FIELD INSTRUMENTATION & ANALYSIS SYSTEMS FOR PROCESS AUTOMATION

INTEGRATION OF CONTINUOUS EMISSIONS MONITORING SYSTEMS

INSTALLATION, TRAINING & SERVICE
The Company

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
The Company

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 was created in 1984 to widen the services offered to the customer. Its aim is

- To understand customer’s process requirements offering always BAT Best Available Technology solutions within the budget.

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

- To offer TKLS Turn Key Lump Sum System with no hidden cost.

- 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 \( \text{H}_2\text{O} \), \( \text{NH}_3 \), \( \text{HCl} \), \( \text{O}_2 \)...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: \( \text{H}_2\text{S} \), \( \text{SO}_2 \), COS, CS\(_2\)
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

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, NOₓ 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.

- Examination of the process problems together with the Customer’s technicians
- Complete turnkey offers in a short time
- Manuals, also in other languages
- Presentation of projects with the customer to Governative organizations
- Installation and start-up at the final Customer’s premises
- QAL 2 certification management
- Optimization of the Customer’s production process
- Remote control of instrumentation
- Demonstration of our range of products and their use
- Training, both in our headquarters and at the Customer’s premises
- After-sales service
- Maintenance contracts
- 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.
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.

### Commodity Groups

**Italian and Foreign Suppliers**

- **Conoflow**
  - ITT Industries
  - Actuator
  - Posizionators
  - Regulators
  - Trasducers

- **Eldridge Products, Inc.**
  - Thermal Mass Flow Meters
  - Stack Flow Meters

- **FineTek**
  - Level Switch
  - Flow Switch
  - Capacitance Level Transmitters
  - Magnetic Float Level Transmitters
  - Magnetostriuctive Level Transmitters
  - ByPass Level Transmitters
  - Ultrasonic Level Transmitters
  - Radar Level Transmitters

- **DYNAmeters**
  - Ultrasonic FlowMeter transit-time & doppler Atex certified.

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

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

K-PATENTS
- PROCESS INSTRUMENTS
  - Concentration in line Refractometer analyzer

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

LEMIS
- Density in line analyzer
- Portable density analyzer

McCrometer
- V-Cone™ flowmeter
- Wafer-Cone™ flowmeter

MIP
- Certified Single-Path Laser Dust Analyzer

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

optek
- Color in line Photometric analyzer
- Concentration in line UV VIS NIR analyzer
- Turbidity in line Photometric analyzer
- pH & Conductivity-meter

Pronova
- Biogas analyzer
- FOS / TAC portable analyzer

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

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

SensoTech
- Concentration in line Ultrasonic analyzer

Sintrol
- Dust in line analyzer
- Dust Switches
- Dust in stack certified analyzer

TRIMEC
- Pistons flow meters
- Oval flow meters
- Turbine flow meters
- Insertion Turbine flow meters

VAF
- 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 DeNox 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.