



Type Approval Certificate

[Sensors]

Initial Approval 7 June 2023

Manufacturer Vaisala Oyj
Vanha Nurmiarventie 21, 01670 Vantaa, Finland

Product Description Type : Humidity and Temperature Probe (MMP8, HMP3, HMP4, HMP5, HMP7, HMP8)
Temperature Probe (TMP1)
Dew Point and Temperature Probe (DMP5, DMP6, DMP7, DMP8)

“ See Appendix 1 ”

Approval Condition “ See Appendix 1 ”

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification of Steel Ships.

This Certificate is valid until 6 June 2028

Issued at Busan, Korea on 7 June 2023



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME23022700901) and certificate No.(HMB37471-AE002).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 7 June 2023

A. Product Description

1. Product Specification

1) Product Description

- HMP Series with MMP8 and TMP1 probes are humidity and temperature measurement probes with a digital output (Modbus protocol). The probes are designed for demanding humidity and temperature measurement applications. The probes have a two-part structure, with measurement electronics contained in the probe body and sensor(s) in the probe head. The probe body and the probe head are connected by a fixed cable.
- DMP series probes are dew point and temperature measurement probes with a digital output (Modbus protocol). The probes are designed for demanding dew point measurement applications. The probes have a two-part structure, with measurement electronics contained in the probe body and sensor(s) in the probe head. The probe body and the probe head are connected by a fixed cable.

A) Specification

Description	Model	Sensor Variant	Power Supply
Humidity and Temperature	HMP3	HUMICAP R2 / R2C / 180VC	15 ~ 30VDC
	HMP4	HUMICAP R2 / R2C	15 ~ 30VDC
	HMP5	HUMICAP R2 / R2C	15 ~ 30VDC
	HMP7	HUMICAP R2 / R2C / 180VC	15 ~ 30VDC
	HMP8	HUMICAP R2 / R2C	15 ~ 30VDC
Moisture	MMP8	HUMICAP 180L2	15 ~ 30VDC
Temperature	TMP1	Pt100 RTD	15 ~ 30VDC
Dew Point and Temperature	DMP5	DRYCAP 180S	15 ~ 30VDC
	DMP6	DRYCAP 180S	15 ~ 30VDC
	DMP7	DRYCAP 180M	15 ~ 30VDC
	DMP8	DRYCAP 180M	15 ~ 30VDC

2. Approved Drawings and Documents

1) Approved Drawings

- Assembly Drawing Probes HMP4-8, Drawing No. ASM211992 Rev A
- Temperature Probe TMP1, Drawing No. ASM212171 Rev A
- Assembly Drawing Probe TMPX, Drawing No. ASM212206 Rev A1
- Probe Body for Probes HMP4-8 and TMP1, Drawing No. DRW247139 Rev B1
- Probe Cap / Metal cap for HMP & TMP probes, Drawing No. DRW247140 Rev B
- Lighting Ring Circular PC light guide, Drawing No. DRW247142 Rev E2
- Cable Grommet Sleeved TPW grommet, Drawing No. DRW247143 Rev D1
- Components Layout, Drawing No. LAY210789 Rev E
- Schematic Diagram, Drawing No. SCH210789 Rev F

3. Test Reports, etc.

1) Test Reports

- Report No. 299628-1-1 issued by SGS dated 2020-07-10
- Report No. 299628-1-2 issued by SGS dated 2020-07-10
- Report No. 299628-2 issued by SGS dated 2020-10-09
- Report No. EUFI29-21002192-T2 issued by EUROFINS dated 2021-03-11
- Report No. VTT-S-05444-17 issued by VTT EXPERT dated 2017-10-06

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- 2) Etc.
 - Quick Guide (HMP Series with MMP8 and TMP1), M211982EN-G
 - User Guide (HMP Series with MMP8 and TMP1), M212022EN-G
 - Quick Guide (DMP Series), M212356EN-C
 - User Guide (DMP Series), M212357EN-B

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the test reports and the approved documentation.
- 2) Degree of protection is to be complied with Rule Pt.6 Ch.1 Sec.2 201.2. (5).
- 3) The manufacturer is to inform this Society of all kinds of revisions of the equipment including the major change of software. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is not required.

3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

4. Others

- 1) Test condition (IACS UR E10 Rev.8)

Test	Condition	Remark
EMC	All locations including the bridge and deck zone	-
Temperature	5°C ~ +70°C	-
Vibration	Acceleration $\pm 0.7g$	-
Ingress Protection	IP66	-

< End of Certificate >