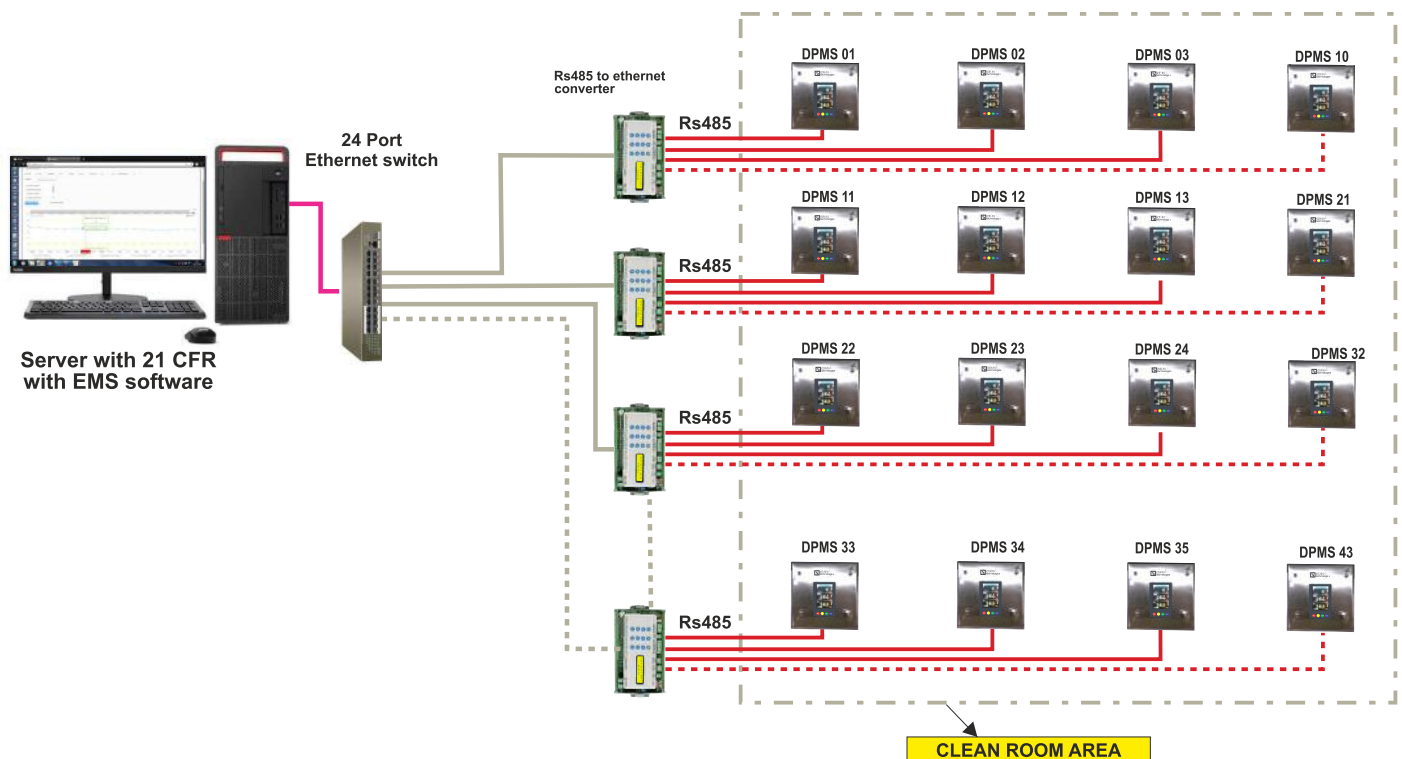# RH+T+DP CLEAN ROOM MONITOR

enviroDPMS

Assists in GMP and Data Integrity in multiple pharma clean rooms

FEATURES

- Microcontroller based
- RH, Temperature & DP measurement
- 3.5 inch color LCD/TFT display
- Software programmable channel ranges, units & input types
- User programmable for 1, 2 or 3 channel measurement
- Real Time Clock with battery back-up
- Software calibration for channels
- MODBUS / TCP multidrop communication for PLC, SCADA, etc.
- 24 VDC, 1 AMP Power Supply
- FDA 21 CFR Part 11 Compliance EMS software
- Advanced digital RH+T sensor technology

BMS - CLEAN ROOM MONITORING SYSTEM

Server with 21 CFR with EMS software

24 Port Ethernet switch

Rs485 to ethernet converter

Rs485

DPMS 01   DPMS 02   DPMS 03   DPMS 10
DPMS 11   DPMS 12   DPMS 13   DPMS 21
DPMS 22   DPMS 23   DPMS 24   DPMS 32
DPMS 33   DPMS 34   DPMS 35   DPMS 43

CLEAN ROOM AREA

INPUTS

No. of inputs	3 (RH, T, DP)
Input RH	a) 0-1 V DC b) 4~20 mA
	c) In-built Digital RH + T Sensor
Input T	a) PT-100 b) 0-1 V DC c) 4~20 mA
	e) In-built Digital RH + T Sensor
Input DP	a) 0-1 V DC b) 4~20 mA
	c) In-built digital DP sensor
Input AHU	Potential free digital input

Input Range	%RH	0~100% RH
	Temperature	PT-100: -90°C ~ 390°C (user selectable)
		Digital: 0°C ~ 100°C (user selectable)
	DP	-250 ~ 900Pa, -25 ~ 90 mmWC (user selectable)

Accuracy

For In-built Sensors	%RH	± 2% RH
	Temperature	± 0.3 °C
	DP	± 1.5% of reading ± 5 Pa,
		± 1.5% of reading ± 0.5 mmWC
For External Sensor	%RH	± 2% RH (depending on sensor)
	Temperature	± 0.5% (depending on sensor)
	DP	± 0.5% (depending on sensor)

INDICATION

Display type	3.5 inch color LCD/TFT display

OUTPUTS

Buzzer output	External Potential free relay output for Buzzer

CLOCK

Real time clock	Available
Battery backup	Available (Optional)

ENCLOSURE

Construction	a) In-built RH+T+DP in front sensing
	b) In-built RH+T+DP sensing at rear
	c) RH+T+DP from external transmitters/Sensors
	d) In-built DP sensing, External RH + T
	transmitter

MOC		
	Faceplate	SS304
	Body	MS, powder coated
Dimensions (in mm)		Front Plate - 210(W)x210(H)
		Back Plate - 190(W)x150(H)x32(D) mm
Mounting		
	Modular Puff panel	a) 50 mm or more b) 100 mm or more
	Brick wall	50 mm or more
Cutout (in mm)		173(W) x 165(H)

COMMUNICATION

System		
	CPU	32 bit MCU
Communication interface		
	Communication	Rs485
	Protocol	MODBUS, Enviro Proprietary
Slave ID		User programmable, 1~128

Parameters (ONLY MODBUS)

Process Variables	Read only
Setpoints	Read & write from the host computer
Alarm Status	Read only
Hysterisis	Read & write from the host computer
Alarm Activation Delay	Read & write from the host computer
Power On Activation Delay	Read & write from the host computer
RTC Synchronzation	Read & write from the host computer

PROGRAMMABLE PARAMETERS

Setpoint		
	% RH	0 ~ 100
	Temperature	-40.0 ~ 90.0 °C
	DP	-19.9 ~ 19.9 mmWC
		-199 ~ 199 Pa
Resolution		0.1 for RH & T
		0.1 for DP unit mmWC
		1 for DP unit Pa
Hysteresis		User selectable
Alarm activation delay		User selectable, 0~250 min
Setpoint lock		Password Protected

OTHER

Programming	Through Capacitive Touch keypad
Supply voltage	24 V DC, 1 amp
Operating ambient temperature	0~50 °C
Relative humidity	Below 90%, non condensing

SOFTWARE FEATURES

Software Architecture	Multiple Cleanrooms & Multiple Plants can be monitored centrally
Alarm & Alerts	Alarms & Alerts by way of Pop-ups, Email & SMS can be sent to multiple authorities
Interface	Cloud Enabled Web Interface
Database	SQL Server
Audit Trail	Database (SQL) & GUI both supports audit trail
Reports	Audit Report, MIS Reports, Alarm Report & Graphs for audit & analysis. Also value added customization of reports is possible

We help pharma companies in GDP, GMP & 21 CFR compliance....

➔ With enviroDPMS & its EMS software it is now possible to simultaneously & accurately monitor DP, RH & Temperature in multiple clean rooms in the Pharma plant, with due Data integrity about the logging of these parameters.

➔ The clean room door open/close event is closely monitored & duly logged for any DP changes which are correlated for audits.

➔ In event of any deviations pop-up alarms are generated on the monitor of central administrator along with text message & email to concerned officials also a hooter alarm is generated in the corridor.

➔ Feature Rich MIS reports are generated in PDF format in compliance with the 21 CFR guidelines of the US FDA thereby assuring accuracy & Data integrity.

Note: All specifications are subject to change without notice due to continuous improvements.