ENVIROsense ETS... series

TEMPERATURE, RELATIVE HUMIDITY & BAROMETRIC PRESSURE TRANSMITTER

www.senseca.com

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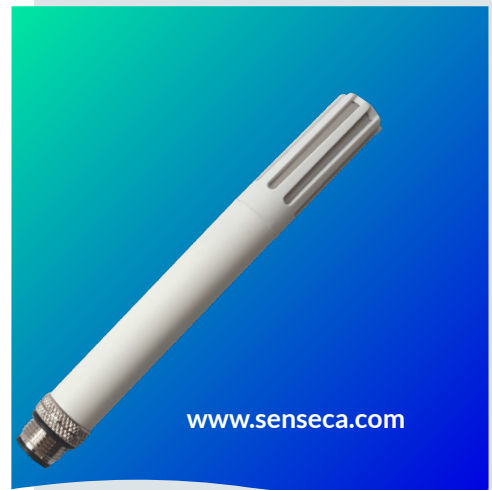
ACCURATE
Centesimal temperature and humidity resolution
Multi-point relative humidity calibration
Optional ISO 17025 Calibration Report available

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

Making the unknown, known
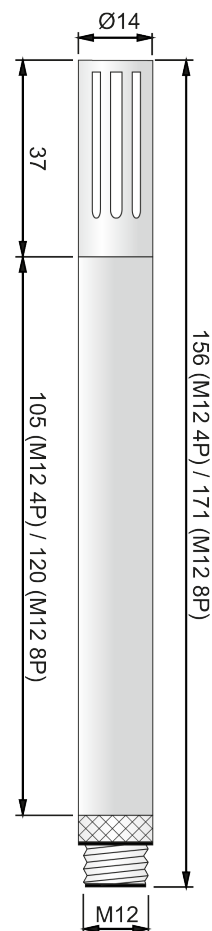
Measurement specifications

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**…: ±1.8% (0…85%) / ±2.5% (85…100%) @ T=15…35 °C (2 + 1.5% of measured value)% @ T= remaining range **ETS68**…: ±1.2% (0…85%) / ±2% (85…100%) @ T=5…50 °C (1.5 + 1.5% of measured value)% @ T= remaining range **ETS80**…: ±1.5% (0…90%) / ±2% (90…100%) @ T=15…35 °C (1.5 + 1.5% of measured value)% @ T= remaining range
	Temperature	±0.1 °C ± 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 (t_{63}, 10 -> 80 %RH)		**ETS60**… / **ETS68**…: < 10 s **ETS80**…: < 13 s With P8 standard filter, air speed=2 m/s @ constant temp.
Warm-up time		600 ms
Long-term drift	RH	±0.5%RH/year
	Temperature	±0.03 °C/year
	Pressure	< ±1 hPa/year

Ordering codes

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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
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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

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