RheoVac® DR

The *RheoVac DR* is a monitoring system that eliminates the guesswork involved with vacuum drying applications. Cost savings can be significant: one chemical manufacturer has reported a reduction of approximately $2 million in operating costs over a four-year contract.

Hit or miss

Many drying operations rely on off-line sampling to determine if the process is complete. This is a time-consuming and not always reliable way to monitor dryer performance. In some cases, this procedure can also invite product contamination.

Time is money

In addition to off-line sampling, many operations also rely on timed runs. As a safeguard against under-drying, extra drying time is typically added to the average drying cycle. The *RheoVac DR* allows engineers and operators to positively determine when drying is complete, eliminating excess drying time. Continuous monitoring with the *RheoVac DR* provides data to achieve efficient and thorough drying for desired product consistency.

Understanding process dynamics

The *RheoVac DR* uses a dual probe system to provide real time data on the following process parameters:

- **Water vapor flow:** the rate at which moisture is being removed during the drying cycle.

- **Pressure:** the level of vacuum actually being achieved in the dryer.

- **Total mass flow and actual volumetric flow:** actual operating effectiveness of the vacuum equipment to remove gas and water vapor in comparison with the vacuum pump's performance curves.

- **Relative saturation:** an output that shows the percent moisture content in the vacuum line.

- **Temperature:** accurate, real time display of process temperature.

These outputs can be used to chart the drying cycle, make informed decisions about changes to the process, and quickly evaluate the impact of these changes.

Measurable benefits

- **Decreased drying time.** Cycles can be reduced by as much as 40 percent.

- **Increased capacity and throughput.** Production bottlenecks created by the drying process are reduced.

- **Improved product integrity.** Elimination of off-line sampling reduces risk of product contamination.

- **Reduced costs.** Closer control and shorter cycles reduce energy consumption and maximize yield.

- **Tighter process control.** Multiple process variables are monitored simultaneously.

INTEK

Primary Calibration Accuracy:
± 1% of full scale

Repeatability:
± 0.5% of reading

Line Size:
3" minimum

Probe Connections:
1" MNPT
1/2" MNPT

Wetted Surface:
316 SS
Engineered plastic

Temperature:
Operating: 40° to 160°F
Maximum: 210°F

Operating Pressure:
0-29" HgA

Input Power:
100-250 Vac, 50-60 Hz

Signal Outputs/Data Access:
RS 232 and RS 422
4/20 mA signals (optional)
Ethernet 10Base-T

Local Display:
Backlit LCD, selectable between
metric and English units

For expert assistance in applying RheoVac technology to vacuum drying problems, contact an Intek application engineer.
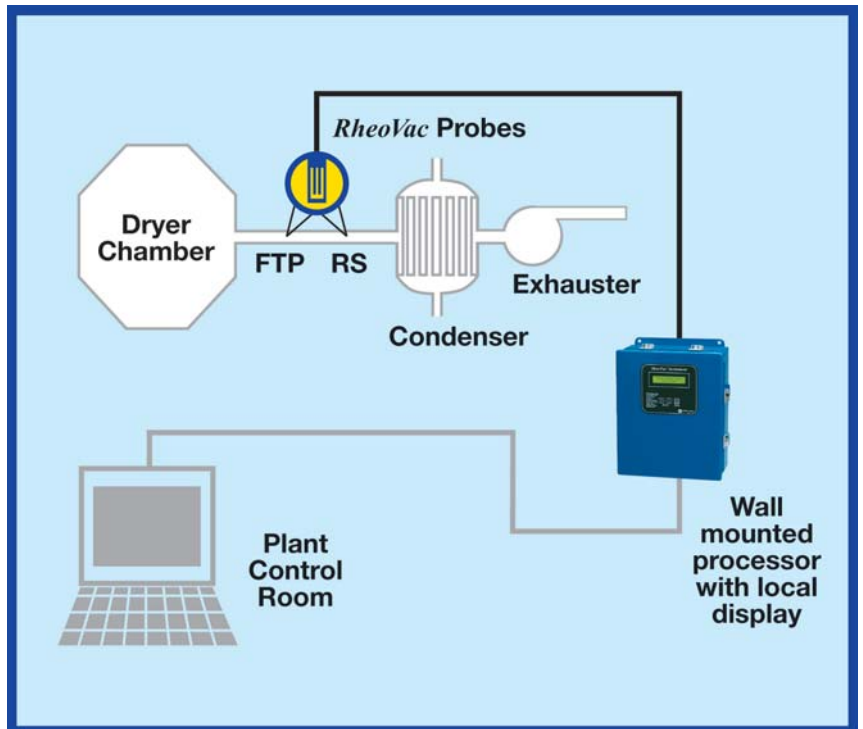
Unit components

Main electronics unit with display
Flow, Temperature, Pressure (FTP) probe
Relative Saturation (RS) probe
Interconnecting cables
4/20 mA transmitter box (optional)

The probes are installed in the vacuum line, downstream of the process. The *RheoVac DR* provides a continuous stream of data for evaluating the performance of the dryer system. The rates of removal of water vapor and purge gases can be measured separately, if required. The operator can view the information locally by scrolling between the output parameters on the wall-mounted processor. This information can also be transmitted to the plant control room for review.

INTEK, INC.
751 Intek Way
Westerville, OH 43082-9057

Tel: (614) 895-0301
Fax: (614) 895-0319
E-mail: sales@intekflow.com
Internet: www.intekflow.com