



## Single Fluid 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.

### Advantages of Single Fluid System

- 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

## 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
- Pyrophoric reactions (Grignard, Sodium & Alkali metals)
- Multi product facilities (CRAMS)
- High temperature reaction