## **SIEMENS**

## Data sheet

6ES7635-2EB01-0AE3

\*\*\* SPARE PART\*\*\* SIMATIC C7-635 TOUCH, COMPACT UNIT WITH INTEGRATED COMPONENTS: S7-300 CPU314C-2 DP AND TP170B, 24 DI, 16 DO, 5 AI, 2 AO; MICRO MEMORY CARD AND CONNECTOR SET REQUIRED



Operator control and monitoring	
Password protection	Yes
<ul> <li>Password levels</li> </ul>	10
Text elements	Yes
Info texts	Yes
Graphics object	Yes
Process images	Yes
Alarms	Yes; Fault messages, operating messages (no buffer)
Process images	
<ul><li>Number of process images</li></ul>	100
<ul> <li>Number of variables per image, max.</li> </ul>	50
<ul> <li>Number of variables in message text, max.</li> </ul>	8
Operating-/fault messages	
<ul> <li>Number of operating messages, max.</li> </ul>	2 000; total number of operation and fault messages
<ul> <li>Number of entries in operational log, max.</li> </ul>	128; not retentive
<ul> <li>Number of fault message, max.</li> </ul>	2 000; total number of operation and fault messages
<ul> <li>Number of entries in fault message buffer, max.</li> </ul>	128; not retentive
Recipes	
<ul> <li>Number of recipes, max.</li> </ul>	20

<ul> <li>Data records per recipe, max.</li> </ul>	50; limited due to storage medium
• Entries per data record, max.	60
• Recipe data memory, max.	32 kbyte; expandable using Compact Flash Card (CF-Card)
Display	
Design of display	STN, CCFL backlit, 5.7" blue mode (4 blue tones)
Resolution (pixels)	
Horizontal image resolution	320 Pixel
<ul> <li>Vertical image resolution</li> </ul>	240 Pixel
Backlighting	
MTBF backlighting (at 25 °C)	50 000 h
Control elements	
Touch operation	
Design as touch screen	Yes; analog, resistive
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
Load voltage L+	
Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption, typ.	350 mA; idling
Current consumption, max.	1 A
Inrush current, max.	2 A; for 70 ms
Digital inputs	
• from load voltage L+ (without load), max.	70 mA
Digital outputs	
• from load voltage L+, max.	20 mA; per group
Power loss	
Power loss, typ.	14 W
Drives	
Compact Flash Card	Yes; Optional
Memory	
Micro Memory Card	Yes
Work memory	
• integrated	64 kbyte
• expandable	No
Load memory	

● Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
ODI Iiii	
CPU processing times for bit operations, typ.	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	
DB	544. DD 0
• Number, max.	511; DB 0 reserved
• Size, max.	16 kbyte
FB	540 and instruction I' t
• Number, max.	512; see instruction list
• Size, max.	16 kbyte
FC	
<ul><li>Number, max.</li></ul>	512; see instruction list
• Size, max.	16 kbyte
ОВ	
<ul><li>Number, max.</li></ul>	see instruction list
• Size, max.	16 kbyte
Nesting depth	
<ul><li>per priority class</li></ul>	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	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
· · · · · ·	

— adjustable	Yes
— preset	No retentivity
Time range	·
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	all
max.	
Flag	0FC h. 4-
• Number, max.	256 byte
Retentivity available	Yes
Retentivity preset	MB 0 to MB 15
Number of clock memories  Deta blacks	8; 1 memory byte
Data blocks	511
Number, max.      Size may.	
Size, max.  Local data	16 kbyte
	510 byte
• per priority class, max.	516 byte
Address area	
I/O address area	415.4.
• Inputs	1 kbyte
Outputs	1 kbyte
of which distributed	4.000   1
— Inputs	1 000 byte
— Outputs	1 000 byte
Process image	400 h. 4.
• Inputs	128 byte
Outputs	128 byte
Default addresses of the integrated channels	404.04, 400.7
— Digital inputs	124.0 to 126.7
— Digital outputs	124.0 to 125.7
— Analog inputs	752 to 761
— Analog outputs	752 to 755
Digital channels	
• Inputs	8 192
— of which central	922
<ul><li>Outputs</li></ul>	8 192

Analog channels  Inputs Input salars Input salars Input salars Input salars Input salars Input salars Input characteristic curve in accordance with IEC Input salas Input characteristic curve in accordance with IEC Input salas Input characteristic curve in accordance with IEC Input characteristic curve	— of which central	922
	Analog channels	
Outputs Of which central  Hardware configuration  Number of DP masters Integrated Order of PP	• Inputs	512
- of which central 248  Hardware configuration  Number of modules per system, max. 23  Number of DP masters  • integrated • integrated • integrated • PM • CP, PP • CP, PP • CP, LAN • Modules per rack, max. 4 • Hardware clock (real-time) • retentive and synchronizable • Backup time • Deviation per day, max. 9 • Deviation per day, max. 10 • Number of waxes • Range of values • Range of values • Range of values • Range of values • Granularity • retentive • Range of values • Granularity • retentive • Ves, Must be restarted at each restart  Clock synchronization • supported • Supported • No MPI, master • to MPI, slave • in AS, master  Pigital inputs  Number of digital inputs • of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Ves  Input characteristic curve in accordance with IEC  Ves	— of which central	248
Hardware configuration  Number of modules per system, max.  Number of DP masters  integrated integrated FM CP  Number of operable FMs and CPs (recommended)  FM S  CP, PtP S CP, LAN 10  Rack Racks, max. Modules per rack, max.  Modules per rack, max.  Hardware clock (real-time) retentive and synchronizable Sackup time Deviation per day, max.  Pumber Number Number Number Number Number Number Number Number Serious	Outputs	512
Number of modules per system, max.  Number of DP masters  integrated integrat	•	248
Number of modules per system, max.  Number of DP masters  integrated integrat		
Number of DP masters  • integrated • via CP  Number of operable FMs and CPs (recommended)  • FM • CP, PtP • B • CP, LAN  10  Rack • Racks, max. • Modules per rack, max.  • Modules per rack, max.  • Hardware clock (real-time) • retentive and synchronizable • Backup time • Deviation per day, max.  Coperating hours counter  • Number • Number • Number • Number of values • Range of values • Granularity • retentive • Tetentive • Synchronizable • Range of values • Range of values • Granularity • retentive • Tetentive • Yes • Wish the restarted at each restart  Clock synchronization • supported • supported • to MPI, slave • to MPI, slave • in AS, master  Pigital inputs  Number of digital inputs  Number of digital inputs • of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes	-	22
integrated via CP  Number of operable FMs and CPs (recommended)  FM CP, PtP 8 CP, LAN 10  Rack  Racks, max. Modules per rack, max. Modules per rack, max.  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number Range of values Granularity retentive Granularity retentive Fess, Must be restarted at each restart  Olock values Olock values Fess, Must be restarted at each restart  Olock values Fess, Must be restarted at each restart  Olock vess, master  Pess Fess Fess Fess Fess Fess Fess Fes		25
via CP     Number of operable FMs and CPs (recommended)     FM     CP, PIP     8     CP, LAN     10 Rack     Racks, max.     Modules per rack, max.     4; 4 in subrack 0; 8 in subracks 1 and 2; 7 in subrack 3  Time of day  Clock     Hardware clock (real-time)     retentive and synchronizable     Poeviation per day, max.  Operating hours counter     Number     Number     Number     Number    1     Number/Number range     Range of values     Granularity     retentive     retentive     Ves; Must be restarted at each restart  Clock synchronization     supported     Ves     ves     to MPI, slave     in AS, master  Number of digital inputs     Of technological functions  Input characteristic curve in accordance with IEC  Yes  Ves  Ves  Ves  Ves  Ves  Ves  Ves		1
Number of operable FMs and CPs (recommended)  • FM  • CP, PIP  • CP, LAN  10  Rack  • Racks, max.  • Modules per rack, max.  • Modules per rack, max.  • Hardware clock (real-time)  • retentive and synchronizable  • Backup time  • Deviation per day, max.  Operating hours counter  • Number  • Number  • Number range  • Range of values  • Granularity  • retentive  • retentive  • Supported  • supported  • to MPI, master  • to MPI, slave  • in AS, master  Number of digital inputs  • of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes  Input characteristic curve in accordance with IEC  Yes		
FM CP, PIP CP, LAN 10  Rack Rack, max. Modules per rack, max.  Modules per rack, max.  Hardware clock (real-time) Fretentive and synchronizable Backup time Deviation per day, max.  Coperating hours counter  Number Number Range of values Granularity Fretentive Fre		
CP, PtP CP, LAN CP, L		0
CP, LAN  Rack  Racks, max.  Modules per rack, max.  Hardware clock (real-time) retentive and synchronizable  Backup time Deviation per day, max.  Plantage of values Range of values Granularity retentive Fretentive Range of values Range o		
Rack  Racks, max.  Modules per rack, max.  Modules per rack, max.  4; 4 in subrack 0; 8 in subracks 1 and 2; 7 in subrack 3  Time of day  Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number Number Range of values Granularity retentive Yes; Must be restarted at each restart  Clock synchronization  Supported O MPI, master O MPI, slave		
Racks, max.  Modules per rack, max.  4 4; 4 in subrack 0; 8 in subracks 1 and 2; 7 in subrack 3  Time of day  Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number Range of values Granularity retentive Yes; Must be restarted at each restart  Clock synchronization  supported to MPI, master to MPI, slave in AS, master  Poigital inputs  Number of digital inputs  of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes		10
Modules per rack, max.  4; 4 in subrack 0; 8 in subracks 1 and 2; 7 in subrack 3  Time of day  Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number Number 1 Number 0 Range of values Granularity retentive Yes; Must be restarted at each restart  Clock synchronization  supported to MPI, master to MPI, slave in AS, master  Pojetal inputs  Number of digital inputs  Number of digital inputs  Lat in subrack 0; 8 in subracks 1 and 2; 7 in subrack 3  Yes  Wes  Wes  Wes  Tyes  At 4; 4 in subrack 0; 8 in subracks 1 and 2; 7 in subrack 3  Yes  Wes  Tyes  Tyes  At 40 °C ambient temperature  O was, At 40 °C ambient temperature  O was, At 40 °C ambient temperature  The subrack 1 in subrack 1 in subrack 2 in subrack 3  Wes  Tyes  Tyes  Digital inputs  Input characteristic curve in accordance with IEC  Yes		A
Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number 1 Number/Number range Range of values Granularity retentive Yes; Must be restarted at each restart  Clock synchronization  supported Yes To MPI, master Yes In AS, master  Digital inputs  Number of digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC Yes		
Clock  Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number Number fange Range of values Granularity retentive Yes; Must be restarted at each restart  Clock synchronization  supported Yes To MPI, slave To MPI, slave Fin AS, master  Ves  Number of digital inputs  Input characteristic curve in accordance with IEC Yes  Yes  Yes  Yes  Yes  Yes  Input characteristic curve in accordance with IEC Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	<ul><li>Modules per rack, max.</li></ul>	4; 4 in Subrack 0; 8 in Subracks 1 and 2; 7 in Subrack 3
Hardware clock (real-time) retentive and synchronizable Backup time Deviation per day, max.  Operating hours counter  Number Number	Time of day	
retentive and synchronizable     Backup time     Deviation per day, max.  Operating hours counter      Number     Number	Clock	
Backup time Deviation per day, max.  Operating hours counter  Number Number Range of values R	Hardware clock (real-time)	Yes
Deviation per day, max.  Operating hours counter  Number  Number  Number	<ul> <li>retentive and synchronizable</li> </ul>	Yes
Operating hours counter  Number  Number  Number/Number range  Range of values  Range of values  Granularity  retentive  Ves; Must be restarted at each restart  Clock synchronization  supported  to MPI, master  to MPI, slave  in AS, master  Pigital inputs  Number of digital inputs  Number of digital inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes  1  O to 2^31 hours (when using SFC 101)  Yes; Must be restarted at each restart  Yes  Yes  Yes  24  6 of which inputs usable for technological  functions  Input characteristic curve in accordance with IEC  Yes	Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Number</li> <li>Number/Number range</li> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Ves; Must be restarted at each restart</li> </ul> Clock synchronization <ul> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>in AS, master</li> </ul> Digital inputs Number of digital inputs <ul> <li>of which inputs usable for technological functions</li> </ul> Input characteristic curve in accordance with IEC <ul> <li>Yes</li> </ul> Yes <ul> <li>16</li> <li>Yes</li> </ul> Yes <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes <ul> <li>Yes</li> </ul> <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes </li> </ul> Yes <ul> <li>Yes <ul> <li>Yes</li> </ul> <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes </li> </ul></li></ul></li></ul></li></ul></li></ul></li></ul></li></ul></li></ul></li></ul>	<ul> <li>Deviation per day, max.</li> </ul>	10 s
<ul> <li>Number/Number range</li> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Ves; Must be restarted at each restart</li> </ul> Clock synchronization <ul> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>in AS, master</li> </ul> Digital inputs Number of digital inputs usable for technological functions <ul> <li>Input characteristic curve in accordance with IEC</li> </ul> Yes <ul> <li>to 4231 hours (when using SFC 101)</li> <li>thour</li> <li>Yes; Must be restarted at each restart</li> </ul> Yes <ul> <li>to MPI, master</li> <li>Yes</li> </ul> Yes <ul> <li>16</li> <li>Yes</li> </ul> Yes <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes <ul> <li>Yes</li> </ul></li></ul></li></ul>	Operating hours counter	
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Yes; Must be restarted at each restart</li> </ul> Clock synchronization <ul> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>in AS, master</li> </ul> Digital inputs Number of digital inputs usable for technological functions <ul> <li>of which inputs usable for technological functions</li> <li>Input characteristic curve in accordance with IEC</li> </ul> Yes <ul> <li>to 2^31 hours (when using SFC 101)</li> <li>hour</li> <li>yes; Must be restarted at each restart</li> </ul> Yes <ul> <li>16</li> <li>Yes</li> </ul> Yes <ul> <li>The public of technological functions</li> </ul>	Number	1
Granularity retentive Yes; Must be restarted at each restart  Clock synchronization supported supported to MPI, master to MPI, slave in AS, master  Pigital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC  Yes; Must be restarted at each restart  Yes  Yes  Yes  Yes  1 hour  Yes  Yes  24  16  16  17  18  19  19  19  19  19  19  19  19  19	<ul><li>Number/Number range</li></ul>	0
retentive     Yes; Must be restarted at each restart  Clock synchronization      supported     Yes     to MPI, master     to MPI, slave     in AS, master  Pigital inputs  Number of digital inputs  Of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes  Yes  Yes  16  16  17  18  19  19  19  19  19  19  19  19  19	<ul><li>Range of values</li></ul>	0 to 2^31 hours (when using SFC 101)
Clock synchronization  • supported Yes • to MPI, master Yes • to MPI, slave Yes • in AS, master  Digital inputs  Number of digital inputs 24 • of which inputs usable for technological functions  Input characteristic curve in accordance with IEC Yes	Granularity	1 hour
<ul> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>in AS, master</li> </ul> Digital inputs Number of digital inputs <ul> <li>of which inputs usable for technological functions</li> </ul> Input characteristic curve in accordance with IEC <ul> <li>Yes</li> </ul> Yes <ul> <li>Yes</li> </ul>	• retentive	Yes; Must be restarted at each restart
<ul> <li>to MPI, master</li> <li>to MPI, slave</li> <li>in AS, master</li> <li>Ves</li> </ul> Digital inputs Number of digital inputs <ul> <li>of which inputs usable for technological functions</li> <li>Input characteristic curve in accordance with IEC</li> </ul> Yes Yes Yes Yes Provided the provided of	Clock synchronization	
<ul> <li>to MPI, slave</li> <li>in AS, master</li> <li>Pigital inputs</li> <li>Number of digital inputs</li> <li>of which inputs usable for technological functions</li> <li>Input characteristic curve in accordance with IEC</li> <li>Yes</li> </ul>	• supported	Yes
<ul> <li>in AS, master</li> <li>Digital inputs</li> <li>Number of digital inputs</li> <li>of which inputs usable for technological functions</li> <li>Input characteristic curve in accordance with IEC</li> </ul> Yes Yes	• to MPI, master	Yes
Digital inputs  Number of digital inputs  • of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes	● to MPI, slave	Yes
Number of digital inputs  of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes	• in AS, master	Yes
Number of digital inputs  of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes	Digital inputs	
• of which inputs usable for technological functions  Input characteristic curve in accordance with IEC  Yes	•	24
functions Input characteristic curve in accordance with IEC Yes		
61131, type 1	Input characteristic curve in accordance with IEC	Yes
	61131, type 1	

Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	12
vertical installation	
— up to 40 °C, max.	18
— up to 50 °C, max.	12
45° mounting position	
— up to 45 °C, max.	12
Input voltage	
Rated value (DC)	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 standard inputs	
— parameterizable	Yes; 0.1 / 0.5 / 3 / 15 ms
— Rated value	3 ms
for counter/technological functions	
— at "0" to "1", max.	8 µs
Cable length	
• shielded, max.	1 000 m; 100 m for technological functions
• unshielded, max.	600 m
for technological functions	
— shielded, max.	50 m; at maximum count frequency
— unshielded, max.	Unshielded cables are not permissible for technological functions
Digital outputs	
Number of digital outputs	16
<ul><li>of which high-speed outputs</li></ul>	4
Short-circuit protection	Yes; Clocked electronically
<ul> <li>Response threshold, typ.</li> </ul>	1 A
Limitation of inductive shutdown voltage to	L+ (-48 V)
Controlling a digital input	Yes
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 "1", min.	L+ (-0.8 V)
Output current	

• for signal "1" rated value	0.5 A
• for signal "1" permissible range, min.	5 mA
• for signal "1" permissible range, max.	0.6 A
• for signal "1" minimum load current	5 mA
• for signal "0" residual current, max.	0.5 mA
Parallel switching of two outputs	
• for uprating	No
<ul> <li>for redundant control of a load</li> </ul>	Yes
Switching frequency	
with resistive load, max.	100 Hz
<ul><li>with inductive load, max.</li></ul>	0.5 Hz
• on lamp load, max.	100 Hz
• of the pulse outputs, with resistive load, max.	2.5 kHz
Total current of the outputs (per group)	
all mounting positions	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	2 A
horizontal installation	
— up to 40 °C, max.	2 A
vertical installation	
— up to 40 °C, max.	3 A
— up to 50 °C, max.	2 A
45° mounting position	
— up to 45 °C, max.	2 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Analog inputs	
Number of analog inputs	4
For voltage/current measurement	4
For resistance/resistance thermometer	1
measurement	
For resistance measurement	1
integrated channels (AI)	4; and 1x PT100
permissible input voltage for current input	2.5 V; continuous, max. 24 V momentarily
(destruction limit), max.	
permissible input voltage for voltage input (destruction limit), max.	30 V; Permanent
permissible input current for voltage input (destruction limit), max.	0.5 mA; Permanent
permissible input current for current input (destruction limit), max.	50 mA; Permanent

Technical unit for temperature measurement adjustable	Yes; Degrees Celsius / degrees Fahrenheit / Kelvin
Input ranges	
Voltage	Yes
Current	Yes
Resistance thermometer	Yes
Resistance	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
<ul><li>Input resistance (0 to 10 V)</li></ul>	100 kΩ
• -10 V to +10 V	Yes
• Input resistance (-10 V to +10 V)	100 kΩ
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
<ul> <li>Input resistance (0 to 20 mA)</li> </ul>	50 kΩ
• -20 mA to +20 mA	Yes
• Input resistance (-20 mA to +20 mA)	50 kΩ
• 4 mA to 20 mA	Yes
<ul><li>Input resistance (4 mA to 20 mA)</li></ul>	50 kΩ
Input ranges (rated values), resistance thermometer	
• Pt 100	Yes
• Input resistance (Pt 100)	10 ΜΩ
Input ranges (rated values), resistors	
No-load voltage, typ.	2.5 V
<ul> <li>Measuring current, typ.</li> </ul>	1.8 to 3.3 mA
• 0 to 600 ohms	Yes
<ul><li>Input resistance (0 to 600 ohms)</li></ul>	10 ΜΩ
Thermocouple (TC)	
Temperature compensation	
— parameterizable	No
Characteristic linearization	
parameterizable	Yes; by software
— for resistance thermometer	Pt 100
Cable length	
• shielded, max.	100 m
Analog outputs	
Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	55 mA
Current output, no-load voltage, max.	17 V
Output ranges, voltage	
• 0 to 10 V	Yes

• -10 V to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes
• 4 mA to 20 mA	Yes
Connection of actuators	
for voltage output two-wire connection	Yes; Without compensation of the line resistances
<ul> <li>for voltage output four-wire connection</li> </ul>	No
<ul> <li>for current output two-wire connection</li> </ul>	Yes
Load impedance (in rated range of output)	
• with voltage outputs, min.	1 kΩ
<ul> <li>with voltage outputs, capacitive load, max.</li> </ul>	0.1 μF
<ul><li>with current outputs, max.</li></ul>	300 Ω
<ul> <li>with current outputs, inductive load, max.</li> </ul>	0.1 mH
Destruction limits against externally applied voltages an	d currents
<ul> <li>Voltages at the outputs towards MANA</li> </ul>	16 V; Permanent
• Current, max.	50 mA; Permanent
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Measurement principle	Actual value encryption (successive approximation)
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign),	12 bit
max.	
	Yes; 2,5 / 16,6 / 20 ms
<ul><li>max.</li><li>Integration time, parameterizable</li><li>permissible input frequency, max.</li></ul>	Yes; 2,5 / 16,6 / 20 ms 400 Hz
<ul><li>max.</li><li>Integration time, parameterizable</li><li>permissible input frequency, max.</li><li>Time constant of the input filter</li></ul>	Yes; 2,5 / 16,6 / 20 ms
<ul> <li>max.</li> <li>Integration time, parameterizable</li> <li>permissible input frequency, max.</li> <li>Time constant of the input filter</li> <li>Basic execution time of the module (all</li> </ul>	Yes; 2,5 / 16,6 / 20 ms 400 Hz
<ul><li>max.</li><li>Integration time, parameterizable</li><li>permissible input frequency, max.</li><li>Time constant of the input filter</li></ul>	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms
<ul> <li>max.</li> <li>Integration time, parameterizable</li> <li>permissible input frequency, max.</li> <li>Time constant of the input filter</li> <li>Basic execution time of the module (all</li> </ul>	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms
<ul> <li>max.</li> <li>Integration time, parameterizable</li> <li>permissible input frequency, max.</li> <li>Time constant of the input filter</li> <li>Basic execution time of the module (all channels released)</li> </ul>	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms
max.  • Integration time, parameterizable  • permissible input frequency, max.  • Time constant of the input filter  • Basic execution time of the module (all channels released)  Analog value generation for the outputs	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms
max.  Integration time, parameterizable  permissible input frequency, max.  Time constant of the input filter  Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms
max.  • Integration time, parameterizable  • permissible input frequency, max.  • Time constant of the input filter  • Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Conversion time (per channel)	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms
max.  • Integration time, parameterizable  • permissible input frequency, max.  • Time constant of the input filter  • Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Conversion time (per channel)  Settling time	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms  12 bit 1 ms
max.  Integration time, parameterizable  permissible input frequency, max.  Time constant of the input filter  Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Conversion time (per channel)  Settling time  for resistive load	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms  12 bit 1 ms  0.6 ms
max.  • Integration time, parameterizable  • permissible input frequency, max.  • Time constant of the input filter  • Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Conversion time (per channel)  Settling time  • for resistive load  • for capacitive load	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms  12 bit 1 ms  0.6 ms 1 ms
max.  Integration time, parameterizable  permissible input frequency, max.  Time constant of the input filter  Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Conversion time (per channel)  Settling time  for resistive load	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms  12 bit 1 ms  0.6 ms
max.  • Integration time, parameterizable  • permissible input frequency, max.  • Time constant of the input filter  • Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Conversion time (per channel)  Settling time  • for resistive load  • for capacitive load  • for inductive load  Encoder	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms  12 bit 1 ms  0.6 ms 1 ms
max.  Integration time, parameterizable  permissible input frequency, max.  Time constant of the input filter  Basic execution time of the module (all channels released)  Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Conversion time (per channel)  Settling time  for resistive load  for capacitive load  for inductive load	Yes; 2,5 / 16,6 / 20 ms 400 Hz 0.38 ms 1 ms  12 bit 1 ms  0.6 ms 1 ms

Number of printer interfaces	1; serial
nterfaces	
• Common mode interference, min.	40 dB
<ul> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> </ul>	30 dB
Interference voltage suppression for $f = n x (f1 +/- 1 \%)$ ,	
• Current, relative to output range, (+/-)	0.7 %
<ul> <li>Voltage, relative to output range, (+/-)</li> </ul>	0.7 %
<ul> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	3 %
<ul> <li>Resistance, relative to input range, (+/-)</li> </ul>	3 %
<ul> <li>Current, relative to input range, (+/-)</li> </ul>	0.7 %
<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.7 %
Basic error limit (operational limit at 25 °C)	
Current, relative to output range, (+/-)	1 %
<ul> <li>Voltage, relative to output range, (+/-)</li> </ul>	1 %
<ul> <li>Resistance, relative to input range, (+/-)</li> </ul>	5 %
<ul> <li>Current, relative to input range, (+/-)</li> </ul>	1 %
<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	1 %
Operational error limit in overall temperature range	
Crosstalk between the outputs, min.	60 dB
Temperature error (relative to output range), (+/-)	0.01 %/K
Linearity error (relative to output range), (+/-)	0.15 %
input range), (+/-)	
Repeat accuracy in steady state at 25 °C (relative to	0.06 %
Crosstalk between the inputs, min.	50 dB
Temperature error (relative to input range), (+/-)	0.06 % 0.006 %/K
Errors/accuracies  Linearity error (relative to input range), (+/-)	0.06 %
sensor), max.	
permissible quiescent current (2-wire)	1.5 mA
2-wire sensor	Yes
connection  Connectable encoders	INO
<ul> <li>for resistance measurement with three-wire connection</li> <li>for resistance measurement with four-wire</li> </ul>	No No
<ul> <li>for resistance measurement with two-wire connection</li> </ul>	Yes; Without compensation of the line resistances
• for current measurement as 4-wire transducer	Yes

Physics   Isolated   No   No   No   Prover supply to interface (15 to 30 V DC), max.   200 mA   Punctionality   • MPI   Yes   MPI   MPI   Yes   MPI	Interface type	Integrated RS 485 interface
Fower supply to interface (15 to 30 V DC), max.  Functionality  • MPI  • Number of connections • Transmission rate, max.  187.5 kbit/s  Services  - PG/OP communication - S7 basic communication - S7 commu	Physics	RS 485
Functionality  • MPI  • Number of connections  • Transmission rate, max.  Services  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server  2. Interface Interface type Interface type Interface type Interface type RS 485 Isolated - Yes Power supply to interface (15 to 30 V DC), max.  Number of connection resources - PROFIBUS DP master - PROFIBUS DP slave - PROFIBUS DP slave - PROFIBUS DP slave - PROFIBUS DP slave - PROFIBUS DP slaves, max Number of DP slaves, max Number	Isolated	No
	Power supply to interface (15 to 30 V DC), max.	200 mA
MPI  Number of connections Transmission rate, max.  8ervices  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server  Physics - S7 communication, as server  2. Interface Physics - RS 485 Isolated - Yes Power supply to interface (15 to 30 V DC), max Ves Power supply to interface (15 to 30 V DC), max Number of connection resources - PROFIBUS DP master - PROFIBUS DP slave - Number of connections, max Number of connections, max Transmission rate, max Number of DP slaves, max Number of DP slaves, max Number of DP slaves, max Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - No	Functionality	
	• MPI	Yes
• Transmission rate, max.  Services  - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication, as client Yes; Via CP and loadable FB - S7 communication, as server Yes  2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Number of connection resources 12 Functionality  • MPI - PROFIBUS DP master - PROFIBUS DP slave Yes  DP master  • Number of connections, max. 12 - Transmission rate, max. 12 Mbit/s - Number of DP slaves, max. 32  Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication No - S7 communication, as client No	MPI	
Services  - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication, as client Yes; Via CP and loadable FB - S7 communication, as server Yes  2. Interface   Interface type	<ul><li>Number of connections</li></ul>	12
— PG/OP communication         Yes           — Routing         Yes           — Global data communication         Yes           — S7 basic communication         Yes           — S7 communication, as client         Yes; Via CP and loadable FB           — S7 communication, as server         Yes           2. Interface         Integrated RS 485 interface           Physics         RS 485           Isolated         Yes           Power supply to interface (15 to 30 V DC), max.         200 mA           Number of connection resources         12           Functionality         No           • PROFIBUS DP master         Yes           • PROFIBUS DP slave         Yes           DP master         Yes           • Number of connections, max.         12           • Transmission rate, max.         12 Mbit/s           • Number of DP slaves, max.         32           Services           — PG/OP communication         Yes           — Routing         Yes           — Global data communication         No           — S7 basic communication         No           — S7 communication         No           — S7 communication, as client         No	<ul> <li>Transmission rate, max.</li> </ul>	187.5 kbit/s
- Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication As client Yes; Via CP and loadable FB - S7 communication, as server Yes - Physics RS 485 Interface RS 485 Isolated Yes - S7 communication Yes - S7 communication Yes - S7 communication No - S7 communication No - S7 communication As Communication No - S7 comm	Services	
— Global data communication Yes  — S7 basic communication Yes  — S7 communication Yes  — S7 communication, as client Yes; Via CP and loadable FB  — S7 communication, as server Yes   2. Interface Interface type Integrated RS 485 interface  Physics RS 485  Isolated Yes  Power supply to interface (15 to 30 V DC), max. 200 mA  Number of connection resources 12  Functionality  • MPI No  • PROFIBUS DP master Yes  • PROFIBUS DP slave Yes   DP master  • Number of connections, max. 12  • Transmission rate, max. 12 Mbit/s  • Number of DP slaves, max. 32  Services  — PG/OP communication Yes  — Routing Yes  — Global data communication No  — S7 basic communication No  — S7 communication No  — S7 communication, as client No	<ul><li>— PG/OP communication</li></ul>	Yes
— S7 basic communication Yes — S7 communication Yes — S7 communication, as client Yes; Via CP and loadable FB — S7 communication, as server Yes  2. Interface Interface type Integrated RS 485 interface Physics RS 485 Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA Number of connection resources 12  Functionality  • MPI No • PROFIBUS DP master Yes • PROFIBUS DP slave Yes  DP master  • Number of connections, max. 12 • Transmission rate, max. 12 Mbit/s • Number of DP slaves, max. 32  Services  — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication No — S7 communication, as client No	— Routing	Yes
— S7 communication Yes — S7 communication, as client Yes; Via CP and loadable FB — S7 communication, as server Yes  2. Interface type  Integrated RS 485 interface Physics RS 485  Isolated Yes Power supply to interface (15 to 30 V DC), max. 200 mA  Number of connection resources 12  Functionality  • MPI No • PROFIBUS DP master Yes • PROFIBUS DP slave Yes  DP master  • Number of connections, max. 12 • Transmission rate, max. 12 Mbit/s • Number of DP slaves, max. 32  Services  — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication No — S7 communication, as client No	<ul> <li>Global data communication</li> </ul>	Yes
— S7 communication, as client — S7 communication, as server  Yes  2. Interface Interface type Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max.  Number of connection resources PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave  PROFIBUS DP slave  PROMUMER of connections, max.  12  12  12  13  14  15  16  17  18  19  19  19  10  10  10  10  10  10  10	<ul> <li>S7 basic communication</li> </ul>	Yes
2. Interface Interface type Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max. Number of connection resources PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave  PROFIBUS DP slave  PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PROFIBUS DP slave PS	— S7 communication	Yes
Interface type Physics RS 485 Isolated Power supply to interface (15 to 30 V DC), max.  Number of connection resources PROFIBUS DP master PROFIBUS DP slave	— S7 communication, as client	Yes; Via CP and loadable FB
Interface type         Integrated RS 485 interface           Physics         RS 485           Isolated         Yes           Power supply to interface (15 to 30 V DC), max.         200 mA           Number of connection resources         12           Functionality                • MPI             • PROFIBUS DP master             • PROFIBUS DP slave         Yes                • PROFIBUS DP slave          Yes                • Number of connections, max.             • 12             • Transmission rate, max.             • 12 Mbit/s             • Number of DP slaves, max.          32                 • Services          — PG/OP communication             • Routing             — Global data communication             • No             — S7 basic communication             • No             • S7 communication             • No             • S7 communication             • No             • S7 communication             • No             • No	<ul> <li>S7 communication, as server</li> </ul>	Yes
Interface type         Integrated RS 485 interface           Physics         RS 485           Isolated         Yes           Power supply to interface (15 to 30 V DC), max.         200 mA           Number of connection resources         12           Functionality                • MPI             • PROFIBUS DP master             • PROFIBUS DP slave         Yes                • PROFIBUS DP slave          Yes                • Number of connections, max.             • 12             • Transmission rate, max.             • 12 Mbit/s             • Number of DP slaves, max.          32                 • Services          — PG/OP communication             • Routing             — Global data communication             • No             — S7 basic communication             • No             • S7 communication             • No             • S7 communication             • No             • S7 communication             • No             • No	2. Interface	
Isolated Power supply to interface (15 to 30 V DC), max.  Power supply to interface (15 to 30 V DC), max.  200 mA  Number of connection resources  I2  Functionality  MPI PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave  PROFIBUS DP slave  Promaster  Number of connections, max. I2 Transmission rate, max. I2 Mbit/s Number of DP slaves, max. I2 Mbit/s  Routing PG/OP communication Pesson Routing Possic communication No S7 basic communication No S7 communication No S7 communication, as client No		Integrated RS 485 interface
Power supply to interface (15 to 30 V DC), max.  Number of connection resources  Functionality  MPI PROFIBUS DP master PROFIBUS DP slave PROFIBUS DP slave  PROFIBUS DP slave  PROFIBUS DP slave  PROFIBUS DP slave  Yes  Number of connections, max. 12  Number of connections, max. 12  Number of DP slaves, max. 12  Services  PG/OP communication Yes  Routing Yes  Routing Yes  Global data communication No  S7 basic communication No  S7 basic communication No  S7 communication No  S7 communication, as client No	Physics	RS 485
Number of connection resources  Functionality  MPI PROFIBUS DP master PROFIBUS DP slave  PROFIBUS DP slave  Yes  PROFIBUS DP slave  Ves  DP master  Number of connections, max. 12 Transmission rate, max. 12 Mbit/s Number of DP slaves, max. 32  Services  — PG/OP communication — Routing — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication No — S7 communication, as client No	Isolated	Yes
Functionality  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  PROFIBUS DP slave   • Number of connections, max.  • Transmission rate, max.  • Number of DP slaves, max.  • Number of DP slaves, max.  32  Services  - PG/OP communication  - Routing  - Routing  - Global data communication  - S7 basic communication  No  - S7 communication  No  - S7 communication, as client  No	Power supply to interface (15 to 30 V DC), max.	200 mA
<ul> <li>MPI</li> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>Yes</li> </ul> DP master <ul> <li>Number of connections, max.</li> <li>Transmission rate, max.</li> <li>Number of DP slaves, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>No</li> <li>S7 communication, as client</li> <li>No</li> </ul>	Number of connection resources	12
<ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>Yes</li> <li>DP master</li> <li>Number of connections, max.</li> <li>12</li> <li>Transmission rate, max.</li> <li>Number of DP slaves, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>No</li> <li>S7 communication, as client</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> <li>No</li> </ul>	Functionality	
<ul> <li>PROFIBUS DP slave</li> <li>Promaster</li> <li>Number of connections, max.</li> <li>Transmission rate, max.</li> <li>Number of DP slaves, max.</li> <li>Services</li> <li>PG/OP communication</li> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>S7 communication</li> <li>No</li> <li>S7 communication</li> <li>No</li> <li>S7 communication, as client</li> <li>No</li> </ul>	• MPI	No
Possible Problems Pr	<ul> <li>PROFIBUS DP master</li> </ul>	Yes
<ul> <li>Number of connections, max.</li> <li>Transmission rate, max.</li> <li>Number of DP slaves, max.</li> <li>Services</li> <li>— PG/OP communication</li> <li>— Routing</li> <li>— Global data communication</li> <li>— S7 basic communication</li> <li>— S7 communication</li> <li>No</li> <li>— S7 communication</li> <li>No</li> <li>— S7 communication, as client</li> <li>No</li> </ul>	<ul> <li>PROFIBUS DP slave</li> </ul>	Yes
<ul> <li>Transmission rate, max.</li> <li>Number of DP slaves, max.</li> <li>Services</li> <li>— PG/OP communication</li> <li>— Routing</li> <li>— Global data communication</li> <li>— S7 basic communication</li> <li>— S7 communication</li> <li>— S7 communication, as client</li> </ul>	DP master	
<ul> <li>Number of DP slaves, max.</li> <li>Services</li> <li>— PG/OP communication</li> <li>— Routing</li> <li>— Global data communication</li> <li>— S7 basic communication</li> <li>— S7 communication</li> <li>— S7 communication</li> <li>— S7 communication</li> <li>— S7 communication, as client</li> </ul>	<ul><li>Number of connections, max.</li></ul>	12
Services	• Transmission rate, max.	12 Mbit/s
<ul> <li>— PG/OP communication</li> <li>— Routing</li> <li>— Global data communication</li> <li>— S7 basic communication</li> <li>— S7 communication</li> <li>— S7 communication</li> <li>— S7 communication</li> <li>— S7 communication, as client</li> <li>No</li> </ul>	<ul><li>Number of DP slaves, max.</li></ul>	32
<ul> <li>Routing</li> <li>Global data communication</li> <li>S7 basic communication</li> <li>No</li> <li>S7 communication</li> <li>No</li> <li>S7 communication</li> <li>No</li> <li>No</li> <li>No</li> </ul>	Services	
<ul> <li>Global data communication</li> <li>S7 basic communication</li> <li>No</li> <li>S7 communication</li> <li>No</li> <li>S7 communication, as client</li> <li>No</li> </ul>	<ul><li>— PG/OP communication</li></ul>	Yes
<ul> <li>— S7 basic communication</li> <li>— S7 communication</li> <li>— S7 communication, as client</li> <li>No</li> <li>No</li> </ul>	— Routing	Yes
<ul><li>— S7 communication</li><li>— S7 communication, as client</li><li>No</li></ul>	— Global data communication	No
— S7 communication, as client No	— S7 basic communication	No
	— S7 communication	No
— S7 communication, as server	— S7 communication, as client	No
· ····································	<ul> <li>S7 communication, as server</li> </ul>	No
— Equidistance Yes	— Equidistance	Yes
— SYNC/FREEZE Yes		Yes

<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
Direct data exchange (slave-to-slave)	Yes
communication)	
Address area	
— Inputs, max.	1 kbyte
— Outputs, max.	1 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
DP slave	
Number of connections	12
• Transmission rate, max.	12 Mbit/s
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>— S7 basic communication</li> </ul>	No
— S7 communication	No
<ul> <li>Direct data exchange (slave-to-slave</li> </ul>	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Communication functions	
Global data communication	
Number of GD packets, max.	4
<ul> <li>Number of GD packets, transmitter, max.</li> </ul>	4
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	4
<ul> <li>Size of GD packets, max.</li> </ul>	22 byte
• Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
● User data per job, max.	76 byte
• User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• as server	Yes
• as client	Yes; Via CP and loadable FB
<ul><li>as client</li><li>User data per job, max.</li></ul>	Yes; Via CP and loadable FB 180 kbyte; With PUT/GET

<ul> <li>User data per job (of which consistent), max.</li> </ul>	64 byte
S5 compatible communication	
• supported	Yes; Via CP and loadable FB
Number of connections	
• overall	12
<ul> <li>usable for PG communication</li> </ul>	11
<ul> <li>reserved for PG communication</li> </ul>	1
<ul> <li>adjustable for PG communication, min.</li> </ul>	1
— adjustable for PG communication, max.	11
<ul> <li>usable for OP communication</li> </ul>	11
<ul> <li>reserved for OP communication</li> </ul>	1
<ul> <li>adjustable for OP communication, min.</li> </ul>	1
— adjustable for OP communication, max.	11
<ul> <li>usable for S7 basic communication</li> </ul>	8
- reserved for S7 basic communication	8
<ul> <li>adjustable for S7 basic communication,</li> </ul>	0
min.	
<ul> <li>adjustable for S7 basic communication,</li> </ul>	8
max.	
<ul><li>usable for routing</li></ul>	4
Number of logical connections (also in	4; 1 fixed with integral CPU
network), max.	
S7 message functions	
Number of login stations for message functions, max.	12; 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	•
Status/control variable	Yes
Status/control variable	Yes
<ul><li>Status/control variable</li><li>Variables</li></ul>	Yes Inputs, outputs, memory bits, DB, times, counters
<ul><li>Status/control variable</li><li>Variables</li><li>Number of variables, max.</li></ul>	Yes Inputs, outputs, memory bits, DB, times, counters 30
<ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>— of which status variables, max.</li> </ul>	Yes Inputs, outputs, memory bits, DB, times, counters 30 30
<ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>— of which status variables, max.</li> <li>— of which control variables, max.</li> </ul>	Yes Inputs, outputs, memory bits, DB, times, counters 30 30
<ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max. <ul> <li>of which status variables, max.</li> <li>of which control variables, max.</li> </ul> </li> <li>Forcing</li> </ul>	Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14
<ul> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.         <ul> <li>of which status variables, max.</li> <li>of which control variables, max.</li> </ul> </li> <li>Forcing         <ul> <li>Forcing</li> </ul> </li> </ul>	Yes Inputs, outputs, memory bits, DB, times, counters 30 30 14

— adjustable	No
Interrupts/diagnostics/status information	
Alarms	Yes
1.000 1.15 0.00	
Integrated Functions Number of counters	4
Counting frequency (counter) max.	4 60 kHz
	Yes
Frequency measurement	
Number of frequency meters	Frequency meter up to max. 60 kHz
controlled positioning	Yes
integrated function blocks (closed-loop control)	Yes; PID controller
PID controller	Yes
Number of pulse outputs	4; Pulse outputs up to 2.5 kHz
Limit frequency (pulse)	2.5 kHz
Potential separation	
Potential separation digital inputs	
• between the channels	No
<ul> <li>between the channels, in groups of</li> </ul>	16
between the channels and backplane bus	Yes
Potential separation digital outputs	
between the channels	Yes
<ul> <li>between the channels, in groups of</li> </ul>	8
between the channels and backplane bus	Yes
Potential separation analog inputs	
Potential separation analog inputs	Yes; common for analog I/O
between the channels	No
between the channels and backplane bus	Yes
Potential separation analog outputs	
Potential separation analog outputs	Yes; common for analog I/O
between the channels	No
between the channels and backplane bus	Yes
·	1.00
Permissible potential difference	
between different circuits	75 V DC/60 V AC
Between the inputs and MANA (UCM)	8 V DC
between MANA and M internally (UISO)	75 V DC/60 V AC
Isolation	
Isolation tested with	500 V DC
EMC	
Interference immunity against discharge of static electri	city
Interference immunity against discharge of	Yes; ±6 kV contact discharge acc. to IEC 61000-4-2, ESD; ±8 kV
static electricity acc. to IEC 61000-4-2	air discharge acc. to IEC 61000-4-2, ESD

Interference immunity against high-frequency electrom	agnetic fields
Interference immunity against high-frequency	Yes; 10 V/m, with 80% amplitude modulation at 1 kHz, 80 MHz to
radiation acc. to IEC 61000-4-3	1 GHz (to IEC 61000-4-3); 10 V/m, pulse-modulated 50% duty
	cycle at 900 MHz and 1.89 GHz (to IEC61000-4-3)
Interference immunity to cable-borne interference	
<ul> <li>Interference immunity on supply lines acc. to IEC 61000-4-4</li> </ul>	Yes
<ul> <li>Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>	Yes; ±2 kV acc. to IEC 61000-4-4, Burst
Interference immunity against voltage surge	
• on the supply lines acc. to IEC 61000-4-5	Yes; Surge measurements with additional protection elements: ± kV (to IEC 61000-4-5; μs pulse / line to line);±2 kV (to IEC 61000-4-5; μs pulse / line to ground)
Interference immunity against conducted variable distu	rbance induced by high-frequency fields
Interference immunity against high-frequency	Yes; 10 V/m, with 80% amplitude modulation at 1 kHz, 10 kHz to
radiation acc. to IEC 61000-4-6	80 MHz (acc. to IEC 61000-4-6)
Emission of radio interference acc. to EN 55 011	
• Limit class A, for use in industrial areas	Yes
Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes; Housing
• IP65	Yes; Front
Standards, approvals, certificates	
CSA approval	Yes
UL approval	Yes
FM approval	Yes
mbient conditions	
Environmental conditions	Not suitable for open-air use
Ambient temperature during operation	
• 45 degree installation, min.	0 °C
• 45 degree installation, max.	45 °C
horizontal installation, min.	0 °C
horizontal installation, max.	40 °C
• vertical installation, min.	0 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Operation, min.	795 hPa
Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
Storage/transport, min.	OOO TIII U

Storage/transport, max.	1 080 hPa
Relative humidity	
Operation, min.	5 %
<ul> <li>Operation, max.</li> </ul>	95 %
• Storage/transport, min.	5 %
Storage/transport, max.	95 %
Vibrations	
Operation, tested according to IEC 60068-2-6	Yes; 10 Hz to 58 Hz: Amplitude 0.075 mm; 58 Hz to 150 Hz: Acceleration 9.8 m/s <sup>2</sup>
• Transport, tested acc. to IEC 60068-2-6	Yes; 5 Hz to 9 Hz: amplitude 3.5 mm; 9 Hz to 500 Hz: acceleration 9.8 m/s² (storage / transport in the packaging)
Shock test	
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Shock testing	
Operation, tested according to IEC 60068-2-29	Yes; Half-sine: 150 m/s2 (15 g), 11 ms, 18 shocks
<ul> <li>Storage/transport, tested acc. to IEC 60068-2-</li> </ul>	Yes; 250 m/s² (25 g), 6 ms, 1 000 shocks
Fire resistance	
Terminal strips	FV2 (tested to IEC 60707)
Basic strips in housing	FV0
Configuration	
Configuration software	
• STEP 7	Yes; V5.1 SP3, STEP 7 Lite
• ProTool	Yes; or SIMATIC ProTool/Pro Configuration, Version 6.0 SP1 or higher
<ul> <li>ProTool/Lite</li> </ul>	Yes
. D. T. 1/D	
<ul><li>ProTool/Pro</li></ul>	Yes; Configuration also with WinCC flexible
<ul><li>ProTool/Pro</li><li>WinCC flexible Compact</li></ul>	Yes; Configuration also with WinCC flexible Yes
WinCC flexible Compact	Yes
<ul><li>WinCC flexible Compact</li><li>WinCC flexible Standard</li></ul>	Yes Yes
<ul><li>WinCC flexible Compact</li><li>WinCC flexible Standard</li><li>WinCC flexible Advanced</li></ul>	Yes Yes
<ul> <li>WinCC flexible Compact</li> <li>WinCC flexible Standard</li> <li>WinCC flexible Advanced</li> </ul> Programming	Yes Yes Yes
<ul> <li>WinCC flexible Compact</li> <li>WinCC flexible Standard</li> <li>WinCC flexible Advanced</li> <li>Programming</li> <li>Command set</li> </ul>	Yes Yes Yes See instruction list
<ul> <li>WinCC flexible Compact</li> <li>WinCC flexible Standard</li> <li>WinCC flexible Advanced</li> <li>Programming</li> <li>Command set</li> <li>Nesting levels</li> </ul>	Yes Yes Yes See instruction list 8
<ul> <li>WinCC flexible Compact</li> <li>WinCC flexible Standard</li> <li>WinCC flexible Advanced</li> <li>Programming</li> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> </ul>	Yes Yes Yes  see instruction list 8 see instruction list
WinCC flexible Compact  WinCC flexible Standard  WinCC flexible Advanced  Programming  Command set  Nesting levels  System functions (SFC)  System function blocks (SFB)	Yes Yes Yes  see instruction list 8 see instruction list
<ul> <li>WinCC flexible Compact</li> <li>WinCC flexible Standard</li> <li>WinCC flexible Advanced</li> </ul> Programming <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> </ul> Programming language	Yes Yes Yes  see instruction list 8 see instruction list see instruction list
WinCC flexible Compact  WinCC flexible Standard  WinCC flexible Advanced  Programming  Command set  Nesting levels  System functions (SFC)  System function blocks (SFB)  Programming language  LAD	Yes Yes Yes  see instruction list 8 see instruction list see instruction list
WinCC flexible Compact  WinCC flexible Standard  WinCC flexible Advanced  Programming  Command set  Nesting levels  System functions (SFC)  System function blocks (SFB)  Programming language  — LAD — FBD	Yes Yes Yes  see instruction list 8 see instruction list see instruction list Yes Yes
WinCC flexible Standard WinCC flexible Advanced  Programming  Command set Nesting levels System functions (SFC) System function blocks (SFB)  Programming language  LAD —FBD —STL	Yes Yes Yes  see instruction list 8 see instruction list see instruction list Yes Yes Yes

— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Languages	
Online languages	
<ul><li>Number of online/runtime languages</li></ul>	3
Mechanics/material	
Service life	
<ul><li>Number of operating cycles, keys</li></ul>	1 000 000
Dimensions	
Dimensions Width	260 mm
	260 mm 199 mm
Width	
Width Height	199 mm
Width Height Depth	199 mm 79 mm
Width Height Depth Mounting cutout, width	199 mm 79 mm 231 mm
Width Height Depth Mounting cutout, width Mounting cutout, height	199 mm 79 mm 231 mm