

4179B EMC Specifications (Immunity)

		Product testing				Product compliance					
		4179B EMC Specifications				IEC61326-1:2021 Standard EMC		Namur NE21:2017 Extended EMC		DNVGL-CG-0339, Edition December 2019 Marine	
Port	Phenomenon	Test Standard	Test value	Criteria	Performance level (Relay outputs)	Test value	Criteria	Test value	Criteria	Test value	Criteria
Enclosure	ESD Input terminals	IEC61000-4-2	Contact: ±6 kV	B	-	Contact: 4 kV	B	Contact: 6 kV	A	Contact: 6 kV	B
	ESD	IEC61000-4-2	Contact: ±6 kV Air: ±8 kV	A	-	Contact: 4 kV Air: 8 kV	B	Contact: 6 kV Air: 8 kV	A	Air: 2 kV, 4 kV and 8 kV Indirect: 6 kV Contact: 6 kV	B
	EM-Field	IEC61000-4-3	10 V/m 80-1000 MHz 10 V/m 1.4 - 2 GHz 1 V/m 2-6 GHz	A	-	10 V/m, 80-1000 MHz 3 V/m, 1.4-2 GHz 1 V/m, 2-2.7 GHz	A	10 V/m, 80-2000 MHz 3 V/m, 2-6 GHz	A	10 V/m, 80-6000 MHz	A
	Magnetic Field	IEC61000-4-8	100 A/m	A	-	30 A/m	A	100 A/m	A	Not required	
Power	Burst	IEC61000-4-4	±2 kV, 5 kHz ±2 kV, 100 kHz	A	-	2 kV	B	2 kV, 5 kHz 2 kV, 100 kHz	A	2 kV, 5 kHz	B
	Surge	IEC61000-4-5	Diff.: ±1 kV, 0 Ω Comm.: ±2 kV, 10 Ω	A	-	Diff.: 1kV, 0Ω Comm.: 2kV, 10Ω	B	Diff.: 0.5KV, 0Ω Comm.: 1kV, 10Ω	A	Diff.: 0.5 kV, 0 Ω Comm.: 1 kV, 10 Ω	B
	Conducted RF	IEC61000-4-6	10 V, 150 kHz - 100 MHz	A	-	3 V, 150 kHz - 80 MHz	A	10 V, 10 kHz - 80 MHz	A	3 V, 150 kHz - 80 MHz	A
	Interruptions	IEC61000-4-29	60% in 10 ms 100% in 20 ms	B	-	60% in 10 ms 100% in 20 ms	B	100% in 20 ms	B	Not required	
	Conducted 50 Hz	IEC61000-4-8	50/60 Hz 300 Ω 300 V	A	-	Not required		Not required		Not required	
	Supply Ripple Suppression Error (Conducted Immunity LF)	IEC61000-4-16	AC: 50/60 Hz < to 200th harmonic: 1st to 15th harm.: 10% of supply, min. 3 Vrms 15th to 100th harm.: Reducing to 1% of supply, min. 3 Vrms DC: 50 Hz to 10 kHz, 10% of supply, max. 2 W	A	-	Not required		Not required		AC: 50/60 Hz < to 200th harmonic: 1st to 15th harm.: 10% of supply, min. 3 Vrms 15th to 100th harm.: Reducing to 1% of supply, min. 3 Vrms DC: 50 Hz to 10 kHz, 10% of supply, max. 2 W	A
I/O Signal	Burst	IEC61000-4-4	±1 kV, 5 kHz ±1 kV, 100 kHz	A	-	1 kV, 5 kHz	B	1 kV, 5 kHz 1 kV, 100 kHz	A	1 kV, 5 kHz	B
	Surge Input	IEC61000-4-5	Diff.: ±1kV, 40Ω Comm.: ±1kV, 40Ω	B	-	Diff.: 1 kV, 40 Ω Comm.: 1 kV, 40 Ω	B	Diff.: 1 kV, 40 Ω Comm.: 1 kV, 40 Ω	B	Not required	
	Surge Output	IEC61000-4-5	Diff.: ±1 kV, 40 Ω Comm.: ±1 kV, 40 Ω	A	-	Diff.: 1 kV, 40 Ω Comm.: 1 kV, 40 Ω	B	Diff.: 1 kV, 40 Ω Comm.: 1 kV, 40 Ω	B	Not required	
	Conducted RF	IEC61000-4-6	10 V 150 kHz-100 MHz	A	-	Not required		Not required		Not required	

4179B 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 og system reset occurs.

4179B EMC Specifications (Emission)

Radiated Emission							
CISPR 11 / EN 55011				DNVGL-CG-0339, EMC-B			
Frequency Range	Limit	Detector	Antenna Distance	Frequency Range	Limit	Detector	Antenna Distance
30-230 MHz	40 dB μ V/m	Quasi-peak	10 m	150 - 300 kHz	80 - 52 dB μ V/m	Quasi-peak	3 m
230-1000 MHz	47 dB μ V/m	Quasi-peak	10 m	300 kHz - 30 MHz	52 - 34 dB μ V/m	Quasi-peak	3 m
				30 MHz - 1 GHz	54 dB μ V/m	Quasi-peak	3 m
				1 - 6 GHz	54 dB μ V/m	Average	3 m
				Except: 156 - 165 MHz	24 dB μ V/m	Quasi-peak	3 m

4179B EMC Specifications (Emission)

Conducted Emission

	CISPR 11 / EN 55011			DNVGL-CG-0339, EMC-B		
	Frequency Range	Limit	Detector	Frequency Range	Limit	Detector
I/O lines						
DC Power Port	150 - 500 kHz	97 - 89 dB μ V	Quasi-peak	10-150 kHz	96 - 50 dB μ V	Quasi-peak
		84 - 76 dB μ V	Average	150-500 kHz	60 - 50 dB μ V	Quasi-peak
	500 kHz - 30 MHz	89 dB μ V	Quasi-peak	500 kHz - 30 MHz	50 dB μ V	Quasi-peak
		76 dB μ V	Average			
AC Power port	150 - 500 kHz	79 dB μ V	Quasi-peak	10-150 kHz	96 - 50 dB μ V	Quasi-peak
		66 dB μ V	Average	150-500 kHz	60 - 50 dB μ V	Quasi-peak
	500 kHz - 5 MHz	73 dB μ V	Quasi-peak	500 kHz - 30 MHz	50 dB μ V	Quasi-peak
		60 dB μ V	Average			
	5 -30 MHz	73 dB μ V	Quasi-peak			
		60 dB μ V	Average			