SIEMENS

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

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+ • • Rated value (DC) 24 V • Rated value (DC) 24 V • Reverse polarity protection Yes Digital outputs - - Rated value (DC) 24 V, 2L+ - Reverse polarity protection No; 2L+ Input current 1 050 mA Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Innush current, typ. 6.5 A Pt 1 A*s Power loss, typ. 7.5 W Memory • • integrated 1 024 kbyte • expandable No Load memory • • Plug-in (MMC), max, • 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • • present • Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data	General information	
Product function Yes • Programming package Yes; Via PROFIBUS DP or PROFINET interface Engineering with • Programming package STEP 7 Vs.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, lower limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.4 min. Load voltage 1+ - • Rated value (DC) 24 V • Rated value (DC) 24 V • Reverse polarity protection Yes Digital outputs - - Rated value (DC) 24 V 21+ - Reverse polarity protection No; 21+ Input current - Current consumption (rated value) 1050 mA Current consumption (in no-load operation), typ. 230 mA Innush current, typ. 6 5 A Power loss, typ. - Power loss, typ. No Load memory - • Integrated 1024 koyte • expandable No </td <td>HW functional status</td> <td>01</td>	HW functional status	01
• Isochronous modeYes; Via PROFIBUS DP or PROFINET interfaceEngineering withForgramming packageSTE 7 V5.5 SP2 or higher and S7.Technology option package V4.2 SP3Sypply orlogsRated value (DC)24 Vpermissible range, upper limit (DC)28.8 Vpermissible range, upper limit (DC)28.8 Vpermissible range, upper limit (DC)28.8 Voverlang upper limit (DC)28.8 Vexternal protection for power supply lines (recommendation)2 A min.Load value (DC)24 V- Rated value (DC)24 V 2- Rated value (DC)24 V 2,1+- Rated value (DC)24 V, 2,1+- Rated value (DC)23 O mA- Rated value (DC)23 O mA- Reverse polarity protectionNo; 2,1+Insult current230 mACurrent consumption (rated value)1050 mACurrent consumption (no no-load operation), typ.65 AInsult current, typ.7.5 WPower loss7.5 WPower lossNoVer standableNoLoad memory104 kbyte• Integrated1024 kbyte• expandableNoLoad memory10 a• Plug-in (MMC)8 Moyte• Plug-in (MMC)10 a• Plug-in (MMC)9.8 Moyte• Plug-in (MMC)10 a• Plug-in (MMC)Yes; Forgram and data• Plug-in (MMC)Yes; Porgram and data• Plug-in (MMC)Yes; Porgram and data• Plug-in (IMC)Yes; Porgram and data <t< td=""><td>Firmware version</td><td>CPU: V3.2; integrated technology V4.1.5</td></t<>	Firmware version	CPU: V3.2; integrated technology V4.1.5
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) 28.8 V external protection for power supply lines (recommendation) 2 A win. • Rated value (DC) 24 V • Reverse polarity protection Yes • Current consumption (rated value) 1050 mA • Current consumption (rated value) 1050 mA • Reverse polarity protection Yes • Power loss typ. 7.5 W • Power loss, typ. 1024 koyte • expandable No • Load memory	Product function	
• Programming packageSTEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3Supply voltageRated value (DC)4 Vpermissible range, uoper limit (DC)28.8 Vpermissible range, uoper limit (DC)24. Nin.Load voltage 1• Rated value (DC)24. V• Rated value (DC)24. V• Rated value (DC)24. V• Rated value (DC)24. V Rate value (DC)20. Man Rate value (DC)20. Man Rue (rate (DC)20. Man. <td>Isochronous mode</td> <td>Yes; Via PROFIBUS DP or PROFINET interface</td>	Isochronous mode	Yes; Via PROFIBUS DP or PROFINET interface
Supply voltage 24 V Rated value (DC) 24 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.A min. Load voltage L+	Engineering with	
Rated value (DC) 24 V permissible range, lower limit (DC) 192 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A min. Load voltage L+ 2 A v • Rated value (DC) 24 V • Reverse polarity protection Yes Digital outputs	 Programming package 	STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3
permissible range, lower limit (DC) 19.2 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.4 min. Load voltage L+ - - Rated value (DC) 24 V - Rated value (DC) 24 V: 2L+ - Rated value (DC) 24 V: 2L+ - Rated value (DC) 24 V: 2L+ - Rated value (DC) 230 mA Inrush current 230 mA Current consumption (rated value) 1050 mA Current tonsumption (rated value) 6.5 A Pt 1A*s Power loss - Power loss, typ. 7.5 W Memory - • integrated 1024 kbyte • expandable No Load memory - • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup - • present Yes; Forgram and data • without battery Yes; Forgram and data	Supply voltage	
permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A min. Load voltage L+ • • Rated value (DC) 24 V • Rated value (DC) 24 V; 2L+ - Rated value (DC) 24 V; 2L+ - Reverse polarity protection No; 2L+ Input current Verse Current consumption (rated value) 1 050 mA Current consumption (rated value) 1 050 mA Current consumption (rated value) 1 050 mA Power loss 75 M Power loss Verse separated Power loss 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max, 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times No.25 µs	Rated value (DC)	24 V
external protection for power supply lines (recommendation) 2 A min. Load voltage L+ FReverse polarity protection 24 V • Reverse polarity protection 24 V; 2L+ Preverse polarity protection Digital outputs	permissible range, lower limit (DC)	19.2 V
Load voltage L+ • Rated value (DC) • Reverse polarity protection - Rated value (DC) - Rated value (DC) - Rated value (DC) - Rated value (DC) - Reverse polarity protection - Reverse polarity protection - Reverse polarity protection - Reverse polarity protection - Integrated - Integrated - Integrated - Plug-in (MMC) man. - Plug-in (MMC), max. - Plug-in (MMC), max. - Plug-in (MMC), max. - Plug-in (MMC), max. - Present - present	permissible range, upper limit (DC)	28.8 V
Rade value (DC)24 V• Reverse polarity protectionYesDigital outputs Rated value (DC)24 V; 2L+- Reverse polarity protectionNo; 2L +Input current1050 mACurrent consumption (rated value)1050 mACurrent consumption (in no-load operation), typ.230 mAInrush current, typ.6.5 APreverse polarity protection1.4²-sPower loss, typ.7.5 WPower loss, typ.7.5 WMemoryIntegrated• Integrated1.024 kbyte• spandableNoLoad memoryYes• Plug-in (MKC), max.8 Mbyte• Plug-in (MKC), max.8 Mbyte• Data management on MMC (after last programming), min.8 Scaurateed by MMC (maintenance-free)• without batteryYes; Carranteed by MMC (maintenance-free)• without batteryYes; Program and dataCPU processing times0.025 µs	external protection for power supply lines (recommendation)	2 A min.
• Reverse polarity protection Yes Digital outputs 24 V; 2L+ Rated value (DC) 24 V; 2L+ Reverse polarity protection 005 2L+ Input current 005 2L+ Current consumption (rated value) 1 050 mA Current consumption (rated value) 230 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A Prower loss 75 W Power loss, typ. 7.5 W Memory 75 W • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs	Load voltage L+	
Digital outputs Rated value (DC) 24 V; 2L+ Reverse polarity protection No; 2L+ Input current 230 mA Current consumption (rated value) 1 050 mA Current consumption (no-load operation), typ. 230 mA Inrush current, typ. 6.5 A Pt 1 A*s Power loss, typ. 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup vers; Suaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs	Rated value (DC)	24 V
Rated value (DC)24 V; 2L+ Reverse polarity protectionNo; 2L+Input currentCurrent consumption (rated value)1050 mACurrent consumption (in no-load operation), typ.230 mAInrush current, typ.6.5 APt1 A²-sPower lossPower loss, typ.7.5 WMemory1024 kbyte• integratedNoLoad memoryNo• Plug-in (MMC)Yes• Plug-in (MMC), max.8 Mbyte• Data management on MMC (after last programming), min.10 aBackupYes; Guaranteed by MMC (maintenance-free)• without batteryYes; Program and dataCPU processing times0.025 µs	 Reverse polarity protection 	Yes
Reverse polarity protection No; 2L+ Input current 1 050 mA Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A I't 1 A²-s Power loss 7.5 W Memory 000000000000000000000000000000000000	Digital outputs	
Input current Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A I*t 1 A*s Power loss, typ. 7.5 W Memory Work memory • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs	— Rated value (DC)	24 V; 2L+
Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A I²t 1 A²-s Power loss 7.5 W Memory 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs	 Reverse polarity protection 	No; 2L+
Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A IPt 1 A²-s Power loss Power loss, typ. Power loss, typ. Power loss, typ. Vork memory • integrated • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times for bit operations, typ. 0.025 µs	Input current	
Inrush current, typ. 6.5 A IPt 1 A²-s Power loss Power loss, typ. Power loss, typ. 7.5 W Memory • integrated 1 024 kbyte • expandable No Load memory Vers • Plug-in (MMC), max. 8 Mbyte • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times for bit operations, typ. 0.025 µs	Current consumption (rated value)	1 050 mA
I* 1 A²-s Power loss 7.5 W Power loss, typ. 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.025 µs	Current consumption (in no-load operation), typ.	230 mA
Power loss Power loss, typ. 7.5 W Memory Memory Work memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.025 µs	Inrush current, typ.	6.5 A
Power loss, typ. 7.5 W Memory Vork memory • integrated 1 024 kbyte • expandable No Load memory Ves • Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Ves; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs	l²t	1 A ² ·s
Memory Work memory integrated 1 024 kbyte expandable No Load memory Plug-in (MMC) Yes Plug-in (MMC), max. 8 Mbyte Data management on MMC (after last programming), min. 10 a Backup 10 a expresent Yes; Guaranteed by MMC (maintenance-free) without battery Yes; Program and data CPU processing times 0.025 µs	Power loss	
Work memory • integrated 1 024 kbyte • expandable No Load memory • Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times for bit operations, typ. 0.025 µs	Power loss, typ.	7.5 W
• integrated 1 024 kbyte • expandable No Load memory Image: Constraint of the second of the seco	Memory	
expandable No Load memory • Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs	Work memory	
Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup	 integrated 	1 024 kbyte
• Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup	expandable	No
• Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs	Load memory	
• Data management on MMC (after last programming), min. 10 a Backup • present • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs	• Plug-in (MMC)	Yes
min. Backup	• Plug-in (MMC), max.	8 Mbyte
• present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs		10 a
• without battery Yes; Program and data CPU processing times for bit operations, typ. 0.025 µs	Backup	
CPU processing times for bit operations, typ. 0.025 µs	• present	Yes; Guaranteed by MMC (maintenance-free)
for bit operations, typ. 0.025 µs	without battery	Yes; Program and data
	CPU processing times	
for word operations, typ. 0.03 µs	for bit operations, typ.	0.025 μs
	for word operations, typ.	0.03 µs

for fixed point arithmetic, typ	0.04 us
for fixed point arithmetic, typ. for floating point arithmetic, typ.	0.04 μs 0.16 μs
PU-blocks	0.10 µS
	2.049: (DDa ECa EDa): the maximum number of leadable blacks can be
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
• Number, max.	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 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously)
 Number of technology synchronous alarm OBs 	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	
 per priority class 	16
 additional within an error OB 	4
ounters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	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	9 990 s
IEC timer	
● present ● Type	Yes SFB

Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte
Flag	
• 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	
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	8 192 byte
Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
Inputs	8 192 byte
• Outputs	8 192 byte
Inputs, adjustable	8 192 byte
	8 192 byte
Outputs, adjustable	
Inputs, default	256 byte
• Outputs, default	256 byte
Default addresses of the integrated channels	
— Digital inputs	66
— Digital outputs	66
Subprocess images	
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600 bytes
	1; With PROFINET IO, the length of the user data is limited to 1600 bytes
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600 bytes 65 536
Number of subprocess images, max. Digital channels	
 Number of subprocess images, max. Digital channels Inputs 	65 536
 Number of subprocess images, max. Digital channels Inputs of which central 	65 536 256
 Number of subprocess images, max. Digital channels Inputs of which central Outputs 	65 536 256 65 536
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central 	65 536 256 65 536
 Number of subprocess images, max. Digital channels Inputs — of which central Outputs — of which central Analog channels Inputs 	65 536 256 65 536 256 4 096
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central 	65 536 256 65 536 256 4 096 64
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs 	65 536 256 65 536 256 4 096 64 4 096
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central 	65 536 256 65 536 256 4 096 64
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Outputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration 	65 536 256 65 536 256 4 096 64 4 096 64 4 096
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels of which central Analog channels of which central Outputs	65 536 256 65 536 256 4 096 64 4 096
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Muther configuration Number of expansion units, max. Number of DP masters 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of DP masters integrated 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive)
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of DP masters integrated via CP 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Analog channels Inputs of which central Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels inputs of which central Analog channels inputs of which central Mumber of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack 	65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Outputs of which central Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. 	65 536 256 65 536 256 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. 	65 536 256 65 536 256 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock	65 536 256 65 536 256 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Racks Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) 	65 536 256 65 536 256 4 096 64 4 096 64 0 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 8 8 8 8 8 8 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Hardware configuration Number of P masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable 	65 536 256 65 536 256 4 096 64 4 096 64 0 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 8 8 8 8 8 8 8 8 8
 Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Racks Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) 	65 536 256 65 536 256 4 096 64 4 096 64 0 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 8 8 8 8 8 8 8 8 8

Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup period	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
• Granularity	1h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	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
Digital inputs	
Number of digital inputs	4
of which inputs usable for technological functions	4
Input characteristic curve in accordance with IEC 61131, type 1	Yes
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	04.14
Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+15 to +30 V
Input current	7 mA
• for signal "1", typ.	7 ma
Input delay (for rated value of input voltage)	
for technological functions — at "0" to "1", max.	10 up; Typical
— at "1" to "0", max.	10 μs; Typical 10 μs; Typical
Cable length	TO ps, Typical
• shielded, max.	1 000 m
• shelded, max. Digital outputs	1 000 11
Number of digital outputs	8
of which high-speed outputs	8 for technology functions, e.g. high speed com switch signals
Functions	for technology functions, e.g. high-speed cam switch signals
Short-circuit protection	Yes
Response threshold, typ.	1A 48.1/
Limitation of inductive shutdown voltage to	48 V
Controlling a digital input	No
Switching capacity of the outputs	EW
on lamp load, max.	5 W
Load resistance range	48.0
lower limit	48 Ω 4 kO
upper limit	4 kΩ
Output voltage	2 \ / (2) \ \
• for signal "0", max.	3 V; (2L+)
 for signal "1", min. 	Rated voltage -2.5 V
Output summat	
Output current	
• for signal "1" rated value	0.5 A
 for signal "1" rated value for signal "1" permissible range for 0 to 60 °C, min. 	0.5 A 5 mA
• for signal "1" rated value	0.5 A

• for uprating	No
 for uprating for redundant control of a load 	No
Switching frequency	INU
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. Tatel everyte of the outputs (non ensure)	100 Hz
Total current of the outputs (per group)	
horizontal installation	4.4
— up to 40 °C, max.	4 A
— up to 60 °C, max.	3 A
all other mounting positions	4.4
— up to 40 °C, max.	4 A
Integrated high-speed cams	70
Switching accuracy (+/-)	70 µs
Cable length	4.000
shielded, max.	1 000 m
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Encoder	
Connectable encoders	
• 2-wire sensor	No
Interfaces	
Number of industrial Ethernet interfaces	1
Number of PROFINET interfaces	1
Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
	Yes
Isolated	Yes Yes
Isolated Interface types	
Isolated Interface types • RS 485	Yes 200 mA
Isolated Interface types • RS 485 • Output current of the interface, max.	Yes
Isolated Interface types • RS 485 • Output current of the interface, max. Protocols	Yes 200 mA
Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI	Yes 200 mA Yes
Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master	Yes 200 mA Yes Yes
Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	Yes 200 mA Yes Yes Yes
Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection	Yes 200 mA Yes Yes Yes
Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI	Yes 200 mA Yes Yes Yes No
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.	Yes 200 mA Yes Yes Yes No
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	Yes 200 mA Yes Yes Yes No 12 Mbit/s
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	Yes 200 mA Yes Yes Yes No 12 Mbit/s
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	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes
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	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes
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 - S7 basic communication	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes
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 - S7 basic communication - S7 communication	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes
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 - S7 basic communication - S7 communication - S7 communication, as client	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes
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 - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes
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 — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server PROFIBUS DP master	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master • Transmission rate, max.	Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max.	Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes Yes Yes Yes
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 - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Routing - Routing - Global data communication	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
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 - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 communication - S7 communication	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes
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 - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Global data communication - Routing - Global data communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 basic communication - S7 basic communication	Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes

— Equidistance	Yes
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
- SYNC/FREEZE	Yes
— Activation/deactivation of DP slaves	Yes
 — Number of DP slaves that can be simultaneously activated/deactivated, max. 	8
— Direct data exchange (slave-to-slave	Yes; as subscriber
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
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	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
	No
— S7 communication, as client	
— S7 communication, as server	Yes; Connection configured on one side only
 — Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No
Transfer memory	244 hvte
— Inputs	244 byte 244 byte
— Inputs — Outputs	244 byte 244 byte
- Inputs - Outputs 2. Interface	244 byte
— Inputs — Outputs 2. Interface Interface type	244 byte Integrated RS 485 interface
- Inputs - Outputs 2. Interface Interface type Isolated	244 byte
- Inputs - Outputs 2. Interface Interface type Isolated Interface types	244 byte Integrated RS 485 interface Yes
 Inputs Outputs 2. Interface Interface type Isolated Interface types • RS 485 	244 byte Integrated RS 485 interface Yes Yes
 Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. 	244 byte Integrated RS 485 interface Yes
 Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols 	244 byte Integrated RS 485 interface Yes Yes 200 mA
 Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI 	244 byte Integrated RS 485 interface Yes Yes 200 mA
 Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master
 Interface Outputs 2. Interface Interface type Isolated 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 Yes 200 mA No Yes; DP(DRIVE)-Master No
 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 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master
 Interface Outputs 2. 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 PROFIBUS DP master 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No
 Inputs Outputs 2. 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 PROFIBUS DP master PROFIBUS DP master PROFIBUS DP master Transmission rate, max. 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing 	244 byte Integrated RS 485 interface Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No Yes No No
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No
 Interface Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No No
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No No
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No I12 Mbit/s 64 No
 Inputs Outputs 2. 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 PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 	244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No I12 Mbit/s 64 No

Outpute may	1.024 bute
— Outputs, max.	1 024 byte
User data per DP slave	244 bito
— 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	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	
RJ 45 (Ethernet)	Yes
Number of ports	2
integrated switch	Yes
Protocols	
• MPI	No
PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
PROFIBUS DP master	No
PROFIBUS DP slave	No
Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
Routing	Yes
— S7 communication	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
— Prioritized startup	Yes
 Number of IO devices with prioritized startup, max. 	32
 — Number of connectable IO Devices, max. 	128
- Of which IO devices with IRT, max.	64
— of which in line, max.	64
 — Number of connectable IO Devices for RT, max. 	128
— of which in line, max.	128
 Activation/deactivation of IO Devices 	Yes
 — Number of IO Devices that can be simultaneously activated/deactivated, max. 	8
 IO Devices changing during operation (partner ports), supported 	Yes
 — Number of IO Devices per tool, max. 	8
- Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs, 1 ms, 2 ms, 4 ms
— Updating time	250 μs to 512 ms (depending on the operating mode, see Manual "S7-300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
- Routing	Yes
···· U	

- S7 communication	Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
laashranaya mada	
— Isochronous mode	No
	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
Open IE communication	
Number of connections, max.	16
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
Protocols	
PROFIsafe	No
Redundancy mode	
Media redundancy	
- Switchover time on line break, typ.	200 ms; PROFINET MRP
- Number of stations in the ring, max.	50
Open IE communication	
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	
— Data length for connection type 01H, max.	1 460 byte
— Data length for connection type 11H, max.	32 768 byte
— Bata length for connection ype 111, max. — several passive connections per port, supported	Yes
 ISO-on-TCP (RFC1006) 	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	16 22.700 bits
— Data length, max.	32 768 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
— Number of connections, max.	16
— Data length, max.	1 472 byte
Web server	
• supported	Yes
User-defined websites	Yes
Number of HTTP clients	5
communication functions / header	
PG/OP communication	Yes
Data record routing	Yes
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
	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET
• User data per job (of which consistent), max.	as server)
User data per job (or which consistent), max. S7 communication	as server)
	as server) Yes
S7 communication	
S7 communication • supported	Yes

• 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)

	SFCs/FCs of S7 Communication)
S5 compatible communication	
 supported 	Yes; via CP and loadable FC
Number of connections	
overall	32
 usable for PG communication 	31
 reserved for PG communication 	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	31
usable for OP communication	31
 reserved for OP communication 	1
— adjustable for OP communication, min.	1
- adjustable for OP communication, max.	31
usable for S7 basic communication	30
 reserved for S7 basic communication 	0
 adjustable for S7 basic communication, min. 	0
— adjustable for S7 basic communication, max.	30
usable for S7 communication	16
- reserved for S7 communication	0
- adjustable for S7 communication, min.	0
— adjustable for S7 communication, max.	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 (active): max.
	14; X2 as PROFINET: 24 max.
S7 message functions	
Number of login stations for message functions, max.	32; Depending on the configured connections for PG/OP and 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
Number of breakpoints	4; without continuation
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. 	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
can be read out	Yes
Interrupts/diagnostics/status information	
Alarms	No
Diagnostics function	No
Diagnostics indication LED	

• Status indicator digital input (green)

• Status indicator digital output (green)

Yes

Yes

Potential separation digital inputs	
 between the channels and backplane bus 	Yes
Potential separation digital outputs	
 between the channels and backplane bus 	Yes
Isolation	
Isolation tested with	500 V DC
Ambient conditions	
Ambient temperature during operation	
• min.	0°0
• max.	60 °C
configuration / header	
Configuration software	
• STEP 7	Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3
configuration / programming / header	
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	120 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	640 g
	~•

last modified:

8/24/2021 🖸