

Product testing						Product compliance								
		PR EMC specification for 5331/32/34 series units				EN IEC 61326-1:2021		EN 61326-1:2013		NAMUR NE21:2017		Marine: IACS E10, Rev. 8		
Type	Phenomenon	Test Setup Standard	Test value	Criteria	Performance derating during test	Test value	Criteria	Test value	Criteria	Test value	Criteria	Test value	Criteria	
Enclosure	ESD Input terminals	IEC61000-4-2	±6 kV Contact discharge	A	-	±4 kV contact discharge	B	4 kV contact discharge	B	6 kV contact discharge	A	6 kV contact discharge	B	
	ESD, Output ports, communication ports, power supply port, enclosure	IEC61000-4-2	±6 kV Contact discharge	A	1.0 %	±4 kV contact discharge	B	4 kV contact discharge	B	6 kV contact discharge	A	6 kV contact discharge	B	
			±8 kV Air discharge	A	1.0 %	±8 kV air discharge	B	8 kV air discharge	B	8 kV air discharge	A	2 kV, 4kV, 8 kV air discharge	B	
	Electromagnetic Field	IEC61000-4-3	10 V/m, 80 MHz...6GHz	A	0.5%	10 V/m (80 MHz to 1 GHz)	A	10 V/m (80 MHz to 1 GHz)	A	10 V/m (80 MHz to 2,7 GHz) @ 1 kHz AM 80%	A	10 V/m (80 MHz to 6 GHz), 1kHz 80% AM	A	
						3 V/m (1,4 GHz to 6 GHz)	A	3 V/m (1,4 GHz to 2 GHz)	A					
								1 V/m (2 GHz to 2,7 GHz)	A					3 V/m (2,7 GHz to 6 GHz) @ 1 kHz AM 80%
						N/A	N/A							
	Power Frequency Magnetic Field	IEC61000-4-8	30 A/m, 50 Hz	A	1.0 %	30 A/m (50 Hz, 60 Hz)	A	30 A/m (50 Hz, 60 Hz)	A	100 A/m (50 Hz)	A	N/A	N/A	
I/O Signal	Burst	IEC61000-4-4	±2 kV, 15/300ms, 5kHz, 5min	A	1.0 %	1 kV (5/50 ns) 15/300ms 5kHz or 100kHz 1min	B	1 kV (5/50 ns) 15/300ms 5kHz 1min	B	1 kV (5/50 ns, 5 kHz)	A	1 kV (5/50 ns) 15/300ms 5kHz 5min	B	
	Surge, Input port	IEC61000-4-5	±1 kV line to line (diff.) 5 pulses of each polarity	B	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			±2 kV line to ground (comm.) 5 pulses of each polarity	B	-	1 kV line to ground 5 pulses of each polarity	B	1 kV line to ground 5 pulses of each polarity	B	1 kV line to ground	B	N/A	N/A	
	Surge, Output and communication ports		±1 kV line to line 5 pulses of each polarity	A	1.0 %	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			±2 kV line to ground 5 pulses of each polarity	A	1.0 %	1 kV line to ground 5 pulses of each polarity	B	1 kV line to ground 5 pulses of each polarity	B	1 kV line to ground	B	N/A	N/A	
	Conducted Immunity RF	IEC61000-4-6	10Vrms 10 kHz - 80 MHz step size 1% Dwell time 1 s	A	0.5 %	3 V (150 kHz to 80 MHz), 1 kHz 80% AM Sweep rate 1%/sec	A	3 V (150 kHz to 80 MHz), 1kHz 80% AM Sweep rate 1%/sec	A	10 V (150 kHz to 80 MHz) @ 1 kHz AM 80%	A	3 V (150 kHz to 80 MHz), 1kHz 80% AM Spot Checks with 10V: 2/3/4/6,2/8,2/12,6/16,5/18,8/22,25MHz Sweep rate 1%/3sec	A	
	Conducted LF	IEC61000-4-16	10V : 15 Hz - 150 kHz 200/decade @ 200ms delay	-	0.5 %									

PR 5331, 5332 and 5334 comply with standard

5331 / 5332 / 5334 EMC specifications - Radiated Emission

	EN 55011:2016 (CISPR 11) Group 1, Class B				EN IEC 61000-6-3:2021				Marine: IACS E10, Rev. 8 Bridge and deck zone			
	Frequency Range	Limit	Detector	Antenna Distance	Frequency Range	Limit	Detector	Antenna Distance	Frequency Range	Limit	Detector	Antenna Distance
Enclosure	30-230 MHz	30 dBµV/m	Quasi-peak	10 m	30 - 230 MHz	30 dBµV/m	Quasi-peak	10 m	150 - 300 kHz	80 - 52 dBµV/m	Quasi-peak	3 m
	230-1000 MHz	37 dBµV/m	Quasi-peak	10 m	230 - 1000 MHz	37 dBµV/m	Quasi-peak	10 m	300 kHz - 30 MHz	52 - 34 dBµV/m	Quasi-peak	3 m
					1 - 3 GHz	70 dBµV/m	Peak	3 m	30 MHz - 1 GHz	54 dBµV/m	Quasi-peak	3 m
					1 - 3 GHz	50 dBµV/m	Average	3 m	1 - 6 GHz	54 dBµV/m	Average	3 m
					3 - 6 GHz	74 dBµV/m	Peak	3 m	Except: 156 - 165 MHz	24 dBµV/m	Quasi-peak	3 m
					3 - 6 GHz	54 dBµV/m	Average	3 m				

5331 / 5332 / 5334 EMC specifications - Conducted emission

	EN 55011:2016 (CISPR 11) Group 1, Class B			EN IEC 61000-6-3:2021			Marine: IACS E10, Rev. 8 Bridge and deck zone		
	Frequency Range	Limit	Detector	Frequency range	Limit [dBµV]	Detector	Frequency Range	Limit	Detector
DC Power Port	150 - 500 kHz	84 - 74 dBµV	Quasi-peak	150 - 500 kHz	79 dBµV	Quasi-peak	10-150 kHz	96 - 50 dBµV	Quasi-peak
		74 - 64 dBµV	Average		66 dBµV	Average	150-500 kHz	60 - 50 dBµV	Quasi-peak
	500 kHz - 30 MHz	74 dBµV	Quasi-peak	500 kHz - 30 MHz	73 dBµV	Quasi-peak	500 kHz - 30 MHz	50 dBµV	Quasi-peak
		64 dBµV	Average		60 dBµV	Average			