## SIEMENS

## Data sheet

## 6ES7677-2DB42-0GL0



SIMATIC ET 200SP Open Controller, CPU 1515SP PC2 + HMI 512PT, 8 GB RAM (basic device 6ES7677-2DB40-0AA0), 128 GB CFast with Windows 10 IoT Enterprise LTSC 2019 64-bit, S7-1500 Software Controller CPU 1505SP V2x and WinCC Runtime Advanced V17 preinstalled, with 512 PowerTags license; interfaces: 1x slot CFast, 1x slot SD/MMC, 1x connection for ET 200SP BusAdapter PROFINET, 1x 10/100/1000 Mbps Ethernet, 2x USB 3.0, 2x USB 2.0, 1x DisplayPort; documentation on CFast,

F	g	ur	e	SI	m	il	ar

General information	
Product type designation	CPU 1515SP PC2
HW functional status	from FS04
Firmware version	V20.8
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V16
Installed software	
Visualization	WinCC Runtime Advanced V16
Control	S7-1500 Software Controller CPU 1505SP
Configuration control	
via dataset	Yes
Control elements	
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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Input current	
Current consumption (rated value)	1.8 A; Full processor load, incl. ET 200SP modules and using USB
Current consumption (in no-load operation), typ.	0.5 A
Current consumption, max.	2.9 A
<sup>2</sup> t	0.426 A <sup>2</sup> ·s; with starting current inrush
Power	
Active power input, max.	43 W; incl. ET 200SP modules and using USB
Infeed power to the backplane bus	8.75 W
Power loss	
Power loss, typ.	16 W
Processor	
Processor type	Intel Atom E3940, 1.6 GHz, 4 cores
Memory	
Type of memory	DDR3L
Main memory	8 GB RAM
CFast memory card	Yes; 128 GB flash memory
SIMATIC memory card required	No
Work memory	
<ul> <li>integrated (for program)</li> </ul>	1 Mbyte

• integrated (for data)	5 Mbyte
integrated (for CPU function library of CPU Runtime)	20 Mbyte
Load memory	
integrated (on PC mass storage)	320 Mbyte
Backup	
• with UPS	Yes; all memory areas declared retentive
with non-volatile memory	Yes
CPU-blocks	
Number of elements (total)	6 000; In addition to blocks such as DBs, FBs and FCs, UDTs, global constants, etc. are also regarded as elements
DB	
Number, max.	5 999; Number range: 1 to 65535
• Size, max.	5 Mbyte
FB	° mayte
• Number, max.	5 998; Number range: 1 to 65535
• Size, max.	1 024 kbyte
FC	1 024 KByte
Number, max.	5 999; Number range: 1 to 65535
• Size, max.	1 024 kbyte
• Size, max. OB	
	1.024 khuta
Size, max.	1 024 kbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
<ul> <li>Number of delay alarm OBs</li> </ul>	20
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	20
<ul> <li>Number of process alarm OBs</li> </ul>	50
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3
<ul> <li>Number of isochronous mode OBs</li> </ul>	1
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	2
Number of startup OBs	100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4
<ul> <li>Number of synchronous error OBs</li> </ul>	2
Number of diagnostic alarm OBs	1
Nesting depth	
<ul> <li>per priority class</li> </ul>	24
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	
	Yes
IEC counter	Yes
IEC counter • Number	
Number	Yes Any (only limited by the main memory)
Number Retentivity	Any (only limited by the main memory)
<ul> <li>Number</li> <li>Retentivity</li> <li>— adjustable</li> </ul>	
Number Retentivity — adjustable S7 times	Any (only limited by the main memory) Yes
Number Retentivity     — adjustable S7 times     Number	Any (only limited by the main memory)
Number Retentivity	Any (only limited by the main memory) Yes 2 048
Number Retentivity    adjustable S7 times     Number Retentivity    adjustable	Any (only limited by the main memory) Yes
Number Retentivity	Any (only limited by the main memory) Yes 2 048 Yes
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Number Retentivity	Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory)
Number Retentivity	Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory)
Number Retentivity	Any (only limited by the main memory) Yes Yes Any (only limited by the main memory) Yes Yes
Number Retentivity    adjustable S7 times      Number Retentivity    adjustable IEC timer     Number Retentivity    adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	Any (only limited by the main memory) Yes Yes Any (only limited by the main memory) Yes Yes
Number Retentivity	Any (only limited by the main memory) Yes Yes Any (only limited by the main memory) Yes 410 kbyte; For storage in NVRAM; for storage in mass storage 5 242 020 bytes
<ul> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>S7 times</li> <li>S7 times</li> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>IEC timer</li> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>Data areas and their retentivity</li> <li>Retentive data area (incl. timers, counters, flags), max.</li> <li>Flag <ul> <li>Size, max.</li> </ul> </li> </ul>	Any (only limited by the main memory) Yes 2 048 Yes Yes Any (only limited by the main memory) Yes 410 kbyte; For storage in NVRAM; for storage in mass storage 5 242 020 bytes
<ul> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>S7 times</li> <li>S7 times</li> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>IEC timer</li> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>Retentivity</li> <li>adjustable</li> </ul> <li>Pata areas and their retentivity</li> <li>Size, max. <ul> <li>Number of clock memories</li> </ul> </li> <li>Data blocks</li>	Any (only limited by the main memory) Yes 2 048 Yes Yes Any (only limited by the main memory) Yes Yes 10 Any (only limited by the main memory) Yes 10 Any (only limited by the main memory) 10 10 10 10 10 10 10 10 10 10 10 10 10
<ul> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>S7 times</li> <li>S7 times</li> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>IEC timer</li> <li>Number</li> <li>Retentivity <ul> <li>adjustable</li> </ul> </li> <li>Data areas and their retentivity</li> <li>Retentive data area (incl. timers, counters, flags), max.</li> <li>Flag <ul> <li>Size, max.</li> <li>Number of clock memories</li> </ul> </li> </ul>	Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 410 kbyte; For storage in NVRAM; for storage in mass storage 5 242 020 bytes 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte

• per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	8 192
I/O address area	0.132
Inputs	32 kbyte; All inputs are in the process image
Outputs	32 kbyte; All outputs are in the process image
Subprocess images	52 kbyte, All bulputs are in the process image
· · · · · · · · · · · · · · · · · · ·	32
Number of subprocess images, max.	52
Hardware configuration	N.
Integrated power supply	Yes
Number of distributed IO systems	20
Number of DP masters	
• Via CM	1
Number of IO Controllers	
via PC interfaces	1
Rack	
<ul> <li>Modules per rack, max.</li> </ul>	64; CPU 1515SP PC + 64 modules + server module
<ul> <li>Quantity of operable ET 200SP modules, max.</li> </ul>	64
<ul> <li>Quantity of operable ET 200AL modules, max.</li> </ul>	16
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	
	Hardware clock
• Type	
Hardware clock (real-time)	Yes; Resolution: 1 s
Backup time	6 wk; At 40 °C ambient temperature, typically
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 s
Clock synchronization	
<ul> <li>supported</li> </ul>	Yes
• to DP, master	Yes
<ul> <li>on Ethernet via NTP</li> </ul>	Yes
<ul> <li>on Windows clock, device</li> </ul>	Yes
Interfaces	
Number of industrial Ethernet interfaces	2
Number of PROFINET interfaces	1
Number of PROFIBUS interfaces	1
Number of RS 485 interfaces	1; Via CM DP module
Number of USB interfaces	4; 2x USB 2.0, 2x USB 3.0 on front side
Number of SD card slots	1
Video interfaces	
Graphics interface	1x DisplayPort
1. Interface	
	PROFINET
Interface type automatic detection of transmission rate	
	Yes
Autonegotiation	Yes
Autocrossing	Yes
Number of connections	88
Interface types	
RJ 45 (Ethernet)	Yes; Via BusAdapter BA 2x RJ45
— Transmission rate, max.	100 Mbit/s
<ul> <li>Industrial Ethernet status LED</li> </ul>	Yes
Number of ports	2
<ul> <li>integrated switch</li> </ul>	Yes
BusAdapter (PROFINET)	Yes; Compatible BusAdapter: BA 2x RJ45, BA 2x FC, BA 2x SCRJ (from FS03, V2.2), BA SCRJ / RJ45 (from FS03, V3.1), BA SCRJ / FC (from FS03, V3.1), BA 2x LC (from FS03, V3.3), BA LC / RJ45 (from FS03, V3.3), BA LC / FC (from FS03, V3.3)
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes

• A service domain dual of the service of the	SIMATIC communication	Yes
• Web source         Yes           PROFINE II Consular         Sources           - Isochronous mode         Sources           Another clock public         Sources           RT         Yes           PROFInergy         Yes           PROFInergy         Yes           Profit Code public         Down the PROFINE I' Montance of the CPU line CPU and the CPU line CPU line CPU and the CPU line CPU		
PROFINET IO Controller           Services           - shortsci clock public           - and the clock clock public           - and the clock clock public           - PROFINET of connectable IO Devices, max.           - Profine regy         Yes           - Profine regy         Yes           - Profine regy         Yes           - Number of connectable IO Devices, max.         128           - Of which In line, max.         64           - Number of connectable IO Devices for RT, max.         64           - Number of connectable IO Devices for RT, max.         128           - Of which In line, max.         64           - Number of Connectable IO Devices for RT, max.         128           - Of objects per tool, max.         8           - Number of IO bevices per tool, max.         9           - Number of IO bevices per tool, max.         9           - To send cycle of 10 main 1 mm to 16 ms         128           - for send cycle of 10 ms         120 ms           - for send cycle of 10 ms         120 ms           - for send cycle of 10 ms         500 µs to 25 ms           - for send cycle of 10 ms         120 ms           - for send cycle of 10 ms         500 µs to 26 ms           - for send cycle of 10 ms         12	-	
Services         Yes           - shotnest dock pulse         500 µs           - IRT         Yes           - PROFInergry         Yes           - Prioritzed startup         Yes           - Number of connectable I/D bevices, max.         128           - Of within 106, docks with IRT, max.         64           - Of within 106, docks with IRT, max.         64           - Of within 106, docks with IRT, max.         64           - Of within 106, docks with IRT, max.         64           - Of within 106, docks with IRT, max.         64           - Of within 106, docks with IRT, max.         728           - Of within 106, docks with IRT, max.         728           - Of within 106, docks with IRT, max.         728           - Number of ICD Devices that can be simultaneously activate/dock/max.         78           - Update time for IRT         Yes           - Update time for IRT         Yes           - Of within time, max.         78           - Of within time, max.         78           - Update time for IRT         Yes           - Of order dock of 17 ms         1 ms 10 films           - To send cycle of 12 ms         500 µs to 8 ms           - To send cycle of 12 ms         500 µs to 256 ms           - To sen		
- shortsi dock pulse     500 µs       - RT     Yes       - PROFilenergy     Yes       - Prioritzed startup     Yes, max. 32 PROFINET devices. If you yout is use in the "Prioritzed startup"       - Windler of connectable (IO Devices, max.     128       - Of which IO devices with IRT, max.     64       - Of which Io line, max.     64       - of which Io line, max.     128       - of which Io line, max.     64       - Number of connectable (IO Devices for RT, max.     128       - Of which In line, max.     64       - Number of Devices that can be simulaneously activated activated science and the speciate of the update line also depends on communication share parts.       - Number of IO Devices per tool, max.     8       - Updating times     The infinitem with a for the update line also depends on communication share parts.       - Updating times     The infinitem with a for the update line also depends on communication share parts.       - Updating times     The infinitem with a non-mode of 10 devices, and on the update line also depends on communication share parts.       - Update line for IRT     Time to form       - Update line for IRT     Time to form       - for send cycle of 1 ms     1 ms to 70 ms       - for send cycle of 1 ms     1 ms to 70 ms       - for send cycle of 2 ms     2 ms to 32 ms       - for send cycle of 1 ms     1 ms to 70 ms <td></td> <td>Yes</td>		Yes
Inf          Inf          Inf          Inf          PROFenergy         Provinces startup         Provinces startup		
ROFIenergy     Yes      Rorizzed startup     Yes      Number of connectable (IO Devices, max.     128      Of which ID devices with (RT, max.     64      Of which In line, max.     64      Of which In line, max.     128      Of which In line, max.     64      Of which In line, max.     128      Number of ID Devices the rest of the CPU. June CPU.     128      Number of ID Devices the number head of the update line also depends on communication share set for PROFINET ID, on the number of ID devices, and on the quantity of configure user dita in the finance on the update line also depends on communication share set for PROFINET ID, on the number of ID devices, and on the quantity of configure user dita into 500 µs to 8 ms      for send cycle of 500 µs     500 µs to 8 ms       -for send cycle of 1 ms     1 ms to 16 ms       -for send cycle of 500 µs     500 µs to 8 ms       -for send cycle of 1 ms     1 ms to 512 ms       -for send cycle of 500 µs     500 µs to 52 ms       -for send cycle of 1 ms     1 ms to 512 ms	-	
Prontized statup         Yes, max. 32 PROFINET Gevices, if you want to use the CPU, the CPU and the device must be separated by means of a switch (e.g. SCALANCE X205)          Number of connectable IO Devices, max.         64          Of which ID devices with IRT, max.         64          Of which ID devices with IRT, max.         128          Of which ID devices that can be simultaneously         8          Number of IO Devices that can be simultaneously         8          Of Devices that can be simultaneously         8          Of Devices that can be simultaneously         8		
- Of which IO devices with IRT, max.     64       - of which IO devices with IRT, max.     64       - Number of connectable IO Devices for RT, max.     128       - of which In IR, max.     128       - which In IR, max.     8       - Number of IO Devices that can be simultaneously activated/deschradet, max.     8       - Number of IO Devices per IoU, max.     8       - Works of IO Devices per IoU, max.     8       - Updating times     The minimum value of the update time also depends on communication share activate of IO devices, and on the quantity of a configured user data       - Updating times     500 µs to 8 ms       - for send cycle of 2 ms     2 ms to 32 ms       - for send cycle of 7 ms     1 ms to 16 ms       - for send cycle of 2 ms     2 ms to 32 ms       - for send cycle of 500 µs     500 µs to 25 ms       - for send cycle of 500 µs     500 µs to 25 ms       - for send cycle of 500 µs     2 ms to 32 ms       - for send cycle of 1 ms     1 ms to 16 ms       - for send cycle of 1 ms     1 ms to 24 ms       - for send cycle of 1 ms     1 ms to 25 ms       - for send cycle of 1 ms     1 ms to 12 ms       - for send cycle of 1 ms     1 ms to 12 ms       - for send cycle of 1 ms     1 ms to 12 ms       - for send cycle of 1 ms     1 ms to 12 ms       - for send cycle of 1 ms     1		Yes; max. 32 PROFINET devices; if you want to use the "Prioritized startup" functionality in STEP 7 for the PROFINET interface of the CPU, the CPU and
	<ul> <li>Number of connectable IO Devices, max.</li> </ul>	128
- Number of connectable IO Devices for RT, max.     128       - of which in line, max.     128       - Number of IO Devices that can be simultaneously activated/deschwated, max.     8       - IO Devices changing during operation (pattner ports), supported     8       - Number of IO Devices part tool, max.     8       - Updating times     8       - Updating times     8       - Tor send cycle of 200 µs     500 µs to 8 ms       - for send cycle of 1 ms     1 ms to 16 ms       - for send cycle of 4 ms     4 ms to 48 ms       - or send cycle of 4 ms     4 ms to 48 ms       - or send cycle of 500 µs     500 µs to 8 ms       - for send cycle of 500 µs     500 µs to 256 ms       - for send cycle of 500 µs     500 µs to 256 ms       - for send cycle of 500 µs     500 µs to 256 ms       - for send cycle of 500 µs     500 µs to 512 ms       - for send cycle of 4 ms     4 ms to 512 ms       - for send cycle of 4 ms     4 ms to 512 ms       - for send cycle of 4 ms     4 ms to 512 ms       - for send cycle of 4 ms     8 ktyte       - outputs. max.     9 ktyte       - Reof Clenergy     Yes       - Reof Clenergy     Yes	— Of which IO devices with IRT, max.	64
	— of which in line, max.	64
	<ul> <li>— Number of connectable IO Devices for RT, max.</li> </ul>	128
activated/deactivated, max.     Yas       — Number of 10 Devices per tool, max.     8       — Updating times     8       Update time for IRT     500 µs to 8 ms       — for send cycle of 10 ms     10 devices, and on the quantity of configured user data       — for send cycle of 1 ms     1 ms to 16 ms       — for send cycle of 4 ms     4 ms to 64 ms       — for send cycle of 1 ms     2 ms to 32 ms       — for send cycle of 1 ms     4 ms to 64 ms       — With IRT and parameterization of "odd" send cycles     Update time * set" odd" send cycle (ary multiple of 125 µs; 625 µs 3 875 µs)       With IRT and parameterization of "odd" send cycles     1 ms to 512 ms       — for send cycle of 500 µs     500 µs to 256 ms       — for send cycle of 1 ms     1 ms to 512 ms       — for send cycle of 4 ms     4 ms to 512 ms       — or send cycle of 4 ms     8 kbyte       — Updats, max.     8 kbyte       — Inputs, max.     8 kbyte       — Services     500 µs       Services     500 µs       — aborter oncous mode     No       — shortest device publices with shared device, max.     4       — PROFlenergy     Yes       — PROFlenergy     Yes       — Interface type     Yes       Autonegotation     Yes       Autonegotation     Yes <tr< td=""><td>— of which in line, max.</td><td>128</td></tr<>	— of which in line, max.	128
<ul> <li>Number of IO Devices per tool, max.</li> <li>Updating times</li> <li>B</li> <li>The minimum value of the update time also depends on communication share configured user data</li> <li>Update time for IRT</li> <li>For send cycle of 500 µs</li> <li>500 µs to 8 ms</li> <li>for send cycle of 1 ms</li> <li>1 ms to 16 ms</li> <li>cor send cycle of 2 ms</li> <li>2 ms to 32 ms</li> <li>4 ms to 64 ms</li> <li>Update time for RT</li> <li>Or send cycle of 500 µs</li> <li>500 µs to 8 ms</li> <li>trans to 64 ms</li> <li>Update time for RT</li> <li>Or send cycle of 500 µs</li> <li>500 µs to 256 ms</li> <li>1 ms to 512 ms</li> <li>4 ms to 512 ms</li> <li>2 ms to 32 ms</li> <li>4 ms to 512 ms</li> <li>4 ms to 512 ms</li> <li>a ms to 512 ms</li> <li>4 for send cycle of 4 ms</li> <li>4 byte</li> <li>PROFINET IO Device</li> <li>Services</li> <li>- Insolate device</li> <li>- Services</li> <li>- Services</li> <li>- PROFINET IO Controlers with shared device, max.</li> <li>A datase strate management record</li> <li>Yes</li> <li>Number of IO Controlers with shared device, max.</li> <li>A datoesplation</li> <li>Yes</li> <li>- Industrial Ethernet interface</li> <li>automatic detection of transmission rate</li> <li>Yes</li> <li>- Industr</li></ul>		8
		Yes
set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data <ul> <li>for send cycle of 500 µs</li> <li>for send cycle of 1 ms</li> <li>for send cycle of 1 ms</li> <li>for send cycle of 4 ms</li> <li>the to 32 ms</li> <li>ans to 16 ms</li> <li>the to 32 ms</li> <li>the to 32 ms</li> <li>the to 32 ms</li> <li>the to 40 ms</li> <li>Update time for RT</li> <li>for send cycle of 1 ms</li> <li>the to 60 ms</li> <lithe 60="" li="" ms<="" to=""> <li>the to 60 ms</li></lithe></ul>	- Number of IO Devices per tool, max.	8
for send cycle of 500 µs     500 µs to 8 ms       for send cycle of 1 ms     1 ms to 16 ms       for send cycle of 4 ms     4 ms to 64 ms       With IRT and parameterization of 'odd" send cycles     Update time = set "odd" send clock (any multiple of 125 µs: 625 µs 3 875 µs)       Update time for RT     -       for send cycle of 1 ms     1 ms to 512 ms       for send cycle of 1 ms     1 ms to 512 ms       for send cycle of 1 ms     1 ms to 512 ms       for send cycle of 1 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 1 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 1 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 500 µs     500 µs       for send cycle of 4 ms     4 ms to 512 ms       Brobiter clock pulse     500 µs       Shared dycle     500 µs       HT     Yes       PROFIenergy     Yes       Number of IO Controllers with shared device, max.     4	— Updating times	set for PROFINET IO, on the number of IO devices, and on the quantity of
for send cycle of 1 ms1 ms to 16 ms for send cycle of 4 ms2 ms to 32 ms for send cycle of 4 ms4 ms to 64 ms With IRT and parameterization of "odd" send cyclesUpdate time = set "odd" send clock (any multiple of 125 µs: 625 µs 3 875 µs)Update time for RT for send cycle of 2 ms500 µs to 256 ms for send cycle of 2 ms2 ms to 512 ms for send cycle of 2 ms2 ms to 512 ms for send cycle of 4 ms4 ms to 512 ms for send cycle of 4 ms4 ms to 512 ms for send cycle of 4 ms8 kbyte for send cycle of 4 ms8 kbyte for send cycle of 4 ms8 kbyte for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms8 kbyte for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms for send cycle of 4 ms9 ms to 512 ms For fleareryYes For fleareryYes For fleareryYes Number of D controllers with shared device, max.4 </td <td>Update time for IRT</td> <td></td>	Update time for IRT	
	— for send cycle of 500 μs	500 µs to 8 ms
	— for send cycle of 1 ms	1 ms to 16 ms
With IRT and parameterization of "odd" send cycles     Update time = set "odd" send clock (any multiple of 125 µs: 625 µs 3 875 µs) minimum cycle time start from 500 µs       for send cycle of 500 µs     500 µs to 256 ms       for send cycle of 1 ms     1 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 4 ms     4 ms to 512 ms       for send cycle of 4 ms     8 kbyte       Inputs, max.     8 kbyte       Outputs, max.     8 kbyte       Schronous mode     No       shortest clock pulse     500 µs       Services        Inputs, max.     8 kbyte       Schronous mode     No       shortest clock pulse     500 µs       PROFINET IO Device        Services        Schronous mode     No       shortest clock pulse     500 µs       PROFINET ODevice        Services        Nortest of 10 Controllers with shared device, max.     4       Saset management record     Yes       Shared device     Yes       Autonegotiation     Yes       Autonegotiation     Yes       Market time transition rate     Yes       Interface type     Transmission rate, max.     1000 Mbit/s	— for send cycle of 2 ms	2 ms to 32 ms
Update time for RT         for send cycle of 500 µs       500 µs to 256 ms         for send cycle of 1 ms       1 ms to 512 ms         for send cycle of 2 ms       2 ms to 512 ms         for send cycle of 4 ms       4 ms to 512 ms         for send cycle of 4 ms       4 ms to 512 ms         for send cycle of 4 ms       4 ms to 512 ms         for send cycle of 4 ms       4 ms to 512 ms         for send cycle of 4 ms       8 kbyte         PROFINET IO Device       500 µs         Services       -         Isochronous mode       No         shortest clock pulse       500 µs         RT       Yes         PROFIenergy       Yes         Prointized startup       Yes         Shared device       Yes         Mumber of IO Controllers with shared device, max.       -         Asset management record       Yes         2. Interface       Interface type         Interface type       Integrated Ethernet Interface         RASE (Bhernet)       Yes         Transmission rate       Yes         Industrial Ethernet status LED       No         Number of ports       1         - Interface       Yes	— for send cycle of 4 ms	4 ms to 64 ms
- for send cycle of 500 μs     500 μs to 256 ms       - for send cycle of 1 ms     1 ms to 512 ms       - for send cycle of 2 ms     2 ms to 512 ms       - for send cycle of 4 ms     4 ms to 512 ms       Address area     - Inputs, max.       - Nuputs, max.     8 kbyte       PROFINET IO Device     - Services       - Isochronous mode     No       - shortest clock pulse     500 μs       - IRT     Yes       - PROFINET     Yes       - PROFINET     Yes       - Shared device     Yes       - Number of IO Controllers with shared device, max.     4       - Asset management record     Yes       Autoregotiation     Yes       Autorossing     Yes       Interface type     Interface       - Iransmission rate, max.     1 000 Mbit/s       - Intarial Ethernet istatus LED     No       - Number of ports     1	— With IRT and parameterization of "odd" send cycles	
for send cycle of 1 ms       1 ms to 512 ms         for send cycle of 2 ms       2 ms to 512 ms         for send cycle of 4 ms       4 ms to 512 ms         Address area       -         Inputs, max.       8 kbyte         PROFINET IO Device       -         Services       -         Isochronous mode       No         shortest clock pulse       500 μs         IRT       Yes         PROFInergy       Yes         Shared device       Yes         Number of IO Controllers with shared device, max.       4         Asset management record       Yes         Interface       Yes         Autocrossing       Yes         - Transmission rate, max.       1 000 Mbit/s         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         1       1	Update time for RT	
	— for send cycle of 500 μs	500 µs to 256 ms
for send cycle of 4 ms     4 ms to 512 ms       Address area     8 kbyte       Inputs, max.     8 kbyte       Outputs, max.     8 kbyte       PROFINET IO Device     500 µs       Isochronous mode     No       shortest clock pulse     500 µs       PROFIlenergy     Yes       Prioritized startup     Yes       Number of IO Controllers with shared device, max.     4       Asset management record     Yes       Interface type     Integrated Ethernet interface       automatic detection of transmission rate     Yes       - Autocrossing     Yes       - RJ 45 (Ethernet)     Yes; Integrated       - Transmission rate, max.     1 000 Mbit/s	— for send cycle of 1 ms	1 ms to 512 ms
Address area         - Inputs, max.       8 kbyte         PROFINET IO Device         Services         - Isochronous mode       No         - shortest clock pulse       500 µs         - IRT       Yes         - PROFInergy       Yes         - PROFInergy       Yes         - Shared device       Yes         - Number of IO Controllers with shared device, max.       4         - Asset management record       Yes         2. Interface       Integrated Ethernet interface         automatic detection of transmission rate       Yes         - Autoregotiation       Yes         - Transmission rate, max.       1 000 Mbit/s         - Transmission rate, max.       1 000 Mbit/s         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1	— for send cycle of 2 ms	2 ms to 512 ms
Inputs, max.       8 kbyte         Outputs, max.       8 kbyte         PROFINET IO Device         Services         IRT       No         shortest clock pulse       500 µs         IRT       Yes         PROFInergy       Yes         PROFIenergy       Yes         Shared device       Yes         Number of IO Controllers with shared device, max.       4         Asset management record       Yes         2. Interface       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autocrossing       Yes         Transmission rate, max.       1 000 Mbit/s         Number of ports       1         1       No         No       No         No       No         Nomer of ports       1	— for send cycle of 4 ms	4 ms to 512 ms
Outputs, max.       8 kbyte         PROFINET IO Device         Services         Isochronous mode       No         shortest clock pulse       500 μs         FROFIenergy       Yes         PROFIenergy       Yes         Prioritized startup       Yes         Shared device       Yes         Number of IO Controllers with shared device, max.       4         Asset management record       Yes         2. Interface type       Integrated Ethermet interface         automatic detection of transmission rate       Yes         Autoegotiation       Yes         - RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         - Number of ports       1	Address area	
PROFINET IO Device         Services         — Isochronous mode       No         — shortest clock pulse       500 µs         — IRT       Yes         — PROFlenergy       Yes         — Prioritized startup       Yes         — Shared device       Yes         — Number of IO Controllers with shared device, max.       4         — Asset management record       Yes         2. Interface       Integrated Ethernet interface         Interface type       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autoregotiation       Yes         Interface types       Integrated Ethernet interface         Interface types       Integrated         Interface types       Integrated Ethernet interface         Interface types       Yes         Interface types       Yes         Interface types       No         • Number of ports       1         0. Number of ports       1         3. Interface type       PROFIBUS with CM DP	— Inputs, max.	8 kbyte
Services         - Isochronous mode       No         - shortest clock pulse       500 µs         - IRT       Yes         - PROFlenergy       Yes         - Prioritized startup       Yes         - Shared device       Yes         - Number of IO Controllers with shared device, max.       4         - Asset management record       Yes         2. Interface       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autorogolitation       Yes         Autorossing       Yes         • RJ 45 (Ethernet)       Yes; Integrated         • Transmission rate, max.       1 000 Mbit/s         • Industrial Ethernet status LED       No         • Number of ports       1	— Outputs, max.	8 kbyte
Interface types       No         Interface       Yes         Interface types       Yes         Interface types       Yes         Interface       Yes         Interface types       Integrated         Interface types       Yes         Interface       Yes         Interface       Yes         Interface       Yes         Provide       Yes         Interface types       Yes         Interface types       Yes         Interface       Yes         Yes       <	PROFINET IO Device	
	Services	
- IRTYes- PROFlenergyYes- Prioritized startupYes- Shared deviceYes- Number of IO Controllers with shared device, max.4- Asset management recordYes2. InterfaceIntegrated Ethernet interfaceautomatic detection of transmission rateYesAutonegotiationYesAutorossingYesInterface typeIntegrated Ethernet interfaceautomatic detection of transmission rateYesAutorossingYesInterface typesIntegrated- Transmission rate, max.1 000 Mbit/s- Industrial Ethernet status LEDNo• Number of ports13. InterfacePROFIBUS with CM DPInterface typePROFIBUS with CM DP		
PROFlenergy     Yes       Prioritized startup     Yes       Shared device     Yes       Number of IO Controllers with shared device, max.     4       Asset management record     Yes       2. Interface     Integrated Ethernet interface       automatic detection of transmission rate     Yes       Autonegotiation     Yes       Autorossing     Yes       Interface type     Integrated Ethernet interface       automatic detection of transmission rate     Yes       Autorossing     Yes       Interface types     Yes       • RJ 45 (Ethernet)     Yes; Integrated       - Transmission rate, max.     1 000 Mbit/s       - Industrial Ethernet status LED     No       • Number of ports     1       3. Interface     PROFIBUS with CM DP	-	
- Prioritized startup       Yes         - Shared device       Yes         - Number of IO Controllers with shared device, max.       4         - Asset management record       Yes         2. Interface       Yes         Interface type       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autorossing       Yes         Interface types       -         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         1       1001 Mbit/s         PROFIBUS with CM DP       PROFIBUS with CM DP		
Shared device       Yes         Number of IO Controllers with shared device, max.       4         Asset management record       Yes         2. Interface       Yes         Interface type       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autocrossing       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         3. Interface       PROFIBUS with CM DP		
- Number of IO Controllers with shared device, max.       4         - Asset management record       Yes         2. Interface       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autocrossing       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         3. Interface       PROFIBUS with CM DP	-	Yes
Asset management record       Yes         2. Interface       Integrated Ethernet interface         Interface type       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autocrossing       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         3. Interface       PROFIBUS with CM DP	— Shared device	Yes
2. Interface         Interface type       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autocrossing       Yes         Interface types       Yes         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         1       PROFIBUS with CM DP		4
Interface type       Integrated Ethernet interface         automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autocrossing       Yes         Interface types       Yes; Integrated         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         3. Interface       PROFIBUS with CM DP	- · · · · · · · · · · · · · · · · · · ·	Yes
automatic detection of transmission rate       Yes         Autonegotiation       Yes         Autocrossing       Yes         Interface types       Yes; Integrated <ul> <li>RJ 45 (Ethernet)</li> <li>Transmission rate, max.</li> <li>1000 Mbit/s</li> <li>Industrial Ethernet status LED</li> <li>No</li> <li>Number of ports</li> </ul> 1 <ul> <li>Autocrossing</li> <li>PROFIBUS with CM DP</li> </ul> PROFIBUS with CM DP	2. Interface	
Autonegotiation       Yes         Autocrossing       Yes         Interface types       Interface types         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         Interface       PROFIBUS with CM DP		-
Autocrossing       Yes         Interface types       • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s       • No         - Industrial Ethernet status LED       No       1         • Number of ports       1       1         Interface       PROFIBUS with CM DP		
Interface types         • RJ 45 (Ethernet)       Yes; Integrated         - Transmission rate, max.       1 000 Mbit/s         - Industrial Ethernet status LED       No         • Number of ports       1         3. Interface       Interface type		Yes
• RJ 45 (Ethernet)     Yes; Integrated       — Transmission rate, max.     1 000 Mbit/s       — Industrial Ethernet status LED     No       • Number of ports     1       3. Interface       Interface type     PROFIBUS with CM DP		Yes
- Transmission rate, max.     1 000 Mbit/s       - Industrial Ethernet status LED     No       • Number of ports     1       3. Interface     Interface type   PROFIBUS with CM DP		
Industrial Ethernet status LED     No       • Number of ports     1       3. Interface     Interface type       Interface type     PROFIBUS with CM DP	RJ 45 (Ethernet)	-
Number of ports 1 3. Interface Interface type PROFIBUS with CM DP	— Transmission rate, max.	1 000 Mbit/s
3. Interface       Interface type       PROFIBUS with CM DP	<ul> <li>Industrial Ethernet status LED</li> </ul>	No
Interface type PROFIBUS with CM DP	Number of ports	1
	3. Interface	
Number of connections 44	Interface type	PROFIBUS with CM DP
	Number of connections	44

Interface types	
• RS 485	Yes
Protocols	105
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
SIMATIC communication	Yes
PROFIBUS DP master	105
max. number of DP devices	125
Services	120
— Equidistance	No
— Isochronous mode	No
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
Interface types	
RS 485	
Transmission rate, max.	12 Mbit/s
Protocols	
PROFIsafe	No
Number of connections	
Number of connections, max.	88
Number of connections, max.     Number of connections reserved for ES/HMI/web	10
Number of connections reserved for ES/NWI/Web     Number of S7 routing paths	16
Redundancy mode	10
Media redundancy	
- MRP	Yes
— MRPD	Yes
— Switchover time on line break, typ.	200 ms
<ul> <li>— Number of stations in the ring, max.</li> </ul>	50
SIMATIC communication	
PG/OP communication	Yes
S7 routing	Yes
S7 communication, as server	Yes
S7 communication, as client	Yes
• User data per job, max.	64 kbyte; BSEND/BRCV: 64 KB; PUT/GET: 960 bytes
Open IE communication	······································
• TCP/IP	Yes
— Data length, max.	64 kbyte
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	2 048 byte
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Web server	
• HTTP	Yes; Via Windows and PROFINET interface
• HTTPS	Yes; Via Windows and PROFINET interface
OPC UA	
Runtime license required	Yes; "Small" license required
OPC UA Client	Yes; From SW CPU 1505SP V2.6
OPC UA Server	Yes; Data access (read, write, subscribe), runtime license required
— Application authentication	Yes; Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
- Security policies	Yes; Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	Yes; "anonymous" or by user name & password
Further protocols	
• MODBUS	Yes; MODBUS TCP
S7 message functions	
Number of login stations for message functions, max.	32

Program alarms	Yes
Program alarms Number of configurable program messages, max.	10 000
Number of simultaneously active program alarms	
Number of simultaneously active program alarms     Number of program alarms	1 000 1 000
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
Single step	No
Number of breakpoints	8
Status/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
<ul> <li>Number of variables, max.</li> </ul>	
— of which status variables, max.	200
— of which control variables, max.	200
Forcing	
• Forcing	Yes
<ul> <li>Forcing, variables</li> </ul>	Inputs, outputs
Number of variables, max.	200
Diagnostic buffer	
• present	Yes
<ul> <li>Number of entries, max.</li> </ul>	1 000
— of which powerfail-proof	300
Traces	
<ul> <li>Number of configurable Traces</li> </ul>	4
<ul> <li>Memory size per trace, max.</li> </ul>	512 kbyte
nterrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Supported technology objects	
Motion Control	Yes
<ul> <li>Number of available Motion Control resources for technology objects</li> </ul>	2 400
<ul> <li>Required Motion Control resources</li> </ul>	
- per speed-controlled axis	40; per axis
— per positioning axis	80; per axis
— per synchronous axis	160; per axis
— per external encoder	
	80; per external encoder
— per output cam	
	80; per external encoder
— per output cam	80; per external encoder 20; per cam
— per output cam — per cam track	80; per external encoder 20; per cam 160; per cam track
— per output cam — per cam track — per probe	80; per external encoder 20; per cam 160; per cam track
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis</li> <li>Number of positioning axes at motion control cycle</li> </ul>	80; per external encoder 20; per cam 160; per cam track 40; per probe
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis</li> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle</li> </ul>	80; per external encoder 20; per cam 160; per cam track 40; per probe
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis</li> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul>	80; per external encoder 20; per cam 160; per cam track 40; per probe
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis</li> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul>	80; per external encoder 20; per cam 160; per cam track 40; per probe 15 30
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis</li> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> Controller <ul> <li>PID_Compact</li> </ul>	<ul> <li>80; per external encoder</li> <li>20; per cam</li> <li>160; per cam track</li> <li>40; per probe</li> <li>15</li> <li>30</li> <li>Yes; Universal PID controller with integrated optimization</li> </ul>
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> <li>Controller         <ul> <li>PID_Compact</li> <li>PID_3Step</li> </ul> </li> </ul>	<ul> <li>80; per external encoder</li> <li>20; per cam</li> <li>160; per cam track</li> <li>40; per probe</li> <li>15</li> <li>30</li> <li>Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves</li> </ul>
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> <li>Controller         <ul> <li>PID_Compact</li> <li>PID_3Step</li> <li>PID-Temp</li> </ul> </li> </ul>	<ul> <li>80; per external encoder</li> <li>20; per cam</li> <li>160; per cam track</li> <li>40; per probe</li> <li>15</li> <li>30</li> <li>Yes; Universal PID controller with integrated optimization</li> <li>Yes; PID controller with integrated optimization for valves</li> </ul>
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> <li>Controller         <ul> <li>PID_Compact</li> <li>PID_3Step</li> <li>PID-Temp</li> </ul> </li> <li>Counting and measuring         <ul> <li>High-speed counter</li> </ul> </li> </ul>	<ul> <li>80; per external encoder</li> <li>20; per cam</li> <li>160; per cam track</li> <li>40; per probe</li> <li>15</li> <li>30</li> <li>Yes; Universal PID controller with integrated optimization</li> <li>Yes; PID controller with integrated optimization for valves</li> <li>Yes; PID controller with integrated optimization for temperature</li> </ul>
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> <li>Controller         <ul> <li>PID_Compact</li> <li>PID_Temp</li> </ul> </li> <li>Counting and measuring             <ul> <li>High-speed counter</li> </ul> </li> </ul> <li>Standards, approvals, certificates</li>	80; per external encoder         20; per cam         160; per cam track         40; per probe         15         30         Yes; Universal PID controller with integrated optimization         Yes; PID controller with integrated optimization for valves         Yes; PID controller with integrated optimization for temperature         Yes
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> <li>Controller         <ul> <li>PID_Compact</li> <li>PID_3Step</li> <li>PID-Temp</li> </ul> </li> <li>Counting and measuring             <ul> <li>High-speed counter</li> </ul> </li> <li>Standards, approvals, certificates</li> <li>CE mark</li> </ul>	80; per external encoder         20; per cam         160; per cam track         40; per probe         15         30         Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature         Yes         Yes
<ul> <li>per output cam</li> <li>per cam track</li> <li>per probe</li> <li>Positioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> <li>Controller         <ul> <li>PID_Compact</li> <li>PID_3Step</li> <li>PID-Temp</li> </ul> </li> <li>Counting and measuring         <ul> <li>High-speed counter</li> </ul> </li> <li>Standards, approvals, certificates</li> </ul>	<ul> <li>80; per external encoder</li> <li>20; per cam</li> <li>160; per cam track</li> <li>40; per probe</li> <li>15</li> <li>30</li> <li>Yes; Universal PID controller with integrated optimization</li> <li>Yes; PID controller with integrated optimization for valves</li> <li>Yes; PID controller with integrated optimization for temperature</li> <li>Yes</li> </ul>

RCM (formerly C-TICK)	Yes		
Ambient conditions			
Ambient temperature during operation			
• min.	-20 °C		
• max.	Up to 60 °C with max. 32 ET 200 200SP modules	SP modules; up to 55 °	C with max. 64 ET
<ul> <li>horizontal installation, min.</li> </ul>	-20 °C		
<ul> <li>horizontal installation, max.</li> </ul>	60 °C		
• vertical installation, min.	-20 °C		
vertical installation, max.	50 °C; With max. 32 ET 200SP r	nodules	
Ambient temperature during storage/transportation	00 0, With hidk. 02 ET 20001 1	noutros	
• min.	-40 °C		
• max.	70 °C		
Vibrations			
<ul> <li>Operation, tested according to IEC 60068-2-6</li> </ul>	Yes		
<ul> <li>Transport, tested acc. to IEC 60068-2-6</li> </ul>	Yes		
Shock testing			
<ul> <li>tested according to IEC 60068-2-6</li> </ul>	Yes		
<ul> <li>tested according to IEC 60068-2-27</li> </ul>	Yes		
<ul> <li>tested according to IEC 60068-2-29</li> </ul>	Yes		
<ul> <li>Storage/transport, tested acc. to IEC 60068-2-27</li> </ul>	Yes		
Operating systems			
pre-installed operating system	Windows 10 IoT Enterprise 2016	LTSB, 64bit, MUI	
configuration / header		, ,	
configuration / programming / header			
Programming language	Vec		
— LAD	Yes		
— FBD	Yes		
— STL	Yes		
— SCL	Yes		
— CFC	No		
— GRAPH	Yes		
Know-how protection			
<ul> <li>User program protection/password protection</li> </ul>	Yes		
Copy protection	Yes		
Block protection	Yes		
Access protection			
Protection level: Write protection	Yes		
Protection level: Read/write protection	Yes		
Protection level: Complete protection	Yes		
programming / cycle time monitoring / header	100		
lower limit	adjustable minimum cycle time		
upper limit	adjustable maximum cycle time		
Open Development interfaces			
Size of ODK SO file, max.	5.8 Mbyte		
Peripherals/Options			
SD card			
Dimensions	Optionally for additional mass sto	brage	
	Optionally for additional mass sto	brage	
Width	Optionally for additional mass sto 160 mm	brage	
Width Height		orage	
	160 mm	orage	
Height Depth	160 mm 117 mm	orage	
Height Depth Weights	160 mm 117 mm 75 mm	Jrage	
Height Depth Weights Weight, approx.	160 mm 117 mm	Jrage	
Height Depth Weights	160 mm 117 mm 75 mm		
Height Depth Weights Weight, approx.	160 mm 117 mm 75 mm	Version	Classification
Height Depth Weights Weight, approx.	160 mm 117 mm 75 mm		Classification 27-24-26-07
Height Depth Weights Weight, approx.	160 mm 117 mm 75 mm 0.83 kg eClass	Version 14	27-24-26-07
Height Depth Weights Weight, approx.	160 mm 117 mm 75 mm 0.83 kg eClass eClass	Version 14 12	27-24-26-07 27-24-26-07
Height Depth Weights Weight, approx.	160 mm 117 mm 75 mm 0.83 kg eClass	Version 14	27-24-26-07

			eClass	8	27-24-26-07
			eClass	7.1	27-24-26-07
			eClass	6	27-24-26-07
			ETIM	9	EC001603
			ETIM	8	EC001603
			ETIM	7	EC001603
			IDEA	4	3565
			UNSPSC	15	32-15-17-05
Approvals / Certificates					
General Product Approva	al				Marine / Shipping
<u>Manufacturer Declara-</u> tion	CE EG-Konf.	UK CA	<u>Miscellaneous</u>		RMRS
		UK CA	Miscellaneous	RCM	RMRS

last modified:

12/8/2024 🖸