

# PROCESS AUTOMATION & CONTROL SYSTEMS

**PROCESS AUTOMATION & CONTROL SYSTEMS** vertical of VSLPRAYAG - VODALUFT Associate [M/s. Controls & Systems] was born of the vision to provide excellence and innovation in instrumentation. The mission statement of Controls & systems is to develop Automation solutions based on sound scientific principles which are fundamental in improving the quality and efficiency of processes in user industries.

Design, Development of Automation solutions is done by a core team of engineers under the able & strong leadership of our Associate Director, Mr. Santhamurthy with more than two decades of experience in building and Industrial Automation systems. All projects that are undertaken are executed under their expertise right from Design, Detailed Engineering, Procurement, Supply up to Erection & Commissioning .

All the systems developed under this vertical, incorporates the latest Microprocessor based instrumentation for automation. This is done in agency tie up & close association with World leaders as well as, well known brands in building controls & industrial automation such as

- A. M/s. Siemens
- B. M/s. Yokogawa and
- C. M/s. Honeywell

## *Process control for refining Crude Oil*



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# **AUTOMATION & CONTROL**

*SYSTEMS INTEGRATOR*





# Instrumentation & control

## GAS ANALYSER/DETECTOR



Detailed Composition Analysis – Routine analysis of hydrocarbons (C1-C4 chain length hydrocarbons with C6+ as back flush) with other impurities (O<sub>2</sub>, N<sub>2</sub>, CO<sub>2</sub>, H<sub>2</sub>, He and sulfur containing hydrocarbons).

- Monitoring process efficiency – Throughout your network, standardize refinery gas analysis using pre-configured laboratory solutions that provide precise, reproducible, reliable data.
- Fit to purpose solutions – Adapt the analyzer to meet your specific monitoring requirements.
- Data for compliance and control – Systems provide accurate and actionable data that allows your team to make decisions to maintain efficiency, optimize operational expenditures, and maximize profitability.

## Actuators & control valves

Metal and soft seated rotary control, on-off and ESD valves together with application specific intelligent valve controllers and Neles FieldCare valve condition monitoring can answer all these challenges with wide margins of assurance.

### Heater dampers automation

**Challenge** – Heater efficiency is measured in accordance of excess O<sub>2</sub> in flue gases. In a customer heater the excess O<sub>2</sub> was 4.5 %, which resulted in poor heater performance in the use of fuel gas. Damper actuation had control problems, like hysteresis, overshooting and response time. The dampers were mostly operated manually.



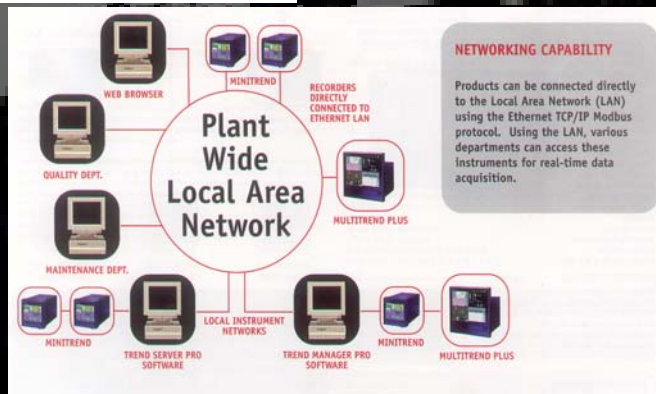
# Recorders and Data Acquisition

## Paper less recorders



### Features

- Paperless Recording with Real-Time Measured Data Display
- 2, 4, or 6 Input Channels upto 64
- Ethernet 10-Base T Connection for FTP and Web Compatibility
- Up to 6 Digital Inputs and Digital Outputs
- PC or Front Panel Configuration
- Data Storage to 3.5" (1.44 MB) Floppy Disk
- Standard DIN Mounting for direct replacement of 100mm Chart Recorders



- 24 Analog inputs
- Accuracy 0.05%
- Configurable chart speed
- Options to include up to 36 logic inputs, 48 alarm s inputs
- 36 relays, communication, math functions, up to 8 Retransmission outputs, Data logging
- Roll or fanfold chart on the same cassette
- Periodic Reports on chart, comm or PC

## Strip chart Recorders



### Features

- Accuracy  $\pm 0.35\%$  or  $\pm 0.1\%$  Span (by Model)
- Up to 2 Inputs
- Fully user configurable, no jumpers or rotary Switches
- Universal power supply
- Wide choice of output types: SPDT, Solid state relay, and open collector outputs, plus alarms
- Optional digital inputs with control or alarm options for switching control modes from a remote contact closure

## Circular Chart Recorders



# Process Control

## PH/TDS/Conductivity control:-

A range of analyzers and transmitters for use with to measure pH,ORP,or Sodium,chloride or Flouride.

\* Integral electronics/sensor design,one or two point calibration,auto Buffer recognition

## PH electrode with transmitter



## Conductivity/TDS/salt concentration analyzer



Temperature compensation unique to each reagent  
Automatic calculation for percent rejection and percent passage, ratio, and difference  
Concentration measurement for specific chemicals  
A flexible display that reflects the appropriate unit of measurement TDS, conductivity, resistivity, concentration, calculated values.

## Boiler/Furnace –Temperature,Steam pressure,Steam Temperature ,dying process controller etc:-

- Clear and informative operator interface
- Easy to setup and operate
- Straightforward installation and maintenance
- Single-button tuning for precise control
- Fuzzy logic overshoot surpression



Easy Connection  
In-Plant Operation

# Field Instruments

## Multi Variable Flow Transmitter & switches



- **SMV 3000 Multivariable Transmitter.** The SMV 3000 measures differential pressure, absolute pressure, and temperature to calculate compensated flow rates. Because all of these variables can be measured with a single instrument fewer pipe intrusions are necessary, reducing the chance of leaks. SMV 3000 can reduce the cost of calculating compensated flow rates by as much as 60 percent.

Measuring pressures, temperatures, and flows effectively, accurately, and economically are the hallmarks of Honeywell Smartline Transmitters. This comprehensive range of technically advanced field instruments offers major advantages for improving your process, complying with regulations and attaining high-quality standards. In addition, the life-cycle costs of buying and maintaining these sturdy instruments is lower than other comparable products.

## Pressure transmitter and switches



## Humidity and Temperature transmitter



Smart Temperature Transmitters. Smart technology (Accur. +/- 0.01% of span-Digital STT350). Temperature by RTD or TC. Support for 4 wire RTD and differential measurements. Head, DIN rail or flame proof housing mount. Loop powered.



# Coal-Fired Power Plant

## Energy Management Systems

### Maximum Demand controller



Minimize your energy costs by controlling your Maximum demand with this low cost controller

Non-domestic electrical power users often have to pay a maximum demand charge in addition to the usual charge for the number of units consumed.

### Power meter/load manager



Single unit capable of measuring single or multi-phase power lines (up to 3-phase / 4-wire lines)

### KW hr meter



### Automatic Power factor controller



### Power transducer



### Precise motor frequency regulation

variable frequency drives uses the latest IGBT frequency inverter technology for more efficient motor operation. These compact, lightweight drives are easy to install

and provide significant energy savings. Plus, they're built to last, allow easy commissioning and start-up



# CONTROL SYSTEMS

## Intelligent Fire Alarm systems

Intelligent smoke sensing in textile area  
spark detector  
Beam detector  
Thermal detector  
Co2 detector  
WRS , blom room , cotton, yarn gowdown  
And other waste collection area



## Intelligent Advantages



1. Early Detection Minimizes Losses
2. Alarm Verification to rule out false and nuisance alarms
3. Exact pinpointing of location helps accelerate fire fighting operation
4. Intelligent annunciation facilitates early and easier evacuation.
5. Continuous Monitoring and health check of systems for reliability and easy maintenance
6. On-line diagnostics to check the state of each detector periodically
7. Systems available for small, Medium or large complexes

