Data sheet



SIPLUS S7-300 CPU 315F-2DP with conformal coating according to EN 50155 T1 Cat 1 Cl A/ B based on 6ES7315-6FF04-0ab0 . Fail-safe module with MPI Integr. power supply 24 V DC, Work memory 384 KB, 40 mm width, 2nd interface DP master/ slave Micro Memory Card required

Figure similar

General information	
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 218 + Distributed Safety
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes; A power supply according to EN 50155 shall be used
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Mains buffering	
Mains/voltage failure stored energy time	5 ms
• Repeat rate, min.	1 s
Input current	
Current consumption (rated value)	850 mA
Current consumption (in no-load operation), typ.	150 mA

Inrush current, typ.	3.5 A
I ² t	1 A ² ·s
Power loss	
Power loss, typ.	4.5 W
M	
Memory Work memory	
• integrated	384 kbyte
	No No
• expandable	
 Size of retentive memory for retentive data blocks 	128 kbyte
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
CDI I processing times	
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	4 004 (DD- FO- FD-) the maximum and a sile debt block
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	
Description	see instruction 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
Number of startup OBs	1; OB 100
 Number of asynchronous error OBs 	5; OB 80, 82, 85, 86, 87
 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	
— 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)

retentive data area in total	All, 128 KB max.
Flag	
• Number, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2 047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
• per priority class, max.	32 kbyte; Max. 2 KB 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	2 048 byte
Outputs	2 048 byte
Inputs, adjustable	2 048 byte
 Outputs, adjustable 	2 048 byte
● Inputs, default	384 byte
Outputs, default	384 byte
Subprocess images	
 Number of subprocess images, max. 	1
Digital channels	
• Inputs	16 384
— of which central	1 024
Outputs	16 384
— of which central	1 024
Analog channels	
• Inputs	1 024
— of which central	256
Outputs	1 024
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1

e via CD	4	
 via CP Number of operable FMs and CPs (recommended) 	3	
• FM	8	
• CP, PtP	8	
	10	
• CP, LAN Rack	10	
	4	
• Racks, max.	8	
Modules per rack, max.	O	
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	
 Behavior of the clock following expiry of backup period 	Clock continues to run with the time at which the power failure occurred	
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	
• in AS, master	Yes	
Digital inputs		
Number of digital inputs	0	
· .		
Digital outputs Number of digital outputs	0	
Number of digital outputs	0	
Analog inputs		
Number of analog inputs	0	
Analog outputs		
Number of analog outputs	0	
Interfaces		
Number of industrial Ethernet interfaces	0	
Number of PROFINET interfaces	0	

Number of RS 422 interfaces 0		2
Interface type Physics Physics RS 485 Isolated No Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication, as client — S7 communication, as server Ptysics Interface Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI Integrated RS 485 interface Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI No	1. Interface	0
Interface type Physics Physics RS 485 Isolated No Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI Integrated RS 485 interface RS 485 Isolated Pyes - 200 mA Protocols • MPI No		
Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI PROFIBUS DP master Point-to-point connection MPI • Transmission rate, max. Services PG/OP communication Roting Strokes PS7 basic communication PS7 communication S7 communication S8 server S8 Services Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI	Interface type	Integrated RS 485 interface
Power supply to interface (15 to 30 V DC), max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Physics Power supply to interface (15 to 30 V DC), max. Protocols • MPI Ves 200 mA	Physics	RS 485
Protocols	Isolated	No
MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, 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 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols ● MPI No	Power supply to interface (15 to 30 V DC), max.	200 mA
PROFIBUS DP master PROFIBUS DP slave Point-to-point connection No MPI Transmission rate, max. Services PG/OP communication Routing Strokes PS7 basic communication S7 communication S8 communication S9 communication S9 communication S9 communication S9 communication, as server Pyes 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols MPI No	Protocols	
PROFIBUS DP slave Point-to-point connection No MPI Transmission rate, max. 187.5 kbit/s Services PG/OP communication Routing Soluting Soluti	• MPI	Yes
● Point-to-point connection MPI ● Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols ● MPI No	 PROFIBUS DP master 	No
MPI	 PROFIBUS DP slave 	No
 Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server Yes — S7 communication, as server Yes — S7 communication, as server Yes 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. Protocols MPI No 	 Point-to-point connection 	No
Services	MPI	
 — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server Yes — S7 communication, as server Yes 2. Interface Interface type Integrated RS 485 interface Physics — RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. Protocols ● MPI No 	Transmission rate, max.	187.5 kbit/s
— Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols ■ MPI No	Services	
- Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated - Yes Power supply to interface (15 to 30 V DC), max. Protocols • MPI No	— PG/OP communication	Yes
— S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols ■ MPI No	— Routing	Yes
— S7 communication Yes — S7 communication, as client No — S7 communication, as server Yes 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. Protocols ■ MPI No	 Global data communication 	Yes
— S7 communication, as client — S7 communication, as server 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. Protocols ● MPI No	 S7 basic communication 	Yes
— S7 communication, as server 2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols ● MPI No	— S7 communication	Yes
2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. Protocols • MPI No	 S7 communication, as client 	No
Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI Integrated RS 485 interface RS 485 Yes 200 mA No	 S7 communication, as server 	Yes
Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Protocols • MPI Integrated RS 485 interface RS 485 Yes 200 mA No	2. Interface	
Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Protocols ● MPI No		Integrated RS 485 interface
Power supply to interface (15 to 30 V DC), max. 200 mA Protocols • MPI No	Physics	RS 485
Protocols ◆ MPI No	Isolated	Yes
• MPI No	Power supply to interface (15 to 30 V DC), max.	200 mA
	Protocols	
PROFIBUS DP master Yes	• MPI	No
	 PROFIBUS DP master 	Yes
PROFIBUS DP slave Yes	 PROFIBUS DP slave 	Yes
Point-to-point connection No	 Point-to-point connection 	No
PROFIBUS DP master	PROFIBUS DP master	
• Transmission rate, max. 12 Mbit/s	Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max. 124; Per station	Number of DP slaves, max.	124; Per station
Services	Services	
— PG/OP communication Yes		Yes
— Routing Yes		Yes
— Global data communication No	— PG/OP communication	
— S7 basic communication Yes; I blocks only	— PG/OP communication — Routing	No
— S7 communication Yes	— PG/OP communication— Routing— Global data communication	

- S7 communication, as server - Equidistance - Isochronous mode - Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max DPV1 - Address area - Inputs, max Dutyts, max Outputs, max Out	 — S7 communication, as client 	No
- Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max DPV1 Address area - Inputs, max Outputs, max Outputs - Outpu	 — S7 communication, as server 	Yes
- SYNO/FREZE - Activation/deactivation of DP slaves - Number of DP slaves that can be simultaneously activated/deactivated, max DPV1 - Address area - Inputs, max Outputs, ves Outputs, max Outputs, ves Outputs, ves Outputs, ves Outputs, max Outputs, ves Output	— Equidistance	Yes
— Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — DPV1 Address area — Inputs, max. — Outputs, max. — Outputs — The latest GSD file is available at: http://www.siemens.com/profibus-gsd — It puts hashed at: http://www.siemens.com/profibus-gsd	— Isochronous mode	Yes; OB 61
- Number of DP slaves that can be simultaneously activated/deactivated, max DPV1 Address area - Inputs, max Outputs, max. 2 048 byte User data per DP slave - Inputs, max. 2 444 byte - Inputs, max. 2 444 byte PROFIBUS DP slave • GSD file The latest GSD file is available at: http://www.siemens.com/profibus-gsd • Transmission rate, max. 1 2 Mbit/s • automatic baud rate search • Address area, max. 32 • User data per address area, max. 32 • User data per address area, max. 32 Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs - Outputs Lochronous mode Isochronous peraltion (application synchronized up to terminal) Communication functions	— SYNC/FREEZE	Yes
simultaneously activated/deactivated, max. — 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 • GSD file The latest GSD file is available at: http://www.siemens.com/profibus-gsd • 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 — PG/OP communication Yes; Only with active interface — Routing Yes; Only with active interface — Global data communication No — S7 basic communication No — S7 communication, as client No — S7 communication, as client No — S7 communication, as server Yes — Direct data exchange (slave-to-slave communication) — DPV1 No Transfer memory — Inputs — Outputs Lochronous mode Isochronous operation (application synchronized up to terminal) Communication functions	 Activation/deactivation of DP slaves 	Yes
Address area Inputs, max Outputs, max Outputs	 Number of DP slaves that can be 	8
Address area	simultaneously activated/deactivated, max.	
Inputs, max Outputs, max Outputs, max Outputs, max Inputs, max Inputs, max Inputs, max Outputs,	— DPV1	Yes
User data per DP slave Inputs, max. Outputs, max. Outputs O	Address area	
User data per DP slave — Inputs, max. — Outputs, max. — 244 byte PROFIBUS DP slave • GSD file The latest GSD file is available at: http://www.siemens.com/profibus-gsd • Transmission rate, max. • 12 Mbit/s • automatic baud rate search • Address area, max. • User data per address area, max. 32 byte Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs Possible is available at: http://www.siemens.com/profibus-gsd 12 Mbit/s 12	— Inputs, max.	2 048 byte
- Inputs, max Outputs, max Outputs, max Outputs, max Outputs, max Outputs, max Outputs, max Outputs DP slave • GSD file The latest GSD file is available at: http://www.siemens.com/profibus-gsd • Transmission rate, max. • 12 Mbit/s • automatic baud rate search • Address area, max. 32 • User data per address area, max. 32 byte Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs - Outputs Isochronous mode Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions	— Outputs, max.	2 048 byte
- Outputs, max. PROFIBUS DP slave GSD file The latest GSD file is available at: http://www.siemens.com/profibus-gsd Transmission rate, max. automatic baud rate search Address area, max. Services - PG/OP communication Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs - Outputs Isochronous mode Isochronous mode Isochronous operation (application synchronized up to terminal) The latest GSD file is available at: http://www.siemens.com/profibus-gsd 12 Mbit/s Tyes only with passive interface Yes Oply with pas	User data per DP slave	
PROFIBUS DP slave • GSD file • Transmission rate, max. • Transmission rate, max. • Transmission rate, max. • Address area, max. • User data per address area, 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 — Direct data exchange (slave-to-slave communication) — DPV1 Transfer memory — Inputs — Outputs Isochronous mode Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions	— Inputs, max.	244 byte
The latest GSD file is available at: http://www.siemens.com/profibus-gsd Transmission rate, max. It Mbit/s automatic baud rate search Address area, max. User data per address area, max. Peg/OP communication Routing Global data communication S7 communication S7 communication, as client S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 No Transfer memory Isochronous mode Isochronous mode Isochronous mode Isochronous operation (application synchronized up to terminal) Tansfer mency Yes Test SPD file is available at: http://www.siemens.com/profibus-gsd at: http://www.siemens.com/profib	— Outputs, max.	244 byte
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automatic baud rate search Address area, max. 32 User data per address area, max. 32 byte 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 - Direct data exchange (slave-to-slave communication) - DPV1 Transfer memory - Inputs - Outputs Sochronous mode Isochronous mode Isochronous functions Yes; only with passive interface Yes Only with active interface Yes Only server, configured on one side No Yes; Only server, configured on one side No Yes - Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs - Outputs Yes Communication (application synchronized up to terminal) Yes		
Address area, max. User data per address area, max. Services - PG/OP communication Yes - Routing Yes; Only with active interface - Global data communication No - S7 basic communication No - S7 communication Yes; Only server, configured on one side - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs 244 byte - Outputs 244 byte Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions		
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PG/OP communication Routing Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server Direct data exchange (slave-to-slave communication) DPV1 No Transfer memory Inputs Outputs Outputs Outputs Isochronous mode Isochronous mode Isochronous mode Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions		32 byte
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- S7 communication Yes; Only server, configured on one side - S7 communication, as client No - S7 communication, as server Yes - Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs 244 byte - Outputs 244 byte Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions		
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- Direct data exchange (slave-to-slave communication) - DPV1 No Transfer memory - Inputs - Outputs Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions		
communication) — DPV1 No Transfer memory — Inputs 244 byte — Outputs 244 byte Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions		
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— Outputs Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions	Transfer memory	
Isochronous mode Isochronous operation (application synchronized up to terminal) Communication functions	— Inputs	244 byte
Isochronous operation (application synchronized up to terminal) Communication functions	— Outputs	244 byte
Isochronous operation (application synchronized up to terminal) Communication functions	Isochronous mode	
Communication functions		Yes
	to terminal)	
PG/OP communication Yes	Communication functions	
	PG/OP communication	Yes

Data record routing	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
Size of GD packets, max.	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
• supported	Yes
User data per job, max.	76 byte
• User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes; Via CP and loadable FB
 User data per job, max. 	180 byte; With PUT/GET
 User data per job (of which consistent), max. 	240 byte; as server
S5 compatible communication	
• supported	Yes; via CP and loadable FC
Number of connections	
Number of connections • overall	16
	16 15
• overall	
overallusable for PG communication	15
 overall usable for PG communication reserved for PG communication 	15 1
 overall usable for PG communication reserved for PG communication adjustable for PG communication, min. 	15 1 1
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simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
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	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
Number of entries, max.	500
— adjustable	No
of which powerfail-proof	100; Only the last 100 entries are retained
Number of entries readable in RUN, max.	
— adjustable	Yes; From 10 to 499
— preset	10
·	
Isolation	
Isolation tested with	500V AC for 1 minute
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes; File E239877
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	Yes
Railway application	
● EN 50155	Yes; Sections 4, 5 and 12; no further agreements apply; T1, Category 1, Class A/B, EN 50155:2007
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	60 °C; = Tmax; the rated temperature range of -25 +55 °C (T1) applies for the use on railway vehicles according to EN50155

mbient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
ltitude during operation relating to sea level	
 Installation altitude above sea level, max. 	2 000 m
 Ambient air temperature-barometric pressure- altitude 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m)
Relative humidity	
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Use in stationary industrial systems	
 to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
 to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on land craft, rail vehicles and special-purpose	vehicles
 to biologically active substances according to EN 60721-3-5 	Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request
 to chemically active substances according to EN 60721-3-5 	Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *
 to mechanically active substances according to EN 60721-3-5 	Yes; Class 5S3 incl. sand, dust; *
Remark	
 Note regarding classification of environmental conditions acc. to EN 60721 	* The supplied plug covers must remain in place over the unuse interfaces during operation!
Conformal coating	
 Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high availability
 Electronic equipment on rolling stock acc. to EN 50155 	Yes; Class PC2 protective coating acc. to EN 50155:2017
 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Conformal coating, Class A
onfiguration	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
Programming	
Command set	see instruction list

• Nesting levels

8

System functions (SFC)	see instruction list
 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	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	290 g
last modified:	12/08/2018