

Controllers - SD Controllers

ABB Ability™ Symphony® Plus hardware selector

Symphony Plus Controllers (SPC) is a powerful and scalable controller family for small, mid-range, and high-end applications. Supporting all types of control requirements including discrete, continuous, sequential, and advanced control applications. The SPC features include modular high-density design, low energy consumption, flexible DIN-Rail column or row mounting, and extreme operating temperature range (-40 to +70 °C)

The controllers belong to the ABB Ability Symphony Plus Control and I/O family: the SD 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 SD Series the best automation solution for your new installation, upgrade, or expansion.

SD 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, SD 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.

SD 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, SD Series controllers are designed to specifically address cybersecurity threats as defined by the industry-leading standard IEC 62443. For example, SD 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 SD Controllers available.



Specific feature ¹	SPC600K01	SPC600K02	SPC600VK01	SPC600VK02
General info				
Article number	8VZZ001272K0100 (SPC600K01)	8VZZ001272K0200 (SPC600K02)	8VZZ001272K1100 (SPC600VK01)	8VZZ001272K1200 (SPC600VK02)
Life cycle status	ACTIVE			
Redundancy	No	Yes	No	Yes
SIL	No			
Clock Frequency	250 MHz			
FBs per controller	5000			
Closed loop control performance	500 I/O in under 250 msec			
XR communications	Up to 50 import + 500 export XR messages per sec			
DRAM Memory	128 MB RAM			
NVRAM	512 KB MRAM			
Flash ROM	4 MB Flash ROM			
Form factor	Full-size (190mm)			
Mounting	Horizontal Row		Vertical Column	
HN800 bus length	150 mm	200 mm	305 mm	355 mm
MTBF (per MIL-HDBK-217-FN2)	SPC600 PR: B = 248,691 hours, MB705 PR: C = 1,576,127 hours	SPC600 PR: B = 248,691 hours, MB710 PR: D = 698,826 hours	SPC600 PR: B = 248,691 hours, VB705 PR: D = 3,620,095 hours	SPC600 PR: B = 248,691 hours, VB710 PR: D = 1,837,354 hours
MTTR (Hours)	SPC600 MTTR = 1 hour, MB705 MTTR = 8 hours	SPC600 MTTR = 1 hour, MB710 MTTR = 8 hours	SPC600 MTTR = 1 hour, VB705 MTTR = 8 hours	SPC600 MTTR = 1 hour, MB710 MTTR = 8 hours
Dimensions				
Width	45 mm	90 mm	66 mm	103 mm
Height	190 mm		218 mm	
Depth	127 mm		138 mm	
Weight (including base)	584 g	941 g	572 g	916 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.com](https://www.symphonyplushardwareselector.com)



Specific feature ¹	SPC700K01	SPC700K02	SPC700VK01	SPC700VK02
General info				
Article number	SPC700K01	SPC700K02	SPC700VK01	SPC700VK02
Life cycle status	ACTIVE			
Redundancy	No	Yes	No	Yes
SIL	No			
Clock Frequency	250 MHz			
FBs per controller	10000			
Closed loop control performance	1000 I/O in under 250 msec			
XR communications	Up to 100 import + 1000 export XR messages per sec			
DRAM Memory	128 MB RAM			
NVRAM	512 KB MRAM			
Flash ROM	4 MB Flash ROM			
Form factor	Full-size (190 mm)		Full-size (190mm)	
Mounting	Horizontal Row		Vertical Column	
HN800 bus length	150 mm	200 mm	305 mm	355 mm
MTBF (per MIL-HDBK-217-FN2)	SPC700 PR: D = 180,930 hours, MB705 PR: C = 1,576,127 hours	SPC700 PR: D = 180,930 hours, MB710 PR: D = 698,826 hours	SPC700 PR: D = 180,930 hours, VB705 PR: D = 3,620,095 hours	SPC700 PR: D = 180,930 hours, VB710 PR: D = 1,837,354 hours
MTTR (Hours)	SPC700 MTTR = 1 hour, MB705 MTTR = 8 hours	SPC700 MTTR = 1 hour, MB710 MTTR = 8 hours	SPC700 MTTR = 1 hour, MB705 MTTR = 8 hours	SPC700 MTTR = 1 hour, VB710 MTTR = 8 hours
Dimensions				
Width	45 mm	90 mm	66 mm	103 mm
Height	190 mm		218 mm	
Depth	127 mm		138 mm	
Weight (including base)	584 g	941 g	572 g	916 g
Environment and certification				
RoHS compliance	RoHS Directive 2015/863			
WEEE compliance	DIRECTIVE/2012/19/EU			

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Specific feature ¹	SPC800K01	SPC800K02	SPC800VK01	SPC800VK02
General info				
Article number	8VZZ001954K0100 (SPC800K01)	8VZZ001954K0200 (SPC800K02)	8VZZ001954K1100 (SPC800VK01)	8VZZ001954K1200 (SPC800VK02)
Life cycle status	ACTIVE			
Redundancy	No	Yes	No	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	Full-size (190mm)			
Mounting	Horizontal Row		Vertical Column	
HN800 bus length	150 mm	200 mm	305 mm	355 mm
MTBF (per MIL-HDBK-217-FN2)	SPC8ØØ PR: C = 248,779 hours, MB7Ø5 PR: C = 1,576,127 hours	SPC8ØØ PR: C = 248,779 hours, MB71Ø PR: D = 698,826 hours	SPC8ØØ PR: C = 248,779 hours, VB7Ø5 PR: D = 3,620,095 hours	SPC8ØØ PR: C = 248,779 hours, VB71Ø PR: D = 1,837,354 hours
MTTR (Hours)	SPC8ØØ MTTR = 1 hour, MB7Ø5 MTTR = 8 hours	SPC8ØØ MTTR = 1 hour, MB71Ø MTTR = 8 hours	SPC8ØØ MTTR = 1 hour, VB7Ø5 MTTR = 8 hours	SPC8ØØ MTTR = 1 hour, VB71Ø MTTR = 8 hours
Program Language Support	Symphony Gateway Software (SGS), Batch 90 (B90), User-Defined Functions (UDF), ANSI C			
Dimensions				
Width	45 mm	90 mm	66 mm	103 mm
Height	190 mm		218 mm	
Depth	127 mm		138 mm	
Weight (including base)	584 g	941 g	572 g	916 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.com](https://www.symphonyplushardwareselector.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: [symphonypushhardwareselector.com](https://www.symphonypushhardwareselector.com)

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