

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <b>4413</b>  Accredited to <b>ISO/IEC 17025:2017</b>	<b>MS Testing</b> <b>– a trading division of Mariner Systems (UK) Ltd</b>	
	Issue No: 029    Issue date: 11 December 2025	
	5 Maple Way Aycliffe Industrial Park Newton Aycliffe Co Durham DL5 6BF	Contact: Mr S Thompson Tel: +44 (0)1325 321366 Fax: +44 (0)1325 319369 E-Mail: <a href="mailto:info@mstesting.co.uk">info@mstesting.co.uk</a> Website: <a href="http://www.mstesting.co.uk">www.mstesting.co.uk</a>
Testing performed at the above address only		

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<b>Address:</b> 5 Maple Way Aycliffe Industrial Park Newton Aycliffe Co Durham DL5 6BF  <b>Local contact:</b> Mr S Thompson Tel: +44 (0)1325 321366 Fax: +44 (0)1325 319369 E-Mail: <a href="mailto:info@mstesting.co.uk">info@mstesting.co.uk</a>	Testing: EMC Testing Environmental Testing	A

#### Site activities performed away from the locations listed above:

Location details	Activity	Location code
Any location suitable for the activity listed. The site must be suitable for the nature of the testing undertaken and will be the subject of contract review arrangements between the laboratory and the customer,  <b>Local contact:</b> Mr S Thompson	Environmental (IPX5) Testing	S



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Electrical installations in ships - Control and instrumentation  Maritime navigation and Radio communication equipment and systems	<b>ENVIRONMENTAL TESTS</b> (non-explosive items)  <b>1. CLIMATIC</b>  <b>1.1 HIGH TEMPERATURE</b> Constant/Cyclic  Max temp: + 70 °C Max chamber size: 1.6 m x 1.9 m x 1.6 m  Max temp: + 100 °C Max chamber size: 0.8 m x 0.8 m x 0.8 m  Max temp: + 180 °C Max chamber size: 1.2 m x 1.0 m x 1.2 m	BS EN 60068-2-2:2007 IEC 60068-2-2:2007 BS EN 60945, section 8.2. IACS E10: 2022 IACS E10: 2024 API 17F:Ed 4 2017 and Ed 5 2023 ISO 13628-6: 2006	A
	<b>1.2 LOW TEMPERATURE</b> Constant/Cyclic Min temp: - 25 °C  Max chamber size: 1.6 m x 1.9 m x 1.6 m  Min temp: - 40 °C Max chamber size: 0.8 m x 0.8 m x 0.8 m  Min temp: - 60 °C Max chamber size: 1.2 m x 1.0 m x 1.2 m		BS EN 60068-2-1:2007 IEC 60068-2-1:2007 BS EN 60945, section 8.4. IACS E10: 2022 IACS E10: 2024 API 17F Ed 4 2017 and Ed 5: 2023 ISO 13628-6: 2006



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As listed on Page 1	<b>ENVIRONMENTAL TESTS</b> (cont'd)  <b>1. CLIMATIC</b> (cont'd)  1.3 HIGH HUMIDITY - Constant/Cyclic  Humidity range: 10 % rh to 98 % rh (at temps > + 10 °C) Max temperature: + 70 °C Max chamber size: 1.6 m x 1.9 m x 1.6 m	IEC 60068-2-30:2005 IEC 60068-2-78:2001 BS EN 60068-2-30:2005 Test Db BS EN 60068-2-78:2002 BS EN 60068-2-78:2013 BS EN 60945, section 8.3 IACS E10: 2022 IACS E10: 2024	A
	1.4 SALT MIST  Temp range: ambient to + 55 °C	IEC 68-2-52:Kb EN 60068-2-52:Kb:1996 EN 60068-2-52:Kb:2017 BS EN 60945:2002, section 8.12 Lloyds Spec No 1:2002, CI 16 Lloyds Spec No 1:2019, CI 16 IACS E10: 2022 IACS E10: 2024	A
	1.5 THERMALSHOCK   Max temp: 80°C Min temp: -30°C Max chamber size: 990 x 1080 x 1080 mm	BS EN 60068-2-14:2009 BS EN 60068-2-14:2023  Na Shock Nb Cycle Nc Fluid bath	



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	<b>2. INGRESS PROTECTION</b>	BS EN 60529:1992 A1 & A2+ AC:2019	
	Protected against solid objects greater than 50 mm dia	IP1X	A
	Protected against solid objects greater than 12.5 mm dia	IP2X	A
	Protected against solid objects greater than 2.5 mm dia	IP3X	A
	Protected against solid objects greater than 1.0 mm dia	IP4X	A
	Dust Protected	IP5X	A
	Dust Tight	IP6X	A
	Protected against splashing water	IPX4	A
	Protected against water jets	IPX5	A, S
	Protected against powerful water jets	IPX6	A
Protected against the effects of immersion	IPX7	A	
Protection against the effects of continuous immersion	IPX8	A	



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As listed on Page 1	<b>ENVIRONMENTAL TESTS</b> (cont'd)		
	<b>3. DYNAMIC</b>		
	3.1 VIBRATION - Sinusoidal (ambient temperature)  Freq range: 2 to 3000 Hz Max pk/pk displacement: ± 25 mm	BS EN 60068-2-6:1996 BS EN 60068-2-6:2008 IEC 60068-2-6:2007 BS EN 60945, section 8.7 IACS E10: 2022 IACS E10: 2024 ISO 13628-6: 2006 API 17F Ed 4 2017 and Ed 5: 2023	A
	3.2 VIBRATION – Random (ambient temperature)  Freq range: 2 to 3000 Hz Max pk/pk displacement: ± 25 mm	BS EN 60068-2-64:2008 IEC 60068-2-64:2008 BS EN 60068-2-64:2019 IEC 60068-2-64:2019 ISO 13628-6: 2006 API 17F Ed 4 2017 and Ed 5: 2023	A
	3.3 SHOCK - Half sine (ambient temperature)  Max severity: 50 gn Pulse width: 6 ms to 11 ms	BS EN 60068-2-27:1993 BS EN 60068-2-27:2009	A
	3.4 STATIC INCLINATION  Max angle: 45° Max item size: 3 m x 3 m x 3 m Max mass: 500 kg	IEC 60092-504:2001 IEC 60092-504:2016 IACS E10: 2022 IACS E10: 2024	A
3.5 DYNAMIC INCLINATION  Max angle: 45° Max item size: 3 m x 3 m x 3 m Max mass: 500 kg	IEC 60092-504:2001 IEC 60092-504:2016 IACS E10: 2022 IACS E10: 2024	A	
3.6 ACOUSTIC NOISE  Sound pressure level at 1 m 30 to 135 dBA	BS EN 60945, section 11.1	A	



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As listed on Page 1	<b>4. VOLTAGE TESTS</b>		
	High Voltage Tests  1500V ac	IACS Req:1991/issue 5 E10 IACS Req:1991/issue 7 E10 IACS E10: 2022 IACS E10: 2024 IEC 60947-2	A
	Insulation Breakdown 500 V dc 100 M Ohms	IEC60092-504 prior to and following Damp heat and low temperature tests in IEC 60945:2002 8.3 and 8.4 IACS E10: 2022 IACS E10: 2024	A
	Power supply Variation	IEC 60945:2002 + Corr 1:2008 section 10.7 IACS E10: 2022 IACS E10: 2024	A
	Power Supply Failure	IEC 60945:2002 + Corr 1:2008 section 10.8 IACS E10: 2022 IACS E10: 2024	A
	<b>5. EMC TESTS</b>		
	5.1 Electrostatic Discharge  8 kV Air Discharge 6 kV Contact Discharge	IEC 60945:2002 + Corr 1:2008 section 10.9 IEC 61000-4-2:2001 IEC 61000-4-2:2008 EN 61000-4-2:2009 EN 61000-4-2:2025	A
	5.2 Electrical Fast Transient  Bursts 4 kV	IEC 60945:2002 + Corr 1:2008 section 10.5 IEC 61000-4-4:2004 EN 61000-4-4:2004 EN 61000-4-4:2004 + A1:2010 EN 61000-4-4:2012	A



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	5.3 Surge 4 kV	IEC 60945:2002 + Corr 1:2008 section 10.6 IEC 61000-4-5:2005 EN 61000-4-5:2006 EN 61000-4-5:2014 + A1: 2017	A
	5.4 Compass Safe Distance	IEC 60945:2002 + Corr 1:2008 section 11.2	A
	5.5 Radiated Immunity 80 to 6000 MHz, $\leq 10$ V/m 80 to 1000 MHz 20 V/m (uniform field size 1.5m x 0.5m)	IEC 60945:2002 + Corr 1:2008 section 10.4 EN 61000-4-3:2006 + A1:2008 EN 61000-4-3:2006 + A1:2008 + A2:2010 EN IEC 61000-4-3:2020	A
5.6 Conducted Emissions 9 kHz to 30 MHz	IEC 60945:2002 + Corr 1:2008 Section 9.2  EN 55016-2-1:2009 EN 55016-2-1:2009 + A2: 2013 EN 55016-2-1:2014 EN 55016-2-1: 2014 + A1: 2017+AC:2020 EN 55022:2006 + A1:2007 (excluding telecommunication ports) EN 55022:2010 EN 55032:2015 +A11:2020 Excluding antenna port  EN 55014-1:2006 EN 55014-1:2006 + A1:2009 EN 55014-1:2017 EN 55014-1: 2021  EN 55011:2009 +A1:2010 EN 55011:2016 + A1:2017 +A11:2020 (excluding Group 2 apparatus & grid connected power converters)	A	



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	5.7 Radiated Emissions  150 kHz to 6000 MHz	IEC 60945:2002 + Corr 1:2008 Section 9.3  EN 55016-2-3:2006 EN 55016-2-3:2006 + A1:2007 + A2:2014 EN 55016-2-3:2017 +A1:2019  EN 55022:2006 + A1:2007 EN 55022:2010 EN 55032:2015 +A11:2020  EN 55014-1:2006 EN 55014-1: 2006 + A1:2009 EN 55014-1: 2017 EN 55014-1: 2021  EN 55011:2009 + A1:2010 (excluding Group 2 apparatus) EN 55011:2016 (excluding Group 2 apparatus) EN 55011: 2016 + A1: 2017 +A11:2020 (excluding Group 2 apparatus)	A
	5.8 Discontinuous Emissions (Clicks): 10 kHz to 30 MHz	EN 55014-1:2006 + A1:2009 EN 55014-1:2017 EN 55014-1: 2021	A
5.9 Conducted Current Harmonics (Emissions) Measurements up to 40 <sup>th</sup> Harmonic Equipment Input Current ≤ 16A per phase	EN 61000-3-2:2006 +A2:2009 EN 61000-3-2:2014 EN IEC 61000-3-2:2019 EN IEC 61000-3-2:2019+A2:2024	A	
5.10 Conducted AC Mains Flicker (Emissions)	EN 61000-3-3:2008 EN 61000-3-3:2013 +A1:2019 EN 61000-3-3: 2013 + A2: 2021	A	



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	5.11 Voltage Dips and Interruptions	EN 61000-4-11:2004 EN 61000-4-11:2004 + A1: 2017 EN IEC 61000-4-11: 2020	A
	5.12 Power Absorbing Emissions Measurements (Power Clamp) 30 to 300 MHz	EN 55014-1:2006 EN 55014-1: 2006 + A1:2009 EN 55014-1: 2017 EN 55016-2-2:2004 +A1:2005 + A2:2005	A
	5.13 Conducted Low Frequency Immunity 50 Hz - 10 kHz	IACS E10: 2006 IACS E10: 2014 IACS E10: 2018 IACS E10: 2022 IACS E10: 2024	A
	5.14 Conducted Radio Frequency Immunity  150 kHz to 230 MHz RF Voltage up to 10 V rms	EN 61000-4-6:2009 EN 61000-4-6:2014 EN 61000-4-6:2023 IEC 60945:2002 + Corr 1:2008 section 10.3	A
	5.15 Power Frequency Magnetic Fields (Immunity) Frequency: DC to 1 kHz Field Strength: Up to 30 A/m	EN 61000-4-8:1993 + A1:2001 EN 61000-4-8: 2010	A
5.16 Power-Frequency Magnetic Fields (Immunity) (Pulsed) Field Strength: Up to 1000 A/m	EN 61000-4-9:1993 +A1:2001 EN 61000-4-9:2016	A	



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As listed on Page 1	<p><b>EMC TESTS</b> (cont'd)</p> <p>5.17 Product Standards</p> <p>The EMC standards listed are accredited to the extent that they call up the basic standards as accredited within this schedule.</p>	<p>EN 50130-4:1994 + A1:1998 + A2:2003            EN 50130-4: 2011 + A1:2014            EN 50270:2006            EN 50270: 2015            EN 50293:2012            EN 55014-2:1997 + A2:2008            EN 55014-2: 2015            EN 55014-2: 2021            EN 55024:1998 + A1:2001 + A2:2003            EN 55024:2010 + A1:2015            EN 55035: 2017 + A11: 2020            EN 61000-6-1:2007            EN IEC 61000-6-1:2019            EN 61000-6-2:2005            EN IEC 61000-6-2:2019            EN 61000-6-3:2007            EN 61000-6-3:2007 + A1:2011            EN IEC 61000-6-3:2020            EN 61000-6-3: 2021            EN 61000-6-4:2007            EN 61000-6-4:2007 + A1:2011            EN IEC 61000-6-4:2019            EN 61326-1:2006            EN 61326-1:2013            EN IEC 61326-1: 2021            EN 61326-2-6:2013            EN IEC 61326-2-6: 2021            EN 50121-3-2: 2016 + A1: 2019            EN 50121-4:2006            IACS E10:2022            IACS E10: 2024</p>	A
	<p><b>6. SAFETY TESTS</b></p> <p>6.1 Needle Flame test</p>	<p>EN 60695-11-5: 2017            Supporting tests covered in IEC 60092-101: 2018            IACS E10: 2024</p>	
END			