



New Instruments and  
Research for Analysis

# SAGITTARIUS SERIES 5000

CONTROL UNIT

## MULTI-LINE INFRARED LEL MONITORING SYSTEM

Our new **INFRARED LEL MONITORING SYSTEM** proposes some innovative technical features, which allows fast response time, simple installations and low maintenance procedure.

## CONTROL UNIT



## Nira Infrared Sensor

Our innovative Infrared sensors differ from all the other similar products on the market, thanks to its special optical system, based on a combination of dual solid state source and dual receiver. The 4 signals are amplified by an internal microprocessor that constantly compares the absorption values between the sample gas band and the reference band.

This automatic signals compensation system constantly controls and realigns the infrared sensors calibration and for this reason, our infrared sensors are solely calibrated during their construction phase and they don't require any further recalibration during their entire life cycle.

## BENEFITS

The new NIRA infrared LEL monitoring system allows some extraordinary advantages for the tobacco, pharmaceutical and food packaging industries:

- > **Low investment.**
- > **High LEL system performances.**
- > **High Safety in printing area.**
- > **Fast response time.**
- > **No infield recalibration.**
- > **Long system warranty.**
- > **Easy and fast installation.**
- > **Low maintenance.**
- > **Easy Infrared sensors and control modules (Micro PLC) replacement.**



ANALYTICAL UNIT





## CALIBRATION'S OPTIMIZATION

All the infrared sensors on the market are built to read a specific component and applies an equal conversion factor for all batches of production. This might affect the reliability of the reading on solvent mixtures analysis. Our infrared sensors are calibrated by NIRA and tested based on the solvents mixtures indicated by our customers.

## SAMPLING SYSTEM

Our exclusive sampling system sucks the sample gas by the usage an ejector (Venturi), completely maintenance free. For safety reasons, the sample flow is continuously monitored by a flow meter and a vacuum sensor, able to detect any possible anomaly on the sample gas flow and on the sample gas transferring line.

## ADVANCE TECHNOLOGY

The analytical unit can be installed nearby the sampling point; this drastically minimizes the response time. The gas detector, made by solid state dual source and detector (quadruple optical path), continuously compares the absorption values of the IR band between the sample gas cell and the internal reference cell. Through this automatic signal compensation system, the calibration of the infrared detector is continuously checked and realigned. For this reason, each IR sensor is only and solely calibrated during its construction phase and doesn't require any further recalibration during its entire life time.

## NORMATIVE REFERENCES

- EN 1539:2015 certified.
- Performance Level "d" under EN 13849-1:2008 certified, including sampling gas line.
- ATEX zone 1 certified, cat. 2G.
- EN 60079-29-1, SIL 3, CSA.
- Other: ABS, INMETRO (UL variant available).

## TECHNICAL CHARACTERISTICS

Detector system	Infrared gas detector
IR Detector characteristics	Dual source and dual receiver
Technology	IR-absorption, dual wavelength, dual path
IR source	Solid state
Response time (T <sub>90</sub> )	<1.4 seconds without sampling gas line
Range of measurements	0-100% LEL or g/m <sup>3</sup>
Lower detectable level	1% LEL
Accuracy	±3%(0-50%LEL)
Startup time	60 seconds
Calibration	Factory calibrated. No infield ricalibration required
Working temperatures (Analytical unit)	0+55 °C
Working temperatures (Control unit)	5-40 °C (50 °C in air conditioned Rack)
Big control unit dimensions and weight	1200x600x1900h mm / 240 Kg.
Small control unit dimensions and weight	500x250x700h mm / 30 Kg.
Analytical unit dimensions and weight	220x400x400h mm / 13 Kg.
Working humidity (sample)	0-100% RH (non-condensing)
Power supply	230Vca (110Vca in option)
Signal Output	4-20mA or 0-10V
Compressed air consumption (for each line)	1m <sup>3</sup> /h
Communication protocol	MODBUS (PROFINET optional)