

ENVIROsense ETS... series

TEMPERATURE, RELATIVE HUMIDITY &
BAROMETRIC PRESSURE TRANSMITTER

INTRODUCTION

ENVIROsense is an environmental temperature, relative humidity and, optionally, barometric pressure transmitter with standard RS485 Modbus-RTU output. Different versions available to fully match the specific requirements of different applications:

- **Meteorology/Renewable energies:** sensor with conformal coating for protection against condensation, contaminants, and salt.
- **HVAC/Indoor:** cost-efficient for general indoor use.
- **Clean Rooms/High performance:** for indoor environments when high reliability and robustness are key factors.

FEATURES

Particularly suitable for OEM applications

It can be used in combination with any Modbus-RTU master device via its M12 connector.

Ready to use

The transmitter is supplied factory-calibrated in multiple points for relative humidity, and it is ready to use.

Low power consumption.

Protection screen

Optional protection shields from solar radiations for outdoor applications.

CONFIGURATION & MEASUREMENT

Additional outputs

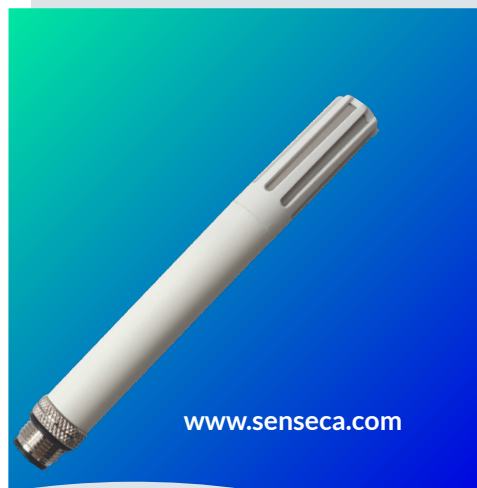
Two optional additional 0...1 V, 0...5 V or 0...10 V (depending on model) analog outputs, with configurable temperature and relative humidity or dew point ranges.

Calculated quantities

Many calculated humidity quantities available: dew point; wet bulb temperature, absolute humidity, mixing ratio, specific enthalpy, water vapour partial pressure, specific humidity, frost point temperature, saturation vapour pressure above water, saturation vapour pressure above ice.

Calibration report

The transmitter can be optionally supplied with an ISO/IEC 17025 calibration certificate.



ACCURATE

Centesimal temperature and humidity resolution
Multi-point relative humidity calibration
Optional ISO 17025 Calibration Report available



ACCORDING TO THE STANDARD
Meets WMO requirements



GREAT FLEXIBILITY
RS485 Modbus-RTU output and optional additional analog output



ROBUST AND RELIABLE

Rugged Ø14 mm compact housing in PBT

Measurement specifications

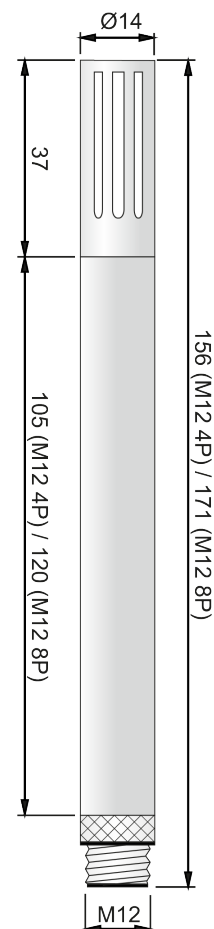
Sensor	RH	Capacitive
	Temperature	Pt100
	Pressure	Piezoresistive
Measuring range	RH	0...100%
	Temperature	-40...+80 °C
	Pressure	300...1100 hPa
Resolution	RH	0.01%
	Temperature	0.01 °C
	Pressure	0.1 hPa
Accuracy	RH	ETS60...: $\pm 1.8\%$ (0...85%) / $\pm 2.5\%$ (85...100%) @ T=15...35 °C (2 + 1.5% of measured value)% @ T= remaining range ETS68...: $\pm 1.2\%$ (0...85%) / $\pm 2\%$ (85...100%) @ T=5...50 °C (1.5 + 1.5% of measured value)% @ T= remaining range ETS80...: $\pm 1.5\%$ (0...90%) / $\pm 2\%$ (90...100%) @ T=15...35 °C (1.5 + 1.5% of measured value)% @ T= remaining range
	Temperature	± 0.1 °C $\pm 0.1\%$ of the measured value
	Pressure	± 0.5 hPa typical @ T=25 °C ± 1 hPa (500...1100 hPa) @ T= full range
RH response time		10 s (10 → 80 %RH; air speed=2 m/s @ constant temperature)
Warm-up time		600 ms
Long-term drift	RH	$\pm 0.5\%$ RH/year
	Temperature	± 0.03 °C/year
	Pressure	$< \pm 1$ hPa/year

Ordering codes

ETS	M	
		Barometric pressure 0 = No B = Yes
		Output 0 = RS485 9 = RS485 "Low Voltage" W = RS485 + analog 0...1 V X = RS485 + analog 0...5 V Y = RS485 + analog 0...10 V
		Application 60 = HVAC/Indoor 68 = Clean rooms/High performance 80 = Meteorology/Renewable energies

General specifications

Operating conditions	-40...+80 °C / 0...100 %RH
Output	RS485 Modbus-RTU or ASCII proprietary protocol 2 optional additional 0...1 V, 0...5 V or 0...10 V (depending on model) analog outputs for temperature and humidity
Power supply	7...30 Vdc (except ETSxxM9x) or 4.5...16 Vdc (only ETSxxM9x) for RS485 output 10...30 Vdc for 0...1 V and 0...5 V analog outputs 15...30 Vdc for 0...10 V output
Power consumption	1.2 mA @ 24 Vdc (except ETSxxM9x) 3 mA @ 5 Vdc (only ETSxxM9x)
Connection	4-pole M12 (ETSxxM0... / ETSxxM9...) 8-pole M12 (ETSxxMW... / ETSxxMX... / ETSxxMY...)
Weight	30 g approx
Material	PBT
Protection degree	IP65



V 1.1