

Flare Pilot Back-Up Flame Monitoring System

“FlareSense” is another recently developed state of the art product from the Hamworthy Combustion Group. The system has been recently patent protected and is now available for purchase through all sales outlets of Hamworthy Combustion.

The unique design of the product is focused on giving the user and/or designer of any flare system total reliability in detection of flare operation. The unique product configuration requires no maintenance at the flare tip (which can be several hundreds of metres above ground). The principle of its operation is very simple, giving total reliability in flare operation detection and therefore safety monitoring. It can be incorporated into all designs of flares and simply back-fitted to existing flare installations at minimal cost.

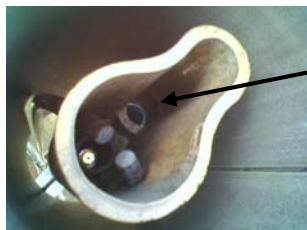
Flaresense® is a CE marked product and can be configured for use in classified hazardous areas.

In recent years, the oil and gas industry requirements have become more and more stringent in terms of monitoring and control of flames generated by combustion equipment. Flare technology has not evolved, basing flame scanning/detection on temperature measurements by means of thermocouples - single or dual type - installed inside the flare pilots.

Nowadays many end-users and EPC contractors are requiring an alternative solution to be used as a back-up system to thermocouples, at the same time solving the problem of access during flare operation.

To match this market requirement, Hamworthy Combustion R&D has developed an innovative solution, covered by an international patent, which works as an indirect method of detection.

“FlareSense®”, is able to detect the pilot flame by analysis of the products of combustion present in the pilot tip which are inspired via a pump, installed at ground level. Each separate component of the products of combustion can be analysed.



**Pilot Tip Detail
with sampling point**

The complete system is integrated into the Flare local control panel skid providing remote indication to the control room via an analogue signal of 4-20 mA. The system is installed at the base of the stack. No elements/instruments are installed in an elevated position or a restricted area.

The system consists of discrete units for water separation and analysis of combustion products.



Condensing Unit



Analyser Unit Front View



Analyser Unit Internal View

“FlareSense®” Pilot Monitoring System can be supplied as part of new equipment design or as an upgrade of an existing flare already using a Flame Front Generator for ignition. All equipment needing maintenance is located at ground level.

The “FlareSense®” Pilot Monitoring System principle can be applied on most of the fuel gas compositions normally experienced in refineries, and gas and chemical plants. Stable pilot operation with variable and unpredictable fuel gas compositions can be detected when burned at the flare tip.

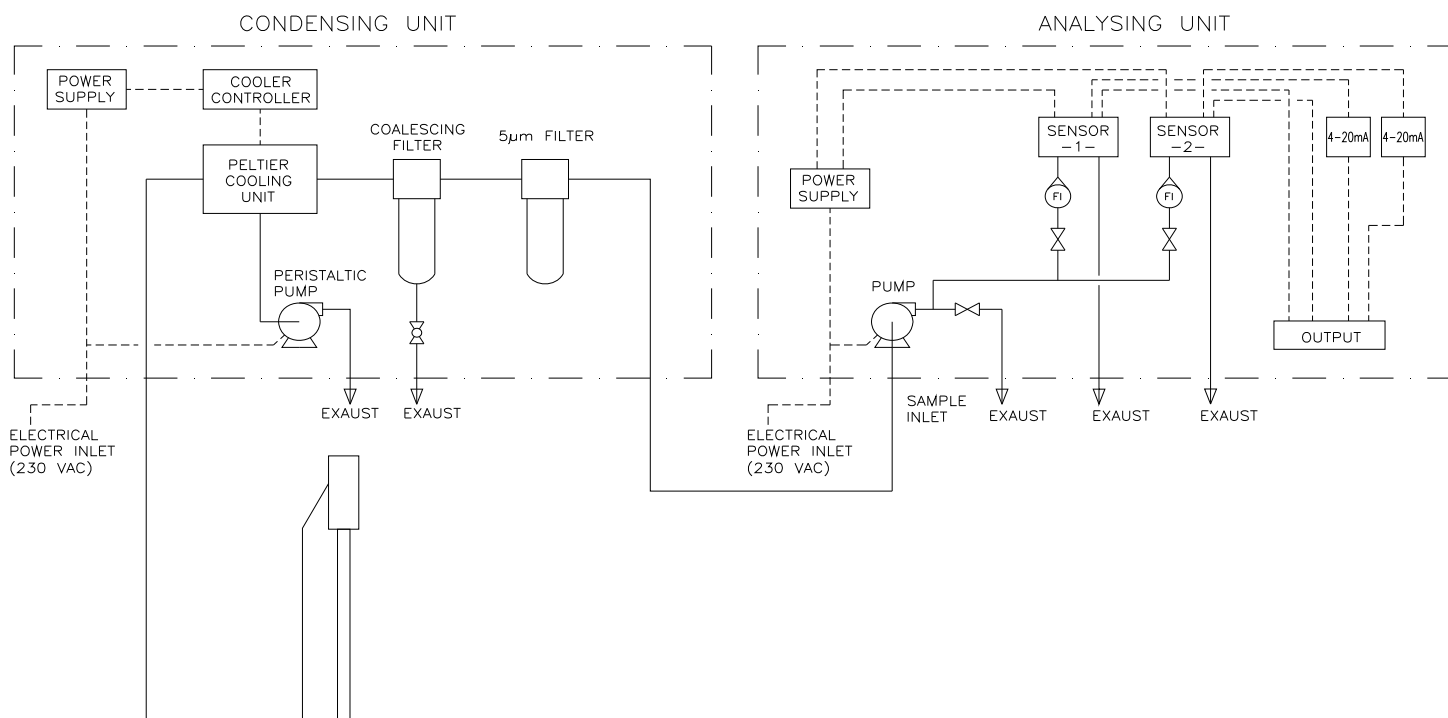
Indirect Flame Detection is based upon Infrared technology with no need of short term maintenance and no expensive consumables which have to be regularly replaced or replenished.

The “FlareSense®” Pilot Monitoring System may be applied to flares up to 180m high. FlareSense® requires no utilities other than an electrical power supply of less than 1kW.



No Limitations due to Flare Height

System Scheme



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HAMWORTHY
 COMBUSTION

Incorporating:

PEABODY ENGINEERING
 AIROL - FLAREGAS
 CHENTRONICS

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Hamworthy Combustion Engineering Limited reserve the right to make changes and improvements which may necessitate alteration to the specification without prior notice