



Environmental monitoring solutions



Thermohygrometers

User manual



Revisions list

<i>Issue</i>	<i>Date</i>	<i>Description of changes</i>
Origin	14/08/2020	
1	22/09/2022	Added the Declaration of Conformity for DMA672.x sensors
2	05/03/2024	Added list of harmful pollutants; added information on safety, handling, storage, packaging, preservation and transport
3	02/08/2024	Change energy consumption of DMA975 sensor
4	28/10/2024	Specified use of RS232/RS485 or USB/RS485 converter in the operational check

About this manual

The information contained in this manual may be changed without prior notification. No part of this manual may be reproduced, neither electronically nor mechanically, under any circumstance, without the prior written permission of LSI LASTEM.

LSI LASTEM reserves the right to carry out changes to this product without timely updating of this document.

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1 Introduction

The LSI LASTEM thermohygrometers featured in this manual are sensors designed even for meteorological applications. Precise and reliable, this sensor is suitable for continuous meteorological measurements also in severe environments and in presence of steep thermal and hygrometric variations.

DMA672.1, DMA672.4, DMA672.5 temperature output is Pt100 element and 0÷1 Vdc output for RH%. DMA672.3 output is 0÷1 Vdc for both Temperature and RH%. DMA672.3 is very suitable for tropical weather in continuous high temperature and RH conditions. For outdoor application it should be coupled with a anti-radiant shield.


DMA875 and DMA975 are equipped with a high efficiency natural ventilation anti-radiant shield (with special black painting on the lower surface of the plates) ensures that the sensing element is protected by sun rays for accurate air temperature readings. Output of the models DMA975 is RS485 using Modbus RTU® or TTY-ASCII protocols.

For even better results in low wind and high solar radiation conditions, model DMA867 is equipped with a forced ventilation shield.

EXP815 model is equipped with an internal radio to send measurement up to 600 m far to data logger equipped with radio receiver.

2 Versions

2.1 DMA672.x models

Code	DMA672.1	DMA672.4	DMA672.5	DMA672.3
				
Output	RH%: 0÷1 V °C: Pt100 DIN-IEC 751 table (EN 60751) UART (Pluvi-ONE, Alpha- Log)	UART	RH%: 0÷1 V °C: Pt100 DIN-IEC 751 table (EN 60751)	2 x 0÷1 V
Power supply	5÷24 V DC			
Power consumption	2 mA			< 5 mA
Cable and connector	L.3 m free wires (8 wires)	L.1 m + male connector for ELU00x enclosures	L.3 m + male connector for DWA9xx extension cables	L.5 m free wires (8 wires), detachable
Data logger compatibility	M-Log (ELO008), E- Log, A-Log, Pluvi- ONE (uscita RS232), A-Log using ALIEM module	Pluvi-ONE and A- Log with ELU00x enclosures	Using DWA9nn: extension cable: M- Log (ELO008) E-Log A-Log using ALIEM module	M-Log (ELO008) E-Log, A-Log using ALIEM module





Common technical specifications

Temperature	Principle	RTD Pt100 1/3 DIN B (Class AA EN60751)
	Measuring range	-50÷100 °C (DMA672.3: -40÷60 °C)
	Accuracy	0.1 °C (@0 °C)
	Output	Pt100 DIN-IEC 751 table (EN 60751)
	Resolution	0.01 °C (A/M/R/ELog, P1)
	Response time (T90)	Typical 4 s (1 m/s air flow)
Relative Humidity	Long term stability	<0.1 °C/year
	Principle	Capacitive
	Measuring range	0÷100%
	Accuracy	±1% (@5÷95%); DMA672.3: 0.5% RH (@10 ÷95%)
	Hysteresis	<1%
	Resolution	0.1% (A/M/R/ELog, P1). 0.01% configurable on data logger
General Information	Response time (T90)	10 s (1 m/s air flow)
	Long term stability	<±1%/year
	Protection type	IP66
	Operative temperature	-50÷100 °C

The values given may differ depending on environmental conditions and the presence of the pollutant. Allowed fault caused from the pollutant: ±2 %RH (10 ÷ 90 %RH).

Pollutant	Formula	Max. Workplace Concentration		Allowed Concentration Continuous Operation	
		(ppm)	(mg/m ³)	(ppm)	(mg/m ³)
Acetic acid	CH ₃ COOH	10	25	800	2000
Acetone	CH ₃ COCH ₃	1000	2400	3300	8000
Ammonia	NH ₃	25	18	5500	4000
2-Butanone (MEK)	C ₂ H ₅ COCH ₃	200	590	3300	8000
Chlorine	Cl ₂	0.5	1.5	0.7	2
Ethanol	C ₂ H ₅ OH	1000	1900	3500	6000
Ethyl acetate	CH ₃ COOC ₂ H ₅	400	1400	4000	15000
Ethylene glycol	HOCH ₂ CH ₂ OH	100	260	1200	3000
Formaldehyde	HCHO	1	1.2	2400	3000
Hydrochloric acid	HCl	5	7	300	500
Hydrogen sulfide	H ₂ S	10	15	350	500
Isopropanol	(CH ₃) ₂ CHOH	400	980	4800	12000
Methanol	CH ₃ OH	200	260	3500	6000
Nitrogen oxides	NO _x	5	9	5	9
Ozone	O ₃	0.1	0.2	0.5	1
Petrol		300	1200		150000
Sulfure dioxide	SO ₂	5	13	5	13
Toluene	C ₆ H ₅ CH ₃	100	380	1300	5000
Xylene	C ₆ H ₅ (CH ₃) ₂	100	440	1300	5000

2.2 DMA867, DMA875, DMA975 and EXP815 models

Code	EXP815	DMA975	DMA875	DMA867
				
Measurements	°C/RH%	°C/RH%	°C/RH%	°C/RH%
Output	Radio	RS-485	2 x 0/4÷20 mA	
Frequency	868 MHz	-	-	
Radio transmission power	25 ± 3 mW	-	-	
Radio transmission distance (line-of-sight)	600 m	-	-	
Transmission rate	10 s	-	-	-
Battery life	>2 years	-	-	-
Communication protocol	-	Modbus RTU, TTY-ASCII	-	-
Configuration	-	Hyperterminal	-	-
RS485 protection	-	Galvanic insulation (3 kV, UL1577)	-	-
RS485 speed	-	1200÷115 kbps	-	-
Power supply	Battery (AA 3.6 V)		10÷30 V AC/DC	
Power consumption	<10 µW stand-by 120 mW in transmission	< 1.3 W	1 W	3 W
Electric protections	NO (electrically insulated system)		Tranzorb and Emifilter	
Ventilation		Natural		Forced
Resolution		Temp: 0.01 °C RH: 0.1%	Dipending on data acquisition	

Common technical specifications

Temperature	Principle	RTD Pt100 1/3 DIN B (Class AA EN60751)
	Measuring range	Programmable: -40÷60 °C, -50÷60 °C, -50÷70 °C, -30÷100 °C
	Accuracy	0.1 °C (@0 °C)
	Output	Pt100 DIN-IEC 751 table (EN 60751)
	Response time (T90)	Typical 4 s (1 m/s air flow)
	Long term stability	<0.1 °C/year
Relative Humidity	Principle	Capacitive
	Measuring range	0÷100%
	Accuracy	±1% (@5÷95%)
	Output	Programmable: RH% or Dew Point
	Resolution	0.1%
	Response time (T90)	10 s (1 m/s air flow)
	Long term stability	<±1%/year
	Hysteresis	<1%
General Information	Protection type	IP66
	Operative temperature	-40÷80 °C
	Data logger compatibility	M-Log (ELO008)
		R-Log (ELR515) E-Log A-Log using ALIEM module

The values given may differ depending on environmental conditions and the presence of the pollutant. Allowed fault caused from the pollutant: ±2 %RH (10 ÷ 90 %RH).

Pollutant	Formula	Max. Workplace Concentration		Allowed Concentration Continuous Operation	
		(ppm)	(mg/m ³)	(ppm)	(mg/m ³)
Acetic acid	CH ₃ COOH	10	25	800	2000
Acetone	CH ₃ COCH ₃	1000	2400	3300	8000
Ammonia	NH ₃	25	18	5500	4000
2-Butanone (MEK)	C ₂ H ₅ COCH ₃	200	590	3300	8000
Chlorine	Cl ₂	0.5	1.5	0.7	2
Ethanol	C ₂ H ₅ OH	1000	1900	3500	6000
Ethyl acetate	CH ₃ COOC ₂ H ₅	400	1400	4000	15000
Ethylene glycol	HOCH ₂ CH ₂ OH	100	260	1200	3000
Formaldehyde	HCHO	1	1.2	2400	3000
Hydrochloric acid	HCl	5	7	300	500
Hydrogen sulfide	H ₂ S	10	15	350	500
Isopropanol	(CH ₃) ₂ CHOH	400	980	4800	12000
Methanol	CH ₃ OH	200	260	3500	6000
Nitrogen oxides	NO _x	5	9	5	9
Ozone	O ₃	0.1	0.2	0.5	1
Petrol		300	1200		150000
Sulfure dioxide	SO ₂	5	13	5	13
Toluene	C ₆ H ₅ CH ₃	100	380	1300	5000
Xylene	C ₆ H ₅ (CH ₃) ₂	100	440	1300	5000

3 Installation

For installation, choose a site where conditions are representative of the environment to be examined. The thermometers and thermohygrometers must be mounted in places where the morphological conditions of the surfaces, the urban structures and the environmental conditions reflect as much as possible the general conditions of the site where the measurements are to be made.

It is important that, in the areas close to the installation, there are no structures that can radiate heat (concrete floors, asphalt, walls, etc.)

The thermohygrometer should be installed at a distance of 1.5 - 2 m from the ground (see WMO n ° 8 part 2).

3.1 General safety rules

Please read the following general safety rules in order to avoid injuries to people and prevent damages to the product or to possible other products connected with it. In order to avoid any damages, use this product exclusively according to the instructions herein contained.

The installation and maintenance procedures must be carried-out only by authorized and skilled service personnel.

Power the instrument in a suitable manner. Pay attention and observe the power supplies like indicated for the model in your possession.

Carry-out all connections in a suitable manner. Pay strict attention to the connection diagrams supplied with the instrument.

Do not use the product in case of suspected malfunctions. In case of suspected malfunction, do not power the instrument and contact authorized technical support immediately.

Before you carry-out any operation on electrical connections, power supply system, sensors and communication apparatus:

- Disconnect the power supply.
- Discharge the accumulated electrostatic discharges touching an earthed conductor or apparatus.

For safety regulations please refer to manual INSTUM_05290.

3.2 Mechanical installation and connection

3.2.1 DMA672.x sensors

The installation of the DMA672.x sensors changes according to the type of anti-radiant shield used.

- Using DYA230 natural ventilation anti-radiant shield:
 1. Fix the DYA049 supporting collar to the pole at a height of about 1.5 - 2 m.
 2. Fix the DYA230 anti-radiant shield to the DYA049 supporting collar.



- Using DYA233 natural ventilation anti-radiant shield:
 1. Fix the DYA046 bar on the pole.
 2. Fix the DYA233 anti-radiant shield to the DYA046 bar.



- Using DYA231 forced ventilation anti-radiant shield:
 1. Fix the DYA049 supporting collar to the pole at a height of about 1.5 - 2 m.
 2. Fix the DYA231 anti-radiant shield to the DYA049 supporting collar



3. Insert the sensor stem inside the anti-radiant shield. The sensitive elements should result in the central position on the anti-radiant shield and then secure it using the cable gland.
4. Run the cable to the data logger.
5. Connect the cable to the data logger as specified in the drawing (DISACC) supplied with the sensor.

3.2.2 DMA867, DMA875 and DMA975 sensors

1. Remove the cover from the sensor box and set the dip-switches for:
 - 0...20 mA or 4...20 mA output
 - Temperature measurement range
 - Relative Humidity or Dew Point output
2. Fix the cover to the box.
3. Fix the DYA049 supporting collar to the pole at a height of about 1.5 - 2 m.
4. Fix the anti-radiant shield support to the DYA049 supporting collar.
5. Screw the DWA5xx cable connector onto the sensor box.
6. Connect the cable to the data logger as specified in the drawing (DISACC) supplied with the sensor.

3.2.3 EXP815 sensor

1. Fix the DYA049 supporting collar to the pole at a height of about 1.5 - 2 m.
2. Fix the anti-radiant shield support to the DYA049 supporting collar.
3. Remove the cover from the sensor box and move the ignition switch to ON; screw the cover to the box.
4. Place/install the EXP301 receiver near the PC or data logger.

3.3 LSI LASTEM data logger configuration

If the sensor is used with an LSI LASTEM data logger, proceed with the configuration of the data logger using the 3DOM software:

- Open the data logger configuration
- Add the sensor by selecting its code (eg DMA672.1) from the *3DOM Sensor Library*.
- Check the acquisition parameters (input, rate, etc.)
- Save the configuration and send it to the data logger.

For more information about the configuration, refer to the manual of the data logger in use.

4 Operation check

To check the sensor output it is necessary to have the accompanying drawing (DISACC) of the sensor and a multimeter.

Identify the sensor output (§2). For sensors with analog output (current or voltage), proceed as follows:

- Current output (0/4÷20 mA):
 1. Set the multimeter to measure signals in direct current (DC) and 20 mA scale.
 2. Disconnect the wire corresponding to the negative signal (- Sig) and connect it to the red test lead (+) of the multimeter. The black test lead (-) fix it in place of the disconnected wire.
 3. Read the value displayed on the multimeter and apply the formula shown in §4.1.
- Voltage output (V):
 1. Set the multimeter to measure voltage signals and scale in V.
 2. Connect the red test lead (+) of the multimeter to the wire corresponding to the positive signal (+ Sig) and the black test lead (-) to the negative signal wire (- Sig) of the sensor (it is not necessary to disconnect the sensor from the data logger.)
 3. Read the value displayed on the multimeter and apply the formula shown in §4.1.

Verification of the digital output (RS485) can be done using a PC, equipped with an RS485 serial port or an RS232/RS485 or USB/RS485 converter, in which the third-party program *modpoll* (<https://www.modbusdriver.com/modpoll.html>) is installed.

1. Connect the sensor serial cable to the PC serial port.
2. Open a DOS Prompt window and type the following command (it is assumed that the transmission parameters are set as follows: *Baudrate: 9600 bps, Parity: None* and that the PC serial port used is COM1):

```
modpoll -a 1 -r 1 -c 3 -t34:float -p none -b 9600 com1 [Enter]
```

For the list of available commands, type the command *modpoll /help*.

3. The program displays the values for the following quantities:
Temperature, Relative Humidity, Dew Point.

For more information about the DMA975 sensor, refer to *INSTUM_01371* user manual.

4.1 Calculation of the measurement value based on the sensor analog output

To calculate the value of the measurement, temperature or relative humidity or dew point, starting from the current or voltage value, apply the formula:

FORMULA:

$$M_0 = M_{low} + \frac{M_{range}}{U_{range}} \cdot (U_{out} - U_{low})$$

where:

M_{low} = lower measurement limit

M_{range} = measurement range

U_{range} = output measurement range (V or mA)

U_{out} = measured output (V oppure mA)

U_{low} = lower output limit (V o mA)

EXAMPLE:

$$M_0 = -50\text{ °C} + \frac{(100 - (-50))\text{ °C}}{(20 - 4)\text{ mA}} (12 - 4)\text{ mA} = 25\text{ °C}$$

With sensor with the following features:

- Temperature range: -50÷100 °C
- Output measurement range: 4÷20 mA
- Measured output: 12 mA

5 Maintenance

This sensor is a precision measurement apparatus. In order to maintain the specified measurement precision over the time, LSI LASTEM recommends to check it periodically (at least twice a year); it is moreover suggested the replacement of the measure element according to the place of installation (in persistent conditions of high humidity, pollution, dust and chemical substances presence, the sensitive element deteriorate faster than the one placed in a location with less adverse conditions). It is, anyway, a good rule to replace the sensitive element at least once every two years.

5.1 Cleaning of the anti-radiant shield and the porous filter

Referring to the picture of §5.2, proceed as follow:

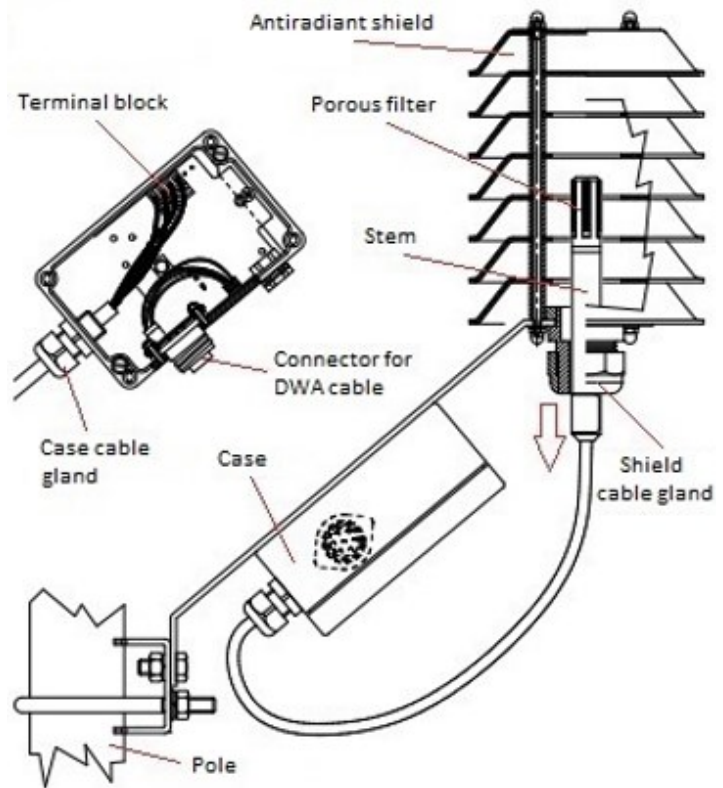
1. Remove power from the sensor. Depending on the model, disconnect the cable from the *Connector from DWA cable* or from the data logger.
2. Unscrew *Shield cable gland* and pull down the *Stem*.
3. Clean the extern side of the *Anti-radiant shield* with the aid of a small brush or a wet rag.
4. Clean the stem using a wet rag.
5. Unscrew the *Porous filter*.
6. Clean the filter with a cold air jet. If the filter is particularly damaged, replace it.

After cleaning mount the sensor following the operations described above in reverse order.

5.2 Sensing element replacement

The sensing element is mounted on the stem. The stem replacement procedure is similar for all sensors. Below we refer to the DMA975 model.

1. Remove power from the sensor, disconnecting the cable from the *Connector for DWA cable* of the *Case*.
2. Remove the *Case cover*.
3. Unscrew the wires from the *Terminal block*.
4. Unscrew the *Case cable gland*.
5. Unscrew *Shield cable gland* and pull down the *Stem*.
6. Insert the new *Stem* in the *Shield cable gland* until reaching the reference (the label); tighten *Shield cable gland*.
7. Insert the stem cable on *Case cable gland* and connect wires on the *Terminal block* as reported on the sensor drawing.
8. Tighten *Case cable gland*.
9. Montare il coperchio e collegare il cavo a *Connettore cavo DWA*. Mount the case cover and connect the cable to the *Connector for DWA cable*.



6 Accessories / Spare parts

Code	Description
SVICA0003	ISO9001 type calibration certificate (Temperature)
SVACA0006	ISO17025-ACCREDIA type calibration certificate (Temperature)
SVICA1003	ISO9001 type calibration certificate (RH%)
SVICA1005.1	ISO17025-ACCREDIA type calibration certificate (RH%)
DWA505	Cable L = 5 m
DWA510	Cable L = 10 m
DWA525	Cable L = 25 m
DWA526	Cable L = 50 m
DWA527	Cable L = 100 m
DWA910	Extension cable L.10 m for DMA672.5
DWA925	Extension cable L.25 m for DMA672.5
MG2251	7 pin free female connector
ML3015	Sensitive element (spare part) for EXP815, DMA975-875-867
DYA049	Mast mounting device for \varnothing 45÷65 mm pipe
EXP301	Radio signal receiver from EXP815 radio sensor (output compatible with data loggers M/E-Log)

7 Handling

Avoid electrostatic discharge (ESD). The product, or part of it, is fragile, avoid mechanical shocks, abrasions or scratches on the surface.

8 Storage, packaging, preservation, delivery

For storage, respect the humidity (0÷100% non-condensing) and temperature (-40÷80 °C) limits. Avoid direct sun exposure.

For delivery and storage, use the packaging supplied with the product.

For preservation, it is recommended to respect the environmental limits of humidity (0÷100% non-condensing) and temperature (-40÷80 °C).

Upon receipt of the material, visually check the package for signs of crushing or perforation; in the presence of these signs, check the integrity of the product inside.

9 Disposal

This product is a device with high electronic content. In accordance with the standards of environmental protection and collection, LSI LASTEM recommends handling the product as waste of electrical and electronic equipment (RAEE). For this reason, at the end of its life, the instrument must be kept apart from other wastes.

LSI LASTEM is liable for the compliance of the production, sales and disposal lines of this product, safeguarding the rights of the consumer. Unauthorized disposal of this product will be punished by the law.



Recycle or dispose of the packaging material according to local regulations.

10 How to contact LSI LASTEM

In case of problem contact the technical support of LSI LASTEM sending an e-mail to support@lsi-lastem.com, or compiling the technical support request module at www.lsi-lastem.com.

For further information refer to addresses and numbers below:

- Phone number: +39 02 95.414.1 (switchboard)
- Address: Via ex S.P. 161 – Dosso n. 9 - 20049 Settala Premenugo, Milano
- Web site: www.lsi-lastem.com
- Commercial service: info@lsi-lastem.com
- After-sales service: support@lsi-lastem.com, Repairs: riparazioni@lsi-lastem.com

11 CE Conformity Declaration

		Zertifikat Nr. Certificate No.	DV31.10816.007.3.CO N.EMV.docx
EG-Konformitätserklärung EC Declaration of Conformity			
im Sinne der EG-Richtlinie as defined by the EC Directive			
Der Hersteller erklärt hiermit, dass die folgenden Produkte den Bestimmungen der EG-Richtlinie entsprechen: The manufacturer certifies that the following products are compliant with the specification of the EC Directive:			
Hersteller: Manufacturer:	The physical devices are manufactured by: ROTRONIC AG Grindelstrasse 6 CH-8303 Bassersdorf, Switzerland http://www.rotronic.ch		Phone +41(44) 838'11'11
Produktbezeichnung: Product designation:			
Modell-Serie Series	10'816		
Markenname Brand name	HC2-S3C03, HC2-S3C03-PT15, HC2-S3C03-PS2		
Testbericht Testreport	DV04-31.10816.07.TST.EMV DV04-31.0898.03.TST.EMV		
Freigabebestätigung: Release confirmation:			
EMV geprüft von: EMC inspected by:	ROTRONIC AG Grindelstrasse 6 CH-8303 Bassersdorf, Switzerland http://www.rotronic.ch		
EMV-Richtlinie 2014/30/EU EMC-Directive 2014/30/EU		RoHS-Richtlinie 2011/65/EU RoHS-Directive 2011/65/EU	
Die folgenden Normen sind angewandt: The following standards are applied:			
EN 61000-6-1: 2007 IEC 61000-6-1: 2005 ed2.0	Elektromagnetische Verträglichkeit (EMV) - Teil 6-1: Fachgrundnormen - Störfestigkeit - Wohnbereich, Geschäfts- und Gewerbebereiche sowie Kleinbetriebe Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments		
EN 61000-6-2: 2005 IEC 61000-6-2: 2005 ed2.0	Elektromagnetische Verträglichkeit (EMV) - Teil 6-2: Fachgrundnormen - Störfestigkeit - Industriebereich Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments		
EN 61000-6-3: 2007+ A1:2011+AC:2012 IEC 61000-6-3: 2011 ed2.1	Elektromagnetische Verträglichkeit (EMV) - Teil 6-3: Fachgrundnormen - Fachgrundnorm Störaussendung - Wohnbereich, Geschäfts- und Gewerbebereiche sowie Kleinbetriebe Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments		
EN 61000-6-4: 2007+ A1:2011 IEC 61000-6-4: 2011 ed2.1	Elektromagnetische Verträglichkeit (EMV) - Teil 6-4: Fachgrundnormen - Fachgrundnorm Störaussendung - Industriebereich Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments		
EN 50581:2012 IEC 50581:2013-02	Technische Dokumentation zur Beurteilung von Elektro- und Elektronikgeräten hinsichtlich der Beschränkung gefährlicher Stoffe Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances		
(Ort, Datum) / (Place, date) Bassersdorf, 20.04.16	Unterschrift / Signature i.A. Patrick Müllhaupt Head of Development Team Technics 	Unterschrift / Signature ppa. Alfred Hegensucher Head of Department Development 	
Template: DV31.xxxxx.vw.z.CON.EMV/18.08.2015			



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Ref. CE005/06

CE CONFORMITY DECLARATION

Producer declaration about the warranty that the series production is up to the Certified sample

Producer declaration about the conformity to the EMC European rules

Name of the producer: LSI LASTEM Srl

We hereby declare that all the products of the following series:

Product name: Temperature and Relative Humidity sensors
Codes: DMA867

Produced by our company are produced in the same way as the exemplar tested at the accredited centre NEMKO SpA [20853 Biassono (MB)] , that issued the Test Report "257775-1TRFEMC".

The products satisfy the requirements imposed by the European rule
EN 61326-1 (2006) , EN55011 – EN61000-3-2, EN61000-3-3

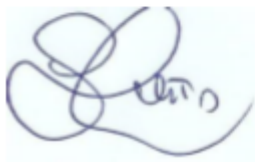
Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards)

- EN 50082 – 1
- EN 55011
- EN 55022 (CISPR 22) – Electromagnetic Interference
- EN 55024 (IEC61000-4-2,3,4,5,6,8,11) – Electromagnetic Immunity
- EN 61000-3-2 (IEC61000-3-2) – Power Line Harmonics
- EN 61000-3-3 (IEC61000) – Power Line Flicker
- EN 60950 (IEC60950) – Product Safety

In accordance to the aforesaid rules, products are marked CE.

The present declaration covers all the options derived by the specified product.

Dr. Giulio Certo
General Manager and Representative





LSI - Laboratori di Strumentazione Industriale S.p.A.
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e-mail: info@lsi-lastem.it

WEB: <http://www.lsi-lastem.it>
CF./P. Iva: (VAT) IT-00847150158
REA: 034042 **Reg. Imprese:** 0347150158



Ref. CE009/12 Date : 10-Oct-2013

DICHIARAZIONE DI CONFORMITA' CE CE CONFORMITY DECLARATION

Dichiarazione del Costruttore sulla garanzia che la produzione di serie sia conforme al Campione Certificato

Producer declaration about the warranty that the series production is up to the Certified sample

*Dichiarazione del Costruttore sulla conformità alle Direttive Europee EMC.
Producer declaration about the conformity to the EMC European rules*

Nome del produttore, *applicant*: LSI-LASTEM srl

Con la presente si dichiara che tutti i prodotti della seguente serie:

We hereby declare that all the products of the following series:

Termo Igmometro per applicazioni ambientali:

Termoigrometer for envioronmental application:

DMA567,DMA575,DMA585,DME775,DME785, DMA 875

A cui questa dichiarazione si riferisce è conforme ai requisiti essenziali dei seguenti standard e documenti normativi :

to witch this declaration relates, is in conformity with the relevant provisions of the following standard and other normative documents :

EN-61326 2006 Industrial Location

Che rispettano le direttive :

following the provision of the Directive:

89/336/EEC, 2004/108/CE

In accordo alle dette direttive i prodotti sono marchiati con il marchio CE.

In accordance to the aforesaid rules, product are market CE

La presente dichiarazione copre tutte le opzioni derivate dal prodotto specificato.

The present declaration covers all the options derived by the specified product

Dr. Giulio Certo

Direttore Generale e Legale Rappresentante



Esperti delle misure tecnologiche ambientali



Dichiarazione di conformità / *Declaration of conformity*

Oggetto / *Subject*

Codice prodotto / Product code: DMA672.1, DMA672.2, DMA672.3, DMA672.4, DMA672.5, DMA672.6

Descrizione / *Description*

Sensore Termo-igrometro / Thermo-hygrometer sensor

Fabbricante / *Manufacturer*

LSI LASTEM Srl

Via ex S.P. 161 loc. Dosso 9

20049 Settala (MI) – Italy

Dichiarazione / *Declaration*

Dichiariamo che i prodotti oggetto di questo documento sono stati progettati in accordo e compatibilmente alle seguenti Direttive Europee e norme armonizzate / *We declare that the products covered by this document have been designed in compliance with the following European Directives and harmonized standards:*

2014/30/EU – Direttiva sulla compatibilità elettromagnetica EMC / *EMC electromagnetic compatibility directive.*

EN 61000-6-1: 2007, EN 61000-6-2: 2005– Norme generiche relative all'immunità elettromagnetica riferita ad ambienti residenziali ed industriali / *Generic standards for electromagnetic immunity in residential and industrial environments.*

EN 61000-6-3: 2007+A1:2011+AC:2012, EN 61000-6-4: 2007+A1:2011 – Norme generiche relative alle emissioni elettromagnetiche riferita ad ambienti residenziali ed industriali / *Generic standards for electromagnetic emissions in residential and industrial environments.*

2011/65/EU – Direttiva sulla restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche. (I nostri prodotti non contengono sostanze definite altamente preoccupanti come definito nell'Art. 33) / *The Restriction of Hazardous Substances Directive. (Our products don't contain the "substances" & "preparations" (Article 33) or release any substances.*

Il Legale Rappresentante / *Legal Representative*

Andrea Certo

15/01/2021