SIEMENS

Data sheet

6ES7314-6BH04-0AB0



SIMATIC S7-300, CPU 314C-2 PTP COMPACT CPU WITH MPI, 24 DI/16 DO, 4AI, 2AO, 1 PT100, 4 FAST COUNTERS (60 KHZ), INTEGRATED INTERFACE RS485, INTEGRATED 24V DC POWER SUPPLY, 192 KBYTE WORKING MEMORY, FRONT CONNECTOR (2 X 40PIN) AND MICRO MEMORY CARD REQUIRED

Product type designation	
General information	
Hardware product version	01
Firmware version	V3.3
Engineering with	
 Programming package 	STEP7 as of V5.5 + SP1 or STEP 7 V5.3 + SP2 or higher with HSP 204
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
External protection for supply cables	Miniature circuit breaker, type C; min. 2 A; miniature circuit
(recommendation)	breaker type B, min. 4 A
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
• Repeat rate, min.	1 s
Digital inputs	
Load voltage L+	
— Rated value (DC)	24 V
— Reverse polarity protection	Yes
Digital outputs	
Load voltage L+	
— Rated value (DC)	24 V

- Reverse polarity protection	No
Input current	
Current consumption (rated value)	660 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	5 A
l²t	0.7 A ^{2.} s
Digital inputs	
 from load voltage L+ (without load), max. 	80 mA
Digital outputs	
 from load voltage L+, max. 	50 mA
Power losses	
Power loss, typ.	13 W
Memory	
Work memory	
Integrated	192 kbyte
• expandable	No
 Size of retentive memory for retentive data blocks 	64 kbyte
Load memory	
• pluggable (MMC)	Yes
 pluggable (MMC), max. 	8 Mbyte
 Data management on MMC (after last 	10 y
programming), min.	
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
• without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.06 µs
for word operations, typ.	0.12 µs
for fixed point arithmetic, typ.	0.16 µs
for floating point arithmetic, typ.	0.59 µs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks
DB	can be reduced by the MMC used.
	1 024; Number range: 1 to 16000
Number, max.	64 kbyte
• Size, max. FB	
Number, max.	1 024; Number range: 0 to 7999
	64 kbyte
• Size, max.	
FC	

• Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Description	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
 Number of time alarm OBs 	1; OB 10
 Number of delay alarm OBs 	2; OB 20, 21
Number of time interrupt OBs	4; OB 32, 33, 34, 35
 Number of process alarm OBs 	1; OB 40
 Number of startup OBs 	1; OB 100
 Number of asynchronous error OBs 	4; OB 80, 82, 85, 87
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
per priority class	16
 additional within an error OB 	4
Counters, timers and their retentivity S7 counter	
Number	256
Retentivity	
— can be set	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— can be set	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s

IEC timer	
• present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Total retentive data area	All, max. 64 KB
Flag	
• Number, max.	256 byte
 Retentivity available 	Yes; MB 0 to MB 255
 Retentivity preset 	MB 0 to MB 15
 Number of clock memories 	8; 1 memory byte
Data blocks	
● Number, max.	1 024; Number range: 1 to 16000
● Size, max.	64 kbyte
 Retentivity adjustable 	Yes; via non-retain property on DB
 Retentivity preset 	Yes
Local data	
• per priority class, max.	32 kbyte; Max. 2048 bytes per block
Address area	
I/O address area	
• Inputs	1 024 byte
Outputs	1 024 byte
of which, distributed	
— Inputs	none
— Outputs	none
Process image	
• Inputs	1 024 byte
Outputs	1 024 byte
 Inputs, adjustable 	1 024 byte
 Outputs, adjustable 	1 024 byte
 Inputs, default 	128 byte
 Outputs, default 	128 byte
Default addresses of the integrated channels	
— 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	1 016
— Inputs, of which central	1 016
Outputs	1 008

— Outputs, of which central	1 008
Analog channels	
• Inputs	253
— Inputs, of which central	253
Outputs	250
- Outputs, of which central	250
	200
Hardware configuration	
Expansion devices, max.	3
Number of DP masters	
Integrated	none
• Via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, point-to-point	8
• CP, LAN	10
Rack	
• Racks, max.	4
 Modules per rack, max. 	8; In rack 3 max. 7
ime of day	
Clock	
 Hardware clock (real-time clock) 	Yes
battery-backed and synchronizable	Yes
Deviation per day, max.	10 s; Typ.: 2 s
Backup time	6 wk; At 40 °C ambient temperature
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup	Clock continues to run with the time at which the power failure
period	occurred
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
Clock synchronization	
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• in AS, master	Yes
	No
• in AS, slave	
Digital inputs	
Number of digital inputs	24

 of which, inputs usable for technological 	16
integrated channels (DI)	24
Input characteristic curve in accordance with IEC 61131, type 1	Yes
horizontal installation	
— up to 40 °C, max.	24
— up to 60 °C, max.	12
vertical installation	
— up to 40 °C, max.	12
Input voltage	
Rated value (DC)	24 V
● for signal "0"	-3 to +5V
Input current	
● for signal "1", typ.	8 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— Parameterizable	Yes; 0.1 / 0.3 / 3 / 15 ms (You can reconfigure the input delay of
	the standard inputs during program runtime. Please note that under certain circumstances your newly set filter time may not be effective until the next filter cycle.)
— nominal	3 ms
for counter/technological functions	
— at "0" to "1", max.	8 μs; Minimum pulse width/minimum pause between pulses at maximum counting frequency
Cable length	
 shielded, max. 	1 000 m; 50 m for technological functions
 Unshielded, max. 	600 m; For technological functions: No
Technological functions	
— shielded, max.	50 m; at maximum count frequency
— Unshielded, max.	not allowed
Digital outputs	
Number of digital outputs	16
 of which high-speed outputs 	4; Notice: You cannot connect the fast outputs of your CPU in parallel
integrated channels (DO)	16
short-circuit protection	Yes; Clocked electronically
 Response threshold, typ. 	1 A
Limitation of inductive shutdown voltage to	L+ (-48 V)
Limitation of inductive shutdown voltage to Controlling a digital input	L+ (-48 V) Yes
•	
Controlling a digital input	

• upper limit 4 k3 Output voltage - • for signal *1", min. L + (0.8 V) Output current - • for signal *1" ated value 500 mA • for signal *1" permissible range, max. 0.6 A • for signal *1" permissible range, max. 0.5 mA • for signal *1" minimum load current, max. 0.5 mA • for raignal *1" minimum load current, max. 0.5 mA • for redundant control of a load Yees • Switching frequency - • with resistive load, max. 0.5 Hz • on lamp load, max. 100 Hz • on lamp load, max. 0.5 Hz • on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 Hz • horizontal installation - - up to 40 °C, max. 2 A Cable length - • Unshielded, max. 600 m • Lonshielded, max. 600 m • For voltage/current mometer 1 • For voltage/current mometer 1 • For voltage/current mometer 5 <th>lower limit</th> <th>48 Ω</th>	lower limit	48 Ω
Support the second se		
• for signal *1*, min. L+ (-0.8 V) Output current 500 mA • for signal *1* permissible range, min. 5 mA • for signal *1* permissible range, max. 0.6 A • for signal *0* residual current 5 mA • for signal *0* residual current, max. 0.5 mA • for signal *0* residual current, max. 0.5 mA • for redundant control of a load Yes Switching frequency No • of redundant control of a load Yes Switching frequency 100 Hz • with inductive load, max. 0.5 H2 • on lamp load, max. 0.5 H2 • on lamp load, max. 0.5 H2 • on lamp load, max. 100 Hz • on lamp load, max. 2.5 kH2 • on lamp load, max. 2.6 H2 • on lamp load, max. 2.6 H2 • on lamp load, max. 2.6 H2 • on lamp load, max. 0.6 IM2 • on the olo *C, max. 2 A vettcal installation -	••	4 777
Output current 500 mA • for signal *1" rated value 500 mA • for signal *1" permissible range, max. 0.6 A • for signal *1" permissible range, max. 0.5 mA • for signal *1" minimum load current 5 mA • for signal *1" minimum load current 5 mA • for signal *1" minimum load current 5 mA • for readundant control of a load Yes Switching frequency 100 Hz • with resistive load, max. 0.5 H2 • on lamp load, max. 0.0 Hz • on lamp load, max. 0.0 Hz • on lamp load, max. 2.5 KHz • horizontal installation 2.5 KHz up to 40 °C, max. 3 A - up to 40 °C, max. 2 A Cable length 5 • For voltage/current measurement 4 • For voltage/current measurement 4 • For rositance/resistance thermometer measurement 5 (+ x current/voltage, 1 x resistance • For voltage/current for voltage input 5 (+ X current/voltage, 1 x resistance • For voltage/current for voltage input 6 V; Permanent		1+(08)()
• for signal "1" rated value500 mA• for signal "1" permissible range, min.5 mA• for signal "1" permissible range, max.0.6 A• for signal "1" minimum load current5 mA• for signal "0" residual current, max.0.5 mAParatlel subching of 2 outputs0.5 mAParatlel subching of 2 outputsNo• for redundant control of a loadYes• for redundant control of a loadYesSwitching frequency100 Hz• with resistive load, max.0.5 Hz• on lamp load, max.0.5 Hz• on lamp load, max.100 Hz• of the pulse outputs, with resistive load, max.2.6 KHz• horizontal installation2.4- up to 40 "C, max.2.A- up to 40 "C, max.2.A• disbielded, max.1000 m• Unshielded, max.600 m• Unshielded, max.600 m• Unshielded, max.5• For voltage/current measurement4• For voltage/current measurement5• For voltage/current measurement5• For voltage/current measurement5• For voltage/current for voltage input5• For voltage/current for voltage input5• V: Permanent6• Gestione inmit, max.0.5 mA; Permanent• for voltage for voltage input60 m• For voltage for voltage input5• For voltage input (destruction limit), max.0.5 mA; Permanent• for voltage input (utrent for voltage input60 mA; Permanent• (-	L+ (-0.0 V)
ior signal "1" permissible range, max. 5 mA ior signal "1" minimum load current 5 mA ior signal "0" residual current, max. 0.6 A Parallel switching of 2 outputs 5 mA ior signal "0" residual current, max. 0.6 mA Parallel switching of 2 outputs 5 mA ior signal "1" minimum load current, max. 0.6 mA ior redundant control of a load Yes Switching frequency 100 Hz iwith inductive load, max. 0.5 Hz ior namp load, max. 100 Hz ior lamp load, max. 0.5 Hz ior lamp load, max. 100 Hz ior lang load, max. 2.5 kHz horizontal installation 2 A - up to 40 "C, max. 2 A vertical installation 2 A - up to 40 "C, max. 2 A vertical installation 600 m Arabided max. 600 m isheleded, max. 600 m ior providsge/current measurement 4 i- For voltage/current measurement 5 i- For voltage/current measurement 5.4 x current/voltage, 1 x resistance permissible input		500 mA
• for signal *1* permissible range, max.0.6 Å• for signal *1* minimum load current5 mÅ• for signal *0* residual current, max.0.5 mÅ Paralet switching of 2 outputs • No• for increased powerNo• for redundant control of a loadYesSwitching frequency• On HZ• with resistive load, max.0.5 HZ• on lamp load, max.0.6 Å• on lamp load, max.0.6 HZ• or lamp load, max.2.5 kHz• or lamp load, max.2.6 kHz• or lamp load, max.100 HZ• or lamp load, max.2.6 kHz• or lamp load or, max.2.6 kHz• or lamp load or, max.2.6 kHz• or lamp load or, max.5 kHz• or lamp load, max.1	•	
if or signal "1" minimum load current 5 mA if or signal "0" residual current, max. 0.5 mA Parallel switching of 2 outputs Ves if or increased power No if or increased power No if or increased power No if or redundant control of a load Yes Switching frequency 100 Hz with resistive load, max. 0.5 Hz if on lamp load, max. 0.5 Hz if the pulse outputs, with resistive load, max. 2.5 kHz if the pulse outputs, with resistive load, max. 2.5 kHz if the pulse outputs, with resistive load, max. 2.4 if the pulse outputs, with resistive load, max. 2.4 if the pulse outputs, with resistive load, max. 2.4 if the pulse outputs, with resistive load, max. 600 m cable length 1000 m if up to 40 "C, max. 600 m cable length 5 if or outlage inputs 5 vi x current/voltage, 1 x resistance		
• for signal "0" residual current, max. 0.5 mA Parallel switching of 2 outputs • • for increased power No • on lamp load, max. 100 Hz • on lamp load, max. 0.5 Hz • on lamp load, max. 100 Hz • of the pulse outputs, with resistive load, max. 2.5 kHz horizontal installation - up to 40 °C, max. 2 A - oup to 60 °C, max. 2 A Cable length - - up to 40 °C, max. 1000 m • Or resistance/resistance 600 m Analog inputs 5 • For voltage/current measurement 4 • For voltage/current measurement 5/t 4 x current/voltage, 1 x resistance permissible input torlege for voltage input (destruction limit), max. 5/t 9/t Permanent permissible input torlege for voltage input (destruction limit), max. 5/t NPermanent		
Parallel syntheting of 2 outputs • for increased power No • for redundant control of a load Yes Switching frequency 100 Hz • with resistive load, max. 0.5 Hz • on lamp load, max. 2.5 kHz • horizontal installation 2 A up to 40 °C, max. 2 A vertical installation - - up to 40 °C, max. 2 A Cable length - • shelded, max. 600 m Number of analog inputs 5 • For voltage/current measurement 4 • For rosistance/resistance thermometer measurement 5 • For voltage/current input 5 v/ Permanent (destruction limit), max. 30 V/ Permanent permissible input urrent for voltage input 50 mA; Permanent (destruction limit), max. 50 mA; Permanent permissible input urrent for voltage input 50 mA; Permanent (destruction limit), max. 50 mA; Permanent permissible input urrent for voltag	-	
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Note of the second of a rate of the second of the	 for increased power 	
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horizontal installation 3 A	• on lamp load, max.	100 Hz
up to 40 °C, max.3 A 2 A up to 60 °C, max.2 Avertical installation2 A up to 40 °C, max.2 ACable length2 A up to 40 °C, max.1000 m6 unshielded, max.1000 m• Unshielded, max.1000 m• Unshielded, max.1000 m• Unshielded, max.5• For voltage/current measurement4• For voltage/current measurement1• For resistance/resistance thermometer measurement5; 4 x current/voltage, 1 x resistanceIntegrated channels (Al)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.30 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for voltage input (destruction limit), max.50 mA; Permanentpermissible input turrent for current input (destruction limit), max.50 mA; Permanentrechnical unit for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin	 of the pulse outputs, with resistive load, max. 	2.5 kHz
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up to 40 °C, max.2 ACable length1000 m• shielded, max.1000 m• Unshielded, max.600 mAnalog inputs5• For voltage/current measurement4• For resistance/resistance thermometer measurement1Integrated channels (AI)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.5 V; Permanentpermissible input current for voltage input (destruction limit), max.30 V; Permanentpermissible input current for current input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; PermanentTechnical unit for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin	— up to 60 °C, max.	2 A
Cable length1000 m• shielded, max.600 m• Unshielded, max.600 mAnalog inputs5Number of analog inputs5• For voltage/current measurement4• For resistance/resistance thermometer measurement1Integrated channels (Al)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.5 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentrechnical unit for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin	vertical installation	
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Number of analog inputs5• For voltage/current measurement4• For resistance/resistance thermometer measurement1Integrated channels (AI)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.5 V; Permanentpermissible input voltage for voltage input (destruction limit), max.30 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; PermanentTechnical unit for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin	• Unshielded, max.	600 m
Number of analog inputs5• For voltage/current measurement4• For resistance/resistance thermometer measurement1Integrated channels (AI)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.5 V; Permanentpermissible input voltage for voltage input (destruction limit), max.30 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; PermanentTechnical unit for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin		
• For voltage/current measurement4• For resistance/resistance thermometer measurement1Integrated channels (AI)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.5 V; Permanentpermissible input voltage for voltage input (destruction limit), max.30 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentfechnical unit for temperature measurement adjustable50 mA; Permanent		5
• For resistance/resistance thermometer measurement1Integrated channels (AI)5; 4 x current/voltage, 1 x resistancepermissible input frequency for current input (destruction limit), max.5 V; Permanentpermissible input voltage for voltage input (destruction limit), max.30 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; Permanentcontract for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin		
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(destruction limit), max.30 V; Permanentpermissible input voltage for voltage input (destruction limit), max.30 V; Permanentpermissible input current for voltage input (destruction limit), max.0.5 mA; Permanentpermissible input current for current input (destruction limit), max.50 mA; PermanentTechnical unit for temperature measurement adjustableYes; Degrees Celsius / degrees Fahrenheit / Kelvin		
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limit), max. Technical unit for temperature measurement adjustable Yes; Degrees Celsius / degrees Fahrenheit / Kelvin		0.5 mA; Permanent
adjustable		50 mA; Permanent
Input ranges		Yes; Degrees Celsius / degrees Fahrenheit / Kelvin
	Input ranges	

• Voltage	Yes; ±10 V / 100 kΩ; 0 V to 10 V / 100 kΩ
Current	Yes; ±20 mA / 100 Ω; 0 mA to 20 mA / 100 Ω; 4 mA to 20 mA /
Gunen	100 Ω
Resistance thermometer	Yes; Pt 100 / 10 MΩ
Resistance	Yes; 0 Ω to 600 Ω / 10 MΩ
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
 Input resistance (0 to 10 V) 	100 kΩ
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
 Input resistance (0 to 20 mA) 	100 Ω
• -20 mA to +20 mA	Yes
 Input resistance (-20 mA to +20 mA) 	100 Ω
• 4 mA to 20 mA	Yes
 Input resistance (4 mA to 20 mA) 	100 Ω
Input ranges (rated values), resistance thermometer	
• Pt 100	Yes
Input resistance (Pt 100)	10 ΜΩ
Input ranges (rated values), resistors	
• No-Load voltage, typ.	3.3 V
Measured current, typ.	1,25 mA
• 0 to 600 ohms	Yes
 Input resistance (0 to 600 ohms) 	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
Integrated channels (AO)	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	55 mA 14 V
Current output, no-load voltage, max.	14 V
Output ranges, voltage	Yes
• 0 to 10 V	Yes
• -10 V to +10 V	
Output ranges, current	Yes
• 0 to 20 mA	100

● -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
for voltage output four-wire connection	No
for current output two-wire connection	Yes
Load impedance (in rated range of output)	
• with voltage outputs, min.	1 kΩ
 with voltage outputs, rank with voltage outputs, capacitive load, max. 	0.1 µF
with current outputs, max.	300 Ω
 with current outputs, inductive load, max. 	0.1 mH
Destruction limits against externally applied voltages an	
Voltages at the outputs towards MANA	16 V; Permanent
Current, max.	50 mA; Permanent
Cable length	
• shielded, max.	200 m
Analog value creation	
Measurement principle	Actual value encryption (successive approximation)
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), 	12 bit
max.	Nos: 16.6 / 20 mg
Integration time, parameterizable	Yes; 16.6 / 20 ms
• permissible input frequency, max.	400 Hz
 Conversion time (per channel) 	1 ms
 Time constant of the input filter 	0.38 ms
 Basic execution time of the module (all channels released) 	1 ms
Settling time	
 for resistive load 	0.6 ms
● for capacitive load	1 ms
 for inductive load 	0.5 ms
Encoder	
Connection of signal encoders	
 for voltage measurement 	Yes
 for current measurement as 2-wire transducer 	Yes; with external supply
 for current measurement as 4-wire transducer 	Yes
 for resistance measurement with two-wire connection 	Yes; Without compensation of the line resistances
 for resistance measurement with three-wire connection 	No
 for resistance measurement with four-wire connection 	No

 2-wire sensor Permissible quiescent current (2-wire sensor), max. 2-more description of the sensor, max. 2-more description of the sensor of the s	Connectable encoders	
sensor), max. Errors/accuracies Temperature error (relative to input range), (+/-) 0.006 %/K Crosstalk between the inputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to input ranea), (+/-) 0.06 % Output ripple (based on output area, bandwidth 0 to 0.1 % 0.06 %/K Crosstalk between the output range), (+/-) 0.15 % Temperature error (relative to output range), (+/-) 0.15 % Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to 0.06 % 0.06 % output area), (+/-) 0.1 % Operational limit in overall temperature range 0.06 % • Voltage, relative to input area, (+/-) 1 % • Courrent, relative to output area, (+/-) 1 % • Courrent, relative to output area, (+/-) 1 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to output area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-)	• 2-wire sensor	Yes
sensor), max. Errors/accuracies Temperature error (relative to input range), (+/-) 0.006 %/K Crosstalk between the inputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to input area), (+/-) 0.06 % Output ripple (based on output area, bandwidth 0 to 50 kHz), (+/-) 0.1 % Linearity error (relative to output range), (+/-) 0.15 % Temperature error (relative to output range), (+/-) 0.06 % Output relative to input area, (+/-) 0.01 %/K Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to output area), (+/-) 0.06 % Output area), (+/-) 0.01 %/K Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to output area), (+/-) 0.06 % Output area), (+/-) 1 % Current, relative to input area, (+/-) 1 % Voltage, relative to output area, (+/-) 1 % Voltage, relative to output area, (+/-) 1 % Current, relative to output area, (+/-) 0.8 %; Linearity error +/- 0.06 % Current, relative to output area, (+/-) 0.8 %; Linearity error +/- 0.06 % Current, relative to output area, (+/-	— Permissible quiescent current (2-wire	1.5 mA
Temperature error (relative to input range), (+/-)0.006 %/KCrosstalk between the inputs, min.60 dBRepeat accuracy in steady state at 25 °C (relative to onput range), (+/-)0.06 %Output ripple (based on output area, bandwidth 0 to 60 KHX , (+/-)0.15 %Crosstalk between the outputs, min.60 dBRepeat accuracy in steady state at 25 °C (relative to output area), (+/-)0.15 %Temperature error (relative to output range), (+/-)0.15 %Operational limit in overall temperature range0.06 %• Voltage, relative to input area, (+/-)1 %• Current, relative to input area, (+/-)1 %• Current, relative to output area, (+/-)1 %• Current, relative to output area, (+/-)1 %• Voltage, relative to output area, (+/-)1 %• Current, relative to input area, (+/-)0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, (+/-)0.8 %; Linearity error +/- 0.06 %• Current, relative to output area, (+/-)0.8 %• Voltage, relative to output area, (+/-)0.8 %• Current, relative to output area, (+/-) <td></td> <td></td>		
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Crosstalk between the inputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to input area), (+/-) 0.06 % Output ripple (based on output area, bandwidth 0 to 50 kHz), (+/-) 0.1 % Linearity error (relative to output range), (+/-) 0.15 % Temperature error (relative to output range), (+/-) 0.01 %/K Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to output area), (+/-) 0.06 % Output ripple, relative to input area, (+/-) 0.06 % Operational limit in overall temperature range • • Voltage, relative to input area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % • Current, relative to input area, (+/-) 1 % • Voltage, relative to input area, (+/-) 1 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to output area, (+/-) 0.8 % • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current,		0.006 % //
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50 kHz), (+/-) 0.15 % Temperature error (relative to output range), (+/-) 0.15 % Temperature error (relative to output range), (+/-) 0.01 %/K Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to output area), (+/-) 0.06 % Operational limit in overall temperature range 0.06 % Voltage, relative to input area, (+/-) 1 % Current, relative to output area, (+/-) 1 % Voltage, relative to output area, (+/-) 1 % Voltage, relative to output area, (+/-) 1 % Current, relative to input area, (+/-) 1 % Voltage, relative to input area, (+/-) 1 % Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% Resistance, relative to output area, (+/-) 0.8 % Voltage, relative to output area, (+/-) 0.8 % Voltage, relative to output area, (+/-) 0.8 % Voltage, relative to output area, (+/-) 0.8 % Current, relative to output area, (+/-) 0.8 % Current, relative to output area, (+/-) 0.8 % Number of Def enterference (peak	input area), (+/-)	0.06 %
Temperature error (relative to output range), (+/-) 0.01 %/K Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to output area), (+/-) 0.06 % Operational limit no verall temperature range 0.06 % • Voltage, relative to input area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Voltage, relative to input area, (+/-) 1 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance, relative to input area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 %		0.1 %
Crosstalk between the outputs, min. 60 dB Repeat accuracy in steady state at 25 °C (relative to output area), (+/-) 0.06 % Operational limit in overall temperature range 0.06 % • Voltage, relative to input area, (+/-) 1 % • Current, relative to input area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Current, relative to input area, (+/-) 1 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % <	Linearity error (relative to output range), (+/-)	0.15 %
Repeat accuracy in steady state at 25 °C (relative to output area), (+/-)0.06 %Operational limit in overall temperature range• Voltage, relative to input area, (+/-)1 %• Voltage, relative to input area, (+/-)1 %• Resistance, relative to input area, (+/-)1 %• Voltage, relative to output area, (+/-)1 %• Voltage, relative to output area, (+/-)1 %• Current, relative to output area, (+/-)1 %• Current, relative to input area, (+/-)1 %• Voltage, relative to input area, (+/-)0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, (+/-)0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, (+/-)0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, (+/-)0.8 %; Linearity error +/- 0.2%• Resistance, relative to output area, (+/-)0.8 %• Voltage, relative to output area, (+/-)0.8 %• Voltage, relative to output area, (+/-)0.8 %• Voltage, relative to output area, (+/-)0.8 %• Current, relative to output area, (+/-)0.8 %• Voltage, relative to output area, (+/-)0.8 %• Current, relativ	Temperature error (relative to output range), (+/-)	0.01 %/K
output area), $(+')$ Operational limit in overall temperature range• Voltage, relative to input area, $(+/-)$ 1 %• Current, relative to input area, $(+/-)$ 1 %• Resistance, relative to output area, $(+/-)$ 1 %• Voltage, relative to output area, $(+/-)$ 1 %• Current, relative to output area, $(+/-)$ 1 %• Basic error limit (operational limit at 25 °C)• Voltage, relative to input area, $(+/-)$ 0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, $(+/-)$ 0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, $(+/-)$ 0.8 %; Linearity error +/- 0.06 %• Current, relative to input area, $(+/-)$ 0.8 %; Linearity error +/- 0.2%• Resistance, relative to output area, $(+/-)$ 0.8 %; Linearity error +/- 0.2%• Resistance thermometer, relative to input area, $(+/-)$ 0.8 %• Voltage, relative to output area, $(+/-)$ 0.8 %• Voltage, relative to output area, $(+/-)$ 0.8 %• Voltage, relative to output area, $(+/-)$ 0.8 %• Current, relative to output area, $(+/-)$ <td>Crosstalk between the outputs, min.</td> <td>60 dB</td>	Crosstalk between the outputs, min.	60 dB
• Voltage, relative to input area, (+/-) 1 % • Current, relative to input area, (+/-) 1 % • Resistance, relative to output area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % • Basic error limit (operational limit at 25 °C) 0.8 %; Linearity error +/- 0.06 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Series mode interference (peak value of input range), min. 0 dB • Common mode interference, min. 40 dB Interfaces 0 Number of USB interfaces (TTY) 0 Number of RS 422 interfaces 1; R		0.06 %
• Current, relative to input area, (+/-) 1 % • Resistance, relative to input area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % • Basic error limit (operational limit at 25 °C) 1 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Interfaces mode interference (pack val	Operational limit in overall temperature range	
• Resistance, relative to input area, (+/-) 1 % • Voltage, relative to output area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % Basic error limit (operational limit at 25 °C) • • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current of Usge interference (peak value of input range), min. • Common mode interference, min. • Common mode interference, m	 Voltage, relative to input area, (+/-) 	1 %
• Voltage, relative to output area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % Basic error limit (operational limit at 25 °C) 0.8 %; Linearity error +/- 0.06 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Interfaces mode interference, (peak value of interference (peak value of interference < rated value of input range), min.	• Current, relative to input area, (+/-)	1 %
• Voltage, relative to output area, (+/-) 1 % • Current, relative to output area, (+/-) 1 % Basic error limit (operational limit at 25 °C) 0.8 %; Linearity error +/- 0.06 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % Interference voltage suppression for f = n x (f1 +/- 1%), f1 = interference frequency 30 dB • Series mode interference, min. 40 dB Interfaces 0 Number of USB interfaces (TTY) 0 Number of RS 422 interfaces 1; RS 422/485 combined Number of other interfaces 0	 Resistance, relative to input area, (+/-) 	1 %
• Current, relative to output area, (+/-) 1 % Basic error limit (operational limit at 25 °C) 0.8 %; Linearity error +/- 0.06 % • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency • Series mode interference, min. • Common mode interference, min. 40 dB • Number of USB interfaces 0		1 %
Basic error limit (operational limit at 25 °C) • Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage relative to output area, (+/-) 0.8 % Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency 0.8 % • Series mode interference (peak value of input range), min. 0 dB • Common mode interference, min. 40 dB Interfaces 0 Number of USB interfaces 0 Number of R S 232 interfaces 0 Number of R S 422 interfaces 1; RS 422/485 combined Number of of parallel interfaces 0 Number of other interfaces 0		1 %
• Voltage, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Current, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.06 % • Resistance, relative to input area, (+/-) 0.8 %; Linearity error +/- 0.2% • Resistance thermometer, relative to input area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % • Interference voltage suppression for f = n x (f1 +/- 1%), f1 = interference frequency • Series mode interference, min. • Common mode interference, min. 40 dB • Interfaces 0 Number of 20 mA interfaces (TTY) 0 Number of RS 232 interfaces 1; RS 422/485 c		
 Resistance, relative to input area, (+/-) Resistance thermometer, relative to input area, (+/-) Voltage, relative to output area, (+/-) Voltage, relative to output area, (+/-) Voltage, relative to output area, (+/-) Current, relative to output area, (+/-) Series mode interference (peak value of interference (peak value of interference < rated value of input range), min. Common mode interference, min. Mumber of USB interfaces Number of S232 interfaces Number of RS 232 interfaces Number of RS 422 interfaces Number of parallel interfaces Rumber of other interfaces RS 422/485 combined Number of other interfaces 	 Voltage, relative to input area, (+/-) 	0.8 %; Linearity error +/- 0.06 %
 Resistance, relative to input area, (+/-) Resistance thermometer, relative to input area, (+/-) Voltage, relative to output area, (+/-) Voltage, relative to output area, (+/-) Current, relative to output area, (+/-) Current, relative to output area, (+/-) Series mode interference (peak value of interference (peak value of interference, min. Common mode interference, min. Mumber of USB interfaces Number of S 232 interfaces Number of RS 422 interfaces Number of parallel interfaces Number of other interfaces RS 422/485 combined Number of other interfaces Point-to-point 		0.8 %; Linearity error +/- 0.06 %
• Resistance thermometer, relative to input area, 0.8 % (+/-) 0.8 % • Voltage, relative to output area, (+/-) 0.8 % • Current, relative to output area, (+/-) 0.8 % Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency 0.8 % • Series mode interference (peak value of interference (peak value of interference, min. 30 dB • Common mode interference, min. 40 dB Interfaces 0 Number of USB interfaces 0 Number of RS 232 interfaces 0 Number of RS 422 interfaces 1; RS 422/485 combined Number of other interfaces 0 Number of other interfaces 0 Number of other interfaces 0 Point-to-point 0		0.8 %; Linearity error +/- 0.2%
(+/-)0.8 %• Voltage, relative to output area, (+/-)0.8 %• Current, relative to output area, (+/-)0.8 %Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency• Series mode interference (peak value of input range), min. • Common mode interference, min.30 dB• Common mode interference, min.40 dBInterfacesNumber of USB interfaces0Number of 20 mA interfaces (TTY)0Number of RS 232 interfaces0Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Number of other interfaces0		
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Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency • Series mode interference (peak value of input range), min. • Common mode interference, min. 40 dB Interfaces Number of USB interfaces 0 Number of 20 mA interfaces (TTY) 0 Number of RS 232 interfaces 0 Number of RS 422 interfaces 1; RS 422/485 combined Number of other interfaces 0 Number of other interfaces 0	 Voltage, relative to output area, (+/-) 	0.8 %
 Series mode interference (peak value of interference < rated value of input range), min. Common mode interference, min. Common mode interference, min. 40 dB Interfaces Number of USB interfaces Number of 20 mA interfaces (TTY) Number of RS 232 interfaces Number of RS 422 interfaces Number of parallel interfaces Number of other interfaces Number of other interfaces Point-to-point 	• Current, relative to output area, (+/-)	0.8 %
interference < rated value of input range), min.	Interference voltage suppression for f = n x (f1 +/- 1 %),	f1 = interference frequency
interference < rated value of input range), min. • Common mode interference, min.40 dBInterfaces0Number of USB interfaces0Number of 20 mA interfaces (TTY)0Number of RS 232 interfaces0Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Point-to-point0		
InterfacesNumber of USB interfaces0Number of 20 mA interfaces (TTY)0Number of RS 232 interfaces0Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Number of other interfaces0		
Number of USB interfaces0Number of 20 mA interfaces (TTY)0Number of RS 232 interfaces0Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Point-to-point0	• Common mode interference, min.	40 dB
Number of 20 mA interfaces (TTY)0Number of RS 232 interfaces0Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Number of other interfaces0Point-to-point0	Interfaces	
Number of RS 232 interfaces0Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Point-to-point	Number of USB interfaces	0
Number of RS 422 interfaces1; RS 422/485 combinedNumber of parallel interfaces0Number of other interfaces0Point-to-point0	Number of 20 mA interfaces (TTY)	0
Number of parallel interfaces 0 Number of other interfaces 0 Point-to-point 0	Number of RS 232 interfaces	0
Number of other interfaces 0 Point-to-point 0	Number of RS 422 interfaces	1; RS 422/485 combined
Point-to-point	Number of parallel interfaces	0
	Number of other interfaces	0
Cable length, max. 1 200 m	Point-to-point	
	• Cable length, max.	1 200 m

Integrated protocol driver	
— 3964 (R)	Yes
— ASCII	Yes
— RK512	Yes
Transmission speed, RS 422/485	
— with 3964 (R) protocol, max.	19.2 kbit/s; 38.4 kbit/s half duplex; 19.2 kbit/s full duplex
— with ASCII protocol, max.	19.2 kbit/s; 38.4 kbit/s half duplex; 19.2 kbit/s full duplex
— with RK 512 protocol, max.	19.2 kbit/s; 38.4 kbit/s half duplex; 19.2 kbit/s full duplex

1st interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	No
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
• MPI	Yes
• DP master	No
• DP slave	No
 Point-to-point connection 	No
MPI	
• Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	No
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server	Yes

2nd interface	
Interface type	Integrated RS 422/ 485 interface
Physics	RS 422/RS 485 (X.27)
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	No
Functionality	
● MPI	No
• DP master	No
• DP slave	No
PROFINET IO Controller	No
PROFINET IO Device	No
• PROFINET CBA	No
 Point-to-point connection 	Yes

Point-to-point connection	
• Transmission rate, max.	19.2 kbit/s; 38.4 kbit/s half duplex; 19.2 kbit/s full duplex
Cable length, max.	1 200 m
 interface from the user program controllable 	Yes
 Interface can trigger alarm/interrupt in the user 	Yes; Message on break - identification
program	
Protocol driver	3964 (R); ASCII and RK 512
Communication functions	
PG/OP communication	Yes
Data record routing	No
Global data communication	
• supported	Yes
 Number of GD loops, max. 	8
 Number of GD packets, max. 	8
 Number of GD packets, transmitter, max. 	8
 Number of GD packets, receiver, max. 	8
 Size of GD packets, max. 	22 byte
 Size of GD packet (of which consistent), max. 	22 byte
S7 basic communication	
• supported	Yes
• User data per job, max.	76 byte
• User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• supported	Yes
• as server	Yes
• As client	Yes; Via CP and loadable FB
• User data per job, max.	180 kbyte; With PUT/GET
 User data per job (of which consistent), max. 	240 byte; as server
S5-compatible communication	
• supported	Yes; via CP and loadable FC
Number of connections	
• overall	12
 usable for PG communication 	11
- reserved for PG communication	1
 Adjustable for PG communication, min. 	1
— Adjustable for PG communication, max.	11
 usable for OP communication 	11
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	11
 usable for S7 basic communication 	8

— Reserved for S7 basic communication	0
— adjustable for S7 basic communication,	0
min.	
 adjustable for S7 basic communication, 	8
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.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
 Number of variables, max. 	30
— of which status variables, max.	30
— of which control variables, max.	14
Forcing	
• Forcing	Yes
• Force, variables	Inputs, outputs
 Number of variables, max. 	10
Diagnostic buffer	
• present	Yes
 Number of entries, max. 	500
— can be set	No
— Of which powerfail-proof	100; Only the last 100 entries are retained
 Number of entries readable in RUN, max. 	499
— can be set	Yes; From 10 to 499
— preset	10
Service data	
• Can be read out	Yes
Diagnostics indication LED	
 Status indicator digital output (green) 	Yes
 Status indicator digital input (green) 	Yes
Integrated Functions	
Number of counters	4; See "Technological Functions" manual
Counter frequency (counter) max.	60 kHz
Frequency measurement	Yes

Number of frequency meters	4; up to 60 kHz (see "Technological Functions" manual)
controlled positioning	Yes
Integrated function blocks (closed-loop control)	Yes; PID controller (see "Technological Functions" manual)
PID controller	Yes
Number of pulse outputs	4; Pulse width modulation up to 2.5 kHz (see "Technological Functions" Manual)
Limit frequency (pulse)	2.5 kHz
Galvanic isolation	
Galvanic isolation digital inputs	
 Galvanic isolation digital inputs 	Yes
 between the channels 	No
 between the channels and the backplane bus 	Yes
Galvanic isolation digital outputs	
 Galvanic isolation digital outputs 	Yes
 between the channels 	Yes
 between the channels, in groups of 	8
 between the channels and the backplane bus 	Yes
Galvanic isolation analog inputs	
Galvanic isolation analog inputs	Yes; common for analog I/O
 between the channels 	No
 between the channels and the backplane bus 	Yes
Galvanic isolation analog outputs	
Galvanic isolation analog outputs	Yes; common for analog I/O
 between the channels 	No
• between the channels and the backplane bus	Yes
Permissible potential difference	
between different circuits	75V DC/60V AC
between inputs and MANA (UCM)	8 V DC
between MANA and M internally (UISO)	75V DC/60V AC
Isolation	
Isolation checked with	600 V DC
Ambient conditions	
Ambient temperature in operation	
• Min.	0 °C
• max.	60 °C
Configuration	
Configuration software	
• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or
	higher with HSP 203
• STEP 7 Lite	No
programming	

Command set	see instruction list
Nesting levels	8
 System functions (SFC) 	see instruction list
 System function blocks (SFB) 	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Width	120 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	680 g
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