

# E instruments

## EColine OL CO<sub>2</sub> & CH<sub>4</sub>

Analizzatori Fissi di Gas NDIR per CO<sub>2</sub> e CH<sub>4</sub>

### EColine

Combustion Gas Analysis

- 3 Modelli NDIR :  
CO  
CO<sub>2</sub>  
CH<sub>4</sub>
- Attacco per campionamento o diffusione in ambiente. Versione con pompa
- Uscita analogica 4-20mA o 0-10 V
- Datalogger su memory card SD
- Uscita RS232
- Display LCD



CE

L'analizzatore di gas EColine OL CO<sub>2</sub> & CH<sub>4</sub> è stato sviluppato per funzionare in continuo e quindi può essere installato in prossimità del processo. Utilizza una tecnologia proprietaria con un sensore interno NDIR per la misura sia tramite campionamento sia nell'ambiente per diffusione. Le uscite sono analogiche e digitali e può essere ordinato con un display di visualizzazione. Le applicazioni tipiche per il modello CO<sub>2</sub> sono : Igiene Ambientale (IAQ), Risparmio Energetico, Agroalimentare (culture idroponiche, serre, maturazione) e Sicurezza (cantine).



### EColine OL CO<sub>2</sub> & CH<sub>4</sub>

#### Properties

- Using microprocessor technology, all on one board
- Fast reaction time (T<sub>90</sub> < 45 seconds.)
- Zeroing of the sensor: manually over zero button or externally over contacts
- Automatic permanent check of sensors function. Necessity for calibration indicated by LED.
- Automatic temperature compensation

#### Operative Modes

- "Smart Zero" - automatic correction of sensor zero using values from the previous 1 to 30 days
- Continuous operation in 3 modes - zero, measure, standby
- Continuous operation with timetable (24 hour cycle)
- Continuous operation with permanent measurement (may be zeroed externally)

#### Standard Configuration

- ABS housing
- Linear voltage output - active range (begin and end) may be user-configured within the nominal range 0...10 V.
- Linear current output - active range (begin and end) may be user-configured within the nominal range 4...20 mA
- Interface RS232C for changing the sensor settings and for data-logging

- Digital output (0/5 V) – shows operating state of the sensor (0 V-measurement / 5 V-zeroing or standby)
- Digital output (0/5 V) – shows the operating state of the pump ( 0V-off / 5 V-on)
- Digital PWM output (0/5 V) - programmable output
- Zeroing of sensor either manually using integrated button or externally over contacts
- Power supply 13...30 VDC or 9...24 VAC, max 3 W

#### Optional

- Membrane pump test gas or zero gas
  - Display module
  - Data storage on 256 MB MMC
  - USB connection with madur adapter
- Processing and display of measurement values
- Measured gas concentration in [ppm] or [%] as:
    - o Measured values in digital form over RS232
    - o Measured value stored in digital form on internal memory card (option)
    - o Measured value over analogue outputs 0/4 - 20 mA and 0 - 5/10 V
    - o Measured values on internal display (option)
  - PC programme for changing the sensor settings and for data-logging

Parameter	madIR-D01
Measured gases	CO, CO <sub>2</sub> , CH <sub>4</sub>
Measuring method	infra-red absorption, 1 channel with light modulation
Housing	ABS
Sampling	Diffusion or flow
Operating temperature	0 ÷ +50°C
Storage temperature	-20 ÷ +70°C
Humidity	5 ÷ 90 %, non-condensing
Voltage supply	13...30 VDC or 9...24 VAC
Power	max. 3 W
Analogue outputs	Begin and end can be user-configured within the range Current: 4 - 20 mA, linear Voltage: 0 - 10 V, linear
Interface	RS 232C
Averaging time	2 ÷ 60 s user-configured
Calibration	10 point calibration stored in EEPROM
Recalibration	not necessary. Falls erwünscht 2-Punkte Kalibrierung möglich
Size of Printplatte	105 x 40 x 30 mm
Size of shot ABS housing	120 x 80 x 55 mm
Size of long ABS housing	240 x 80 x 55 mm
Weight (short / long housing)	220 g/330 g

Measurement Channel Technical Data

Gas	Range	Resolution	Detection limit	Accuracy	Resp. time (t <sub>90</sub> )
CO - carbon monoxide-volumetric concentration	0...100 %	0.10 %	0.10 %	± 0.5 % abs., or 3 % rel.	45 s
	0...50 %	0.10 %	0.10 %	± 0.3 % abs., or 3 % rel.	
CO <sub>2</sub> - carbon dioxide-volumetric concentration	0...25 %	0.01 % (100 ppm)	0.01 % (100 ppm)	± 0.15 % abs., or 3 % rel.	
	0...10 %	0.01 % (100 ppm)	0.01 % (100 ppm)	± 0.05 % abs., or 3 % rel.	
CH <sub>4</sub> - methane-volumetric concentration	0...5%	0.01 % (100ppm)	0.01 % (100ppm)	± 0.03 % abs., or 3 % rel.	
	0...2,5%	0.001 % (10 ppm)	0.001 % (10 ppm)	± 0.015 % abs., or 3 % rel.	