

RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY
RAJAGIRI VALLEY P.O.KOCHI – 682039

Notice inviting quotation

Competitive quotations are invited for the supply of software/equipments for lab modernization under MODROB scheme of AICTE. The quotation along with specifications, warranty period, taxes etc. should reach the undersigned on or before 28th December 2013. The list of software/equipments with specification is given below.

Specifications: DCS System comprising of the following

Processor module	1
Software	Necessary software for Engg. Configuration programming, Hart interface, i/p-o/p modules
Analog I/P	4 to 20 mA with Hart 16 Channel
Analog O/P	4 to 20 mA with Hart 16 Channel
SCADA	(Minimum) 1 user
Input/output terminal	Relay board out 32 points
Input Power supply	230 VAC 50Hz Single phase
24 V DC power supply	Internal power supply
Ethernet switch	8 ports
Cabinet	Fully wired cabinet with necessary lighting and cooling fans
Operator Interface	Work station with monitor 21" windows OS, Micro soft,Office,Antivirus etc.
Services	Engg.Drawing Site visit & Training

Specifications: Programmable Logic Controller

I/O modules	Digital input -14, digital output -16 & Analog input-2, Analog output -1
Software	Programming /Device Interface
Input Power supply	230 VAC 50Hz Single phase
Module Power supply	DC 12/24 Volts,5 Amps
Communication ports	RS 232,RS 485

Specification Transmitter

Transmitter type	Differential pressure (DP)
Range	0 to 0.5 BAR
Signal Based on	Hart Protocol
Output	4 to 20 mA
Material of construction	SST
Sensor	Fluid (Silicone)

Specification HART communicator

Type	Hand held Device/Integrated with DCS IO
Software	All required for hart communication including device driver and GUI
List of protocols	At least HART and Field bus .

SPECIFICATIONS: CORIOLIS MASSFLOW METER

Cable conduit connection	M20 x 1.5, female thread with cable glands ANSI ½'' NPT, female thread without cable glands.
Repeatability for liquids	$\pm 0.05\% \pm (\text{zerostability}/2) / \text{flow rate} * 100\%$
Accuracy volume flow	$\text{SQRT} ((\text{mass flow error in } \%)^2 + (\text{density error in } \%)^2)$
Output	4 to 20 mA DC

CONDUCTIVITY METER

Accuracy	+1% FS+1Digit
Temperature Probe Range	0-1000 Mhos/cm
Temperature Compensation	Auto : 0 to 50 °C Manual : 0 to 50 °C
Power	230V+10% AC, 50 Hz
Measuring Cell	Platinum DIP Type
Resolution	0.1 μ S/cm

GAS ANALYZER

Operating Temperature	0 to +50 °C
Storage	-30 °C to +60 °C
Operating Humidity	0-99% Relative Humidity(non-condensing)
Measurement Range	0-1000 PPM
Measurement Resolution	1 PPM
Accuracy	+/- 5% or +/- 10 PPM
Battery	9V, NEDA 1604A
Sensor Type	Stabilized Electrochemical Gas specific(CO)

DUAL CALIBRATOR

High accuracy	$\pm 0.02\%$ of FS ± 2 counts (except ohms)
Range	Pt100 : 0 to 400.00 W J -Type Thermocouple : -210 to 760 °C K -Type Thermocouple : -270 to 1372 °C mV Source : -199.99 to 199.99 mV mA Source : 0 to 19999 μ A
Accuracy	Thermocouple, Mill volt : $\pm 60 \mu$ V Milliamps : $\pm 6 \mu$ A Pt100, 3-wire RTD : ± 0.5 W Mill volt : $\pm 60 \mu$ V
Measure/Calibrate in °C/°F	-270 °C to +1820 °C, -454 °F to +3308°F
Battery	Ni-cad batteries for 4 to 8 hours operation on

	single charge
High resolution	0.1 °C or °F, 10 μV, 1 μA, 0.02 Ω

pH METER

Range	-2.00 to 16.00 pH
Accuracy	+/- 0.01 pH
Resolution	0.01 pH
Slope	80-120%
Temperature Compensation	Manual / Automatic
Calibration	5 Point / Manual Calibration
Communication	RS-232
Power Supply	Mains Operated (230 V +/- 10%) & Rechargeable Battery Operated
Recorder O/P	0-2 VDC Programmable Output

Add redox probe