

Engineering Growth

Managing the manufacturing process of varied industries with ingenious support solutions



- Analytics
- Metering & Measurement
- Steam Engineering Solutions
- Terminal Automation
- Utility Management Systems (UMS)

About Chemtrols

Founded in October 1975, **Chemtrols Industries Ltd.** is a leading solutions' provider of B2B Solutions in the field of Process Analytics, CEMS, AAQMS, Gas Detection, Terminal Automation, Flow Metering for Custody Transfer of Liquids and Natural Gas, Measurement Products for Level, Flow, Temperature, Pressure, SCADA, Control and Process Automation systems. Our philosophy to nurture long-term associations with our esteemed customers and partners has helped us to build strong position in engineering and instrumentation services. As a specialized solution provider, we serve varied industries like Oil and Gas, Refining, Petrochemicals, Chemicals, Fertilizers, Pulp and Paper, Power Generation, Network Management, Mining and Minerals and Water & Waste Water Management.



Having successfully executed projects and delivered products to various industries in all major markets and companies across sectors in India and the international markets, we stand committed to serve the industry with the highest standards of excellence.

Our endeavour is to strengthen partnerships with customers, drive forward improvement efforts at all levels of the group and stimulate free movement of expertise between personnel. We focus on clear understanding of the project's scope, adopt a systematic approach, define the methodology and facilitate its rapid implementation. Our credo has been to identify and serve the changing needs of clients. We strive to add value to our clients' businesses through monitoring and management of processes, utilities and environment.

Manufacturing Facilities

- Located in Goa and Rabale (Navi Mumbai) in India.
- State-of-the-art Manufacturing facility with more than 1,00,000 sq. ft area.
- In-house strength of process knowledge and capability to offer solutions.
- ISO 9001 certified and accredited by CE, ASME, PED, etc.
- Qualified & Expert Engineering workforce, spread nationwide through our network offices.
- Presence in Sharjah and spread worldwide through Partners, Distributors and Agents.

Analytics

- PROCESS ANALYTICS
- CEMS
- AAQMS
- FLAME & GAS DETECTION SYSTEMS



Metering & Measurement

- FLOW
- METERING SKIDS FOR LIQUIDS & GASES
- LEVEL
- DENSITY
- TEMPERATURE
- MOISTURE
- MECHANICAL
- OXYGEN ANALYSERS



Steam Engineering

- PRDS&DUMPPRDS
- DESUPERHEATERS
- CONTROL VALVES
- TURBINE BYPASS VALVES



Terminal Automation

- TERMINAL AUTOMATION



Utility Management Systems (UMS)

- POWER GRID NETWORK MANAGEMENT
- POWER DISTRIBUTION NETWORK MANAGEMENT
- SCADA MONITORING & CONTROL
- RTUs & FRTUs for SUBSTATIONS & RMUs



Chemtrols established its Process Analytics Division in 1983 to provide solutions to Process/Stack/Ambient Analysis / Gas Detection System, as a totally integrated system and under a single point responsibility. We are one of the few companies in India, who have developed an in-house expertise in Analytics. This position has been earned through our emphasis on world class engineering, impeccable project execution and rendering quality services.

Process Analytics

Designed, engineered, supplied, installed, and commissioned 3,000+ Analyzer Systems globally to various industries like refineries, petrochemical, chemical, fertilizer, power and cement plants in India. Such projects involve, taking a turnkey responsibility for Application data review, Engineering, Construction, Integration and Installation in Analyzer House.

Product Quality/Blending

Supplied analyzer packages for blending of motor fuels (MS & HSD) consisting of NIR, total Sulphur, physical property, viscosity and density measurement. Analyzers delivered were complete with sample probes, sample conditioning, validation, and sample recovery systems.

Steam and Water Analysis (SWAS)

Expertise to provide solutions for accurate measurement and monitoring of Silica, Sodium, Phosphates, Calcium, Chlorides, pH, Conductivity, etc. to assure safety of Boilers and Turbines. Chemtrols' uniquely designed Boiler Blow-down systems, increases the efficiency of the Boilers.

Process Analytics Product Solutions

Stack & Heater Analyzers • Process Analyzers including Mass Spectrometer • Physical Property Analyzers / Blending Packages • Gas Chromatographs • Photometric Analyzers • Dust Concentration and Opacity Analyzers • Analyzer Management System • Steam & Water Analysis System Package • Integrated Analyzer package system with Shelter • HVAC, Split and Window Air Conditioning units for installation in hazardous and non-hazardous areas • Specialized Analytical solutions for FCCU, SRU, HDPE, CRACKER, VCM, MEG PP, Butadiene, H₂, NH₃, DRI plants based on Licensor philosophy.



Continuous Emission Monitoring Systems (CEMS)

Optimum solutions to the measurement and monitoring of various pollutants like SO₂, NO_x, CO, CO₂, NH₃, HCl, HF, THC, Mercury, etc. Based on the vast experience gained in such systems, Chemtrols today provide solutions on technology platforms of either Dilution Extractive, Hot Extractive or In-situ measurement.

Dilution System

Sample is extracted and diluted with zero air in the probe. Since, dilution takes place within the probe, there is no need for a heat-traced sample transportation line.

Hot - Wet Extraction System

Sample is extracted from stack / duct through a heated filter. Blow back arrangement provided for cases where there is high dust load. Extracted sample is transported using heat-traced line to the sampling system.

In-Situ Instruments

An in-situ gas analyzer sits directly at the measurement point on the stack / duct. Both, cross duct and probe measurement techniques are available.



Ambient Air Quality Monitoring (AAQMS)

Ambient Air Quality Monitoring Systems or AAQMS monitors the level of pollutants. From a single analyzer to complete turnkey systems (Both Mobile and Fixed) with shelters, hard wired or wireless data transfer to the pollution boards. Chemtrols provides a wide range of solutions to meet much of the Ambient Air Quality Monitoring demands.

Conventional Analyzers - SO₂, H₂S, NO_x, NH₃, CO, CO₂, O₃, and HC • BTX Analyzer - Benzene, Toluene, and Xylene • Particulate Monitoring - TSP, PM₁₀, PM_{2.5} • Sampling System • Calibration Systems • Meteorological Sensors • Data Acquisition and Management Systems • Analyzers designed according to US EPA regulations / equivalent regulations • Ethernet connectivity for efficient remote access • User-friendly interface with single button programming and large display screen • Well thought out of layout design for easy accessibility to components • Report generation on an hourly / daily / weekly / monthly / yearly basis.



Flame & Gas Detection Systems

Flame and Gas Detection systems with/without SIL certified controlling & PLC conforming IEC 61508.

These systems are also supplied wireless communication using HART/ ISA 100/ GSM wireless.

- SIL 2 certified Hybrid Sensors
- SIL 3 certified Controllers
- Point IR Gas Detectors
- Open Path IR Gas Detectors
- Catalytic Detectors
- Electrochemical Detectors
- Metal Oxide Semiconductor Detectors
- Flame Detectors
- Photo Acoustic Detectors
- Ultrasonic Gas Leak Detectors



By virtue of our own manufacturing range of products and partnerships with various leading global instrumentation companies, Chemtrols is uniquely placed as a solution provider for simple application of Level or sophisticated custody transfer applications in Flow, involving high level of complexity.

- Flow
- Metering skids for Liquids and Gases
- Level
- Density
- Temperature Elements and Transmitters
- Pressure and Differential Pressure Transmitters
- Moisture Measurement
- Mechanical Sampling Systems.
- Oxygen Analysers
- Conductivity Measurement in light oil products
- Gas Regulators - Pilot & Direct Operated

Flow

Chemtrols supplies wide range of Flow Meters for Liquids and Gas flow measurement. In addition, a state of art integration capability helps us seamlessly integrate the components of flow metering and control with skid manufacturing, to meet the demands of the Oil & Gas industry. These systems conform to relevant AGA Standards and API regulations, to meet the demands of custody transfer applications of gases and liquids. These include Natural Gas metering skids, Pressure reducing/ regulating skids with Filtering & Gas Heating, Odourising skids, etc. and Liquid metering skids in Oil and Gas Industry, using various flow measurement technologies.

<p style="text-align: center;">Chemtrols FLOW Measurement Solutions</p>	Variable Area/ Rotameters
	Electro Magnetic Flow Meters
	PD Meters for Custody Transfer
	Ultrasonic Clamp-on Flow Meters
	Turbine Flow Meters
	Coriolis Mass Flow Meters
	Vortex Flow Meters
	Ultrasonic Flare Gas Flow Meters
	Ultrasonic Process Gas & Custody Transfer Meters



• Electromagnetic Flow Meters



• Metal Tube Variable Area Meters (Rotameters)

Metering Skids for Liquids & Gases



Level

- Buoyancy type/Displacer Level Transmitters for Level, Density and Interface Measurement

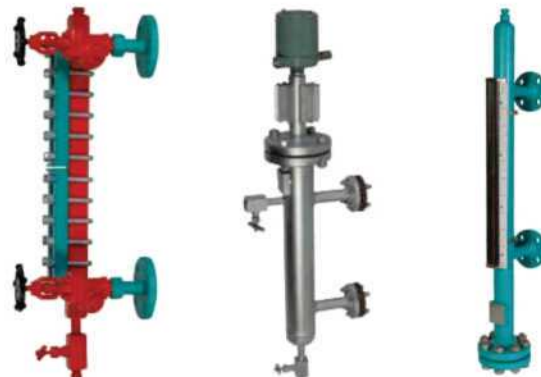
Level Gauges

- Reflex Level Gauge
- Magnetic Level Switch
- Magnetic Level Gauge



Level Switches

- Displacer Operated Level Switch
- Float Operated Level Switch
- Diaphragm type and paddle type level switches



- Guided Wave Radar Level Transmitters
- Admittance Type Level Switches

Density

- On-line high Accuracy Density transmitters for Hydrocarbons.
- Online Non Contact Nucleonic Density Measurement Systems

Temperature

Temperature elements like RTD & Thermocouples, Switches and Transmitters, with a wide range of connection fittings and Thermo-well assemblies. Specials for winding and bearing temperature measurement.

Moisture

Nucleonic Gamma Ray Moisture Analysers for Coke

Mechanical • Closed Loop Sampling Systems •

Oxygen Analysers

- Zirconia Oxygen Analysers for Online Oxygen Measurement in Stack Gas



Complete range of DeSuperheaters, Pressure Reducing & DeSuperheating Systems (PRDS) for steam, including interconnecting Piping in CS/P11 /P22 with all instruments, Valves, manifolds, Temperature and Pressure Control loops. Chemtrols PRDS/ DeSuperheaters are available with CE marking. Control valves are manufactured in-house for steam and water service.

Pressure Reducing and DeSuperheater [PRDS] • Turbine Bypass Valves [TBV]• Control Valves for severe applications of Water & Steam. • DeSuperheaters, Dump PRDS.

PRDS

PRDS: Pressure Reducing and DeSuperheating System.

Steam PRDS is used for Steam Conditioning Services for reduction of pressure and temperature of steam. It is a combination of Control Valve for the pressure reduction purpose & atomizing nozzles, through which water is sprayed into steam for reducing the temperature.

- Split PRDS: separate PRV (Pressure Reducing Valve) and DeSuperheater
- Combined PRDS: Both PRV and DeSuperheater in a compact single unit

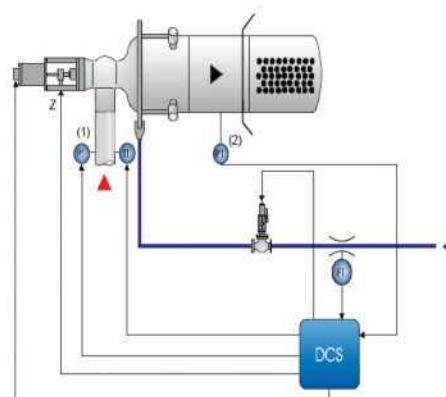
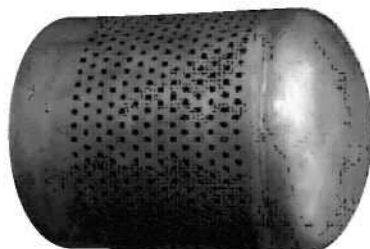
Combined PRDS helps to save the space and also cost of piping, as the unit is single and compact. For PRDS control system, there will be one Pressure loop and one temperature loop. Pressure control system includes pressure sensor, pressure transmitter, controller, IP Converter, Pressure gauges, etc. Temperature control system includes temperature sensor, transmitter, controller, IP Converter, Temperature gauges, etc. Spray water quantity required for the temperature reduction of the steam is controlled by separate spray water valve.

DUMP PRDS

Designed to achieve final pressure reduction and allows steam to expand into the condenser.

Pressure class : Up to ANSI 2500#. «IBR certified.

- Compliance to ASME Section VIII, Div. I, 2010 • International Stampings, PED, CE on request, for export jobs.



DeSuperheaters

Steam DeSuperheater is used to spray water into steam, so that it gets mixed, resulting in reduction in the temperature at the outlet. DeSuperheater can be classified into two:

a. Non-Integral type DeSuperheater: DeSuperheater nozzle and water valve are separate units **b. Integral type DeSuperheater:** DeSuperheater is in-built with actuator, so that there is no need of separate spray water valve.

Nozzles are also classified into: **a. Venturi type:** where nozzle orifice is fixed irrespective of flow variation **b. Variable orifice:** where orifice area opening will vary according to the flow and pressure variations.



Control Valves

The CGV Series control valves are suitable for handling steam and water. The valve body is designed for smooth flow profile, which minimizes pressure loss and provides better Cv and rangeability.

Features

Body	Inline Globe, Drag design
Sizes	from 1" (25NB) to 12" (300NB)
Rating	Upto 2500#
Materials	F11, F22, F91
Actuator	Diaphragm, Piston Cylinder



Turbine Bypass Valves

Benefits

- PRDS used in turbine bypass applications help to protect the turbine during start-up, power trip and also for part load generation. Turbine by pass valve prevent venting of steam into atmosphere and allow the steam to be dumped into condenser, so that energy can be saved to generate high temperature Boiler Feed Water.



Applications: • Thermal Power Plants and Cogeneration Plants • All process plants like Fertilizers, Petrochemical, Refineries, Pharmaceuticals, Sugar Pulp & Paper, Steel, etc.

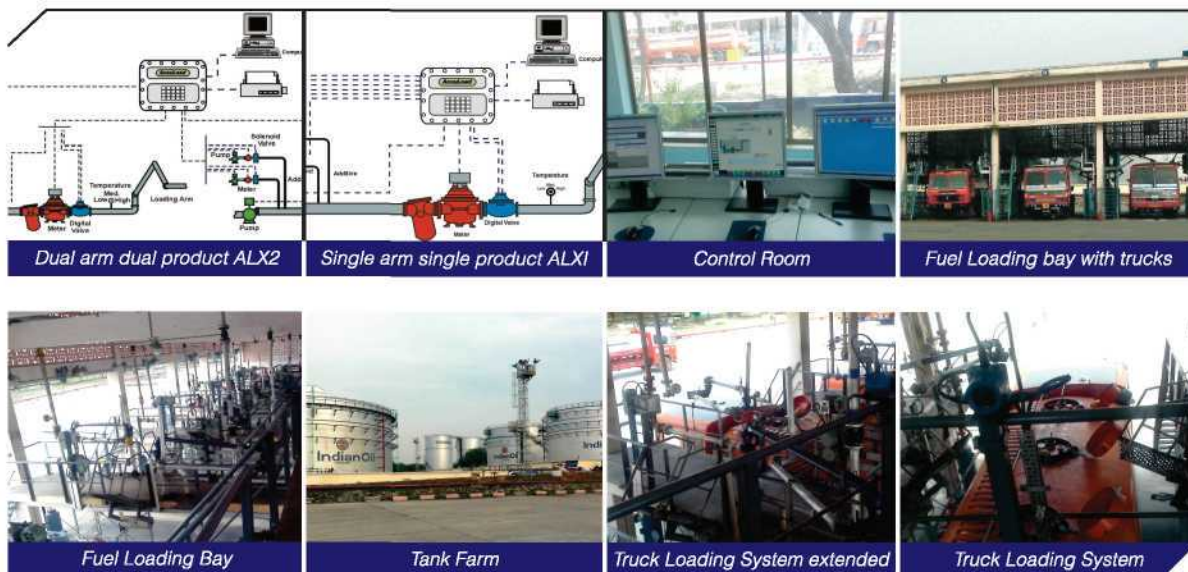
Specifications: • Inlet Size: 3" to 20" • Outlet Size: 4" to 64" • Pressure class: ANSI 150# to ANSI 2500# • Material: A182F12 / A182F22 / A182F91 / F92 • Rangeability up to 1 : 100 • Actuator type: Pneumatic, Hydraulic, Electro-hydraulic, Electric. • Trim type: Multi stage with perforated cage type • Body spherical form, with transitions radially designed with surfaces nearly without marks.

Terminal Automation Systems find applications primarily in Trucks /Wagon fuel loading. Fuels include Motor Spirit (MS), Diesel, Aviation Turbine Fuel (ATF), Naphtha, Superior Kerosene Oil (SKO), Furnace Oil, (Diesel High Pour Point) DHPP, Liquefied Petroleum Gas (LPG), Chemicals.



The Flowmeters used are generally PD Meters or Coriolis Mass Flowmeters. The Batch Controllers supplied conform to OIML R117 capable of simultaneous Additive Injection and Ethanol Blending with Ratio Control and Our AMC includes hassle-free service at all times leading to enhanced performance and higher productivity.

Tank Farm Management with Primary Secondary Radar gauges and overspill relay are SIL2, approved with software integrated to TAS.



Security Surveillance

We deliver solutions for security surveillance, CCTV, Access Control systems for public utilities, oil depots and terminals.

Metering Systems Highlights

- Strainer and Air Eliminator
- Top Loading Arm with arm position switch
- Earthing Relay
- Radar level gauges
- MOV's, MOV power station
- UPS
- Density meters
- Additive Block
- Metered Additive system linked with batch controller
- Metered Ethanol blending system linked with Batch controller
- Servers, Network switches, Printers
- Piping, cabling, accessories, Gas detection systems
- PD Meters, Batch Controllers, Digital Valves, Card Readers.
- Main product loading with simultaneous additive and blending facility
- Single point responsibility including tank farm management system upto SIL 3, PLC
- Proven TA Management Software for TTL, TWL & TFMS with SAP connectivity.
- Well-trained manpower for Project execution and AMC.

Chemtrols provides integrated solutions to understand the demand for energy and suggests methods to optimize it with the available resources. Our RTU and SCADA / EMS/DMS solutions integrate the substation, feeder and field input data with the management information system.

SCADA/EMS System

The SCADA/ EMS Systems help utilities in managing their large state-wide and region-wide **Power Grid Transmission Networks** from Load Dispatch Control Centres. We offer SCADA/EMS solutions with fully operational Backup Control Centres, for highest availability.

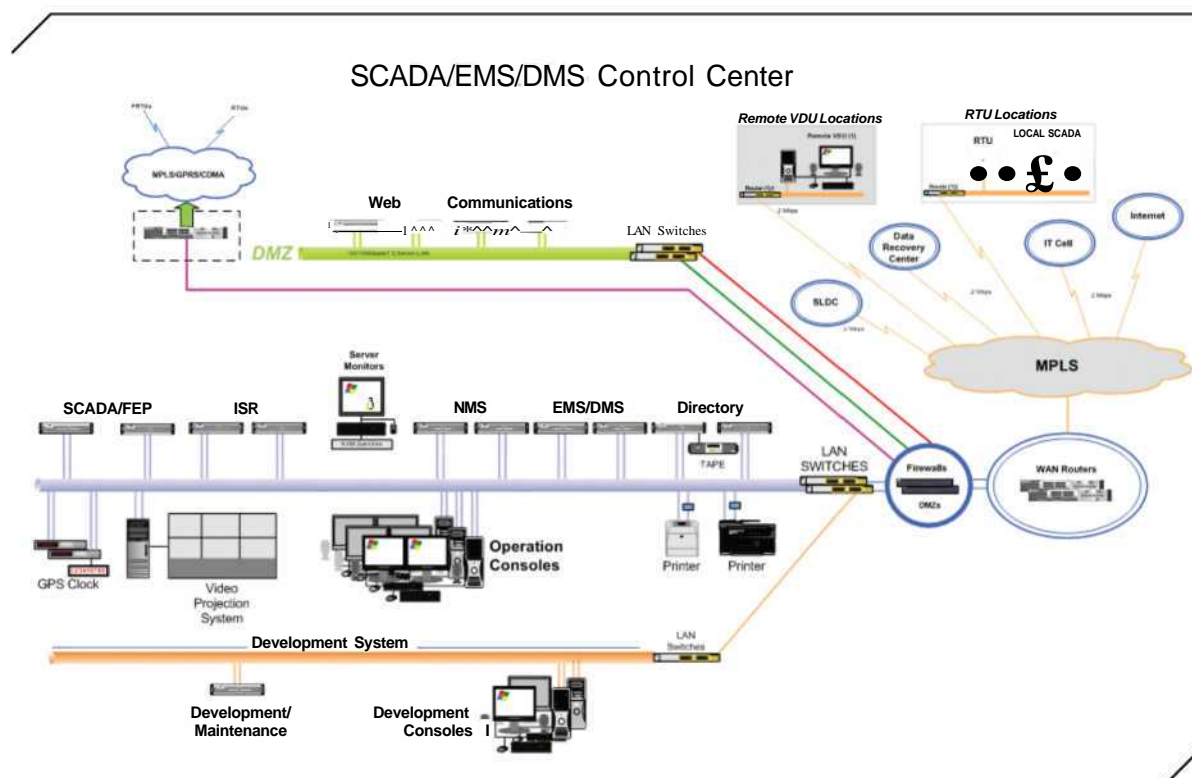


SCADA/DMS System

The SCADA/ DMS Systems help distribution utilities in effectively managing & maintaining city-wide **Power Distribution Network**.

SCADA Software for Substation Monitoring & Control

We provide SCADA System Software solutions for Local or Remote Monitoring & Controlling of single/multiple Transmission/Distribution Substations.



Remote Terminal Units (RTUs) for Substations / RMUs

We provide RTUs for Monitoring & Controlling equipment in Transmission/Distribution Substations, Ring Main Units (RMUs), Distribution Transformers etc. These are scalable RTUs ranging from large 400kV Substations to 11kV Ring Main Units. The RTUs provide extensive communication capabilities over Serial, LAN, GSM/ GPRS/ 3G/ CDMA Wireless networks, through library of industry standard communication protocols; such as IEC101/104, DNP3, Modbus, IEC61850 etc. The RTUs are capable of acquiring data from Sub-stations, and are rugged & field proven in design, complying to international EMI/ EMC standards.



Chemtrols Industries Limited is committed to meet or exceed customers' expectations by providing quality products and services. Service support is a vital aspect of Chemtrols' Philosophy. We continue to keep our focus on rendering prompt and efficient after sales services, for all products and solutions and also offer training on products, operations and services.

We further engage in rendering end-to-end Annual Comprehensive Maintenance Contracts, Sales & Services of all items to our clients on contractual basis. We are backed by a team of experienced Process and Instrumentation trained professionals, who have profound expertise in this domain.



AMC & CAMC



24X7 Support



Training



System Integration

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