SIEMENS

Data sheet

6ES7515-2AM01-0AB0



*** Spare part *** SIMATIC S7-1500, CPU 1515-2 PN, central processing unit with work memory 500 KB for program and 3 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 30 ns bit performance, SIMATIC Memory Card required

General information	
Product type designation	CPU 1515-2 PN
HW functional status	FS03
Firmware version	V2.9
Product function	
I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes; Distributed and central; with minimum OB $6x$ cycle of $500~\mu s$ (distributed) and 1 ms (central)
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V17 (FW V2.9) / V13 (FW V1.5) or higher
Configuration control	
via dataset	Yes
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	6
Mode selector switch	1
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)	0.8 A
Inrush current, max.	2.4 A; Rated value
l²t	0.02 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.	6.3 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
integrated (for program)	500 kbyte

integrated (for data)	3 Mbyte
Load memory	·,
Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	,\-
maintenance-free	Yes
CPU processing times	
	30 ns
for bit operations, typ. for word operations, typ.	36 ns
	48 ns
for fixed point arithmetic, typ.	192 ns
for floating point arithmetic, typ.	192 115
CPU-blocks	
Number of elements (total)	8 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
Number range	1 60 999; subdivided into: number range that can be used by the user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	3 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	500 kbyte
FC	
 Number range 	0 65 535
• Size, max.	500 kbyte
OB	
• Size, max.	500 kbyte
 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 500 μs
 Number of process alarm OBs 	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	2
 Number of technology synchronous alarm OBs 	2
 Number of startup OBs 	100
 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	
— adjustable	Yes
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 472 KB
Extended retentive data area (incl. timers, counters, flags),	3 Mbyte; When using PS 6 0W 24/48/60 V DC HF
max.	
Flag	
• Size, max.	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte

Data blocks	
Retentivity adjustable	Yes
Retentivity adjustable Retentivity preset	No
Local data	10
• per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	8 192; max. number of modules / submodules
I/O address area	5 TOE, THAN THE TOTAL OF THOUGHOUT OUDTHOUGHOUT
• Inputs	32 kbyte; All inputs are in the process image
Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
per CM/CP	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
Number of subprocess images, max.	32
Hardware configuration	
Number of distributed IO systems	64; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Number of IO Controllers	
integrated	2
Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can
Rack	be inserted in total
Modules per rack, max.	32; CPU + 31 modules
Number of lines, max.	1
PtP CM	
Number of PtP CMs	the number of connectable PtP CMs is only limited by the number of available slots
Time of day	
Clock	
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	
• Number	16
Clock synchronization	Voc
• supported	Yes
in AS, masterin AS, slave	Yes Yes
In AS, slave on Ethernet via NTP	Yes
Interfaces	163
Number of PROFINET interfaces	2
	2
1. Interface	
Interface types	Voc. V1
RJ 45 (Ethernet) Number of parts	Yes; X1
Number of ports integrated switch	2 Yes
integrated switch Protocols	165
IP protocol	Yes; IPv4
PROFINET IO Controller	Yes
PROFINET TO Controller PROFINET TO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	

Services PCICIP communication Isochronous mode Yes	0	
Isochronous mode Direct data exchange Direct data exchange IRT PROFOlenergy Prontized startup Number of connectable IO Devices, max Of Which IO devices with IRT, max Number of connectable IO Devices for RT, max Number of Connectable IO Devices for RT, max Of Which In Ide, max Of Which In Ide, max Of Which I In Ide, max Number of IO Devices that can be simultaneously activate/deactivated, max Number of IO Devices that can be simultaneously activate/deactivated, max Number of IO Devices per tool, max Updating times For send cycle of 250 µs For se	Services	N.
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- Of which in line, max Number of ID Devices that can be simultaneously activated/deactivated, max Number of ID Devices per tool, max Updating times Update time for IRT - For send cycle of 250 μs - For send cycle of 250 μs - For send cycle of 4 ms - With IRT and parameterization of "odd" send cycles time for RT - For send cycle of 4 ms - For send cycle of 4 ms - With IRT and parameterization of "odd" send cycles - For send cycle of 4 ms - For send cycle of 550 μs - For send cycle of 550 μs - For send cycle of 4 ms - With IRT and parameterization of "odd" send cycles - For send cycle of 4 ms - For send cycle of 4 ms - For send cycle of 550 μs - For send c	 Number of connectable IO Devices for RT, 	256
simultaneously activated/deactivated, max. — Number of 10 Devices per tool, max. — Updating times — Updating times — To reand cycle of 250 µs — for send cycle of 500 µs — for send cycle of 1500 µs — for send cycle of 1 ms — with IRT and parameterization of "odd" send cycles — for send cycle of 1 ms — for send cycle of 2 ms — with IRT and parameterization of "odd" send cycles — for send cycle of 250 µs — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 4 ms — for send cycle of 4 ms — for send cycle of 4 ms — for send cycle of 2 ms — for send cycle of 4 ms — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 1 ms — for send cycle of 2 ms		256
- Number of IO Devices per tool, max. - Updating times - Update time for IRT - For send cycle of 250 µs - For send cycle of 1 ms - For send cycle of 2 ms - For send cycle of 2 ms - For send cycle of 250 µs - For send cycle of 2 ms - For send cycle of 250 µs - For send cycle of 250 µs - For send cycle of 2 ms - For send cycle of 2 ms - For send cycle of 4 ms - For send cycle of 500 µs - For send cycle of 4 ms - For send cycle of 500 µs - For send cycle of 500 µs - For send cycle of 500 µs - For send cycle of 1 ms		8; in total across all interfaces
The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data Update time for IRT — for send cycle of 250 μs 500 μs 500 μs 600 μs of the isochronous OB is decisive 500 μs to 8 ms 7 ms 600 μs of the isochronous OB is decisive 500 μs to 8 ms 9 ms 600 μs of the isochronous OB is decisive 500 μs to 8 ms 9 ms 600 μs of the isochronous OB is decisive 500 μs to 8 ms 9 ms 600 μs of the isochronous OB is decisive 500 μs to 8 ms 9 ms 600 μs of the isochronous OB is decisive 500 μs to 8 ms 9 ms 600 μs of the isochronous OB is decisive 500 μs to 8 ms 9 ms 600 μs to 266 ms 9 ms		
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Update time for RT		
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for send cycle of 500 µs	·	250 up to 129 mg
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for send cycle of 4 ms 4 ms to 512 ms PROFINET IO Device Services PG/OP communication Yes		
PROFINET IO Device Services		
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- Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • Interface switch • No Protocols • IP protocol • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy • Media redundancy • PROFINET IO Controller Services - PG/OP communication - Isochronous mode - Direct data exchange - IRT No		
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 Open IE communication Web server Media redundancy No PROFINET IO Controller Services — PG/OP communication — Isochronous mode — Direct data exchange — IRT No 	PROFINET IO Device	Yes
 Open IE communication Web server Media redundancy No PROFINET IO Controller Services — PG/OP communication — Isochronous mode — Direct data exchange — IRT No 	 SIMATIC communication 	Yes
		Yes; Optionally also encrypted
PROFINET IO Controller Services		
Services		
 — PG/OP communication — Isochronous mode — Direct data exchange — IRT Yes No No 		
 — Isochronous mode — Direct data exchange — IRT No 		Yes
Direct data exchangeIRTNo		
— IRT No		
— I NOI lettergy		
	— i Noi ielielyy	166, per user program

— Prioritized startup	No
 Number of connectable IO Devices, max. 	32; In total, up to 1 000 distributed I/O devices can be connected via
Number of connectable IC Devices for DT	AS-i, PROFIBUS or PROFINET
 Number of connectable IO Devices for RT, max. 	32
— of which in line, max.	32
Number of IO Devices that can be	8; in total across all interfaces
simultaneously activated/deactivated, max.	
 Number of IO Devices per tool, max. 	8
 Updating times 	The minimum value of the update time also depends on communication
	share set for PROFINET IO, on the number of IO devices, and on the
Lindaka Kara fan DT	quantity of configured user data
Update time for RT	1 ms to 512 ms
— for send cycle of 1 ms PROFINET IO Device	1 IIIS 10 512 IIIS
Services	
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes; per user program
Prioritized startup	No
— Shared device	Yes
 Number of IO Controllers with shared device, 	4
max.	
 activation/deactivation of I-devices 	Yes; per user program
Asset management record	Yes; per user program
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
 Autonegotiation 	Yes
 Autocrossing 	Yes
Industrial Ethernet status LED	Yes
Protocols	
PROFIsafe	No
	No
PROFIsafe Number of connections • Number of connections, max.	192; via integrated interfaces of the CPU and connected CPs / CMs
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web	192; via integrated interfaces of the CPU and connected CPs / CMs
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths	192; via integrated interfaces of the CPU and connected CPs / CMs
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes
PROFIsafe Number of connections • Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of S7 routing paths Redundancy mode • H-Sync forwarding Media redundancy — Media redundancy	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1)
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client
PROFIsafe Number of connections • Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of S7 routing paths Redundancy mode • H-Sync forwarding Media redundancy — Media redundancy	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy Media redundancy MRP MRP interconnection, supported MRPD	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP interconnection, supported MRPD Switchover time on line break, typ.	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
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PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP interconnection, supported MRPD Switchover time on line break, typ. Number of stations in the ring, max.	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD
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PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 Yes; encryption with TLS V1.3 pre-selected
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication S7 routing	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 Yes; encryption with TLS V1.3 pre-selected Yes
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PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication PG/OP communication, as server S7 communication, as server S7 communication, as client User data per job, max. Open IE communication TCP/IP Data length, max. Several passive connections per port,	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 Yes; encryption with TLS V1.3 pre-selected Yes Yes Yes See online help (S7 communication, user data size)
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PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP interconnection, supported MRPD Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication S7 routing S7 communication, as server S7 communication, as client User data per job, max. Open IE communication TCP/IP Data length, max. supported ISO-on-TCP (RFC1006)	192; via integrated interfaces of the CPU and connected CPs / CMs 10 108 16 Yes only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 Yes; encryption with TLS V1.3 pre-selected Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte Yes Yes
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• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Encryption	Yes; Optional
Web server	
• HTTP	Yes; Standard and user pages
• HTTPS	Yes; Standard and user pages
OPC UA	
 Runtime license required 	Yes; "Medium" license required
 OPC UA Client 	Yes
 Application authentication 	Yes
Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
	Basic256Sha256
 User authentication 	"anonymous" or by user name & password
Number of connections, max.	10
 number of nodes of the client interfaces, 	2 000
recommended max.	200
— Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C	300
max.	
 Number of elements for one call of 	20
OPC_UA_NameSpaceGetIndexList, max.	
 Number of elements for one call of 	100
OPC_UA_MethodGetHandleList, max.	
number of simultaneous calls of the client	1
instructions for session management, per connection, max.	
number of simultaneous calls of the client	5
instructions for data access, per connection, max.	J
Number of registerable nodes, max.	5 000
Number of registerable method calls of	100
OPC_UA_MethodCall, max.	
 Number of inputs/outputs when calling 	20
OPC_UA_MethodCall, max.	
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,
Lloor outbortion	Basic256Sha256
User authentication ODS support (actificate represent)	"anonymous" or by user name & password
GDS support (certificate management)	Yes
— Number of sessions, max.	48
Number of accessible variables, max.	100 000
Number of registerable nodes, max.	20 000
Number of subscriptions per session, max.	20
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
— Number of server methods, max.	50
 Number of inputs/outputs per server method, max. 	20
number of monitored items, recommended	2 000; for 1 s sampling interval and 1 s send interval
max.	2 000, 101 1 3 Sampling interval and 1 3 Sent 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 	5 000
interfaces, max.	
 Alarms and Conditions 	Yes
 Number of program alarms 	200
 Number of alarms for system diagnostics 	100
Further protocols	
• MODBUS	Yes; MODBUS TCP
Isochronous mode	
Equidistance	Yes
S7 message functions	
Number of login stations for message functions, max.	64
radinati of logiti stations for message functions, max.	VT

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.	5 000
Number of simultaneously active program alarms	
 Number of program alarms 	800
 Number of alarms for system diagnostics 	200
 Number of alarms for motion technology objects 	160
Test commissioning functions	
Joint commission (Team Engineering)	Yes; Parallel online access possible for up to 8 engineering systems
Status block	Yes; Up to 8 simultaneously (in total across all ES clients)
Single step	No
Number of breakpoints	8
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Number of variables, max.	inputs/outputs, memory bits, bbs, distributed 1/03, timers, counters
of which status variables, max.	200; per job
·	
— of which control variables, max.	200; per job
•	Voc
Forcing Forcing variables	Yes
Forcing, variables Number of variables, many	Peripheral inputs/outputs
Number of variables, max. Diagraphia by ffor	200
Diagnostic buffer	Y.
• present	Yes
Number of entries, max.	3 200
— of which powerfail-proof	500
Traces	
Number of configurable Traces	4; Up to 512 KB of data per trace are possible
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
 Connection display LINK TX/RX 	Yes
Supported technology objects	
Motion Control	Yes; Note: The number of technology objects affects the cycle time of
Wotton Control	the PLC program; selection guide via the TIA Selection Tool
 Number of available Motion Control resources for 	2 400
technology objects	
Required Motion Control resources	
— per speed-controlled axis	40
— per speed-controlled axis	40 80
per speed-controlled axisper positioning axis	
per speed-controlled axisper positioning axisper synchronous axis	80
per speed-controlled axisper positioning axisper synchronous axisper external encoder	80 160 80
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam 	80 160 80 20
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track 	80 160 80 20 160
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe 	80 160 80 20
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis 	80 160 80 20 160 40
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control 	80 160 80 20 160
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) 	80 160 80 20 160 40
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control 	80 160 80 20 160 40
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) 	80 160 80 20 160 40
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) 	80 160 80 20 160 40 7
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact 	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step 	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp 	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp Counting and measuring	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp Counting and measuring High-speed counter 	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp Counting and measuring High-speed counter Ambient conditions	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp Counting and measuring High-speed counter 	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp Counting and measuring High-speed counter Ambient conditions	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature Yes
 per speed-controlled axis per positioning axis per synchronous axis per external encoder per output cam per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_3Step PID-Temp Counting and measuring High-speed counter Ambient temperature during operation 	80 160 80 20 160 40 7 14 Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature Yes

 vertical installation, min. 	0 °C
 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
— GRAPH	Yes
Know-how protection	
 User program protection/password protection 	Yes
 Copy protection 	Yes
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: Complete protection 	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	
Weight, approx.	830 g
last modified:	4/1/2022 🗗