## **SIEMENS**

Data sheet

## 6ES7315-6TG10-0AB0

SIMATIC S7-300, CPU 315T-2 DP, CENTRAL PROCESSING UNIT FOR PLC AND TECHNOLOGY 128 KBYTE WORKING MEMORY, 1. INTERFACE MPI/DP 12MBIT/S 2. INTERFACE DP(DRIVE), INTEGRATED I/O FOR TECHNOLOGY FRONT CONNECTOR (1 X 40PIN) AND MICRO MEMORY CARD MIN. 4MB NECESSARY

Hardware product version	01
Firmware version	
	CPU: V2.3.1, integrated technology: V3.1.1
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V 5.3 SP1 or higher and S7-Technology option package V2.0
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 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
<ul> <li>Reverse polarity protection</li> </ul>	No
nput current	
Current consumption (in no-load operation), typ.	200 mA
Inrush current, typ.	2.5 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	6 W
lemory	
Work memory	
• integrated	128 kbyte
• expandable	No
Load memory	
• Plug-in (MMC)	Yes
<ul> <li>Plug-in (MMC), max.</li> </ul>	8 Mbyte
Data management on MMC (after last	10 у

present

• present	res, Suaranteed by Mino (maintenance-nee)
Battery	
Backup battery	
● Backup time, max.	10 y; Data retention on the MMC (after last programming)
CPU processing times	
for bit operations, typ.	0.1 μs
for bit operations, max.	0.1 μs
for word operations, typ.	0.2 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	3 µs
CPU-blocks	
Number of blocks (total)	1 024
DB	
• Number, max.	1 023; DB 0 reserved
• Size, max.	16 kbyte
FB	
• Number, max.	2 048; see instruction list
• Size, max.	16 kbyte
FC	
• Number, max.	2 048; see instruction list
• Size, max.	16 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	16 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1
<ul> <li>Number of time alarm OBs</li> </ul>	1
<ul> <li>Number of delay alarm OBs</li> </ul>	1
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	1
<ul> <li>Number of process alarm OBs</li> </ul>	1
<ul> <li>Number of startup OBs</li> </ul>	1
<ul> <li>Number of asynchronous error OBs</li> </ul>	1
<ul> <li>Number of synchronous error OBs</li> </ul>	2
Nesting depth	
● per priority class	8
<ul> <li>additional within an error OB</li> </ul>	4
Counters, timers and their retentivity	
S7 counter	
● Number	256
Retentivity	
— adjustable	Yes

— preset	Z 0 to Z 7
Counting range	
— can be set	Yes
— lower limit	0
— upper limit	999
IEC counter	
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
• Number	
Data areas and their retentivity	
retentive data area in total	1024 (DBs, FCs, FBs). The maximum number of loadable blocks can be reduced by the MMC that you use.
Flag	
• Number, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2047
Retentivity preset	MB 0 to MB 15
<ul> <li>Number of clock memories</li> </ul>	8; 1 memory byte
Data blocks	
• Number, max.	1 023; DB 0 reserved
• Size, max.	16 kbyte
Retentivity adjustable	Yes
Local data	
• per priority class, max.	1 024 byte
Address area	
I/O address area	
Inputs	2 kbyte
Outputs	2 kbyte
of which distributed	
— Inputs	2 kbyte
— Outputs	2 kbyte
Process image	

• Outputs128 byteDigital channels16 384- of which central256• Outputs16 384- of which central256Analog channels1024• Inputs1024- of which central64• Outputs1024- of which central64• Outputs1024- of which central64• Outputs1024- of which central64• Outputs2; 1 DP and 1 DP (drive)• Integrated2; for DP• Number of DP masters2; for DP• Number of operable FMs and CPs (recommended)8• CP, PtP8• CP, PtP8• CP, LAN10Racks, max.1• Modules per rack, max.1• Modules per rack, max.1	Inputs	128 byte
Digital channels• Inputs16 384- of which central256• Outputs16 384- of which central256Analog channels-• Inputs1024- of which central64• Outputs1024- of which central64• Outputs22 (10 P and 1 DP (drive)- of which central2, 1 DP and 1 DP (drive)• Inegrated2, 1 or DPNumber of DP masters2; for DP• Integrated2, 1 or DP• Number of operable FMs and CPs (recommended)8• CP, PLP8• CP, PLP8• CP, PLP8• CP, LAN10Racks, max.1• Notubes of cold (seal-line)Yes• Individues per rack, max.8• Individues cook (real-line)Yes• Individues cook (real-line)1• Individues cook (real-line)1• Individues cook (real-line)Yes• Individues cook (real-line)Yes• Individues cook (real-line)1• Individues cook (real-line)1• Individues cook (real-line)Yes• Individues cook (real-line)1• Individues cook (real-line)Yes• Individues cook (real-line)1• Individues cook (real-line)Yes• Individues cook (real-line)Yes• Individues cook (real-line)1• Individues cook (real-line)Yes• Individues cook (real-line)1• Individues c		-
• Inputs16 384- of which central256• Outputs16 384- of which central84• Inputs1024- of which central84• Outputs1024- of which central64• Outputs1024- of which central64• Outputs64• Integrated2; 1 DP and 1 DP (drive)• via CP5; for DP• Number of DP masters5; for DP• Integrated2; 1 DP and 1 DP (drive)• via CP8• CP, PAP8• CP, PAP8• CP, LAN10• Racks, max.1• Racks, max.1• Modules per rack, max.1• Backy time6 wk; At 40 °C ambient temperature• Backy time6 wk; At 40 °C ambient temperature• Dervisition per day, max.10 sOperating hours counter1• Number of values10 s• Sange of values0 to 2*31 hours (when using SFC 101)• Granularity1 hour• elevistion per day, max.1 hour• elevisterion1 hour <td>·</td> <td></td>	·	
of which central258•Outputs10 384of which central26•Inputs1024of which central64•Outputs1024of which central64•Outputs1024of which central84Warder configuration210Number of DP masters210 pand 1 DP (drive)•Integrated21 OP and 1 DP (drive)•Integrated21 or DPNumber of operable FMs and CPs (recommended)8•Outputs10Numer of operable FMs and CPs (recommended)10Numer of operable FMs and CPs (recommended)8•Outputs10Reck1•Or pLAN10Reck5•Or plant I DP (drive)9•Or plant I DP (drive)9•Or plant I DP (drive)9•Or plant I DP (drive)10•Or plant I DP (drive)9•Or plant I DP (drive)9•Or plant I DP (drive)9•Or plant I DP (drive)9•Or plant I DP (drive)10•Or plant I DP (drive)9•Or plant I DP (drive		16 384
• Outputs18 384- of which central256Analog channels1024- of which central64• Outputs1024- of which central64• Outputs64Number of DP masters2; 1 DP and 1 DP (drive)• integrated2; for DPNumber of operable FMs and CPs (recommended)8• CP, P.P8• CP, P.P8• CP, P.P8• CP, P.P8• CP, P.P8• CP, P.P8• CP, IAN10Racks, max.1• Hardware clock (recel-time)Yes• Indextore clock (real-time)Yes• Indextore clock (real-time)Yes• Indextore clock (real-time)10 s• Deviation per day, max.0• Deviation per day, max.0• Operating hours counter10 s• Number of values0 to 2/31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• Exported of valuesYes; Must be restarted at each restart• Exported of valuesYes; Must be restarted at each restart• Exported of valuesYes• In AS, masterYes		256
		16 384
Analog channels         1024           - of which central         64           • Outputs         1024           - of which central         64           • Outputs         1024           - of which central         64           Hardware configuration         64           Number of DP masters         52; 1DP and 1DP (drive)           • via CP         2; for DP           Number of operable FMs and CPs (recommended)         6           • CP, PtP         8           • CP, PtP         8           • CP, PtP         10           • Racks, max.         1           • Modules per rack, max.         8           • Time of day         Yes           • Indrdware clock (real-time)         Yes           • Indrdware clock (real-time)		
• Inputs1024- of which central64• Outputs1024- of which central64Hardware configurationNumber of DP masters• Integrated2: 1 DP and 1 DP (drive)• via CP2; for DPNumber of operable FMs and CPs (recommended)8• CP, PIP8• CP, PIP10Racks1• Racks, max.1• Modules per rack, max.1• Intervence tock (real-time)Yes• Indravare clock (real-time)10 sOperating hours counter10 s• Number 10• Number 20• Number 30• Number 410 s• Deviation per day, max.0• Deviation per		
• Outputs         1024           of which central         64           Hardware configuration            Number of DP masters         2; 1 DP and 1 DP (drive)           • via CP         2; for DP           Number of operable FMs and CPs (recommended)            • FM         8           • CP, PP         8           • CP, LAN         10           Rack            • Racks, max.         1           • Modules per rack, max.         8           Time of day            Clock            • Hardware clock (real-time)         Yes           • Racks, max.         1           • Backup time         6 wk; At 40 °C ambient temperature           • Deviation per day, max.         0 s           Operating hours counter            • Number         1           • Number/Number range         0           • Granularity         1 hour           • Granularity         1 hour           • retentive         Ves           • Supported         Yes           • to MPI, master         Yes           • to MPI, slave         Yes           • to MPI, slave<		1 024
- of which central64Hardware configurationNumber of DP masters2; 1 DP and 1 DP (drive)• integrated2; f or DPNumber of operable FMs and CPs (recommended)8• FM8• CP, PtP8• CP, LAN10Racks, max.1• Modules per rack, max.1• Hardware clock (real-time)Yes• Factos, max.0• Enter of dayClock• Colok• Colok• Hardware clock (real-time)Yes• Enter of ay, max.0 s• Deviation per day, max.0 s• Operating hours counter• Number/Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes• supportedYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• to MPI, slave <t< td=""><td>— of which central</td><td>64</td></t<>	— of which central	64
Hardware configuration         Number of DP masters         • integrated       2; 1 DP and 1 DP (drive)         • via CP       2; for DP         Number of operable FMs and CPs (recommended)       8         • FM       8         • CP, PtP       8         • CP, LAN       10         Rack       1         • Modules per rack, max.       1         • Preserver       • Rack (real-time)         • retentive and synchronizable       Yes         • Backup time       6 wk; At 40 °C ambient temperature         • Deviation per day, max.       10 s         Operating hours counter       1         • Number       1         • Range of value	Outputs	1 024
Number of DP masters           • integrated         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         10           Rack         1           • Modules per rack, max.         1           • Modules per rack, max.         8           • Time of day         COlock           Clock         Ves           • retentive and synchronizable         Yes           • Backup time         6 wk; At 40 °C ambient temperature           • Deviation per day, max.         10 s           Operating hours counter         1           • Number/Number range         0           • Range of values         0 to 2^31 hours (when using SFC 101)           • Granularity         1 hour           • retentive         Yes; Must be restarted at each restart           Clock synchronization         Yes           • supported         Yes           • to MPI, master         Yes           • to MPI, slave         Yes           • to MPI, slave         Yes           • to MPI, slaver         Yes           <	— of which central	64
• integrated2; 1 DP and 1 DP (drive)• via CP2; for DPNumber of operable FMs and CPs (recommended)8• FM8• CP, PtP8• CP, LAN10Racks1• Racks, max.1• Racks, max.8• Time of day7Clock7Clock7• Fland synchronizableYes• Fland synchronizable6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number10 s• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restartClock7• SupportedYes; Must be restarted at each restart• Duration1• SupportedYes; Must be restarted at each restart• Deviation per day.Yes• Number1 hour• SupportedYes; Must be restarted at each restart• Clock synchronizationYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes• YesYes• to MPI, slaveYes• has speriesYes• has speriesYes• has speriesYes• SupportedYes• has speriesYes• has speriesYes• has speriesYes• has speriesYes• has speriesYes <tr< td=""><td>Hardware configuration</td><td></td></tr<>	Hardware configuration	
• vac P2; for DPNumber of operable FMs and CPs (recommended)8• FM8• CP, PIP8• CP, LAN10Racks, max.• Racks, max.1• Modules per rack, max.8ClockClock• Hardware clock (real-time)Yes• retentive and synchronizableYes• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter• Number1• Number range0• Range of values0 to 2°31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• Clock synchronizationYes• supportedYes• to MPI, slaveYes• to MPI, slaveYes• in AS, masterYes		
Number of operable FMs and CPs (recommended)           • FM         8           • CP, PtP         8           • CP, LAN         10           Rack         1           • Racks, max.         1           • Modules per rack, max.         8           • Time of day         2           Clock         Yes           • Hardware clock (real-time)         Yes           • Hardware clock (real-time)         Yes           • etentive and synchronizable         So           • Deviation per day, max.         10 s           Operating hours counter         1           • Number         1           • Number funge         0           • Range of values         0 to 2^31 hours (when using SFC 101)           • Granularity         1 hour           • retentive         Yes; Must be restarted at each restart           Clock synchronization         Yes           • to MPI, master         Yes           • to MPI, slave         Yes           • to MPI, slave         Yes	• integrated	2; 1 DP and 1 DP (drive)
• FM8• CP, PIP8• CP, LAN10Rack1• Racks, max.1• Modules per rack, max.8ClockClock• Hardware clock (real-time)Yes• Hardware clock (real-time)Yes• Hardware clock (real-time)Yes• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number1• Number0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restartClock synchronizationYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	• via CP	2; for DP
Nome8• CP, LAN10Rack1Racks, max.1• Modules per rack, max.8Time of dayClockClockYes• Hardware clock (real-time)Yes• retentive and synchronizable6 wk; At 40 °C ambient temperature• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter• Number1• Number0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restartClock synchronization• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes• in AS, masterYes	Number of operable FMs and CPs (recommended)	
• CP, LAN10Rack1• Racks, max.1• Modules per rack, max.8Time of day7Clock7• Hardware clock (real-time)Yes• Hardware clock (real-time)9• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number1• Number0• Range of values0 to 2°31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• SupportedYes• supportedYes• supportedYes• to MPI, masterYes• in AS, masterYes	● FM	8
Rack         • Racks, max.       1         • Modules per rack, max.       8         Time of day         Time of day         Clock         • Hardware clock (real-time)       Yes         • Hardware clock (real-time)       Yes         • Hardware clock (real-time)       Yes         • Backup time       6 wk; At 40 °C ambient temperature         • Deviation per day, max.       10 s         Operating hours counter         • Number       1         • Number range       0         • Range of values       0 to 2^31 hours (when using SFC 101)         • Granularity       1 hour         • retentive       Ves; Must be restarted at each restart         Clock synchronization       Yes         • supported       Yes         • to MPI, master       Yes         • to MPI, slave       Yes         • in AS, master       Yes	● CP, PtP	8
• Racks, max.1• Modules per rack, max.8Time of dayClock• Hardware clock (real-time)Yes• Hardware clock (real-time)6 wk; At 40 °C ambient temperature• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number/Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• SupportedYes• SupportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	● CP, LAN	10
Modules per rack, max.         8           Time of day           Time of day           Clock           Clock                e Hardware clock (real-time)         Yes                e retentive and synchronizable         6 wk; At 40 °C ambient temperature                e Backup time         6 wk; At 40 °C ambient temperature                e Deviation per day, max.         0 s           Operating hous counter           Image of values                e Range of values         0 to 2^31 hours (when using SFC 101)                e retentive         1 hour           e Supported                e supported         Yes; Must be restarted at each restart                e supported         Yes                e to MPI, master         Yes                e to MPI, slave         Yes                e to MPI, slaver         Yes                e in AS, master         Yes	Rack	
Time of day         Clock         • Hardware clock (real-time)       Yes         • retentive and synchronizable       Yes         • Backup time       6 wk; At 40 °C ambient temperature         • Deviation per day, max.       0 s         Operating hours counter       1         • Number       1         • Number range       0         • Range of values       0 to 2^31 hours (when using SFC 101)         • Granularity       1 hour         • retentive       Yes; Must be restarted at each restart         Clock synchronization       Yes         • to MPI, master       Yes         • to MPI, slave       Yes         • in AS, master       Yes	• Racks, max.	1
Clock• Hardware clock (real-time)Yes• retentive and synchronizableYes• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number1• Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restartClock synchronizationYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	<ul> <li>Modules per rack, max.</li> </ul>	8
Hardware clock (real-time)Yes• Hardware clock (real-time)Yes• retentive and synchronizable6 wk; At 40 °C ambient temperature• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number1• Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• SupportedYes; Must be restarted at each restart• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	Time of day	
• retentive and synchronizableYes• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number1• Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• SupportedYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	Clock	
• Backup time6 wk; At 40 °C ambient temperature• Deviation per day, max.10 sOperating hours counter1• Number1• Number/Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restartClock synchronizationYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
• Deviation per day, max.10 sOperating hours counter• Number1• Number ange0• Number/Number range0 to 2^31 hours (when using SFC 101)• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restartClock synchronizationYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	<ul> <li>retentive and synchronizable</li> </ul>	Yes
Operating hours counter           • Number         1           • Number/Number range         0           • Range of values         0 to 2^31 hours (when using SFC 101)           • Granularity         1 hour           • retentive         Yes; Must be restarted at each restart           • Supported         Yes           • to MPI, master         Yes           • to MPI, slave         Yes           • in AS, master         Yes	<ul> <li>Backup time</li> </ul>	6 wk; At 40 °C ambient temperature
• Number1• Number/Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• clock synchronizationYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	<ul> <li>Deviation per day, max.</li> </ul>	10 s
• Number/Number range0• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• retentiveYes; Must be restarted at each restart• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	Operating hours counter	
• Range of values0 to 2^31 hours (when using SFC 101)• Granularity1 hour• retentiveYes; Must be restarted at each restart• Clock synchronizationYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	• Number	
• Granularity1 hour• retentiveYes; Must be restarted at each restart• Clock synchronizationYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	Number/Number range	
• retentiveYes; Must be restarted at each restart• Clock synchronizationYes• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes	Range of values	
Clock synchronization         • supported       Yes         • to MPI, master       Yes         • to MPI, slave       Yes         • to MPI, slave       Yes         • in AS, master       Yes	Granularity	
• supportedYes• to MPI, masterYes• to MPI, slaveYes• in AS, masterYes		Yes; Must be restarted at each restart
• to MPI, master     Yes       • to MPI, slave     Yes       • in AS, master     Yes		
<ul> <li>to MPI, slave</li> <li>in AS, master</li> <li>Yes</li> </ul>		
• in AS, master Yes	• to MPI, master	
	● to MPI, slave	
• in AS, slave Yes		
	• in AS, slave	Yes

Digital inputs	
Number of digital inputs	
Functions	technological functions, e.g. reference point detection (BERO); digital inputs can also be used (with restrictions) in STEP 7 user program.
Input characteristic curve in accordance with IEC	Yes
61131, type 1	
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	4
— up to 60 °C, max.	4
Input voltage	
<ul> <li>Rated value (DC)</li> </ul>	24 V
• for signal "0"	-3 to +5V
● for signal "1"	+15 to +30V
Input current	
● for signal "1", typ.	7 mA
Input delay (for rated value of input voltage)	
for counter/technological functions	
— at "0" to "1", max.	10 μs; Typical
— at "1" to "0", max.	10 μs; Typical
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Digital outputs	
Number of digital outputs	8
Functions	For technology functions, e.g. high-speed cam switch signals
Short-circuit protection	Yes
<ul> <li>Response threshold, typ.</li> </ul>	1 A
Limitation of inductive shutdown voltage to	2L+ (-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	
● for signal "0", max.	3 V
● for signal "1", min.	2L+ (-2,5 V)
Output current	
<ul> <li>for signal "1" rated value</li> </ul>	0.5 A

<ul> <li>for signal "1" permissible range for 0 to 60 °C, min.</li> </ul>	5 mA
<ul> <li>for signal "1" permissible range for 0 to 60 °C, max.</li> </ul>	0.6 A
<ul> <li>for signal "0" residual current, max.</li> </ul>	0.3 mA
Parallel switching of two outputs	
● for uprating	No
<ul> <li>for redundant control of a load</li> </ul>	No
Switching frequency	
<ul> <li>with resistive load, max.</li> </ul>	100 Hz
<ul> <li>with inductive load, max.</li> </ul>	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.	3 A
Cable length	
<ul> <li>shielded, max.</li> </ul>	1 000 m
• unshielded, max.	600 m
Encoder	
Connectable encoders	No
2-wire sensor	No
	No
• 2-wire sensor	No Integrated RS 485 interface
• 2-wire sensor 1. Interface	
• 2-wire sensor 1. Interface Interface type	Integrated RS 485 interface
• 2-wire sensor      1. Interface     Interface type     Physics	Integrated RS 485 interface RS 485
• 2-wire sensor      1. Interface Interface type Physics Isolated	Integrated RS 485 interface RS 485 Yes
• 2-wire sensor      1. Interface Interface type Physics Isolated Power supply to interface (15 to 30 V DC), max.	Integrated RS 485 interface RS 485 Yes
• 2-wire sensor      1. Interface Interface type Physics Isolated Power supply to interface (15 to 30 V DC), max. Functionality	Integrated RS 485 interface RS 485 Yes 200 mA
<ul> <li>2-wire sensor</li> <li>1. Interface</li> <li>Interface type</li> <li>Physics</li> <li>Isolated</li> <li>Power supply to interface (15 to 30 V DC), max.</li> <li>Functionality</li> <li>MPI</li> </ul>	Integrated RS 485 interface RS 485 Yes 200 mA Yes
<ul> <li>2-wire sensor</li> <li>1. Interface</li> <li>Interface type</li> <li>Physics</li> <li>Isolated</li> <li>Power supply to interface (15 to 30 V DC), max.</li> <li>Functionality <ul> <li>MPI</li> <li>PROFIBUS DP master</li> </ul> </li> </ul>	Integrated RS 485 interface RS 485 Yes 200 mA Yes Yes
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<ul> <li>2-wire sensor</li> <li>1. Interface</li> <li>Interface type</li> <li>Physics</li> <li>Isolated</li> <li>Power supply to interface (15 to 30 V DC), max.</li> <li>Functionality <ul> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>Point-to-point connection</li> </ul> </li> <li>MPI <ul> <li>Transmission rate, max.</li> <li>Services</li> </ul> </li> </ul>	Integrated RS 485 interface RS 485 Yes 200 mA Yes Yes Yes Yes No
<ul> <li>2-wire sensor</li> <li>1. Interface</li> <li>Interface type</li> <li>Physics</li> <li>Isolated</li> <li>Power supply to interface (15 to 30 V DC), max.</li> <li>Functionality <ul> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>Point-to-point connection</li> </ul> </li> <li>MPI <ul> <li>Transmission rate, max.</li> <li>Services <ul> <li>PG/OP communication</li> </ul> </li> </ul></li></ul>	Integrated RS 485 interface RS 485 Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s
<ul> <li>2-wire sensor</li> <li>1. Interface</li> <li>Interface type</li> <li>Physics</li> <li>Isolated</li> <li>Power supply to interface (15 to 30 V DC), max.</li> <li>Functionality <ul> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>Point-to-point connection</li> </ul> </li> <li>MPI <ul> <li>Transmission rate, max.</li> </ul> </li> <li>Services <ul> <li>PG/OP communication</li> <li>Routing</li> </ul> </li> </ul>	Integrated RS 485 interface RS 485 Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s

— S7 communication	Yes
— S7 communication, as client	Yes; Via CP and loadable FB
— S7 communication, as server	Yes
DP master	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	127
— PG/OP communication	Yes
— Routing	Yes
	No
— Global data communication	No
— S7 basic communication	
— S7 communication	No
— Equidistance	Yes
— SYNC/FREEZE	Yes
— DPV1	Yes
Address area	
— Inputs, max.	244 kbyte; KB> 244 bytes per DP slave
— Outputs, max.	244 kbyte; KB> 244 bytes per DP slave
DP slave	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	No
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	
— Routing	Yes
— Global data communication	No
— S7 basic communication	No
— S7 communication	No
— Direct data exchange (slave-to-slave	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
● MPI	No

PROFIBUS DP master	Yes; DP(DRIVE)-Master
PROFIBUS DP slave	No
Point-to-point connection	No
DP master	10 MbH/2
• Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	32
Services	
— PG/OP communication	No
— Routing	No
— Global data communication	No
— S7 basic communication	No
— S7 communication	No
— Equidistance	Yes
— SYNC/FREEZE	No
— Activation/deactivation of DP slaves	No
— DPV1	No
Address area	
— Inputs, max.	244 kbyte; KB> 244 bytes per DP slave
— Outputs, max.	244 kbyte; KB> 244 bytes per DP slave
Communication functions	
Communication functions PG/OP communication	Yes
Global data communication	
• supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	22 byte
S7 basic communication	
	Ves
<ul> <li>supported</li> </ul>	Yes 76 hito
<ul><li>supported</li><li>User data per job, max.</li></ul>	76 byte
• supported	
<ul><li>supported</li><li>User data per job, max.</li></ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with
<ul> <li>supported</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with
<ul> <li>supported</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
<ul> <li>supported</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> <li>supported</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes
<ul> <li>supported</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication <ul> <li>supported</li> <li>as server</li> </ul> </li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes
<ul> <li>supported</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul> S7 communication <ul> <li>supported</li> <li>as server</li> <li>as client</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes; Via CP and loadable FB
<ul> <li>supported</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> </ul> S7 communication <ul> <li>supported</li> <li>as server</li> <li>as client</li> <li>User data per job, max.</li> </ul>	76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes; Via CP and loadable FB 180 byte; With PUT/GET

Yes; via CP and loadable FC supported Number of connections 16 overall usable for PG communication 15 1 - reserved for PG communication - adjustable for PG communication, min. 1 15 - adjustable for PG communication, max. 15 • usable for OP communication 1 - reserved for OP communication 1 - adjustable for OP communication, min. - adjustable for OP communication, max. 15 12 usable for S7 basic communication 0 - reserved for S7 basic communication - adjustable for S7 basic communication, 0 min. 12 - adjustable for S7 basic communication, max. S7 message functions Number of login stations for message functions, max. 16; Depending on the configured connections for PG/OP and S7 basic communication Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. 40 Test commissioning functions Status block Yes Single step Yes Number of breakpoints 2 Status/control Yes Status/control variable Inputs, outputs, memory bits, DB, times, counters Variables 30 Number of variables, max. 30 - of which status variables, max. 14 - of which control variables, max. Forcing Yes Forcing Inputs, outputs · Forcing, variables 10 • Number of variables, max. Diagnostic buffer Yes present 100 • Number of entries, max. No - adjustable Interrupts/diagnostics/status information

Alarms	No
Diagnostic functions	No
Diagnostics indication LED	
<ul> <li>Status indicator digital input (green)</li> </ul>	Yes
<ul> <li>Status indicator digital output (green)</li> </ul>	Yes
Potential separation	
Potential separation digital inputs	
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Potential separation digital outputs	
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
Permissible potential difference	
between different circuits	75 V DC/60 V AC
Isolation	
Isolation tested with	500 V DC
Configuration	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher and S7 Technology option package
Programming	
Command set	see instruction list
Nesting levels	8
<ul> <li>System functions (SFC)</li> </ul>	see instruction list
<ul> <li>System function blocks (SFB)</li> </ul>	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Cycle time monitoring	
lower limit	1 ms
• upper limit	6 000 ms
• adjustable	Yes
• preset	150 ms
Dimensions	
Width	160 mm
Height	125 mm

Depth	130 mm
Weights	
Weight, approx.	750 g
last modified:	08/28/2017