Environmental Monitoring Solutions

Thermohygrometer

- Design and performances addressed to meteorological applications
- Fast return after saturation
- High protection from salty and polluted air
- High efficency radiant screen
- Optional forced ventilation radiant screen
- ISO17025 traceability

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, DMA672.5 temperature output is Pt100 element and 0...1 Vdc output for RH%. DMA672.8 output is 0...1 Vdc for both Temperature and RH%. DMA672.8 is very suitable for tropical weather in continuous high temperature and RH conditions. For outdoor application it should be coupled with a radiant screen.

Technical Specifications

Codice	DMA672.1	DMA672.5	DMA672.8
Output	RH%:0...1 Vdc. °C:Pt100 DIN-IEC 751 table (EN 60751) UART	RH%:0...1 Vdc. °C:Pt100 DIN-IEC 751 table (EN 60751)	2X0...1 V
Power supply	5...24 Vdc		3.3...5 Vdc (5..30 Vdc/Ac using CCRTA01nn cable)
Power consumption	2 mA		<4.5 mA
Cable and connector	L=3 m free wires (8 wires)	L=3 m + Male connector for DWA9xx extension cables	See Accessories
Temperature range	-50...100°C (Pt100) -40...60°C (UART)		-40....60°C Option: –40...80°C
Temperature accuracy	±0.15 K @ 0 °C		±0.1 K @ 23 °C
RH% accuracy	1% (10...30°C)		0,8% ± 1K (23 °C)
Data logger compatibility	E-Log Alpha-Log	Using DWA9nn cable: E-Log	E-Log Alpha-Log

Common Technical Specifications

Temperature	Principle	Pt100 Class A IEC60751 (DIN Class A)
	Response time (T90)	Typical 4 s without filter, 180 s with filter (1 m/sec air flow)
	Long term stability	<0.1°C/year

Relative Humidity	Principle	Capacitive
	Measuring range	0...100%
	Long term stability	<±1% / year
	Response time	Typical 10 s without filter, 15 s with filter (1 m/s air speed)
	Hysteresis	<1%
	Resolution	0.1% (A/E-Log), 0.01% configurable on data logger
General Information	Protection type	IP65
	Operative temperature	-50...100°C
	Weight / Dimensions	DMA672.1/5: 0.44 kg / L=168 mm, Ø 18 mm
		DMA672.8: 0.17 kg / L=108 mm, Ø 15 mm
	Input type on A/E-Log	Analog (UART using Alpha-Log)

Accessories

	DYA230	N.7 Luran made plates natural ventilation radiant screen. Complete with arm. Black paint on the bottom side to increase natural air circulation inside the screen. DYA049 collar required to fix it on the lateral side of Ø 45...65 mm poles. Dimensions: H.156 mm. Diameter 124 mm. Weight: 0.67 kg
	DYA233	N.7 Luran made plates natural ventilation radiant screen for DYA046 arm. Complete with arm. Black paint on the bottom side to increase natural air circulation inside the screen. Dimensions: H.156 mm. Diameter 124 mm. Weight: 0.67 kg
	DYA231	N.7 Louran made plates forced ventilation radiant screen. 12 Vdc power supply. Complete with arm. Air speed inside the screen. DYA049 collar required to fix it on the lateral side of Ø 45...65 mm poles. • Weight: 1 kg • Operating range: -20...80 °C
	SVICA0003	ISO9001 type calibration certificate (Temperature)
	SVACA0006	ISO17025-ACCREDIA type calibration certificate (Temperature)
	SVICA1003	ISO9001 type calibration certificate (RH%)
	SVACA1005.1	ISO17025-ACCREDIA type calibration certificate (RH%)
	DYA049	Mast-mounting device for ø 45-65 mm pipe
	DWA910	Extension cable L=10 m for DMA672.5
	DWA925	Extension cable L=25 m for DMA672.5
	CCRTA0105	Cable L=5 m with 5..30 V DC/AC power adapter for DMA672.8
	CCRTA0110	Cable L=10 m with 5..30 V DC/AC power adapter for DMA672.8
	CCRTA0125	Cable L=25 m with 5..30 V DC/AC power adapter for DMA672.8

AIR TEMPERATURE AND RELATIVE HUMIDITY

Thermohygrometer
(Analogue, Digital, Radio outputs)

LSI LASTEM — Environmental Monitoring Solutions

- ▶ 4...20 mA, RS485-Modbus RTU, Radio output versions
- ▶ Forced ventilation radiant screen (DMA867)
- ▶ Replaceable sensitive element
- ▶ Programmable air temperature measurement range

Instruments for accurate measurement of air temperature and relative humidity in severe outdoor environments.
On models DMA975-875, an high efficiency natural ventilation radiant screen (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. For even better results in low wind and high solar radiation conditions, model DMA867 is equipped with a forced ventilation screen. Output of the models DMA975 is RS485 using Modbus RTU® or TTY-ASCII protocols. EXP815 model is equipped with an internal radio to send measurement up to 600 m far to data logger equipped with radio receiver.

Technical Specifications

Codice	EXP815	DMA975	DMA875	DMA867
Measurements	°C/RH%	°C/RH%	°C/RH%	°C/RH%
Output	Radio	RS485	2x0-4...20 mA	
Frequency	868 MHz			
Radio transmission power	25 ± 3 mW			
Radio transmission distance (line-of-sight)	600 m.			
Transmission rate	10'			
Battery life	>2 years			
Protocol		Modbus RTU®, TTY-ASCII		
Configuration		Hyperterminal		
RS485 protection		Galvanic insulation (3 kV, UL1577)		

Technical Specifications

Code	EXP815	DMA975	DMA875	DMA867
RS485 speed		1200...115 kbps		
hPa measurement range				
hPa uncertainty				
hPa thermal drift				
Power supply	Battery (AA 3.6 V)	10...30 Vac/dc		
Power consumption	<10 µW stand-by 120 mW in transmission	1 W		3 W
Electric protections	NO (electrically insulated system)	Tranzorb and Emifilter		
Ventilation	Natural			Forced
Resolution	Temp.: 0.01 °C RH: 0.1%	Temp.: 0.01 °C RH: 0.1%	Depending on Data acquisition	Depending on Data acquisition

Common Technical Specifications

Temperature	Principle	RTD Pt100 1/3 DIN (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 sec (1 m/sec 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
	Long term stability	<±1% / year
	Response time (T90)	Typical 10 sec (1m/sec air flow)
	Hysteresis	<1%
General Information	Protection type	IP66
	Temperature	-40...80°C

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	SVICA0003	ISO9001 type calibration certificate (Temperature)
	SVACA0006	ISO17025-ACCREDIA type calibration certificate (Temperature)
	SVICA1003	ISO9001 type calibration certificate (RH%)
	SVACA1005.1	ISO17025-ACCREDIA type calibration certificate (RH%)
	DYA049	Mast-mounting device for Φ 45...65 mm pipe
	DWA505A	Cable L=5 m
	DWA510A	Cable L=10 m
	DWA525A	Cable L=25 m
	DWA526A	Cable L=50 m
	DWA527A	Cable L=100 m
	MG2251.R	7 pin free female connector
	ML3015	Sensitive element (spare part) for EXP815, DMA975-875-867
	EXP301	Radio signal receiver from EXP815 radio sensor Output compatible with data loggers (M/E-Log) • Maximum number of receivable sensors: 200 • Battery: NiCd 9 V • Power supply: 12 Vdc • Connection cable to data logger: DWA601