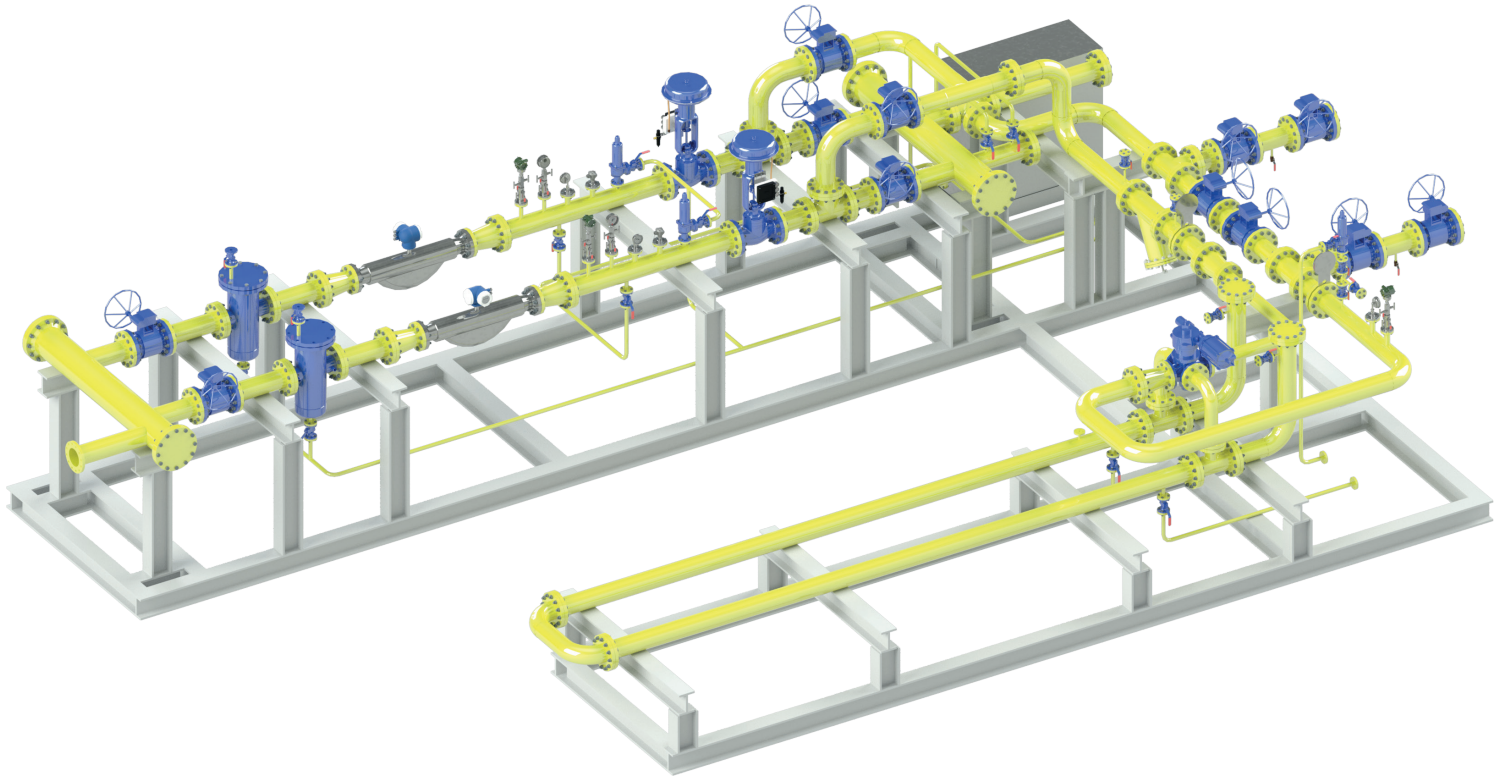


# Metering Skid (Liquid & Gas)



• Sensing • Measuring • Controlling • Automation

**UK | USA | UAE | INDIA | ITALY | IRAQ | KSA | OMAN | TURKEY**

[www.autocontrolpi.com](http://www.autocontrolpi.com)



## About Us



Autocontrol Process Instrumentation (API) Originates from Autocontrol Technologies, a Company established in 1994 Italy.

Autocontrol Process Instrumentation (API) provide the complete Design, Engineering, Integration, fabrication, Technical support, Test, Commissioning and handover for all package system for Oil & Gas, Petrochemical, Chemical and Power industries as per the customer requirement. We also focused on Sensing Technologies, Measuring Instruments, Controlling Equipment, Automation Systems and all related Accessories. While API's activities cover a wider range of products, services and packages.

API's products are approved by International and National Oil and Gas Operators, Energy, Utilities and Industrial Companies.

We study and research on your requested systems and utilize best and competitive Technologies and instruments to meet your requirements.

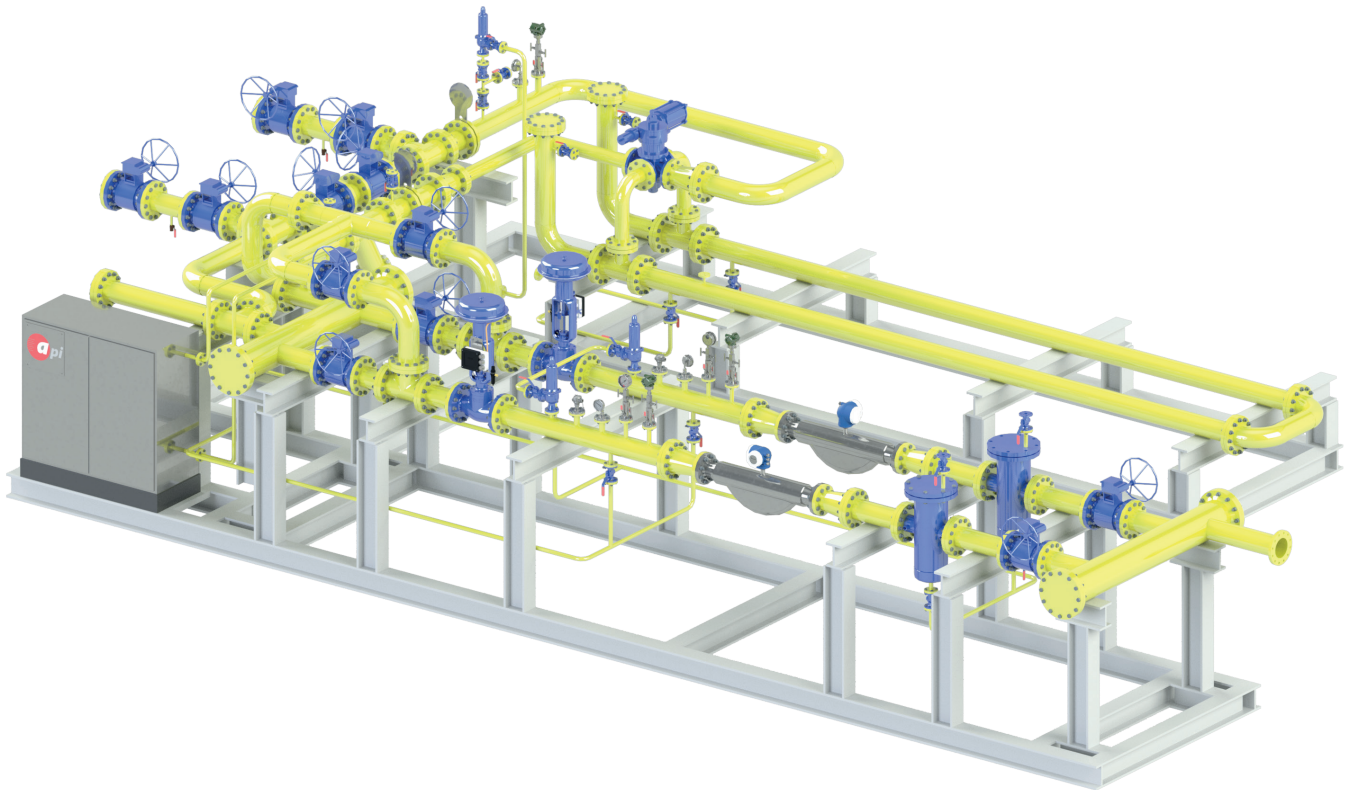
For more information, please ask for a copy of our integrated company profile, or visit:

[www.autocontrolpi.com](http://www.autocontrolpi.com)

Whatever you need, we can sense it...  
Measure it... Control it and if necessary...  
automate it....



## Metering Skid



Autocontrol Americas Inc. Offers metering skid for Liquid & Gas measuring based on customer requirements where fiscal metering / custody transfer solution are pre-assembled on a steel structure required additional calibration options (proving system) shall be included in skid compliance with OIML & API standards.

During custody transfer, accuracy is of great importance to both the company delivering the material and the eventual recipient, when transferring a material Hydrocarbons..

CTM - Custody Transfer Meter is defined as a meter designed, installed, and operated to meet the requirements for custody transfer as per standard measurement.

Custody transfer requires an entire metering system that is designed and engineered for measuring the product application, not just flow meters.

The custody transfer metering skid is an integrated piping system supported on a structural base. It accommodates all primary measurement instruments including the flow meters, pressure transmitters, temperature transmitters and the MOV's, Provers, switcher straight length.

Flow profiler, piping and structural design, fabrication and testing shall be in line with project specifications and applicable codes and standards keeping in view the functional requirements.

The metering cabinets are located in the control room in a safe area. The panel houses the flow computers, station computers, GC controllers, PLC, HMI and Ethernet switches with interface to DCS. All flow and energy calculations are done by the flow computers which collect data of various signals from skids and analyzer house. The station computers compile the station values and generate reports.

# Metering Skid

## Standards:

### API (AMERICAN PETROLEUM INSTITUTE)

- API Manual of Petroleum Measurement Standards; All Chapters (1~22) Specially:
  - Chapter 1 "Vocabulary "
  - Chapter 4 "Proving Systems "
  - Chapter 5 "Metering "
  - Chapter 6 "Metering Assemblies "
  - Chapter 7 "Temperature Determination "
  - Chapter 8 "Sampling "
  - Chapter 9 "Density Determination "
  - Chapter 11 "Compressibility Factor for Hydrocarbon "
  - Chapter 12 "Calculation of Petroleum Quantities"
  - Chapter 13 "Statistical Aspects of Measuring and Sampling"
  - Chapter 18 "Custody Transfer"
  - Chapter 21 "Flow Metering using Electronic Metering system"
- API Std. 598 "Valve Inspection and Test" or ANSI/FCI 70-2 API Spec. 6D "Specification for Pipeline Valves".
- API Std. 1104 "Standard for Welding of Pipelines and Related Facilities".
- API 6D: Specification for Pipeline Valves.
- API 6FA: Specification for Fire Test for Valves.

### AGA (AMERICAN GAS ASSOCIATION)

- AGA Report No.3: Natural Gas Fluid Measurement.
- AGA Report No.7: Measurement of Natural Gas by Turbine Meters.
- AGA Report No.8: Compressibility and super compressibility for natural gas and other hydrocarbon gases. (1994).
- AGA Report No.9: Measurement of Gas by Multi - path Ultrasonic Meters (2007).
- AGA Report No.10: Speed of Sound in Natural Gas and Other Related Hydrocarbon Gases (2003).

### OIML

- OIML R 117: Gas Dynamic measuring systems for liquids other than water.
- OIML R 137: Gas Meters.

### ISO (INTERNATIONAL ORGANIZATION FOR STANDARDIZATION)

- ISO 5168: Measurement of fluid flow – Evaluation Uncertainties.
- ISO 9000: Quality Management Systems Fundamental and vocabulary.
- ISO 9001: Quality Management Systems Requirements.
- ISO 9001: Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation and Servicing.
- ISO 6976:2005: Natural gas – Calculation of calorific values, density, relative density and Wobble Index from Composition.

## Metering Skid

### Metering Skid:

API can provide different types of flow measuring systems for a wide range of customer's

#### Applications:

- Custody Transfer and fiscal Gas Metering Systems
- Metering of petrochemicals and hazardous substances
- Heavy fuel oil, crude & high viscose liquids and light liquids metering
- Metering Systems for Loading and Unloading facilities with high operating temperature
- Cryogenic metering systems with low operating temperature

### Prover System:

To prove the performance, accuracy, repeatability and linearity of all proposed measuring systems, we supply a highest technology and suitable prover for each application including:

- Bi-Directional Pipe Provers
- Master Meters
- Master Provers
- Compact Provers

### Sampling & Analyzing System:

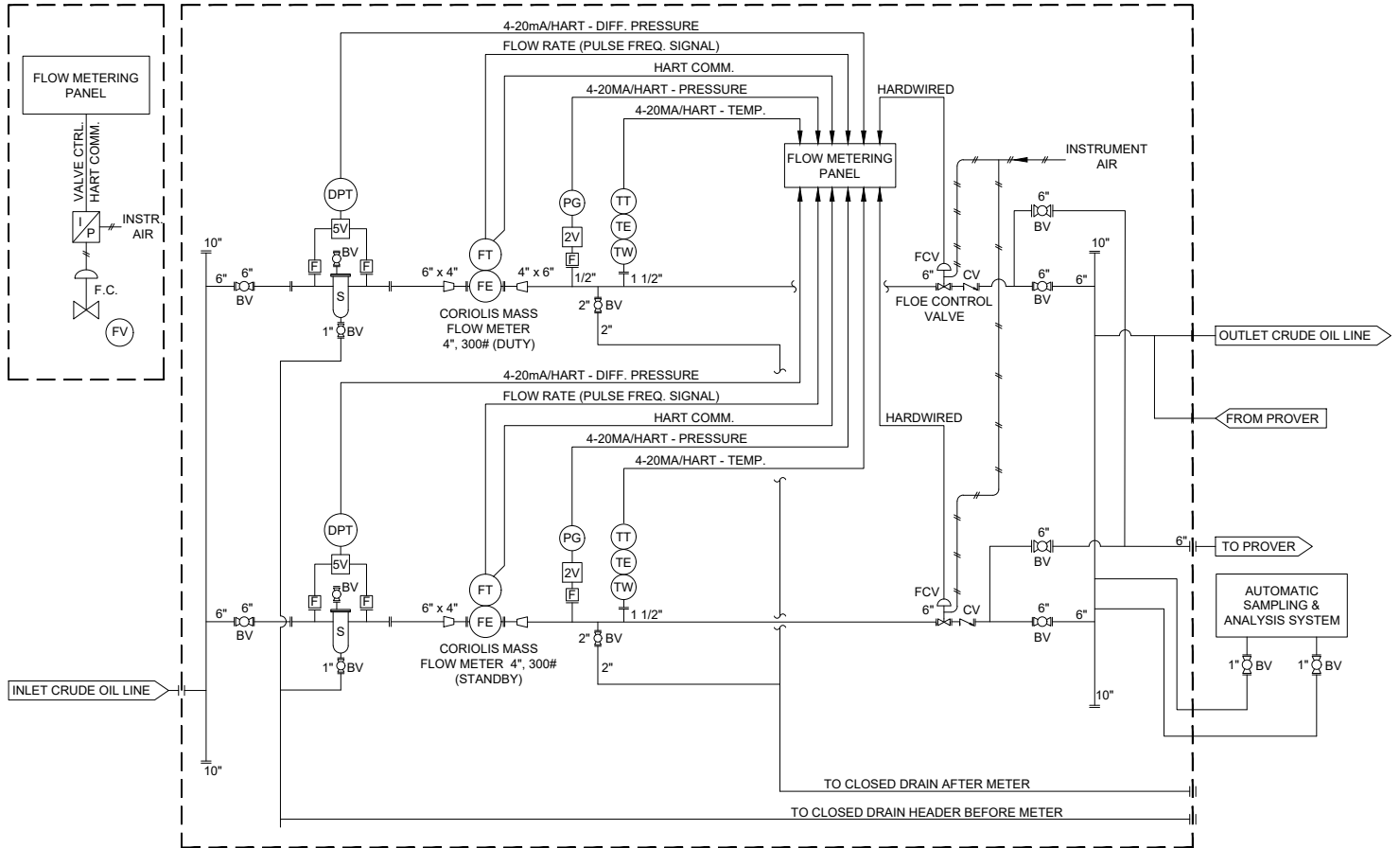
We in API design and provide sampling and analyzing packages to complete our measurements systems and ensure our customers about the best performance of the proposed systems and related accuracy for both liquid and gas applications. We can propose online sampling and analysis systems as well as providing required facilities to take continues and homogeneous samples as per our customer's requirements and international standards using high technology and quality instruments and devices.

We can offer the following sampling & analyzing system based on customer requirement as follows:

- Online Process Analysis
- Offline Process Analysis
- Fast Loop Sampling Systems
- Jet Mixing Systems

# Metering Skid

## Typical P&ID for Metering Skid:



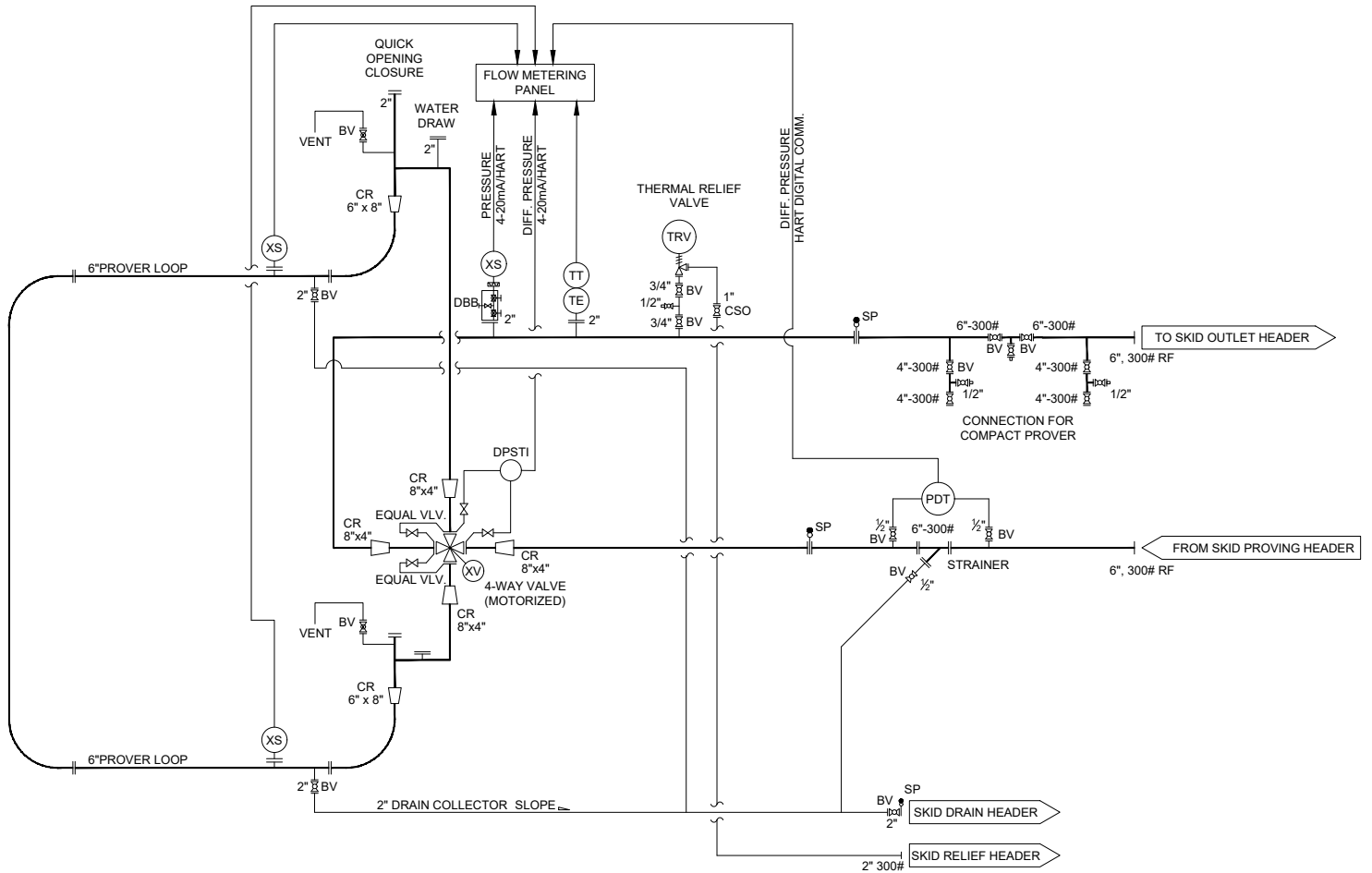
## Legends & Symbols:

	: BASKET STRAINER		: TEMP. TRANSMITTER
	: CORIOLIS MASS FLOW METER		: TEMP. ELEMENT
	: BALL VALVE		: THERMOWELL
	: DBB VALVE		: PRESSURE TRANSMITTER
	: 5-WAY MANIFOLD		: PRESSURE GAUGE
	: 2-WAY MANIFOLD		: SPECTACLE BLIND
	: THERMAL RELIEF VALVE		: CONCENTRIC REDUCER
	: CHECK VALVE		: FLOW ELEMENT
	: THERMAL RELIEF VALVE		: FLOW TRANSMITTER



# Metering Skid

## Typical P&ID for Metering Skid:

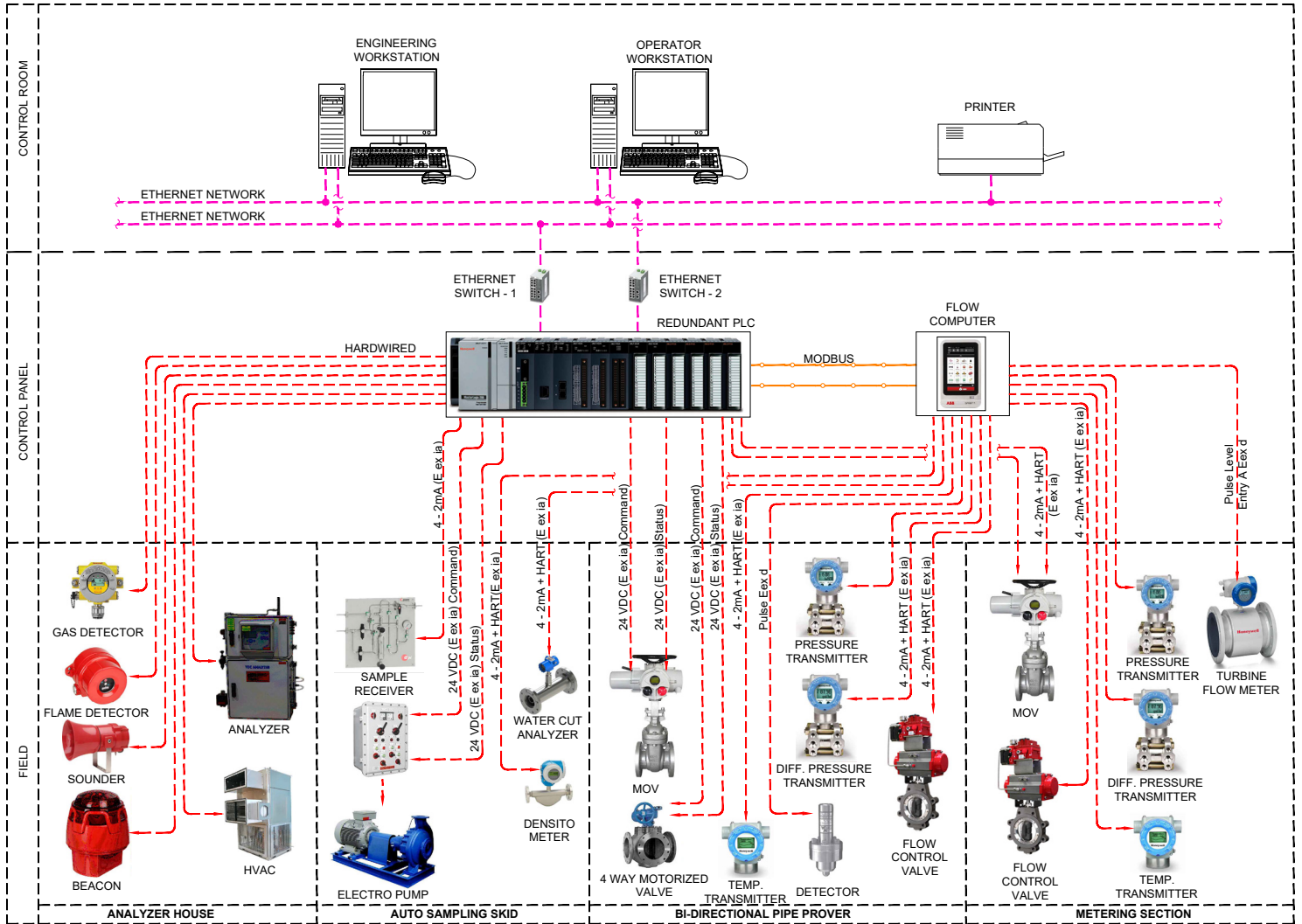


## Legends & Symbols:

	: BASKET STRAINER		: TEMP. TRANSMITTER
	: CORIOLIS MASS FLOW METER		: TEMP. ELEMENT
	: BALL VALVE		: THERMOWELL
	: DBB VALVE		: PRESSURE TRANSMITTER
	: 5-WAY MANIFOLD		: DIFF. PRESSURE TRANSMITTER
	: 2-WAY MANIFOLD		: PRESSURE GAUGE
	: THERMAL RELIEF VALVE		: SPECTACLE BLIND
	: CHECK VALVE		: CONCENTRIC REDUCER
	: THERMAL RELIEF VALVE		: FLOW ELEMENT
	: FLOW TRANSMITTER		: FLOW TRANSMITTER

# Metering Skid Package

## System Architecture:





## Installation, Commissioning & Service

### Installation & Commissioning:

Many of our clients have engaged us in the installation and commissioning of the equipment we supply and can therefore be fully confident in site system performance, safety and reliability as was engineered.

### Benefits:

- Turn-key, fully seamless integrated solution, one stop shop with added advantages of foresight.
- Single point of contact and accountability
- Installation and commissioning by engineers experienced and cognizant with the platform and design and who can deliver Innovative Solutions to unexpected site issues as are often encountered.
- Bespoke arrangements
- Immediate and full access to the project engineering team responsible for the application design to advise in any unforeseen site Implementation problems at no additional cost.

### Key Business Benefits Derived:

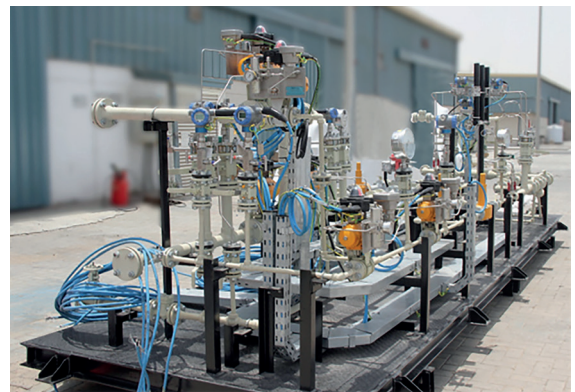
- Confidence in effective and competent installation and commissioning with easy access to engineering base support
- Contributes to lifetime performance, functional efficacy and safety.
- Cost effective, simplifies management overhead with reduced contractual risk.
- Ensures against third party systematic errors with immediate and/or potential later incurred costs.

### Our Service offering:

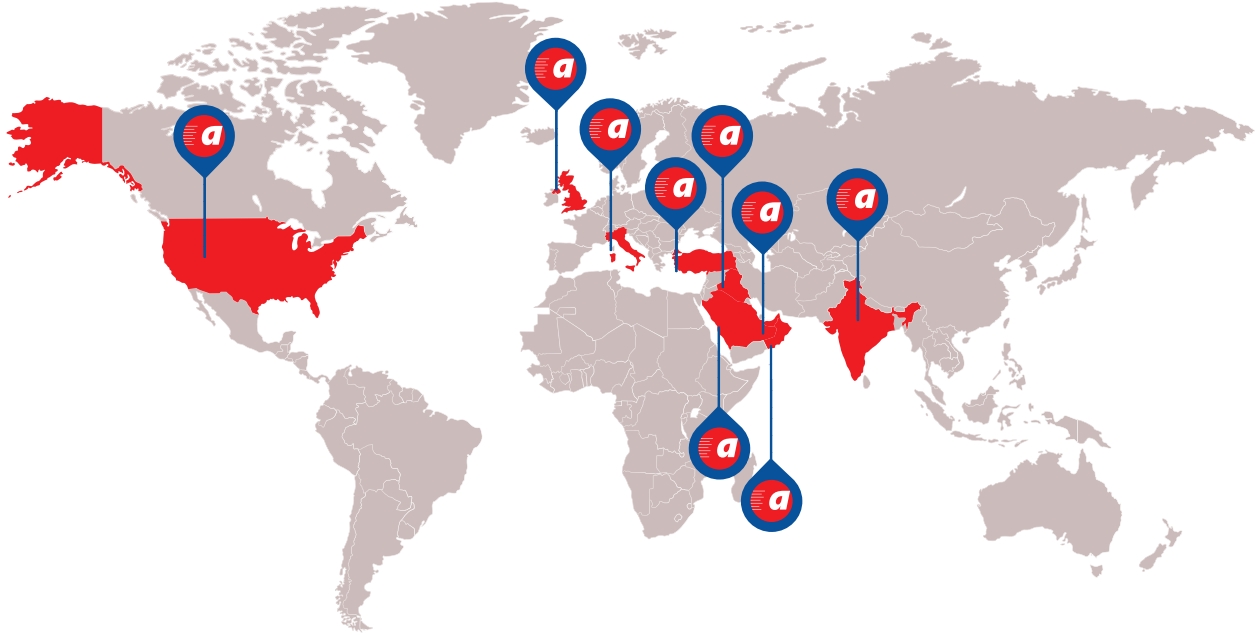
The system you have purchased has been engineered, manufactured and tested to the highest standard. However, we recognize that The system will serve its purpose to the maximum efficacy where competent engineering is engaged throughout its entire life cycle and not just up to point of delivery and later application of highly competent operations and maintenance. An engineering solution that is well designed, built and tested can easily be compromised by insufficiently enlightened installation or Commissioning that can act in detriment to the longer term system performance, safety, reliability and application. It is more often So, as an imperative, that installation and commissioning requires extensive knowledge of the platform, application and site Integration.

API works with its partners to offer you complete fabrication services for skid-mounted / modular equipment, from the supply of material, through fabrication, inspection, testing, and assembly, including surface finishing, electrical and instrumentation work, insulation, and packing.

We deliver Skids to Petrochemical, Oil & Gas, and Water Industries, with certified welding procedures and professional experience enabling us to work with a comprehensive array of materials, including carbon and low temp carbon steel, stainless and alloy steels, as well as HDPE and GRE. Integration, Assembly, Calibration & Testing of Pressure, Temperature, Level & Flow Instruments including Tank gauging solutions.



## Our Global Presence



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