

Thermohygrometer



- ▶ Design and performances addressed to meteorological applications
- ▶ Fast return after saturation
- ▶ High protection from salty and polluted air
- ▶ High efficiency 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 V DC output for RH%, while DMA672.4 output is UART. For outdoor applications it should be coupled with a radiant screen.

Technical Specifications

PN	DMA672.1	DMA672.4	DMA672.5
Output	RH%: 0...1 V DC °C: Pt100 DIN-IEC 751 table (EN 60751) UART	UART	RH%: 0...1 V DC °C: Pt100 DIN-IEC 751 table (EN 60751)
Power supply	5...24 V DC		
Power consumption	2 mA		
Cable and connector	L=3 m free wires (8 wires)	L=3 m + male connector for DWA0nn extension cables	L=3 m + male connector for DWA9nn extension cables
Temperature range	-50...100 °C (Pt100) -40...60 °C (UART)	-40...60 °C	-50...100°C
Temperature accuracy	±0.15 °C		
RH% accuracy	1% (10...30 °C)		
Data logger compatibility	Alpha-Log E-Log	Using DWA0nn cable: Alpha-Log	Using DWA9nn cable: E-Log

Common Technical Specifications

Temperature	Principle	Pt100 Class A IEC60751 (DIN Class A)
	Response time	1s
	Long term stability	<0.1°C/year
	Resolution	0.1°C
	Stability	<±1%

Relative Humidity	Principle	Capacitive
	Measuring range	0...100%
	Stability	<±1%
	Response time	1s
	Hysteresis	<1%
	Resolution	0.1% (Alpha/E-Log), 0.01% configurable on data logger
General Information	Protection type	IP65
	Operative temperature	-50...80 °C
	Weight / Dimensions	0.44 kg / L=168 mm, Ø 18 mm
	Input type on A/E-Log	Analog (UART using Alpha-Log)
	Recommended calibration frequency	2 years in clean and not corrosive/salty air

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. DYAO49 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 radiant screen for natural ventilation for DYAO46 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 Luran made plates forced ventilation radiant screen. 12 V DC power supply. Complete with arm. Air speed inside the screen. DYAO49 collar required to fix it on the lateral side of Ø 45...65 mm poles. - Weight: 1 kg - Operating range: -20...80 °C
	DYA049	Mast-mounting device for ø 45-65 mm pipe
	DWA005A	Extension cable L=5 m for DMA672.4
	DWA010A	Extension cable L=10 m for DMA672.4
	DWA025A	Extension cable L=25 m for DMA672.4
	DWA910	Extension cable L=10 m for DMA672.5
	DWA925	Extension cable L=25 m for DMA672.5
	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%)

Thermohygrometer (Analogue, Digital, Radio outputs)



- ▶ 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, a 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 model DMA975 is RS485 using Modbus RTU® or TTY-ASCII protocols. EXP815 model is equipped with an internal radio to send measurements up to 600 m far to data logger equipped with radio receiver.

Technical Specifications

PN	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

PN	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 μ W 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 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%)
	Output	Programmable: RH% or Dew Point
	Long term stability	<±1% / year
	Response time (T90)	Typical 10 s (1 m/s air flow)
General Information	Hysteresis	<1%
	Protection type	IP66
	Temperature	-40...80 °C

Accessoris

	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.R	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 V DC • Connection cable to data logger: DWA601