits DDP UDP UDP UDP Ves; only via Web API Yes S1 computed Sessions, max. Wes OPI only via Web API Yes S2 computed Sessions, max. Wes OPI only via Web API Per OPI onl		
Number of connections, max. Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections reserved for ES/HMI/web Number of S7 routing paths PROFINET system redundancy (S2) PROFINET system redundancy (R1) Media redundancy MRP MRP (Yes, MRP Automanager according to IEC 62439-2 Edition 2.0 Yes, as MRP ring node according to IEC 62439-2 Edition 2.0 Yes, as MRP ring node according to IEC 62439-2 Edition 3.0 No No No MRPO MRP (Yes, MRP Automanager according to IEC 62439-2 Edition 3.0 No No Switchover time on line break, typ. No Switchover time on line break, typ. No SiMATIC communication PC/I/OP communicat		No
Number of connections, max. Number of connections in integrated interfaces of the CPU and connected CPs Number of connections is integrated interfaces Number of S7 routing paths Redundancy mode PROFINET system redundancy (R1) Media redundancy — MRP — MRP — MRP — MRP — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication PGOP communication PGOP communication PGOP communication PS7 routing S7 routing S7 communication, as server S7 communication, as client Open IE communication		
Number of connections via integrated interfaces 128 Number of S7 routing paths 16 Redundancy mode PROFINET system redundancy (S2) Yes PROFINET system redundancy (R1) No Media redundancy — MRP Yes; MRP Automanager according to IEC 62439-2 Edition 3.0 No Media redundancy — MRP Yes; as MRP nign node according to IEC 62439-2 Edition 3.0 No — Switchover time on line break, typ. 200 ms; PROFINET MRP 50; Only 16 are recommended, however SIMATIC communication		256; via integrated interfaces of the CPU and connected CPs
Number of S7 routing paths No PROFINET system redundancy (S2) PROFINET system redundancy (R1) Media redundancy — MRP — MRP — MRP — MRP interconnection, supported — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication PC/PO communication PC/PID Data length, max. — several passive connections per port, supported PSO-Data length, max. — UDP multicast — Data length, max. — UDP multicast — Data length, max. — UDP multicast — Data length, max. — UDP multicast — Discommunication PC/PO — Data length, max. — UDP multicast — UDP with system s	•	
Number of S7 routing paths Redundancy mode PROFINET system redundancy (S2) PROFINET system redundancy (R1) Media redundancy MRP MRP MRP MRP MRP MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 No No Switchover time on line break, typ. No Suitchover time on line break, typ. No PGO communication PGO active PGO		
Redundancy mode PROFINET system redundancy (S2) Yes PROFINET system redundancy (R1) No Media redundancy — MRP Yes: MRP Automanager according to IEC 62439-2 Edition 2.0 Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 No — MRPD Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 No — Switchover time on line break, typ. — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication PG/OP communication PG/OP communication PG/OP communication PG/OP communication PG/OP communication, as server ST communication, as client No Open IE communication TCP/IP — Data length, max. — several passive connections per port, supported ISO-on-TCP (REC1006) — Data length, max. — UDP multicast PHCP DHCP DNS SNMP Pes SNMP Pes PCP LIDP Yes SNMP Pes PCP LIDP Yes Encryption Yes Pes Pes Pyes Py	-	
PROFINET system redundancy (R1) Media redundancy — MRP — MRP — MRP — MRP interconnection, supported — MRPD — No — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication PG/OP communication PS/T routing • S7 routing • S7 communication, as server • S7 communication, as client No Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. • UDP — Data length, max. • UDP Yes • SNMP • DNS • SNMP • DCP • LLDP • Encryption Ves • Sound No		
Media redundancy	PROFINET system redundancy (S2)	Yes
— MRP — MRP interconnection, supported — MRP interconnection, supported — MRP interconnection, supported — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SilMATIC communication • PG/OP communication • PG/OP communication • S7 routing • S7 communication, as server • S7 communication, as client Open IE communication • TCP/IP — Data length, max. — Several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. — UDP multicast • DHCP • DNS • SNMP • DCP • LLDP • Pes • Encryption • TCP • Yes • SNMP • DCP • LLDP • Yes • SNMP • Encryption • TCP • Yes • SNMP • DCP • LLDP • Yes • SNMP • Encryption • TCP • Yes • SNMP • DCP • LLDP • Yes • Encryption • Yes • SNMP • Pes • Encryption • No No No No No No No No HTTP • No • HTTP • No • HTTP • No • No • HTTP • Number of sessions, max. — number of simultaneous HTTP calls, max. 4 HTTP request body, max. 131 072 byte	 PROFINET system redundancy (R1) 	No
	Media redundancy	
	— MRP	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0
- Switchover time on line break, typ Number of stations in the ring, max. 50; Only 16 are recommended, however SIMATIC communication • PG/OP communication • S7 routing • S7 communication, as server • S7 communication, as server • S7 communication, as cilent OPERITE communication • TCP/IP - Data length, max several passive connections per port, supported • ISO-on-TCP (RFC1006) - Data length, max UDP - Data length, max UDP multicast • DHCP • No • SNMP • SNMP • CPCP • CPC	 MRP interconnection, supported 	Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
Number of stations in the ring, max. SIMATIC communication PG/OP communication PG/OP communication ST routing ST routing ST communication, as server ST communication, as client No Open IE communication TCP/IP Data length, max. several passive connections per port, supported ISO-on-TCP (RFC1008) Data length, max. UDP Data length, max. UDP Data length, max. UDP Data length, max. UDP multicast DHCP No DNS SNMP SNMP SNMP SNMP SCP Encryption Web server HTTP No Number of sessions, max. Number of sessions, max. Number of simultaneous HTTP calls, max. HTTP request body, max.	— MRPD	No
SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected S7 routing Yes S7 communication, as server S7 communication, as client No Open IE communication TCP/IP Data length, max. Several passive connections per port, supported Yes ISO-on-TCP (RFC1006) Data length, max. S4 kbyte DDP Data length, max. S4 kbyte S5 kbyte; 1 472 bytes for UDP broadcast PHCP No DNS Yes SNMP Yes SNMP Yes SNMP Yes CDCP Yes Encryption Web server HTTP HTTP No HTTPS Yes; only via Web API Number of sessions, max. HTTP request body, max. HTTP request body, max. 131 072 byte	 Switchover time on line break, typ. 	200 ms; PROFINET MRP
PG/OP communication S7 routing S7 communication, as server S7 communication, as client No Open IE communication TCP/IP Data length, max. Several passive connections per port, supported ISO-on-TCP (RFC1006) Data length, max. Several passive connections per port, supported ISO-on-TCP (RFC1006) Data length, max. Several passive connections per port, supported S8 Several passive connections per port, supported S9 Several passive connections S9 Several	 Number of stations in the ring, max. 	50; Only 16 are recommended, however
• S7 routing • S7 communication, as server • S7 communication, as client Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. — 4 kbyte • UDP — Data length, max. — UDP multicast • DHCP • DNS • SMMP • DCP • LLDP • LLDP • Encryption Web server • HTTP • HTTPS • Web API — Number of sessions, max. — under simultaneous HTTP calls, max. 1 4 HTTP request body, max. 1 100	SIMATIC communication	
● S7 communication, as client No Open IE communication ● TCP/IP Yes — Data length, max. 64 kbyte — several passive connections per port, supported Yes ● ISO-on-TCP (RFC1006) Yes — Data length, max. 64 kbyte ● UDP Yes — Data length, max. 2 kbyte; 1 472 bytes for UDP broadcast — UDP multicast Yes; max. 118 multicast circuits ● DHCP No ● DNS Yes ● SNMP Yes ● DCP Yes ● LLDP Yes ● Encryption Yes; Optional Web server HTTP ● HTTPS Yes; only via Web API — Number of sessions, max. 100 — number of simultaneous HTTP calls, max. 4 — HTTP request body, max. 131 072 byte	 PG/OP communication 	Yes; encryption with TLS V1.3 pre-selected
S7 communication, as client Open IE communication TCP/IP Data length, max. Set kbyte Several passive connections per port, supported SISO-on-TCP (RFC1006) Data length, max. Set kbyte Support Set Support Set Set Set Set Set Set Set Set Set Se	• S7 routing	Yes
Open IE communication TCP/IP Yes — Data length, max. 64 kbyte — several passive connections per port, supported Yes • ISO-on-TCP (RFC1006) Yes — Data length, max. 64 kbyte • UDP Yes — Data length, max. 2 kbyte; 1 472 bytes for UDP broadcast — UDP multicast Yes; max. 118 multicast circuits • DHCP No • DNS Yes • SNMP Yes • LLDP Yes • LLDP Yes • Encryption Yes; Optional Web server • HTTP No • HTTPS Yes; only via Web API • web API Yes — Number of sessions, max. 100 — number of simultaneous HTTP calls, max. 4 — HTTP request body, max. 131 072 byte	 S7 communication, as server 	Yes
 TCP/IP — Data length, max. — several passive connections per port, supported Pes ISO-on-TCP (RFC1006) — Data length, max. EVE — Data length, max. UDP — Data length, max. — UDP multicast — UDP multicast DHCP — No DNS — Yes SNMP — Yes SNMP — Yes Encryption Web server HTTP HTTPS — Web API — Number of sessions, max. — UDP multicals, max. — 100 Additional of the properties of the prope	S7 communication, as client	No
Data length, max several passive connections per port, supported ISO-on-TCP (RFC1006) Data length, max. UDP Data length, max UDP multicast UDP multicast UDP multicast UDP multicast No DNS SNMP Pes SNMP Pes DCP LLDP Yes Encryption Web server HTTP Number of sessions, max Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Akbyte Yes Akbyte Yes Akbyte Yes Akbyte Yes Akbyte Yes Akbyte Yes SNMP Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Akbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes SNMP Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max. 64 kbyte Yes Number of simultaneous HTTP calls, max HTTP request body, max.	·	
several passive connections per port, supported • ISO-on-TCP (RFC1006) Data length, max. • UDP Data length, max. UDP multicast • DHCP DNS • SNMP DCP • Encryption Web server • HTTP • Web API Number of sessions, max. number of simultaneous HTTP calls, max. USP (Akbyte) Yes • 4 kbyte Yes • 4 kbyte Yes • 2 kbyte; 1 472 bytes for UDP broadcast Yes; max. 118 multicast circuits No Yes Yes • SNMP Yes • SNMP • Yes • Encryption No Yes • Web API Number of sessions, max. number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte	• TCP/IP	Yes
	— Data length, max.	64 kbyte
- Data length, max. • UDP - Data length, max. - UDP multicast • DHCP • DNS • SNMP • DCP • Encryption Web server • HTTP • HTTPS • web API - Number of sessions, max. - UDP multicast 64 kbyte Yes 92 kbyte; 1 472 bytes for UDP broadcast Yes; max. 118 multicast circuits No Yes Yes 92 kbyte; 1 472 bytes for UDP broadcast Yes; max. 118 multicast circuits No Yes 94 ces 95 ces 96 ces 97 ces 98 ces 99 ces 90 ces	 several passive connections per port, supported 	Yes
UDP Data length, max. UDP multicast EDHCP DNS SNMP DCP CENTRY CENTRY PES CENTRY PES NO PES CENTRY PES CENTRY PES CENTRY PES PES PES PES PES PES PES PE		
 Data length, max. UDP multicast Yes; max. 118 multicast circuits DHCP DNS SNMP DCP LLDP Encryption Web server HTTP HTTPS web API No Web are No Yes Solutional No HTTP on the properties of sessions, max. Multiple of sessions, max. <li< td=""><td>•</td><td></td></li<>	•	
 UDP multicast DHCP DNS SNMP DCP LLDP Encryption Yes; Optional Web server HTTP HTTPS web API No No HTTP on White API Web assions, max. number of sessions, max. HTTP request body, max. 131 072 byte 		
 DHCP DNS SNMP DCP LLDP Encryption Yes; Optional Web server HTTP HTTPS Web API No Web API Number of sessions, max. number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte		
 DNS SNMP DCP Ves LLDP Encryption Yes; Optional Web server HTTP HTTPS Web API Web API Number of sessions, max. Number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte		
 SNMP DCP LLDP Encryption Web server HTTP HTTPS Web API No No HTTPS Yes; only via Web API Web API Number of sessions, max. - number of simultaneous HTTP calls, max. - HTTP request body, max. 131 072 byte 		
 DCP LLDP Encryption Yes; Optional Web server HTTP No HTTPS Yes; only via Web API web API Number of sessions, max. Number of simultaneous HTTP calls, max. HTTP request body, max. 		
 LLDP		
● Encryption Yes; Optional Web server ● HTTP ● HTTPS ● Web API ● web API — Number of sessions, max. — number of simultaneous HTTP calls, max. — HTTP request body, max. 131 072 byte		
● HTTP ● HTTPS ● Web API ● Web API — Number of sessions, max. — number of simultaneous HTTP calls, max. — HTTP request body, max. 131 072 byte		
 HTTP HTTPS Yes; only via Web API web API No Yes Number of sessions, max. number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte 		res, optional
 HTTPS Yes; only via Web API web API Number of sessions, max. number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte 		No
 web API Number of sessions, max. number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte 		
 Number of sessions, max. number of simultaneous HTTP calls, max. HTTP request body, max. 131 072 byte 		
 — number of simultaneous HTTP calls, max. — HTTP request body, max. 4 131 072 byte 		
— HTTP request body, max. 131 072 byte		
OPC UA		13 T O/Z Dyte

Runtime license required	Yes; "Medium" license required per CPU
OPC UA Client	No
OPC UA Server	Yes; Data access (read, write, subscribe), method call, custom address space
 Application authentication 	Yes
— Security policies	available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss
User authentication	"anonymous" or by user name & password
 — GDS support (certificate management) 	No
Number of sessions, max.	24
 Number of subscriptions per session, max. 	25
— Sampling interval, min.	250 ms
— Publishing interval, min.	250 ms
 Number of server methods, max. 	50
 Number of inputs/outputs per server method, max. 	20
 Number of monitored items, recommended max. 	2 000; for 1 s sampling interval and 1 s send interval
 Number of server interfaces, max. 	10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"
 Number of nodes for user-defined server interfaces, max. 	30 000
Alarms and Conditions	No
Further protocols	
• MODBUS	Yes; MODBUS TCP
S7 message functions	
Number of login stations for message functions, max.	64
number of subscriptions, max.	500
number of tags/attributes for subscriptions, max.	8 000
Program alarms	Yes
Number of configurable program messages, max.	10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Number of loadable program messages in RUN, max.	10 000
Number of simultaneously active program alarms	
 Number of program alarms 	1 000
 Number of alarms for system diagnostics 	200
Test commissioning functions	
loint commission (Team Engineering)	No
Joint commission (Team Engineering)	
Status block	Yes; up to 8 simultaneously
	Yes; up to 8 simultaneously No
Status block	
Status block Single step Number of breakpoints Status/control	No
Status block Single step Number of breakpoints Status/control • Status/control variable	No
Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	No 8; Breakpoints are only supported in RUN-Solo status
Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max.	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max.	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing Forcing, variables	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing Forcing, variables Number of variables, max.	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max.	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. forcing Forcing Forcing Forcing, variables Number of variables, max. Indicate the process of the	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max.	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max. Interrupts/diagnostics/status information	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max. Interrupts/diagnostics/status information Diagnostics indication LED	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4 512 kbyte
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max. Interrupts/diagnostics/status information Diagnostics indication LED RUN/STOP LED	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4 512 kbyte
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max. Interrupts/diagnostics/status information Diagnostics indication LED RUN/STOP LED ERROR LED	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4 512 kbyte
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. forcing Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max. Interrupts/diagnostics/status information Diagnostics indication LED RUN/STOP LED ERROR LED MAINT LED	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4 512 kbyte
Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. of which powerfail-proof Traces Number of configurable Traces Memory size per trace, max. Interrupts/diagnostics/status information Diagnostics indication LED RUN/STOP LED ERROR LED	No 8; Breakpoints are only supported in RUN-Solo status Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4 512 kbyte

Supported technology objects	
	No
Motion Control Controller	INO
	Voc. Universal DID controller with integrated entimization
PID_Compact PID_3Stan	Yes; Universal PID controller with integrated optimization
PID_3Step PID_Tomp	Yes; PID controller with integrated optimization for valves
PID-Temp Counting and managing	Yes; PID controller with integrated optimization for temperature
Counting and measuring	Yes
Standards, approvals, certificates	
Ecological footprint	V
environmental product declaration	Yes
Global warming potential	400 I.e.
— global warming potential, (total) [CO2 eq]	100 kg
 — global warming potential, (during production) [CO2 eq] 	25.8 kg
global warming potential, (during operation) [CO2 eq]	75.2 kg
global warming potential, (after end of life cycle) [CO2 eq]	-0.83 kg
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	-30 °C; No condensation
• horizontal installation, max.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
vertical installation, min.	-30 °C; No condensation
• vertical installation, max.	40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
Know-how protection	
User program protection/password protection	Yes
Copy protection	No
Block protection	Yes
Access protection	
protection of confidential configuration data	Yes
Password for display	Yes
Protection level: Write protection	Yes
Protection level: Read/write protection	Yes
Protection level: Write protection for Failsafe	No
Protection level: Complete protection	Yes
User administration	Yes
programming / cycle time monitoring / header	
• lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	,,
Width	70 mm
Height	147 mm
Depth	129 mm
Weights	120 11111
Weight, approx.	456 g
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