



TCR Tecora celebrates 35 year of activity in high quality sampling equipments

Emission test in stack: Flowtest St

TCR Tecora introduces the new Flowtest St, evolution of the historic Flowtest, who established an industry standard in Italy and Europe.

Stack emission sampling is still a complex activity.

The engineer who executes the sampling is involved in different activities, from the preparation of instruments and samples in laboratory, to the preparation of sampling on site, where sometimes it is necessary to lift instruments on duct's platform using a stack ladder.

In these situations, it would be useful to have an instrument which simplifies and speeds up the work. Flowtest St has been renewed to meet the requests of those engineers who work on stack.

On site, the operator should execute manually all the operations required by official methods.

Based on duct's characteristics (diameter, circular or rectangular section, etc), as required by norm EN 13284, you choose the number of sampling points (distance to put the nozzle into duct) to execute with the probe (Pitot and thermocouple).

Flowtest St allows the operator to calculate the sampling point and to define the sampling time for each point. The instrument will execute the measurement and will record velocity, temperature and pressure point-by-point.

Extremely accurate, Flowtest St stands out for the innovative software, that, through the continuously view of sampling flow, helps

INDEX

- *Emission test in stack: Flowtest St*
- *Delta MK II*
- *Sampling COV in stack*
- *Cooling devices*



NEXT EVENTS

- *Achema 2009*
Frankfurt 11-15 May
- *A&WMA Conference*
Detroit, 16-19 June
- *Dioxin 2009*
Beijing, 23-28 August
- *CEM 2009*
Stresa, 23-25 September

the isokinetic calculation. With the new software, the user can change duration time point-by-point, repeat a measurement point or recover an incomplete profile already stored in an easy and simple manner.

The instrument is supplied with a USB key to download sampling data, avoiding to connect the instrument to a PC; file format is compatible with all browser and the most common spreadsheets.

The main parameters can be easily seen on the wide graphic display (128x64 pixel). Status bar shows the name of the site in which you are working and the battery life. The numeric keypad simplifies all data entry procedures.

Another important feature of Flowtest St is the universality of the thermocouples: in fact, it is possible to choose J, K or T type. This means that the laboratories that already have a probe won't buy another one and so they will use their own.

Regarding battery, the customer can choose rechargeable batteries (with battery charger) or alkaline batteries AA type.

Flowtest St has high stability: its recalibration is necessary only once a year. The plus of the instrument is the high accuracy (better than 1%). This is very important for laboratories accredited with ISO 17025, who can execute measurements according to EN13284, which requires high accuracy sensors to perform the measurement.



DELTA MK II

Delta MK II is the evolution of Delta battery sampler. The main topics of the new version are the removal of the battery adapter, now as built-in device, and the integration of the dry gas meter (DGM), as requested by the official methods. The DGM version supplies a double control (flow and volume) on effective sampling performance: this comparison is unique in a portable equipment, with the result of high accuracy for output data. An innovative electronic flow control system, optimized for battery consumption, manages the power in relation to the flowrate. Thanks to its modular structure, the battery pack can be changed on field without stopping the sampling; this is a quick and easy operation that increases the autonomy of the sampler. In this new version, the built-in power supply unit allows both 110/220 VAC and Delta battery pack power supply. Compared to the old version, the new built-in power supply unit allows battery charging and instrument running using a simple power cord (included).

The control of the flow is effective to obtain fast

response time, even at low flow ranges. The response time (only 5 seconds) allows the instrument to adjust itself to changing ranges and pressure drops.

The new pneumatic system doesn't need any external device and is free from pulsations, even at low flows. A trap secures the instrument from damages caused by the accidental liquid suction.

Equipping Delta with the TCR sequential manifold module, it is possible to connect to the sampler all TCR sequential modules. The module is connected to the instrument in the place of the battery pack and it is supplied with 110/220 VAC. The programming modes allow to perform multiple samplings, daily or with established duration and pause. A sequential pump function allows to spread the sampling duration. This function is very useful with sampling on tubes or impingers, because allows to have a representative sample for 24 hours, without the risk to overload the tube or the adsorbent liquid.

Measurement reports are saved on the internal flash memory. Using the function Explore memory, through the wide

graphic display, it is possible to see all stored reports. Through the RS232 interface, it is possible to download all stored data on a PC.

The dedicated Downloader software, compatible with Echo and Bravo series, allows to convert all stored data in an Excel™ sheet with a simple click. The software is supplied with the instrument and the connecting cables in a CD format.

Sampling VOC in stack

In order to satisfy norm EN 13649, TCR Tecora developed two instruments for sampling VOC in stack, simple and effective with different characteristics to satisfy all needs.

DDS (Dynamic Dilution Sampler) is engineered and realized to meet the requirement of UNI EN 13649 *Determination of the mass concentration of single volatile organic compounds, using charcoal tubes and solvent desorption method.*

It is also possible to use DDS system to sample inorganic compounds as described by norm UNI EN 10493.

DDS system assembles in a single case the sampler and the dilution unit. The power supply is ensured by internal rechargeable battery with a 7 hours autonomy.

DDS is equipped with a membrane pump, a precision flowmeter, a temperature indicator and a dry gas meter for both pumps.

The protection trap prevents damages to the pump from aggressive gases or from accidental sampling of



Delta with TCR
sequential manifold
module

adsorbing solutions. The adsorbing trap is necessary to dehydrate the dilution air sampled from the ambient and eventually eliminates pollutants traces. The trap must be half filled with silica gel and half with charcoal. The polyurethane foam and the glass fiber filter ensure the particulate elimination from the sampled air.

The dilution flow is calculated according to the flue gas humidity and ambient temperature in stack. The dilution flow should be so to avoid the achievement of the condensation point of the sampled gas.



DDS

The **Easy Gas** sampling line is realized to satisfy the sampling methods of UNI EN 10493.

The sampler allows a sampling with a flowrate from 0.2 to 1.2 l/min supplied with a rechargeable battery with 10 hours autonomy.

Easy Gas is equipped with a volumetric dry gas meter for low flow with a thermometer for temperature measurement. It also has a silica gel trap and a protection filter. These devices avoid pump damages caused by aggressive stack gases or simply by accidental suction of adsorbing solution.

The instrument is supplied both with rechargeable battery and main power supply.



Easy Gas

The **DDS/Easy Gas Sampling probe** can be used for sampling gaseous compounds with or without using the dynamic dilution system. It is equipped with a heated filter holder and a dilution chamber. Only stainless steel are in touch with gas. Sampling tubes are suitable with different shape and length, according to standard sampling methods. The probe is supplied with a carrying case containing a power supply of 220/110-12 V and a battery that allows to work even with AC power. The supply includes an umbilical cable for sampler connection, with a suction/dilution line, a key roll and a quick connectors to joint the sampler. As an alternative to the umbilical cable, a heated line with PTFE interchangeable sampling tube is available.



DDS/Easy Gas sampling probe

Cooling devices

In order to protect any kind of samplers from damages caused by heat or fumes humidity, it is necessary to use a cooling and condensing device, also useful for determine the content of moisture in fumes and to analyze the condensates.

TCR Tecora offers different solutions to satisfy different stack sampling and analysis requirements. An example is the cooling and moisture collecting system with glass impingers. The solution solves the double task of cooling the sampled gas and moisture collected for the determination of water vapors content in fumes.

Realized into a robust, portable and athermic container that can be used with ice/water. The device has been realized particularly for use with cover closed, taking the advantages of the isolating capability offered by the special box. Inside the container there are four impingers – two with plate and two with straight tube – located hanging on aluminum rack.



Cooling device

Another solution is the EG Peltier system. This device is equipped with a Peltier system that ensures the ideal temperature maintenance during sampling. The main advantages of this system are the light weight and the small size.

Continue on page 4

The glass kit is located into three cylindrical containers. To use the device it is not required to insert water and/or ice. Charcoal tubes are located inside the system and are cooled and protected from any source of heat and UV rays.

35 YEARS OF ACTIVITY

TCR Tecora was established in Milan in 1974. The company's aim was to design and manufacture technologically advanced instrumentation for air quality and stack emission, based on international standards. Since more than 30 years TCR Tecora designs and manufactures sampling and measuring systems for both immission and emission control in compliance with the

most important international standards.

Since 1998 TCR Tecora is ISO 9001 certified: this is a further commitment to supply high quality products toward Italian and foreign customers.



EG Peltier



Emission



Immission



Industrial Hygiene

TRTECORA

We control the air quality since 1974

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