ETHER
Engineeering Educational Equipments
An ISO 9001 : 2015 Certified Co.
ETHER ENGINEERS
52, Industrial Estate, Ambala Cantt - 133006
Mb : 098963 33447, 098961 33557, 090340 83447
Website: www.etherengineers.com
Email: etherengineers@rediffmail.com, info@etherengineers.com
Manufacturers & Exporters of Engineering, Scientific & Laboratory Equipments

PARALLEL /COUNTER FLOW HEAT EXCHANGER (EE-1572)

Heat exchanger is devices in which heat is transferred from one fluid to another. The apparatus consists of a concentric tube heat exchanger. Hot water flows through inner tube in one direction only and cold water flows over the inner tube in outer tube. Direction of cold fluid flow can be changed from parallel or counter to hot water so that unit can be operated as parallel or counter flow heat exchanger. Flow rates of hot and cold water are measured using Rotameters. A magnetic drive pump is used to circulate the hot water from a re-cycled type water tank, which is fitted with heaters and Digital Temperature Controller.

EXPERIMENTS:

- To calculate the following parameters both for parallel and Counter flow arrangement.
- To find the rate of heat transfer
- To calculate the LMTD
- Overall heat transfer co-efficient.
- To compare the performance of Parallel and Counter flow heat exchanger.

UTILITIES REQUIRED:

- Water supply 10 lit/min (approx.) and drain
- Electricity Supply: 1Phase, 220 V AC, 3 kW
- Floor area 2 m x 0.6m

TECHNICAL DETAILS:

- System : Water to Water
- Length of Heat Exchanger : 1.2 m(approx.)
- Outer Tube : Material Stainless steel, ID 27.5mm, OD 33.8 mm(approx).
- Inner Tube : OD 12.7mm (approx)
- Water Flow Measurement : Measuring cylinder & Stop Watch with Rotameters (2Nos.) one each for cold & hot fluid
- Hot Water Tank : Made of Stainless steel Insulated with ceramic fiber wool.
- Hot Water Circulation : Magnetic Pump made of Polypropylene to circulate Hot Water. Maximum working temperature is 85°C.
- Heaters : Nichrome wire heater (2 Nos.)
- Temperature Sensors : RTD PT-100 type 6 Nos.
- Control panel : Digital temperature controller 0-199^0 C (For Hot Water Tank)
- Digital temperature indicator: 0-199^0 C, with multichannel switch
- On off switch, Mains Indicator etc
- A good quality painted rigid MS Structure is provided to support all the parts.