



Humidification and Dilution System of Gas Sample

HUMIX

HUMIX and HUMIX DIL are last generation instruments developed by TCR TECORA to meet the most stringent norms of calibration and testing of gas analysis systems for emissions in atmosphere.

The instruments "HUMIX series" integrates the best active technology for dilution of the gas span concentration for calibration, control and linearity of gas analyzers, sme, analyzers for monitoring network and multiple situations where necessary to generate a precise gas concentration with high dilution accuracy.

The flow regulation of the dilution gas is managed by MFC-H, high accuracy mass flow controller, able to ensure the dilution in static mode i.e single point of calibration, or in dynamic mode, by automatic management of dilution ratios over the defined work cycle.

HUMIX DIL can be equipped with a wet module to allow the generation of wet gas at the dilutor outlet for checking the reading channel related to the emissions water content, and the generation of gas from solution (for example: HCl, HF, NH₃, CH₂O, H₂O₂, Hg, HBr...).



*Perfect combination between
evolution and easy of use...*

- Programming dilution/cycle time, duration, delay, cycle, volume of solution;
- Data download to pen drive USB;
- Static or dynamic dilution (range % gas concentration from 0,1 to 100% saturated);
- Automatic or manual test menu, leak test, flow test MFC1-MFC2-MFC3;
- Connection with wet module for sample wet phase management;
- Digital active humidity trap to STOP generation of condensate;
- Possibility of connecting a scale for measuring the volume delivered by solution;
- Start from external digital contact or via MODEM (option);
- Sample gas library, plant, instrument, operator;
- Active dilution by manual or automatic configuration with report;
- Dilution log to check continuously the dilution ratio;
- MFC-H high precision flow regulator;
- MFC-H-L high precision liquid flow regulator and anti-corrosion surface treatment;
- Thermoregulators for control of the temperature of the wet gas generating tower.





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Characteristics

- ▶ Software with instantaneous flow data visualization, set and normalized;
- ▶ Electronic flow regulation with display visualization;
- ▶ Solution activation through integrated peristaltic pump with automatic weight system of solution;
- ▶ Flow regulator and anti-pulsation system to ensure a constant flow with glass mixing (quartz option);
- ▶ High precision flow measurement;
- ▶ MFC with calibration report (EN 17025 on request) with user-accessible calibration software;
- ▶ Information on customer/site/measurement zone, insertable from keyboard;
- ▶ Storage of up to 512 dilution sessions (location data, dilution ratio, inlet temperature, gas pressure, flow, atmospheric pressure (option));
- ▶ Report data downloadable via USB as a txt file with raw and normalized data;
- ▶ Memorization of power failure and visualization on reports;
- ▶ Vacuum gauge for functional checks and leak test;
- ▶ Power supplies available: 230 VAC – 110 VAC (external 24 VDC batteries for HUMIX-DIL-BAT version only);
- ▶ Flowrate from 1 ml/min to 10 l/min (other flowrates on request);
- ▶ Ozone generator for GPT testing (option).

- ✔ Dilution ratios from 1 ml/min;
- ✔ Humidification of the dry sample from calibration mixture as CO, NO, NO₂, SO₂, CO₂...;
- ✔ Simple software with remote control (VPN or MODEM).

HUMIX has achieved high quality standard and reliability and it has allowed the development of a series of dilutors derived from this technology:

HUMIX (WET) add wet generation module with MFC-H-L;

HUMIX (DIL-WET) complete dilutor dry and wet gas;

HUMIX (DIL) three ways dilutor;
MFC1 0-100 cc/min dilution gas 1
MFC2 0-1000 cc/min dilution gas 2
MFC3 0-10000 cc/min dilution carrier for gas 1 and/for 2.



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TCR TECORA has introduced in recent years an innovative calibration concept on the whole series of HUMIX dilutors. Thanks to the training center (see TCR TECORA training session on our website) that allow the continuous exchange of information between the sampling technicians and the quality managers/metrological confirmations in line with regulatory requirements and Accredia; the definition of CALIBRATION AREA external to the instrument was born, which allows to control all the sensors without having to open the instrument.

- ▶ Temperature
- ▶ Gas Inlet Temperature
- ▶ MFC Flowrate
- ▶ Ambient Pressure

A software menu dedicated of the instrument allow the calibration on 5 points for all parameters and to save previous calibration for a continuous check of linearity over the time.

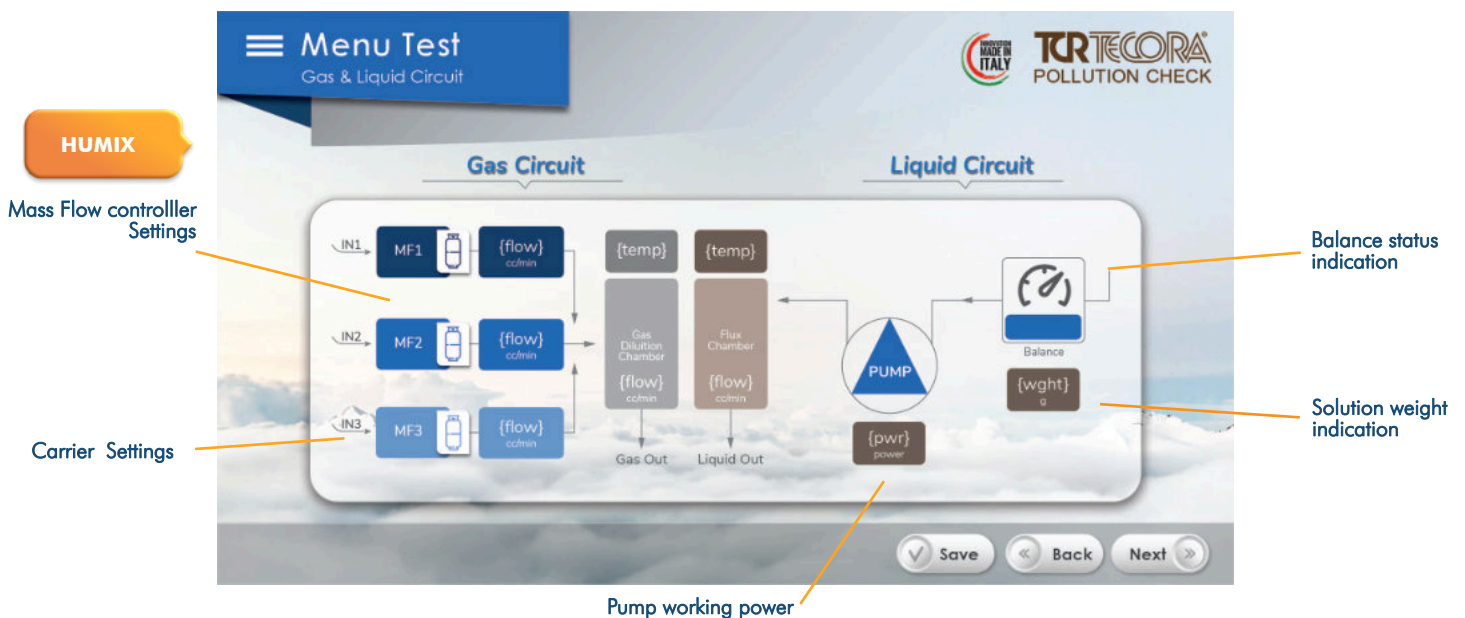
FLOWCAL AIR

Flowcal Air is the reference instrument accredited 17025 for flowrate, temperature and pressure.



Gas Dilution and Humidification

HUMIXWet



HUMIX

- ▶ Dilution percentage editable in real time
- ▶ Zero-span manual or automatic
- ▶ Pneumatic separation
- ▶ Inert materials no contamination

Option:

In a few seconds HUMIX become a dry dilution system, humidity generator, sample humidification, ozone generator for GPT, flowmeter calibrator... and much more!



HUMIX

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System of Gas Sample

HUMIX DIL ↓



HUMIX DIL WET ↓



Technical Characteristics

HUMIX - standard version

Pump Type	Peristaltic with PWM control (only for WET version)
Max flowrate (free flow)	10 l/min
Range of regulation of pump flowrate	1 ml/min - 10,00 l/min
Range of scale of MFC - L	1 ml/min - 10,00 l/min
Flow measurement	Mass Flow controller
Range of inlet temperature	-1 ÷ 45 °C
Operative temperature D	-1 ÷ 50 °C (with forced ventilation active)
Range of ambient humidity sensor	0-105 kPa, Accuracy ± 0.1 kPa, resolution 0.01 kPa (optional)
Range of ambient pressure sensor	Microprocessor electronics
User interface data management	Membrane keyboard IP65/Color display touch screen 10"
Weight	5 kg (dry version) 9 kg (with evaporation system)
Dimensions	200 x 315 x 460 mm
Power supply	230 VAC 50-60Hz 110 VAC 50-60 Hz 24 Vdc (option)
Consumption	350W
Codes	AA99-000-0700SP (230 VAC) AA99-000-0701SP (110 VAC)

