IntegraHeat™
Electric Process Heating Systems

Integrated Flow Solutions IntegraHeat™ Electric Process Heating Systems are flanged heater bundles & control panels designed in accordance with IFS-607A technical specification to electrically heat liquids and gases.

Industries

Standard Features- Process

• Integraheat™ Electric Heater Process Sizing Software
• IFS-607A Industrial Grade Electric Process Heater & Control Panel Specification
• Aspen Simulation/Process Guarantee
• Element Watt Density Selection by Application
  o Water – 45 watts per square inch
  o Fuel Gas – 23 watts per square inch
  o Air – 15 watts per square inch
  o Oil – 10 watts per square inch

Standard Features- Electrical

• Non-Hazardous Area Classification
• Control Panel NEMA 4/4X
• Programmable Logic Control (PLC)
  o Outlet or Differential Temperature Control
  o Pressure Control
• “Low Select” Over Ride Logic Control
  o Process & Bundle PID Control Loops
• Load Management Control
• Human Machine Interface (HMI) by Touch Screen Graphic Color Display
• Finger Safe
• Ground Fault Detection
• Heater Bundle Over Temperature Limit
• Silicon Controlled Rectifier (SCR) Power Control
• Rigid Galvanized “On Skid” Conduit
• Analog Wiring 300 Volt, PVC Insulation, 16 AWG Minimum
• Control Power & Digital Wiring 600 Volt, THWN Insulation, 14 AWG Minimum
• Power Wiring 600 Volt XHHW-2 or THWN Insulation, 12 AWG Minimum

Standard Features- Mechanical

• Stainless Steel Nameplate Stamped with Project Information
• Heavy Duty All Welded Structural Steel Skid Base

Standard Features- Testing

• Hydro Test of Heater Bundle/Housing/Piping
• On Skid Meggar/Continuity Test
• Heater Bundle Meggar/Resistance/High Pot Test
• Control Panel Power/Control Circuitry Test
• Simulated PLC Logic Test

Industry Standards

• NEC 500 – Control Panel
• TEMA “R” 8th Edition – Electric Heater Design
• CSA – Heater Bundle Terminal Housing
• ASME Section VIII & National Board Registered – Heater Housing
• ANSI B31.1 / ANSI B31.3 – Piping, Fittings, Valves
• ASME Section IX – Pipe Fabrication
• AWS D1.1 - Structural Steel

Standard Options

• Hazardous Area Classifications
  o Class 1, Division 1
  o Class 1, Division 2
• On Skid Stainless Steel or Fiberglass Cable Tray
• Offshore Paint
• Heater Housing Insulation
IFS “Low Select” Electric Heater Process Temperature Control Logic

**PID CONTROL & TUNING PARAMETERS**

- **PROCESS PID DISABLED (TC1)**
  - SP1 = NNNN °C
  - PV1 = NNNN °C
  - CV1 = NNNN %
  - GAIN = NNNN
  - SET = NNNN
  - MODE = AUTO

- **BUNDLE PID ENABLED (TC2)**
  - SP2 = NNNN °C
  - PV2 = NNNN °C
  - CV2 = NNNN %
  - GAIN = NNNN
  - SET = NNNN

**Analog Input Setup**

- OUTLET TEMPERATURE
  - MOD1 ADDR: L3.0
  - ENG UNITS: °C
  - Alarm SP  HH
  - Alarm SP  HH
  - Alarm SP  H
  - Alarm SP  L

- BUNDLE TEMPERATURE
  - MOD1 ADDR: L3.1
  - ENG UNITS: °C
  - Alarm SP  HH
  - Alarm SP  HH
  - Alarm SP  H
  - Alarm SP  L

**Alarm History**

- Note: Clear Alarm History button only removes alarm from list. The alarm may still be active.
- K = Alarm Acknowledged
  - Alarm Active
  - Clear Alarm History
  - All

**Heater Overview**

- Heater Running
- Bundle Temperature (TC2): PV2 = NNNN °C
  - CV2 = NNNN %
  - SP2 = NNNN °C

**Alarm History**

- Acknowledge
- All
- Clear Alarm History
- Note: Alarm History button only removes alarm from list. The alarm may still be active.

**Heater Control & Tuning Parameters**

- Process PID: DISABLED (TC1)
  - SP1 = NNNN °C
  - PV1 = NNNN °C
  - CV1 = NNNN %
  - GAIN = NNNN
  - SET = NNNN
  - MODE = AUTO

- Bundle PID: ENABLED (TC2)
  - SP2 = NNNN °C
  - PV2 = NNNN °C
  - CV2 = NNNN %
  - GAIN = NNNN
  - SET = NNNN

**Analog Input Setup**

- Outlet Temperature
  - MOD1 ADDR: L3.0
  - ENG UNITS: °C
  - Alarm SP  HH
  - Alarm SP  HH
  - Alarm SP  H
  - Alarm SP  L

- Bundle Temperature
  - MOD1 ADDR: L3.1
  - ENG UNITS: °C
  - Alarm SP  HH
  - Alarm SP  HH
  - Alarm SP  H
  - Alarm SP  L