

# SAMPLE CONDITIONING PACKAGE

PRODUCT DATA SHEET—202

## Model 31—Intrinsically safe aspirator-driven sampler

For powder processing and handling

### Introduction

The Neutronics Sample Conditioning Package is designed to ensure that the oxygen sensor always has a clean, dry sample gas for accurate measurement. Process conditions that include corrosive chemicals, temperature extremes, and powders present significant challenges. To deliver accurate and reliable gas measurement, sensors require a sample that is free of contaminants. Sample conditioning systems built to withstand harsh processing conditions and efficiently remove damaging contaminants from the sample stream are critical to delivering reliable continuous duty low-maintenance gas monitoring

### Operation

The Model 31 Sample Conditioning Package uses a pneumatically driven aspirator to extract the sample from the process. Using air or nitrogen as the drive gas, the aspirator produces vacuum by means of the Venturi effect. This vacuum is used to draw the sample gas from a long distance without long lag times in sensor response. With no moving parts, the aspirator is intrinsically safe. The Model 31 sampler is ideally suited for processes operating at pressures ranging from -25 inH<sub>2</sub>O to 5 psig.

To provide the sensor with a continuous clean sample gas flow, most powder processing systems require the removal of varying amounts of particulates. For these systems, external preconditioning components are typically included. The blowback filter (Product Data Sheet 105) and the coalescing prefilter (Product Data Sheet 101) provide high filtration performance along with high stability, exceptional dirt holding capacity, and high flow rates with low pressure drop.

### Available options

Teflon wetted parts

Explosion proof heat tracing

NEMA 4 enclosure or panel-only mounting

Single or dual oxygen sensors

Single or dual flammable or toxic gas sensors

Remote calibration valve



### Features

- Intrinsically safe design – with no moving parts, the pneumatically-powered Model 31 sampler is suitable for hazardous area locations
- Corrosion resistant NEMA 4X enclosure – suitable for indoor or outdoor use with protection against ingress of dust and water
- Integral flow switch – opens contacts in alarm when sample gas flow falls below a preset level
- Single or dual sensor compatible – option for redundant dual sensors enhances reliability
- Low maintenance package – high quality components with few replacement parts minimizes maintenance costs and unplanned downtime
- Continuous duty – external high efficiency filter units remove particulates and contaminants from the sample gas stream

### Applications

Mills

Dryers

Blenders and mixers

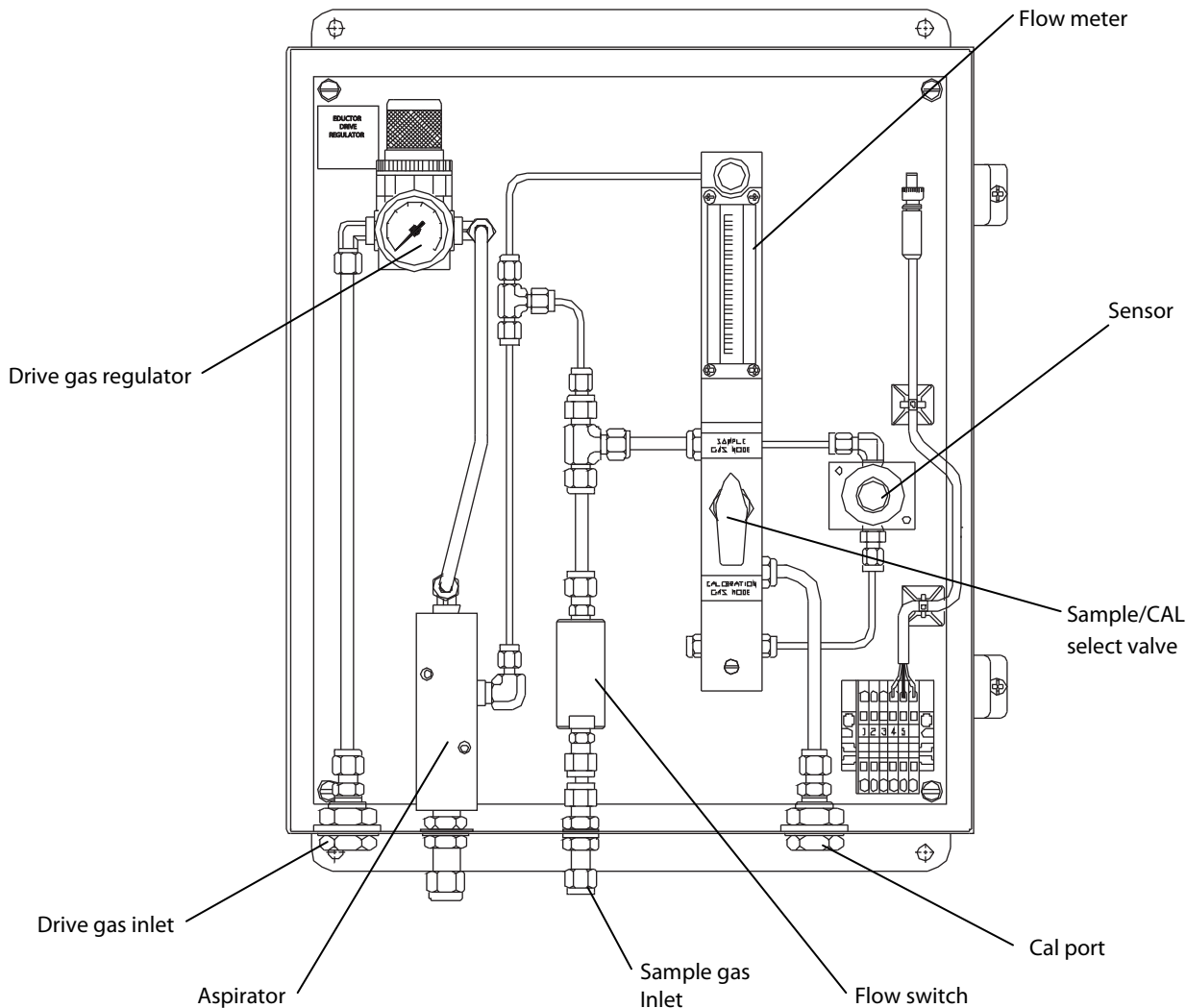
Conveyors and feeders

Hoppers, bins and receivers

Reactors and process vessels

# MODEL 31 SERIES SAMPLE CONDITIONING PACKAGE—SPECIFICATIONS

Sample gas pressure	-25 inH <sub>2</sub> O to 5 psig
Sample gas flow	5 slpm (± 1 slpm) total flow
Venturi drive gas	Instrument quality air or nitrogen 35 psig (min) @ 2 scfm (± 0.5 scfm)
Sample filter	External cartridge or sintered metal filter
Sampling method	5 slpm flow via 55 inH <sub>2</sub> O vacuum draw from venturi aspirator/venturi pump, suitable for application ranging from -25 inH <sub>2</sub> O to 5 psig
Vacuum capacity	55 inH <sub>2</sub> O (± 5 inH <sub>2</sub> O)
Wetted materials	Stainless steel, glass, Teflon
Enclosure	23.31" w x 14.96" h x 8.3" d (356 x 406 x 155 mm)
Weight	35 lbs. (15.8 kg)



## Order information

Part No. 7-04-3100-43-0  
Part No. 7-04-3100-65-0

Model 31-609-023000-2S  
Model 31-609-023000-2

NEMA 4 enclosure, with prefilter  
NEMA 4X enclosure, without prefilter



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