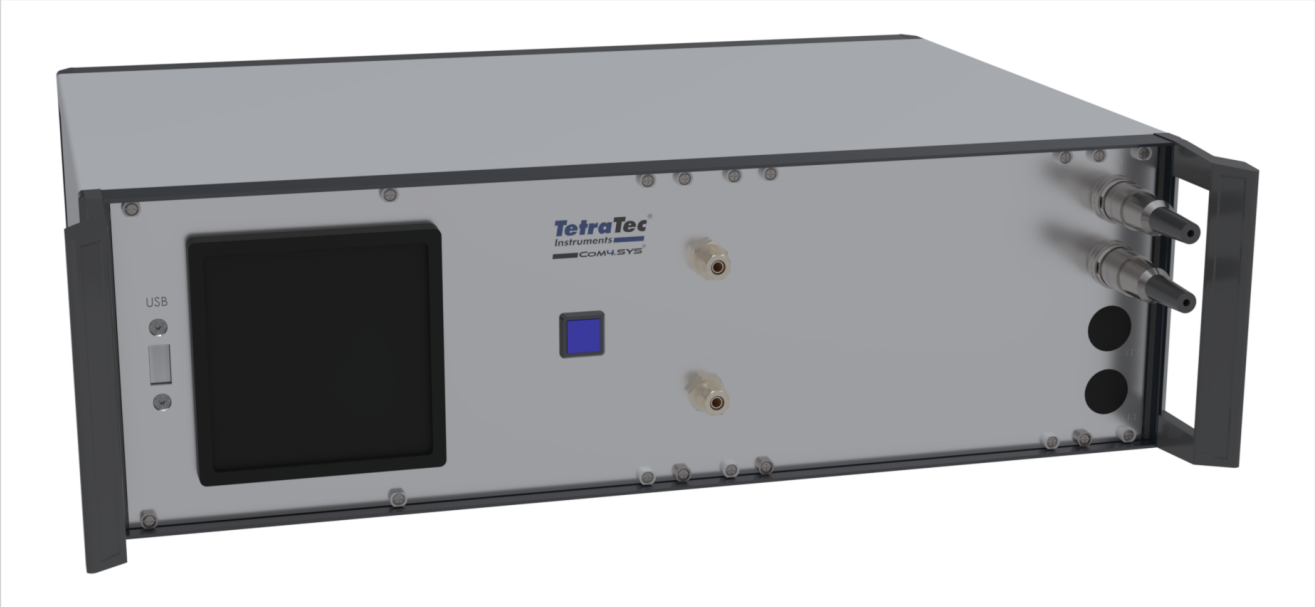
CoM4.Flow-Eco/Smart/Pro

Technical Datasheet



Short description

Evaluation unit of a flow measurement system for air and gases. It contains a differential and an absolute pressure sensor as well as a temperature measurement; the humidity measurement is built into the Pro and available on request for Eco and Smart. A microcontroller acquires the sensor data and computes the current and the averaged flow value from them as volumetric or mass flow, using the appropriate physical model. All other measured variables can also be output if required. It is used with an external differential pressure element (laminar flow element). Eco, Smart and Pro differ in accuracy and pressure sensors, LP and HP in the absolute pressure range.

Identification

Product name	CoM4.Flow-Eco/Smart/Pro
Versions	Eco-LP-01, Eco-HP-01, Smart-LP-01, Smart-HP-01, Pro-LP-01, Pro-HP-01
Controller	CoM4.SYS
Document version	12.11.2026
Housing size	19" 3 U benchtop housing with handles

Measured variables and calibrated ranges

CoM4.Flow-Eco

MEASURED VARIABLE	UNIT	MIN	MAX	MAX. DEVIATION
Flow	mL/min to m^3/min	–	–[1)]	Accuracy: < 0.3 % rdg.[2)] Measurement uncertainty (k=2): ±1.5 % rdg.[2)]
Differential pressure	mbar	2	20	0.075 % rdg., min. 1.0
Absolute pressure LP	bar	0.8	1.2	0.15 % FS
Absolute pressure HP	bar	0.8	4	0.15 % FS
Temperature	°C	5	50	0.35 °C
Humidity[3)]	% RH	5	90	3 % RH

CoM4.Flow-Smart

MEASURED VARIABLE	UNIT	MIN	MAX	MAX. DEVIATION
Flow	mL/min to m^3/min	–	–[1)]	Accuracy: < 0.25 % rdg.[2)] Measurement uncertainty (k=2): ±1 % rdg.[2)]
Differential pressure	mbar	2	20	0.05 % of span
Absolute pressure LP	bar	0.8	1.2	0.05 % of span
Absolute pressure HP	bar	0.8	7	0.05 % of span
Temperature	°C	5	50	0.35 °C
Humidity[3)]	% RH	5	90	3 % RH

CoM4.Flow-Pro

MEASURED VARIABLE	UNIT	MIN	MAX	MAX. DEVIATION
Flow	mL/min to m^3/min	–	–[1)]	Accuracy: < 0.2 % rdg.[2)] Measurement uncertainty (k=2): ±0.65 % rdg.[2)]
Differential pressure	mbar	2	60	0.030 % rdg., min. 0.75
Absolute pressure LP	bar	0.8	1.2	0.15 % FS
Absolute pressure HP	bar	0.8	7	0.15 % FS
Temperature	°C	5	50	0.35 °C
Humidity	% RH	5	90	3 % RH

rdg. = of reading, FS = full scale, span = difference between upper and lower range value.
[1)] The flow range depends on the reference standard(s) in use.
[2)] Accuracy and measurement uncertainty apply to the chain of evaluation unit and any TetraTec laminar flow element, each over a turndown ratio of 1:10, and to air only. For other gases the value in the calibration certificate applies.
[3)] On request.

Sensors

CoM4.Flow-Eco

SENSOR TYPE	MEASURING RANGE	OVERLOAD
PDP1 differential pressure	0 to 20 mbar	6 bar
PDP1 absolute pressure LP	0 to 1.2 bar	3 × max. measuring range
PDP1 absolute pressure HP	0 to 4 bar	8 bar abs.
PT 100 temperature sensor	0 to 75 °C	max. 75 °C

CoM4.Flow-Smart

SENSOR TYPE	MEASURING RANGE	OVERLOAD
PDP2 differential pressure	0 to 20 mbar	Plus to minus: 10 bar Minus to plus: < 1 bar
PDP2 absolute pressure LP	0 to 1.25 bar	2 × measuring range
PDP2 absolute pressure HP	0 to 7 bar	2 × measuring range
Temperature sensor	0 to 75 °C	max. 75 °C

CoM4.Flow-Pro

SENSOR TYPE	MEASURING RANGE	OVERLOAD
Differential pressure	0 to 60 mbar	10 bar abs.
Absolute pressure LP	0 to 1.2 bar	3 × max. measuring range
Absolute pressure HP	0 to 7 bar	12 bar abs.
Temperature sensor	0 to 75 °C	max. 75 °C
Humidity sensor	0 to 100 % RH	non-condensing

Operating conditions

CoM4.Flow-Eco

Inlet pressure LP	0.8 to 1.2 bar abs.
Inlet pressure HP	0.8 to 4 bar abs.
Inlet temperature	0 to 50 °C
Humidity	0 to 100 % RH, non-condensing

CoM4.Flow-Smart

Inlet pressure LP	0.8 to 1.2 bar abs.
Inlet pressure HP	0.8 to 7 bar abs.
Inlet temperature	0 to 50 °C
Humidity	0 to 100 % RH, non-condensing

CoM4.Flow-Pro

Inlet pressure LP	0.8 to 1.2 bar abs.
Inlet pressure HP	0.8 to 7 bar abs.
Inlet temperature	0 to 50 °C
Humidity	0 to 100 % RH, non-condensing

Ambient conditions

All three instruments

Temperature	-10 to +50 °C (without enclosure)
Humidity	0 to 100 % RH, non-condensing
Pressure	atmospheric
Degree of protection	IP20

Media compatibility

All three instruments

Permitted media	Clean, dry, non-condensing, non-flammable, non-corrosive gases
Purity requirements	ISO 8573-1; 5 µm filter as well as oil and water separator required

Standards and approvals

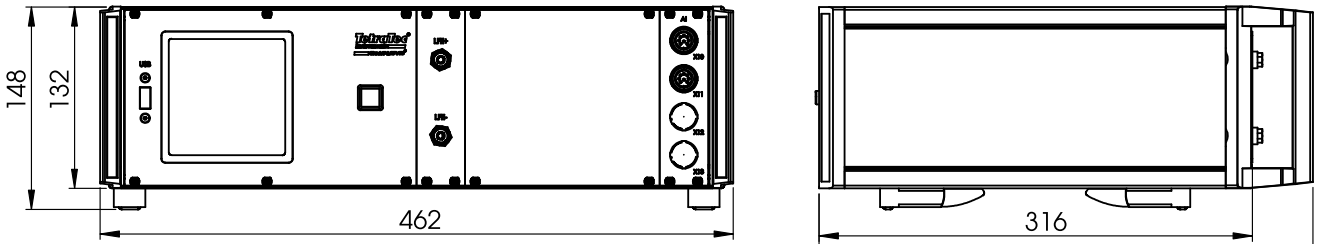
All three instruments

Standards	EN 61010-1

Mechanical and electrical data

All three instruments

Housing	462 × 148 × 316 mm
Process connections	Plastic hoses with union nuts 4/6 mm
Display	4-inch graphical user interface
Power supply	90 to 260 VAC / 50/60 Hz
Power consumption	max. 80 W
Electrical connections	IEC power connector, circular connector (Lumberg)



Dimensions in millimetres. Drawing not to scale; binding dimensions on request.

Interfaces

All three instruments

Communication	Ethernet, USB 2.0 (Type A, for updates)

Accessories

All three instruments

Flow measuring element	TTI Laminar Flow Element, measuring ranges available between 1 mL/min to 64 m^3/min
Turndown per LFE (max.)	LFE S010: 1:50 (air only) LFE S018 to S050: 1:20 (air only), higher on request LFE R series: 1:10, in special cases up to 1:30

CoM4.Flow-Eco and CoM4.Flow-Smart

Humidity measuring element	HUMTMP humidity/temperature combination sensor for humidity measurement from 0 to 100 % RH

Options and variants

All three instruments

- Housing variants: benchtop or rack housing, with or without handles
- Sensor connections on the rear instead of the front of the instrument

Ordering information

The system can be adapted to the requirements of the test task. For design and quotation we need:

- Flow measurement range(s)
- Type(s) of gas
- Test volume
- Operating conditions (pressure and temperature)
- Environmental conditions
- Enclosure requirements
- Power supply
- Data acquisition requirements
- Other specific requirements

FURTHER INFORMATION

Benefits, operating principle and application examples are given in the product brochure **CoM4.Flow-Eco/Smart/Pro**. To discuss your measuring task, contact us at **+49 7157 5387-0** or **info@tetratec.de**.