

	Technology Integrated (CPU)									Technology modules ET 200SP				ET 200SP I/O modules																																
	S7-1200 Basic Controller (Standard-/F-CPU)	S7-1500 Advanced Controller (Compact-CPU)	S7-1500 Advanced Controller (Standard-/F-CPU)	S7-1500 Advanced Controller (T-/TF-CPU)	S7-1500 Distributed Controller (Standard-/F-CPU)	S7-1500 Open Controller (Standard-/F-CPU)	S7-1500 Open Controller (T-/TF-CPU)	S7-1500 Drive Controller (TF-CPU)	TM Count 2x24V	TM Posinput 2	TM Timer DIDQ 16x24V	TM PTO 4	TM Count 1x24V	TM Posinput 1	TM Timer DIDQ 10x24V	TM Pulse 2x24V	DI 32x24VDC HF	DI 16x24VDC HF	DQ 8x24VDC/2A HF	AI 8xU/I HS	AI 8xU/IRTD/TC HF	AQ 8xU/I HS	ET 200SP I/O modules	DI 8x24VDC HS	DQ 4x24VDC/2A HS	AI 2xU/I 2-/4-wire HF	AI 4xRTD/TC 2-/3-/4-wire HF	AI 8xRTD/TC 2-wire HF	AI 2xU/I 2-/4-wire HS	AI 2xSG 4-/6-wire HS	AQ 2xU/I HS	AI Energy Meter	I/O modules S7-1200	SM 1238 Energy Meter	I/O modules ET 200AL	DIQ 16x24VDC	Drives	SINAMICS G (depends on the CU)	SINAMICS V90	SINAMICS V90 PN	SINAMICS S120	SINAMICS S210				
<b>Motion Control: software functions</b>																																														
Virtual axes			✓	✓	✓	✓	✓	✓	✓																																					
Open-loop speed control			✓	✓	✓	✓	✓	✓	✓																																					
External encoder			✓	✓	✓	✓	✓	✓	✓																																					
Measuring inputs			✓	✓	✓	✓	✓	✓	✓																																					
Output cams, output cam tracks			✓	✓	✓	✓	✓	✓	✓																																					
Torque functions			✓	✓	✓	✓	✓	✓	✓																																					
Positioning	✓		✓	✓	✓	✓	✓	✓	✓																																					
Synchronous operation			✓	✓	✓	✓	✓	✓	✓																																					
Specification of the synchronous position					✓			✓	✓																																					
Synchronization with actual value coupling					✓			✓	✓																																					
Cam disks					✓			✓	✓																																					
Cross-PLC synchronous operation *)					✓			✓	✓																																					
Kinematic functions					✓			✓	✓																																					
Cyclic setpoint (MotionIn)					✓			✓	✓																																					
<b>Motion Control: onboard drive interface</b>																																														
PROFIdrive		✓	✓	✓	✓	✓	✓	✓	✓																																					
PROFIdrive isochronous			✓	✓	✓	✓	✓	✓	✓																																					
Analog		✓	✓																				✓																							
Pulse / direction (PTO) (e.g. stepper motor)		✓	✓									✓																																		
DRIVE-CLiQ								✓																																						
<b>Position detection for Motion Control</b>																																														
24V incremental encoder		✓	✓							✓		✓		✓		✓																														
5V incremental encoder (RS422)		C												✓																																
SSI-Absolute value encoder (single + multi turn)														✓																																
Via cyclical drive telegrams and motor encoder																																														
<b>Counting</b>																																														
Max frequency in kHz		20–1000	100					32		200	1000	50			200	1000	50					1	1																							
Forward / backward		✓	✓							✓	✓				✓	✓																														
Supported by technology object TO HSC			✓							✓	✓				✓	✓																														
Fast reaction with Onboard-DQ			✓							✓	✓				✓	✓																														
DI for HW-Gate		✓	✓							✓	✓				✓	✓																														
DI for synchronization		✓	✓							✓	✓				✓	✓																														
DI for capture			✓							✓	✓				✓	✓																														

Caption:

Suitable hardware for function

Available

Not relevant



Blank field

A Output signals in 24V, RS-422 and 5V asymmetrical available

B With technology object speed axis




C Only CPU 1217C DC/DC/DC

D Only CU250S-2 und CU250D-2

\*) All S7-1500 CPUs can provide the leading value for cross-PLC synchronous operation. For a CPU which receives the leading value via a leading axis proxy, you must use a T-CPU.

	Technology Integrated (CPU)	S7-1200 Basic Controller (Standard-/F-CPU)	S7-1500 Advanced Controller (Compact-CPU)	S7-1500 Advanced Controller (Standard-/F-CPU)	S7-1500 Advanced Controller (T-/TF-CPU)	S7-1500 Distributed Controller (Standard-/F-CPU)	S7-1500 Open Controller (Standard-/F-CPU)	S7-1500 Open Controller (T-/TF-CPU)	S7-1500 Drive Controller (TF-CPU)	Technology modules S7-1500/ET 200MP	TM Count 2x24V	TM Posinput 2	TM Timer DIDQ 16x24V	TM PTO 4	Technology modules ET 200SP	TM Count 1x24V	TM Posinput 1	TM Timer DIDQ 10x24V	TM Pulse 2x24V	Peripheral modules S7-1500/ET 200MP	DI 32x24VDC HF	DI 16x24VDC HF	DQ 8x24VDC/2A HF	AI 8xU/I HS	AI 8xU/IRTD/TC HF	AQ 8xU/I HS	Peripheral modules ET 200SP	DI 8x24VDC HS	DQ 4x24VDC/2A HS	AI 2xU/I 2-/4-wire HF	AI 4xRTD/TC 2-/3-/4-wire HF	AI 8xRTD/TC 2-wire HF	AI 2xU/I 2-/4-wire HS	AI 2xSG 4-/6-wire HS	AQ 2xU/I HS	AI Energy Meter	I/O modules S7-1200	SM 1238 Energy Meter	I/O modules ET 200AL	DIQ 16x24VDC	Drives	SINAMICS G (depends on the CU)	SINAMICS V90	SINAMICS V90 PN	SINAMICS S120	SINAMICS S210
<b>Pulse outputs</b>																																														
Pulse width modulation (PWM)		✓	✓					✓				✓					✓	✓				✓																								
PTO – pulse / direction		✓	✓																																											
PTO – forward / backward		✓	✓										A																																	
Incremental encoder simulation (A/B phase-shifted)		✓	✓										A																																	
Frequency output		✓	✓										B					✓																												
<b>Time critical applications</b>																																														
Timebased I/O *)								✓				✓					✓																													
Output for output cam and cam control *)								✓				✓					✓																													
Inputs for measuring input			✓					✓*)		✓	✓	✓*)		✓	✓	✓*)																											✓*)	✓*)	✓*)	
Oversampling *)								✓				✓					✓	✓		✓	✓		✓	✓		✓	✓																			
<b>System function</b>																																														
Isochronous mode			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
<b>PID Control</b>																																														
Temperature controller		✓	✓	✓	✓	✓	✓	✓	✓									○			○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○									
Compact controller		✓	✓	✓	✓	✓	✓	✓	✓									○			○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○									
Step controller		✓	✓	✓	✓	✓	✓	✓	✓												○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○									
Basic functions			✓	✓	✓	✓	✓	✓	✓																																					
Support functions		✓	✓	✓	✓	✓	✓	✓	✓																																					
<b>Measurement</b>																																														
Frequency		✓	✓								✓	✓				✓	✓																													
Period duration			✓					✓*)			✓	✓				✓	✓																													
Speed measurement			✓								✓	✓				✓	✓																													
Strain gauge (DMS)																																														
Energy																																														
<b>Measured value processing</b>																																														
Measurement scaling																							✓						✓																	
Measuring range adjustment																							✓						✓																	
"Scalable temperature measuring range"																																														

Caption:

- Suitable hardware for function 
- Available 
- Not relevant 

A Output signals in 24V, RS-422 and 5V asymmetrical available  
 B With technology object speed axis  
 C Only CPU 1217C DC/DC/DC  
 D Only CU250S-2 und CU250D-2

\*) Requires the system function isochronous mode

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.