

FIELD INSTRUMENTATION &
ANALYSIS SYSTEMS FOR
PROCESS AUTOMATION

INTEGRATION OF
CONTINUOUS EMISSIONS
MONITORING SYSTEMS

INSTALLATION, TRAINING & SERVICE



TECNOVA HT

Field Instrumentation Liquid & Gas Analysis Systems Service



TECNOVA High Technology was founded in 1994 as the next step in the development of TECNOVA SpA, a leading Italian company in process automation since 1976. TECNOVA HT, still maintaining its leadership in flow measurement, has really diversified, year after year, own process automation solutions. TECNOVA HT is now able to offer a full package of field instrumentation, analysis systems and related services, such as service, consulting and engineering. TECNOVA HT has more than **7,500 customers** world-wide in all industrial markets, such as

Environmental Consulting Refining **Contractors**

Oil & Gas up/downstream **Skids Integrators** Feasibility Studies

Petrochemical Textile **Pulp&Paper** Maintenance

Pharma Aerospace Food&Beverage **Steel PowGen** **WWT** Marine

Chemical Boilers Heaters **R&D** Automotive **Biogas**



Our core business consists of the supply of Intrinsic High Technology Instrumentation, the study of Complex Engineering Design and Development to resolve specific problems and the offer of Global Services to the customer. Only a stable company with long standing technical partnerships, the continuous development of skills and the pursuit of qualified staff can be defined as a global player in process automation and emission analysis.



The new headquarters in Pregnana Milanese are organized so that the staff work harmoniously together in 1600 m² with 700 m² of space available for parts assembly, instrument testing, products storage and shipment. The geographical position of the company is excellent; it is found at the crossroads of the 3 main motorways of Lombardy - A8, A4, A11 - as well as being equidistant from the airports of Milan - Linate and Malpensa. The new mega Exhibition Center Fiera di Milano is few minutes away.



The technical, process, sales and administration management nucleus is composed of 25 people: 350 years of combined work experience and customer satisfaction are our best guarantee.

Investments to improve the Work Process have always been solid and continuous.

The important points of our advance are the following:

- True Staff training
- Integrated management of the work flow
- Employment of qualified staff
- Selection of suppliers
- Technicians on field 24/24, 7/7, 365/365
- Quality Certificate maintenance

TECNOVA HT is proudly in conformance with **ISO 9001:2008 engineering included** to demonstrate management's commitment to continuous improvement, to reduce delivery time, to increase safety on workplaces for both TECNOVA HT people and Customer's one, to exceed the contractual duties. TECNOVA HT is fully qualified **ACHILLES® RePro®**.



TECNOVA HT is an active member of main associations in Process Automation as **GISI Associazione Imprese Italiane di Strumentazione** and **AIS Associazione Italiana Strumentisti** already part of ISA Italian Section as well in the Foundation Fieldbus board, Italian section.

TECNOVA HT is continuously scouting new Products fully certified as per European Directives or specific Directive as PED / ATEX / IECEx / Marine...or necessary for export such as GOST R/K. For your projects always ask for a copy of needed certification: is your right and our pleasure send it to you!



TECNOVA HT is qualified as Vendor in ENI Group and sister companies: list of qualified products and services here http://www.tecnovaht.it/certificazioni_ISO.php

Instrumentation



Rugged Air Filters



Instrument Air Reduction Panels



Temperature Switches



Pressure Switches



Smart Hart Transmitters: DP, Pg, Pabs, T, with capillaries & separators, flush mounted....also exotic material (Tantalum, Gold..)



High Static Pressure up to 15,000 psi



Indicators & Paper Recorders equipped by Barton cell



Flow Computer EEX d, ia



Indicator & Totalizer: Local EEx d



Local Weather-Proof



Panel Mounted



Flow Elements: Orifices, Venturi, Pitot, Darcy, V-Cone™ tube style, V-Cone™ wafer style



Turbine Flow Meters for Gas & Liquid Service up to rating #2,500, wafer type, double pick up...exotic materials



Weco® Turbine meter

Insertion Type

PD meter & local electronic

PD meter & local counter



PD meter & mechanical counter

PD meters with Pistons, Wheels, Vanes...also for Acid Service

Instrumentation



Ultrasonic FlowMeters: fixed type, portable type, Atex Zone 2, Atex Zone 1



Magnetic FlowMeters: without display, with display, Atex, battery power operated



Thermal Mass FlowMeters Gas service: insertion type, in line type, integral electronic, remote electronic, multipoint



Thermal Mass FlowMeters Gas service Atex: insertion type, in line type, integral electronic, remote electronic, multipoint



Level Measurement Solid & Liquid Service: magnetic, floating, radar, ultrasonic, DP transmitters, Nucleonic Source for Molding



Panel Instrumentation: Indicators, Paperless Recorders, Paper Recorders, Controllers & Microcontrollers



Rear Panel Temperature

Alarm & Monitoring panel mounted on-board marine service



Annunciators & Alarm Panel

Sequence of Event Recorder

Shaft Torque Monitoring System for marine service

The Analysis Division



The **Analysis Division** was created in 1984 to widen the services offered to the customer. Its aim is

T.H.T To understand customer's process requirements offering always **BAT Best Available Technology** solutions within the budget.

T.H.T To reduce **TCO Total Cost of Ownership** : low utilities consumption, minimum footprint, negligible yearly downtime, fast spare parts service, gas bottles management.



T.H.T To offer **TKLS Turn Key Lump Sum System** with no hidden cost

T.H.T To design, integrate and install complete systems **CEMS Continuous Emissions Monitoring Systems** fully compliance with Environmental Local Regulations



For convenience we have divided our technical capacity into 4 macro-areas:

1. Analysis of Process Gas Phase
2. Analysis of Process Liquid Phase
3. Analysis of Emissions Gas Phase
4. Analysis of Emission Liquid Phase



Analysis > Gas > Process

- **Dust** monitoring to check any filter bags rupture (Switch), efficiency of electrostatic filter (Trend) or process management (Monitoring) by triboelectric principle



- Reaction or combustion optimization or explosive limits monitoring in situ, measuring concentration up to ppm of H₂O, NH₃, HCl, O₂...installing a laser analyzer

- **Biogas**: in line analysis, also portable



- On line measurement, less than 4 seconds, of **Wobbe Index, LHV, Gas Density** of Fuel gas, Tail gas, Coke Oven and Blasting furnace gas...

- Toxic and Flammable gas detection

- **Tail Gas** Analysis: H₂S, SO₂, COS, CS₂

Analysis > Liquid > Process

The control of the fundamental parameters of chemical and petrochemical processes is not only achieved by accurate control of pressure, temperature, flow rate, but also by calculating the concentration of reagents, products and pollutants as well as studying the viscosity of the hydrocarbons or fuel oils. **ATEX / IECEx** certifications available.

- Isokinetical **sampling** systems for custody transfer
- **Concentration** analysis in liquid phase also suitable for aggressive fluid, by refractive index, ultrasonic principle or photometry also in UV range
- In line **color and turbidity** measurement
- **Viscosity** analysis in line of any fluid, also suitable for machinery
- Water Cut Monitor
- **Oil in Water**, fluorescence method also for variable composition pollutants
- Sensors for Conductivity, pH, Redox, Dissolved Oxygen, Chlorine



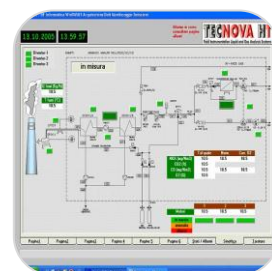
Analysis > Gas > Stack Emissions

The Analysis Division has progressed remarkably, continually increasing the number of production orders for complex analysis systems: the design of entire analysis cabinets, their construction and testing on-site by the customer is now a well-established reality. We work both within the industrial sector to ensure compliance with current **Italian and European regulations EC 2001 / 80, Testo Unico 152/06 (law 203/88 and subsequent D.P.C.M. -Prime Minister Decrees- of 02/10/95, 21/12/95, 08/03/02), Law 133 Incinerator Unit.**

*Any Analyzers installed by **TECNOVA HT** are **TÜV (or equivalent Notified Body)** certified and therefore suitable for emissions monitoring. Always ask for a copy of the certification.*

Our analyzers with **direct insertion** Zirconium oxide probes are the reference standard for the market; the precision and stability of this paramagnetic O₂ analyzer are now required by many customers.

The simultaneous measurement of CO₂, CO, SO₂, CH₄, O₂, NO_x with NDIR technology allows us to construct complete **cabinets**; thanks to FID systems, we can check the TOC, and by installing FTIR type technology, we can offer our customers every type of measurement available. **Any analysis system is equipped with a dedicated software, validated by the Public Department.**





Stack dust monitoring is performed in situ by different technologies such as tribo, dehumidified tribo and laser, always **TÜV (or equivalent Notified Body) certified**.



Analysis > Liquid > WWT Emissions

Even in this case we turn to the private sector as well as public organisations. Current regulations require increasingly more accurate control of effluents and staff in charge of maintenance are continually decreasing in numbers.

The Analysis Division can supply the more robust, precise and reliable instruments, developed from experience in the field, which are now required.



The measurement of **TOC, COD, BOD, Total Nitrogen and Toxicity** is now extremely simple: thanks to our high temperature reactor, the absence of costly catalysts, only one reagent and the absence of filtration, our TOC, COD, BOD analyzers have reduced maintenance and response times to less than 3 minutes. The reduced scale WWT simulation unit allows us to assess and safeguard the condition of bacteria in real time.



Sometimes measurement of chemical pollutants, such as surfactants, ammonia, nitrates, nitrides, phosphates, silicates, sulphates, chlorine, formaldehyde, phenol, cyanuric, iron, copper, chromium VI, manganese, zinc, magnesium, aluminium..., is necessary. We can measure concentrations with our patented **Multiparametric analyzer**, based on colorimetric principle, now available in a portable version for the car, for immediate analysis using only one instrument over considerable areas.

When “standard quality” is not enough, customized sampling systems are always available, simply ask for.



Let's introduce you **TECNOVASERVICE**, a service company fully owned by TECNOVA HT, as partner in our on-field activities. The Global Service we can offer the Customer clearly distinguishes us in a market where bargain prices, uncertain technical preparation, delivery delays and poor quality documentation are the norm.

- T.H.T** Examination of the process problems together with the Customer's technicians
- T.H.T** Complete turnkey offers in a short time
- T.H.T** Manuals, also in other languages
- T.H.T** Presentation of projects with the customer to Governative organizations
- T.H.T** Installation and start-up at the final Customer's premises
- T.H.T** QAL 2 certification management
- T.H.T** Optimization of the Customer's production process
- T.H.T** Remote control of instrumentation
- T.H.T** Demonstration of our range of products and their use
- T.H.T** Training, both in our headquarters and at the Customer's premises
- T.H.T** After-sales service
- T.H.T** Maintenance contracts
- T.H.T** Repair service carried out by our qualified in-house technicians



TECNOVASERVICE operates worldwide with carefully selected and well-trained Staff in order to improve both technical knowledge and workplace safety. In particular all technicians are equipped with Personal protective Systems and equipment suitable to operate in hazardous Area or in extreme environmental conditions.



Principals

TECNOVA HT thanks to the constant increase of his success and the unceasing work of its staff, has now gained a more than solid experience in instrumentation and control and is able, continuously monitoring the market, to choose the most prestigious and known Italian or foreign Principals, expanding the range of solutions always at the highest level of quality.

This section contains the list of commodity groups of Italian and foreign suppliers available to our kind customers. In process automation market where every solution is presented as the Best, TECNOVA HT prefers to offer consulting that not necessarily leads to the choice of our instrumentation but allows our customers to achieve the expected result.



Oil in Water
Underwater Leakage Detector



Barton

NuFlo

Clif Mock



Turbine Flow Meters
Indicators
Totalizers
Flow computer
Differential Pressure by Barton cell
Indicator by Barton cell
Paper Recorder by Barton cell
Pressure Switch by Barton cell
Rotary vanes Flowmeter
Multivariables Transmitters
Tankage area Management
Cryogenic Inventory Management
Isokinetics Sampling Probes
Sampling Systems
Orifices
Meter run
Single & dual chamber orifice
PSV Pilot Operated

Conoflow



Actuator
Posizionators
Regulators
Trasduttori

contrec

Batch controller
Blending controller
Heat controller
Steam Condensing Heat Computer
Heat Transfer Computer
Loading / Unloading Truck Computer
Level Control
Flow computer
Indicator



Thermal mass flowswitches
Thermal mass levelswitches

DYNAMETERS

Ultrasonic FlowMeter transit-time &
doppler Atex certified.



WWT multiparametric analyzers

Eldridge Products, Inc.

Thermal Mass Flow Meters
Stack Flow Meters



Level Switch
Flow Switch
Capacitance Level Transmitters
Magnetic Float Level Transmitters
Magnetostrictive Level Transmitters
ByPass Level Transmitters
Ultrasonic Level Transmitters
Radar Level Transmitters

**FUJI
ELECTRIC**

Panel Process Controller
Panel Temperature Controller
Rear panel Temperature Controller
hand held communicator
Panel Indicator
Level metering
Magnetic Flowmeter
Ultrasonic Flow Meters
Portable Ultrasonic Flow Meters
Paper Recorders
Paperless Recorders
DP, Pg, Pabs, T smart Transmitters
Gas Process Analyzer
Gas Emissions Certificated Analyzers
Oxygen Analyzer

hi **hobré instruments bv**

X-ray fluorescence liquid analyzer
Total Sulphur, H₂S, COS, RSH and
H₂O Umidity gas analyzers



OEM viscosity meter
 Laboratory viscosity meter
 In line viscosity meters
 Portable viscosity meter



PROCESS INSTRUMENTS
 Concentration in line Refractometer analyzer



PROCESS ANALYSERS AG
 BOD in line analyzer
 COD in line analyzer
 TNb in line analyzer
 TOC in line analyzer
 TP in line analyzer



Density in line analyzer
 Portable density analyzer



V-Cone™ flowmeter
 Wafer-Cone™ flowmeter



Certified Single-Path Laser Dust Analyzer

Neo-Dyn



Pressure Switches
 Temperature Switches



Process Interlocking Systems
 Pigging Interlocking
 Electrical Switches Interlocking
 Mechanical Partial Stroke Testing
 Valve Position Indicator



Color in line Photometric analyzer
 Concentration in line UV VIS NIR analyzer
 Turbidity in line Photometric analyzer
 pH & Conductivimeter



Biogas analyzer
 FOS / TAC portable analyzer



Heavy Duty Electrohydraulic Actuators
 Low Heating Value, Wobbe Index,
 Gas Density calorimetric analyzers.



Annunciators
 Event Sequence Recorder
 Nuclear weighting system
 Nuclear level monitoring system
 Nuclear mold level monitoring system
 Nuclear interface monitoring system
 Nuclear density monitoring system



Concentration in line Ultrasonic analyzer



Dust in line analyzer
 Dust Switches
 Dust in stack certified analyzer



Pistons flow meters
 Oval flow meters
 Turbine flow meters
 Insertion Turbine flow meters



INSTRUMENTS

Ballast analyzers
 Viscosity analyzers
 Mechanical batch counters
 Torque meter for ship engine shaft
 Pistons flow meters
 Rotating vanes flow meters
 Totalizers

Who's
 Next?

Reference List

TECNOVA HT is in partnership with more than 7,500 Customers belonging to the most diverse industrial markets and located in every part of the world: it is impossible to develop a proper list of references and therefore we prefer to simply point out specific significant projects for technical difficulty or for overall value that were completed in recent years.



Shelter EEx p Refinery
ENI Group



Inlet & Outlet DeNo_x
Alstom Power Group



CEMS Double Streams



CEMS equipped
with TOC & FTIR



Double O₂ Streams
Techint Group



CEMS & Heated Line
Alstom France



Safe Area Shelter
Alstom France



CEMS standard
Techint Group



Field Biogas Analyzer



Certified Laboratory for
Dust Analyzer Calibration



Four Streams
Cogeneration Plant



Dedicated Software
Certified by Public Dept.



TÜV Certified
Dust on-site Analysis



Stack Ultrasonic
Flowmetering



Multiple CEMS
Hellenic Petroleum



Double Streams CEMS
during cabling

Years of partnership with most important EPC contractors both Italian and Foreign have allowed TECNOVA HT to be very often a **SSS Single Source Supplier** for Field Instrumentation. Custom Process Automation solutions, Top-quality devices, documentation as per project specs, Factory & Site Acceptance Test, Extended warranty...are only few of TECNOVA HT milestones in engineering business.



Fail Action Integrity Test
Ras Gas on actuators



The legendary TECNOVA HT
Air Filters



Customized Reduction Panel
ENI Group



Wafer Type Heavy Duty
Turbine Meter & Totalizer



Customized O₂
Calibration Panel



Double EEx d Refractometers
BASF Group



2 streams OIW
FPSO Aquila ENI Group



Zone 1 Eex p Calorimeter
General Electric



1.2 MM USD V-Cone™
Sonatrach Project



1.1 MM USD V-Cone™
Saudi Aramco Project



12 V-Cone™ meters
New Steam Generation



DN 60" V-Cone™
KOC Booster Station



22,500 psi Tested
DP Transmitters, GE



> 500 Interlocking Systems
QAFCO 5 & 6



Refractometer Integrated Electronic
NESTE Oil Rotterdam & Singapore



Triple TOC Haz Area FAT
Saudi Aramco