

4225 EMC Specifications (Immunity)

		Product testing				Product compliance					
		4225 EMC Specifications				EN 61326-1		Namur NE21 : 2017		IACS E10 Rev. 8 (marine)	
Port	Phenomenon	Test Standard	Test value	Criteria	Performance level	Test value	Criteria	Test value	Criteria	Test value	Criteria
Enclosure	ESD Input terminals	IEC61000-4-2	Contact: 6KV	B	-	Contact: 4kV	B	Contact: 6kV	A	Contact: 6kV	B
	ESD	IEC61000-4-2	Contact: 6kV Air: 8kV	A	1.0%	Contact: 4kV Air: 8kV	B	Contact: 6kV Air: 8kV	A	Air: 2kV, 4kV and 8kV Indirect: 6kV Contact: 6kV	B
	EM-Field	IEC61000-4-3	10V/m 80-1000 MHz 10V/m 1.4 - 2GHz 1V/m 2-2.7GHz	A	0.5%	10V/m, 80-1000 MHz 3V/m, 1.4-2GHz 1V/m, 2-2.7GHz	A	10V/m, 80-2000 MHz 3V/m, 2-6GHz	A	10 V/m, 80-6000 MHz	A
	Magnetic Field	IEC61000-4-8	30A/m	A	0.5%	30A/m	A	100A/m	A	Not required	
Power	Burst	IEC61000-4-4	2kV, 5KHz 2kV, 100 kHz	A	1.0%	2KV	B	2KV, 5KHz 2kV, 100 kHz	A	2KV, 5kHz	B
	Surge	IEC61000-4-5	Diff.: 1kV, 0Ω Comm.: 2kV, 10Ω	A	1.0%	Diff.: 1kV, 0Ω Comm.: 2kV, 10Ω	B	Diff.: 0.5KV, 0Ω Comm.: 1kV, 10Ω	A	Diff.: 0.5KV, 0Ω Comm.: 1kV, 10Ω	B
	Conducted RF	IEC61000-4-6	10V, 150KHz - 100MHz	A	0.5%	3V, 150KHz - 80MHz	A	10V, 10KHz - 80MHz Covers RF + LF	A	3V, 150KHz - 80MHz	A
	Interruptions	IEC61000-4-29	60% in 10ms 100% in 20 ms	B	-	60% in 10ms 100% in 20 ms	B	100% in 20 ms	B	Not required	
	Conducted 50Hz	IEC61000-4-8	50/60Hz, 300Ω, 230V	A	1.0%	Not required		Not required		Not required	
	Conducted LF	IEC61000-4-16	AC: 50/60Hz < to 200th harmonic: 1st to 15th harm.: 10% of supply, min 3Vrms 15th to 100 harm.: Reducing to 1% of supply, min 3Vrms 100th to 200th: 1% of supply, min 3Vrms DC: 50Hz to 10kHz, 10% of supply, max 2W	A	0.5%	Not required		Not required		AC: 50/60Hz < to 200th harmonic: 1st to 15th harm.: 10% of supply, min 3Vrms 15th to 100 harm.: Reducing to 1% of supply, min 3Vrms 100th to 200th: 1% of supply, min 3Vrms DC: 50Hz to 10kHz, 10% of supply, max 2W	A
I/O Signal	Burst	IEC61000-4-4	1KV, 5KHz 1kV, 100kHz	A	1.0%	1KV, 5kHz	B	1KV, 5KHz 1kV, 100 kHz	A	1KV, 5kHz	B
	Surge Input	IEC61000-4-5	Diff.: 1kV, 40Ω Comm.: 2kV, 40Ω	B	-	Diff.: 1kV, 40Ω Comm.: 2kV, 40Ω	B	Diff.: 1kV, 40Ω Comm.: 2kV, 40Ω	B	Not required	
	Surge Output	IEC61000-4-5	Diff.: 1kV, 40Ω Comm.: 2kV, 40Ω	A	1.0%	Diff.: 1kV, 40Ω Comm.: 2kV, 40Ω	B	Diff.: 1kV, 40Ω Comm.: 2kV, 40Ω	B	Not required	
	Conducted RF	IEC61000-4-6	10V, 150kHz-100MHz	A	0.5%	Not required		Not required		Not required	

4225 complies with standard

- A: During testing, normal performance within the specification limits.
- B: During testing, temporary degradation, or loss of function or performance which is self recovering.
- C: During testing, temporary degradation, or loss of function or performance which requires operator intervention or system reset occurs.

4225 EMC Specifications (Emission)

CISPR 11 / EN 55011 Group 1, Class B				IACS E10 Rev. 8				EN 61000-6-3			
Frequency Range	Limit	Detector	Antenna Distance	Frequency Range	Limit	Detector	Antenna Distance	Frequency range	Limit	Detector	Antenna Distance
30-230 MHz	30 dB μ V/m	Quasi-peak	10 m	150 - 300 kHz	80 - 52 dB μ V/m	Quasi-peak	3 m	30-230 MHz	30 dB μ V/m	Quasi-peak	10 m
230-1000 MHz	37 dB μ V/m	Quasi-peak	10 m	300 kHz - 30 MHz	52 - 34 dB μ V/m	Quasi-peak	3 m	230-1000 MHz	37 dB μ V/m	Quasi-peak	10 m
				30 MHz - 1 GHz	54 dB μ V/m	Quasi-peak	3 m	1-3 GHz	70 dB μ V/m	Peak	3 m
				1 - 6 GHz	54 dB μ V/m	Average	3 m	1-3 GHz	50 dB μ V/m	Average	3 m
				Except: 156 - 165 MHz	24 dB μ V/m	Quasi-peak	3 m	3-6GHz	74 dB μ V/m	Peak	3 m
								3-6GHz	54 dB μ V/m	Average	3 m

4225 EMC Specification

Conducted Emission

	CISPR 11 / EN 55011 Group 1, Class B			DNVGL-CG-0339, EMC-B Edition December 2019			EN 61000-6-3				
	Frequency Range	Limit	Detector	Frequency Range	Limit	Detector	Frequency range	Limit [dB μ V]	Limit [dB μ A]	Detector	
DC Power Port	150 - 500 kHz	84 - 74 dB μ V	Quasi-peak	10-150 kHz	96 - 50 dB μ V	Quasi-peak	150 - 500 kHz	84 - 74 dB μ V		Quasi-peak	
		74 - 64 dB μ V	Average	150-500 kHz	60 - 50 dB μ V	Quasi-peak		74 - 64 dB μ V		Average	
	500 kHz - 30 MHz	74 dB μ V	Quasi-peak	500 kHz - 30 MHz	50 dB μ V	Quasi-peak	500 kHz - 30 MHz	74 dB μ V		Quasi-peak	
		64 dB μ V	Average					64 dB μ V		Average	
I/O lines							150 kHz - 500 kHz	84 - 74 dB μ V	40 - 30 dB μ A	Quasi-peak	
								74 - 64 dB μ V	30 - 20 dB μ A	Average	
							500 kHz - 30 MHz	74 dB μ V		30 dB μ A	Quasi-peak
								64 dB μ V		20 dB μ A	Average