



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
 - Water – 45 watts per square inch
 - Fuel Gas – 23 watts per square inch
 - Air – 15 watts per square inch
 - Oil – 10 watts per square inch

Standard Features- Electrical

- Non-Hazardous Area Classification
- Control Panel NEMA 4/4X
- Programmable Logic Control (PLC)
 - Outlet or Differential Temperature Control
 - Pressure Control
- “Low Select” Over Ride Logic Control
 - 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

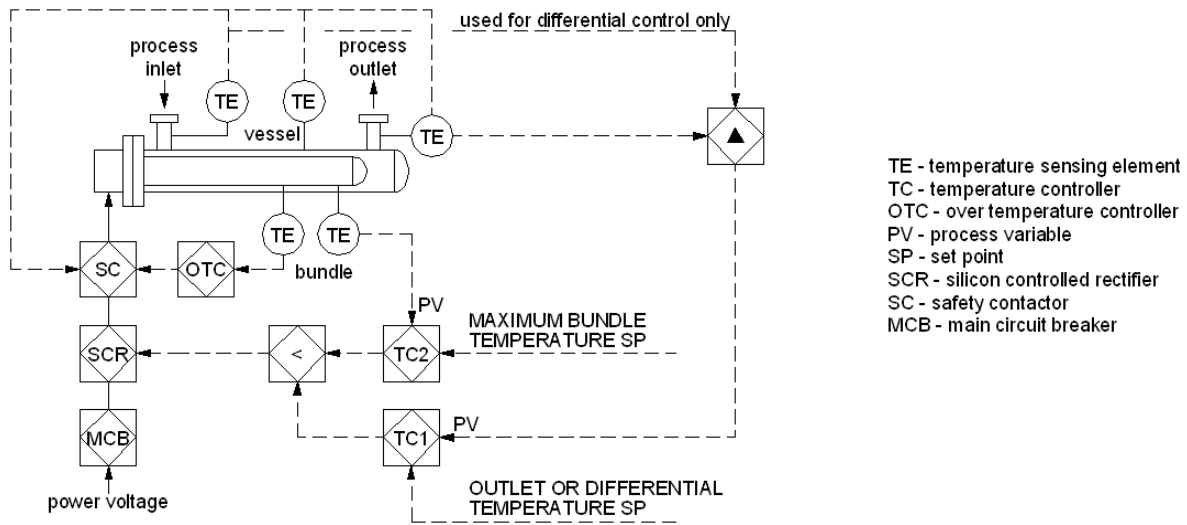
Industry Standards

- 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
 - Class 1, Division 1
 - Class 1, Division 2
- On Skid Stainless Steel or Fiberglass Cable Tray
- Offshore Paint
- Heater Housing Insulation

AUTOMATION and CONTROLS



IFS "Low Select" Electric Heater Process Temperature Control Logic

HEATER OUTPUT CO=>■■■■■%

INLET HOUSING (VESSEL) TEMPERATURE NNNN °C

OUTLET TEMPERATURE (TC1) PV1 =>■■■■■ °C
 SP1 =>■■■■■ °C
 CV1 =>■■■■■ %

BUNDLE TEMPERATURE (TC2) PV2 =>■■■■■ °C
 SP2 =>■■■■■ °C
 CV2 =>■■■■■ %

HOME MAINT. DIRECTORY ALARM HISTORY HEATER OVERVIEW

"Heater Overview" Screen

PID CONTROL & TUNING PARAMETERS

PROCESS PID DISABLED (TC1)
 SP1 => NNNN °C
 PV1 => ■■■■■ °C
 CV1 => ■■■■■ %
 GAIN NN.NN
 RESET NN.NN
 RATE NN.NN

PID GRAPHIC
 AUTO
 MAN

BUNDLE PID ENABLED (TC2)
 SP2 => NNNN °C
 PV2 => ■■■■■ °C
 CV2 => ■■■■■ %
 GAIN NN.NN
 RESET NN.NN
 RATE NN.NN

HOME MAINT. DIRECTORY ALARM HISTORY HEATER OVERVIEW

"PID Control & Tuning Parameter" Screen

ANALOG INPUT 1 & 2 OF 6

OUTLET TEMPERATURE MOD1/ADDR: I:3.0 ENG UNITS: °C
 NNNN Latch Delay Alarm SP Timer (in msec.) S L

BUNDLE TEMPERATURE MOD1/ADDR: I:3.1 ENG UNITS: DEG °C
 NNNN Latch Delay Alarm SP Timer (in msec.) S L

HOME MAINT. DIRECTORY ALARM HISTORY HEATER OVERVIEW

"Analog Input Setup" Screen

Alarm Time	Ack Time	Message
K A 10:04:27 AM	10:04:27 AM	ABCDE FGHIJK LMNOPQ RSTUV WXYZ ABCDE FGHIJK LMNOPQ R*

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

HOME MAINT. DIRECTORY ALARM HISTORY HEATER OVERVIEW

"Alarm History" Screen