

# FGI 351

Responding to  
Industries' needs



## Burner Management System

### *for atmospheric industrial heaters*

Titan Logix Corp. anticipates the superior safety, convenience and reliable innovations contained in this new FGI 351 unit will make it the burner management system of choice for atmospheric industrial heaters used throughout North America.

The FGI 351 Burner Management System has been developed specifically for atmospheric burners. It is compliant to the requirements of the B149.3 Code. Designed and manufactured by Titan Logix Corp, the original developers of the industry preferred FGI 100, 201/202 and 301 for the Western Canadian oil and gas industry. A DC voltage spark generator and electrode supply an ignition spark. If there is a flame fail or safety interlock condition the fuel gas is promptly shut off. Residual fuel is given time to purge before the FGI 351 attempts to restart the pilot.

Due to the of the lack of choice when it comes to compliant products available for the often severe oil patch environment, this product was designed especially for that use - harsh outdoor conditions and the low power requirements at remote sites. Gone are the days when an operator is required to light an industrial burner using the traditional 'flaming rag on a stick', with all its inherent safety concerns. Using the FGI 351 this procedure is performed safely, conveniently, and reliably. And if the pilot does blow out, the FGI 351 will take the necessary actions to attempt re-ignition or safety shut down. There is no better time than now to incorporate these significant advantages into your atmospheric heater.

#### applications

- Treaters
- Line heaters
- Glycol heaters
- Salt bath heaters
- Dehydrators
- Direct Fired heaters
- Non-blower type furnaces
- Heated Tanks
- Incinerators
- Other natural draft heaters

- Approved for CSA Class I Div 2, C22.2 #199 M89
- Cost Effective: Save-a-valve with Proof of closure
- Economic: minimal heater down-time; helps prevent hydrate formation
- Environmental: reduction in emission of unburnt fuel gas
- Advanced unique features (see back for more!)



# FGI 351 features

After the programmed purge cycles are complete, the FGI 351 turns on the pilot gas and supplies the ignition spark for the pilot. The pilot flame is then monitored with the flame rod and thermocouple. When acceptable, the main burner gas is turned on. The FGI 301 then continuously monitors the pilot flame and takes action to promptly stop the flow of fuel gas if the pilot flame fails, or if a safety interlock condition occurs. After appropriate purge routines are complete it initiates the burner relight sequence (manual or automatic operation). Flame failure trips local and remote alarm outputs.



- Approvals: CSA Class 1 Division 2 Groups C&D. T3 (FGI 351 Controller Only) CSA C22.2 No. 199 (Combustion Safety Controls and Solid-State Igniters for Gas and Oil Burning Equipment). The IGN 50 is approved for installations in non-hazardous areas.  
Meets the requirements for a certified Combustion Safety Control as required by B149.3.
- Power Requirements: 12 VDC or 24 VDC +/- 10%; or 24 VAC, +/- 10%.
- Display: 2 line x 20 character vacuum fluorescent display. Full text messages. -40°C to + 60°. NOT an LED or LCD Display. Provides operator with specific operational, diagnostic and troubleshooting information such as timer countdown, safety alarm state, # of restart attempts, etc. Solenoid ratings Supported: 12 DC or 24 VDC or 24 VAC.
- Solenoid ratings Supported: 12 DC or 24 VDC or 24 VAC.
- Appliance Size: Up to 10MM Btuh per appliance.
- Programming: Original Installation: Factory configured. Customer can complete the 351 Application Data identifying the settings of each configured variable. Field Modification (2 options)
  - User replaceable EEPROM.
  - Field programming of most variables by factory trained technician.
- Timers: Pre-purge: 1 second to 160 minutes (time between pressing the START button and spark sequence). Low fire Start: 1 second to 160 minutes (duration of low fire condition).
- 3 relight attempts.
- Flame-out timing: 3.8 seconds after pilot flame out (as determined by flame rod-ionization detection); solenoids/valves will be commanded to close, alarm contact opened, alarm shown on screen.
- Operating Temperatures: -40 to 60C.
- Ignition Source – IGN 50: DC Transformer spark ignition coil. The IGN 50 must be installed in a non-hazardous location. The FGI 351 Controller can be 100's of feet away from the ignition coil. This provides greater safety and convenience to the operator.
- Safety Switch Input: Series alarm, Low Pressure alarm. High Pressure alarm. Low Liquid Level alarm. High Temperature alarm.
- Flame monitor - IGN 50: Once ignition is completed then the ignitor becomes a flame rod. Proves the presence of a pilot flame. Material: Kanthal.
- Input: Thermocouple input. Proves the quality of the pilot flame only. Material: Type K thermocouple encased in 446 sst c/w 20 ft. thermocouple cable. NOTE: does not replace the Flame rod.
- Proof of Closure inputs - Main burner valve: Enables the use of 1 safety valve with POC vs. 2 valves.
- Remote run/stop. Can be connected to a remote PLC, PC, controller, etc.
- Alarm Output
- Solenoid Outputs: 1 x pilot, 2 x main, 1 x high fire start.
- Communications: RS 232/485 (Modbus) remote communications for monitoring and on/off control only. Multidrop communications via RS485.
- One sensor for ignition and flame fail using Titan's advanced flame rod design.
- 3 operator push buttons: Start, Stop, Menu.

Standard FGI 351 kit includes: FGI 351 Controller, IGN 50 and Flame Rod circuitry, Ignitor (doubles as the flame-rod), Pilot mounting bracket (for ignitor, user-supplied pilot, Ignition cable, Thermocouple and thermocouple cable.



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