

# GAS PIPING & UTILITIES PROJECTS



We introduce ourselves as one of the leading manufacturing of Laboratory Gas Handling and Control Systems for various Inert, High Purity, Flammable and Non Flammable Gases. We design, supply, install & develop Turnkey projects for all types of Pharma, Chemicals, Petroleum, Food & Pesticides Laboratories our scope includes

- ♦ Supply & Installation of gas piping & utility system
- ♦ Gas detection system
- ♦ Low gas alarm panel system
- ♦ HPLC drain system
- ♦ Gas cabinete & Gas bank shed
- ♦ AAS & ICP Ducting & Exhaust
- ♦ Gas cylinder automation

Under PCi we have our own manufacturing brand called P-Lok, Under P-Lok we manufacture various products like:

- ♦ Change Over Panel
- ♦ Regulator
- ♦ Valve & Micron Filter
- ♦ Flexible Hoses
- ♦ Tube & Pipe Fitting
- ♦ Clamp / Support / Tagging

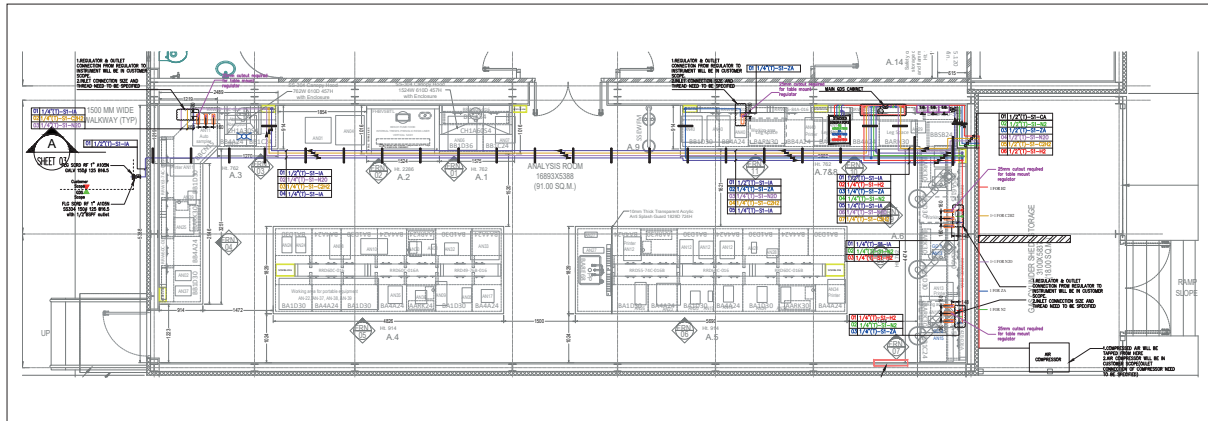
We undertake the total Turnkey projects for High Purity Gases, Utilities, Cylinder Storage Systems, Cylinder Cabinets and Drainage Systems.

Some of the our prestigious customers are:

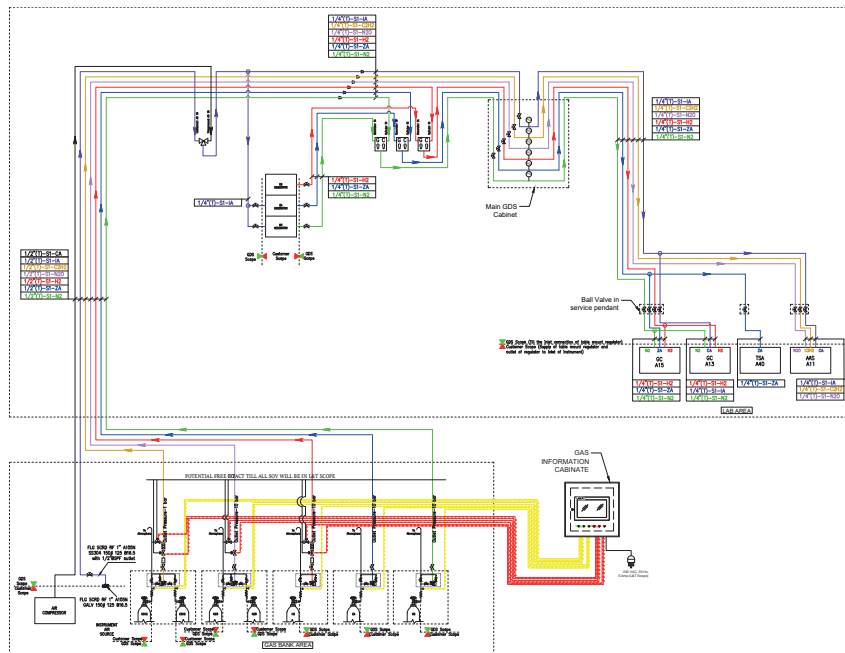
- ♦ Hindustan Petroleum Corporation Ltd.
- ♦ Indian Oil Corporation Ltd. (IOCL)
- ♦ International Flavour and Fragrances (IFF)
- ♦ Mangalore Refinery and Petrochemicals Ltd. (MRPL)
- ♦ Research Centre Imarat (RCI) - Hyderabad
- ♦ National Thermal Power Corporation Ltd. (NTPC)
- ♦ Bhabha Atomic Research Centre (BARC)
- ♦ Ajanta Pharma Ltd.
- ♦ Lupin Ltd.
- ♦ Cipla Ltd.
- ♦ Aditya Birla Research Laboratories
- ♦ Sun Pharmaceutical Industries Ltd.
- ♦ Mylan Laboratories Ltd.

## DESIGNING & LAYOUT

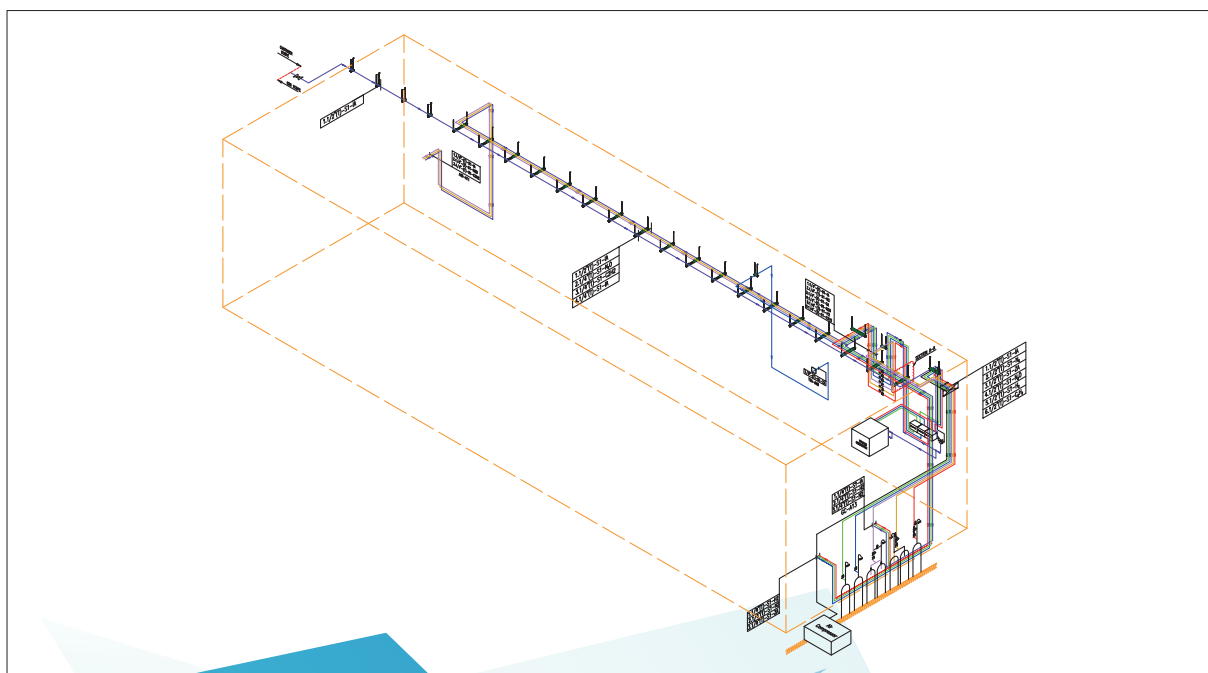
### Autocad Drawing



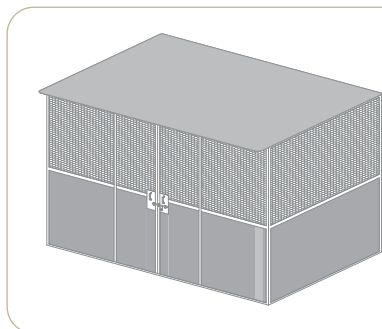
## P & ID Drawing



## Isometric Drawing







Cylinder Storage Cabinet / Cage



Unistrut Support Frame



Wall Mounting Bracket



Gas Cylinders /  
Gas Mixture Canisters



Cylinder Trolleys



GI Pipes & Fittings



HDPE Pipes & Fittings



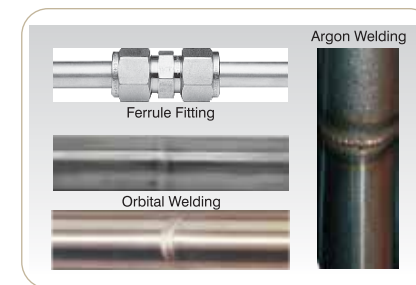
PVC / UPVC / CPVC Pipes & Fittings



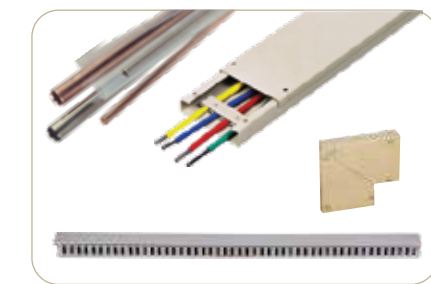
Gas Purification / Distribution  
Systems



Single / Two Way Valve &  
Flexible Hose



Types of Tubes & Pipe Joints



PVC & Aluminium Casing Capping



Flash Back Arrester /  
Quick release Coupling



LPG Burner & Manifold

## AUTO GAS CHANGEOVER SYSTEM



Semi Automatic Changeover



Semi Automatic Changeover  
without Outlet Regulator



Semi Automatic Changeover  
with Pressure Transmitter

## MANUAL CHANGEOVER & MANIFOLD SYSTEM



Manual Changeover Panel  
for Two Cylinder



Manual Changeover Panel  
for Single Cylinder



Gas Manifold for Two Cylinder



Gas Manifold for Four Cylinder

## CYLINDER REGULATOR



**NGS Series**  
Double Stage Cylinder Regulator



**NGSH Series**  
Double Stage Cylinder Regulator  
with Pre Heater



**NGSS Series**  
Single Stage Cylinder Regulator



**FBG Series**  
High Piston Type Cylinder Regulator



**TXC Series**  
Single Stage Cylinder Regulator



**HFS Series**  
High Flow Double Stage Cylinder Regulator

## POINT OF USE REGULATORS



Regulator with Outlet Pressure Gauge



Regulator with Inlet & Outlet Pressure Gauge



Regulator with Outlet Pressure Gauge & Ball Valve



Regulator with Inlet & Outlet Pressure Gauge & Ball Valve



Regulator with Inlet & Outlet Pressure Gauge



Regulator with Outlet Pressure Gauge



Regulator with Outlet Pressure Gauge & Ball Valve



Regulator with Outlet Pressure Gauge, Needle Valve & Shut Off Valve



Regulator with Outlet Pressure Gauge, Needle Valve

## BALL VALVES



Ball Valve with Tube Fittings



Ball Valve with Female Fittings



Three Way Ball Valve with Tube Fittings



Ball Valve with Female Fittings



## NEEDLE VALVES



Needle Valve with  
Tube Fittings



Needle Valve with  
Female Fittings



Needle Valve with  
Female Fittings



Angle Pattern Needle Valve  
with Female Fittings

## CHECK VALVE



CHECK VALVE  
(Tube Fitting)



CHECK VALVE  
BSP / NPT (Male / Female End)



CHECK VALVE  
BSP / NPT (Female End)



CHECK VALVE  
BSP / NPT (Male End)

## MICRON FILTER



MICRON FILTER  
(Inline Type)



MICRON FILTER  
(TEE Type)

## QUICK RELEASE COUPLING



QRC (Complete Assembly)



QRC (Body)



QRC (Stem)

## FLEXIBLE HOSES



BSPM End Connection



BSPF End Connection



Tube End Connection



TC End Connection

## FITTINGS

### COMPRESSION END FITTINGS



### CONNECTOR



### CONNECTOR (TEE & ELBOW)



### SOCKET WELD FITTINGS



### ORBITAL WELD FITTINGS



### TAGGING / PROFILE



Tagging

Aluminium Profile (Powder Coated)

### PP CLAMP



PP Clamp

PP Clamp

Allen Bolt

Tee Nut

Hexagonal  
Head Bolt

Base Plate

Cover Plate



## AUTOMATIC MECHANICAL GAS CHANGE OVER



**For  
2 Cylinder**



**For 4 Cylinder  
& more**

### Specifications:

Inlet Pressure Gauge	: 2 Nos. of 0 - 210 kg/cm <sup>2</sup> guage.
Outlet Pressure Gauge	: 1 No. of 0 - 14 kg/cm <sup>2</sup> guage / as per requirement.
Flow	: 300 LPM (Max)
Gas Services	: Air, N <sub>2</sub> , H <sub>2</sub> , He, Ace, Arg, N <sub>2</sub> o, P10 and other gas and also flammable / non flammable & corrosive gases.
Outlet Connection	: 1/4" OD ferrule fitting with ball valve.
Mounting Dimension Size	: 500 (L) X 300 (H) X 45 (D) in mm

## MANUAL SUPPLY PANEL

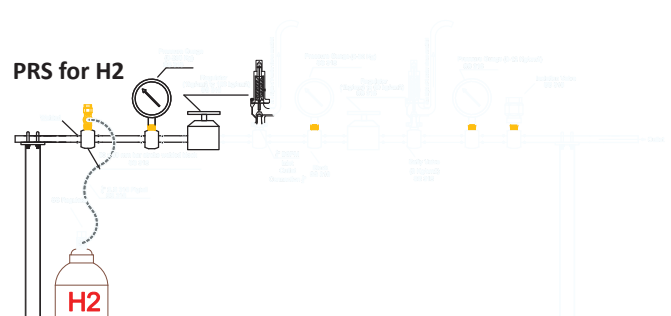
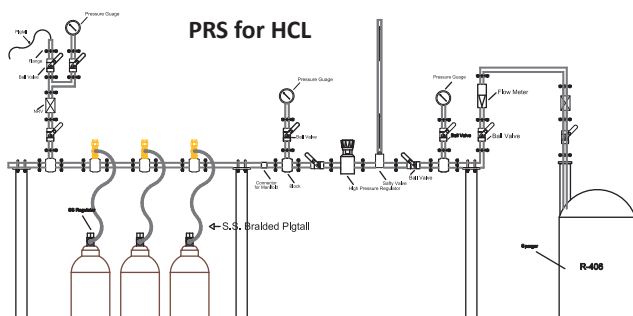
### Technical Data Sheet :

- Body & Bonnet : Stainless Steel 316 / SS 316L / Brass Chromplated.
- Stage : Single Stage
- Diaphragm: SS 316 / hastelloy having good Protection against Corrosion & burst
- Seat & Sealing: PTFE.
- Safety Relief Valve : MOC: SS316
- Inlet Pressure Gauge: SS316 or Brass Chromplated.
- Outlet Pressure Gauge: SS316 or Brass Chromplated.
- Inlet Pressure: 150 Bar
- Outlet Pressure: 12 Bar
- Max Flow - 250 Lpm @ 7Bar.
- Purge Value - 1/4" NPTF, Inlet Value - 1/4" NPTF



MODEL : PL-MGC-20

## PRESSURE REDUCING SYSTEM



PCI make Pressure Regulation System is the most safest method of using flammable & corrosive gases as it has built-in safety shut off arrangement with 100% redundant safety measures. Additional safety interlocks can be incorporated as per process requirements. Provision of Nitrogen purging for safe operation. These pressure reducing systems are supplied for flows as high as 4000 nm<sup>3</sup>/hr and are known for its simple design and easy to maintain components.

### Advantages :

- Ensures fast & maximum possible emptying of gas cylinders.
- Reduced batch time and no. of cylinders change over compared to other means of hydrogen unloading.
- No electrical or pneumatic supply is required to ensure normal working and safety shut-off operation.
- High accuracy in control of final outlet pressure supplied to process is guaranteed.

## GAS / UTILITY PIPE ROUTING THROUGH FALSE CEILINGS



Gas Purification  
Panel

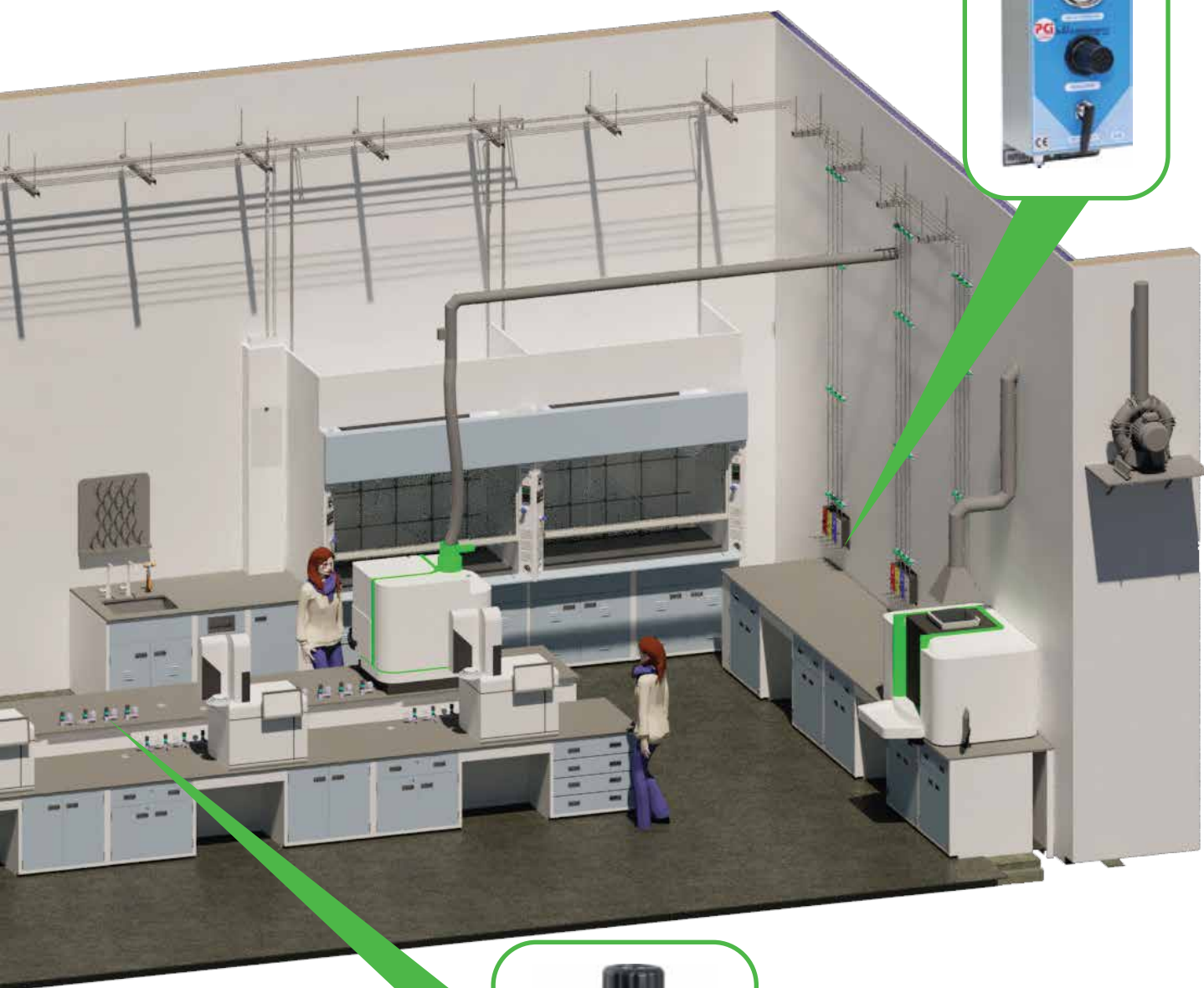


Line Regulator



Semi Automatic  
Changeover Panel

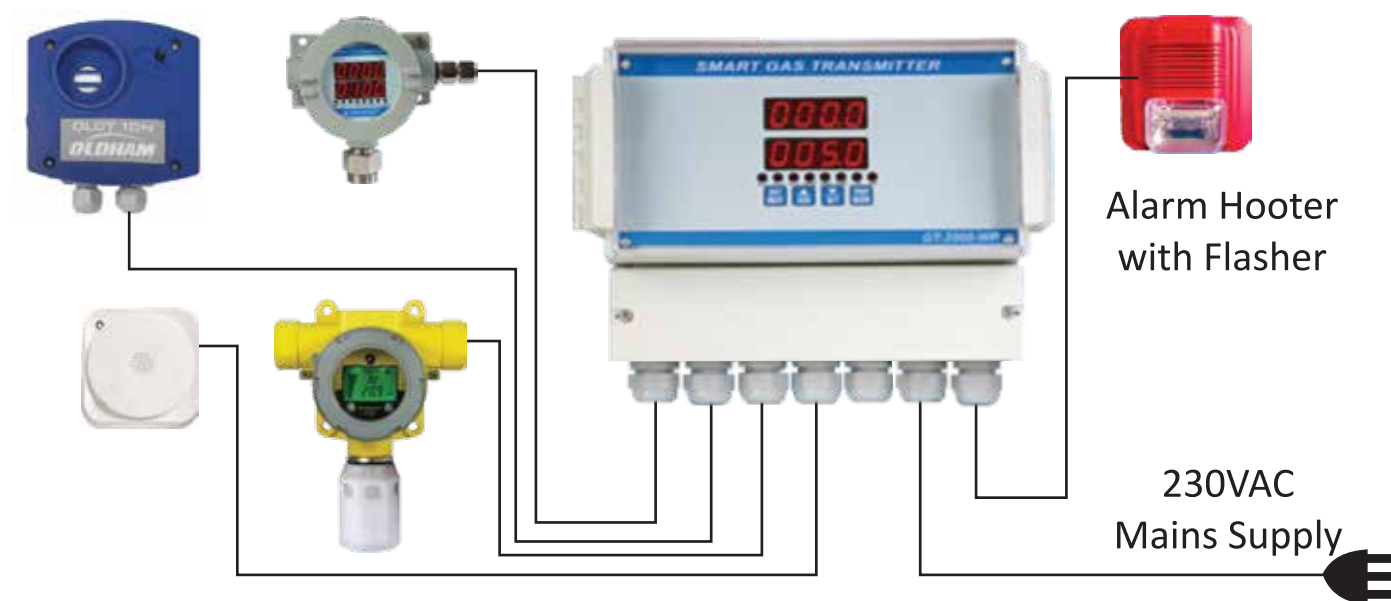
Gas Distribution  
Panel



Bench Mount  
Regulator

## GAS / DETECTOR / DETECTION SYSTEMS

### Gas Detection System



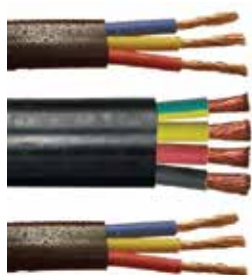
Gas Monitoring Panel  
Make : OLDHAM



Gas Monitoring Panel  
Make : Honeywell  
(Digi Guard)



Gas Monitoring Panel  
Make : Honeywell  
(Touch Point)



3 core, 1.5 sq mm  
Armoured Cable



Cable Tray



Conduit & Saddle



Alarm Hooter  
with Flasher

#### Features :

- Dual display of gas concentration & set point / unit of the gas
- Plug in smart field proven sensor
- Programmable linear 4-20mA / 20-4mA O/P with respect to gas concentration
- Easy one man calibration at site
- Optional RS-485 with modbus RTU protocol
- Suitable in hazardous area ATEX, CCOE, CMRI & IP-65 approved.

#### Applications :

- Gas cylinder bank
- Gas pipeline project
- Chemical processing plant
- Refineries
- Chemical & petrochemical plants
- Oil & gas industries
- Fertilizers plants
- Gas metering station
- Chemical storage area



## LOW GAS ALARM SYSTEM

Low gas alarm panel is used to monitor the low pressure level of cylinder, the contact gauge / pressure transmitter used in this system helps to give 4 - 20 mA or NO/NC signal to panel to monitor the cylinder empty and filled position.

### Specifications of low gas alarm system :

- Fully electronic
- Dual colour / multi colour LED to show the status of cylinder
- Pressure set point (user adjustable)
- External hooter can be connected
- Acrylic body enclosure
- Single or multiple gauge connection provision
- Power supply 230V, 50Hz
- Micro controller based contact gauge



Low Gas Alarm Panel

### Contact Gauge :

Contact gauge is used to produce visual and acoustic warning of low gas supply pressure to monitor the cylinder pressure.

### Technical Specifications :

- Measuring element : Bourbon tube
- Diameter : 50 mm / 100 mm
- Design : Chemical-safety version DIN 16063
- Housing : Brass / SS 316
- Measuring element : CrNi-steel 1.4571, circular form / copper-zink-alloy
- Inspection glass : Polycarbonate
- Nominal pressure : 230 bar/ 300 bar
- Display range : see gauge scale
- Gas suitability : All gases
- Contact : inductive slit sensor (in accordance with NAMUR)
- Protection class : II 2 G EEx ia IIC T6, PTB 99 ATEX 2219 X
- Connection : NPT 1/4"m outside thread



### Pressure Transmitter :

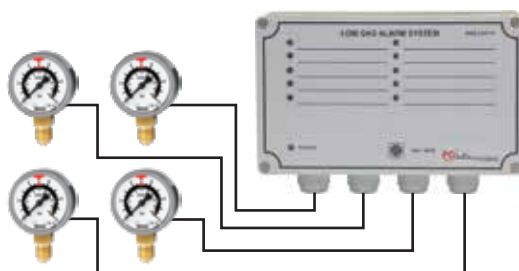
Pressure transmitter is used to produce 4-20 mA to low Gas Alarm Panel to monitor the cylinder pressure.

### Technical Specifications :

- Service : Compatible gases and liquids
- Wetted materials : Type 316L SS
- Accuracy : 626: 0.25% FS; 626: 0.20% RSS; 628: 1.0% FS; 628: 0.5% RSS; 626 Absolute Ranges: 0.5% FS; 626 absolute ranges: 0.30% RSS. (Includes linearity, hysteresis and repeatability)
- Temperature limit : 0 to 200°F (-18 to 93°C)
- Compensated temperature range : 0 to 175°F (-18 to 79°C)
- Thermal Effect : ±0.02% FS/°F includes zero and span)
- Pressure Limite : see table
- Power requirements : 10-30 VDC (for 4-20 mA, 0-5, 1-5, 1-6 VDC outputs); 13-30 VDC (for 0-10, 2-10 VDC outputs); 5 VDC ±0.5 VDC (for 0.5-4.5 VDC ratio-metric output), 10-35 VDC (for 4-20 mA with - CB option), 13-35 VDC or isolated 16-33 VAC (for selectable output with - CB option)
- Response Time : 300 ms



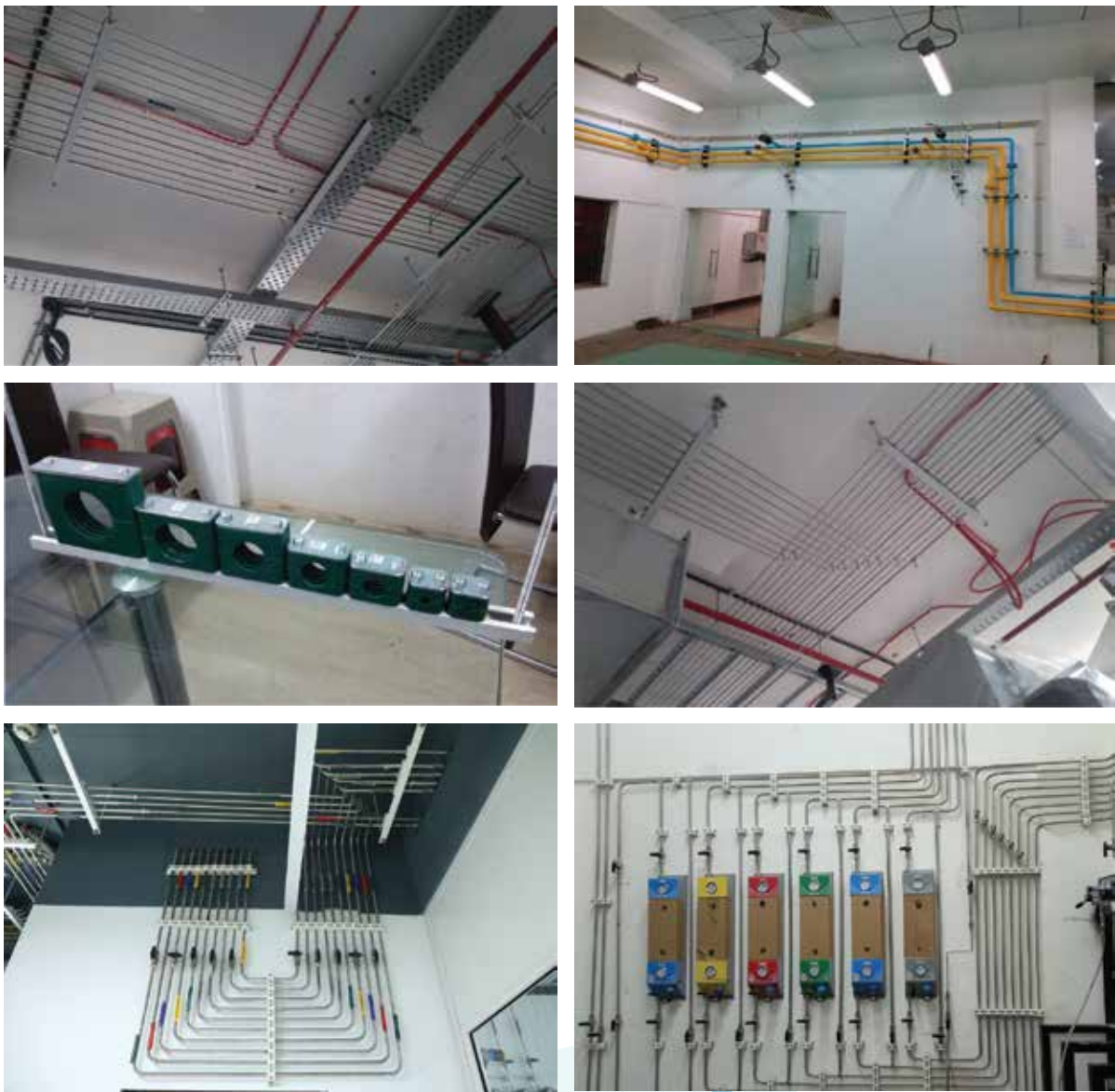
### Installation of Diagram



INSTALLATION SITE PHOTOGRAPHY  
GAS BANK AREA



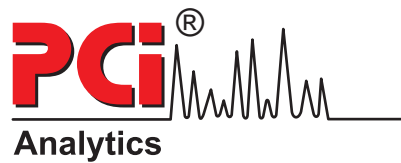
SUPPORTING / STRUCTURES





## LAB AREA





A-71, Road No.22, Wagle Industrial Estate, Opp. Lodha Grandeza, Near Spraytech Circle,  
(Tata Motors Bus Stop), Thane (W), Maharashtra, India. 400604.

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