

Data sheet

VIPA CPU 314ST (314-6CF23)

Technical data

Order no.	314-6CF23
Туре	VIPA CPU 314ST
General information	
Note	
Features	Powered by CDEED7
reatures	Powered by SPEED7 Work memory [KB]: 5122.048 Onboard 8x DI / 8x DIO / 5x AI [current/voltage] / 2x AO / 1x Pt100 / 4x Counter SPEED-Bus Interface [RJ45]: Ethernet PG/OP communication Interface [2x RS485]: MPI, PROFIBUS master/slave, PtP: ASCII, STX/ETX, 3964 (R), USS master, Modbus master/slave Including front connector SD/MMC card slot with locking, up to 32 modules stackable, programmable with WinPLC7, SIMATIC Manager and TIA Portal
SPEED-Bus	yes
Technical data power supply	
Power supply (rated value)	DC 24 V
Power supply (rated value) Power supply (permitted range)	DC 20.428.8 V
Reverse polarity protection	yes
Current consumption (no-load operation)	300 mA
Current consumption (rated value)	1 A
Inrush current	5 A
²t	0.5 A ² s
Max. current drain at backplane bus	2.5 A
Max. current drain load supply	-
Power loss	14 W
Technical data digital inputs	
Number of inputs	8
Cable length, shielded	1000 m
Cable length, unshielded	600 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	yes
Current consumption from load voltage L+ (without load)	70 mA
Rated value	DC 24 V
Input voltage for signal "0"	DC 05 V
Input voltage for signal "1"	DC 1528.8 V
Input voltage hysteresis	-
Signal logic input	Sinking input
Frequency range	-
Input resistance	-
Input current for signal "1"	6 mA
Connection of Two-Wire-BEROs possible	yes
Max. permissible BERO quiescent current	1.5 mA
Input delay of "0" to "1"	parameterizable 2.56µs - 40ms



Input delay of "1" to "0" Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve Initial data size Technical data digital outputs Number of outputs Cable length, shielded	8 8 IEC 61131-2, type 1 34 Byte
configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve Initial data size Technical data digital outputs Number of outputs Cable length, shielded	8 IEC 61131-2, type 1
Input characteristic curve Initial data size Technical data digital outputs Number of outputs Cable length, shielded	IEC 61131-2, type 1
Technical data digital outputs Number of outputs Cable length, shielded	**
Technical data digital outputs Number of outputs Cable length, shielded	34 Byte
Number of outputs Cable length, shielded	
Cable length, shielded	
	8
	1000 m
Cable length, unshielded	600 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	-
Current consumption from load voltage L+ (without load)	30 mA
Total current per group, horizontal configuration, 40°C	4 A
Total current per group, horizontal configuration, 60°C	3 A
Total current per group, vertical configuration	3 A
Output voltage signal "1" at min. current	L+ (-0.8 V)
Output voltage signal "1" at max. current	L+ (-0.8 V)
Output current at signal "1", rated value	0.5 A
Signal logic output	Sourcing output
Output current, permitted range to 40°C	5 mA to 0.6 A
Output current, permitted range to 60°C	5 mA to 0.6 A
Output current at signal "0" max. (residual current)	100 μΑ
Output delay of "0" to "1"	100 µs
Output delay of "1" to "0"	100 μs
Minimum load current	
Lamp load	5 W
Parallel switching of outputs for redundant control of a load	possible
Parallel switching of outputs for increased power	not possible
Actuation of digital input	yes
Switching frequency with resistive load	max. 2.5 kHz
Switching frequency with inductive load	max. 0.5 Hz
Switching frequency on lamp load	max. 2.5 kHz
Internal limitation of inductive shut-off voltage	L+ (-52 V)
Short-circuit protection of output	yes, electronic
Trigger level	1 A
Number of operating cycle of relay outputs	-
Switching capacity of contacts	
Output data size	18 Byte
Technical data analog inputs	
Number of inputs	5
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	yes
	85 mA
Current consumption from load voltage L+ (without load)	····
Current consumption from load voltage L+ (without load) Voltage inputs	yes

Operational limit of viotage ranges +40.3% Operational limit of viotage ranges with SFU - Basic error limit voltage ranges with SFU - Destruction limit voltage ranges with SFU - Destruction limit voltage max. 15V Current Inputs yes Max. input resistance (current range) 85 Ohm Input current ranges +6.03% Operational limit of current ranges +6.03% Operational limit of current ranges with SFU - Basic error limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50mA Destruction limit current inputs (voltage) max. 15V Resistance inputs +6.04% Resistance inputs +6.000 Ohm Operational limit of resistor ranges +6.04% Operational limit of resistor ranges with SFU - Basic error limit with SFU - Destruction limit resistance inputs +6.02% Resistance thermometer ranges +7.03% Operational limit of resistance thermometer ranges +7.0.9% Operational limit of resistance thermomet	Input voltage ranges	-10 V +10 V 0 V +10 V
Basic error limit voltage ranges +/-0.3% Basic error limit voltage ranges with SFU - Current Inputs yes Mex. input resistance (current range) 85 Ohm Input current ranges -20 m.A. +20 m.A Operational limit of current ranges +/-0.3% Operational limit of current ranges with SFU - Operational limit current ranges with SFU - Basic error limit current ranges with SFU - Destruction limit current ranges with SFU - Pestruction limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50m.A Destruction limit current inputs (voltage) max. 15V Resistance inputs yes Resistance inputs +/-0.4% Operational limit of resistor ranges with SFU - Destruction limit vire selations inputs max. 15V Resistance thermometer ranges +/-0.4% Operational limit of resistance inputs max. 15V Resistance thermometer ranges P100 Post probability of resistance thermometer ranges with SFU - Operational	Operational limit of voltage ranges	+/-0.3%
Basic error limit voltage ranges with SFU - Current inputs yes Max. input resistance (current range) 85 Ohm Input current ranges -20 mA, -20 mA, -40 mA, -44 mA, -42 mA Operational limit of current ranges -20 mA, -20 mA, -40 mA, -44 mA, -42 mA Operational limit of current ranges with SFU - Basic error limit current ranges with SFU - Basic error limit current ranges with SFU - Destruction limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50mA Destruction limit current inputs (voltage) max. 15V Resistance inputs yes Resistance inputs yes Resistance inputs +0.000 Ohm Operational limit of resistor ranges with SFU - Basic error limit with SFU - Basic error limit with SFU yes Resistance thermometer ranges Pri000 Ni1000 Ni1000 Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistanc	Operational limit of voltage ranges with SFU	-
Destruction limit voltage max. 15V Current inputs yes Max. input resistance (current range) 85 Ohm Input current ranges 220 mA + 20 mA Operational limit of current ranges +0.3% Operational limit of current ranges with SFU - Basic error limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50mA Resistance ranges 0 600 Ohm Operational limit of resistor ranges with SFU - Resistance ranges 0 600 Ohm Operational limit of resistor ranges with SFU - Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer ranges P100 Ni 100 Ni 100 Operational limit of resistance thermometer ranges with SFU - Resistance thermometer ranges with SFU - Operational limit of resistance thermometer ranges with SF	Basic error limit voltage ranges	+/-0.3%
Current inputs Max. Input resistance (current range) Max. Input current ranges Portal contail limit of current ranges with SFU Postruction limit current inputs (electrical current) Postruction limit current inputs (electrical current) Postruction limit current inputs (voltage) Portal contail limit or resistor ranges Portal contail limit of resistor ranges Portal contail limit of resistor ranges Portal contail limit of resistor ranges with SFU Postruction limit resistance inputs Postruction limit resistance inputs Postruction limit resistance inputs Portal contail limit of resistance ranges Prico Portal contail limit of resistance thermometer ranges Prico Portal contail limit of thermocouple ranges Prico Pri	Basic error limit voltage ranges with SFU	-
Max. input resistance (current ranges) 85 Ohm Input current ranges -20 mA + 20 mA -20 mA + 20 mA -20 mA -20 mA +	Destruction limit voltage	max. 15V
input current ranges -20 mA +20 mA	Current inputs	yes
Operational limit of current ranges	Max. input resistance (current range)	85 Ohm
Operational limit of current ranges +/0.2% Basic error limit current ranges +/0.2% Radical error limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50mA Destruction limit current inputs (voltage) max. 15V Resistance inputs yes Resistance ranges 0 600 Ohm Operational limit of resistor ranges +/0.4% Operational limit of resistor ranges with SFU - Basic error limit +/0.2% Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges P100 P1100 P1100 N1000 N11000 Operational limit of resistance thermometer ranges +/-0.8% Operational limit of resistance thermometer ranges +/-0.8% Basic error limit thermoresistor ranges with SFU - Basic error limit thermoscuple ranges Operational limit of thermocouple ranges Operational limit of thermocouple ranges with SFU - <td>Input current ranges</td> <td>0 mA +20 mA</td>	Input current ranges	0 mA +20 mA
Basic error limit current ranges +/-0.2% Radical error limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50mA Destruction limit current inputs (voltage) max. 15V Resistance inputs yes Resistance ranges 0 600 Ohm Operational limit of resistor ranges +/-0.4% Operational limit of resistor ranges with SFU - Basic error limit +/-0.2% Basic error limit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges P100 Resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Basic error limit thermoresistor ranges with SFU - Basic error limit thermoresistor ranges with SFU - Pestruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error lim	Operational limit of current ranges	+/-0.3%
Radical error limit current ranges with SFU - Destruction limit current inputs (electrical current) max. 50mA Destruction limit current inputs (voltage) max. 15V Resistance inputs yes Resistance ranges 0 6000 Ohm Operational limit of resistor ranges +/-0.4% Operational limit of resistor ranges with SFU - Basic error limit +/-0.2% Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges P1100 P11000 P11000 P11000 N11000 N11000 Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer inputs max. 15V Thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermoclement ranges with SFU	Operational limit of current ranges with SFU	-
Destruction limit current inputs (voltage) max. 15V Resistance inputs yes Resistance inputs 0 660 Ohm Operational limit of resistor ranges +/-0.4% Operational limit of resistor ranges with SFU - Basic error limit +/-0.2% Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer ranges Pri100 Resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges with SFU - Destruction limit of thermocouple ranges with SFU - Destruction limit thermocouple inputs - Programma	Basic error limit current ranges	+/-0.2%
Destruction limit current inputs (voltage) yes Resistance ranges Operational limit of resistor ranges Operational limit of resistor ranges with SFU Basic error limit Basic error limit with SFU Destruction limit esistance inputs Resistance thermometer ranges Pri 100 Pri 1000 Ni	Radical error limit current ranges with SFU	-
Resistance inputs o 600 Ohm Operational limit of resistor ranges	Destruction limit current inputs (electrical current)	max. 50mA
Resistance ranges 0 600 Ohm Operational limit of resistor ranges +/-0.4% Operational limit of resistor ranges with SFU - Basic error limit +/-0.2% Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer ranges PP1000 PP1000 Ni1000 Ni100	Destruction limit current inputs (voltage)	max. 15V
Operational limit of resistor ranges +/-0.4% Operational limit of resistor ranges with SFU - Basic error limit +/-0.2% Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges Pri000 Ni1000 Ni1000 Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermoelement ranges with SFU - Basic error limit thermoelement ranges with SFU - Basic error limit thermocouple inputs - Programmable temperature compensation - Internal temperature compensation - <	Resistance inputs	yes
Operational limit of resistor ranges with SFU - Basic error limit +/-0.2% Basic error limit with SFU - Destruction limit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges Pr1000 Pr1000 Ni1000 Operational limit of resistance thermometer ranges with SFU - Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermoelement ranges with SFU - Basic error limit thermoelement ranges with SFU - Destruction limit thermocouple inputs - Programmable temperature compensation - External temperature compensation - External temperature compensation - Technical u	Resistance ranges	0 600 Ohm
Basic error limit with SFU - Cascard Inmit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges P11000 N11000	Operational limit of resistor ranges	+/-0.4%
Basic error limit with SFU Destruction limit resistance inputs Resistance thermometer inputs Resistance thermometer ranges Resistance thermometer ranges Pt100 Pt1000 Ni1000 Ni1000 Pt1000 Ni1000 Ni1000 Operational limit of resistance thermometer ranges Pt-0.6% Operational limit of resistance thermometer ranges Pt-0.4% Basic error limit thermoresistor ranges with SFU Destruction limit resistance thermometer inputs Ptermocouple inputs Thermocouple inputs Operational limit of thermocouple ranges Personal limit of thermocouple ranges Programmable temperature compensation External temperature compensation Programmable temperature compensation Pethnical unit of temperature measurement Call Resolution in bit Passic conversion time Sigma-Delta Basic conversion for frequency 80 dB	Operational limit of resistor ranges with SFU	-
Destruction limit resistance inputs max. 15V Resistance thermometer inputs yes Resistance thermometer ranges Pt100 Pt1000 Ni1000 Ni1000 Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermoelement ranges with SFU - Basic error limit thermoelement ranges with SFU - Destruction limit thermoelement ranges with SFU - External temperature compensation - External temperature compensation - External temperature compensation - Internal temperature measurement °C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversi	Basic error limit	+/-0.2%
Resistance thermometer inputs Resistance thermometer ranges Pt100 Pt1000 Ni1000 Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU Basic error limit thermoresistor ranges +/-0.4% Basic error limit thermoresistor ranges with SFU Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges - Destruction limit thermoelement ranges - Basic error limit thermoelement ranges with SFU - Basic error limit thermoelement ranges with SFU - Destruction limit thermoelement ranges with SFU - Destruction limit thermoelement ranges with SFU - Caternal temperature compensation - External temperature compensation - External temperature compensation - Technical unit of temperature measurement Caternal temperature measurement Caternal limit of temperature limit himit memorial limit of temperature limit himit limit	Basic error limit with SFU	-
Resistance thermometer ranges Pt100 Pt1000 Ni1000 Operational limit of resistance thermometer ranges 4/-0.6% Operational limit of resistance thermometer ranges with SFU Basic error limit thermoresistor ranges 4/-0.4% Basic error limit thermoresistor ranges with SFU Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs Thermocouple ranges Operational limit of thermocouple ranges Operational limit of thermocouple ranges Pt100 Pt200	Destruction limit resistance inputs	max. 15V
Pr1000 Ni1000 Operational limit of resistance thermometer ranges +/-0.6% Operational limit of resistance thermometer ranges with SFU - Basic error limit thermoresistor ranges +/-0.4% Basic error limit thermoresistor ranges with SFU - Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermoelement ranges with SFU - Basic error limit thermoelement ranges with SFU - Destruction limit thermocouple inputs - Programmable temperature compensation - External temperature compensation - External temperature compensation - Technical unit of temperature measurement	Resistance thermometer inputs	yes
Departional limit of resistance thermometer ranges with SFU Basic error limit thermoresistor ranges #/-0.4% Basic error limit thermoresistor ranges with SFU Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs	Resistance thermometer ranges	Pt1000 Ni100
Basic error limit thermoresistor ranges	Operational limit of resistance thermometer ranges	+/-0.6%
Basic error limit thermoresistor ranges with SFU Destruction limit resistance thermometer inputs max. 15V Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges Operational limit of thermocouple ranges Operational limit of thermocouple ranges with SFU Basic error limit thermoelement ranges Basic error limit thermoelement ranges Basic error limit thermocouple inputs - Cestruction limit thermocouple inputs - External temperature compensation Internal temperature compensation - Cected Resolution in bit Basic conversion time Sigma-Delta Basic conversion for frequency 80 dB	Operational limit of resistance thermometer ranges with SFU	-
Destruction limit resistance thermometer inputs Thermocouple inputs - Thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges - Operational limit of thermocouple ranges with SFU - Basic error limit thermoelement ranges - Basic error limit thermoelement ranges with SFU - Destruction limit thermocouple inputs - Programmable temperature compensation - External temperature compensation - Internal temperature compensation - Technical unit of temperature measurement C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Basic error limit thermoresistor ranges	+/-0.4%
Thermocouple inputs Thermocouple ranges Coperational limit of thermocouple ranges Coperational limit of thermocouple ranges Coperational limit of thermocouple ranges with SFU Coperational limit of thermocouple ranges with SFU Coperational limit thermoelement ranges Coperational limit of temperature compensation Coperational limit of temperature measurement Coperational limit of temperature measu	Basic error limit thermoresistor ranges with SFU	-
Thermocouple ranges Operational limit of thermocouple ranges Operational limit of thermocouple ranges with SFU Basic error limit thermoelement ranges Basic error limit thermoelement ranges Basic error limit thermocouple inputs Programmable temperature compensation External temperature compensation Internal temperature compensation Technical unit of temperature measurement Resolution in bit 12 Measurement principle Basic conversion time 6 ms Noise suppression for frequency 80 dB	Destruction limit resistance thermometer inputs	max. 15V
Operational limit of thermocouple ranges Operational limit of thermocouple ranges with SFU Basic error limit thermoelement ranges Basic error limit thermoelement ranges with SFU Destruction limit thermocouple inputs Programmable temperature compensation External temperature compensation Internal temperature compensation Technical unit of temperature measurement C Resolution in bit Measurement principle Basic conversion time Noise suppression for frequency - - - - - - - - - - - - -	Thermocouple inputs	-
Operational limit of thermocouple ranges with SFU - Basic error limit thermoelement ranges - Basic error limit thermoelement ranges with SFU - Destruction limit thermocouple inputs - Programmable temperature compensation - External temperature compensation - Internal temperature compensation - Technical unit of temperature measurement °C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Thermocouple ranges	-
Basic error limit thermoelement ranges Basic error limit thermoelement ranges with SFU Destruction limit thermocouple inputs Programmable temperature compensation External temperature compensation Internal temperature compensation Technical unit of temperature measurement Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency	Operational limit of thermocouple ranges	-
Basic error limit thermoelement ranges with SFU Destruction limit thermocouple inputs Programmable temperature compensation External temperature compensation Internal temperature compensation Technical unit of temperature measurement C Resolution in bit Measurement principle Basic conversion time Noise suppression for frequency Possible A Secondary SFU Secondary SFU	Operational limit of thermocouple ranges with SFU	-
Destruction limit thermocouple inputs Programmable temperature compensation External temperature compensation Internal temperature compensation Technical unit of temperature measurement CC Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Basic error limit thermoelement ranges	-
Programmable temperature compensation - External temperature compensation - Internal temperature compensation - Technical unit of temperature measurement °C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Basic error limit thermoelement ranges with SFU	-
External temperature compensation - Internal temperature compensation - Technical unit of temperature measurement °C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Destruction limit thermocouple inputs	-
Internal temperature compensation - Technical unit of temperature measurement °C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Programmable temperature compensation	-
Technical unit of temperature measurement C Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	External temperature compensation	-
Resolution in bit 12 Measurement principle Sigma-Delta Basic conversion time 6 ms Noise suppression for frequency 80 dB	Internal temperature compensation	-
Measurement principleSigma-DeltaBasic conversion time6 msNoise suppression for frequency80 dB	Technical unit of temperature measurement	°C
Basic conversion time 6 ms Noise suppression for frequency 80 dB	Resolution in bit	12
Noise suppression for frequency 80 dB	Measurement principle	Sigma-Delta
	Basic conversion time	6 ms
Initial data size 10 Byte	Noise suppression for frequency	80 dB
	Initial data size	10 Byte



Technical	data:	analog	outnuts

rechnical data analog outputs	
Number of outputs	2
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	yes
Current consumption from load voltage L+ (without load)	-
Voltage output short-circuit protection	-
Voltage outputs	yes
Min. load resistance (voltage range)	1 kOhm
Max. capacitive load (current range)	1 μF
Max. inductive load (current range)	30 mA
Output voltage ranges	-10 V +10 V 0 V +10 V
Operational limit of voltage ranges	+/-0.4%
Basic error limit voltage ranges with SFU	+/-0.3%
Destruction limit against external applied voltage	max. 15V
Current outputs	yes
Max. in load resistance (current range)	500 Ohm
Max. inductive load (current range)	10 mH
Typ. open circuit voltage current output	16 V
Output current ranges	-20 mA +20 mA 0 mA +20 mA +4 mA +20 mA
Operational limit of current ranges	+/-0.4%
Radical error limit current ranges with SFU	+/-0.3%
Destruction limit against external applied voltage	max. 15V
Settling time for ohmic load	0.2 ms
Settling time for capacitive load	0.5 ms
Settling time for inductive load	0.75 ms
Resolution in bit	12
Conversion time	1 ms
Substitute value can be applied	yes
Output data size	4 Byte
Technical data counters	
Number of counters	4
Counter width	32 Bit
Maximum input frequency	100 kHz
Maximum count frequency	100 kHz
Mode incremental encoder	yes
Mode pulse / direction	yes
Mode pulse	yes
Mode frequency counter	-
Mode period measurement	-
Gate input available	yes
Latch input available	yes
Reset input available	yes
Counter output available	yes

Load memory, integrated	2 MB
Load memory, maximum	2 MB
Work memory, integrated	512 KB
Work memory, maximal	2 MB
Memory divided in 50% program / 50% data	yes
Memory card slot	SD/MMC-Card with max. 2 GB
Hardware configuration	
Racks, max.	4
Modules per rack, max.	8 in multiple-, 32 in a single-rack configuration
Number of integrated DP master	1
Number of DP master via CP	4
Operable function modules	8
Operable communication modules PtP	8
Operable communication modules LAN	8
Status information, alarms, diagnostics	
Status display	yes
Interrupts	yes
Process alarm	yes, parameterizable
Diagnostic interrupt	yes, parameterizable
Diagnostic functions	yes
Diagnostics information read-out	possible
Supply voltage display	green LED
Group error display	red SF LED
Channel error display	red LED per group
Isolation	
Between channels	yes
Between channels of groups to	8
Between channels and backplane bus	yes
Between channels and power supply	-
Max. potential difference between circuits	DC 75 V/ AC 50 V
Max. potential difference between inputs (Ucm)	-
Max. potential difference between Mana and Mintern (Uiso)	-
Max. potential difference between inputs and Mana (Ucm)	-
Max. potential difference between inputs and Mintern (Uiso)	-
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V
Command processing times	
Bit instructions, min.	0.01 µs
Word instruction, min.	0.01 μs
Double integer arithmetic, min.	0.01 μs
Floating-point arithmetic, min.	0.06 µs
Timers/Counters and their retentive characteristi	cs
Number of S7 counters	512
S7 counter remanence	0 512
S7 counter remanence adjustable	C0 C7
Number of S7 times	512
S7 times remanence	0 512

S7 times remanence adjustable	not retentive
Data range and retentive characteristic	
Number of flags	8192 Byte
Bit memories retentive characteristic adjustable	0 8192
Bit memories retentive characteristic preset	MB0 MB15
Number of data blocks	4095
Max. data blocks size	64 KB
Max. local data size per execution level	1024 Byte
Blocks	
Number of OBs	23
Number of FBs	2048
Number of FCs	2048
Maximum nesting depth per priority class	8
Maximum nesting depth additional within an error OB	4
Time	
Real-time clock buffered	yes
Clock buffered period (min.)	6 w
Accuracy (max. deviation per day)	10 s
Number of operating hours counter	8
Clock synchronization	yes
Synchronization via MPI	Master/Slave
Synchronization via Ethernet (NTP)	no
Address areas (I/O)	
Input I/O address area	8192 Byte
Output I/O address area	8192 Byte
Input process image maximal	2048 Byte
Output process image maximal	2048 Byte
Digital inputs	65536
Digital outputs	65536
Digital inputs central	1032
Digital outputs central	1032
Integrated digital inputs	8
Integrated digital outputs	8
Analog inputs	1024
Analog outputs	1024
Analog inputs, central	261
Analog outputs, central	258
Integrated analog inputs	5
Integrated analog outputs	2
Communication functions	
PG/OP channel	yes
Global data communication	yes
Number of GD circuits, max.	4
Size of GD packets, max.	22 Byte
S7 basic communication	yes
S7 basic communication, user data per job	76 Byte

S7 communication	yes
S7 communication as server	yes
S7 communication as client	-
S7 communication, user data per job	160 Byte
Number of connections, max.	32
PWM data	
PWM channels	-
PWM time basis	-
Period length	-
Minimum pulse width	-
Type of output	-
Functionality Sub-D interfaces	
Туре	X2
Type of interface	RS485
Connector	Sub-D, 9-pin, female
Electrically isolated	yes
MPI	yes
MP²I (MPI/RS232)	-
DP master	-
DP slave	-
Point-to-point interface	-
5V DC Power supply	max. 90mA, isolated
24V DC Power supply	max. 100mA, non-isolated
Туре	Х3
Type of interface	RS485
Connector	Sub-D, 9-pin, female
Electrically isolated	yes
MPI	-
MP²I (MPI/RS232)	
DP master	yes
DP slave	yes
Point-to-point interface	yes
5V DC Power supply	max. 90mA, isolated
24V DC Power supply	max. 100mA, non-isolated
Functionality MPI	
Number of connections, max.	32
PG/OP channel	yes
Routing	yes
Global data communication	yes
S7 basic communication	yes
S7 basic communication	yes
S7 basic communication S7 communication	yes
S7 basic communication S7 communication S7 communication as server	yes yes

Number of connections, max.	32
PG/OP channel	yes
Routing	yes
S7 basic communication	yes
S7 communication	yes
S7 communication as server	yes
S7 communication as client	-
Activation/deactivation of DP slaves	yes
Direct data exchange (slave-to-slave communication)	-
DPV1	yes
Transmission speed, min.	9.6 kbit/s
Transmission speed, max.	12 Mbit/s
Number of DP slaves, max.	124
Address range inputs, max.	1 KB
Address range outputs, max.	1 KB
User data inputs per slave, max.	244 Byte
User data outputs per slave, max.	244 Byte
Functionality PROFIBUS slave	
Number of connections, max.	32
PG/OP channel	yes
Routing	yes
S7 communication	yes
S7 communication as server	yes
S7 communication as client	-
Direct data exchange (slave-to-slave communication)	-
DPV1	yes
Transmission speed, min.	9.6 kbit/s
Transmission speed, max.	12 Mbit/s
Automatic detection of transmission speed	-
Transfer memory inputs, max.	244 Byte
Transfer memory outputs, max.	244 Byte
Address areas, max.	32
User data per address area, max.	32 Byte
Functionality RJ45 interfaces	·
Туре	X5
Type of interface	Ethernet 10/100 MBit
Connector	RJ45
Electrically isolated	yes
PG/OP channel	yes
Number of connections, max.	4
Productive connections	<u> </u>
Point-to-point communication	
PtP communication	yes
Interface isolated	yes
RS232 interface	-
RS422 interface	-
RS485 interface	yes

Transmission speed, min. 150 bit/s Transmission speed, max. 115.5 kbit/s Cable length, max. 500 m Point-to-point protocol ASCII protocol yes STX/ETX protocol yes 3964(R) protocol yes RK512 protocol - USS master protocol yes Modbus master protocol yes Modbus slave protocol - Special protocols - Housing Material Metarial PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certification yes KC certification yes	Connector	Sub-D, 9-pin, female
Cable length, max. 500 m Point-to-point protocol ASCII protocol yes STX/ETX protocol yes 3964(R) protocol yes RK512 protocol - USS master protocol yes Modbus master protocol - Special protocols - Housing - Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification	Transmission speed, min.	150 bit/s
Point-to-point protocol yes	Transmission speed, max.	115.5 kbit/s
ASCII protocol yes STX/ETX protocol yes 3964(R) protocol yes RK512 protocol - USS master protocol yes Modbus master protocol yes Modbus slave protocols - Special protocols - Housing Rail System 300 Metarial PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Cable length, max.	500 m
STX/ETX protocol yes 3964(R) protocol yes RK512 protocol - USS master protocol yes Modbus master protocol yes Modbus slave protocols - Special protocols - Housing PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification UL certification yes	Point-to-point protocol	
3964(R) protocol yes RK512 protocol - USS master protocol yes Modbus master protocol - Modbus slave protocol - Special protocols - Housing PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification	ASCII protocol	yes
New Year	STX/ETX protocol	yes
USS master protocol yes Modbus master protocol - Modbus slave protocols - Special protocols - Housing Rail System 300 Mechanical data PPE Mounting Rail System 300 Mechanical data 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification UL certification yes	3964(R) protocol	yes
Modbus master protocol Modbus slave protocol Special protocols Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Net weight 480 g Weight including accessories Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	RK512 protocol	-
Special protocols	USS master protocol	yes
Special protocols	Modbus master protocol	yes
Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Modbus slave protocol	-
Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Special protocols	-
Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Housing	
Mechanical data Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Material	PPE
Dimensions (WxHxD) 80 mm x 125 mm x 120 mm Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Mounting	Rail System 300
Net weight 480 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Mechanical data	
Weight including accessories Gross weight Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Dimensions (WxHxD)	80 mm x 125 mm x 120 mm
Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Net weight	480 g
Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Weight including accessories	-
Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Gross weight	-
Storage temperature -25 °C to 70 °C Certifications UL certification yes	Environmental conditions	
Certifications UL certification yes	Operating temperature	0 °C to 60 °C
UL certification yes	Storage temperature	-25 °C to 70 °C
<u> </u>	Certifications	
KC certification yes	UL certification	yes
	KC certification	yes