## Data sheet 6ES7317-7TK10-0AB0



SIMATIC S7-300, CPU 317T-3 PN/DP, Central processing unit for PLC and technology tasks, 1024 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP (drive), 3rd interface Ethernet PROFINET with 2-port switch, Integr. I/O for technology, Front connector (1x 40-pole) and Micro Memory Card min. 8 MB required

General information	
Firmware version	CPU: V3.2; integrated technology V4.1.5
Product function	
<ul> <li>Isochronous mode</li> </ul>	Yes; Via PROFIBUS DP or PROFINET interface
Engineering with	
Programming package	STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3
Supply voltage	
Rated value (DC)	24 V
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.
Load voltage L+	
<ul> <li>Rated value (DC)</li> </ul>	24 V
<ul> <li>Reverse polarity protection</li> </ul>	Yes
Digital outputs	
— Rated value (DC)	24 V; 2L+
<ul> <li>Reverse polarity protection</li> </ul>	No; 2L+
Input current	
Current consumption (rated value)	1 050 mA
Current consumption (in no-load operation), typ.	230 mA
Inrush current, typ.	6.5 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	7.5 W
Memory	
Work memory	
integrated	1 024 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
<ul><li>without battery</li></ul>	Yes; Program and data

CPU processing times	
	0.025 up
for bit operations, typ.	0.025 µs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs
for floating point arithmetic, typ.	0.16 μs
CPU-blocks	
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
<ul><li>Number, max.</li></ul>	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
<ul><li>Number, max.</li></ul>	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
<ul><li>Number, max.</li></ul>	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
<ul><li>Number, max.</li></ul>	see instruction list
• Size, max.	64 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35
<ul> <li>Number of process alarm OBs</li> </ul>	1; OB 40
Number of DPV1 alarm OBs	3; OB 55, 56, 57
Number of isochronous mode OBs	1; OB 61 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously)
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	1; OB 65
Number of startup OBs	1; OB 100
Number of asynchronous error OBs	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	2, 05 121, 122
per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	512
	312
Retentivity — adjustable	Yes
— adjustable — lower limit	res 0
	511
— upper limit	
— preset	Z 0 to Z 7
Counting range	Von
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	Ver
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
• Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	No retentivity

Time range	
— lower limit	10 ms
— upper limit  IEC timer	9 990 s
	Van
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte
Flag	4 000 h. da
• Size, max.	4 096 byte
Retentivity available	Yes; From MB 0 to MB 4 095
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
<ul> <li>Retentivity adjustable</li> </ul>	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	
<ul><li>Inputs</li></ul>	8 192 byte
<ul> <li>Outputs</li> </ul>	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
<ul><li>Inputs</li></ul>	8 192 byte
<ul><li>Outputs</li></ul>	8 192 byte
Inputs, adjustable	8 192 byte
Outputs, adjustable	8 192 byte
• Inputs, default	256 byte
Outputs, default	256 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	65 536
— of which central	256
<ul><li>Outputs</li></ul>	65 536
— of which central	256
Analog channels	
• Inputs	4 096
— of which central	64
<ul> <li>Outputs</li> </ul>	4 096
— of which central	64
Hardware configuration	
Number of expansion units, max.	0
Number of DP masters	
<ul><li>integrated</li></ul>	2; 1 DP and 1 DP (drive)
• via CP	2; for DP
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	8
Rack	
• Racks, max.	1
Modules per rack, max.	8
• • • • • • • • • • • • • • • • • • • •	

ime of day	
Clock	
<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
<ul> <li>retentive and synchronizable</li> </ul>	Yes
Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 s
<ul> <li>Behavior of the clock following POWER-ON</li> </ul>	Clock continues running after POWER OFF
<ul> <li>Behavior of the clock following expiry of backup</li> </ul>	Clock continues to run with the time at which the power failure occurre
period	
Operating hours counter	
<ul><li>Number</li></ul>	4
<ul> <li>Number/Number range</li> </ul>	0 to 3
<ul> <li>Range of values</li> </ul>	0 to 2^31 hours (when using SFC 101)
<ul> <li>Granularity</li> </ul>	1 h
retentive	Yes; Must be restarted at each restart
Clock synchronization	
<ul><li>supported</li></ul>	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes
• to DP, slave	Yes; Only time-of-day slave
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	Yes; As client
ligital inputs	1.55,716 51.51.1
Number of digital inputs	4
of which inputs usable for technological functions	4
Input characteristic curve in accordance with IEC 61131,	Yes
type 1	165
Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	4
— up to 60 °C, max.	4
vertical installation	
— up to 40 °C, max.	4
Input voltage	·
Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+15 to +30 V
Input current	+15 t0 +30 V
·	7 mA
for signal "1", typ.  Input delay (for rated value of input voltage)	I HIPA
for technological functions	10 us: Typical
— at "0" to "1", max.	10 μs; Typical
— at "1" to "0", max.	10 μs; Typical
Cable length	4 000
shielded, max.	1 000 m
ligital outputs	
Number of digital outputs	8
of which high-speed outputs	8
Functions	for technology functions, e.g. high-speed cam switch signals
Short-circuit protection	Yes
Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	48 V
Controlling a digital input	No
Switching capacity of the outputs	
on lamp load, max.	5 W
Load resistance range	

• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	11/42
• for signal "0", max.	3 V; (2L+)
• for signal "1", min.	Rated voltage -2.5 V
Output current	Nated Voltage 2.0 V
for signal "1" rated value	0.5 A
• for signal "1" permissible range for 0 to 60 °C, min.	5 mA
• for signal "1" permissible range for 0 to 60 °C, max.	0.6 A
• for signal "0" residual current, max.	0.3 mA
Parallel switching of two outputs	0.3 IIIA
- ·	No
• for uprating	No No
• for redundant control of a load	No
Switching frequency	400 11
with resistive load, max.	100 Hz
with inductive load, max.	0.2 Hz; According to IEC 60947-5-1, DC-13
• on lamp load, max.	100 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	3 A
all other mounting positions	
— up to 40 °C, max.	4 A
Integrated high-speed cams	
Switching accuracy (+/-)	70 µs
Cable length	
<ul><li>shielded, max.</li></ul>	1 000 m
Analog inputs	
Number of analog inputs	0
Analog outputs	
Analog outputs  Number of analog outputs	0
Number of analog outputs	0
Number of analog outputs Encoder	0
Number of analog outputs  Encoder  Connectable encoders	
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor	0 No
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces	No
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces	No 1
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces	No 1 1 1
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces	No  1 1 2
Number of analog outputs  Encoder  Connectable encoders	No 1 1 1
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface	No 1 1 2 0
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type	No  1 1 2 0 Integrated RS 485 interface
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated	No 1 1 2 0
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type	No  1 1 2 0 Integrated RS 485 interface
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485	No  1 1 2 0 Integrated RS 485 interface
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated  Interface types	No  1 1 2 0 Integrated RS 485 interface Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485	No  1 1 2 0 Integrated RS 485 interface Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.	No  1 1 2 0 Integrated RS 485 interface Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols	No  1 1 2 0 Integrated RS 485 interface Yes Yes 200 mA
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI	No  1 1 2 0 Integrated RS 485 interface Yes  Yes 200 mA
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master	No  1 1 2 0 Integrated RS 485 interface Yes  Yes 200 mA  Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave	No  1 1 2 0 Integrated RS 485 interface Yes Yes 200 mA  Yes Yes Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection	No  1 1 2 0 Integrated RS 485 interface Yes Yes 200 mA  Yes Yes Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection  MPI	No  1 1 2 0  Integrated RS 485 interface Yes  Yes 200 mA  Yes Yes Yes Yes Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection  MPI  • Transmission rate, max.	No  1 1 2 0  Integrated RS 485 interface Yes  Yes 200 mA  Yes Yes Yes Yes Yes Yes
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection  MPI  • Transmission rate, max.  Services	No  1 1 2 0 Integrated RS 485 interface Yes  Yes Yes Yes Yes Yes Yes Yes Yes Y
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection  MPI  • Transmission rate, max.  Services  — PG/OP communication	No  1 1 2 0 Integrated RS 485 interface Yes  Yes 200 mA  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection  MPI  • Transmission rate, max.  Services  — PG/OP communication  — Routing	No  1 1 2 0 Integrated RS 485 interface Yes  Yes 200 mA  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Number of analog outputs  Encoder  Connectable encoders  • 2-wire sensor  Interfaces  Number of industrial Ethernet interfaces  Number of PROFINET interfaces  Number of RS 485 interfaces  Number of RS 422 interfaces  1. Interface  Interface type  Isolated  Interface types  • RS 485  • Output current of the interface, 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	No  1 1 2 0 Integrated RS 485 interface Yes  Yes Yes 200 mA  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye

	<ul> <li>— S7 communication, as client</li> </ul>	No; but via CP and loadable FB
PROFIBUS DP master  • Transmission rate, max. • Number of DP slaves, max.  P-G/OP communication — Routing — P-G/OP communication — ST pasic communication — ST pasic communication — ST communication — ST communication, as client — ST communication — DP slaves that can be simultaneously activated deach value of the simultaneously activated deach value, max. — Direct data exchange (slave-to-slave communication) — DPV1 — Yes — Address area — Inputs, max. — Outputs, max. — Ves, only with passive interface — Address area, max. — 12 Mbit/s — PG/OP communication — ST basic communication — ST basic communication — ST basic communication — ST basic communication — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication, as server — Direct data exchange (slave-to-slave communication) — ST communication		
■ Transmission rate, max     ■ Number of De slaves, max.     ■ Number of De slaves, max.     ■ PG/OP communication     ■ Routing     ■ Clobal data communication     ■ ST basic communication     ■ ST ossic communication     ■ ST communication, as client     ■ ST communication, as client     ■ ST communication, as server     ■ Equidistance     ■ Isochronous mode     ■ ST communication, as server     ■ Equidistance     ■ Isochronous mode     ■ ST communication     ■ ST commu		
Services  - PCOP communication - Routing - Global data communication - ST basic communication - ST open communication - ST communication, as client - ST communication, as client - ST communication, as dient - ST communication, as dient - ST communication, as dient - ST communication, as server - Equidistance - Insochronous mode - STNO/FREEZE - Activation/descrivation of DP slaves - Number of DP slaves that can be simultaneously activated/descrivated, max Direct data exchange (slave-to-slave communication) - DPV1 - PDV1 - PST slave - Inputs, max Outputs, max Outputs, max Outputs, max Outputs, max Stationary - PROFIBUS DP slave - Inputs, max Stationary - Stationar	Transmission rate, max.	12 Mbit/s
- PGOP communication	<ul> <li>Number of DP slaves, max.</li> </ul>	124
Routing Global data communication S7 basic communication S7 basic communication S7 communication, as selent S7 communication, as selent S7 communication, as server Equidistance Isochronous mode ROFIBUS DP or PROFINET IO SYNC/FREEZE Activation/deactivation of DP slaves Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) DPV1 PDP1 PDP1 PDP1 PDP2 PDP3		
- Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as client - 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 Direct data exchange (slave-to-slave communication) - DPV1 - Yes - Inputs, max - Outputs, max - Outputs, max - User data per DP slave - Inputs, max - User data per DP slave - Transmission rate, max - User data per DP slave - Transmission rate, max - User data per Autores area, max - Services - PGOP communication - Routing - Global data communication - S7 communication - S8 485 - Outputs - Ves - No WPI - Inputs - R8 485 - Ves - No WPI - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP slave - No	— PG/OP communication	Yes
	— Routing	Yes
- S7 communication as client No - S7 communication, as server Yes - Equidistance Yes - Equidistance Yes - Equidistance Yes - SYNC/FREEZE Yes - Activation/deactivation of DP slaves Yes - Number of DP slaves that can be simultaneously activated deactivated, max Direct date exchange (slave-to-slave communication) Yes - Inputs, max. 8 kbyte - User data per DP slave - Inputs, max. 244 byte - User data per DP slave - Transmission rate, max User data per address area, max Salvy with passive interface - Address area, max PROFIBUS DP slave - Frommunication No - S7 communication No - S7 communication No - S7 communication, as elient No - S7 communication, as server - Direct data exchange (slave-to-slave communication) No - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPY1 - Inputs - S4 byte - Uputs - Uputs - Yes - Communication No - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPY1 - No - Transfer memory - Inputs - S4 byte - Uputs - Uputs - Yes - R8 d85 - Uput current of the interface, max POFICIBUS DP slave - PROFIBUS DP slave	Global data communication	No
- S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - Isochronous mode - SYNC/FREEZE - Activation/deachwaton of DP slaves - Number of DP slaves that can be simultaneously activated/deachwated, max Direct data exchange (slave-to-slave communication) - DPV1 - Address area - Inputs, max Outputs, max O	<ul> <li>S7 basic communication</li> </ul>	Yes; I blocks only
- S7 communication, as server	— S7 communication	Yes
- Equidistance	<ul> <li>S7 communication, as client</li> </ul>	No
- Equidistance	<ul> <li>S7 communication, as server</li> </ul>	Yes
PROFIBUS DP or PROFINET IO  PROFIDED S DP or PROFINET IO  Activation/deactivation of DP slaves — Activation/deactivation of DP slaves — Number of DP slaves that can be simultaneously activated/deactivated, max. — Direct data exchange (slave-to-slave communication) — DPV1  Address area — Inputs, max. — Outputs, max. — 244 byte  PROFIBUS DP slave  I ransmission rate, max. — 12 Mbit/s  • automatic baud rate search • Address area, max. 32  • User data per address area, max. 32  • User data per address area, max. 32  • User data 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 Transfer memory — Inputs — Outputs — Output current of the interface, max.  Protocols • RS 485  • RS 485  • RS 485  • PROFIBUS DP slave  No  PROFIBUS DP slave  PROFIBUS DP slave  PROFIBUS DP slave  No	— Equidistance	Yes
Activation/deactivation of DP slaves Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) DPV1 DPV1 Address area Inputs, max Outputs, max	— Isochronous mode	
Number of DP slaves that can be simultaneously activated/deactivated, max Direct data exchange (slave-to-slave communication) DPV1 PDV1 -	— SYNC/FREEZE	Yes
simultaneously activated/deactivated, max.  — Direct data exchange (slave-to-slave communication)  — DPV1 Yes  Address area  — Inputs, max. — Outputs, max. — 244 byte  — Inputs, max. — 244 byte  PROFIBUS DP slave  • Transmission rate, max. • 12 Mbit/s • automatic baud rate search • Address area, max. 32 outer data per address area, max. 32 byte  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 — Outputs  • R8 485 • Output current of the interface, max.  Protocois • MPI • PROFIBUS DP master • PROFIBUS DP slave  No  Ves SpP(CRIVE)-Master • PROFIBUS DP slave	<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
communication)  - DPV1  Address area  - Inputs, max.		8
Address area  Inputs, max.  Inputs, max.  Outputs, max.  Itser data per DP slave  Inputs, max.  Itser data per DP slave  Interface type  Interface type  Interface type  Interface type  Interface type  Interface type  Interface, max.  Itser data per address area  Itser data per address area, max.  Itser data per addres		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.	Address area	
User data per DP slave	— Inputs, max.	8 kbyte
Inputs, max. — 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  PG/OP communication Yes; Only with active interface Routing Yes; Only with active interface 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 communication) DPV1 No  Transfer memory Inputs 244 byte Outputs 244 byte  2. Interface Interface type Integrated RS 485 interface Interface type Integrated RS 485 interface Interface type Integrated RS 485 interface Interface type  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP master PROFIBUS DP slave No PROFIBUS DP slave No PROFIBUS DP slave No S44 byte Output S244 byte Output S245 interface PROFIBUS DP slave No -	— Outputs, max.	8 kbyte
	User data per DP slave	
PROFIBUS DP slave  • Transmission rate, max. • automatic baud rate search • 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.  • 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.  • 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.  • 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.  • 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.  • 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.  • 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.  • 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.  • 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.  • 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.  • 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	— Inputs, max.	244 byte
Transmission rate, max. automatic baud rate search Address area, max. User data per address area, max.  PG/OP communication Routing Stroices  PG/OP communication Stroices  PG/OP communication Stroices  PG/OP communication No Stroices  PS basic communication No Stroices PS communication PS communication PS communication PS communication, as client PS connection configured on one side only Pes communication PDPV1 No  Transfer memory  Inputs DIPUT POPUT PROFIBUS DP master PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave	— Outputs, max.	244 byte
automatic baud rate search Address area, max.  Address area, max.  User data per address area, max.  PG/OP communication No PG/OP communication PG/OP commu	PROFIBUS DP slave	
Address area, max. User data per address area, max.  User data per address area, max.   Yes  - PG/OP communication - Routing - Global data communication - S7 basic 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 - DPV1 - No  Transfer memory - Inputs - Outputs  244 byte 2. Interface Interface type Integrated RS 485 interface Isolated Interface types  RS 485 - Output current of the interface, max.  PROFIBUS DP master - PROFIBUS DP slave  32 byte  28 byte  32 byte  485 - Output data exchange - PROFIBUS DP slave  32 byte  32 byte  485 - Ves - Output current of the interface, max.  32 byte  32 byte  485 - Ves - Output current of the interface, max.  486 - PROFIBUS DP paster - PROFIBUS DP slave  No	<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
User data per address area, max.  Services  - PG/OP communication - Routing - Global data communication No - 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 - Outputs  2. Interface type Interface type Interface types  • RS 485 • Output current of the interface, max.  PROFIBUS DP master • PROFIBUS DP master • PROFIBUS DP slave  Yes Only with active interface No  Yes Only with active interface No  Yes; Only with active interface No  Yes; Only with active interface No  Yes; Only with active interface No  No  Tess  • No  Yes  • Only with active interface No  No  Interface  Yes  • Only with active interface No  No  Interface  Yes  • Only with active interface No  No  Tess  • Only with active interface No  No  Yes  • Only with active interface No  No  Tess  • Uses  • Only with active interface No  No  Interface  Interface  • PROFIBUS DP master • PROFIBUS DP slave	<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface
Services  - PG/OP communication		32
- PG/OP communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 - DPV1 - No  Transfer memory - Inputs - Outputs  244 byte  2. Interface Interface type Interface type Interface types - RS 485 - Output current of the interface, max.  Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - No  No  No  Yes - Only with active interface No  No  Yes; Only with active interface No  No  Yes - Only with active interface No	·	32 byte
- Routing Yes; Only with active interface - Global data communication No - S7 basic communication Yes - 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 communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  2. Interface type Integrated RS 485 interface Interface types - RS 485 Yes - Output current of the interface, max. 200 mA  Protocols - MPI No - PROFIBUS DP master - PROFIBUS DP slave No		
- 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 - Outputs - Outputs - Outputs - Integrated RS 485 interface   Integrated RS 485 interface   Interface type   Integrated RS 485 interface   Interface type   Integrated RS 485 interface   Solated		
- S7 basic communication Yes - 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 communication) - DPV1 No  Transfer memory - Inputs - Outputs 244 byte - Outputs 244 byte  2. Interface Interface type Integrated RS 485 interface Isolated Yes Interface types  • RS 485 • Output current of the interface, max. 200 mA  Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave No	<u> </u>	
- 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 communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  2. Interface Interface type Integrated RS 485 interface Interface types  • RS 485 • Output current of the interface, max. 200 mA  Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave  No		
- S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs 244 byte 2. Interface Interface type Interface types - RS 485 - Output current of the interface, max.  Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave - Order data exchange (slave-to-slave yes; Connection configured on one side only Yes; Connection configured on one side only Yes  Yes  Yes  Yes  1 No  Yes - Output a exchange (slave-to-slave yes  Yes - Output current of the interface, max.  No  No - S7 communication, as client Yes - Connection configured on one side only Yes  Yes - Outputs - Yes - Outputs - Yes - Output current of the interface, max Yes - Output current of the interface, max No		
- S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs - Outputs 244 byte 2. Interface Interface type Interface types - RS 485 - Output current of the interface, max.  Protocols - MPI - PROFIBUS DP master - PROFIBUS DP slave  Yes: Connection configured on one side only Yes Connection configured on one side only The subject of the state of the st		
- Direct data exchange (slave-to-slave communication) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  2. Interface Interface type Integrated RS 485 interface Isolated Yes  Interface types • RS 485 • Output current of the interface, max. 200 mA  Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave  Yes  No		
communication)  — DPV1 No  Transfer memory  — Inputs 244 byte  — Outputs 244 byte  2. Interface  Interface type Integrated RS 485 interface Isolated Yes  Interface types  • RS 485 • Output current of the interface, max. 200 mA  Protocols  • MPI • PROFIBUS DP master • PROFIBUS DP slave No		
Transfer memory  — Inputs — Outputs  244 byte  2. Interface  Interface type Interface type Isolated  PROFIBUS DP master PROFIBUS DP slave  244 byte  244 byte  244 byte  244 byte  244 byte  245 byte  246 byte  247 byte  248 byte  249 byte  249 byte  249 byte  249 byte  249 byte  240 byt	communication)	
- Inputs - Outputs 244 byte  2. Interface  Interface type Interface types Interface types  • RS 485 • Output current of the interface, max.  Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave  244 byte  244 byte  244 byte  245 246 247 248 2485 Interface Yes Interface Yes  248 binterface Yes  Yes  Yes  Yes  Yes  9 PROFIBUS DP master  Yes; DP(DRIVE)-Master  No		NO
- Outputs  2. Interface  Interface type Interface types Interface types  • RS 485 • Output current of the interface, max.  Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave  244 byte  Integrated RS 485 interface Yes  Integrated RS 485 interface Yes  Ves  Yes  Yes  Yes  200 mA  Protocols  • MPI • No  Yes; DP(DRIVE)-Master  No	•	0441.4
Interface type Interface type Isolated Interface types Interface types  • RS 485 • Output current of the interface, max.  Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave  Integrated RS 485 interface Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye		•
Interface type Isolated Yes Interface types  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP slave  Integrated RS 485 interface Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye		244 byte
Isolated  Interface types  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP slave  Yes No  Yes  Yes  200 mA  Yes  Yes  200 mA  Protocols  No		
Interface types  RS 485 Output current of the interface, max.  Protocols  MPI PROFIBUS DP master PROFIBUS DP slave  No		
<ul> <li>RS 485         <ul> <li>Output current of the interface, max.</li> </ul> </li> <li>Protocols         <ul> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> </ul> </li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> </ul>		Yes
<ul> <li>Output current of the interface, max.</li> <li>Protocols</li> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>No</li> <li>No</li> <li>Yes; DP(DRIVE)-Master</li> <li>No</li> </ul>	* *	
Protocols		
<ul> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>No</li> </ul>	·	200 mA
<ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>Yes; DP(DRIVE)-Master</li> <li>No</li> </ul>		
PROFIBUS DP slave     No		
Point-to-point connection     No		
	<ul> <li>Point-to-point connection</li> </ul>	No

PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	64
Services	· ·
— PG/OP communication	No
— Routing	No
Global data communication	No
— S7 basic communication	No
— S7 communication	No
— Equidistance	Yes
— Isochronous mode	Yes
— SYNC/FREEZE	No
Activation/deactivation of DP slaves	Yes
— DPV1	No
Address area	
— Inputs, max.	1 024 byte
— Outputs, max.	1 024 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• GSD file	http://support.automation.siemens.com in Product Support area
Transmission rate, max.	12 Mbit/s
3. Interface	12 molec
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
	Yes
Autocrossing Change of IP address at runtime, supported	Yes
Interface types	165
• RJ 45 (Ethernet)	Yes
Number of ports	2
integrated switch	Yes
Protocols	163
• MPI	No
PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Controller  PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
PROFIBUS DP master	No
PROFIBUS DP slave	No
	Yes; Via TCP/IP, ISO on TCP, and UDP
<ul><li>Open IE communication</li><li>Web server</li></ul>	Yes, Via TCP/IP, ISO ON TCP, and ODP
<ul><li>Web server</li><li>Media redundancy</li></ul>	Yes
PROFINET IO Controller	163
	100 Mbit/s
Transmission rate, max.  Services	TOO INIDIUS
— PG/OP communication	Yes
	Yes
<ul><li>— Routing</li><li>— S7 communication</li></ul>	
	Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— Shared device	Yes
<ul> <li>Prioritized startup</li> </ul>	Yes
<ul> <li>Number of IO devices with prioritized startup, max.</li> </ul>	32
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	128
<ul> <li>Of which IO devices with IRT, max.</li> </ul>	64
— of which in line, max.	64

500 μs, 1 ms, 2 ms, 4 ms o 512 ms (depending on the operating mode, see Manual "S7- J 31xC and CPU 31x, technical Data" for more details)
o 512 ms (depending on the operating mode, see Manual "S7- I 31xC and CPU 31x, technical Data" for more details)
o 512 ms (depending on the operating mode, see Manual "S7- I 31xC and CPU 31x, technical Data" for more details)
o 512 ms (depending on the operating mode, see Manual "S7- I 31xC and CPU 31x, technical Data" for more details)
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o 512 ms (depending on the operating mode, see Manual "S7- I 31xC and CPU 31x, technical Data" for more details)
J 31xC and CPU 31x, technical Data" for more details)
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n loadable FBs, max. configurable connections: 16, max. of instances: 32
n SFB 73 / 74 prepared for loadable PROFlenergy standard FB ice
te; Per IO Controller with shared device
te; Per IO Controller with shared device
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, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 5533, 65534, 65535
PROFINET MRP
integrated PROFINET interface and loadable FBs
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integrated PROFINET interface and loadable FBs
yte
integrated PROFINET interface and loadable FBs
te
113

• cumported	Yes
<ul><li>supported</li><li>User-defined websites</li></ul>	Yes
Number of HTTP clients	
	5
Communication functions	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
<ul><li>supported</li></ul>	Yes
<ul> <li>Number of GD loops, max.</li> </ul>	8
<ul> <li>Number of GD packets, max.</li> </ul>	8
<ul> <li>Number of GD packets, transmitter, max.</li> </ul>	8
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	8
<ul> <li>Size of GD packets, max.</li> </ul>	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
<ul><li>supported</li></ul>	Yes
<ul> <li>User data per job, max.</li> </ul>	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 integrated PROFINET interface and loadable FB or via CP and loadable FB
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)
S5 compatible communication	
supported	Yes; via CP and loadable FC
Number of connections	
<ul><li>overall</li></ul>	32
<ul> <li>usable for PG communication</li> </ul>	31
<ul> <li>reserved for PG communication</li> </ul>	1
<ul> <li>adjustable for PG communication, min.</li> </ul>	1
<ul> <li>adjustable for PG communication, max.</li> </ul>	31
<ul> <li>usable for OP communication</li> </ul>	31
<ul> <li>reserved for OP communication</li> </ul>	1
<ul> <li>adjustable for OP communication, min.</li> </ul>	1
<ul> <li>adjustable for OP communication, max.</li> </ul>	31
<ul> <li>usable for S7 basic communication</li> </ul>	30
<ul> <li>reserved for S7 basic communication</li> </ul>	0
<ul> <li>adjustable for S7 basic communication, min.</li> </ul>	0
<ul> <li>adjustable for S7 basic communication, max.</li> </ul>	30
<ul> <li>usable for S7 communication</li> </ul>	16
<ul> <li>reserved for S7 communication</li> </ul>	0
<ul> <li>adjustable for S7 communication, min.</li> </ul>	0
<ul> <li>adjustable for S7 communication, max.</li> </ul>	16
total number of instances, max.	32
usable for routing	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave
S7 message functions	(active): max. 14; X2 as PROFINET: 24 max.
Number of login stations for message functions, max.	32; Depending on the configured connections for PG/OP and S7 basic
	communication
Process diagnostic messages simultaneously active Alarm-S blocks, max.	Yes 300
Test commissioning functions	300
	Variable to 0 significances
Status block	Yes; Up to 2 simultaneously
Status block Single step	Yes
Status block	

Substatiscention Variables Variables Number of variables, max.  of which status variables, max.  of which status variables, max.  14  Forcing Forcing Forcing Forcing, variables Number of variables, max.  10  Sugnantia buffer Person, variables No  - adjustable Of which powerfal-proof Number of entries readable in RUN, max.  - adjustable Of which powerfal-proof Number of entries readable in RUN, max.  - adjustable Of which powerfal-proof Number of entries readable in RUN, max.  - adjustable Of which powerfal-proof Number of entries readable in RUN, max.  - adjustable Of which powerfal-proof No  Service data  - present Of which powerfal-proof No  Diagnostics function Diagnostics function No  Diagnostics function Diagnostics function No  Diagnostics function LED Status indicator digital input (green) Status indicator digital input Stat	Ohah salaa sahaal saasiah la	V
Number of variables, max  of which status variables, max.  14  Forcing  Forcing  Forcing, variables  Forcing (Forcing, variables)  Forcing (Forcing, variab	Status/control variable	Yes
- of which status variables, max.		
- of which control variables, max. Forcing For		
Forcing Forcing Forcing yariables Forcing yariab		
Forcing		14
Porceing, variables Number of variables, max.  Present Poresent Number of entries, max.  -adjustable Of which powerfail proof Number of entries readable in RUN, max.  -adjustable Present  Number of entries readable in RUN, max.  -adjustable Preset  No	_	
Number of variables, max.   10		
Diagnostic buffer  • present  • present  • Number of entries, max.  —adjustable —of which powerfall-proof  • Number of entries readable in RUN, max.  —adjustable —preset  10  Service data —preset  • can be read out  Interrupts/diagnostics/status information  Alarms  Diagnostics function  Alarms  Diagnostics indication LED  • Status indicator digital pout (green) • Status indicator digital input  • between the channels and backplane bus  • configuration  Configuration  Configuration  Configuration  Configuration software  • STEP 7  Ves. STEP 7 V5.5 SP2 or higher and S7-Technology option package  V4.2 SP3  Programming  • Command set  • see instruction list  • Nesting levels  • System function slocks (SFB)  Programming  - Command set  • see instruction list  • System functions (SFC)  • System functions (SFC)  • System function blocks (SFB)  Programming  - LAD  — FBD  — FBD  — STL  — SCL  — CFC  — GRAPH — Yes  - SCL  — GFC  — GRAPH — HiGraphè  No  Dimensions		Inputs, outputs
Prosent Number of entries, max. — a djustable — of which powerfall-proof Number of entries readable in RUN, max. — a djustable — or which powerfall-proof Number of entries readable in RUN, max. — a djustable — preset — preset — preset — preset — or an be read out — read out — read out — or an be read out — or a		10
No Number of entries, max.  - adjustable - of which powerfail-proof No Number of entries readable in RUN, max.  - Adjustable - preset 10 No Number of entries readable in RUN, max.  - adjustable - preset 10 No Number of entries readable in RUN, max.  - Adjustable - preset 10 No N	Diagnostic buffer	
adjustable of which powerfail-proof 1000. Only the last 100 entries are retained 1000. Only the last 1000 entries are	<ul><li>present</li></ul>	Yes
- of which powerfall-proof  • Number of entries readable in RUN, max.  - adjustable - preset 10  Service data  • can be read out  Interrupts (diagnostics status information Alarms Diagnostics function Diagnostics function Diagnostics indication LED  • Status indicator digital input (green) • Status indicator digital inputs • between the channels and backplane bus  Potential separation digital inputs • between the channels and backplane bus • b	<ul> <li>Number of entries, max.</li> </ul>	500
Number of entries readable in RUN, max. — adjustable — preset — preset — ocan he read out  Interrupts/diagnostics/status information  Alarms — No Diagnostics function Diagnostics function Diagnostics function — Status indicator digital input (green) — Status indicator digital input (green) — Status indicator digital inputs — Status indicator digital inputs — between the channels and backplane bus Potential separation digital outputs — between the channels and backplane bus  Potential separation digital outputs — between the channels and backplane bus  Potential separation digital outputs — between the channels and backplane bus  Solo V DC  Ambient conditions  Ambient conditions  Ambient conditions  Ambient conditions  Configuration  Configuration software — STEP 7  Yes: STEP 7 V5.5 SP2 or higher and S7-Technology option package  V4.2 SP3  Programming  • Command set • Nesting levels • System function blocks (SFB) — see instruction list  8 • System function blocks (SFB) — see instruction list  Programming language  — LAD — FBD — STL — SCL — CFC — Yes — GRAPH — HiGraph®  Know-how protection • User program protection/password protection • Block encryption	— adjustable	No
adjustable — preset 10  Service data  • can be read out Yes   Interrupts/dispnostics/status information   Alarms No   Diagnostics function   Obignostics function   Obignostics indication LED   Obignostics indication digital input (green) Yes   Obtain separation   Potential separation digital inputs   Obtain separation separation separation   Obtain separation separation separation   Obtain separation separation separation   Obtain separation separation separation separation   Obtain separation separation separation   Obtain separation sep	<ul><li>— of which powerfail-proof</li></ul>	100; Only the last 100 entries are retained
- preset  • can be read out    Yes	<ul> <li>Number of entries readable in RUN, max.</li> </ul>	499
Service data  • can be read out  interrupts/dagnostics/status information  Alarms  Diagnostics function  Status indicator digital input (green)  • Status indicator digital input (green)  • Status indicator digital inputs  • Status indicator digital inputs  • between the channels and backplane bus  • Detential separation digital outputs  • between the channels and backplane bus  • both temperature during operation  • min.  • max.  • 60 °C  Configuration  Configuration  Configuration  Configuration  Configuration  • STEP 7  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package v4.2 SP3  Programming  • Command set  • Nesting levels  • See instruction list  • Nesting levels  • System functions (SFC)  • System function blocks (SFB)  Programming language  — LAD — FBD — FBD — STL — SCL — CFC — GRAPH — HiGraph® — Yes  Know-how protection  • User program protection/password protection • Block encryption  Dimensions	— adjustable	Yes; From 10 to 499
Can be read out	— preset	10
Interrupts/diagnostics/status information Alarms No Diagnostics function No Diagnostics indication LED  • Status indicator digital input (green) Yes • Status indicator digital input (green) Yes Potential separation Potential separation digital inputs • between the channels and backplane bus Potential separation digital outputs • between the channels and backplane bus   Solation		
Alarms No Diagnostics function No Diagnostics indication LED  • Status indicator digital input (green) Yes Status indicator digital input (green) Yes Potential separation digital inputs • between the channels and backplane bus Yes Potential separation digital outputs • between the channels and backplane bus Yes    Solation	• can be read out	Yes
Alarms No Diagnostics function No Diagnostics indication LED  • Status indicator digital input (green) Yes Status indicator digital input (green) Yes Potential separation digital inputs • between the channels and backplane bus Yes Potential separation digital outputs • between the channels and backplane bus Yes    Solation	Interrupts/diagnostics/status information	
Diagnostics indication LED  • Status indicator digital input (green) • Status indicator digital output (green) • Status indicator digital output (green) • Status indicator digital output (green)  Potential separation Potential separation digital inputs • between the channels and backplane bus  Potential separation digital outputs • between the channels and backplane bus  Isolation Isolation Isolation tested with  Ambient conditions  Ambient conditions  Ambient temperature during operation • min.		No
Diagnostics indication LED  • Status indicator digital input (green) • Status indicator digital output (green) • Status indicator digital output (green) • Status indicator digital output (green)  Potential separation Potential separation digital inputs • between the channels and backplane bus  Potential separation digital outputs • between the channels and backplane bus  Isolation Isolation Isolation tested with  Ambient conditions  Ambient conditions  Ambient temperature during operation • min.	Diagnostics function	No
Status indicator digital input (green) Status indicator digital output (green) Potential separation Polential separation digital inputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • between the channels and backplane bus Potential separation digital outputs  • bot VC  Conflouration Configuration software  • STEP 7  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming  • Command set • Nesting levels • See instruction list  • System function s(SFC) • System function blocks (SFB) Programming language  — LAD — FBD — FBD — FBD — FBD — STL — SCL — Yes — SCL — CFC — GRAPH — HiGraph®  Know-how protection • User program protection/password protection • Block encryption		
Status indicator digital output (green)  Potential separation  Potential separation digital inputs	-	Yes
Potential separation Potential separation digital inputs  • between the channels and backplane bus    Solution		Yes
Potential separation digital inputs  • between the channels and backplane bus    Solution		
between the channels and backplane bus     Potential separation digital outputs		
Potential separation digital outputs		Yes
between the channels and backplane bus  Isolation  Isolation tested with  Ambient conditions  Ambient temperature during operation      • min.     • max.     • 60 °C  Configuration  Configuration  Configuration software      • STEP 7      Ves; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming      • Command set     • Nesting levels     • System function s(SFC)     • System function blocks (SFB)  Programming language      — LAD     — FBD     — FBD     — STL     — SCL     — CFC     — GRAPH     — HiGraph®  Know-how protection     • Block encryption  Dimensions		100
Isolation		Yes
Isolation tested with 500 V DC  Amblent conditions  Ambient temperature during operation  • min. 0 °C  • max. 60 °C  Configuration  Configuration software  • STEP 7 Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  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 — STL Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes — HiGraph® Yes  Know-how protection  • User program protection/password protection • Block encryption  Pinnersions		
Ambient temperature during operation  • min. • max. • max. • 60 °C  Configuration  Configuration software  • STEP 7  • Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming  • Command set • Nesting levels • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — SCL — CFC — GRAPH — HiGraph®  Know-how protection • User program protection/password protection • Block encryption  Dimensions		500 V DC
Ambient temperature during operation  • min. • max.  60 °C  Configuration  Configuration software  • STEP 7  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming  • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — SCL — CFC — GRAPH — HiGraph®  Know-how protection • User program protection/password protection • Block encryption  P °C  60 °C  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package v4.2 SP3  Yes instruction list  see instruction list  Yes  yes  yes  yes  Yes  Yes  FBD — STL — Yes — SCL — Yes — GRAPH — Yes — HiGraph®  Know-how protection • User program protection/password protection • Block encryption  P yes  Yes; With S7 block Privacy		300 V DC
<ul> <li>min.</li> <li>max.</li> <li>60 °C</li> </ul> Configuration Configuration software <ul> <li>STEP 7</li> <li>Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3</li> </ul> Programming <ul> <li>Command set</li> <li>Nesting levels</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>see instruction list</li> </ul> Programming language <ul> <li>LAD</li> <li>FBD</li> <li>STL</li> <li>SCL</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> </ul> Know-how protection <ul> <li>User program protection/password protection</li> <li>Block encryption</li> </ul> Ves <ul> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul> Kinth S7 block Privacy Dimensions		
max. 60 °C  Configuration  Configuration software      STEP 7 Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming      Command set     Nesting levels     System functions (SFC)     see instruction list     System function blocks (SFB)  Programming language      LAD     Yes     STEP 7 V5.5 SP2 or higher and S7-Technology option package v4.2 SP3  Programming      System function list      System function list  Programming language      LAD     Yes     STL     Yes     STL     Yes     STL     Yes     SCL     CFC     GRAPH     Yes     HiGraph®  Know-how protection  User program protection/password protection     Block encryption  Pimensions		0.00
Configuration  Configuration software  STEP 7  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming  Command set See instruction list System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD Yes STL SCL SCL SCL SCR GRAPH HiGraph®  Know-how protection User program protection/password protection SIED Ves; With S7 block Privacy		
Configuration software  • STEP 7  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming  • Command set  • Nesting levels  • System functions (SFC)  • System function blocks (SFB)  Programming language  — LAD  — FBD  — STL  — SCL  — SCL  — CFC  — GRAPH  — HiGraph®  Know-how protection  • User program protection/password protection		60 °C
STEP 7  Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Programming  Command set See instruction list See instruction list System functions (SFC) See instruction list Programming language  LAD Yes FBD Yes STL SCL SCL Yes CFC GRAPH HiGraph®  Know-how protection User program protection/password protection Yes; With S7 block Privacy  Dimensions		
Programming  Command set  Nesting levels  System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD FBD FBD STL SCL SCL FC GRAPH HIGraph®  Know-how protection User program protection/password protection Block encryption  V4.2 SP3  See instruction list  see instruction list  Yes see instruction list  Yes Y		
Programming  Command set See instruction list System functions (SFC) See instruction list System function blocks (SFB) See instruction list System function blocks (SFB)  Programming language  LAD Yes FBD Yes STL Yes SCL Yes CFC GRAPH HiGraph®  Know-how protection User program protection/password protection Block encryption  See instruction list Yes	• STEP /	
Command set  Nesting levels  System functions (SFC)  System function blocks (SFB)  Programming language	Programming	V-1.2 01 0
<ul> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>See instruction list</li> <li>System function blocks (SFB)</li> <li>See instruction list</li> </ul> Programming language <ul> <li>LAD</li> <li>FBD</li> <li>Yes</li> <li>STL</li> <li>Yes</li> <li>SCL</li> <li>Yes</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> <li>Ves</li> </ul> Know-how protection <ul> <li>User program protection/password protection</li> <li>Block encryption</li> </ul> Ves; With S7 block Privacy Dimensions		see instruction list
System functions (SFC) System function blocks (SFB)  Programming language		
● System function blocks (SFB)  Programming language  — LAD — FBD — FBD — STL — SCL — SCL — CFC — GRAPH — HiGraph®  Know-how protection ● User program protection/password protection ● Block encryption  Pyes  see instruction list  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y		
Programming language  — LAD — FBD — FBD — STL — SCL — SCL — CFC — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Pres  Yes Yes Yes Yes Yes Yes Yes Yes  Know-how Protection Yes Yes; With S7 block Privacy	, ,	
— LAD — FBD — FBD — Yes — STL — SCL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  ● User program protection/password protection ● Block encryption  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye		333 Hoteldott not
- FBD Yes - STL Yes - SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes  Know-how protection  ● User program protection/password protection ● Block encryption Yes; With S7 block Privacy  Dimensions		Yes
- STL Yes - SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes  Know-how protection  • User program protection/password protection • Block encryption Yes; With S7 block Privacy  Dimensions		
- SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes  Know-how protection  • User program protection/password protection • Block encryption Yes; With S7 block Privacy  Dimensions		
- CFC - GRAPH - HiGraph® Yes  Know-how protection  ● User program protection/password protection ● Block encryption Yes; With S7 block Privacy  Dimensions		
— GRAPH — HiGraph® Yes  Know-how protection  ● User program protection/password protection  ● Block encryption Yes; With S7 block Privacy  Dimensions		
— HiGraph® Yes  Know-how protection		
Know-how protection  • User program protection/password protection  • Block encryption  Yes; With S7 block Privacy  Dimensions		
<ul> <li>User program protection/password protection</li> <li>Block encryption</li> <li>Dimensions</li> </ul> Yes Yes; With S7 block Privacy		165
◆ Block encryption Yes; With S7 block Privacy  Dimensions	·	Vac
Dimensions		
		166, WILLIOT DIOCK I TIVACY
wiath 120 mm		400
	vviath	120 mm

Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	640 g

last modified: 3/25/2021 🖸