DATA SHEET

I/O Systems - S800 I/O

ABB Ability™ System 800xA® hardware selector

S800 I/O is a comprehensive, distributed and modular process I/O system that communicates with parent controllers over industry-standard fieldbus technology and therefore can be used with a wide range of process controllers from ABB and other vendors.

By permitting installation in the field, close to sensors and actuators, S800 I/O reduces the installation cost by reducing the cost of cabling. And thanks to features such as “hot swap” of modules, “online” reconfiguration, and redundancy options, it contributes to keeping production – and thereby profits – up.

For updated information regarding System 800xA please visit our 800xA Hardware Selector. In the HW-selector, you can compare different communication modules, AC 800M controllers, S800 I/O modules, S900 I/O modules, Select I/O modules, module termination units, network equipment, panels, power supplies, and voters, and also print your PDF files or save an outline of all modules in the product area.

Below is an outline of the range of different S800 I/O modules available.

Specific feature [1]	AI801	AI810	AI815	AI820
General info				
Article number	3BSE020512R1	3BSE008516R1	3BSE052604R1	3BSE008544R1
Type	Analog Input			
Signal specification	0...20 mA, 4...20 mA	0..20mA, 4..20mA, 0..10V, 2..10V	0..20 mA, 4..20 mA, 0..5 V, 1..5 V	-20..+20 mA, 0(4)..20 mA, -10..+10 V, 0(2)..10 V
Number of channels	8			4
Signal type	Unipolar single ended			Bipolar differential
HART	No		Yes	No
SOE	No			
Redundancy	No			
High integrity	No			
Intrinsic safety	No			
Mechanics	S800L	S800		
Dimensions				
Width	86.1 mm (3.4”)	45 mm (1.77”)		
Depth	58.5 mm (2.3”)	102 mm (4.01”), 111 mm (4.37”) including connector		
Height	110 mm (4.33”)	119 mm (4.7”)		
Weight	0.24 kg (0.53 lbs.)	0.2 kg (0.44 lbs.)	0.23 kg (0.51 lbs.)	0.2 kg (0.44 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	AI825	AI830A	AI835A	AI843
General info				
Article number	3BSE036456R1	3BSE040662R1	3BSE051306R1	3BSE028925R1
Type	Analog Input			
Signal specification	-20..+20 mA, 0(4)..20 mA, -10..+10 V, 0(2)..10V	3-wire RTD: Pt100, Cu10, NI100, Ni120 and resistive potentiometer	-30..75 mV linear; TC types B, C, D, E, J, K, L, N, R, S, T and U	-30..75 mVlinear, TC types B, C, E, J, K, L, N, R, S, T and U
Number of channels	4	8		
Signal type		See table in S800 Modules and Termination Units, 3BSE020924		See table
HART	No			
SOE	No			
Redundancy	No			Yes
High integrity	No			
Intrinsic safety	No			
Mechanics	S800			
Dimensions				
Width	45 mm (1.77")			
Depth	102 mm (4.01"), 111 mm (4.37") including connector			
Height	119 mm (4.7")			
Weight	0.22 kg (0.49 lbs.)			0.157 kg (0.35 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	AI845	AI880A	AI890	AI893
General info				
Article number	3BSE023675R1	3BSE039293R1	3BSC690071R1	3BSC690141R1
Type	Analog Input			
Signal specification	0..20mA, 4..20 mA, 0..5 V, 1..5 V	0..20 mA, 4..20 mA	0...20 mA	RTD or TC
Number of channels	8			
Signal type	Unipolar single ended			Differential
HART	Yes		No	
SOE	No			
Redundancy	Yes		No	
High integrity	No	Yes	No	
Intrinsic safety	No		Yes	
Mechanics	S800			
Dimensions				
Width	45 mm (1.77”)			
Depth	102 mm (4.01”), 111 mm (4.37”) including connector			
Height	119 mm (4.7”)			
Weight	0.23 kg (0.51 lbs.)	0.15 kg (0.33 lbs.)	0.2 kg (0.44 lbs.)	0.16 kg (0.35 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	AI895	AO801	AO810V2	AO815
General info				
Article number	3BSC690086R1	3BSE020514R1	3BSE038415R1	3BSE052605R1
Type	Analog Input	Analog Output		
Signal specification	4...20 mA	0... 20 mA, 4...20 mA	0..20 mA, 4..20 mA	4..20 mA
Number of channels	8			
Signal type	Unipolar single ended			
HART	Yes	No		Yes
SOE	No			
Redundancy	No			
High integrity	No			
Intrinsic safety	Yes	No		
Mechanics	S800	S800L	S800	
Dimensions				
Width	45 mm (1.77”)	86.1 mm (3.4”)	45 mm (1.77”)	
Depth	102 mm (4.01”), 111 mm (4.37”) including connector	58.5 mm (2.3”)	102 mm (4.01”), 111 mm (4.37”) including connector	
Height	119 mm (4.7”)	110 mm (4.33”)	119 mm (4.7”)	
Weight	0.2 kg (0.44 lbs.)	0.24 kg (0.53 lbs.)	0.18 kg (0.4 lbs.)	0.21 kg (0.46 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	AO820	AO845A	AO890	AO895
General info				
Article number	3BSE008546R1	3BSE045584R1	3BSC690072R1	3BSC690087R1
Type	Analog Output			
Signal specification	-20 mA...+20 mA, 0...20 mA, 4...20 mA, -10 V...+10 V, 0...10 V, 2...10 V	4..20 mA	0..20 mA, 4..20 mA	4...20 mA
Number of channels	4	8		
Signal type			Unipolar single ended	
HART	No	Yes	No	Yes
SOE	No			
Redundancy	No	Yes	No	
High integrity	No			
Intrinsic safety	No		Yes	
Mechanics	S800			
Dimensions				
Width	45 mm (1.77”)			
Depth	102 mm (4.01”), 111 mm (4.37”) including connector			
Height	119 mm (4.7”)			
Weight	0.18 kg (0.4 lbs.)	0.21 kg (0.46 lbs.)	0.2 kg (0.44 lbs.)	
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DI801	DI802	DI803	DI810
General info				
Article number	3BSE020508R1	3BSE022360R1	3BSE022362R1	3BSE008508R1
Type	Digital Input			
Signal specification	24V d.c.	120 V a.c., 110 V d.c.	230 V a.c., 220 V d.c.	24 V d.c.
Number of channels	16	8		16
Signal type	Current sinking			
HART	No			
SOE	No			
Redundancy	No			
High integrity	No			
Intrinsic safety	No			
Mechanics	S800L			S800
Dimensions				
Width	86.1 mm (3.4”)			45 mm (1.77”)
Depth	58.5 mm (2.3”)			102 mm (4.01”), 111 mm (4.37”) including connector
Height	110 mm (4.33”)			119 mm (4.7”)
Weight	0.24 kg (0.53 lbs.)			0.15 kg (0.33 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DI811	DI814	DI818	DI820
General info				
Article number	3BSE008552R1	3BUR001454R1	3BSE069052R1	3BSE008512R1
Type	Digital Input			
Signal specification	48 V d.c.	24 V d.c.		120 V a.c. / 110 V d.c.
Number of channels	16		32	8
Signal type	Current sinking	Current sourcing	Current sinking	
HART	No			
SOE	No			
Redundancy	No			
High integrity	No			
Intrinsic safety	No			
Mechanics	S800			
Dimensions				
Width	45 mm (1.77”)			
Depth	102 mm (4.01”), 111 mm (4.37”) including connector			
Height	119 mm (4.7”)			
Weight	0.15 kg (0.33 lbs.)			0.18 kg (0.4 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DI821	DI825	DI828	DI830
General info				
Article number	3BSE008550R1	3BSE036373R1	3BSE069054R1	3BSE013210R1
Type	Digital Input			
Signal specification	230 V a.c., 220 V d.c.	125 V d.c.	120 V a.c. / d.c.	24 V d.c.
Number of channels	8		16	
Signal type	Current sinking			
HART	No			
SOE	No	Yes	No	Yes
Redundancy	No			
High integrity	No			
Intrinsic safety	No			
Mechanics	S800			
Dimensions				
Width	45 mm (1.77”)			
Depth	102 mm (4.01”), 111 mm (4.37”) including connector			
Height	119 mm (4.7”)			
Weight	0.18 kg (0.4 lbs.)	0.14 kg (0.31 lbs.)	0.15 kg (0.33 lbs.)	0.22 kg (0.48 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DI831	DI840	DI880	DI890
General info				
Article number	3BSE013212R1	3BSE020836R1	3BSE028586R1	3BSC690073R1
Type	Digital Input			
Signal specification	48 V d.c.	24 V d.c.		NAMUR input level
Number of channels	16			8
Signal type	Current sinking			Proximity sensor (NAMUR) or Voltage free contact
HART	No			
SOE	Yes			No
Redundancy	No	Yes		No
High integrity	No		Yes	No
Intrinsic safety	No			Yes
Mechanics	S800			
Dimensions				
Width	45 mm (1.77")			
Depth	102 mm (4.01"), 111 mm (4.37") including connector			
Height	119 mm (4.7")			
Weight	0.22 kg (0.48 lbs.)	0.15 kg (0.33 lbs.)		0.2 kg (0.44 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DO801	DO802	DO810	DO814
General info				
Article number	3BSE020510R1	3BSE022364R1	3BSE008510R1	3BUR001455R1
Type	Digital Output			
Signal specification	24 V d.c. (12 - 32 V d.c.), 0.5 A	24...110 V d.c. / 250 V a.c. (max 2 A)	24V d.c. (12 - 32 V d.c.), 0.5 A	24 V d.c. (12-32 V d.c.), 0.5 A
Number of channels	16	8	16	
Signal type	Current sourcing, current limiting	Relay (NO)	Current sourcing, current limiting	Current sinking, current limiting
HART	No			
SOE	No			
Redundancy	No			
High integrity	No			
Intrinsic safety	No			
Mechanics	S800L		S800	
Dimensions				
Width	86.1 mm (3.4”)		45 mm (1.77”)	
Depth	58.5 mm (2.3”)		102 mm (4.01”), 111 mm (4.37”) including connector	
Height	110 mm (4.33”)		119 mm (4.7”)	
Weight	0.24 kg (0.53 lbs.)		0.18 kg (0.4 lbs.)	
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DO815	DO818	DO820	DO821
General info				
Article number	3BSE013258R1	3BSE069053R1	3BSE008514R1	3BSE013250R1
Type	Digital Output			
Signal specification	24 V d.c. (10 - 32 V d.c.), 2A	24 V d.c. (12 - 32 V d.c.), 0.5 A	230 V a.c. / d.c. (5 - 250 V a.c./d.c.), 3 A	230 V a.c./d.c. (5-250 V a.c./d.c.), 3 A
Number of channels	8	32	8	
Signal type	High side driver, current limiting	Current sourcing, current limiting	Relay (NO)	Relay (NC)
HART	No			
SOE	No			
Redundancy	No			
High integrity	No			
Intrinsic safety	No			
Mechanics	S800			
Dimensions				
Width	45 mm (1.77")	45 mm (1.77")	45 mm (1.77")	
Depth	102 mm (4.01"), 111 mm (4.37") including connector	102 mm (4.01"), 111 mm (4.37") including connector	102 mm (4.01"), 111 mm (4.37") including connector	
Height	119 mm (4.7")	119 mm (4.7")	119 mm (4.7")	
Weight	0.2 kg (0.44 lbs.)	0.18 kg (0.4 lbs.)	0.23 kg (0.5 lbs.)	
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DO828	DO840	DO880	DO890
General info				
Article number	3BSE069055R1	3BSE020838R1	3BSE028602R1	3BSC690074R1
Type	Digital Output			
Signal specification	125 V d.c. / 250 V a.c., (5 - 125 V d.c. / 5 - 250 V a.c.), 2 A	24 V d.c. (19.2 - 32 V d.c.), 0.5 A		11 V, 40 mA
Number of channels	16			4
Signal type	Relay (NO)	Current sourcing, current limiting		Solenoid driver
HART	No			
SOE	No			
Redundancy	No	Yes		No
High integrity	No		Yes	No
Intrinsic safety	No			Yes
Mechanics	S800			
Dimensions				
Width	45 mm (1.77")	45 mm (1.77”)		
Depth	102 mm (4.01"), 111 mm (4.37") including connector	102 mm (4.01”), 111 mm (4.37”) including connector		
Height	119 mm (4.7")	119 mm (4.7”)		
Weight	0.18 kg (0.4 lbs.)	0.15 kg (0.33 lbs.)	0.20 kg (0.44 lbs.)	0.2 kg (0.44 lbs.)
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	DP820	DP840
General info		
Article number	3BSE013228R1	3BSE028926R1
Type	Pulse counter	
Signal specification	24 V d.c. (12 - 32 V d.c.)	24 V d.c. (19.2 - 32 V d.c.)
Number of channels	2	8
HART	No	
SOE	No	
Redundancy	No	Yes
High integrity	No	
Intrinsic safety	No	
Mechanics	S800	
Dimensions		
Width	45 mm (1.77”)	
Depth	102 mm (4.01”), 111 mm (4.37”) including connector	
Height	119 mm (4.7”)	
Weight	0.15 kg (0.33 lbs.)	0.15 kg (0.33 lbs)
Environment and certification		
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS	
WEEE compliance	DIRECTIVE/2012/19/EU	

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Accessories

Specific feature [1]	TB805	TB806	TB807	TB845
General info				
Article number	3BSE008534R1	3BSE008536R1	3BSE008538R1	3BSE021437R1
Mechanics	S800			
Dimensions				
Width	22 mm		17 mm	43 mm
Depth	25 mm		13 mm	31.5 mm
Height	109 mm		19 mm	186 mm
Weight	46 g		10 g	180 g
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	TB846	TK801V003	TK801V006	TK801V012
General info				
Article number	3BSE021439R1	3BSC950089R1	3BSC950089R2	3BSC950089R3
Mechanics	S800			
Dimensions				
Width	43 mm			
Depth	31.5 mm			
Height	186 mm			
Weight	180 g	0,155 kg	0.19 kg	0.265 kg
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	TK811V015	TK811V050	TK811V150	TK812V015
General info				
Article number	3BSC950107R1	3BSC950107R2	3BSC950107R3	3BSC950118R1
Mechanics	S800			
Dimensions				
Weight	0.02 kg	0.045 kg	0.125 kg	0.015 kg
Environment and certification				

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	TK812V050	TK812V150	TL810K01	TL811K01
General info				
Article number	3BSC950118R2	3BSC950118R3	3BSE088170R1	3BSE088171R1
Mechanics	S800		Select I/O	
Type			Empty slot protector for FCI	Empty slot protector for EA
Hot swap			Yes	
Dimensions				
Width			134.5 mm (5.30 in.)	109.5 mm (4.31 in.)
Depth			38.5 mm (1.52 in.)	
Height			29 mm (1.14 in.)	24.5 mm (0.96 in.)
Weight	0.025 kg	0.065 kg		
Weight (including base)			35.5 g (0.07 lbs)	23.8 g (0.05 lbs)
Environment and certification				
RoHS compliance			DIRECTIVE/2011/65/EU (EN 50581:2012)	
WEEE compliance			DIRECTIVE/2012/19/EU	

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

Specific feature [1]	TY801K01	TY804K01	TY805K01	TY820K01
General info				
Article number	3BSE023607R1	3BSE033670R1	3BSE081160R1	3BSE056980R1
Mechanics	S800			
Dimensions				
Width	15.5 mm			20 mm
Depth	62 mm			8 mm
Height	11 mm			13 mm
Weight	0.06 kg			0.08 kg
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**

solutions.abb/800xA
solutions.abb/controlsystems

800xA and Symphony Plus is a registered trademark of ABB. All rights to other trademarks reside with their respective owners.

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2026 ABB All rights reserved