



BIOTRON - ECONOMY



Many vessels to choose from...

We offer multiple vessel options, from Glass - in Glass, Packed bed, fluid bed, photo bioreactor, All SS316 vessels, SS316 jacket with Glass vessels in multiple capacities, a common simplistic economic Electronic control system, this system can also be offered with a linux SBC and a 7" capacitive touch screen, the only difference, the number of Peristaltic pumps being two instead of our Regular Four.

Highlights:

- Best suited for Degree & PG colleges
- Multiple Vessel sizes to choose.
- Fully Instrumented advanced control system
- Compatible with all our regular Bioreactor Accessories.
- PC interface & standalone operation
- Optional DO control
- Ideally sets the experimental conditions to optimize the growth phenomena.
- This enables the student/researcher to safely handle the bacteria/ virus cells at ideal chemico- physical conditions.
- In case a third pump is required for material transfer, our high capacity Peristaltic Pump will be supplied as an add-on.
- Optional Capacitive touch screen display with Linux SBC

The Electronic unit:

Fully integrated electronic unit for pH & temperature control based on the state of art embedded distributed control system. Dual high precision, Cassette, variable speed continuous duty Stepper motor driven Peristaltic pumps guarantees ultimate pH control & regulation. The control system employs proprietary Reactive Logic™ control that outperforms any PID or Fuzzy logic controller. at affordable cost.

Fully integrated electronic unit with ...

- ⇒ Based on high performance ATMEL ATMEGA128 RISC controller
- ⇒ DS1307 IIC Real-time clock (RTC) with battery back-up
- ⇒ 20 X 4 backlit alpha numeric LCD with integrated membrane keyboard
- ⇒ Dual full duplex RS232 interface
- ⇒ High performance Single 24V SMPS power supply
- ⇒ pH controller based on proprietary Reactive logic™
- ⇒ Guaranteed pH control resolution 0.01 pH units
- ⇒ Twin variable speed Eight roller Peristaltic pumps
- ⇒ P.Pumps driven by high-performance uni-polar L/R stepper drives
- ⇒ P.Pumps control pH, pump1 for Acid, Pump2 for Base
- ⇒ Temperature controller based on Proprietary Reactive Logic™
- ⇒ Dual temperature sensors, for medium & circulator
- ⇒ Sparger air flow control by front panel mounted Rotameter
- ⇒ Optional DO controller interface

To Order Call: +91 402 420 1570-72 (3 Lines)

Unique system features not found even in the best imported systems...

Worlds only Unique all Teflon RUSTON turbine six segment impeller, is easy on shear sensitive medium at the same time provides optimum stirring action. DC motor speed control by high performance PWM chopper drive for uniform agitation.



Uni-polar L/R high performance stepper motor variable speed drive based peristaltic pumps are not effected by voltage fluctuations & thus provide highest accuracy at all times. De-mountable cassette head peristaltic pump facilitates easy maintenance. Eight roller pump head with Molybdenum Di-sulphide rollers ensures highest pumping accuracy with very minimum pulsation. Extended pump tubing life. High flow pump heads are from Watson Marlow & easy load heads from Cole Parmer

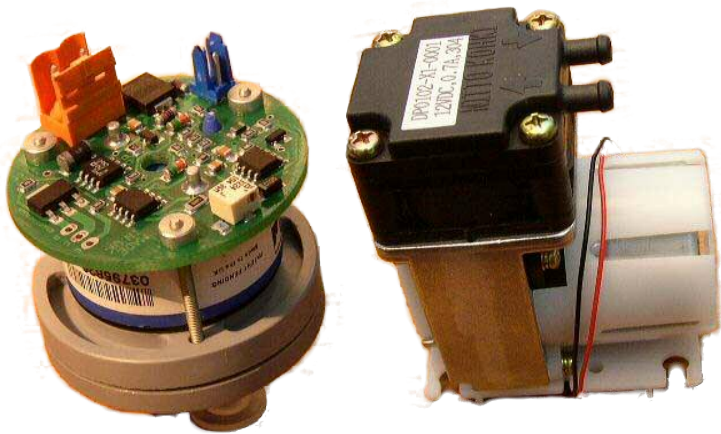
Unique all SS HOT, COLD & TAP water circulation system based on dedicated controller & individual circulation pumps and is controlled by our proprietary Reactive logic™. The dwell time of the circulation medium is also controlled apart from the source temperature control to achieve best and fastest control.



A host of vessel options to choose from, Stir tank & photo bioreactors/fermenters to Parallel plate, Airlift, Fluid & packed bed reactors. We manufacture the complete system in-house, including all the accessories we support. Also we can custom fabricate as per your design, we have done this for IIT Jodhpur , Central Glass & ceramic Institute (CGCRI Calcutta) a CSIR lab & NIT Agaratala

All our systems are rated for continuous operation, fitted with the best power supplies & state of art Embedded Distributed control systems.

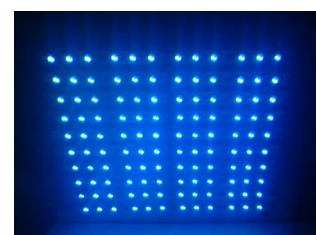
Instrumentation through innovation



We supply on-line gas analyzers for CO₂ & O₂, or any other gasses with built-in brushless DC gas sampling pump. We provide different sensor combinations based on NDIR, Electro chemical or Tin Oxide solid state sensors.



Our new addition is a 7.83Hz Schumann resonator probe to enhance cellular growth., a natural resonant frequency required for all life forms to sustain.



We supply a host of options for Photo bioreactor light sources, the most popular are our LED light sources with intensity control & additive color mixing. We manufacture the complete LED source available in Warm White, Cool White or Neutral & RGB, also the intensity and cycle controller are in house manufactured. We can customize the control program as needed by your application eg, follow sunlight pattern etc.

We provide these light sources as hang down tubes in case of photo STBR's, wrap arounds, or as flat panels for parallel plate or flat plate reactors.

Spectrochem Instruments Pvt. Ltd.

Regd Office: (correspondence only)

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