SIEMENS

Data sheet



SIPLUS ET 200S IM 151-8 PN/DP CPU based on 6ES7151-8AB01-0AB0 with conformal coating, -40...+70 °C, start up -25 °C, 192 KB work memory, int. PROFINET interface (with three RJ45 ports) as IO Controller, without battery MMC required

Figure similar

General information	
HW functional status	01
Firmware version	V3.2
Product function	
Isochronous mode	No
Engineering with	
 Programming package 	STEP 7 V5.5 or higher
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes; against destruction
external protection for power supply lines (recommendation)	24 V DC/16 A miniature circuit breaker with type B and C tripping characteristics. Note: A 24 V DC/16 A miniature circuit breaker with type B tripping characteristics trips before and with type C tripping characteristic after the device protection fuse.
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Input current	
Inrush current, typ.	1.8 A
l²t	0.13 A ² ·s
from supply voltage 1L+, max.	352 mA; 426 mA with DP master module
Output current	
for backplane bus (5 V DC), max.	700 mA
Power loss	
Power loss, typ.	5.5 W
Memory	
Work memory	
• integrated	192 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 a
Backup	
• present	Yes; Ensured by SIMATIC Micro Memory Card (maintenance-free)
CPU processing times	
for bit operations, typ.	0.06 µs
for word operations, typ.	0.12 μs

for fixed point arithmetic, typ.	0.16 μs
for floating point arithmetic, typ.	0.59 µs
PU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be
(1000)	reduced by the MMC used.
DB	
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
 Number, max. 	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Number, max.	See S7-300 operation list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10
Number of delay alarm OBs	2; OB 20, 21
Number of cyclic interrupt OBs	4; OB 32, 33, 34, 35
Number of process alarm OBs	1; OB 40
Number of DPV1 alarm OBs	3; OB 55, 56, 57
Number of isochronous mode OBs	1; OB 61; only for PROFINET
Number of startup OBs	1; OB 100
Number of asynchronous error OBs	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for centralized I/O and PROFINET IO)
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	_, _,,,
per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
• Number	256
Retentivity	200
•	Yes
— adjustable	Z 0 to Z 7
— preset	201021
Counting range	Voc
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	V
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	2-0
• Number	256
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Flag	
• Size, max.	256 byte

 Retentivity preset 	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	o, i memory byte
Retentivity adjustable	Yes; via non-retain property on DB
	Yes
Retentivity preset Local data	165
	22.769 byte: May 2049 bytes per block
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	0.0401
• Inputs	2 048 byte
• Outputs	2 048 byte
of which distributed	
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	
 Inputs, adjustable 	2 048 byte
 Outputs, adjustable 	2 048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Subprocess images	
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600 bytes
Digital channels	
• Inputs	16 336
— of which central	496
Outputs	16 336
— of which central	496
Analog channels	
• Inputs	1 021
— of which central	124
 Outputs 	1 021
— of which central	124
Hardware configuration	
Hardware configuration Number of modules per system, max.	63; Centralized
	63; Centralized
Number of modules per system, max.	63; Centralized
Number of modules per system, max. Mounting rail	
Number of modules per system, max. Mounting rail Number of mounting rails that can be used	1
Number of modules per system, max. Mounting rail Number of mounting rails that can be used Length of mounting rail, max.	1
Number of modules per system, max. Mounting rail Number of mounting rails that can be used Length of mounting rail, max. Time of day	1
Number of modules per system, max. Mounting rail Number of mounting rails that can be used Length of mounting rail, max. Time of day Clock	1 Station width: ≤ 1 m or < 2 m
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Number of modules per system, max. Mounting rail Number of mounting rails that can be used Length of mounting rail, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable	1 Station width: ≤ 1 m or < 2 m Yes Yes
Number of modules per system, max. Mounting rail Number of mounting rails that can be used Length of mounting rail, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable Backup time	1 Station width: ≤ 1 m or < 2 m Yes Yes 6 wk; At 40 °C ambient temperature, typically
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Interface PROFINET Ves Submission rate Ves	Interfaces/bus type	1x PROFINET (3 RJ45 ports)
	1. Interface	
automagnication Ves Autocroposition Yes Autocroposition Yes Change of IP address at number, supported Yes Initiation of IP address at number, supported Yes Initiation of IP and the supported of probability of the property	Interface type	PROFINET
Autorosing	Isolated	Yes
Autocrashing Change of IP address at nutrime, supported Interface types R. I.4 5 (Ehemet) Number of ports Integrated switch Protocols MPI Protocols PROFINET IO Controller PROFINET IO Controller PROFINET IO Device PROFINET IO Device PROFINET IO Device PROFINET IO Controller	automatic detection of transmission rate	Yes
Autonessing	Autonegotiation	Yes
Change of IP address at nutrime, supported Ves		Yes
Relation types		
R.14 & Elbernet) Yes Number of ports 3. R.145		
Number of ports Integrated switch Protocols MP MP MP PROFINET IC Controller PROFINET IC Dontroller PROFINET CEA PROFIBUS DP master No Open IE communication Web server Polithopoint connection PROFINET IO Controller Transmission rate, max. Dontroller Transm	• •	Yes
Findingrated switch Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET CDA PROFINET CDA PROFINET CDA PROFIBUS DP master PROFIGUS DP device PROFIBUS DP device With profitzed startup PROFIBUS DP device Profitzed DP device Startup PROFIBUS DP device PROFINET IO PROFIBUS DP device PROFIBUS DP device PROFIBUS DP device PROFINET IO PROFIBUS DP device PROFI	,	
MPI	·	
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PROFINET IO Controller PROFINET CBA PROFINET CBA PROFIBUS DP master No PROFIBUS DP master Popular in Controller functionality PROFIBUS DP master Popular in Controller Profiler in Con		No
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Open IE communication Ves: Via TCP/IP, ISO on TCP, and UDP Veb server Point-to-point connection No PROFIDET IO Controller Transmission rate, max. 100 Mbitls; full duplex Services PG/OP communication Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with loadable FBs Psc With DP master module Psc; with DP master module Psc; with loadable FBs Psc With DP master module find the psc With IRT and the option "pigh loadable FBs Psc With DP master module Miss With IRT and the psc With I		
● Web server ● Point-to-point connection PROFINET I Controller ● Transmission rate, max. Services - PG/OP communication - Routing - S7 communication - Isam		
PROFINET IO Controller * Transmission rate, max. 100 Mbit/s; full duplex Services - PG/OP communication - Routing - S7 communication - Isochronous mode - Isochronous mode - Isochronous mode - Isochronous mode - IRT - Shared device - Prioritized startup - Number of IO devices with prioritized startup, max Number of Gouerable IO Devices, max Number of connectable IO Devices, max Of which in line, max Of which in line, max Number of IO Devices with IRT and the option 'high flexibility' - of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating tim		
PROFINET IO Controller ● Transmission rate, max. Services - PG/OP communication Yes; With DP master module - Routing Yes; With DP master module - ST communication Yes; With loadable FBs - Starded device Yes; OB 61; only for PROFINET IO - IRT Yes - Shared device Yes - Prioritized startup Yes - Number of IO devices with prioritized startup, max Number of IO devices with prioritized startup, max Number of Connectable IO Devices, max Of which in line, max Number of IO Devices that can be simultaneously activated/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivation max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating time - Updating time - Updating times - Updating time		
Services - PC/OP communication Yes - Routing Yes; With DP master module - S7 communication Yes; with loadable FBs - IRT Yes - Prioritized startup Yes - Number of IO devices with prioritized startup, max Of which in line, max Of which in line, max Activation/deactivation of IO Devices - Number of IO Devices for RT, max Activation/deactivation of IO Devices Yes - Number of IO Devices with prioritized startup 128 - Of which in line, max Activation/deactivation of IO Devices for RT, max Activation/deactivation of IO Devices - Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating times - Updating max Updutys, max Upduty		NO .
Services		
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Routing Yes; With DP master module Yes; with loadable FBs Yes; with loadable FBs Yes; With loadable FBs Yes; OB 61; only for PROFINET IO Yes Shared device Yes Prioritized startup Yes Yes Prioritized startup Prioritized		
- S7 communication - Isochronous mode - Isochronous mode - Isochronous mode - IRT - Shared device - Prioritized startup - Number of IO devices with prioritized startup, max Of which IO devices with IRT, max Of which in line, wax Obvices that can be simultaneously at 28 - Send cycles of RT, wax Obvices that can be simultaneously at 28 - Send cycles of RT, wax Outputs, max Outputs, wax Outputs, wax Outputs, wax.	— PG/OP communication	Yes
- Isochronous mode - IRT - Shared device - Prioritized startup - Number of IO devices with prioritized startup, max Number of IO devices with prioritized startup, max Number of IO devices with IRT, max Of which IO devices with IRT, max Of which In line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of Operation (Devices for RT, max.) - IO Devices that can be simultaneously activated/deactivated, max IO Devices that can be simultaneously activated/deactivated, max IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating time - Updating time - Updating times - Updating time	— Routing	Yes; With DP master module
- IRT - Shared device - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Of which IO devices with IRT, max of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating times - Send cycles, and on the number of configured user data items Outputs, max Outputs, max Outputs, max Outputs, max Outputs, max Outputs, max User data consistency, max User data consistency, max User data consistency, max Outputs, max Ou	— S7 communication	Yes; with loadable FBs
- Shared device - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Of which IO devices with IRT, max of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating time - Updating times - Send series - Inputs, max Outputs, max Outputs, max User data consistency, max PROFINET IO Devices - PG/OP communication - Yes	— Isochronous mode	Yes; OB 61; only for PROFINET IO
- Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Of which IO devices with IRT, max of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of IO Devices for RT, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating time - Updating time - Updating times - Updating times - Senvices - Inputs, max Outputs, max User data consistency, max User data consistency, max User data consistency, max User data consistency, max PROFINET IO Devices - PG/OP communication - Yes	— IRT	Yes
- Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Of which IO devices with IRT, max of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of connectable IO Devices for RT, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating time - Updating times - Updating tim	— Shared device	Yes
- Number of connectable IO Devices, max. - Of which IO devices with IRT, max. - of which in line, max. - Number of IO Devices with IRT and the option "high flexibility" - of which in line, max. - Number of connectable IO Devices for RT, max. - Number of connectable IO Devices for RT, max. - Number of connectable IO Devices for RT, max. - Number of connectable IO Devices for RT, max. - of which in line, max. - of which in line, max. - Number of IO Devices that can be simultaneously activated/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max. - IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max. - Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating time - Updating times - Updating time	 Prioritized startup 	Yes
- Of which IO devices with IRT, max of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Updating time - Updating time - Updating times - Updating times - Updating times - Updating times - Send cycles - Inputs, max Updating times - Send cycles - Inputs, max Updating times - Send cycles - Inputs, max Updating times - Updating times	 Number of IO devices with prioritized startup, max. 	32
- of which in line, max Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating times - Updating times - Updating times - Updating times - Inputs, max Inputs, max Outputs, max User data consistency, max User data consistency, max User data consistency, max User data consistency, max User Operating Instructions - PROFINET IO Devices - PG/OP communication - Yes	 Number of connectable IO Devices, max. 	128
- Number of IO Devices with IRT and the option "high flexibility" - of which in line, max Number of connectable IO Devices for RT, max. 128 - of which in line, max. 128 - Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating times -	 Of which IO devices with IRT, max. 	64
flexibility" — of which in line, max. — Number of connectable IO Devices for RT, max. — of which in line, max. — of which in line, max. — Activation/deactivation of IO Devices — Number of IO Devices that can be simultaneously activated/deactivated, max. — IO Devices changing during operation (partner ports), supported — Number of IO Devices per tool, max. — Device replacement without swap medium — Send cycles — Send cycles — Updating time — Updating time — Updating times — Updat	— of which in line, max.	64
- Number of connectable IO Devices for RT, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating times -		128
- of which in line, max. - Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max. - IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max. - Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating times - Updating ti	— of which in line, max.	61
 — Activation/deactivation of IO Devices — Number of IO Devices that can be simultaneously activated/deactivated, max. — IO Devices changing during operation (partner ports), supported — Number of IO Devices per tool, max. — Device replacement without swap medium — Send cycles — Send cycles — Updating time — Updating times — Updating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area — Inputs, max. — Outputs, max. — User data consistency, max. — User data consistency, max. — User data consistency, max. — PG/OP communication Yes 	 Number of connectable IO Devices for RT, max. 	128
- Number of IO Devices that can be simultaneously activated/deactivated, max. - IO Devices changing during operation (partner ports), supported - Number of IO Devices per tool, max. - Device replacement without swap medium - Send cycles - Send cycles - Updating time - Updating time - Updating times - Updating time to the case of IRT with "high flexibility" option) - Updating time the case of IRT with "high flexibility" option the case of IRT with "high flexibility" option - Updating times - Updating	— of which in line, max.	128
activated/deactivated, max. — IO Devices changing during operation (partner ports), supported — Number of IO Devices per tool, max. — Device replacement without swap medium — Send cycles — Updating time — Updating time — Updating times — 250 µs to 512 ms (depends on operating mode; for more details, refer to Operating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area — Inputs, max. — Outputs, max. — Outputs, max. — User data consistency, max. — User data consistency, max. — User data consistency, max. — User Operating Instructions — PG/OP communication Yes	 Activation/deactivation of IO Devices 	Yes
ports), supported — Number of IO Devices per tool, max. — Device replacement without swap medium — Send cycles — Send cycles — Updating time — Updating times — Updatin		8
- Device replacement without swap medium - Send cycles - Send cycles - Send cycles - Updating time - Updating time - Updating times - 250 μs to 512 ms (depends on communication share set for PROFINET I/O, on the number of I/O devices, and on the number of configured user data items Updating times - 250 μs to 512 ms (depends on operating mode; for more details, refer to Operating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area - Inputs, max Outputs, max Outputs, max User data consistency, max User data consistency, max 1 024 byte; with PROFINET I/O PROFINET IO Device - PG/OP communication - Yes	0 0 0	Yes
- Send cycles 250 μs, 500 μs, 1 ms; 2 ms, 4 ms (not in the case of IRT with "high flexibility" option) - Updating time Minimum value depends on communication share set for PROFINET I/O, on the number of I/O devices, and on the number of configured user data items. - Updating times 250 μs to 512 ms (depends on operating mode; for more details, refer to Operating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area - Inputs, max. - Outputs, max. - User data consistency, max. 1 024 byte; with PROFINET I/O PROFINET IO Device Services - PG/OP communication Yes	 Number of IO Devices per tool, max. 	8
option) — Updating time Minimum value depends on communication share set for PROFINET I/O, on the number of I/O devices, and on the number of configured user data items. — Updating times 250 µs to 512 ms (depends on operating mode; for more details, refer to Operating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area — Inputs, max. — Outputs, max. — User data consistency, max. — User data consistency, max. 1 024 byte; with PROFINET I/O PROFINET IO Device Services — PG/OP communication Yes	 Device replacement without swap medium 	Yes
the number of I/O devices, and on the number of configured user data items. — Updating times 250 µs to 512 ms (depends on operating mode; for more details, refer to Operating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area — Inputs, max. — Outputs, max. — User data consistency, max. — User data consistency, max. 1 024 byte; with PROFINET I/O PROFINET IO Device Services — PG/OP communication Yes	— Send cycles	
Operating Instructions, "Interface Module IM151-8 PN/DP CPU") Address area — Inputs, max. 2 kbyte — Outputs, max. 2 kbyte — User data consistency, max. 1 024 byte; with PROFINET I/O PROFINET IO Device Services — PG/OP communication Yes	— Updating time	the number of I/O devices, and on the number of configured user data items.
 — Inputs, max. — Outputs, max. — User data consistency, max. PROFINET IO Device Services — PG/OP communication Yes 		
 Outputs, max. User data consistency, max. 1 024 byte; with PROFINET I/O PROFINET IO Device Services — PG/OP communication Yes		
— User data consistency, max. 1 024 byte; with PROFINET I/O PROFINET IO Device Services — PG/OP communication Yes	— Inputs, max.	
PROFINET IO Device Services — PG/OP communication Yes	• •	2 kbyte
Services — PG/OP communication Yes	— User data consistency, max.	1 024 byte; with PROFINET I/O
— PG/OP communication Yes	PROFINET IO Device	
	Services	
— Routing Yes	— PG/OP communication	Yes
	— Routing	Yes

— S7 communication	Yes; with loadable FBs
— Isochronous mode	No
— IRT	Yes
— PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I- Device
— Shared device	Yes
 Number of IO Controllers with shared device, max. 	2
Transfer memory	
— Inputs, max.	1 440 byte; Per IO Controller with shared device
— Outputs, max.	1 440 byte; Per IO Controller with shared device
Submodules	
 number of submodules / at the 1st interface / as PROFINET IO device / maximum 	64
 User data per submodule, max. 	1 024 byte
PROFINET CBA	
acyclic transmission	Yes
cyclic transmission	Yes
Open IE communication	
Number of connections, max.	8
 Local port numbers used at the system end 	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
2. Interface	
Interface type	External interface via master module 6ES7138-4HA00-0AB0
Isolated	Yes
Interface types	
• RS 485	Yes
	No
Output current of the interface, max. Protocole	INO
Protocols	
• MPI	No
PROFINET IO Controller	No
PROFINET IO Device	No
PROFINET CBA	No
 PROFIBUS DP master 	Yes
 PROFIBUS DP device 	No
Open IE communication	No
Web server	No
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
 max. number of DP devices 	32; Per station
Services	
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes
 S7 communication, as client 	No
 S7 communication, as server 	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes
 activation/deactivation of DP devices 	Yes
 max. number of DP devices that can be activated/deactivated at the same time 	8
 Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	Yes
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
User data per DP device	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
outputo, max.	2110,10

Protocols	
Redundancy mode	
Media redundancy	
— MRP	Yes
 Switchover time on line break, typ. 	200 ms; PROFINET MRP
 Number of stations in the ring, max. 	50
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	8
 Data length for connection type 01H, max. 	1 460 byte
 Data length for connection type 11H, max. 	32 768 byte
 several passive connections per port, supported 	Yes
• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	8
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	8
— Data length, max.	1 472 byte
Web server	
• supported	Yes
 User-defined websites 	Yes
 Number of HTTP clients 	5
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes; With DP master module
Global data communication	
• supported	No
S7 basic communication	
supported	Yes; I blocks
 User data per job, max. 	76 byte
 User data per job (of which consistent), max. 	76 byte
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes; via integrated PROFINET interface and loadable FBs
 User data per job, max. 	See online help of STEP 7 (shared parameters of the SFBs/FBs and of the
CONTRACTOR OF THE PROPERTY OF A COURT OF THE PROPERTY OF THE P	SFCs/FCs of S7 Communication)
communication functions / PROFINET CBA (with set target commu	
Setpoint for the CPU communication load Number of remate interconnection partners	50 %
Number of remote interconnection partners number of master/device functions	32
number of master/device functions total of all master/device connections	1,000
total of all master/device connections data length of all incoming master/device connections	1 000
 data length of all incoming master/device connections, max. 	4 000 byte
 data length of all outgoing master/device connections, max. 	4 000 byte
 Number of device-internal and PROFIBUS interconnections 	500
 Data length of device-internal und PROFIBUS interconnections, max. 	4 000 byte
Data length per connection, max.	1 400 byte
performance data / PROFINET CBA / remote interconnection /	/ with acyclic transfer / header
— Sampling interval, min.	500 ms
 Number of incoming interconnections 	100
 Number of outgoing interconnections 	100
 Data length of all incoming interconnections, max. 	2 000 byte
 Data length of all outgoing interconnections, max. 	2 000 byte
 Data length per connection, max. 	1 400 byte
performance data / PROFINET CBA / remote interconnection /	/ with cyclic transfer / header
— Transmission frequency: Transmission interval, min.	1 ms
 Number of incoming interconnections 	200
 Number of outgoing interconnections 	200

 Data length of all incoming interconnections, max. 	2 000 byte
 Data length of all outgoing interconnections, max. 	2 000 byte
Data length per connection, max.	450 byte
performance data / PROFINET CBA / HMI variables via PROF	FINET / acyclic / header
 Number of stations that can log on for HMI variables (PN OPC/iMap) 	3; 2x PN OPC/1x iMap
 HMI variable updating 	500 ms
 Number of HMI variables 	200
 Data length of all HMI variables, max. 	2 000 byte
performance data / PROFINET CBA / PROFIBUS proxy function	onality / header
— supported	Yes
 Number of linked PROFIBUS devices 	16
 Data length per connection, max. 	240 byte; Slave-dependent
iPAR server	
• supported	Yes
Number of connections	
overall	12
 usable for PG communication 	11
 reserved for PG communication 	1
 adjustable for PG communication, min. 	1
 adjustable for PG communication, max. 	11
 usable for OP communication 	11
 reserved for OP communication 	1
 adjustable for OP communication, min. 	1
 adjustable for OP communication, max. 	11
usable for S7 basic communication	10
 reserved for S7 basic communication 	0
 adjustable for S7 basic communication, min. 	0
adjustable for S7 basic communication, max.	10
usable for S7 communication	10; with loadable FBs
— adjustable for S7 communication, max.	10
total number of instances, max.	32
usable for routing	4: With DP master module
- doddie iei reddiig	i, master medici
S7 message functions	
S7 message functions Number of login stations for message functions may	12: Depending on the configured connections for PG/OP and S7 hasic
S7 message functions Number of login stations for message functions, max.	12; Depending on the configured connections for PG/OP and S7 basic communication
Number of login stations for message functions, max.	communication
Number of login stations for message functions, max. Process diagnostic messages	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max.	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max.	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max.	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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	yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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.	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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.	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10 Yes 500
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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. adjustable	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10 Yes 500 No
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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. — adjustable — of which powerfail-proof	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10 Yes 500
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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. — adjustable — of which powerfail-proof Interrupts/diagnostics/status information	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10 Yes 500 No 100; Only the last 100 entries are retained
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • 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. — adjustable — of which powerfail-proof Interrupts/diagnostics/status information Alarms	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10 Yes 500 No 100; Only the last 100 entries are retained Yes
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm_S blocks, max. Test commissioning functions 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. — adjustable — of which powerfail-proof Interrupts/diagnostics/status information	communication Yes; ALARM_S, ALARM_SC, ALARM_SQ, ALARM_D, ALARM_DQ 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14 Yes I/O 10 Yes 500 No 100; Only the last 100 entries are retained

Relative humidity • With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 —		
Stroup error SF (red) Monitoring 24 V voltage supply ON (green) Bus activity PROFINET (green) Potential separation between PROFIBUS DP and all other circuit components Isolation tested with Sol V DC Degree and class of protection IP degree of protection IP degree of protection Protection IP degree of protection	for maintenance	Yes; MT
Monitoring 24 V voltage supply ON (green) Sus activity PROFINET (green) Potential separation between PROFIBUS DP and all other circuit components Yes toolation Isolation Isolation Isolation Isolation IP degree of protection IP degree of protection IP degree of protection IP degree of protection If the protection If the protection of the protection If the protection of the protection If the protection of th	Bus fault BF (red)	Yes; BF-PN
Bus activity PROFINET (green) Yes; P1-/P2-/P3-Link Potential separation between PROFIBUS DP and all other circuit components Isolation tested with Solution tested with Figure 3 transport of protection IP degree of protection under the protection of protesting to the limit of the fortion by the limit of the fortion by the protection on the protection of the protection of the protection of the protection of the	Group error SF (red)	Yes
Potential separation between PROFIBUS DP and all other circuit components Isolation Isolation tested with 500 V DC Degree and class or protection IP degree of protection of prote	Monitoring 24 V voltage supply ON (green)	Yes
between PROFIBUS DP and all other circuit components total ton lsolation tested with 500 V DC Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark Ambient conditions Ambient emperature during operation • min. • max. • At cold restart, min. • and thit de during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient conditions, 12 max. • Altoude during operation relating to sea level • Installation altitude above sea level, max. • Altoude during operation relating to sea level Timin Trax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) // Trinin (Trax -20 at 658 hPa 440 hPa 795 hPa (-1 000 m +3 000 m) // Trinin (Trax -20 at 658 hPa 450 hPa (-1 000 m +3 000 m) // Trinin (Trax -20 at 658 hP	Bus activity PROFINET (green)	Yes; P1-/P2-/P3-Link
Isolation Isolation tested with Degree and class of protection IP degree of protection of protection of the	tential separation	
Isolation tested with 500 V DC Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark Ambient conditions Ambient temperature during operation • min. • max. • At cold restart, min. • max. • At cold restart, min. • Mittude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • North condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-3 Usage in industrial process technology — Against chemically active substances according to EN 60684-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 The substance of the first of t	etween PROFIBUS DP and all other circuit components	Yes
Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark Ambient conditions Ambi	lation	
IP degree of protection IP20	solation tested with	500 V DC
Pegree of protection P20	gree and class of protection	
CE mark Ambient conditions Ambient temperature during operation • min. • max. • At cold restart, min. • min. • max. • At cold restart, min. • Mistillation allitude above sea level • Installation allitude above sea level, max. • Ambient air temperature-barometric pressure-allitude • Installation allitude above sea level, max. • Ambient air temperature-barometric pressure-allitude • With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to mechanically active substa		IP20
Ambient conditions Ambient temperature during operation • min. • max. • At cold restart, min. Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • With condensation, tested in accordance with IEC 60068-2-38, max. Relative humidity • With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 6068-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Class 3 (xcluding trichlorethylene)	0 1	
Ambient conditions Ambient temperature during operation • min. • max. • At cold restart, min. • hinstallation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level, max. • Ambient air temperature value (pressure-altitude) • Installation altitude above sea level (pressure-altitude) • With condensation, tested in accordance with IEC 60068-2-38, max. 100 %; RH incl. condensation/frost permitted (no commissioning in bedewe state) • Yes; Class 3024 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * • Yes; Class 662 mold and fungal spores (excluding fauna); Class 6B3 on request • Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * • Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (seve		Yes
Ambient temperature during operation • min. • max. • At cold restart, min. Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude • Installation altitude above sea level, max. • Alt old Pa 795 hPa (-1 000 m +2 000 m) // Triin (Tmax -2 0 a		
 min. max. At cold restart, min. At cold restart, min. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Ambient air 140 MPa 795 hPa (-1 000 m +2 000 m) // Trini (Trax -2 00 m +3 500 m +		
 max. At cold restart, min. 70 °C; = Tmax -25 °C Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-3 (also 683 incl. sand, dust; * Yes;		-40 °C: = Tmin
 At cold restart, min. -25 °C Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Ambient air temperature-barometric pressure-altitude Timin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -20 at 658 hPa 540 hPa (+3 500 m +5 000 m) With condensation, tested in accordance with IEC 60068-2-38, max. With condensation, tested in accordance with IEC 60068-2-38, max. Wesistance Use in stationary industrial systems to biologically active substances according to EN 60721-3-3 to mechanically active substances according to EN 60721-3-6 to biologically active substances according to EN 60721-3-6 to chemically active substances according to EN 60721-3-6 to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology Against chemically active substances acc. to EN 60654-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Ambient air temperature-barometric pressure-altitude Timin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -20 at 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 000 m) // Tmin (Tmax -20 at 658 hPa (+3 500 m +5 00 m) // Tmi		
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Ambient air temperature-barometric pressure-altitude Relative humidity With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to mechanically active s	<u> </u>	5 000 m
Relative humidity • With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60152-7-1.04 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 — 100 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 at 658 hPa 540 h		
 With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-3 (excluding trichlorethylene) — to the minute of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level 	Ambient air temperature-barometric pressure-aititude	- 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K)
2-38, max. Resistance Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 — to biologically active substances according to EN 60721-3-3 — to biologically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 state) Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of faun Class 3B3 on request Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of faun Class 3B3 on request Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of faun Class 3B3 on request Yes; Class 3S4 incl. sand, dust, * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B3 incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * Yes; Class 6B3 incl. sand, dust; * Yes; Class 6S3 incl. sand, dust; * Yes; C	Relative humidity	
Use in stationary industrial systems — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60654-4 — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of faun Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B3 incl. sand, dust, * Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * Yes; Class 6B3 incl. sand, dust, * Yes; Class 6B3 incl. sand, dust; * Yes; Class 6B3 incl. sand, dust, * Yes; Class 6B3 incl.		100 %; RH incl. condensation/frost permitted (no commissioning in bedewed state)
- to biologically active substances according to EN 60721-3-3 - to chemically active substances according to EN 60721-3-3 - to mechanically active substances according to EN 60721-3-3 - to mechanically active substances according to EN 60721-3-3 Use on ships/at sea - to biologically active substances according to EN 60721-3-6 - to chemically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-3 (according to EN 60721-3-3 class 3C4 permissible); levilogically active substances according to EN 60721-3-3 (according to EN 60721-3-3 class 3C4 permissible); levilogically active substances according to EN 60721-3-3 (according to EN 60721-3-3 (according to EN 60721-3-3 class 3C4 permissible); levilogically active substances according to EN 60721-3-3 class 3C4 permissible); levilogically active substances according to EN 60721-3-3 class 3C4	Resistance	
Class 3B3 on request — to chemically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 — Key; Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Use in stationary industrial systems	
degree 3); *		Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
Use on ships/at sea — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * Yes; Class 6S3 incl. sand, dust; * Yes; Class 3 (excluding trichlorethylene) Yes; Class 3 (excluding trichlorethylene)		Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severite degree 3); * Yes; Class 6S3 incl. sand, dust; * Yes; Class 3 (excluding trichlorethylene) Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severite degree 3); * Yes; Class 6S3 incl. sand, dust; * Yes; Class 3 (excluding trichlorethylene)		Yes; Class 3S4 incl. sand, dust, *
- to chemically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 - to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology - Against chemically active substances acc. to EN 60654-4 - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severit degree 3); * Yes; Class 6S3 incl. sand, dust; * Yes; Class 3 (excluding trichlorethylene) Yes; Class 3 (excluding trichlorethylene)	Use on ships/at sea	
60721-3-6 — to mechanically active substances according to EN 60721-3-6 Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 degree 3); * Yes; Class 6S3 incl. sand, dust; * Yes; Class 3 (excluding trichlorethylene) Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level		request
Usage in industrial process technology — Against chemically active substances acc. to EN 60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Class 3 (excluding trichlorethylene) Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level		
 Against chemically active substances acc. to EN 60654-4 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Class 3 (excluding trichlorethylene) Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level 	,	Yes; Class 6S3 incl. sand, dust; *
60654-4 — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations and the first and the fir	Usage in industrial process technology	
— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level A/B (excluding trichlorethylene); level A/B (excluding tr		Yes; Class 3 (excluding trichlorethylene)
200 (00.1 0) 10.10	— Environmental conditions for process, measuring	concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level
Remark	Remark	
	Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and	* The supplied plug covers must remain in place over the unused interfaces during operation!
configuration / header	nfiguration / header	
Configuration software	Configuration software	
• STEP 7 Yes; V5.5 or higher		Yes; V5.5 or higher
configuration / programming / header		
Command set see instruction list		see instruction list
Nesting levels 8		
• System functions (SFC) see instruction list	· ·	
• System function blocks (SFB) see instruction list	· · ·	
Programming language	` '	
— LAD Yes	* * * * * * * * * * * * * * * * * * * *	Yes
— FBD Yes		
— STL Yes		
	~·-	
— CFC Yes; Optional	— SCL	Yes; Optional

— GRAPH	Yes; Optional
— HiGraph®	Yes; Optional
Know-how protection	
 User program protection/password protection 	Yes
Block encryption	Yes; With S7 block Privacy
programming / cycle time monitoring / header	
• lower limit	1 ms
• upper limit	6 000 ms
adjustable	Yes
• preset	150 ms
Dimensions	
Width	120 mm; DP master module: 35 mm
Height	119.5 mm
Depth	75 mm
Weights	
Weight, approx.	320 g; DP master module: Approx. 100 g

last modified: 12/8/2024 🖸