DATA SHEET

Controllers - SDe Controllers

ABB Ability™ Symphony® Plus Hardware Selector

Symphony® Plus SDe Controllers (SPC) are the next generation of time-tested, field-proven SD series controllers. Specifically designed for the evolution, enhancement, and expansion of Harmony Rack (HR) systems, SDe controllers provide flexible, mounting options that allow them to be installed in multiple configurations. In every form, the controllers are form, fit, and functional replacements for HR controllers. Offering complete scalability, the powerful controllers are suitable for small to large applications.

The controllers belong to the ABB Ability Symphony Plus Control and I/O family: the SDe Series – a green portfolio of completely scalable control and I/O products that deliver a total plant automation solution for your process regardless of application type, size, or physical setting. Energy efficient, compact, and providing digital infrastructure to integrate smart field devices seamlessly makes SDe Series the best automation solution for your new installation, upgrade, or expansion.

SDe Series controllers are the latest in a long line of ABB field-proven process controllers and can adapt to a broad spectrum of applications and process requirements. Configured by S+ Engineering, SDe Series controllers feature an extensive library of predefined function codes for easy building block design of complex control strategies to fit any control application, including continuous, sequential, batch, and advanced control.

SDe Series controller subsystems are redundant at all levels - CPU, power, internal bus, I/O networks, communication ports, and plant network. Compliance with international standards assures the highest level of reliability and quality needed to meet the most rigorous global specifications and requirements. Together, they provide users with fast, accurate, uninterrupted control of their process.

Further, SDe Series controllers are designed to specifically address cybersecurity threats as defined by the industry-leading standard IEC 62443. For example, SDe Series controllers are ISA Secure Component Security Assurance (CSA) certified (formally known as Embedded Device Security Assurance, EDSA).

Below is an outline of the range of different SDe Controllers available.




Specific feature [1]	MB910e (Controller MTU)	SPC810e	SPC810eK01	SPC810eK02
General info				
Article number	7PAA006638R11	7PAA001435R11	7PAA008646R0100	7PAA008646R0200
Life cycle status	Active			
Line redundancy	Yes			
Hot swap	No			
Singular or redundant	Singular and redundant			
Form factor	Compact (127 mm)	Compact (127mm)		
Mounting	Horizontal DIN-rail	EMB910e using 1-Slot in EMC, or DIN-Rail using either MB910e or VB910e	MB910e occupies 90 mm on Horizontal DIN-Rail	
HN800 bus length	200 mm	190 mm	200 mm	
MTBF (per MIL-HDBK-217-FN2)	PR B: 5,553,552 @ 30˚C; 4,700,973 @ 40˚C; 2,883,415 @ 70˚C	SPC810e PR D: 298,128 Hours @ 30˚C 226,849 Hours @ 40˚C 92,677 Hours @ 70˚C EMB910e PR C: 8,568,246 Hours @ 30˚C 7,392,563 Hours @ 40˚C 4,825,271 Hours @ 70˚C	SPC810e PR D: 298,128 Hours @ 30˚C 226,849 Hours @ 40˚C 92,677 Hours @ 70˚C MB910e PR C: 8,568,246 Hours @ 30˚C 7,392,563 Hours @ 40˚C 4,825,271 Hours @ 70˚C	
MTTR (Hours)	8 Hrs	SPC810e MTTR = 1 hour EMB910e MTTR = 8 hours	SPC810e MTTR = 1 hour, MB910e MTTR = 8 hours	
Redundancy		No		Yes
SIL		No		
Clock Frequency		250 MHz		
FBs per controller		30 000		
Closed loop control performance		5000 I/O in under 250 msec (70% Digital, 30% Analog)		
XR communications		Up to 100 import + 1000 export XR messages per sec		
DRAM Memory		128 MB RAM		
NVRAM		2.0 MB MRAM		
Flash ROM		4 MB Flash ROM		
Dimensions				
Width	96 mm	27 mm	90.1 mm	
Depth	127 mm	27 mm	137.2 mm	
Height	127 mm		141.5 mm	
Weight	355 g			
Weight (including base)		181 g (module only)	400 g	600 g
Environment and certification				
RoHS compliance	RoHS Directive 2015/863			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **symphonyplushardwareselector.automation.abb.com**



Specific feature [1]	SPC810EMC1K01	SPC810EMC1K02	VB910e (Controller MTU)
General info			
Article number	7PAA005095R0100	7PAA005095R0200	7PAA007385R11
Life cycle status	Active		
Line redundancy			Yes
Hot swap			No
Singular or redundant			Singular or redundant
Form factor	Compact (127mm)		Compact (145 mm)
Mounting	EMB910e using 1-Slot in EMC	2x EMB910e using 2-Slots in EMC	Vertical DIN-rail
HN800 bus length	190 mm	410 mm	355 mm
MTBF (per MIL-HDBK-217-FN2)	SPC810e PR D: 298,128 Hours @ 30˚C 226,849 Hours @ 40˚C 92,677 Hours @ 70˚C EMB910e PR C: 8,568,246 Hours @ 30˚C 7,392,563 Hours @ 40˚C 4,825,271 Hours @ 70˚C		PR B: 5,553,552 @ 30˚C; 4,700,973 @ 40˚C; 2,883,415 @ 70˚C
MTTR (Hours)	SPC810e MTTR = 1 hour, EMB910e MTTR = 8 hours		8 Hrs
Redundancy	No	Yes	
SIL	No		
Clock Frequency	250 MHz		
FBs per controller	30 000		
Closed loop control performance	5000 I/O in under 250 msec (70% Digital, 30% Analog)		
XR communications	Up to 100 import + 1000 export XR messages per sec		
DRAM Memory	128 MB RAM		
NVRAM	2.0 MB MRAM		
Flash ROM	4 MB Flash ROM		
Program Language Support	B90 (BSEQ, CSEQ, & PHASEX FBs), UDF Type 1 & 2		
Dimensions			
Width	173 mm	346 mm	103 mm
Depth	263 mm		115 mm
Height	177.8 mm		151 mm
Weight			345 g
Weight (including base)	0.542 kg	1.064 kg	
Environment and certification			
RoHS compliance	RoHS Directive 2015/863		
WEEE compliance	DIRECTIVE/2012/19/EU		

[1] For detailed information on each module, please visit: **symphonyplushardwareselector.automation.abb.com**

Accessories




Specific feature [1]	PBA811	PBA812	TER800	TER810
General info				
Article number	7PAA001437R11	7PAA001438R11	TER800	TER810
Life cycle status	Active			
Redundancy	Yes		No	
SIL	No			
Dimensions				
Width	31 mm			
Height	94 mm			
Depth	131 mm			
Weight (including base)	140 g		136 g	
Environment and certification				
RoHS compliance	RoHS Directive 2015/863			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **symphonyplushardwareselector.automation.abb.com**

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