

PR EMC Specifications (5450 series units): Immunity

		Product Testing				Product Compliance								
		5450 EMC Specifications				EN IEC 61326-1:2021		EN IEC 61326-1:2013		Namur NE21:2017			Marine: DNV-CG-0339:2021	
Port	Phenomenon	Test Setup Standard	Test value	Criteria	Performance level	Test value	Criteria	Test value	Criteria	Test value	Criteria	Test value	Criteria	
Enclosure	ESD, Contact discharge Input	IEC61000-4-2	±6 kV Contact discharge	B	1.0 %	±4 kV contact discharge	B	±4 kV contact discharge	B	±6 kV Contact discharge	A	±6 kV Contact discharge	B	
	ESD, Contact discharge Output	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	
	ESD, Air discharge	IEC61000-4-2	±8 kV Air discharge	A	1.0 %	±8 kV air discharge	B	±8 kV air discharge	B	±8 kV Air discharge	A	±8 kV Air discharge	B	
	Electromagnetic Field	IEC61000-4-3	10 V/m (80 MHz to 6 GHz), 1kHz 80% AM	A	0.1 %	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 %
Power Frequency Magnetic Field	IEC61000-4-8	100 A/m (50 ,60 Hz)	A	0.1 %	30 A/m (50 Hz, 60 Hz)	A	30 A/m (50 Hz, 60 Hz)	A	100 A/m (50 Hz)	A	Not Required			
I/O	Burst	IEC61000-4-4	±1 kV (5/50 ns) 15/300ms 5kHz 5min	A	1.0 %	±1 kV (5/50 ns) 15/300ms 5kHz 1 min.	B	±1 kV (5/50 ns) 15/300ms 5kHz 1 min.	B	1 kV (5 kHz, pulse packet lenght 15 ms)	A	±1 kV (5/50 ns) 15/300ms 5kHz 5min	B	
			1 kV (100 kHz, pulse packet lenght 0.75 ms)	A	1.0%	±1 kV (5/50 ns) 0.75/300ms 100kHz 1 min.	B	Not Required		1 kV (100 kHz, pulse packet lenght 0.75 ms)	A	Not Required		
	Surge	IEC61000-4-5	1 kV line to line 5 pulses of each polarity	B	1.0 %	Not Required		Not Required		Not Required		Not Required		
			1 kV line to ground 5 pulses of each polarity	B	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 (1,2 / 50 us)	B	Not Required		
	Conducted Immunity RF	IEC61000-4-6	10 V (10 kHz to 150 kHz) @ 1 kHz AM 80 %	A	0.1 %	Not Required		Not Required		10 V (10 kHz to 150 kHz) @ 1 kHz AM 80 %	A	Not Required		
			10 V (150 kHz to 80 MHz) @ 1 kHz AM 80 %	A	0.1 %	3 V (150 kHz to 80 MHz), 1kHz 80% AM	A	3 V (150 kHz to 80 MHz), 1kHz 80% AM	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:	A	
	Conducted 50 Hz	-	50Hz, 60Hz og 400Hz with 300Ω at 55VAC	A	0.1 %	Not Required		Not Required		Not Required		Not Required		

5450 comply 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



5450 EMC Specifications (Emission)

Radiated Emission											
CISPR 11 / EN 55011:2016				EN 61000-6-3:2007				Marine: EU-RO E10 Revision 8			
Frequency Range	Limit	Detector	Antenna Distance	Frequency range	Limit	Detector	Antenna Distance	Frequency Range	Limit	Detector	Antenna Distance
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
				3-6GHz	74 dBµV/m	Peak	3 m	Except: 156 - 165 MHz	24 dBµV/m	Quasi-peak	3 m
				3-6GHz	54 dBµV/m	Average	3 m				



5450 EMC Specifications (Emission)

Conducted Emission

	EN 55011:2016 / (CISPR 11) Group 1, Class B			EN IEC 61000-6-3:2007				Marine: EU-RO E10 Revision 8 EMC-B		
	Frequency Range	Limit	Detector	Frequency Range	Limit [dBµV]	Limit [dBµA]	Detector	Frequency Range	Limit	Detector
Input				150 kHz - 500 kHz	84 - 74 dBµV	40 - 30 dBµA	Quasi-peak			
					74 - 64 dBµV	30 - 20 dBµA	Average			
				500 kHz - 30 MHz	74 dBµV	30 dBµA	Quasi-peak			
					64 dBµV	20 dBµA	Average			
Loop supply / Output	150 - 500 kHz	84 - 74 dBµV	Quasi-peak	150 - 500 kHz	84 - 74 dBµV	40 - 30 dBµA	Quasi-peak			
		74 - 64 dBµV	Average		74 - 64 dBµV	30 - 20 dBµA	Average			
	500 kHz - 30 MHz	74 dBµV	Quasi-peak	500 kHz - 30 MHz	74 dBµV	30 dBµA	Quasi-peak			
		64 dBµV	Average		64 dBµV	20 dBµA	Average			

