## **SIEMENS**

## Data sheet

## 6ES7216-2BD23-0XB0

\*\*\*Spare part\*\*\* SIMATIC S7-200, CPU 226 Compact unit, AC power supply 24 DI DC/16 DO relay 16/24 KB progr./10 KB data, 2 PPI/user-programmable interface



Figure similar

Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
Load voltage L+	
<ul> <li>Rated value (DC)</li> </ul>	24 V
<ul> <li>permissible range, lower limit (DC)</li> </ul>	5 V
<ul> <li>permissible range, upper limit (DC)</li> </ul>	30 V
Load voltage L1	
<ul> <li>Rated value (AC)</li> </ul>	100 V; 100 V AC to 230 V AC
<ul> <li>permissible range, lower limit (AC)</li> </ul>	5 V
<ul> <li>permissible range, upper limit (AC)</li> </ul>	250 V
<ul> <li>permissible frequency range, lower limit</li> </ul>	47 Hz
<ul> <li>permissible frequency range, upper limit</li> </ul>	63 Hz
Input current	
Inrush current, max.	20 A; at 264 V

from supply voltage L1, max.	320 mA; 40 to 160 mA (240 V); 80 to 320 mA (120 V); output current for expansion modules (5 V DC) 1000 mA
Encoder supply	
24 V encoder supply	
• 24 V	Yes; Permissible range: 20.4V to 28.8V
<ul> <li>Short-circuit protection</li> </ul>	Yes; electronic at 400 mA
• Output current, max.	400 mA
Power loss	
Power loss, typ.	17 W
Memory	
Number of memory modules (optional)	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files
Work memory	
<ul> <li>integrated (for program)</li> </ul>	24 kbyte; 16 KB with active run-time edit
<ul> <li>integrated (for data)</li> </ul>	10 kbyte
Backup	
• present	Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering
Battery	
Backup battery	
• Backup time, max.	100 h; (min. 70 h at 40 $^\circ\text{C}$ ); 200 days (typ.) with optional battery module
CPU processing times	
for bit operations, max.	0.22 µs
Counters, timers and their retentivity	
S7 counter	
• Number	256
Retentivity	
— adjustable	Yes; via high-performance capacitor or battery
— lower limit	1
— upper limit	256
Counting range	
— lower limit	0
— upper limit	32 767
S7 times	
• Number	256
Retentivity	

— adjustable	Yes; via high-performance capacitor or battery
— upper limit	64
Time range	
— lower limit	1 ms
— upper limit	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236
	timers: 100 ms to 54 min
Data areas and their retentivity Flag	
• Number, max.	32 byte
Retentivity available	Yes; M 0.0 to M 31.7
<ul> <li>of which retentive with battery</li> </ul>	0 to 255, via high-performance capacitor or battery, adjustable
<ul> <li>of which retentive with battery</li> </ul>	0 to 112 in EEPROM, adjustable
Hardware configuration	
Number of expansion units, max.	7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited.
connectable programming devices/PCs	SIMATIC PG/PC, standard PC
Expansion modules	
Analog inputs/outputs, max.	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14
	outputs (EM)
<ul> <li>Digital inputs/outputs, max.</li> </ul>	148; max. 128 inputs and 120 outputs (CPU+EM)
AS-Interface inputs/outputs, max.	62; AS-Interface A/B slaves (CP 243-2)
Digital inputs	
Number of digital inputs	24
Source/sink input	Yes; optionally, per group
Input voltage	
Rated value (DC)	24 V
● for signal "0"	0 to 5 V
● for signal "1"	min. 15 V
Input current	
● for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; all
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes; I 0.0 to I 0.3
for counter/technological functions	
— parameterizable	Yes; (E 0.0 to E 1.5) 30 kHz
Cable length	

• unshielded, max.     300 m; not for high-speed signals       Digital outputs     16: Relays       Short-clicul protection     No; to be provided externally       Switching capacity of the outputs     2.A       • on lamp load, max.     2.00 W; 30 W with DC, 200 W with AC       Output voltage     -       • for signal *1" rated value     2.A       • for signal *1" rated value     3.D       • for uprating     No       Switching frequency     10 ms; all outputs       • for uprating positions     1 kHz       Total current of the outputs (per group)     1 kHz       all mounting positions     10 A       • up to 40 * °C, max.     10 A	• shielded, max.	500 m; Standard input: 500 m, high-speed counters: 50 m
Number of digital outputs       16; Relays         Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       •         • with resistive load, max.       2 A         • on lamp load, max.       200 W; 30 W with DC, 200 W with AC         Output voltage       •         • for signal "1" rated value       2 A         • for the solutule and the residual current, max.       0 mA         Output delay with resistive load       10 ms; all outputs         • for uprating       No         Switching frequency       0         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 56 "C, max.       10 A         Neady outputs       10 000 000; mechanically 10 million, at rated load voltage 100 000	• unshielded, max.	300 m; not for high-speed signals
Number of digital outputs       16; Relays         Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       •         • with resistive load, max.       2 A         • on lamp load, max.       200 W; 30 W with DC, 200 W with AC         Output voltage       •         • for signal "1" rated value       2 A         • for the solutule and the residual current, max.       0 mA         Output delay with resistive load       10 ms; all outputs         • for uprating       No         Switching frequency       0         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 56 "C, max.       10 A         Neady outputs       10 000 000; mechanically 10 million, at rated load voltage 100 000	Diaital outouts	
Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       2 A         • on lamp load, max.       200 W; 30 W with DC, 200 W with AC         Output ordinage		16: Relays
Switching capacity of the outputs       2 A         • with resistive load, max.       2 A         • on lamp load, max.       200 W: 30 W with DC, 200 W with AC         Output voltage       • for signal "1", min.         • for signal "1" rated value       2 A         • for signal "1" rated value       2 A         • for signal "0" residual current, max.       0 mA         Output day with resistive load       • max.         • "0" to "1", max.       10 ms; all outputs         • for or ginal of the outputs       • nore; all outputs         • for or ginal of the outputs.       10 ms; all outputs         • "0" to "1", max.       10 ms; all outputs         • for uprating       No         Switching frequency       • of the pulse outputs, with resistive load, max.         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 40 "C, max.       10 A         Person positions       10 A         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       150 m         • Sou inshielded, max.       150 m         • unshielded, max.       150 m         • Suite denooders       2. Analog potentiometers		
with resistive load, max. 2A     on lamp load, max. 200 W; 30 W with DC, 200 W with AC     Output voltage     for signal "1" min. L+/L1     Output current     for signal "1" rated value 2A     for signal "1" rated value 2A     for signal "1" rated value 10 mA     Output delay with resistive load     "0" to "4", max. 10 ms; all outputs     "1" to "0", max. 10 ms; all outputs     "1" to "0", max. 10 ms; all outputs     for uprating No     Switching frequency     of the pulse outputs, with resistive load, max. 1 kHz     Total current of the outputs (per group)     all mounting positions    up to 40 °C, max. 10 A     horizontal installation     _up to 55 °C, max. 10 A     Relay outputs     integrated 16     Number of relay outputs, integrated 16     Number of paraling cycles, max. 150 m  Analog inputs     Analog inputs     Analog inputs     Total current (2-wire 50 °C, max. 10 °C)     Total current of the outputs, max. 10 °C)     Total current of the outputs, integrated 16     Number of analog potentiometers 2; Analog potentiometer; resolution 8 bit     Encoder     Connectable encoders     · 2-wire sensor		
• on lamp load, max.       200 W; 30 W with DC, 200 W with AC         Output voitage       •         • for signal "1", min.       L+/L1         Output current       2 A         • for signal "1" rated value       2 A         • for signal "0" residual current, max.       0 mA         Output delay with resistive load       •         • "0" to "1", max.       10 ms; all outputs         • "0" to "1", max.       10 ms; all outputs         • for signal "1" reactive load, max.       10 ms; all outputs         • for uprating       No         Switching frequency       •         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       10 A         horizontal installation       -         - up to 55 °C, max.       10 A         Relay outputs       No         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       100 00 0000; mechanically 10 million, at rated load voltage 100 000         Cable length       •         • shielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       1 mA <td></td> <td>2 A</td>		2 A
• for signal "1", min.         L+/L1           Output current         2 A           • for signal "0" residual current, max.         0 mA           Output delay with resistive load         • "0" fo "1", max.           • "0" fo "1", max.         10 ms; all outputs           • "1" to "0", max.         10 ms; all outputs           • for uprating         No           Switching frequency         •           • of the pulse outputs, with resistive load, max.         1 kHz           Total current of the outputs (per group)         all mounting positions          up to 40 "C, max.         10 A           horizontal installation         -up to 55" C, max.           - Number of relay outputs, integrated         16           • Number of operating cycles, max.         10 000 000; mechanically 10 million, at rated load voltage 100 000           Cable length         500 m           • unshielded, max.         500 m           • unshielded, max.         150 m           Analog inputs         2; Analog potentiometer; resolution 8 bit           Encoder         Concetable encoders           • 2-wire sensor         Yes           permissible quiescent current (2-wire sensor), max.         1 mA		200 W; 30 W with DC, 200 W with AC
Interface     2 A       • for signal "1" rated value     2 A       • for signal "0" residual current, max.     0 mA       Output delay with resistive load     0 ms; all outputs       • "0" to "1", max.     10 ms; all outputs       • "0" to "1", max.     10 ms; all outputs       • "1" to "0", max.     10 ms; all outputs       • for uprating     No       Switching frequency     • of the pulse outputs, with resistive load, max.       • of the pulse outputs, with resistive load, max.     1 kHz       Total current of the outputs (per group)     all mounting positions       up to 40 °C, max.     10 A       horizontal installation     -       - up to 55 °C, max.     10 A       Relay outputs     16       • Number of relay outputs, integrated     16       • Number of operating cycles, max.     10 000 000; mechanically 10 million, at rated load voltage 100 000       Cable length     • shielded, max.       • shielded, max.     500 m       • unshielded, max.     150 m       Analog inputs     2; Analog potentiometer; resolution 8 bit       Encoder     Connectable encoders       • Z-wire sensor     Yes       - permissible quiescent current (2-wire sensor), max.     1 mA	Output voltage	
Output current       2 A         • for signal "1" rated value       2 A         • for signal "0" residual current, max.       0 mA         Output delay with resistive load       0 mS         • "0" to "1", max.       10 ms; all outputs         • "0" to "1", max.       10 ms; all outputs         • "0" to "1", max.       10 ms; all outputs         • "1" to "0", max.       10 ms; all outputs         • "1" to "0", max.       10 ms; all outputs         • or uprating       No         Switching frequency       • of the pulse outputs, with resistive load, max.         • for uprating       No         Switching frequency       • of the outputs (per group)         all mounting positions       - up to 40 "C, max.         - up to 40 "C, max.       10 A         Nomber of relay outputs, integrated       16         • Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       • shielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       - permissible quiescent current (2-wire sensor)       1 mA         - permissible qu	● for signal "1", min.	L+/L1
• for signal "0" residual current, max.       0 mA         Output delay with resistive toad       10 ms; all outputs         • "0" to "1", max.       10 ms; all outputs         • "1" to "0", max.       10 ms; all outputs         • for uprating       No         Switching frequency       No         Switching frequency       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       10 A         horizontal installation       -         - up to 55 °C, max.       10 A         Relay outputs       16         • Number of relay outputs, integrated       16         • Number of relay outputs, integrated       150 m         • shielded, max.       150 m         • unshielded, max.       150 m         Analog inputs       2: Analog potentiometer; resolution 8 bit         Encoder       Ves         - uprmissible quiescent current (2-wire sensor), max.       1 mA         - permissible quiescent current (2-wire sensor), max.       1 mA		
• for signal "0" residual current, max.     0 mA       Output delay with resistive load     10 ms; all outputs       • "0" to "1", max.     10 ms; all outputs       • "1" to "0", max.     10 ms; all outputs       Parallel switching of two outputs     10 ms; all outputs       • of the pulse outputs, with resistive load, max.     1 kHz       Total current of the outputs (per group)     1 kHz       all mounting positions     10 A       - up to 40 °C, max.     10 A       horizontal installation     10 A000 000; mechanically 10 million, at rated load voltage 100 000       Cable length     500 m       • shielded, max.     500 m       • unshielded, max.     150 m       Analog inputs     2; Analog potentiometer; resolution 8 bit       Encoder     Yes       • Quire sensor     Yes       - permissible quiescent current (2-wire sensor), max.     1 mA	<ul> <li>for signal "1" rated value</li> </ul>	2 A
Output delay with resistive load         • "0" to "1", max.       10 ms; all outputs         • "1" to "0", max.       10 ms; all outputs         Parallel switching of two outputs       10 ms; all outputs         • for uprating       No         Switching frequency       1 kHz         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       10 A         horizontal installation       - up to 55 °C, max.         - up to 55 °C, max.       10 A         Relay outputs       16         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       500 m         • shielded, max.       150 m         Analog inputs       2: Analog potentiometer; resolution 8 bit         Encoder       Connectable encoders         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         Interface type       Integrated RS 485 interface		0 mA
• "0" to "1", max.       10 ms; all outputs         • "1" to "0", max.       10 ms; all outputs         Parallel switching of two outputs       No         • for uprating       No         Switching frequency       1 kHz         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       10 A         horizontal installation       - up to 55 °C, max.         - up to 55 °C, max.       10 A         Relay outputs       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       Image: sensor         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         Interface       Image: sensor), max.		
• "1" to "0", max.       10 ms; all outputs         Parallel switching of two outputs       No         • for uprating       No         Switching frequency       1 kHz         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       1 kHz         • all mounting positions       - up to 40 °C, max.         - up to 40 °C, max.       10 A         horizontal installation       - up to 55 °C, max.         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • unshielded, max.       500 m         • unshielded, max.       150 m         • Decoder       2. Analog potentiometers         • 2-wire sensor       Yes         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         • Interface       Integrated RS 485 interface		10 ms; all outputs
• for uprating       No         Switching frequency       •         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         up to 40 °C, max.       10 A         horizontal installation       up to 55 °C, max.         up to 55 °C, max.       10 A         Relay outputs       10 A         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs		10 ms; all outputs
Switching frequency       I         • of the pulse outputs, with resistive load, max.       1 kHz         Total current of the outputs (per group)       all mounting positions         - up to 40 °C, max.       10 A         horizontal installation       - up to 55 °C, max.         - up to 55 °C, max.       10 A         Relay outputs       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • shielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       Connectable encoders         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         Interface type       Integrated RS 485 interface	Parallel switching of two outputs	
<ul> <li>of the pulse outputs, with resistive load, max.</li> <li>1 kHz</li> <li>Total current of the outputs (per group)         <ul> <li>all mounting positions</li></ul></li></ul>	• for uprating	No
Total current of the outputs (per group)         all mounting positions         up to 40 °C, max.         horizontal installation         up to 55 °C, max.         Relay outputs         • Number of relay outputs, integrated         16         • Number of operating cycles, max.         10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length         • shielded, max.         • unshielded, max.         150 m         Analog inputs         Number of analog potentiometers         2; Analog potentiometer; resolution 8 bit         Encoder         Connectable encoders         • 2-wire sensor         - permissible quiescent current (2-wire sensor), max.         1 Interface         Interface type       Integrated RS 485 interface	Switching frequency	
all mounting positions       10 A	<ul> <li>of the pulse outputs, with resistive load, max.</li> </ul>	1 kHz
	Total current of the outputs (per group)	
horizontal installation       - up to 55 °C, max.       10 A         Relay outputs       10 A         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       Connectable encoders         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface       Integrated RS 485 interface	all mounting positions	
up to 55 °C, max.10 ARelay outputs16• Number of relay outputs, integrated16• Number of operating cycles, max.10 000 000; mechanically 10 million, at rated load voltage 100 000Cable length500 m• shielded, max.500 m• unshielded, max.150 m• unshielded, max.2; Analog potentiometer; resolution 8 bitEncoderVes• 2-wire sensorYes• 2-wire sensorYes• 2-wire sensorYes• permissible quiescent current (2-wire sensor), max.1 mAInterfaceIntegrated RS 485 interface	— up to 40 °C, max.	10 A
Relay outputs       16         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       2; Analog potentiometer; resolution 8 bit         Encoder       1 mA         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         Interface       1 mA	horizontal installation	
Relay outputs         • Number of relay outputs, integrated       16         • Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       2; Analog potentiometer; resolution 8 bit         Connectable encoders       2; Analog potentiometer; resolution 8 bit         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface       1 mA	— up to 55 °C, max.	10 A
• Number of relay outputs, integrated16• Number of operating cycles, max.10 000 000; mechanically 10 million, at rated load voltage 100 000Cable length• shielded, max.500 m• unshielded, max.150 mAnalog inputsNumber of analog potentiometers2; Analog potentiometer; resolution 8 bitEncoderConnectable encodersYes• 2-wire sensor1 mA- permissible quiescent current (2-wire sensor), max.1 mAInterfaceInterface typeIntegrated RS 485 interface		
• Number of operating cycles, max.       10 000 000; mechanically 10 million, at rated load voltage 100 000         Cable length       500 m         • shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       2; Analog potentiometer; resolution 8 bit         Connectable encoders       Yes         • 2-wire sensor       Yes         — permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface       Integrated RS 485 interface		16
Cable length     500 m       • shielded, max.     500 m       • unshielded, max.     150 m       Analog inputs       Number of analog potentiometers     2; Analog potentiometer; resolution 8 bit       Encoder       Connectable encoders     2: Analog potentiometer; resolution 8 bit       • 2-wire sensor     Yes       permissible quiescent current (2-wire sensor), max.     1 mA       1. Interface     Integrated RS 485 interface		10 000 000; mechanically 10 million, at rated load voltage 100 000
• shielded, max.       500 m         • unshielded, max.       150 m         Analog inputs       Analog potentiometers         Number of analog potentiometers       2; Analog potentiometer; resolution 8 bit         Encoder       Connectable encoders         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface       Integrated RS 485 interface		
• unshielded, max.       150 m         Analog inputs		500 m
Analog inputs       2; Analog potentiometer; resolution 8 bit         Encoder       2; Analog potentiometer; resolution 8 bit         Connectable encoders       • 2-wire sensor         • 2-wire sensor       Yes         permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface       Integrated RS 485 interface		150 m
Number of analog potentiometers       2; Analog potentiometer; resolution 8 bit         Encoder       Connectable encoders         • 2-wire sensor       Yes         - permissible quiescent current (2-wire sensor), max.       1 mA         Interface       Integrated RS 485 interface	·	
Encoder         Connectable encoders         • 2-wire sensor       Yes         — permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface         Interface type       Integrated RS 485 interface		
Connectable encoders       Yes         • 2-wire sensor       Yes         — permissible quiescent current (2-wire sensor), max.       1 mA         1. Interface       Integrated RS 485 interface	Number of analog potentiometers	2; Analog potentiometer; resolution 8 bit
<ul> <li>2-wire sensor  permissible quiescent current (2-wire sensor), max.</li> <li>1 mA</li>     &lt;</ul>	Encoder	
— permissible quiescent current (2-wire sensor), max.       1 mA       1. Interface       Interface type       Integrated RS 485 interface	Connectable encoders	
sensor), max.       1. Interface       Interface type       Integrated RS 485 interface	• 2-wire sensor	Yes
Interface type Integrated RS 485 interface		1 mA
Interface type Integrated RS 485 interface	1. Interface	
Physics RS 485		Integrated RS 485 interface
	Physics	RS 485

Functionality	
● MPI	Yes; As MPI slave for data exchange with MPI masters (S7- 300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200- internal CPU/CPU communication is possible in the MPI network with restrictions; transmission rates: 19.2/187.5 kbit/s
• PPI	Yes; with PPI protocol for program functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communication ; transmission rates 9.6/19.2/187.5 kbit/s
<ul> <li>serial data exchange</li> </ul>	Yes; As freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter
MPI	
<ul> <li>Transmission rate, min.</li> </ul>	19.2 kbit/s
• Transmission rate, max.	187.5 kbit/s
2. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Functionality	
● MPI	Yes; As MPI slave for data exchange with MPI masters (S7- 300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200- internal CPU/CPU communication is possible in the MPI network with restrictions; transmission rates: 19.2/187.5 kbit/s
• PPI	Yes; with PPI protocol for program functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communication ; transmission rates 9.6/19.2/187.5 kbit/s
<ul> <li>serial data exchange</li> </ul>	Yes; As freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter
Integrated Functions	
Number of counters	6; High-speed counters (30 kHz each), 32 bits (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.
Counting frequency (counter) max.	30 kHz
Number of alarm inputs	4; 4 rising edges and/or 4 falling edges
Potential separation	
Potential separation digital inputs	
<ul> <li>between the channels</li> </ul>	Yes; Optocoupler
<ul> <li>between the channels, in groups of</li> </ul>	13 and 11
Potential separation digital outputs	
<ul> <li>between the channels</li> </ul>	Yes; Relays

• between the channels, in groups of	4, 5 and 7
Permissible potential difference	
between different circuits	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC
Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	0°0
<ul> <li>horizontal installation, max.</li> </ul>	55 °C
<ul> <li>vertical installation, min.</li> </ul>	0°0
• vertical installation, max.	45 °C
Air pressure acc. to IEC 60068-2-13	
• permissible range, lower limit	860 hPa
<ul> <li>permissible range, upper limit</li> </ul>	1 080 hPa
Relative humidity	
• Operation, min.	5 %
• Operation, max.	95 %; RH class 2 in accordance with IEC 1131-2
Configuration	
Programming	
• Command set	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions
<ul> <li>Program processing</li> </ul>	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)
<ul> <li>Program organization</li> </ul>	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer
<ul> <li>Number of subroutines, max.</li> </ul>	64
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
Know-how protection	
User program protection/password protection	Yes; 3-stage password protection
Connection method	
Plug-in I/O terminals	Yes
Dimensions	
Width	196 mm

Height Depth	80 mm 62 mm
Weights	
Weight, approx.	660 g
last modified:	04/19/2018