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]	SPC810eK01	SPC810eK02	SPC810EMC1K01	SPC810EMC1K02
General info				
Article number	7PAA008646R0100 (SPC810eK01)	7PAA008646R0200 (SPC810eK02)	7PAA005095R0100 (SPC810EMC1K01)	7PAA005095R0200 (SPC810EMC1K02)
Life cycle status	Active			
Redundancy	No	Yes	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			
Form factor	Compact (127mm)			
Mounting	MB910e occupies 90 mm on Horizontal DIN-Rail		EMB910e using 1-Slot in EMC	2x EMB910e using 2-Slots in EMC
HN800 bus length	200 mm		190 mm	410 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 MB910e 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 EMB910e PR C: 8,568,246 Hours @ 30˚C 7,392,563 Hours @ 40˚C 4,825,271 Hours @ 70˚C	
MTTR (Hours)	SPC810e MTTR = 1 hour, MB910e MTTR = 8 hours		SPC810e MTTR = 1 hour, EMB910e MTTR = 8 hours	
Program Language Support			B90 (BSEQ, CSEQ, & PHASEX FBs), UDF Type 1 & 2	
Dimensions				
Width	90.1 mm (3.55 in.)		35.5 mm (1.06 in.)	71.2 mm (2.12 in.)
Height	141.5 mm (5.57 in.)		177.8 mm (7.0 in.)	
Depth	137.2 mm (5.40 in.)			
Weight (including base)	400 grams	600 grams	362 grams	724 grams
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]	SPC810ev1K02	SPC810ev2K02
General info		
Article number	7PAA006320R0200 (SPC810ev1K02)	7PAA006320R1200 (SPC810ev2K02)
Life cycle status	ACTIVE	
Redundancy	Yes	
SIL	No	
Clock Frequency	250 MHz	
FBs per controller	30000	
Closed loop control performance	5000 I/O in under 250 msec	
XR communications	Up to 300 import + 3000 export XR messages per sec	
DRAM Memory	128 MB RAM	
NVRAM	2.0 MB MRAM	
Flash ROM	4 MB Flash ROM	
Form factor	HR Module	
Mounting	HR (1-Slot in MMU)	
HN800 bus length	355 mm	
MTBF (per MIL-HDBK-217-FN2)	SPC810ev PR: D = 230,7107 hours @ 40 °C	
MTTR (Hours)	SPC810ev1K02 MTTR = 1 hour	SPC810ev2K02 MTTR = 1 hour
Dimensions		
Width	35.6 mm (1.06 in.)	
Height	177.8 mm (7.0 in.)	
Depth	298.5 mm (11.75 in.)	
Weight (including base)	1.00 kg (35.27 oz.)	
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]	PBA811A	PBA812A	TER800	TER810
General info				
Article number	7PAA001437R11	7PAA001438R11	TER800	TER810
Life cycle status	Active			
Redundancy	Yes		No	
SIL	No			
Dimensions				
Width	31 mm (1.22 in.)			
Height	94 mm (3.70 in.)			
Depth	131 mm (5.16 in.)			
Weight (including base)	140 g (4.93 oz.)		136 g (4.80 oz.)	
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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