SIEMENS

Data sheet

6ES7154-8FB01-0AB0

SIMATIC DP, IM154-8F PN/DP CPU f. ET200 PRO, 512 KB work memory, Int. PROFINET interface, Int. PROFIBUS DP master/slave interface Degree of protection IP65/67, Micro Memory Card and Connection module required



General information	
HW functional status	01
Firmware version	V3.2
Engineering with	
Programming package	STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines	MCB 24 V DC / 16 A with tripping characteristic Type B and C
(recommendation)	(see ET 200pro manual)
Load voltage L+	
• 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
Input current	
Current consumption, typ.	350 mA

Current consumption (in no-load operation), typ.	250 mA; Typical, current consumption for CPU in STOP state	
Inrush current, typ.	2 A	
l²t	0.25 A²·s; Typical	
Power loss		
Power loss, typ.	8.5 W	
Memory		
Work memory		
• integrated	512 kbyte	
• expandable	No	
Load memory		
• Plug-in (MMC)	Yes	
Plug-in (MMC), max.	8 Mbyte	
 Data management on MMC (after last programming), min. 	10 y	
Backup		
• present	Yes; Guaranteed by MMC (maintenance-free)	
without battery	Yes; Program and data	
CPU processing times		
for bit operations, typ.	0.05 µs	
for word operations, typ.	0.09 µs	
for fixed point arithmetic, typ.	0.12 µs	
for floating point arithmetic, typ.	0.45 µs	
CPU-blocks		
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be 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		
● 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 DPV1 alarm OBs 	3; OB 55, 56, 57
 Number of isochronous mode OBs 	1; OB 61
 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	

Counters, timers and their retentivity	
S7 counter	
• Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
• Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— 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	

Dala	areas	anu	uieii	reter	ιτινιτή

retentive data area in total All, 128 KB max.

Flag	
• Number, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
• per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
• 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	16 384
— of which central	128
Outputs	16 384
— of which central	64
Analog channels	
• Inputs	1 024
— of which central	64
Outputs	1 024
— of which central	64
Hardware configuration	
Integrated power supply	No
Number of DP masters	
• integrated	1
Rack	
• Racks, max.	1

Modules per rack, max.	16; Expansion width max. 1 m	
Time of day		
Clock		
Hardware clock (real-time)	Yes	
 retentive and synchronizable 	Yes	
Backup time	6 wk; At 40 °C ambient temperature	
 Deviation per day, max. 	10 s; Typ.: 2 s	
Operating hours counter		
Number	1	
 Number/Number range 	0	
Range of values	0 to 2^31 hours (when using SFC 101)	
Granularity	1 h	
• retentive	Yes; Must be restarted at each restart	
Clock synchronization		
• supported	Yes	
• to MPI, master	Yes	
● to MPI, slave	Yes	
• to DP, master	Yes; With DP slave only slave clock	
• to DP, slave	Yes	
• on Ethernet via NTP	Yes; As client	
Interfaces		
Number of industrial Ethernet interfaces	1	
Number of PROFINET interfaces	1	
Number of wireless interfaces	0	
1. Interface		
Interface type	Integrated RS 485 interface	
Physics	RS 485/connection: 2 x M12 b-coded	
Isolated	Yes	
Power supply to interface (15 to 30 V DC), max.	May only be used for external terminating resistor	
Protocols		
• MPI	Yes	
 PROFIBUS DP master 	Yes	
PROFIBUS DP slave	Yes	
Point-to-point connection	No	
MPI		
Transmission rate, max.	12 Mbit/s	
Services		
— PG/OP communication	Yes	

— Routing

— Global data communication

— S7 basic communication

Yes

Yes

Yes

Sof communication, as client Sof communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. • Number of DP slaves, max. • Routing — Routing — Routing — Global data communication — S7 basic communication — S7 communication — S8 communication — S9 communication, as client — S9 communication, as server — Equidistance — Isochronous mode — Isochronous mode — Isochronous mode — S9NC/FREEZE — Activation/deactivation of DP slaves — Direct data exchange (slave-to-slave communication) — DPV1 — Yes — Address area — Inputs, max. — Outputs,	— S7 communication	Yes
PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. 124 Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — lsochronous mode — lsochronous mode — S9 NC/FREEZE — Activation/deactivation of DP slaves — Direct data exchange (slave-to-slave — Inputs, max. — Outputs, max. — Outputs, max. — Outputs, max. • Vest data per DP slave — Inputs area. • Routing • Transmission rate, max. • User data per address area, max. • Ves; with interface active — Routing — Global data communication — S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave — S8 communication, as server — S9 communication, as server — S9 communication, as server — Direct data exchange (slave-to-slave — PS5 connection configured on one side only — S9 connection configured on one s		No
PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as server - Equidistance - Isochronous mode - Isochronous mode - Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Direct data exchange (slave-to-slave communication) - DPV1 - Address area - Inputs, max Outputs, m		Yes
Number of DP slaves, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SynC/FREEZE - Activation/deactivation of DP slaves - Direct data exchange (slave-to-slave communication) - DPV1 Address area - Inputs, max Outputs, max		
■ Number of DP slaves, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — SYNC/FREEZE — Activation/deactivation of DP slaves — Direct data exchange (slave-to-slave communication) — DPV1 — Yes Address area — Inputs, max. — Outputs, max. — Yes; only with passive interface ■ Address area, max. ■ User data per DP slave ■ Transmission rate, with interface active ■ Address area, max.	Transmission rate, max.	12 Mbit/s
Services - PG/OP communication		124
Routing Yes Global data communication No S7 basic communication Yes: I blocks only Yes Conneurication Yes I blocks only Yes Communication Yes S7 communication, as client No S7 communication, as server Yes: Connection configured on one side only Yes Global data communication, as server Yes: Connection configured on one side only Yes S7 communication, as server Yes S8 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes Activation/deactivation of DP slaves Yes — Direct data exchange (slave-to-slave communication) Yes Address area — Inputs, max. 2 048 byte User data per DP slave — Inputs, max. 2 048 byte User data per DP slave — Inputs, max. 244 byte PROFIBUS DP slave — Inputs, max. 244 byte PROFIBUS DP slave — Transmission rate, max. 244 byte PROFIBUS DP slave — Transmission rate, max. 32 byte Services — Routing Yes; with interface active No Services — Routing Yes; with interface active — Global data communication No — S7 basic communication No — S7 communication, as client No — S7 communication, as server Yes; Connection configured on one side only — Direct data exchange (slave-to-slave Yes	Services	
Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — Isochronous mode — SYNC/FREZE — Activation/ideactivation of DP slaves — Direct data exchange (slave-to-slave communication) — DPV1 Address area — Inputs, max. — Outputs, max. — Outpu	— PG/OP communication	Yes
S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server S8 connection configured on one side only S8 concentration on S8 connection configured on one side only S8 connection configured on one side only S8 connection configured on one side only S9 connection configured on one side only	— Routing	Yes
- S7 communication Yes No - S7 communication, as client No - S7 communication, as server Yes: Connection configured on one side only Yes Connection Configured on the side only Yes Connection Configured On Configured	Global data communication	No
— S7 communication, as client — S7 communication, as server — S7 communication, as server — Equidistance — Isochronous mode — Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — SYNC/FREEZE — Activation/deactivation of DP slaves — Direct data exchange (slave-to-slave communication) — DPV1 — Yes Address area — Inputs, max. — Outputs, max. — 12 Mbit/s • Transmission rate, max. • Address area, max. • User data per address area, max. • User data per address area, max. • User data per address area, max. • User data per address area, max. • User data per address area, max. • Services — Routing — Global data communication — S7 basic communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave Yes; Connection configured on one side only — Direct data exchange (slave-to-slave Yes; Connection configured on one side only — Direct data exchange (slave-to-slave Yes	 — S7 basic communication 	Yes; I blocks only
- S7 communication, as server - Equidistance - Isochronous mode is possible either on DP or PROFINET IO (not simultaneously) - SYNC/FREEZE - Activation/deactivation of DP slaves - Direct data exchange (slave-to-slave communication) - DPV1 - Yes - Address area - Inputs, max Outputs, max.	— S7 communication	Yes
- Equidistance - Isochronous mode - Isochronous mode - Isochronous mode - Isochronous mode - Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) - SYNC/FREEZE - Activation/deactivation of DP slaves - Direct data exchange (slave-to-slave communication) - DPV1 - Yes - Address area - Inputs, max Outputs, max.	 — S7 communication, as client 	No
— Isochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — SYNC/FREEZE Yes — Activation/deactivation of DP slaves Yes — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 2 048 byte — Outputs, max. 2 048 byte User data per DP slave — Inputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. 12 Mbit/s • automatic baud rate search Yes; only with passive interface • Address area, max. 32 byte Services — Routing Yes; with interface active — Global data communication No — S7 basic communication Yes — S7 communication, as client No — S7 communication, as server Yes; Connection configured on one side only — Direct data exchange (slave-to-slave)	 — S7 communication, as server 	Yes; Connection configured on one side only
PROFINET IO (not simultaneously) - SYNC/FREEZE - Activation/deactivation of DP slaves - Direct data exchange (slave-to-slave communication) - DPV1 - Yes Address area - Inputs, max Outputs, max Outpu		Yes
— Activation/deactivation of DP slaves — Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 2 048 byte — Outputs, max. 2 048 byte User data per DP slave — Inputs, max. 244 byte — Outputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. 12 Mbit/s • automatic baud rate search Yes; only with passive interface • Address area, max. 32 • User data per address area, max. 32 byte Services — Routing Yes; with interface active — S7 communication No — S7 communication, as client No — S7 communication, as server — Direct data exchange (slave-to-slave) Yes Yes; As subscriber Yes	— Isochronous mode	· ·
— Direct data exchange (slave-to-slave communication) — DPV1 Yes Address area — Inputs, max. 2 048 byte — Outputs, max. 2 048 byte User data per DP slave — Inputs, max. 244 byte — Inputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. 12 Mbit/s • automatic baud rate search Yes; only with passive interface • Address area, max. 32 • User data per address area, max. 32 byte Services — Routing Yes; with interface active — Global data communication No — S7 basic communication No — S7 communication, as client No — S7 communication, as server — Direct data exchange (slave-to-slave) Yes Yes; As subscriber Yes; As subscriber Yes yes; As subscriber Yes Yes Yes Address Yes Yes Yes Yes Yes Yes Yes	— SYNC/FREEZE	Yes
communication) — DPV1 Yes Address area — Inputs, max. 2 048 byte — Outputs, max. 2 048 byte User data per DP slave — Inputs, max. 244 byte — Inputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. 12 Mbit/s • automatic baud rate search Yes; only with passive interface • Address area, max. 32 • User data per address area, max. 32 byte Services — Routing Yes; with interface active — Global data communication No — S7 basic communication No — S7 communication Yes — S7 communication, as client No — S7 communication, as server Yes; Connection configured on one side only — Direct data exchange (slave-to-slave)	 Activation/deactivation of DP slaves 	Yes
Address area - Inputs, max Outputs, max. 2 048 byte User data per DP slave - Inputs, max. 244 byte - Outputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. • automatic baud rate search • Address area, max. • User data per address area, max. 32 byte Services - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - S7 communication, as server - Direct data exchange (slave-to-slave) - Ves byte - Ves Connection configured on one side only - Yes - Direct data exchange (slave-to-slave)		Yes; As subscriber
Inputs, max Outputs, max Outputs, max. User data per DP slave Inputs, max Outputs, max	— DPV1	Yes
User data per DP slave — Inputs, max. — Outputs, max. — 244 byte PROFIBUS DP slave • Transmission rate, max. — 12 Mbit/s • automatic baud rate search • Address area, max. — 4 Ves; only with passive interface — Address area, max. — 32 • User data per address area, max. — 32 byte Services — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Ves; Connection configured on one side only — Direct data exchange (slave-to-slave)	Address area	
User data per DP slave — Inputs, max. — Outputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. • automatic baud rate search • Address area, max. 32 • User data per address area, max. 32 byte Services — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 conmunication, as server — Direct data exchange (slave-to-slave) Yes 244 byte 244 byte 244 byte 245 246 247 248 248 249 249 249 249 249 249	— Inputs, max.	2 048 byte
- Inputs, max Outputs, max. 244 byte PROFIBUS DP slave • Transmission rate, max. • automatic baud rate search • Address area, max. • User data per address area, max. - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave) - 244 byte 24 byte 244 byte	— Outputs, max.	2 048 byte
Outputs, max. PROFIBUS DP slave 12 Mbit/s automatic baud rate search Address area, max. User data per address area, max. Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server Direct data exchange (slave-to-slave) 244 byte 12 Mbit/s Yes; only with passive interface Yes; only with passive interface Yes; with interface active No Yes; with interface active No Yes Yes; Connection configured on one side only Yes; Connection configured on one side only	User data per DP slave	
PROFIBUS DP slave • Transmission rate, max. • automatic baud rate search • Address area, max. • User data per address area, max. Services — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — S7 connection configured on one side only — Direct data exchange (slave-to-slave) 12 Mbit/s Yes; only with passive interface Yes; with interface active No Yes; with interface active No Yes; connection configured on one side only Yes; Connection configured on one side only	— Inputs, max.	244 byte
 Transmission rate, max. automatic baud rate search Address area, max. User data per address area, max. Services Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server S7 connection configured on one side only Direct data exchange (slave-to-slave 	— Outputs, max.	244 byte
 automatic baud rate search Address area, max. User data per address area, max. Services Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server Direct data exchange (slave-to-slave 	PROFIBUS DP slave	
 Address area, max. User data per address area, max. Services Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server Direct data exchange (slave-to-slave 	Transmission rate, max.	12 Mbit/s
 User data per address area, max. Services — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Direct data exchange (slave-to-slave 	automatic baud rate search	Yes; only with passive interface
Services - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave Yes; with interface active No No Yes; with interface active No Yes; Connection configured on one side only Yes	 Address area, max. 	32
 Routing Global data communication S7 basic communication No S7 communication Yes S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave Yes; with interface active No Yes	 User data per address area, max. 	32 byte
 Global data communication S7 basic communication No S7 communication Yes S7 communication, as client S7 communication, as server S7 communication, as server Direct data exchange (slave-to-slave No Yes; Connection configured on one side only Yes	Services	
 — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Direct data exchange (slave-to-slave No Yes; Connection configured on one side only Yes	— Routing	Yes; with interface active
 — S7 communication — S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave Yes Yes Yes Yes	 Global data communication 	No
 — S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave No Yes; Connection configured on one side only Yes 	— S7 basic communication	No
 — S7 communication, as server — Direct data exchange (slave-to-slave Yes; Connection configured on one side only Yes 	— S7 communication	Yes
— Direct data exchange (slave-to-slave Yes	 S7 communication, as client 	No
3. (S7 communication, as server 	Yes; Connection configured on one side only
	_ :	Yes

— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte

Description	— inputs	244 byte
Interface type PROFINET Physics Ethernet (2 x M12 d-coded; 1 x RJ45) Isolated Yes; Galvanic isolation for P3 is implemented in IM154-8, for P1 and P2 in CM automatic detection of transmission rate Yes; 10/100 Mbit/s Autorrossing Yes Autocrossing Yes Change of IP address at runtime, supported Yes Interface types • Number of ports 3 • integrated switch Yes Media redundancy • supported Yes Switchover time on line break, typ. 200 ms; PROFINET MRP • Number of stations in the ring, max. Protocols • MPI • PROFINET IO Controller Yes; Also simultaneously with IO-Device functionality • PROFINET IO Device Yes; Also simultaneously with IO Controller functionality • PROFINET DBA Yes • PROFIBUS DP master No • PROFIBUS DP master No • PROFIBUS DP slave No • Open IE communication Yes; Via TCP/IP, ISO on TCP, and UDP • Yes PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication Yes — Routing Yes — So communication Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode Yes; Via TCP/IP, ISO on TCP, and UDP • Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) • Yes; Via TCP/IP, ISO on TCP, and UDP • Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) • Yes; Via TCP/IP, ISO on TCP, and UDP • Yes; Via TCP/IP, ISO on TCP, and UDP	— Outputs	244 byte
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Isolated Yes; Galvanic isolation for P3 is implemented in IM154-8, for P1 and P2 in CM Autoregotiation Autocrossing Change of IP address at runtime, supported Interface types Number of ports integrated switch Media redundancy supported Switchover time on line break, typ. Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFIBUS DP master PROFIBUS DP slave Open IE communication PGOP in Communication PGOP IE communication PROFINET IO Controller Tansmission rate, max. Poen IE communication PSOFINET OP Communication PROFINET IO (not simultaneously with loadable FBs, max. configurable connections: 14, max. number of instances: 32 Proson TCP, and UDP PROFINET Controller PSOFINET Controller PROFINET IO Controller PROF		PROFINET
and P2 in CM automatic detection of transmission rate Autorogotiation Yes Change of IP address at runtime, supported Interface types Number of ports integrated switch Yes Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFIBUS DP master PROFIBUS DP slave PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFINET OB wise PROFINET IO Controller PROFIBUS DP master PROFIBUS DP master PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFIBUS DP master PROFIBUS DP master PROFINET IO Communication PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFIBUS DP slave PROFIBUS DP slave PROFINET IO Controller PROFINET IMEDED IN TERMS PROFINET MRP PROFINET MRP PROFINET MRP PROFIN	Physics	Ethernet (2 x M12 d-coded; 1 x RJ45)
Autocrossing Autocrossing Yes Change of IP address at runtime, supported Interface types Number of ports integrated switch Media redundancy supported Switchover time on line break, typ. Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFIBUS DP master PROFIBUS DP slave Open IE communication FROFINET IO Controller Transmission rate, max. Services PROGPO communication PROFINET IO Controller Transmission rate, max. Services PROFINET OF communication PROFINET IO Controller Transmission rate, max. Services PROFINET IO Controller PROFINET IO Controller Transmission rate, max. Services PROFINET IO Controller PROFINET IO Controller Transmission rate, max. Services PROFINET IO Controller PROFINET IO Controller Transmission rate, max. Services PROFINET IO (ont simultaneously) Yes With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Yes; With loadable FBs, max. configurable either on DP or PROFINET IO (not simultaneously) PROFINET IO (not simultaneously) Yes; Via TCP/IP, ISO on TCP, and UDP Yes	Isolated	
Autocrossing Change of IP address at runtime, supported Yes Interface types • Number of ports • integrated switch Media redundancy • supported • Switchover time on line break, typ. • Number of stations in the ring, max. Protocols • MPI • PROFINET IO Controller • PROFINET IO Device • PROFINET CBA • PROFISUS DP master • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Web server PROFINET IO Controller • Transmission rate, max. 100 Mbit/s Services — PG/OP communication — Routing — S7 communication — Isochronous mode — Open IE communication — PROFINET IO Controller Yes: Open IE communication — Profined To Controller Yes Yes Yes PROFINET IO Controller • Transmission rate, max. 100 Mbit/s Services — PG/OP communication — Routing — S7 communication — Yes — Isochronous mode Yes: Open IE communication — Yes Yes: Obe 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes: Via TCP/IP, ISO on TCP, and UDP Yes Yes: Obe 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes: Via TCP/IP, ISO on TCP, and UDP Yes: Via TCP/IP, ISO on TCP, and UDP	automatic detection of transmission rate	Yes; 10/100 Mbit/s
Charge of IP address at runtime, supported Interface types Number of ports Integrated switch Media redundancy Supported Switchover time on line break, typ. Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFIBUS DP master PROFIBUS DP master PROFIBUS DP slave PROFIBUS D Slave PROFIBUS D Slave PROFINET IO Controller Subserver PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFINET IO State PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFINET IO Controller Stransmission rate, max. Transmission rate, max. 100 Mbit/s Services PG/OP communication Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Pes; With loadable FBs, max. configurable connections: 14, max. number of	Autonegotiation	Yes
Interface types • Number of ports • integrated switch Yes Media redundancy • supported • Switchover time on line break, typ. • Number of stations in the ring, max. Protocols • MPI • PROFINET IO Controller • PROFINET IO Device • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication — Routing — S7 communication — Routing — S7 communication — Isochronous mode — Open IE communication — Isochronous mode — Open IE communication — Isochronous mode — Open IE communication — PROFINET IO Controller Yes — Open IE communication — Ses — PG/OP communication — Routing — S7 communication — Ses — PGOFINET IO Controller — Open IE communication — Ses — PGOFINET IO Controller — Isochronous mode — Open IE communication — Ses — PGOFINET IO Controller — Open IE communication — Ses — PGOFINET IO Controller — Open IE communication — Ses — PGOFINET IO Controller — Open IE communication — PROFINET IO (not simultaneously) — Open IE communication — PROFINET IO (not simultaneously) — Open IE communication — IRT — ISOCHROPINET IO (PIP, ISO on TCP, and UDP — PROFINET IO (not simultaneously) — Open IE communication — IRT	Autocrossing	Yes
Number of ports integrated switch Yes Media redundancy supported Switchover time on line break, typ. Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFIBUS DP master PROFIBUS DP slave Open IE communication Transmission rate, max. PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services PG/OP communication Yes, With loadable FBs, max. configurable connections: 14, max. number of instances: 32 PROFINET IO (not simultaneously) PROFINET IO (not simultaneously) Yes, Wia TCP/IP, ISO on TCP, and UDP Yes PROFINET IO Controller PROFINET IO Controller Yes PROFINET IO Controller PG/OP communication Yes, With loadable FBs, max. configurable connections: 14, max. number of instances: 32 PGOFINET IO (not simultaneously) POPEN IE communication Yes, Via TCP/IP, ISO on TCP, and UDP Yes PROFINET IO (not simultaneously) Yes, Via TCP/IP, ISO on TCP, and UDP Yes, Via TCP/IP, ISO on TCP, and UDP PROFINET IO (not simultaneously) Yes, Via TCP/IP, ISO on TCP, and UDP PROFINET IO (not simultaneously) Yes, Via TCP/IP, ISO on TCP, and UDP	Change of IP address at runtime, supported	Yes
integrated switch Media redundancy supported Switchover time on line break, typ. Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFINET GBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Transmission rate, max. PROFOP Communication PROFOP Communication PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFINET O Controller PROFINET CBA PROFIBUS DP slave PROFIBUS DP slave PROFINET O Controller Profiner Profi	Interface types	
Media redundancy • supported • Switchover time on line break, typ. • Number of stations in the ring, max. Protocols • MPI • PROFINET IO Controller • PROFINET IO Device • PROFINET BA • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Transmission rate, max. PROFINET IO Controller • Transmission rate, max. - Routing — S7 communication — Isochronous mode — Open IE communication — Open I	Number of ports	3
* supported * Switchover time on line break, typ. * Number of stations in the ring, max. Protocols * MPI * PROFINET IO Controller * PROFINET IO Device * PROFINET UD Device * PROFINED DP slave * PROFINED DP slave * Open IE communication * Ves; Via TCP/IP, ISO on TCP, and UDP * Ves PROFINET IO Controller * Transmission rate, max. * 100 Mbit/s Services PG/OP communication * Yes * PROFINET IO Device * PROFINET UD Device Yes * PROFINET UD Device Undevice Undev	• integrated switch	Yes
Switchover time on line break, typ. Switchover time on line break, typ. Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFINET IO Controller PROFINET IO Controller Transmission rate, max. Services PROFOP communication Pess PROFOP communication Yes PROFOP communication Yes PROFOP communication Yes PROFIBUS DP slave PROFINET IO Controller Transmission rate, max. Services PROFOP communication Yes PROFINET IO Controller Pess Profine II is in it i	Media redundancy	
 Number of stations in the ring, max. Protocols MPI PROFINET IO Controller PROFINET IO Device PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Transmission rate, max. PROFINET IO Controller Transmission rate, max. PG/OP communication PS (With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode — Open IE communication Yes; Via TCP/IP, ISO on TCP, and UDP Yes PG/INET IO Controller Transmission rate, max. Services — PG/OP communication — Routing — S7 communication Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — Open IE communication — IRT 	• supported	Yes
Protocols • MPI • PROFINET IO Controller • PROFINET IO Device • PROFINET IO Device • PROFINET CBA • PROFIBUS DP master • PROFIBUS DP slave • Open IE communication • Transmission rate, max. PROFINET IO Controller • Transmission rate, max. Services - PG/OP communication - Routing - S7 communication Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 - Isochronous mode - Open IE communication - Routing - Open IE communication Yes; With IO Controller Services - PG/OP communication Yes - PG/OP communication Yes - S7 communication Yes - S8 G8 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) - Open IE communication Yes; Via TCP/IP, ISO on TCP, and UDP Yes Yes	 Switchover time on line break, typ. 	200 ms; PROFINET MRP
MPI PROFINET IO Controller Yes; Also simultaneously with IO-Device functionality PROFINET CBA Yes PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFINET IO Controller Transmission rate, max. Services PRO/OP communication Yes Yes Yes PROFIDE IO Controller Yes PROFIDE IO Controller Transmission rate, max. 100 Mbit/s Services PRO/OP communication Yes Yes PROFIDE IO Controller Yes PROFIDE IO Controller PROFIDE IO Controller Yes PROFIDE IO Controller PROFIDE IO Controller PROFIDE IO Controller Yes PROFIDE IO Controller Yes PROFIDE IO Controller Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Plsochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) PROFINET IO (not simultaneously) Yes; Via TCP/IP, ISO on TCP, and UDP Yes; Via TCP/IP, ISO on TCP, and UDP	 Number of stations in the ring, max. 	50
PROFINET IO Controller PROFINET IO Device PROFINET CBA PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller PROFIDED PRO	Protocols	
 PROFINET IO Device Yes; Also simultaneously with IO Controller functionality PROFINET CBA PROFIBUS DP master No PROFIBUS DP slave No Open IE communication Web server Yes; Via TCP/IP, ISO on TCP, and UDP Web server PROFINET IO Controller Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode — Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — Open IE communication — IRT Yes; Via TCP/IP, ISO on TCP, and UDP — IRT 	● MPI	No
 PROFINET CBA PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFINET IO Controller Transmission rate, max. Services PG/OP communication Yes PROFINET Transmission rate, max. Services PG/OP communication Yes Routing S7 communication Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Isochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Open IE communication Yes; Via TCP/IP, ISO on TCP, and UDP IRT 	 PROFINET IO Controller 	Yes; Also simultaneously with IO-Device functionality
 PROFIBUS DP master PROFIBUS DP slave Open IE communication Web server PROFINET IO Controller Transmission rate, max. Services PG/OP communication Routing S7 communication Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Isochronous mode PROFINET IO (not simultaneously) POPEN IE communication Yes; Via TCP/IP, ISO on TCP, and UDP PROFINET IO (not on TCP, and UDP 	PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
 PROFIBUS DP slave Open IE communication Web server Yes PROFINET IO Controller Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — S7 communication — Isochronous mode — Ves; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode — PROFINET IO (not simultaneously) — Open IE communication — IRT Yes 	• PROFINET CBA	Yes
Open IE communication Web server PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services — PG/OP communication — Routing — S7 communication — S7 communication — Isochronous mode Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — Open IE communication — IRT Yes	 PROFIBUS DP master 	No
	PROFIBUS DP slave	No
PROFINET IO Controller • Transmission rate, max. Services - PG/OP communication - Routing - S7 communication - S7 communication - Isochronous mode - Isochronous mode - Open IE communication - IRT 100 Mbit/s Yes Yes Yes Yes Yes Yes Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Yes; Via TCP/IP, ISO on TCP, and UDP Yes	Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
 ◆ Transmission rate, max. Services — PG/OP communication — Routing — S7 communication — S7 communication — Isochronous mode — Isochronous mode — Open IE communication — Ves; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Ves; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — Open IE communication — Ves; Via TCP/IP, ISO on TCP, and UDP — Ves 	Web server	Yes
Services - PG/OP communication - Routing - S7 communication - S7 communication - Isochronous mode - Isochronous mode - Open IE communication - Open IE communication - IRT - Yes - Yes - Yes - Yes - With loadable FBs, max. configurable connections: 14, max. number of instances: 32 - Yes; OB 61 - isochronous mode is possible either on DP or - PROFINET IO (not simultaneously) - Yes; Via TCP/IP, ISO on TCP, and UDP - Yes	PROFINET IO Controller	
 — PG/OP communication — Routing — S7 communication — Ves; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode — Ves; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — Open IE communication — IRT Yes 	Transmission rate, max.	100 Mbit/s
 Routing S7 communication Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Isochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Open IE communication IRT Yes 	Services	
 Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 Isochronous mode Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) Open IE communication IRT Yes 	— PG/OP communication	Yes
 — S7 communication — Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32 — Isochronous mode — Yes; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) — Open IE communication — IRT Yes 	— Routing	Yes
PROFINET IO (not simultaneously) — Open IE communication Yes; Via TCP/IP, ISO on TCP, and UDP IRT Yes	— S7 communication	
— IRT Yes	— Isochronous mode	
	 Open IE communication 	Yes; Via TCP/IP, ISO on TCP, and UDP
— Prioritized startup	— IRT	Yes
	— Prioritized startup	Yes

Number of IO devices with prioritized	32
startup, max.	128
Number of connectable IO Devices, max.	
Of which IO devices with IRT, max.	64
— of which in line, max.	64
 Number of IO Devices with IRT and the option "high flexibility" 	128
— of which in line, max.	61
Number of connectable IO Devices for RT,	128
max.	1.20
— of which in line, max.	128
 Activation/deactivation of IO Devices 	Yes
 Number of IO Devices that can be 	8
simultaneously activated/deactivated, max.	
— IO Devices changing during operation	Yes
(partner ports), supported	
Number of IO Devices per tool, max.	8
Device replacement without swap medium	Yes
— Send cycles	$250~\mu s,500~\mu s,1$ ms; 2 ms, 4 ms (not in the case of IRT with "high flexibility" option)
— Updating time	250 µs to 512 ms (depending on the operating mode, see "IM 154-8 CPU Interface Module" operating instructions for more details)
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
 User data consistency, max. 	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 routing	Yes
— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
— Isochronous mode	No
— Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
— 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, max.	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, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Keep-alive function, supported	Yes

· Reep-anve function, supported	163
Protocols	
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	8
— Data length, max.	32 768 byte; 1460 bytes with connection type 01H; 32768 bytes with connection type 11H
 several passive connections per port, supported 	Yes
• ISO-on-TCP (RFC1006)	Yes
 Number of connections, max. 	8
— Data length, max.	32 768 byte
• UDP	Yes
 Number of connections, max. 	8
— Data length, max.	1 472 byte
Web server	

 User-defined websites 	Yes
Number of HTTP clients	5

Isochronous mode	
Isochronous operation (application synchronized up	Yes; Via PROFIBUS DP or PROFINET interface
to terminal)	

Communication functions	
PG/OP communication	Yes
Global data communication	
• supported	Yes
 Number of GD loops, max. 	8
 Number of GD packets, max. 	8
 Number of GD packets, transmitter, max. 	8
 Number of GD packets, receiver, max. 	8

Oins of OD markets many	22 huto
Size of GD packets, max.	22 byte 22 byte
 Size of GD packet (of which consistent), max. S7 basic communication 	22 byte
• supported	Yes
• •	76 byte
User data per job, max.User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with
• Oser data per job (or which consistent), max.	X_PUT or X_GET as server)
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 SFCs/FCs of S7 Communication)
Web server	
• supported	Yes
PROFINET CBA (at set setpoint communication load)	
 Setpoint for the CPU communication load 	50 %
 Number of remote interconnection partners 	32
 Number of functions, master/slave 	30
 Total of all master/slave connections 	1 000
 Data length of all incoming connections master/slave, max. 	4 000 byte
 Data length of all outgoing connections master/slave, 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
Remote interconnections with acyclic transmission	
 — Sampling frequency: Sampling time, 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
Remote interconnections with cyclic transmission	
— Transmission frequency: Transmission interval, min.	1 ms
 Number of incoming interconnections 	200
 Number of outgoing interconnections 	200

— Data length of all incoming 2 000 byte	
interconnections, max.	
— Data length of all outgoing 2 000 byte	
interconnections, max.	
— Data length per connection, max. 450 byte	
HMI variables via PROFINET (acyclic)	
— Number of stations that can log on for HMI 3; 2x PN OPC/1x iMap variables (PN OPC/iMap)	
— HMI variable updating 500 ms	
— Number of HMI variables 200	
— Data length of all HMI variables, max. 2 000 byte	
PROFIBUS proxy functionality	
— supported Yes	
— Number of linked PROFIBUS devices 16	
— Data length per connection, max.240 byte; Slave-dependent	
Number of connections	
• overall 16	
• usable for PG communication 15	
— reserved for PG communication 1	
— adjustable for PG communication, min. 1	
— adjustable for PG communication, max.	
• usable for OP communication 15	
— reserved for OP communication 1	
— adjustable for OP communication, min.	
— adjustable for OP communication, max.	
• usable for S7 basic communication 14	
— reserved for S7 basic communication 0	
— adjustable for S7 basic communication, 0	
min.	
— adjustable for S7 basic communication,max.	
• usable for routing X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP	slave
(active): max. 14; X2 as PROFINET: 24 max.	
S7 message functions	
Number of login stations for message functions, max. 16; Depending on the configured connections for PG/OP and the configured connection for P	nd S7
basic communication	
Process diagnostic messages Yes	
simultaneously active Alarm-S blocks, max. 300	
Test commissioning functions	
Status block Yes; Up to 2 simultaneously	
,	
Single step Yes	

Status/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	30
— of which status variables, max.	30
of which control variables, max.	14
Forcing	
• Forcing	Yes
Forcing, variables	I/O
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
Number of entries, max.	500; Only the last 100 entries are retentive at power on/off
— adjustable	No
— preset	10
`	
Potential separation	
between backplane bus and electronics	No
between backplane bus and all other circuit components	Yes
between supply and all other circuits	Yes
Isolation	
Isolation Isolation tested with	In general, 707 V DC (type test), Ethernet interface 1 500 V AC (for P1 and P2 on CM, for P3 on IM)
Isolation tested with	
Isolation tested with Degree and class of protection	(for P1 and P2 on CM, for P3 on IM)
Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK)	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes No Yes
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode • Performance level according to ISO 13849-1	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes PLe
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes No Yes
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Configuration	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes PLe
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Configuration Configuration software	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes PLe SIL 3
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Configuration Configuration software • STEP 7	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes PLe
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Configuration Configuration software • STEP 7 Programming	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes PLe SIL 3 Yes; V5.5 or higher
Isolation tested with Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark CSA approval cULus FM approval RCM (formerly C-TICK) Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Configuration Configuration software • STEP 7	(for P1 and P2 on CM, for P3 on IM) IP65/67 Yes No Yes No Yes PLe SIL 3

• 0	see instruction list
System functions (SFC)	
 System function blocks (SFB) 	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	135 mm
Height	130 mm
Depth	65 mm; 60 mm without cover for RJ45 socket; 65 mm with cover
	for RJ45 socket
Weights	
Weight, approx.	720 g
last modified:	06/15/2018