Schneider Electric

Authorised System Integrator
& Galaxy Partner Since 2001
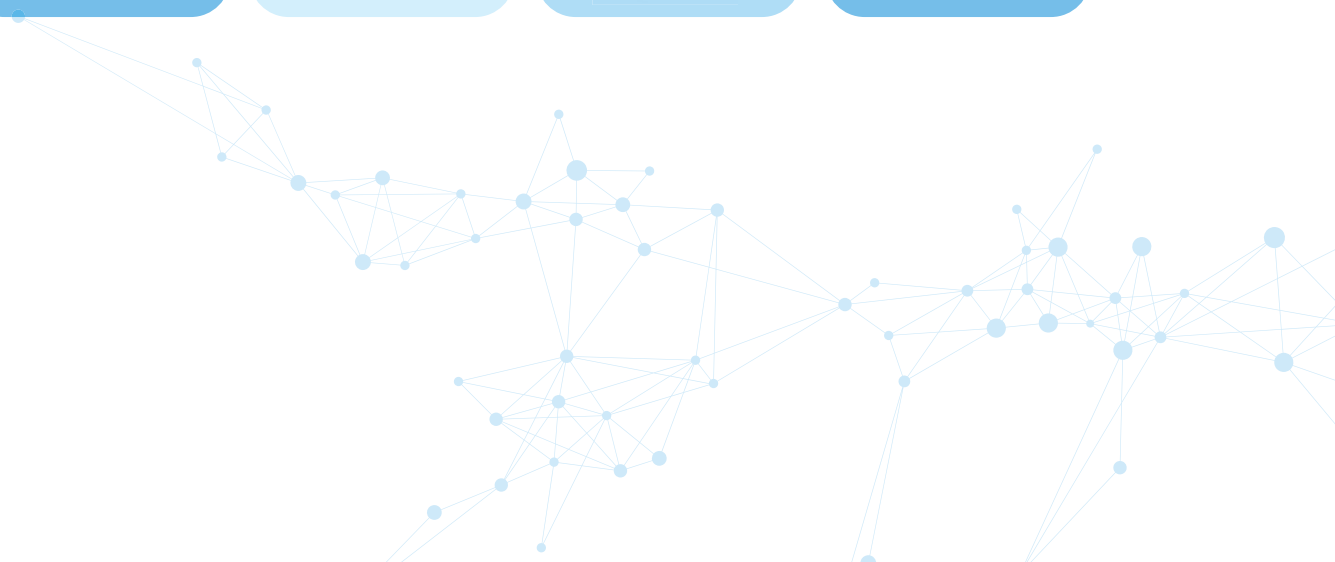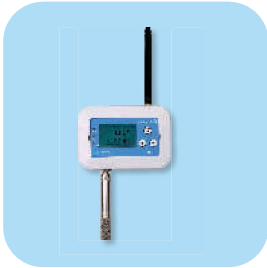
POLMON

Measure. Control. Automate.

PROCESS
AUTOMATION &
INSTRUMENTATION
SOLUTIONS

CELEBRATING

25

YEARS
OF ORIGINAL
THINKING

OUR PRODUCTS & SOLUTIONS

HELP YOU TO
MEET REGULATORY &
SAFETY REQUIREMENTS
AND INCREASE
PRODUCTIVITY

About Polmon

Twenty five years of innovation. Twenty five years of determined pursuit of quality. Twenty five years of surmounting obstacles and overcoming challenges. Polmon's journey thus far has been one of excitement, originality and accomplishment.

Firmly established among the league of India's leading Measuring & Control Instrumentation and Automation solution providers, Polmon is today an integral part of India's Life Sciences industry. Our product range finds wide application in the Production, Quality Control, Raw Material Analysis, Warehouse, FG and other departments of the Pharmaceutical industry.

Innovation is nothing without paying close attention to the market.
At Polmon, we strive to translate technological advancements into tailored solutions for our customers, to offer high performance results.
This has been made possible by our ability and willingness to 'listen' - to the advancements happening the world over, to our customers' needs and expectations, to our own voice of creativity. As a result,
our products and services are capable of supporting our clients,
over 1300+ till date, in an international competitive scenario at the highest level of quality and technology.

With standardisation as well as customisation, and performance consistency as default parameters our broad spectrum of technology-driven products meet all regulatory, safety and productivity requirements.

Starting with the first ISO certification in 2005 and through regular re-certifications (in 2008, 2011, 2014 & 2018), we have never let our focus on quality assurance and process improvements waver. Standards set by NABL is our chosen yardstick of measurement.
Both our facilities in Hyderabad feature state-of-the-art equipment and technologies that are upgraded regularly to enable us to deliver solutions that preempt their demand in terms of time and quality.
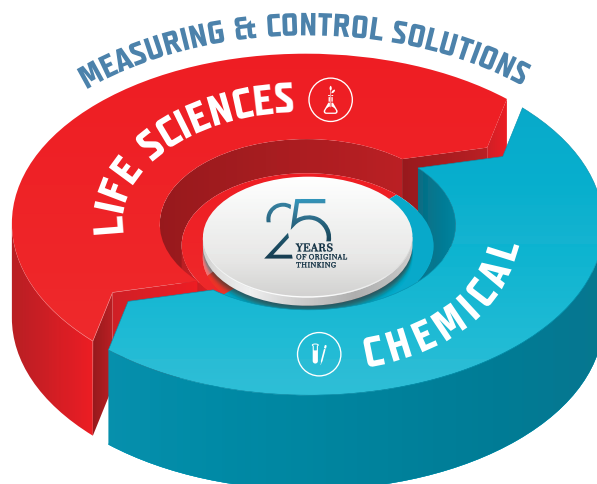
THE GUIDING BEACONS

VISION

Polmon will strive for and be recognized as a professional company, addressing the safety, productivity and regulatory requirements of the industry by providing customized, "state-of-the-art, integrated, evolvable measuring and control solutions that meet or exceed customer requirements, on a mutually profitable basis.

SECTORS / INDUSTRIES

WHAT WE DO

VERTICALS & ACTIVITIES

MEDICAL DEVICES
ESTD: 2010

Design | Manufacturing | Regulatory | Compliance Testing | Contract Manufacturing | Documentation

SINGLE FLUID HEAT TRANSFER SYSTEMS
ESTD: 2006

Concept | Design | Build | Test | Supply / Deliver | Install | Validate | Training

AUTOMATION
ESTD: 2001

Concept | Design | Build | Test | Supply / Deliver | Install | Validate | Training

SERVICES
ESTD: 2001

Consulting | Calibration | Validation | Annual Maintenance Contracts | Plant Maintenance Contracts | Post Warranty | Training

INSTRUMENTS
ESTD: 1993

Research & Development | Product Development | Product Manufacturing | Sales

C O N T E N T S

PROCESS

Temperature

Multi Loop Controller

pH

Conductivity

Calibration

ENVIRONMENTAL MONITORING SYSTEM (EMS)

Wireless Data Loggers

Door Interlocking System

POLNET CLOCKS

PROCESS

Temperature, pH and conductivity need to be tightly controlled in an API manufacturing process. Polmon Instruments provides cost-effective solutions to measure and control the above parameters. Our Distributed Data Acquisition System allows process parameters from the entire plant to be logged and monitored from a central location.

ENVIRONMENTAL MONITORING SYSTEM (EMS)

Our cleanroom instruments are the industry standard in measurement, monitoring and validation of cleanrooms. Together with distributed data acquisitions systems and door interlocking systems, we provide a complete turnkey solution for cleanrooms.

POLNET CLOCK

Synchronized wireless clocks are essential to meet FDA 21 part 11, Section 11.10(e) requirement to maintain consistency of "time stamping". Time is synchronized with UTC (PC Server) with an accuracy of ± 1 sec. Internal RTC maintains accurate time (± 2 min/year) in case of lost GPS signal.

DISTRIBUTED DATA ACQUISITION SYSTEM (DDAS)

Connectivity between all the field instruments in a pharmaceutical plant allows data to be gathered at a central location. This data can be used to improve plant productivity and for regulatory compliance. Polmon's range of data logging solutions can log multiple parameters simultaneously from various locations using a distributed architecture. We also provide solutions to control reactor temperature, monitor utilities, and temperature / RH mapping and validation as well as data integrity.

Polmon's utility monitoring system delivers a cost-effective solution to enable a centralized control over the plant utilities for energy conservation.

ADDRESSING REGULATORY NORMS

LABORATORY INSTRUMENTS

Our analytical instruments assist quality control teams to accurately and quickly test the pharmaceutical products. Our Microprocessor based pH Meter, KF Titrators, Conductivity Meter and Melting Point Apparatus offer many industry first and unparalleled features for achieving better yields.

SERVICES

Our solutions are designed to augment our range of instruments and provide value beyond just measurement of parameters. With offices in Hyderabad, Visakhapatnam, Vadodara, Bangalore and Mumbai our nationwide servicing / installation teams can immediately respond to your needs. Our AMC / PMC contracts prevent equipment failure and costly downtime in manufacturing.

HEAT TRANSFER SYSTEMS

When it comes to Unit processes in production, the right temperature is critical and so accordingly is the need for an appropriate heating / cooling solution.

For process engineers it is essential to find a compromise between yield quality and productivity.

Polmon's Single Fluid Heating and Cooling Systems result in better and accurate heat transfer for sensitive processes.

AUTOMATION

Polmon has two decades of experience in designing complete process automation systems - from field to ERP - for the Life Sciences industry to meet the unique Regulatory, Safety and Productivity requirements of their manufacturing units.

Polmon is associated with Schneider Electric Since 2001 and works extensively with them as their Authorised System Integrator and Galaxy Partner. Polmon particularly partners with end-to-end process automation solutions provider, Invensys (now part of Schneider Electric) to deliver best-in-class products that meet and exceed customers' expectations. Competent to work on Foxboro, Wonderware, PCS7 & Delta V

ZONE 1
REMOTE MONITORS & HMI

The Polmon FLP HMI 1010 Human Machine Interface is designed to meet the requirements of operator interface to monitor and control systems such as PLC / DCS. This 10 inch HMI is specially designed for Life Sciences industries and suitable for use in Zone1, Zone 2 Gas Gr IIA, IIB Hazardous Area.

The Polmon rPC 1200 is a remote monitor with integrated intrinsically safe keyboard and mouse, 18.5 inch FLP monitor suitable for use in Zone 1, Zone 2, Gas Gr I, IIA and II B Hazardous areas. Wide Screen Monitor makes it possible to remotely view SCADA screens from the shop floor, operator can control and monitor any process in the shop floor.
It utilizes highly secure remote monitoring protocol over Ethernet / IP.

IMPROVING SAFETY & PRODUCTIVITY

Polmon is the most preferred provider of instrumentation and automation solutions to the Life Sciences industry. "Customer is our product designer" is the beacon that inspires our R&D team to design highly tailored process instruments for our customers.

Our unparalleled life sciences manufacturing process knowledge allows us to recommend the most suitable process and laboratory instruments to improve productivity, quality and throughput.

Our instrumentation and automation divisions adopt an integrated approach to address the customer pain points. This approach has helped the Life Sciences industry to reduce production costs and increase compliance with regulatory norms.

TEMPERATURE

FLP TEMPERATURE INDICATORS

Polmon's flagship product, the FLP Temperature Indicator, has put us firmly on the instrumentation industry map. This intelligent product can be found in every pharmaceutical company in India.

- CIMFR certified flame-proof enclosure
- High Intensity 1" 3½ digit RED LED display
- Built in RTD sensor linearization
- 3 wire RTD with lead wire resistance compensation
- 3 point RTD calibration (DIN 43760)
- Test & Calibration certificates traceable to NABL/NIST standards
- Sensor open/burnout indication
- Dual-compartment housing provides the highest reliability in harsh industrial environments

DPI-01 F   DPI-01 C-F   DPI-06/08 F
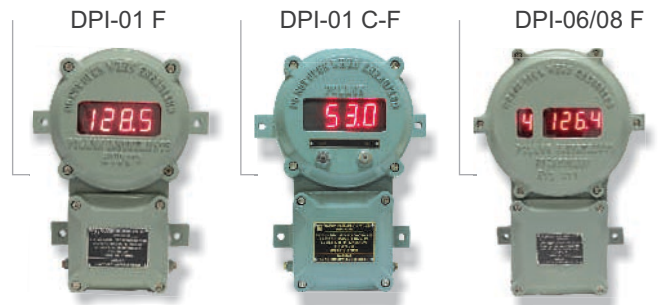
Variant	# of channels	Dual Chamber	Output
DPI 01 F	1	✓	4-20 mA retransmission
DPI 01 C	1	✓	PID Control
DPI 01 C-F	1	✓	On/Off relay
DPI 01 F-P	1	✓	VFD Interface
DPI 02F	2	✓	x
DPI 06F	6	✓	x
DPI 08F	8	✓	x
DPI 06 FI	6	x	6 On/Off relays

CUSTOMIZED MEASUREMENT SOLUTIONS

POLMON
Measure. Control. Automate.

MICROPROCESSOR-BASED FLP
TEMPERATURE INDICATORS-CUM-CONTROLLERS

- CIMFR certified flame-proof dual chamber enclosure
- Dual channel indicator with relay control outputs and current retransmission
- Analog inputs
  - RTD
  - 4-20mA (Factory Configurable)
- Outputs
  - 4-20mA retransmission output for process value
  - Optional MODBUS interface to PLC/SCADA system
  - 2 On/Off relays
- Magnetic key operation for programming and calibration facilitates hassle-free maintenance
- Password security to prevent unauthorized access
- Status indication such as sensor failure, communication failure and Relay On/Off
- 4 Digit 7 segment RED LED display
- VFD interface for RPM display and Control

DPI-10 SF   DPI-12 F   DPI-11 F

Variant	# of channels	RPM Control	Replay Output	4 - 20mA
DPI 10 S-F	1	X	1	X
DPI 11-F	2	✓	1	✓
DPI 12-F	2	X	2	✓

TEMPERATURE SENSORS

NFLP

- CIMFR Certified Flame-proof enclosure
- Class 'A' RTD, DIN 43760 standards
- Three wire construction
- Sheath SS 316, Seamless 6mm & 8mm OD
- Temperature Range -50^{0}C to 350^{0}C
- Calibration Certificate

VARIANTS:

- FLP & NFLP, Process, Lab & Validation applications
- Simplex & Duplex RTD
- Thermocouple J, K & R (wide MOC)

FLP

LOOP POWERED
TEMPERATURE TRANSMITTER

LPT 03 NH

- Two Wire, Non Isolated, Loop Supply 7.5 to 32 V DC
- 3 Wire RTD Pt100 (Alpha: 0.00385)
- DIN43760 / IEC751 Temperature linearized output
- Zero & Span calibration
- Reverse polarity Protection
- Sensor breakdown current limit to 27 mA
- Suitable for mounting in Sensor Head
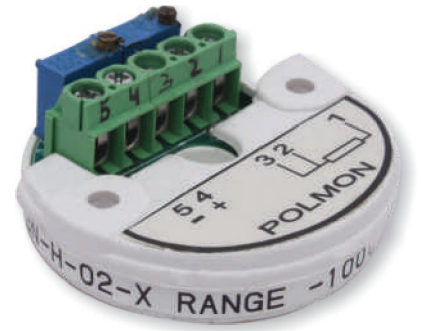
MULTI LOOP CONTROLLER

MULTI LOOP CONTROLLER MLC 40

MLC-40

- Field programmable Analog and Digital channels to tailor to customer needs
- RS 485 MODBUS communication to interface with PLC or SCADA
- Magnetic key pad operation interface for hassle-free maintenance in hazardous areas
- Dual display
  - 0.3" 7-segment RED LED display for process values
  - LCD for diagnostic messages
- CIMFR certified flame-proof enclosure

	Analog	Digital
	2 x RTD	
Inputs	1 x 4-20mA	10
Outputs	1 x 4-20mA	5

Applications

- Utility Automation
- Reactor control
- Prevents utility contamination
- Heating & cooling skids
- AHU control

OUR PRODUCTION FACILITIES ARE
ISO 9001-2015 CERTIFIED

MULTI LOOP CONTROLLER - MLC 45

Multi Logic Controller with built-in Analog and Digital I/Os is a cost-effective alternative to PLC. It can to be tailored to control reactor temperature, hot water skids or AHUs. The device can be interfaced via MODBUS to SCADA for monitoring and data logging.

- Advanced Process Controller
- Easy steps for Process Logic Configuration & I / O mapping
- 32 DI's, 16DO's, 8 AI's, 4AO
- All I/O's are Isolated
- Interface to DCS / PLC
- Easy operation and Remote configuration with HMI

Applications

- Remote I/O station in hazardous area
- Pharma Reactor Utility Control
- Process Control
- HVAC
- SFHTS

Features:

- Multi Loop Controller for
  - Process Control
  - Reactor Control and Safety
  - SFHTS Control (Single Fluid Heat Transfer System)
  - HVAC
- Stainless steel enclosures for outdoor installations can also be ordered with Flame Proof (FLP) enclosure for use in Ex zones, clean rooms
- The unit can be programmed for On / Off and PI control methods with field configurable Input and Output Logic configuration
- Zone I remote I/O station
- Dual RS 485 communication with MODBUS for
  - Rs. 485 communication with MODBUS for HMI Interface
  - Rs. 485 (1) communication with MODBUS for PLC / DCS interface
- Non volatile flash memory for storing program parameters
- Field feature: Enhanced Debugging protocol incorporated in the system
- User friendly
  - Keypad - Magnetic Keys
  - Display interface - 4 Line Alphanumeric Display for viewing process values, Status of input / output and diagnostic messages

MLC-45

pH

ON LINE pH LOGGER/CONTROLLER

- **CIMFR** certified enclosure
- Multi-parameter measurement pH, mV & temperature
- Password protected program menu to avoid unauthorized tampering
- Magnetic key interface for hassle-free maintenance in hazardous areas
- Splash-proof membrane keyboard with soft touch tactile keys for safe areas
- NIST/USA/DIN/Custom buffer selection to meet all calibration standards
- Built-in diagnostics provides specific error and corrective messages
- Up to five point buffer calibration
- Default outputs
  - Two Relays (Dual SPDT Relay)
  - RS 485 Communication
- Optional outputs: Dual output (4-20 mA)/Voltage 0-5 & 0-10 Programmable for retransmission/PI Control
- Choice of automatic or manual temperature compensation
- Housing: FLP Enclosure/NFLP/DIN Size

INP-151 MF (FLP)

INP-151 M (DIN)

INP-150 I

ON LINE pH INDICATOR

- **CIMFR** certified enclosure
- Slope adjustments at transmitter itself
- Auto temperature compensation
- Big display (1 inch), high intensity Red LED
- 4-20 mA retransmission (Optional)

pH RECIRCULATION

The pH Recirculation System is specially designed for precise pH control and measurement as per process requirements. It provides easy operation during pH measurement & control and easy cleaning after pH measurement & control.

Features:

- Easy Installation
- Easy Operation for pH Measurement & Control
- Easy Cleaning after pH measurement and control
- Low Maintenance

Application in Process Industries:

- Reactor pH Measurement & Control
- Scrubber pH Measurement & Control

INP-155

pH Recirculation Panel

SOLVENT

N2 (AIR)

M
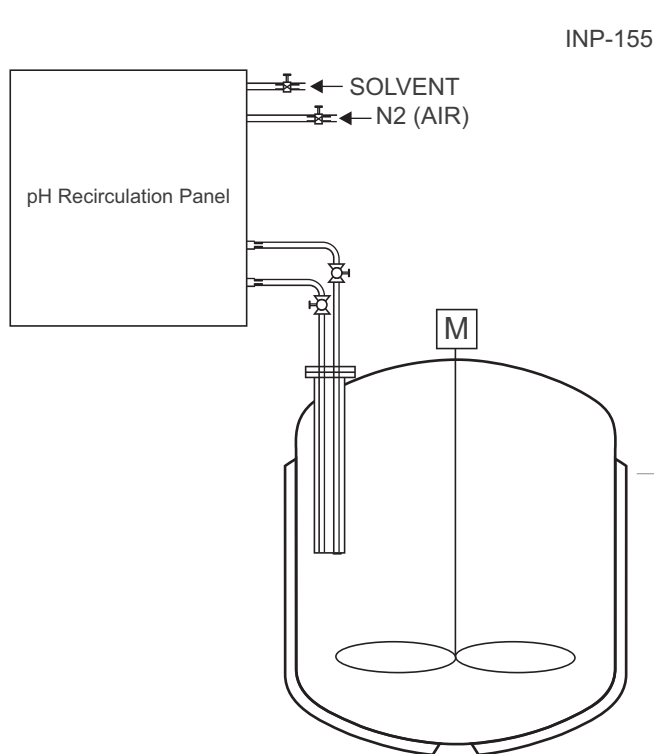
pH ASSEMBLY & ELECTRODES
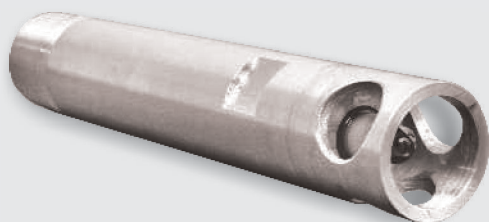
Various types of Online pH Electrodes - Immersion & Flow through

- Teflon
- SS316
- PP

Applications

- Reactor pH
- Scrubber pH
- Ultrapure Water pH

CONDUCTIVITY

ON LINE CONDUCTIVITY LOGGER / CONTROLLER

CM-510

- Measures Conductivity/TDS and temperature
- Dual display
  - 4 Digit, Red LED for conductivity/TDS
  - Backlit LCD for temperature & diagnostics
- Auto/Manual temperature compensation
- Selectable temperature co-efficient
- Temperature uncompensated conductivity (USP requirement)
- Software calibration - single point
- Auto/Man range selection
- Easy to use plain text dialogue operation
- Output: 1 Relay O/P (2A) (Optional)

INDUSTRIAL CONDUCTIVITY CELL

- Sanitary design
- MOC: SS316L
- Polished measuring surfaces facilitates easy cleaning
- Wide variety of mounting assemblies
- Best suitable for DM water measurement

CM-510C

Variant	Remarks
CM510F	Online Conductivity flow assembly 0.1 cell constant
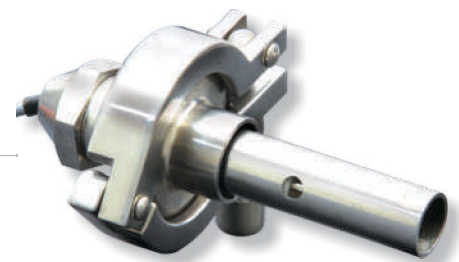
WE DESIGN, MANUFACTURE, SUPPLY AND SUPPORT ALL OF OUR PRODUCTS

CALIBRATION

PROCESS LOOP ANALYZER

PLA-50

Perfect solution for the calibration and testing needs of a field engineer

- In field calibration of control valves, 2 or 3 wire transmitters
- Verify RTDs and loop continuity
- High accuracy measurement of current, voltage & resistance
- High accuracy sourcing of current and voltage
- Flexible step & ramp, current/voltage sourcing features to support wide range of field testing options
- Calibration traceable to NABL/NIST standards
- 3 Digit resolution of parameters

RTD CALIBRATOR

PT-100

pH CALIBRATOR

CAL-130

CONDUCTIVITY CALIBRATOR

CAL-500

PROCESS

IN-FIELD CONTROL VALVE TESTING

ENVIRONMENTAL MONITORING SYSTEM (EMS)

Polmon's EMS is a comprehensive solution encompassing the entire range from Field instruments to Dataloggers to 21 CFR Part 11 compliant software. The cleanroom instruments are the industry standard in cleanroom parameter measurement and data logging. The novel data acquisition system provides Real time trends, GMP-compliant reports, Critical Process Parameters (CPP) and Alarm notification features.

NEW PRODUCT

Applications

- Environmental Monitoring for Clean Rooms with Synchronized Clock
- Data logging

Highlights

- Data Store and Forward feature

CLEAN ROOM MONITOR (CRM)

"CRM" is specially designed for Clean rooms to meet the requirement of Measurement, Display & Data logging of Relative Humidity, Temperature and Differential Pressure for meeting the Regulatory requirements in API's & Formulations with Display of Time (for Hrs & Mins in 24Hour Mode).

Features:

- 1/2/3 Channel with Clock (for Hrs & Mns in 24 Hour Mode) Display with 4.3"TFT-LCD Colour Display / Graphical LCD / LED
- Wide range of Input Options for Remote Tx interface / Inbuilt Sensors / Extended Inbuilt Sensor (up to 10 mtr).
- Time Synchronization with PLC/ SCADA/ DCS through RS-485 communication.
- User Selectable fixed / scrolling Screens (1 / 2 / 3 Parameters with or without Clock)
- Programmable Set points for RH & Temp (High High / High/ Low/ Low Low) and DP (High/ Low) for Visual Annunciation.
- User configurable (enable/disable) Inbuilt Buzzer to provide audible Process value violation.
- Option for Buzzer Acknowledgement and Snoozing.
- Password protected calibration & other programming modes.

- Software Calibration & Ranging through soft touch tactile keypad.
- User configurable (enable/disable) Inbuilt Relay (for Process Value) (1- NO, NC).
- Relay Output with Programmable Acknowledgement and Snoozing.
- Opto Isolated RS-485 Communication (Optional) to transfer the data for storage through Proprietary / MODBUS/ BACnet/ DNP3 Protocol.
- MODBUS interface Max 31 Devices without Repeater.
- Programmable Baud Rate selection 9600 / 19200 / 38400.
- Optional 4-20mA O/P for single channel.
- Stand-alone mode working clock in network failure condition.
- Safe area applications with SS Faceplate, flush mount (Brick Wall / Modular Wall) and On Wall Mount for Clean Room Application.
- Clean Room compatible Concealed Enclosure (Depth 45 mm).

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TIME SYNC CLEAN ROOM MONITOR RHT 73
RH/TEMP/DP WITH TIME DISPLAY

"RHT73" is specially designed for Clean rooms to meet the requirement of Measurement, Display & Data logging of Relative Humidity, Temperature and Differential Pressure for meeting the Regulatory requirements in API's & Formulations with Display of Time.

- Measures, displays and logs relative humidity, temperature and differential pressure

- Time display with master synchronization

- Synchronizes time every second with master clock in network through RS-485 communication

- Relay output with programmable acknowledgment and snoozing

- Optional 4-20mA output for single channel

- Stand alone mode working clock in network failure condition

- Options of 1/2/3 channel with 0.3"/0.8"/1.0" seven segment red LED display

- Wide range of input options for remote Tx interface/in-built sensors

- User programmable set points for each parameter; visual and audio alarm indication

- User configurable (enable/disable) in-built buzzer for process value violation

- Option for buzzer acknowledgment and snoozing

- Data logging and PLC communication through RS 485 MODBUS protocol

- Safe area application with SS face plate, true flush mount (brick wall/modular wall) and on wall mount for clean room application

CLEAN ROOM

VARIANTS

Model	Measurement Parameter				Display Size	Display Type	Sensors	Power Supply
	RH	Temp	DP	Time				
RHT 73	✓	✓	✓	✓	1"	LED	In-built / Remote	24 V DC
DPI 38I	✓	✓	✓	x	0.8"	LED	In-built / Remote	24 V DC
DPI 37I	✓	✓	✓	x	0.3"	LED	In-built / Remote	24 V DC
DPI 35I	✓	✓	✓	x	0.3"	LED	Remote	230 V AC or 24V DC
RHT-71I	✓	✓	x	x	0.3"	LED	In-built	24 V DC
DPI-54I	x	✓	✓	x	0.3"	LED	In-built	24 V DC
DPI 52I	x	x	✓	x	0.3"	LED	In-built	24 V DC
TET 91I	x	✓	x	x	0.3"	LED	In-built	24 V DC
DPT 56	x	x	✓	x	0.3"	LED	In-built	24 V DC
RHT-70 T	✓	✓	x	x	x	x	Only sensor	24 V DC
TET-90 T	x	✓	x	x	x	x	Only sensor	24 V DC
DPI-52 R	x	x	✓	x	x	x	Only sensor	24 V DC
DPT-53	x	x	✓	x	--	LCD	In-built	4 x 1.5 V AA Battery

DPI-37 I

DPI-52 I

DPI-56

CRM

RHT-70 T

RHT-71 I

TET-90 T

RHT-73

DPI-35 I

DPI-38 I
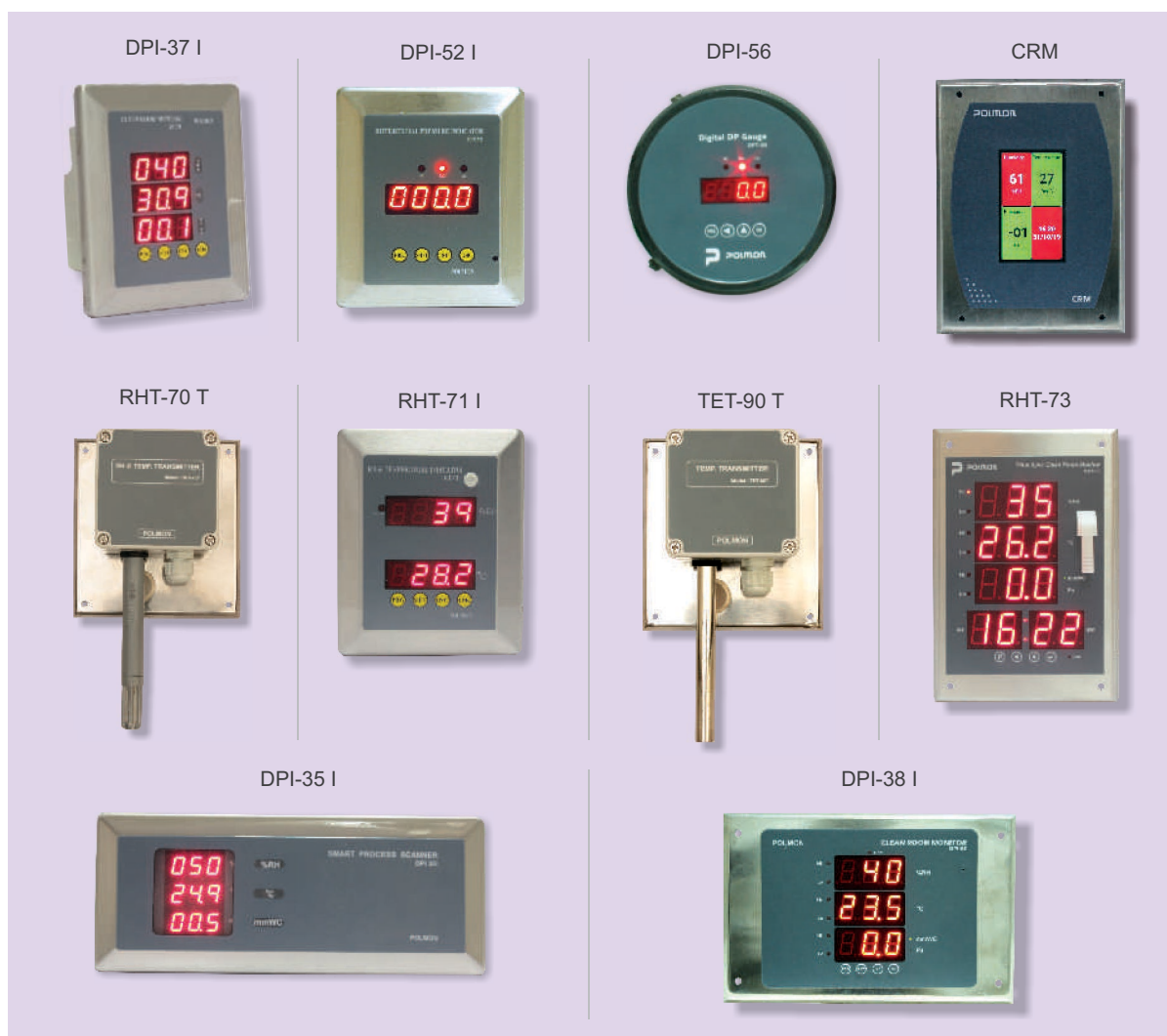
WIRELESS PRODUCTS

HYGROPOL
- HIGHLY ACCURATE RH AND TEMPERATURE MEASUREMENT

RHT-75

NEW PRODUCT

Highlights

- Accuracy Rh +/- 0.8 %; Temperature: +/- 0.2^{0}C

- HygroPol is essential for environment monitoring where RH and Temperature are critical

- HygroPol is perfect for spot checking HVAC installations in clean rooms, manufacturing and storage areas, and generally for all ambient air measurements within the range of -40 °C to 60 °C.

Features:

- Dedicated key for instant/spot data recording

- 21 CFR compliant reports can be generated by using a host software

- HygroPol can be used as a master to calibrate other instruments

- Dedicated key for Min/Max value display

- Selectable data recording time interval: 1 to 1440 minutes

- Delayed/ Trigger-start/ Time Event/ Manual log option

CLEAN ROOM

NEW PRODUCT

TM680H

POLMON Wi-CLOCK is a handheld, portable, battery operated synchronized digital clock. It is the perfect solution for a wide range of applications where accurate, synchronized time is required. Wi-Clock is synchronized with UTC via GPS or with Polmon master clock at regular intervals.

It works on an internal, highly accurate temperature compensated RTC when synchronization with source is not available. It is also used for range, signal strength testing and setting up of Polmon clock network. Wi-Clock's toughened plastic enclosure is designed for pharma clean room applications, laboratory applications etc.

Features:

- Accuracy in standalone mode: ± 2min/year
- GPS/Polmon Master Clock synchronization
- Hand-held, portable, battery operated device
- Auto/Manual synchronization
- Programmable synchronization period
- Works in stand-alone mode when source is not available
- Ultralow power graphical LCD
- Programmable time format (HH:MM/HH:MM:SS)
- 3000 hrs. battery life
- Battery status on the display and Low battery indication
- Shows both date and time
- Shows last synchronization status

CLEAN ROOM

COMPLIANCE AND CLEANLINESS

WIRELESS DATA LOGGERS

Ultra Long Range; Extremely Low Power Consumption
Wireless Dataloggers for Environmental Monitoring

π Net

- π Net is based on Polmon's proprietary wireless protocol that operates in 865-867 MHz and offers best in class signal penetration for gap free communication
- Ultralong range using a simple star network. Easy installation & trouble shooting
- Each π Net base station supports 15 π Net transmitters
- π Net Data loggers are plug and play with minimal configuration
- π Net eliminates cabling cost
- Loggers can be repositioned based on changing requirements

π Net

NEW PRODUCT

π Net DATALOGGERS

- Measures Rh & Temperature
- Accuracy
  Rh +/- 2 %;
  Temperature: +/- 0.3^{0}C
- 4 AA Energizer L91 battery
- Typical battery life of 9 months
- Easily replaceable probe
- 64MB records memory
- Extendable probe available

CLEAN ROOM

Network Architecture

WiRhT78 (1)

WiRhT78 (2)

DL123M

CN60R (1)

WiRhT78 (3)

WiRhT78 (15)

LAN Communication

Ethernet Switch

SCADA

AA164

Tagname4
000.0 Deg c

LAN Communication

LAN Communication

HMI1010

LAN Communication

GSM
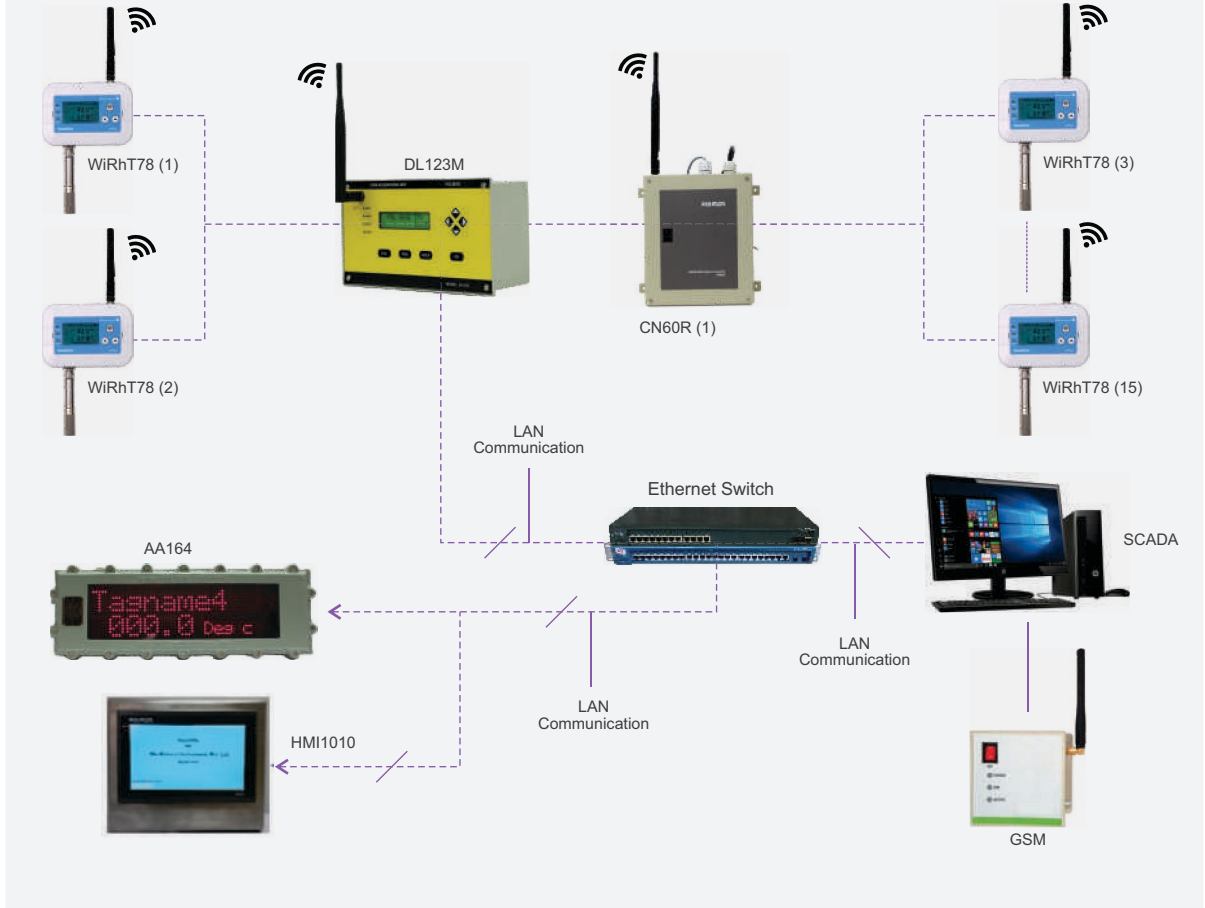
π Net BASE STATION

- One π Net Basestation supports upto 15 π Net Dataloggers
- 24 v DC power supply operated
- Inbuilt memory enables store and forward feature which results in gap free data logging.
- Encrypted communication ensures secure data transfer
- Typical range of atleast 100m in indoor conditions.
- LOS of >1 km.

![POLMON logo]
Measure. Control. Automate.

WIRELESS MODBUS DATA LOGGER

NEW PRODUCT

RS485 - WIRELESS CONVERTER

CN-60

- Accepts the MODBUS data as input and converts into wireless
- Transmit the converted data on wireless to centralized data logging system which can be interfaced to SCADA or PISCADA
- Inbuilt memory enables store and forward feature which results in gap free data logging.
- Available in FLP and NFLP

Applications
- pH Scrubber monitoring

CN-60

FLP Wireless Maser

Ethernet Cable

PiSCADA

Slave (1 to 15)
FLP RS485-Wireless Converter

Repeater-1

FLP pH Indicator

FLP Wireless Repeater

Slave (1 to 15)
FLP RS485-Wireless Converter

Repeater-4

FLP pH Indicator

N FLP Wireless Repeater

Slave (1 to 15)
NFLP RS485-Wireless Converter

NFLP pH Indicator
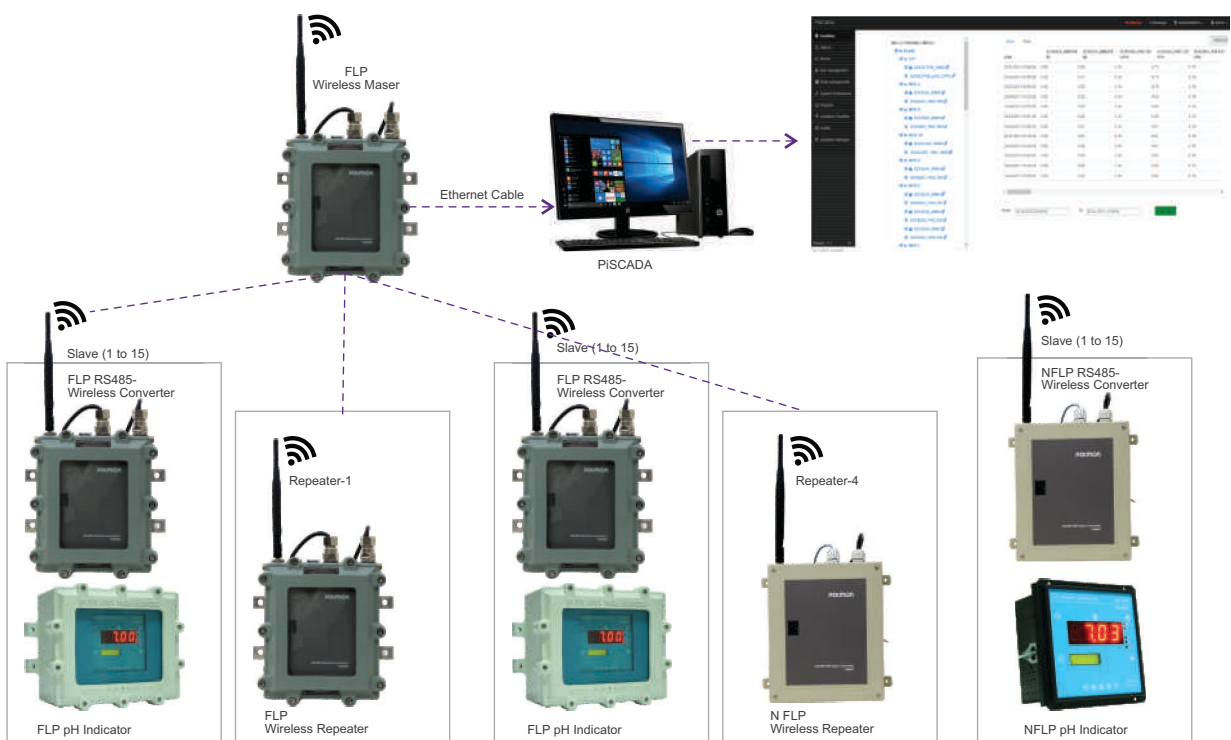
DOOR INTERLOCKING SYSTEM

In clean room areas, personnel going from an unclassified area to a classified area are required to pass through a series of rooms. In each room, certain stringent steps need to be followed. This procedure ensures that the person is not carrying any external contamination into the process area. It also makes sure the pressure in each room is maintained before opening of door.

- Supports maximum of 8 doors
- Supports emergency stations
- Sequence of door interlocking is field configurable
- Delay between door openings is field configurable from 0 to 99 sec
- Non-volatile flash memory to store programmed parameters
- D/I provided to take feedback from BMS in case of fire
- Supports access control module interface in place of push button stations
- Connects to fire alarm system in case of fire
- Having feature of connecting to Fire Alarming System in case of fire

2-Door Controller

4 & 8-Door Controller

Emergency Button

Door Status Module

Push Button

POLNET CLOCKS

- Only 25mm Thick
- Digital synchronized clocks to Meet Time Stamping Requirements of Pharmaceutical Industry

Synchronized wireless clocks are essential to meet FDA 21 part 11, Section 11.10(e), MHRA requirement to maintain consistency of "time stamping". Time is synchronized with UTC (GPS/PC Server) with an accuracy of ± 1 sec. Internal RTC maintains accurate time (± 2 min/year) in case of Sync Lost

Polnet Clock Features

• During synchronization. Master Clock time can be traced to UTC • In offline mode. Master clock accuracy in standalone mode is ± 2 min/year w.r.t UTC	• Hooter output upon GPS failure or no feedback from slave
• High receiver sensitivity and Spread spectrum technology allows Time signal to be received even through multiple concrete walls • Communication distance up to 1.5 Km (LOS)	• Industrial grade Antenna
	• FLP Certified system
• For gas groups IIA. IIB & IIC Hazardous area as per IEC 60079-0 the transmitter power output shouldn't exceed 2 watts. • Maximum transmitted power in 865-867 MHz band is 1W according to Wireless Planning Commission of India.	• Highly accurate temperature compensated Real time clock
	• Panasonic RTC backup battery
• Synchronizes all the slave clocks every 1 minute	• Slave clock blinks upon dislinking from master
• GPS receiver protocol: NMEA standard	• Slave clock stops displaying time upon being dislinked from master for more than a programmable timeout period
• Industrial electronic hardware with extended temperature range	• Optional Ethernet based Network Time Protocol (NTP)

WIRELESS CLOCK MESH NETWORK

GPS Satellite

Optional

Optional

NTP Server

Ethernet Cable

Switch

2" NFLP Wireless Master with Seconds
Primary Master

2" NFLP Wireless Master without Seconds
Redundant Master

Redundant Master Panel

NFLP Hooter

13:27 13:27 13:27 13:27

13:27 13:27

WIRELESS CLOCK NETWORK

GPS Satellite

Optional

Optional

NTP Server

Ethernet Cable

Switch

2" NFLP Wireless Master with Seconds
Primary Master

2" NFLP Wireless Master without Seconds
Redundant Master

Redundant Master Panel

NFLP Hooter

4" NFLP Slave without Seconds

4" FLP Slave without Seconds

4" FLP Slave with Seconds

NFLP Repeater

FLP Repeater

2" NFLP Slave with Seconds

2" NFLP Slave without Seconds

2" FLP Slave with SS Enclosure

4" FLP Slave without Seconds Double side

2" NFLP Calendar Slave without Seconds

2" FLP Slave with Seconds

2" FLP Slave without Seconds

ETHERNET CLOCK NETWORK

PiTIME
Clock Health Status

Ethernet Cable

2" NFLP Flush Mount Ethernet Clock with Seconds

Switch

2" NFLP Wall Mount Ethernet Calendar Clock without Seconds

2" NFLP Wall Mount Ethernet Clock with Seconds

2" NFLP Wall Mount Ethernet Clock without Seconds

HEALTH STATUS OF POLNET CLOCKS
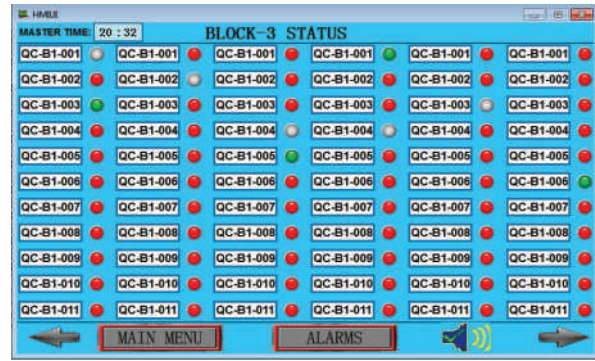
POLNET CLOCK VARIANTS

	TM680M-R-1-X Display size: 2" Dimensions: 470x100x40mm Weight: 1.6Kg
	TM690M-R-1-X Display size: 2" Dimensions: 470x100x40mm Weight: 1.6Kg
	TM682S-F-1-X Display size: 2" Dimensions: 335x199x87mm Weight: 3.5Kg
	TM682S-F-2-X Display size: 2" Dimensions: 431x210x110mm Weight: 5Kg
	TM682S-R-1-X Display size: 2" Dimensions: 360X100X25mm Weight: 1.5Kg
	TM682S-M-1-X Display size: 2" Dimensions: 400x120x35mm Weight: 1.2Kg
	TM682S-C-1-X Display size: 2" Dimensions: 350x350x210 mm Weight: 16Kg
	TM692S-F-1-X Display size: 2" Dimensions: 485x202x90mm Weight: 8Kg
	TM692S-R-1-X Display size: 2" Dimensions: 470x100x25mm Weight: 1.5Kg
	TM684S-F-1-X Display size: 4" Dimensions: 684x225x130.5mm Weight: 17Kg
	TM684S-F-2-X Display size: 4" Dimensions: 521x238x122mm Weight: 12Kg
	TM684S-R-1-X Display size: 4" Dimensions: 540x150x40mm Weight: 3Kg
	TM694S-F-1-X Display size: 4" Dimensions: 620x220x120mm Weight: 17Kg
	TM680R-F-X Dimensions: 335x199x87 mm Weight: 3.5Kg .
	TM680R-R-X Dimensions: 360x100x25mm Weight: 1.5Kg .

	TM670M-R-1-1-5-1-X-X Display size: 2" Dimensions: 434x149x40 Weight: 2.5Kg
	TM670M-R-1-1-6-1-X-X Display size: 2" Dimensions: 434x149x40 Weight: 2.5Kg
	TM672S-R-1-2-5-1-X-X Display size: 2" Dimensions: 470x100x40mm Weight: 1.6Kg
	TM672S-F-1-2-5-1-X-X Display size: 4" Dimensions: 684x225x130.5mm Weight: 17Kg
	TM672S-E-1-2-6-1-X-X Display size: 2" Dimensions: 519x290x40mm Weight:
	TM672S-R-1-2-6-1-X-X Display size: 2" Dimensions: 470x100x40mm Weight: 1.6Kg
	TM672S-F-1-2-6-1-X-X Display size: 4" Dimensions: 684x225x130.5mm Weight: 17Kg
	TM674S-R-1-2-5-1-X-X Display size: 4" Dimensions: 684x225x130.5mm Weight: 17Kg
	TM672S-M-1-1-2-1-X-X Display size: 2" Dimensions: 520x140x35mm Weight: 2Kg
	TM672S-R-1-1-2-1-X-X Display size: 2" Dimensions: 470x100x40mm Weight: 1.6Kg
	TM672S-M-1-1-1-1-X-X Display size: 2" Dimensions: 520x140x35mm Weight: 1.75Kg
	TM672S-R-1-1-1-1-X-X Display size: 2" Dimensions: 470x100x40mm Weight: 1.6Kg
	HMI1010-R-X Display size: 10.2" Dimensions: 310x310x65mm Weight: 4Kg
	PiTIME-S-X-X

DISTRIBUTED DATA ACQUISITION SYSTEM (DDAS)

Polmon's Distributed Data Acquisition System (DDAS) offers a 21 CFR Part 11 compliant solution to measure, log and report process parameters such as Temperature, Pressure, Vacuum, pH etc. DDAS reduces the cabling cost substantially and eliminates 4 - 20 mA loop errors. Tag-based process parameter deviation, annunciation and synchronization of DDAS with clock networks provides an integrated approach to productivity, safety & regulatory requirements.

DL-123

DATA ACQUISITION UNIT

- Stamps each data packet with real time & date
- Provides remote interface to user to display process values
- Supports a maximum of 3 analog / serial modules or combination
- Provides uninterrupted process value data to "Annunciation Card" for violation generation.
- 64 MB Memory
- Supports Modbus / BACNET

Network Architecture

WiRhT78 (1)   WiRhT78 (2)   DL123M

CN60R (1)

WiRhT78 (3)   WiRhT78 (15)

AA164

LAN
Communication   Ethernet Switch

LAN
Communication   SCADA   GSM

LAN
Communication

HMI1010

Network Architecture

RS485 Modbus RTU Devices

SCADA

1   2   3   4
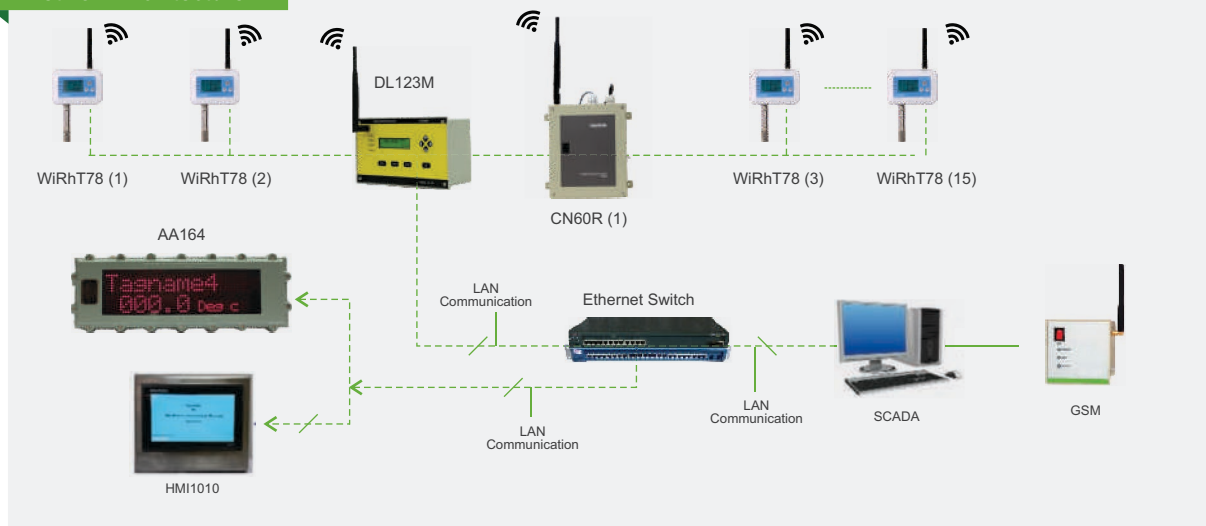
Measure. Control. Automate.
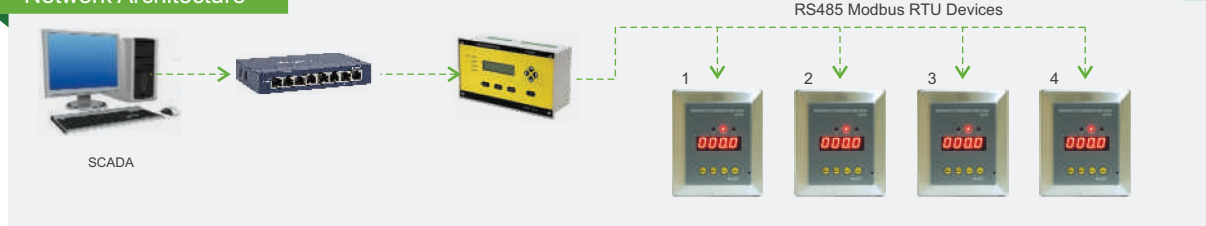
UTILITY ALARM SYSTEM

This unique solution was developed to warn the operator about utility failures such as steam pressure loss or a drop in chilled brine temperature. The system can be used to monitor any plant utility that is critical to a process. Beyond monitoring and alerting the operator, the system also provides a centralised location for the top management to view the data coming from the manufacturing floor.

ANALOG MODULE

DL-123 A

- Accepts 16 process inputs (Analog: RTD, mA) 0-10, 0-1
- Remotely configurable by PC
- Provides diagnostic codes for "communication fail" conditions
- Available in FLP (optional)

ANNUNCIATION MODULE

AA-164

- CIMFR certified flame-proof enclosure
- Supports a maximum of 48 channels
- Operates in two modes viz. Violation display mode or PV display mode
- Displays PV along with configured equipment tag names & units @ 4 sec/channel scan rate
- Violations are displayed until the PV value is within set limits
- Displays diagnostic messages in case of communication breakdown, sensor open conditions and while undergoing remote programming
- Communicates on 3-Wire RS485

Applications
- Chilled pump utility monitoring
- Cold Room
- Ware house

SOLUTIONS

PiSCADA

PiSCADA is the latest offering from Polmon in Critical Process Parameter monitoring and logging.

PiSCADA is built from the ground up by drawing over 25 years of experience in the life sciences industry and conforming to all the latest standards in Regulated Monitoring.

PiSCADA securely logs the data from proprietary as well as third party data loggers, stores in the inbuilt historian, and makes the data available over the web.

Comprehensive Alarm Management and Audit Trails allow GxP events to be captured and reviewed by exception.

MAIN FEATURES		
GAMP5 Compliant	Real Time Data Monitoring	Assured Data Integrity
Comprehensive Alarm Management	Powerful Reporting	Web Access
OPC UA	SMS / Email Alerts	Advanced backup & Review

Audit Trail

- Extensive audit trails capture changes and the signature for signed actions
- Each log has a unique ID, old & New values, timestamp the user and a remarks column
- Logs cannot be manipulated or deleted
- 21 CFR Part 11 and EU Annexure 11 complaint

User Management

- No limit on the number of users
- Exhaustive password management features
- Users cannot be deleted
- Multiple user roles with editable privileges

OUR INSTRUMENTATION SOLUTIONS HELP YOU TO
MEET THE HIGHEST STANDARDS IN HYGIENE,
CONSISTENCY, COMPLIANCE AND ULTIMATELY PROFITABILITY

POLMON

Measure. Control. Automate.

LABORATORY INSTRUMENTS

Polmon is known for manufacturing high precision and highly reliable lab and analytical instruments. Our laboratory pH meter, Melting point apparatus and KF Titrator can be found in most of the quality control and R&D labs of Pharmaceutical companies in India

21 CFR Part 11 Compliant*

MP-98
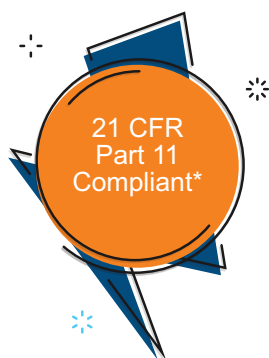
MELTING POINT

AUTO MELT MELTING POINT APPARATUS

Computer vision-based automatic melting point detection

- Automatically detects melting point of up to 3 samples simultaneously
- In-built camera records the melting process
- 7" colored touch screen LCD replays melting video instantly
- 100 results with video can be stored in internal memory
- Real time graph is visible after completing the sample text
- Results can be copied to USB drive or accessed over LAN

- Wide measurement range from RT to 400 ^{0}C
- 12 user programmable profiles for Quick Start
- User selectable PID-controlled accurate temperature ramping from 0.1 to 20^0 C/min
- Fully guided four point calibration
- Accuracy:
  - +/- 0.3 ^{0}C up to 200 ^{0}C
  - +/- 0.4 ^{0}C from 200-300 ^{0}C
  - +/- 0.6 ^{0}C from 300-400 ^{0}C

*Via online printing

MELTING POINT

SEMI AUTO MELT MELTING POINT APPARATUS

- 4.3" TFT colored LCD displays melting video
- 100 results can be stored in internal memory
- Print-out of the results can be obtained through RS232 serial connector
- Wide measurement range from RT to 400 $^{\circ}$C
- 12 user programmable profiles for QuickStart
- User selectable PID-controlled accurate temperature ramping from 0.1 to 20 $^{\circ}$C/min
- Fully guided four point calibration
- Accuracy:
    - +/- 0.3 $^{\circ}$C up to 200 $^{\circ}$C
    - +/- 0.4 $^{\circ}$C from 200 $^{\circ}$C-300 $^{\circ}$C
    - +/- 0.6 $^{\circ}$C from 300 $^{\circ}$C-400 $^{\circ}$C

MP-97

MELTING POINT APPARATUS

MP-96

- Determines melting point and melting range
- 4 digit 0.5" seven segment digital display
- Memory to store melting range (T1 & T2)
- Heater safety cut-off at 345 $^{\circ}$C
- Programmable rate of heating
- FRP Body
- Liquid bath for better accuracy

MORE THAN 25000 LAB INSTRUMENTS SOLD

pH

pH STAT/ANALYSER

- Auto buffer recognition & up to 5 buffer calibration
- Selectable temperature compensation Auto/Manual
- Standard buffers selection between NIST/DIN/USA (in auto mode) or customized (only in manual mode)
- Selectable auto/manual calibration
- 100 samples storage facility
- Auto printing with selectable print interval
- Each sample identified with unique numerical ID given by the user
- Last three calibration details report along with electrode efficiency
- Advanced diagnostics i.e. electrode working condition etc.
- Dual display - LED & back lit dot matrix LCD
- Customized password
- Built-in STAT for accurate pH control
- Supports peristaltic pump for pH titration
- 80 column printer optional

LP-139 SA

MICROPROCESSOR BASED pH METER

- Built-in STAT for laboratory pH titrations
- Supports peristaltic pump for pH titrations
- Selectable acid/base titration
- Documentation supports to GMP, QM, ISO
- Auto/Manual temperature compensation
- Advanced diagnostics i.e. electrode working condition etc.
- Dual display - LED & backlit dot matrix LCD
- 80 column printer output (optional)
- Auto buffer recognition

LP-139 S

CUSTOMER IS OUR PRODUCT DESIGNER

DIGITAL pH METER

- Microprocessor based multiparameter measurement
  i) pH   ii) mv   iii) Temperature
- Splash-proof membrane keyboard with soft touch snap
  action keys
- Dual display for simultaneous view of pH and
  temperature
- 0.8'' seven segment red LED display for pH
- 0.39'' seven segment red LED display for temperature
- Single buffer or two buffer calibration
- Auto or manual temperature compensation

LP-135M

HAND pH METER

- 9V battery operated
- Portable and lightweight
- LCD display
- Low battery indication & auto power off feature
- Battery life: 225 hrs of continuous use
- Durable plastic enclosure
- pH and mv measurement
- Dimensions: 160x85x20mm

LP-132

POLMON
Measure. Control. Automate.

KARL FISCHER TITRATOR

DIGITAL KF TITRATOR

MI-453

- Measures moisture content in solids and liquids
- Digital indication of KF reagent consumption
- End point annunciation
- KF reagent addition by peristaltic pump
- Imported tubing and auto titration
- Speed adjustable stirrer
- Temperature range is 20^0c to 50^0c
- KF dispensing accuracy: 0.03ml
- Corrosion-free FRP body
- 4 digit LED display

KF TITRATOR

MI-450

- Measures moisture content in solids and liquids
- KF reagent dispensing accuracy is 0.05/0.1 ml
- END - STOP - ADD indication
- Speed adjustable stirrer
- Corrosion-free FRP enclosure
- 10/25ml burette (optional)

CONDUCTIVITY

CONDUCTIVITY/TDS ANALYSER

CM-540

- Measures conductivity/TDS and temperature
- Temperature uncompensated measurement
  - USP requirement
- Wide range conductivity/TDS measurements
- Dual display
  - 4 digit, red LED for conductivity/TDS
  - Backlit LCD for temperature & diagnostics
- Direct read out in conductivity/TDS
  (multiplication factor not required)
- Splash-proof housing protects internal components
- Customised print reports of data
- Push button calibration
- Input: Conductivity cell and Pt100
- Weight: 2 kg

LABORATORY INSTRUMENTS

SERVICES

When you buy a Polmon Product / Solution, you are not only buying the best value for your money, but are also receiving the benefit of Polmon's unsurpassed customer service and post-sales technical support

INSTRUMENTATION CONSULTANCY SERVICES

- Tailored URS, IQ/OQ/PQ protocol preparation according to the customer's regulatory requirement
- Executing onsite qualifications
- Turnkey concept to commissioning solutions

INSTRUMENTS SERVICE

- Qualified Field support and in-house service team provide timely service.
- Well-appointed test and calibration lab accredited by NABL

INSTALLATION

- Experienced site engineers are engaged to properly integrate our instruments into your processes and provide supervision as required

CLEAN ROOM VALIDATION

- We provide extensive range of service pertaining to clean room validation by our team of experts
- Our HVAC validations comply with USFDA, Schedule M and ISO 14644 standards

CALIBRATION

- Our engineers ensure that all the instruments are calibrated periodically and comply with cGMP and FDA norms.

TEMPERATURE / RH MAPPING

Temperature & Humidity mapping is done for Autoclaves, Dry Heat Sterilizers, ETO and Stability chambers, Incubators, Tray Driers, VTDs and Warehouses. Our service includes:

- Determining critical mapping points
- Determining sampling frequency
- Data logger selection
- Calculating Mean Kinetic Temperature from the data logs
- Documenting the process

PRODUCT DESIGN AND R&D

- Our team of engineers can design a solution to meet your customized requirement.

TRAINING

- Polmon's factory trained and experienced engineers provide your personnel with knowledge and skills necessary to maintain and maximize the performance of Instruments and life span.

ANNUAL MAINTENANCE CONTRACTS AND SPARES MANAGEMENT

- AMC helps to extend the life of the instrument and keep it in peak operating condition.
- Availability of spares ensures quick servicing and reduces equipment downtime

OPERATIONAL & MAINTENANCE CONTRACTS: 24/7 SUPPORT

- Our O&M support is an ongoing process of sustaining the performance of the systems &equipment's to design intent
- To address changing needs of customers and to maintain optimum efficiency levels.
- Post project hand holding to customer

ON-LINE SUPPORT & TECHNICAL ASSISTANCE

- A team of customer support specialists effectively assists our customers for technical, operational and trouble-shooting queries.

SERVICES

POLSTAT 2300
FIRST-OF-ITS-KIND. ONE-OF-ITS-KIND.

NEW PRODUCT

A NEW-AGE HEATING & COOLING SYSTEM

POLMON

POLSTAT 2300

Polstat, a new, innovative Heating and Cooling system for Pharma Laboratory & Kilolabs from Polmon, is specially designed for precise temperature control of reaction vessels of capacity ranging from 250 ml to 100 lts over a wide working temperature range.

Polstat features a built-in electrical heater for Heating and a Common Chiller for cooling operations. The circulation pump discharge pressure is maintained taking into consideration, the vessel safety. Polstat can be operated / controlled through a local LCD keyboard (HMI) and can also be monitored / controlled through SCADA. **Polstat** occupies minimal space and is characterised by a cost-effective design.

EXPERIENCE THE ADVANTAGE OF DISTRIBUTED TEMPERATURE CONTROL
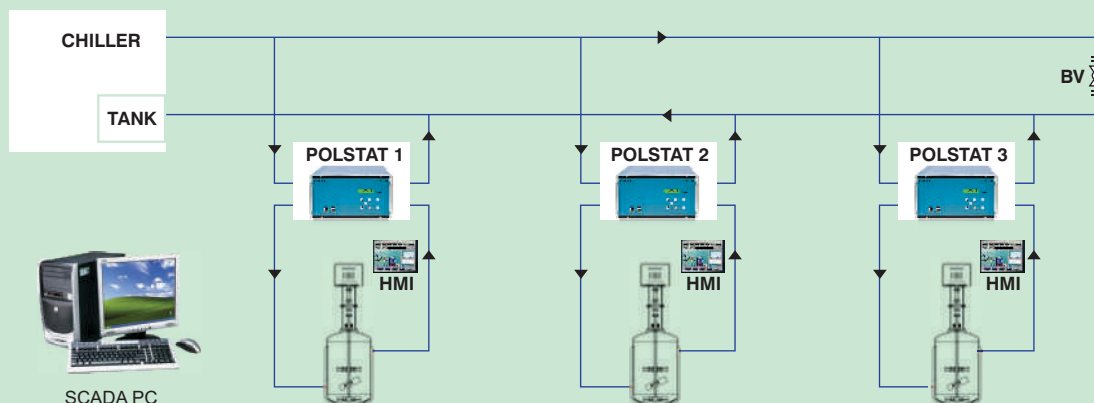
APPLICATIONS

Heating and cooling the vessels of size 250 ml to 5 Litres

HIGHLIGHTS

MINIMAL LAB SPACE
- Common chiller for Polstat
- Polstat can be mounted in service bay

WIDE TEMPERATURE RANGE
- Precise control of reactor mass and jacket temperatures
- Temperature stability up to $\pm 0.5^0$ C

AUTOMATION
- Control all Polstats from a PC
- 21 CFR Part 11
- HMI-based operation / control

HEAT TRANSFER FLUID
- Glycol+Water mixture -10^0 to 60^0C
- Synthetic oils -35^0 to 140^0 C
- Recipe management
- Closed loop for operator and process safety
- Improves utilization of vessels
- Saving of lab space
- Water cooled chiller placed in service area to avoid additionalload on HVAC system
- Provision for customisation

FEATURES

- Optimum footprint
- Fast temperature changes
- Built-in electrical heater
- In-built thermostat for over temperature protection
- Quickly addresses exothermic and endothermic reactions
- Centralised controlling data

SPECIFICATIONS

POLSTAT 2300
Working temperature min: -35^0C
Working temperature max: 140^0C
Ambient temperature max: 50^0C
Temperature stability: $\pm 0.5^0$C
Heating capacity: 1 KW
Cooling capacity: 0.7 KW
Weight: 15 Kg
Pump pressure max: 0.4 Kg/cm^2
Pump flow max: 20 L/Min
Pump type: Magnetic Drive Pump
Interface: DI - 4, DO - 2, RTD - 2

CONNECTIVITY

Ethernet
RS485

HEAT TRANSFER SYSTEMS

HEAT TRANSFER SYSTEMS

Polmon has built up robust domain knowledge of 25 years in the sophisticated area of Instrumentation and process Automation. With this invaluable experience backing us firmly, we are fully capable of providing advanced SFHTS-based process automation solutions.

Our richly experienced teams of Chemical and Instrumentation engineers are adept in the areas of design, manufacture, supply and execution of SFHTS. The sizing and design of the system itself follows a thorough study of the process and minute calculation of heat loads.

Our Heat Transfer Systems range

- Single reactor heat transfer system
- Multiple skids: Hot, Cold, Chilled
- Single reactor heat transfer system with electrical heating
- Hot water systems
- RCVD / VTD /ANFD Heating & Cooling Systems

**Multiple skids:
Hot, Cold, Chilled**
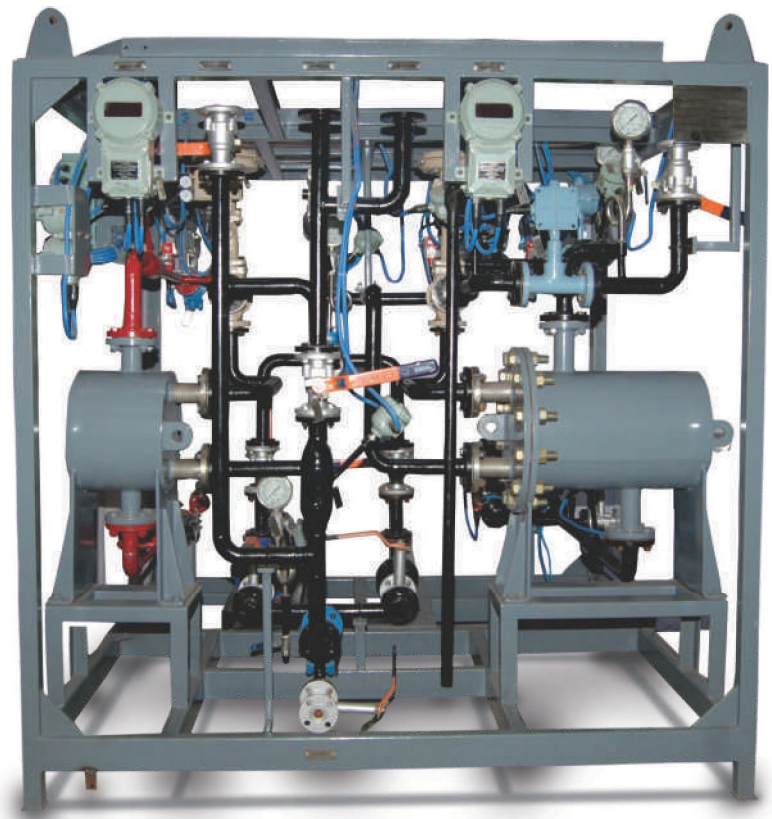
SINGLE FLUID HEATING AND COOLING SYSTEM

When it comes to chemical reactions in production processes, the right temperature is critical and so accordingly, is the need for an appropriate heating/cooling solution.

For process engineers it is essential to find a compromise between yield quality and productivity.

Polmon's Single Fluid Heating and Cooling Systems result in better and accurate heat transfer for sensitive processes.

- PID tuning is easy in multiple products' plants
- Effectively addresses the reaction kinetics
- No leakage at process area - helps in maintaining a neat and clean plant
- No temperature deviations
- Corrosion-free operation
- Cleaner operation
- No cross-contamination of utilities
- No steam traps at reactor
- Centralized control
- Accurate temperature control
- No hot and cold spots - this in turn results in consistent product yields and quality - a regulatory requirement for APIs
- Easy to maintain
- Piping network is more aesthetic
- No thermal shocks to reactor
- Doubles the reactor life

HEAT TRANSFER SYSTEMS

TECHNICAL SPECIFICATIONS

Application	Precise heating and cooling
Temperature Range	(-) 50°C to 250°C
Heat transfer fluid	MEG / synthetic oils (Based on temperature range)
Type of Heat Exchanger	PHE / Shell and Plate / Shell and Tube or Electrical Heater
Utility Requirement	Steam, chilled water & chilled brine or with packaged utilities (Chiller & Electrical Heater)
MOC of Internal Piping and Components	Mild steel / Carbon steel / SS304 or SS316
Type of Pumps	Seal or seal-less
System Accuracy	± 1°C
Temperature Controller	PLC or Dedicated Controller
Operations	Graphical HMI (Display: 7", 10" & 12")
Data Recording	SCADA with Historian
Area of Classifications	Safe & hazardous area

Applications
- Crystallization
- Precise temperature control
- Multi product environment

HOT WATER GENERATOR

- For pharmaceutical process, heating and drying
- Works continuously
- Requires minimal maintenance
- Efficient control

Features

- Compact and complete solution
- Design, engineering, manufacturing and instrumentation under one roof
- Customized advanced temperature controller with DCS connectivity
- Skid mounted system for ease of installation
- Versatile heating controls for consistent and desired temperatures
- Advanced condensate removal technique
- Instantaneous results

Advantages

- Instant output - Hot water generation is instantaneously available for fluctuating process loads and urgent demands
- Less energy consumption - System designed with heat exchangers with very high heat transfer rates and efficiency
- Least cost of ownership - Inexpensive solution in terms of initial capital costs, installation, operation control with safety and maintenance
- Highly reliable - Ensures accurate hot water temperature demanded by most of the temperature sensitive drying processes
- Compact yet efficient - Up to 75% less space required for installation when compared to conventional hot water tank heating systems

TECHNICAL SPECIFICATIONS

Application	Process / Drying
Temperature Range	RT to 95°C
Type of Heat Exchanger	PHE / Shell and Plate / Shell and Tube or Electrical Heater
Utility Requirement	Steam or electrical power supply
MOC of Internal piping and components	Mild steel / Carbon steel / SS304 or Ss316
Type of Pumps	Seal or seal-less
System Accuracy	± 2°C
Condensate Pumping system	Automatic Pumping Trap
Temperature Controller	Advanced controller having an unique feature and no need of secondary controller for activating the safety cut off valve
Area of classifications	Safe & hazardous area

"STRONG PRESENCE IN..."

AUTOMATION

From our experience in the Life Sciences industry, our solution portfolio has evolved to include all aspects of Pharmaceutical Automation solutions - from concept, design, build, test, install, validation to maintenance and training.

Our team of highly qualified process, chemical and instrumentation engineers have great experience in delivering industry-leading solutions. We excel in designing and delivering FDA-compliant systems that meet the continuous process monitoring and automation requirements of API industries.

Safe handling of
Unit processes and
Unit operations

Solutions to maintain
uniform crystal size
and consistency

AUTOMATION

OUR SOLUTIONS

Batch Process Automation

Automate the Unit Processes & Unit Operations, L0 to L4 Integration and able to generate eBPR

Process Automation

Addition Controls pH based, Temperature based

Utility Automation

Reactors & Downstream equipments

Utility Management

Provides SFHTS based solution to address the associated problems with conventional utilities

EMS (Environmental Monitoring System)

- CPP (Critical Process Parameters) Monitoring & Logging for a Clean Room application in Pharma & Formulations as per regulatory norms
- Compliant with ISPE guidelines for the complete range of field instruments and softwares

BMS

Integrate all facility sub systems

Solvent Handling System

- Handle the complete solvent cycle in the Pharma
- Safe handling and accountability of solvent usage

Solvent Recovery System

- Automate the Batch / Continuous distillations in the Pharma
- Atmospheric / Vacuum distillation Automation

PROJECT LIFE CYCLE
EXPERTS IN "CONCEPT TO COMMISSIONING"

SUPPLY • ENGINEERING • ERECTION & COMMISSIONING • SYSTEM DESIGN • VALIDATION & DOCUMENTA-TION 21CFR part-11 compliance • CONCEPT • MAINTENANCE
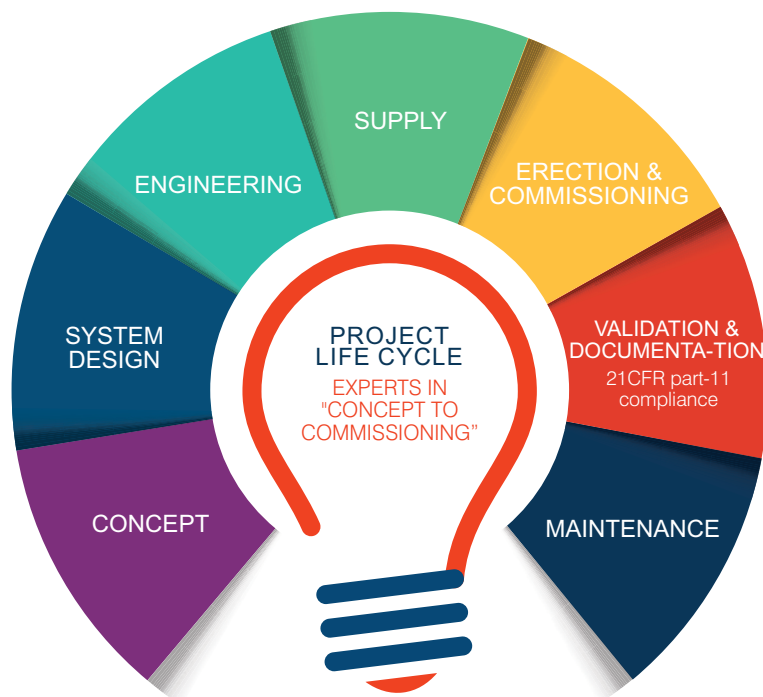
OUR PROCESS = OUR STRENGTH

OUR EXPERTISE

Automation to Critical Processes of

- Grignard Reaction
- Hydrogenation
- DEZ - NBL
- Crystallization

RESULTS

- Improved Safety and Less Down Time
- Maximized Productivity
- Process Compliance
- Lower Operating Costs
- Improved Product Quality and Consistency

BEST-IN-CLASS INFRASTRUCTURE & TALENT

- In-house Design and Development
- Competent to work on Foxboro, Wonderware, PCS7 & Delta V
- FAT / Simulation lab
- Teams of Chemical, Instrumentation, IT & Electronic Engineers
- Efficient operations and execution team
- Quality systems as per ISO 9001:2015
- Validation and Documentation as per GAMP 5 guidelines

EXTENSIVE SKILL BASE

- Partner in preparing customer URS
- Risk analysis, mitigation and design
- Performance Qualification (PQ) assistance at every stage of customer's process
- CSV V-model project methodology
- Matured and Validated algorithms for critical processes
- Interactive Operator experience
- Efficient Manpower optimization

MAJOR PROJECTS EXECUTED

- BLOCK AUTOMATION
  NATCO, Mylan II, Zydus Cadila, Hetero, Solara, Alembic

- REACTOR PROCESS AUTOMATION
  Sai Life Sciences, Almelo, Divis, Alembic, Biocon

- EMS
  NATCO, AET, Micro Labs, Lupin, Intas, Concord Biotech

- SOLVENT DISPENSING SYSTEM
  Dr. Reddy's, Mylan, Laurus, Smilax, Solara, Cadila, Alivira, Avra Labs, Divis, NATCO, Zydus Cadila, Alembic, Srini Pharmaceuticals, Torrent

- HYDROGENATION
  Zydus Cadila, Kudos Chemie, Dr. Reddy's, Solara, Aurobindo, Suven, GVK Bio

- SINGLE FLUID BASED REACTOR PROCESS AUTOMATION
  Apotex Pharmachem, Anthem Bio Sciences, Jubilant, Micro Labs, Cipla, Granules Omnichem, NATCO, Laurus, Aurobindo, Sun Pharma, Mylan, Teva, Dr. Reddy's, Hetero, SMS, Divis

- SOLVENT RECOVERY SYSTEM
  Laurus, Mylan, Shasun, Bhageeradha, NetMatrix, SMS, Zydus Cadila, Biocon

AUTOMATION

Ex Remote PC – rPC 1200

REMOTE MONITORS

Highlights

- 18.5", 1366x768 HD display
- Windows RDP protocol provides the most reliable solution to access SCADA applications remotely
- Exd certified monitor
- Exi certified intrinsically safe keyboard
- SS Construction

The Polmon rPC 1200 is a remote monitor suitablefor use in Zone1, Zone2 GasGr. I, IIA & IIB hazardous areas. Operator can control and monitor any process in the shop floor with integrated intrinsically safe keyboard and mouse. It utilizes highly secure remote monitoring protocol over Ethernet/IP.

Key Features

Industrial grade embedded CPU

Zone 1 and Zone 2 approved

SS flame proof enclosure & intrinsically safe keyboard & mouse

Integrated stand mount enclosure

18.5" 16:9 LCD Monitor

108 keys IP65 membrane keyboard.

HMI 1010

The Polmon FLP HMI 1010 Human Machine Interface is designed to meet the requirements of operator interface to monitor and control systems such as PLC / DCS. This 10 inch HMI is specially designed for Life Sciences industries and suitable for use in Zone1, Zone 2 Gas Gr IIA, IIB Hazardous Area.

Highlights

- 10" TFT-color display touch screen
- Resolution 1024 x 768
- SS Construction
- Graphic rich visualization software
- Ethernet 10/100 base with CAT5
- Exd Certified

REMOTE MONITORS

CLIENTSPEAK

"

As a customer of Polmon, we have always been provided with state-of-the-art products and automation solutions in both technology and quality. Polmon has proved to be a truly customer-centric company and we are highly satisfied with their services.

K. VenkataRami Reddy
Associate Director - Projects
Dr. Reddy's Laboratories Ltd.

"

I have always received very good service from the Polmon group. Their timing and quality have always met my expectations.

I am impressed by their clear and professional communication. We certainly look forward to associating with Polmon for our future projects.

B. Sree Rama Sarma
AGM - Engineering
AurobindoPharma Ltd.

"

I want to congratulate Polmon for their critical role in providing Mylan with the necessary tools to succeed in the implementation of new customer product lines over the years. Their technical knowledge and expertise in automation solutions is unsurpassed by any other vendor we have worked with. I am especially impressed with the responsiveness and the professionalism of the team.

L.V. Satyanarayana
Sr. President - Projects
Mylan Laboratories Ltd

"

I have had the opportunity to work with Polmon on several projects in the pharmaceutical environment. In every case, the team at Polmon has been responsive, thorough, and shown the ability to do what was necessary to complete the project on-schedule. We continue to choose Polmon as our supplier because of our consistent successes together.

J. Sambi Reddy
Director - Operations
Hetero Drugs Ltd.

"

Polmon's relationship with us started with digital temperature indicators. Over the years, Polmon has evolved admirably and given us the best automation solutions. The determined efforts displayed by Polmon inline with our ever-changing requirements are commendable. We wish Polmon great success for the future.

S. Ramakrishna
GM - Maintenance & Projects
Divis Laboratories Ltd.

"

Polmon has been our preferred supplier for Clean room products. They understand, adapt and customise to our requirements and we have always been impressed with their innovative capabilities. We appreciate Polmon's support in making our project a success.

L. Ravikumar
DGM - Engineering
NATCO Pharma Ltd.

POLMON
Measure. Control. Automate.

"

Polmon has been our prefer supplier for clean room products (CDDAS). They understand, adopt & customize to our requirements & we have always been impressed with their innovative capabilities. Their timings & quality have met my expectations. We appreciate polmon's support in making our projects a success. We wish them all the best in their journey.

iCLEAN

"

I hold in high regard Polmon's ability to stay abreast of the emerging automation and instrumentation technologies. I am happy that they apply this rare ability to the clean room products that they build for us.

L.B.R. Chakravarthy
Chief Manager - Projects
Piramal Enterprises Ltd.

"

Polmon has been our preferred supplier for our 'Digital Synchronized Clock's. Their quality of instrumentation products is very much superior, rather differentiated. They meet customer specific requirements and enable us to meet quality & regulatory requirements. We appreciate Polmon's support in making our projects a success. We wish them all the best in their journey

T.J. Srinivas
GM - Projects & Engineering
Pharmazell (Vizag) Pvt. Ltd.

"

Our scorecard for Polmon would without hesitation be 100% Quality and 100% Innovation. Attention to detail and after sales service are also their strong points. Polmon has exceeded our expectations for the products we had engaged them for.

PrashantParmar
GM - Projects
Cadila Healthcare Ltd.

"

Polmon has been our preferred supplier for "Utility Low Pressure Alarming System'. The performance of Polmon products has been highly satisfactory and speaks for their consistency in quality. Polmon can surely be trusted upon to handle any major instrumentation related projects and complete them.We appreciate "POLMON' support in making our projects a success. We wish them all the best in their journey

M. Sunder Kumar
GM - Engineering & Maintenance
Laurus Labs

"

Polmon has been our preferred supplier for our Distributed Data Acquisition System (DDAS). They understand, adopt and customize to our requirements and we have always been impressed with their innovative capabilities. Their timings and quality have met my expectations. We appreciate Polmon's support in making our projects a success. They meet customer specific requirements and enable us to meet quality and regulatory requirements in a better ways. We wish them all the best in their journey

K. Hari Mohan Reddy
General Manager
Virchow Laboratories Limited.

Actavis Pharma Manufacturing Pvt. Ltd.

Aculife Healthcare Pvt Ltd

Ajanta Pharma Ltd.

Alembic Pharmaceuticals Ltd.

Alkem Laboratories Limited

Amneal Pharmaceuticals Ltd.

Anthem Bio sciences Pvt. Ltd.

Apotex Pharmachem Pvt. Ltd.

Aurobindo Pharma Ltd.

Bharat Biotech Ltd.

Biocon Limited

Biological E. Ltd.

Cadila Healthcare Ltd.

Carrier Race Technologies Pvt. Ltd.

Cipla Ltd.

Concord

Divis Laboratories Ltd.

Dr. Reddys Laboratories Ltd.

Eisai Pharmaceuticals India Pvt. Ltd.

Emcure Pharmaceuticals Pvt. Ltd.

Fabtech Technologies International Ltd.

Glenmark Pharmaceuticals Ltd.

Granules India Ltd.

GVK Bio sciences Pvt. Ltd.

Hetero Group

Hospira Health care (I) Pvt. Ltd.

Indoco Remedies

Ingersoll Rand Climate Controls

Intas Pharmaceuticals
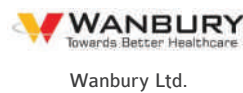
Integrated Clean Room Technologies Ltd.

Ipca Laboratories Ltd.

Jubilant Generics Ltd.

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LUPIN
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Medilux
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Piramal Healthcare
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Piramal Enterprises Ltd.

sai
solutions that add up
Sai Life

Schneider Electric
Schneider Electric

sms
Values Life, Values Quality
SMS Pharmaceuticals Ltd.

SRF
We always find a better way
SRF Limited, Gujarat

Strides Shasun
Strides Shasun Ltd.

SUN PHARMA
Sun Pharmaceuticals
Industries Ltd.

SUVEN
Life Sciences
Suven Life sciences Ltd.

TEVA
TEVA PHARMACEUTICALS LTD
TEVA API India pvt. Ltd.

torrent
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Redefining Healthcare
Unimark Remedies Ltd.

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Zydus
Zydus Cadila Health care Ltd.

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BANGLADESH
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Bangladesh

POLMON

Measure. Control. Automate.

POLMON'S CAPABILITY MATRIX

INSTRUMENTATION | AUTOMATION | SINGLE FLUID HEAT TRANSFER SYSTEMS |

SERVICES | MEDICAL DEVICES

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