AIR STAR PD-SAS™

Benefits of the AirStarPD-SAS™ Upgrade

SullAir TS32/25 Two-Stage Rotary Screw Compressors

As part of our AirStar® family of controllers, Case offers a unique control scheme for SullAir two-stage, rotary screw compressors. The AirStarPD-SAS™ Upgrade provides significant advantages over OEM controls.

OEM Controls: The Issues

The OEM controls provided with SullAir TS32/25 series compressors use a microprocessor. The earliest controllers may have gauge package systems with thermistors and pressure switches. The electronic controllers use pressure transducers and RTDs to load/unload and to protect the compressor from out-of-range pressures and temperatures.

When the compressor is running there are three main components that regulate the compressor:

1. *Inlet (Sullicon™) Valve – Regulates intake air.*
2. *Spiral Valve – Vents air from the exit air end back to the inlet of the machine, shortening the length of the rotor compression based on outlet pressure. The result is a variable displacement machine that can effectively modulate between 50% and 100% power consumption.*
3. *Load (blow down) Solenoid – Provides venting of the compressed air to the atmosphere.*

Both the inlet and spiral valve are controlled via mechanical/pneumatic pressure regulators. Regular cleanings and adjustments to both are needed for the controls to operate efficiently. The same applies any time the load and unload pressures are adjusted in the controller.

The existing, original pneumatic devices use hot, wet, unconditioned air straight off the top of the separator lid. Shuttle valves stick, regulators clog and need adjustment, control line filters clog and auto-drains fill with rust and condensate, requiring constant maintenance. This need for continuous maintenance is the weak link.

The Case Controls Solution

1. Remove the spiral valve and inlet (Sullicon™) valve regulators, solenoid and shuttle valves and closed-inlet start-tank system.
2. Replace the OEM microprocessor with an Allen Bradley PLC and HMI.
3. Install two new I/P transducers to directly control the spiral valve and the inlet (Sullicon™) valve via a standard current loop from the new PLC. Replace the hot-wet air control line filter with the new, high-performance extended-life coalescing filter for clean, dry control air.
4. The pilot valve solenoid remains in place to control the blow down valve.

This document is in reference to an AirStar® compressor controller system used to replace the SullAir TS32/25 Supervisor. Product ID: AirStarPD-SAS.
Sullicon™ is a registered trademark of SullAir.

CASE iZ

Phone 812-422-2422 **Fax** 812-425-3138
Mailing Address P.O. Box 6884 · Evansville IN 47719-0884
Street Address 1401 W. Franklin St. · Evansville IN 47710
www.caseiz.com

AIR STAR PD-SAS™

AirStarPD-SAS™ Upgrade: The Benefits

Increased Accuracy & Reliability, Decreased Maintenance

- Increased accuracy following demand changes. PID loop-controlled, allowing tuning to plant specific demand.
- Increased efficiency by fully utilizing the spiral valve, thereby minimizing use of the inlet valve throttle.
- Further improved efficiency with coordination of multiple compressors via Case's AirMaster™.
- Reduced maintenance by eliminating pneumatic solenoids, shuttle valves, regulators and filters.
- Allen Bradley PLC improves reliability, flexibility and supportability.

Results of Your New AirStarPD-SAS™ PLC System

Replacing the pneumatic control scheme with a modern PLC solution and proven control algorithm will deliver noticeable results:

- Tighter pressure tolerance
- Quick response to demand changes
- Improved energy efficiency by turning down capacity
- Eliminates need for regular adjustments
- Easy-to-use, intuitive operator interface
- Further energy efficiencies can be realized by load-sharing multiple compressors with AirMasterPD™. Ask for more information.

Compressor State	Inlet Valve	Spiral Valve
	Designed to fail when open, requiring air to close.	Varies compressor capacity, effectively reducing the compression ratio of the rotor assembly.
Off	100% Open	0% Closed or Max Output
Starting	100% Closed (minimum flow)	
On Unloaded	100% Closed (minimum flow)	100% Closed or Minimum Output
On Loaded	100% Open	Modulating to the calculated pressure set point.

Two AirStarPD-SAS™ Solutions To Fit Your Needs

Materials and labor for physical installation are not included in the controller cost. These services must be provided by a professional. Case can recommend an experienced contractor for installation.

Complete New Enclosure

Retrofit Kit

This document is in reference to an AirStar® compressor controller system used to replace the SullAir TS32/25 Supervisor. Product ID: AirStarPD-SAS™. Sullicon™ is a registered trademark of SullAir.

CASE iZ

GUARANTEED COMPRESSED AIR SOLUTIONS

Phone 812-422-2422 **Fax** 812-425-3138

Mailing Address P.O. Box 6884 · Evansville IN 47719-0884
Street Address 1401 W. Franklin St. · Evansville IN 47710

Email solutions@caseiz.com

www.caseiz.com