

SD Series is designed for extremes



Property	Characteristic / Value
Density	Over 1,000 I/O in 19" Rack cabinet
Operating Temperature Range	From -20 to +70 ° C
Corrosive Environments	G3 Conformal Coating, optionally available
Low Power Requirements	I/O Modules 1 to 2 W, SPC700 3.6W per module
Backward Compatibility	Supported by HPC800, SP700 & BRC300/400/410

HR: Harmony Rack Series

Evolution Mapping to SD Series I/O

Module	# CH	I/O	Signal Ranges	HR Harmony Rack Replacement		SD Symphony DIN Replacement	
				HR Module	Comment	SD Module	Comment
NASI01	15	AI	1-5VDC, 0-1VDC, 0-5VDC, 0-10VDC, -10VDC to 10VDC, 4-20mA	SPFEC12	FEC12 does not support Smart Transmitter communications. Uses FC132 and FC133.	AI01	AI01 does not support Smart Transmitter communications
NASI02	15	AI	1-5VDC, 0-1VDC, 0-5VDC, 0-10VDC, -10VDC to 10VDC, 4-20mA	SPFEC12	FEC12 does not support Smart Transmitter communications. Uses FC132 and FC133.	AI01	AI01 does not support Smart Transmitter communications
NASM01	16	AI	1-5VDC, 0-5VDC, 0-10VDC, -10 to 10VDC, 4-20mA	SPFEC12	Sixteen high-level inputs. System or field powered current, or single ended or differential voltage.	AI01	
NASM02	8	AI	-100 to 100mV, 0 to 100mV, Thermocouples	SPASI23	Supports types E, J, K, T, S, R, Chinese E, and Chinese S thermocouples. Also supports millivolt inputs.	AI04	AI04 provides 16 TC / mV inputs
NASM03	8	AI	100 Ohm Platinum RTD, 120 Ohm Nickel RTD, 53 Ohm Chinese Copper RTD	SPASI23	RTDs: 100 Ohm US Lab, 100 Ohm US Industrial, 100 Ohm Platinum European, 120 Ohm Nickel, 53 Ohm Chinese Copper	AI03	
NASM04	8	AI	10 Ohm Copper RTD	IMASM04	Limited Lifecycle Phase	None	
NASO01	14	AO	1-5VDC or 4-20mA	SPASO11	Maximum load 750 Ohms. Uses FC149.	AO01	
NCIS01	3	DI	24VDC, 125VDC, 120VAC	SPCIS22	Interfaces to NDCS03 or IISAC01 manual/auto stations. Used with FC79.	AD01 AD02	AD01 provides 4x LV-DI (24 / 48 VDC) + 4x AO AD02 provides 4x HV-DI (120VAC / 125VDC) + 4x AO Both AD01 & AD02 support HART on Analog I/O No solution or support for NDCS03 or IISAC01
	4	DO	24VDC				
	4	AI	1-5VDC, 4-20mA				
	2	AO	1-5VDC, 4-20mA				
NCIS02	3	DI	24VDC, 125VDC, 120VAC	SPCIS22	Interfaces to NDCS03 or IISAC01 manual/auto stations. Used with FC79.	AD01 AD02	AD01 provides 4x LV-DI (24 / 48 VDC) + 4x AO AD02 provides 4x HV-DI (120VAC / 125VDC) + 4x AO Both AD01 & AD02 support HART on Analog I/O No solution or support for NDCS03 or IISAC01
	4	DO	24VDC				
	4	AI	1-5VDC, 4-20mA				
	2	AO	1-5VDC, 4-20mA				

HR: Harmony Rack Series Evolution Mapping to SD Series I/O

Module	# CH	I/O	Signal Ranges	HR Harmony Rack Replacement		SD Symphony DIN Replacement	
				HR Module	Comment	SD Module	Comment
NDSI01	16	DI	24VDC, 125VDC, 120VAC	SPDSI22	Inputs optically isolated, however, 2 pairs share a common on TU (inputs 7 and 8, and 15 and 16) and these pairs must use same voltage source. Used with FC84.	DI01 DI02 DI03 DI04	DI 24/48 VDC (supports 1 msec SOE) DI 120VAC / 125 VDC (supports 10msec SOE) DI 24 VDC (does not support SOE) DI 48VDC (does not support SOE)
NDSI02	16	DI	24VDC, 125VDC, 120VAC	SPDSI22	Inputs optically isolated, however, 2 pairs share a common on TU (inputs 7 and 8, and 15 and 16) and these pairs must use same voltage source. Used with FC84.	DI01 DI02 DI03 DI04	DI 24/48 VDC (supports 1 msec SOE) DI 120VAC / 125 VDC (supports 10msec SOE) DI 24 VDC (does not support SOE) DI 48VDC (does not support SOE)
NDSM01	16	DI/O	24VDC, selectable as inputs or outputs in groups of 8				
NDSM02	16	DI	24VDC, 125VDC	SPDSI22		DI01 DI02	DI 24/48 VDC (supports 1 msec SOE) DI 120VAC / 125 VDC (supports 10msec SOE)
NDSM03	16	DI	24VDC, 125VDC, 120VAC		24VDC use SPDSI13. 125VDC or 120VAC use SPDSI22	DI01 DI02 DI03	DI 24/48 VDC (supports 1 msec SOE) DI 120VAC / 125 VDC (supports 10msec SOE) DI 24 VDC (does not support SOE)
NDSM04	8	PI	0-50KHz, 4-6VDC, 21.627VDC	SPDSM04	Performs totalization (FC104), frequency count (FC103), or pulse count (FC102).	PI01	
NDSM05	16	DI/O	24VDC, selectable as inputs or outputs in groups of 8	INS: SPDSI22 OUTS: SPDSO14	Must change dip-shunt and reverse polarity of field wires when replacing NDSM05 with DSO14 for outputs or DSI for inputs.	INS: DI03 OUTS: DO01	DI03 provides 16 DI 24 VDC DO01 provides 16 DO 24/48VDC, max 250mA
NDSO01	8	DO	24-240VAC	IMDSO01	Limited Lifecycle Phase	None	
NDSO02	8	DO	4-50VDC	IMDSO02	Limited Lifecycle Phase	None	
NDSO03	8	DO	5-160VDC	IMDSO03	Limited Lifecycle Phase	None	
NDSO04	16	DO	24VDC	SPDSO14		DO01 DO02	DO01 provides 16 DO 24-48 VDC, max 250mA DO02 provides 16 DO 24/48VDC, max 250mA w/ SC protection