

"Saving the planet, one compressor at a time"

Universal Autodual SPECIFICATIONS

Models AS-2, AS2PT, AS-3, UASPT, AD, ADS, ADSE, ASPSS, and Accessories Effective September 1, 2022



Model AS-2



Model ADS



Model AS2PT



Model ADSE-2



Model AD



Model ASPSS-3

Convert Reciprocating and Rotary Compressors to Automatic Dual Control for High Efficiency Operation!

See our website <u>www.stdpneumatics.com</u> for our complete catalogue, engineering details and installation photos.



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"Saving the planet, one compressor at a time"

MODEL AS-2 UNIVERSAL AUTOSYNC

Automatic Lead/Lag Control Two Rotary or Reciprocating Compressors

of any size or make



AS-2

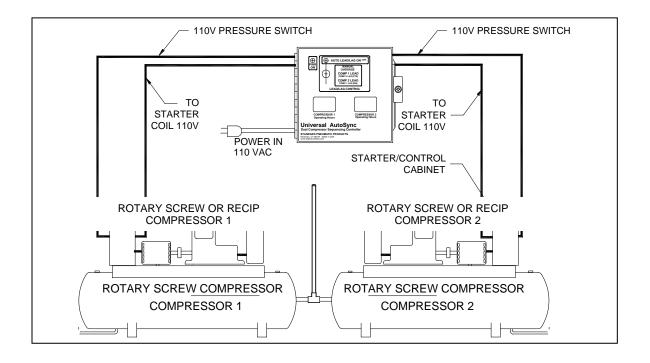
Overview

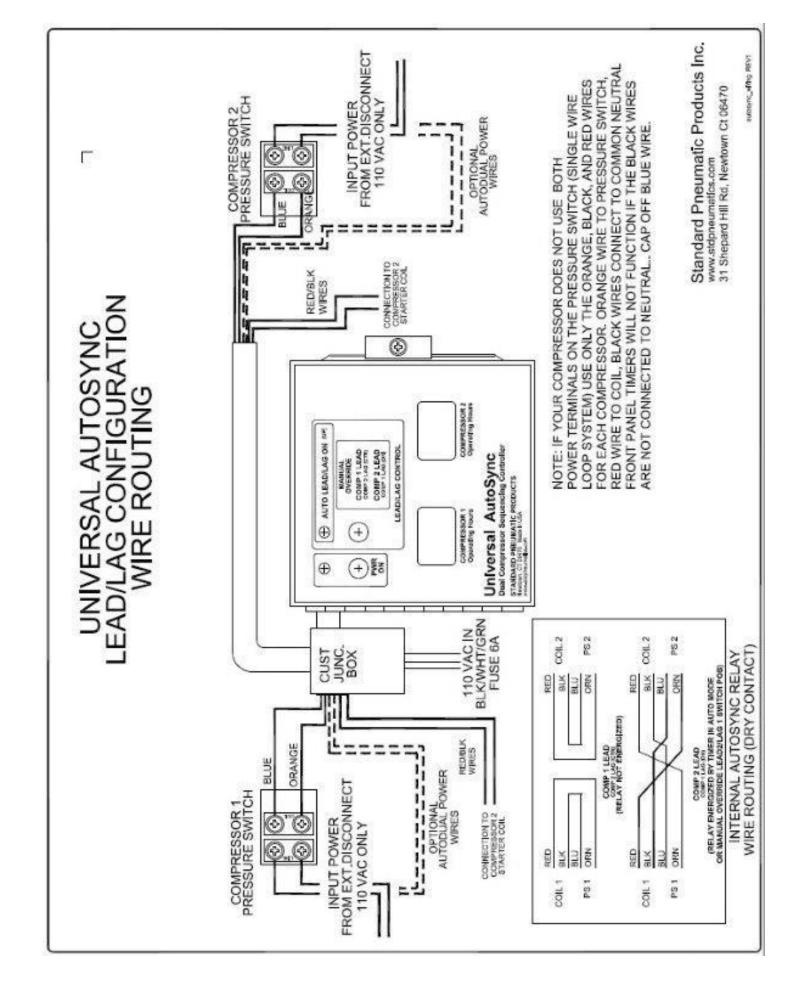
The AS-2 sequencer is designed to work with any two rotary or reciprocating compressors with powered pressure switches currently controlling the starter coils. When properly installed, the Universal AS-2 will operate both compressors in either manual or automatic lead/lag control and provide efficient operation and lead/lag cycling of both compressors. Automatic Lead/Lag Control is field adjustable to "alternate" lead machines anywhere from a 10 min to 7-day swap cycle.

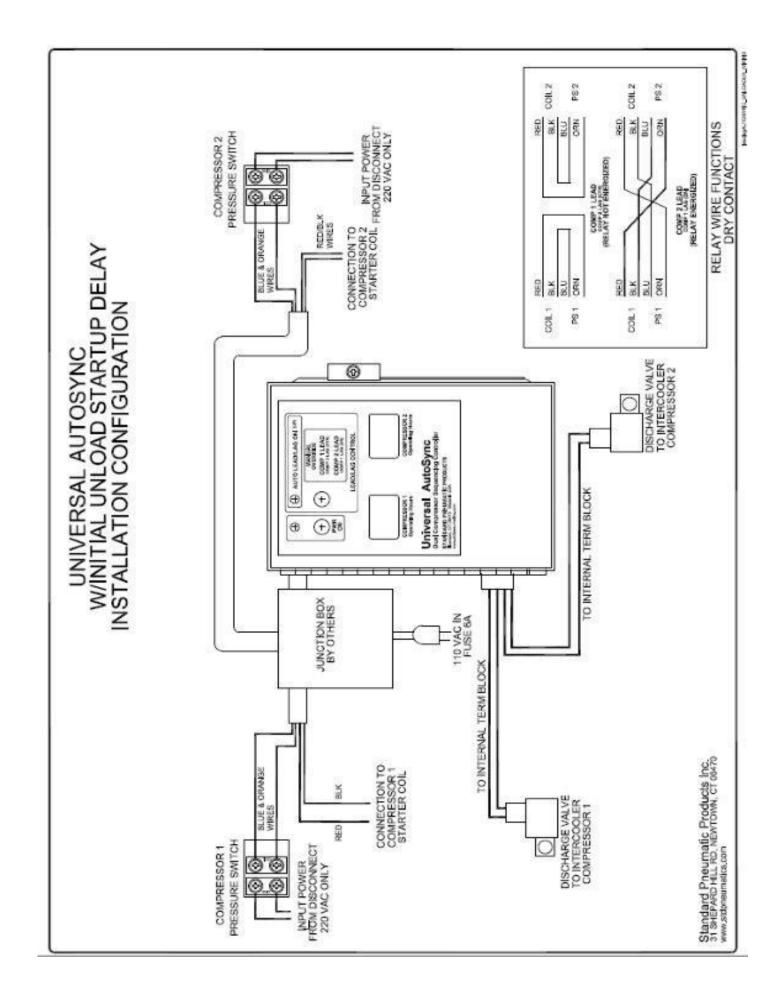
Installation

The AS-2 is connected between the compressor pressure switches and the compressor starter coil. 110v is required to operate the internal relay, automatic timer, and the pressure switch and starter coil. The starter must have a 110v or 230v coil regardless of main input power. Enclosure is $6^{\circ} \times 6^{\circ} \times 4^{\circ}$, NEMA 12.

Input Power 1/60/115v or 1/60/230v Compressor Coil Voltage 1/60/115v or 1/60/230v







USING THE AS-2 CONTROLLER ON RECIP AND ROTARY COMPRESSORS WITH STANDARD MECHANICAL PRESSURE SWITCHES AND THE AS2PT CONTROLLER FOR COMPRESSORS WITH DUAL CONTROL AND THE 6 MIN TIME-OUT-TO-STOP CONTROL

The AS-2 Universal AutoSync has been used on Atlas Copco, GD, Champion, Curtis, I-R, Powerex and other basic rotary and recip compressors for over 15 years with hundreds of successful installations.

The parameters for a successful AS-2 application are:

- 1. The control voltage -- i.e., the signal from the mechanical pressure switch to the starter coil -- can be 24v, 115v, 200 or 230 volts. It cannot be 460 volts or above;
- 2. The operating mode must be start/stop control;
- 3. The AS-2 Automatic Lead/Lag Controller can be used to automatically lead/lag control a variety of machines beyond the compressor world. We have installations on heat exchangers, centrifugal pumps and refrigeration compressors, to name a few.

Here is the problem:

The AS-2 controller works perfectly when the compressors have standard pressure switches and start/stop control. During the lead/lag control set up and cycle Comp 1 is always set at a higher pressure then Comp 2. So that in this position Comp 1 will always lead and Comp 2 will always lag.

When the system alternates to Comp 2 lead and Comp 1 lag, then Comp 2 is reading Comp1's pressure switch (the high setting) and Comp 1 is now reading Comp 2's pressure switch (the low setting). That is how we achieve lead/lag control without resetting the pressure switches for each alternating cycle.

The AS-2 cannot be used on air compressors that have automatic dual control. That is, a compressor which when the signal to stop is received from the pressure switch the compressor goes into the idle or unload mode and stays there for 6 minutes--unless a call for air is sensed, in which case the machine will begin its normal pumping cycle --before it is stopped.

When the compressors have the 6 min time out feature we cannot us the AS-2 controller. Here is why: With the 6 min time out feature the compressor continues to run and unloads all of the compressed air produced by the compressor by blowing off the load through a Solenoid Valve mounted on the compressor separator tank. It does this for 6 minutes (unless it gets a pump signal again).

The problem for us occurs when the compressors with this 6 minute control alternates. Comp 2 is now the lead compressor and Comp 1 is the Lag compressor reading the other compressors pressure switch. That part works as normal EXCEPT COMP2 WHICH IS READING COMP 1'S PRESSURE SWITCH WILL NOT GET ITS OWN UNLOADER SOLENOID VALVE TO OPEN--AND THE SOLENOID VALVE ON COMP 1 OPENS SINCE THAT IS THE PRESSURE SWITCH GIVING COMP 2 ITS SIGNAL. THIS WILL RESULT IN OVER PRESSURIZING THE SYSTEM AND BLOWING THE SAFETY VALVE.

As you can see that will not work!

THE AS2PT CONTROLLER

In the case of the air compressor with the 6 min stop feature we have the AS2PT controller which has been specifically designed to work two rotary compressors with mechanical pressure switches AND the automatic dual control option -- or 6 min unload period.

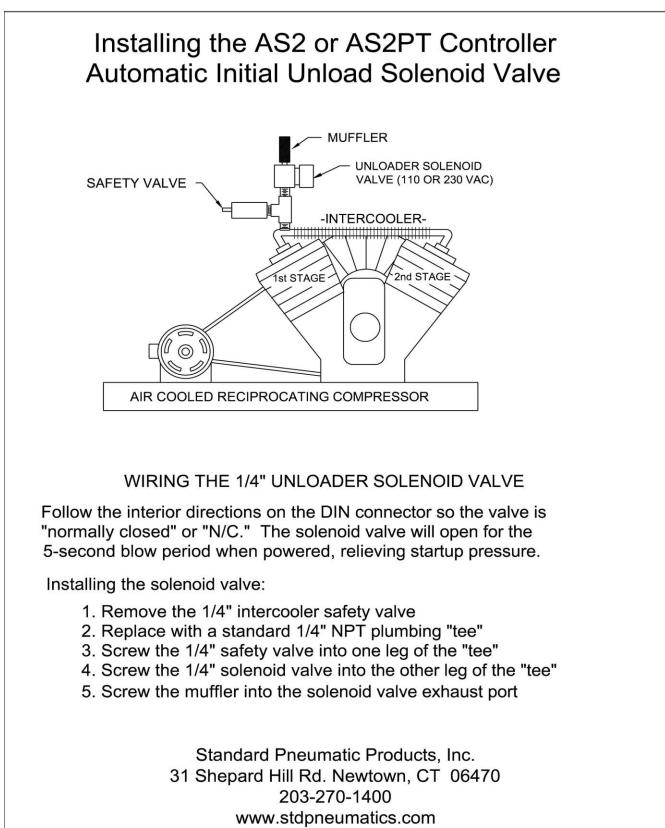
The AS2PT controller fixes that problem by supplying the pressure signal to the starters and proper unloader solenoids simultaneously completely overcoming the 6 min time out problem by using Pressure Transducers to control the two compressors. The SMC pressure transducers include a pressure display and easy to field-set pressure changes.

Note the wiring schematic for the installation of the AS2PT controller into Quincy and Atlas Copco compressors.

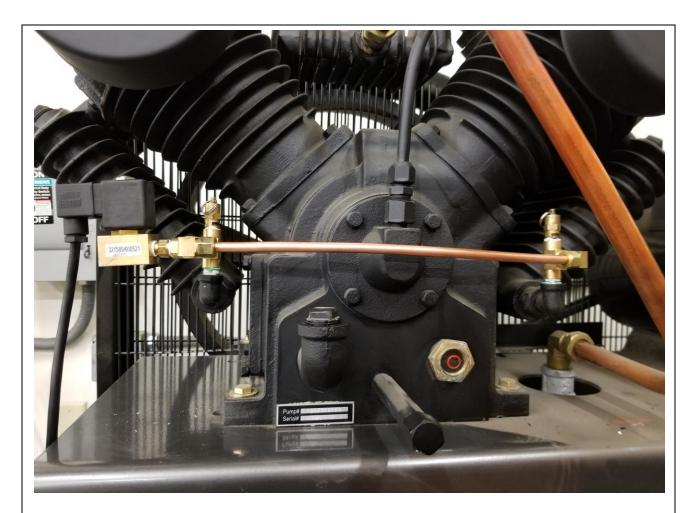
When the Compressor Head Has No Built-in Auto Initial Unload Mechanism

When the duplex compressor system uses the FORM X (unloader type) pressure switches for automatic initial unloading on start-up, meaning that the independent compressor is not equipped to unload itself on start-up and must have an external method of loadless start.

In this circumstance, you must use the AS-2 or AS2PT plus the optional "5-second totally unloaded soft start" feature added to the cost of your controller selection, either the AS-2 or AS2PT.



as2pt solenoid valve installation.dwg



Two Atlas Copco AR series 4 cylinder, 2 stage recips sold by NAPA. The customer required automatic lead/lag control. Since the Atlas Copco AR series does not have a compressor mounted automatic startup unloading device they use the FORM X type pressure switch which exhausts the compressed air in the discharge line when the compressor stops. However, the pressure switch unloading device must be eliminated when using the AS-2 Universal AutoSync controller and our 5 second Automatic loadless start system substituted for unloaded starts. The picture illustrates how the single solenoid valve is piped into the interstage coolers to unload both cylinder banks. The AS-2 controller is wired to the 1/4" solenoid valve and supplies the logic to open the valve for 5 seconds on each start-up for loadless start.

Standard Pneumatic Products, Inc.

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"Saving the planet, one compressor at a time"

MODEL AS2PT

UNIVERSAL AUTOSYNC with Pressure Transducer Control

Automatic Lead/Lag Control Two Rotary or Reciprocating Compressors of any size or make

Overview

The AS2PT AutoSync with Pressure Transducer Control is designed to work with any two rotary or reciprocating compressors replacing the pressure switches currently controlling the starter coils. The AS2PT will operate both compressors in either manual or automatic lead/lag control and provide efficient operation and lead/lag cycling of both compressors. Automatic Lead/Lag Control is field adjustable to "alternate" lead machines anywhere from a 10 min to 7 day swap cycle.

The Pressure Transducer supplied with the AS2PT Controller overrides and replaces the two mechanical pressure switches and supplies highly accurate pressure control to the system.

Option: The AS2PT Controller can be supplied with starters. Inquire direct at SPP.

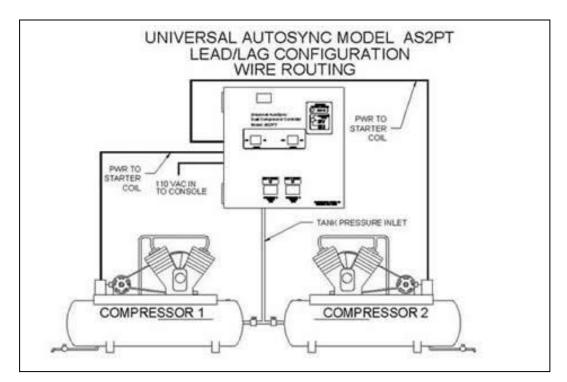
Installation

The AS2PT is supplied with a terminal block to connect the 115v on/off signal to the individual compressor starter coils.

Connections:

- 1. Power in to the controller 115v
- 2. 115v signal power to Comp1 and Comp 2 starter coils
- 3. Air signal from receiver to the controller

Enclosure size is 12" x 12" x 6", NEMA 12.







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MODEL AS-3

Lead/Lag Control Three Rotary or Reciprocating Compressors Manual Selection 3-Way Lead/Lag Control

Overview

The AS-3 sequencer is designed to work with any three rotary or reciprocating compressors with powered pressure switches currently controlling the starter coils. When properly installed, the AS-3 will operate three compressors in manual control and provide efficient operation and lead/lag cycling of all three compressors. The lead/lag cycle is by manual selection only.

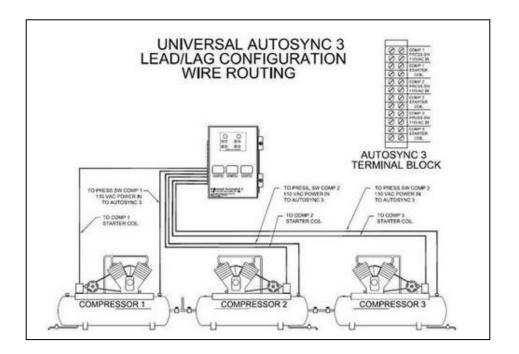
Installation

The AS-3 is supplied with a terminal block for connection between the three compressor pressure switches and the compressors' starter coils. 110v is required to operate the internal relay, automatic timer, and the pressure switch and starter coil. The starters must have 110v starter coils. Enclosure size is 11" x 7" x 6", NEMA 12.

Input Power 1/60/115v Compressor Coil Voltage 1/60/115v



Model AS-3





SPP BURNEY IMUSED

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"Saving the planet, one compressor at a time"

MODEL UASPT-115

Universal AutoSync Simplex Lead/Lag Controller with Pressure Transducer -- Lead/Lag Two Compressors, Attaching the Controller to One Compressor --



Model UASPT-115

The lead/lag function is accomplished by the automatic switching of the controller pressures bracketing the non-accessible compressor permanent pressure setting. The UASPT controller is simple to install and brilliant and foolproof in function.

The non-accessible compressor is typically a rotary screw machine that has the Pressure Transducer and all controls enclosed in a circuit board. This precludes any lead/lag attachments from an outside source.

The accessible compressor is typically a machine that is controlled by a mechanical pressure switch.

The hour meter records the "on" time for the accessible compressor.

Compressor loaded light indicates when the compressor is pumping.

Overview The Model UASPT is an evolved product specifically designed to lead/lag two compressors where one compressor has controls that are not accessible to the standard AutoSync technology. Pressure control is supplied by the UASPT via our included very accurate pressure transducer with display. The UASPT is attached to the accessible compressor.

The UASPT controller can also be installed in the conventional way to operate each compressor in automatic lead/lag control when both machines are accessible to the controller.

Enclosure size is 11" x 7" x 6", NEMA 12.

Installation

- 1. Wire the UASPT to the compressor starter coil (115v) removing the existing connection from the mechanical pressure switch.
- 2. Connect the common system pressure control line to the UASPT.
- 3. Power the controller 1/60/115v.
- 4. Set the required "bracket pressures" on the Pressure Transducer.
- 5. Power the compressor with the "on-off" power switch.

Example of the "pressure bracket" design of the UASPT-115:

Comp 2 Lead - Accessible Compressor: Set Lead Pressure: Off 130 psi On 120 psi

Comp 1 - Non-Accessible Compressor: Permanent set: Off 125 psi On 115 psi

Comp 2 Lag - Accessible Compressor: Set Lag Pressure: Off 120 psi On 110 psi

The operator can by-pass the auto lead/lag function by selecting the Compressor 1 lead or Compressor 2 lead position on the panel.



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"Saving the planet, one compressor at a time"

MODEL AD Universal AutoDual

High Efficiency Air Compressor Management System with Pressure Transducer (for Rotary or Recip Compressors)



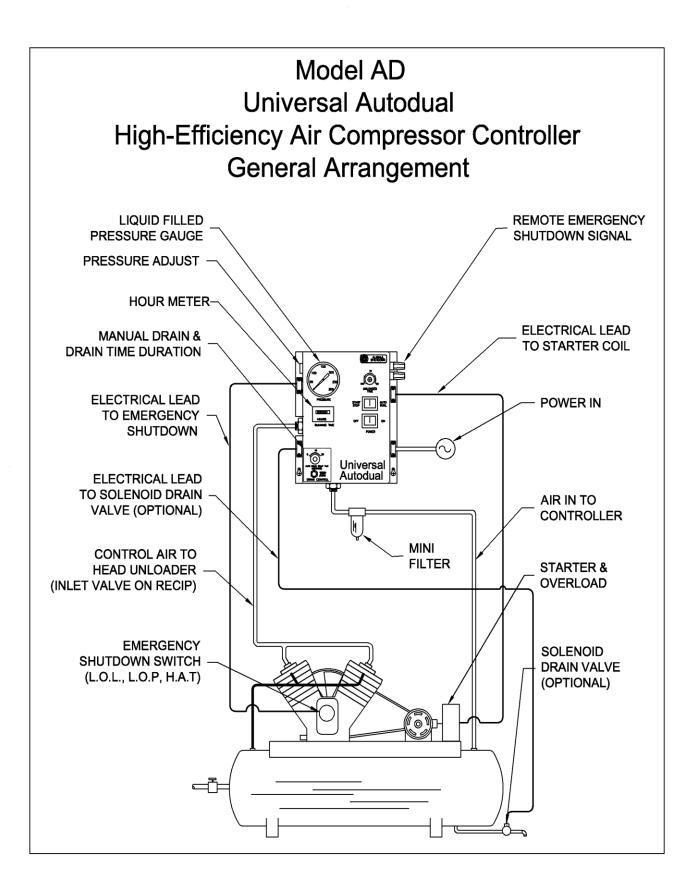
UNIVERSAL AUTODUAL® Standard Features:

- Automatic Dual Control Timed out 4-20 mins/Start-Stop Control
- 5-Second Automatic Initial Unloading Delay**
- Hour Meter with Compressor Loaded Lite
- Power On-Off Switch, Illuminated
- Pressure Transducer Adjustable from 50-150 psig, Adjustable Differential +/-0.5%
- 1/4" NPT Bottom Connection for Control Air In
- 1/4" NPT Connection for control air to compressor unloaders
- U.S. Patented, UL Listed
- Enclosure size is 11" x 7" x 6", NEMA 12

** Please specify compressor type when ordering.

Model AD

Model	Description						
AD115	AutoDual 115 Volt - includes Pressure Transducer, for 150 psig max operating pressure						
AD230	AutoDual 230 Volt - includes Pressure Transducer, for 150 psig max operating pressure						
Options							
-PT-MP -PT-HP	Pressure Transducer (Accuracy: +/-½ psi) - Medium Pressure from 150 to 300 psi Pressure Transducer (Accuracy: +/-½ psi) - High Pressure to 1500 psi						
-TD	Timed Tank Drain - Blows the electric solenoid for 5, 10 or 20 seconds, (front panel selectable) for every hour of COMPRESSOR PUMPING TIME. Includes front panel mounted manual test button. Drain option supplied with 6' Power Cord & DIN connect ¼" NPT 115 or 230V solenoid.						
-TDPS	With Pre-Strainer						
-ES	Emergency Shutdown - Adaptable to normally closed (N/C) low oil pressure, low oil level or high air temperature. Quick connect to controller.						
-LOP	Low Oil Pressure (LOP) Shutdown Switch - Used with Emergency Shutdown above. Activates Shutdown signal if oil pressure drops below 10 PSI.						
-N4	NEMA 4 Enclosure - Standard AD-115/230 Unit sub packaged in watertight NEMA 4 housing with clear Lexan [™] enclosure face.						
-DT	Daytimer - Programmable timer for one or two compressors to shut down the machines selectively nights or weekends. AD Controller requires repackaging in a 12" x 12" enclosure.						





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"Saving the planet, one compressor at a time"

MODEL ADS

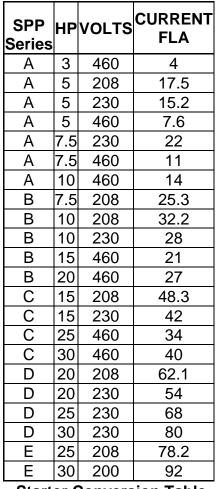
Universal AutoDual Starter Combination High Efficiency Air Compressor Management System with Pressure Transducer (for Rotary or Recip Compressors)

UNIVERSAL AUTODUAL® ADS Standard Features:

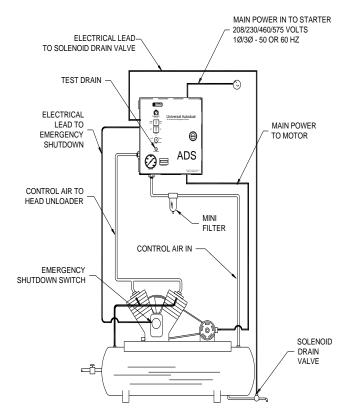
- Automatic Dual Control Timed out 4-20 mins/Start-Stop Control
- 5 Second Automatic Initial Unloading Delay**
- Hour Meter with Compressor Loaded Lite
- Power On-Off Switch, Illuminated
- Pressure Transducer Adjustable from 50-150 psig. Adjustable Differential +/-0.5%
- Liquid-filled, Stainless Steel Case Pressure Gauge, 0-300 psig
- 1/4" NPT Bottom Connection for Control Air In
 - 1/4" NPT Connection for control air to compressor unloaders
- Operates on 3Ø 60Hz 200/208/230/460/575 VAC, IEC Starter/Overload
- Enclosure size is 12" x 12" x 6", NEMA 12

Enclosure size is 12 x 12 x 6, NEMA 12 ** Please specify compressor type when ordering.							
Мс	odel ADS						
Model	Description						
ADS-A	AutoDual Starter Combination 7-22 Amps						
ADS-B	AutoDual Starter Combination 23-34 Amps						
ADS-C	AutoDual Starter Combination 34-62 Amps						
ADS-D	AutoDual Starter Combination 63-80 Amps						
ADS-E	AutoDual Starter Combination 92 Amps						
Options							
-PT-MP -PT-HP	Pressure Transducer – Medium Pressure from 150 to 300 psi Pressure Transducer – High Pressure to 1500 psi						
-TD	Timed Tank Drain - Blows the electric solenoid for 5, 10 or 20 seconds, (front panel selectable) for every hour of COMPRESSOR PUMPING TIME. Includes front panel mounted manual test button. Drain option supplied with 6' Power Cord & DIN connect 1/4" NPT 115V solenoid. Quick connect to controller. With Pre-Strainer						
-TDPS							
-ES	Emergency Shutdown - Adaptable to a normally closed (N/C) low oil pressure, low oil level or high air temperature switch. Quick connect to controller.						
-LOP	Low Oil Pressure (LOP) Shutdown Switch - Used with Emergency Shutdown above. Activates Shutdown signal if oil pressure drops below 10 PSI.						
-DT	Daytimer – Programmable timer for two compressors to shut down the machines selectively nights or weekends.						





Starter Conversion Table





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"Saving the planet, one compressor at a time"

MODEL ADSE

Universal Autodual High Efficiency Air Compressor and Vacuum Pump Controller with Automatic Lead/Lag and Pressure Transducers for Two, Three and Four Rotary or Recip Compressors

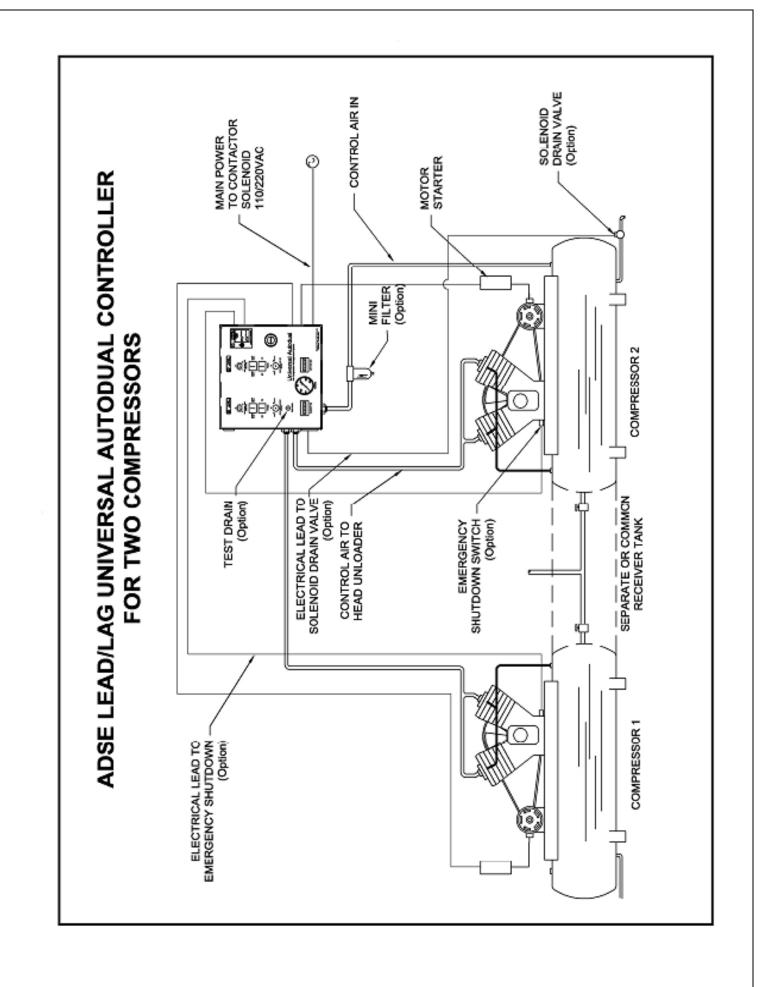


Model ADSE-2

UNIVERSAL AUTODUAL® Model ADSE Standard Features:

- Universal Autodual Control for two, three or four compressors. Timed-out-to-stop automatic dual control, field adjustable, for one minute to 30 minutes idle period to stop. Switch selectable for start/stop control.
- Start/stop control or automatic dual control depending on plant load requirements. True hands-off operation for max efficiency operation of the multiple compressor system.
- Fully unloaded soft starts, field selectable from 1-20 seconds
- Hour Meters with compressor loaded indicator lights
- Power On/Off Switches
- Pressure Transducer Pressure Control. Adjustable differential. Range: (A) 15-150psi;
 (B) 30-300psi; (C) 200-1500psi. Accuracy +/-0.5%.
- Automatic Lead-Lag Switching Cycles 2, 3 or 4 compressor/vacuum systems to equally share plant air requirements. Alternates Lead Compressor function between compressors on the clock. Delay is field adjustable between 10min 7 Days. Lag compressor starts on pressure deterioration due to high air demand and idles to stop when satisfied. Includes manual override to "lock" any compressor in lead mode.
- Emergency shutdown for each compressor. Adapts to LOP, LOL or HAT.
- Remote Signal for Emergency Shutdown Sends remote shutdown signal (24VDC 40ma) to control room console, low voltage relay, etc.
- Power required 115v. Existing starters require 115v coils.
- NEMA4 Option available. NEMA 12 standard.
- Approximate Enclosure Sizes: ADSE-2: 12" x 12" x 6"; ADSE-3 & ADSE-4: 17" x 15" x 9"

Model	Description							
ADSE-2 ADSE-3 ADSE-4	Universal Autodual with AutoSmart and Automatic Lead/Lag for Two Compressors Universal Autodual with AutoSmart and Automatic Lead/Lag for Three Compressors Universal Autodual with AutoSmart and Automatic Lead/Lag for Four Compressors							
Options								
-PT-MP -PT-HP	Pressure Transducer - Medium Pressure from 150 to 300 psi. Pressure Transducer - High Pressure to 1500 psi							
-TD	Timed Tank Drain - Blows the electric solenoid for 5, 10 or 20 seconds for every hour of COMPRESSOR PUMPING TIME. Includes front panel mounted manual test button. Drain option supplied with 6' Power Cord & DIN connect ¼" NPT 115V solenoid. Per compressor.							
-TDPS	With Pre-Strainer							
-ES	Emergency Shutdown - Adaptable to normally closed (N/C) low oil pressure, low oil level or high air temperature. Quick connect to controller.							
-LOP	Low Oil Pressure (LOP) Shutdown Switch - Used with Emergency Shutdown above. Activates Shutdown signal if oil pressure drops below 10 PSI. Per compressor.							
-DT	Daytimer – Programmable timer for two compressors to shut down the machines selectively nights or weekends.							
-VC	Voltage Conditioner – Automatic voltage regulation automatically steps up low voltage and steps down high voltage; lightning and surge protection to prevent damage to your equipment from power surges and spikes; resettable circuit breaker for easy recovery from overloads (no need to replace a fuse). Protects logic board only.							
NEMA4	NEMA 4 Switches and Enclosure for ADSE-2							





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"Saving the planet, one compressor at a time"

MODEL ASPSS

Universal Autodual High Efficiency Air Compressor and Vacuum Pump Controller with Automatic Lead/Lag, Starters and Pressure Transducers for Two, Three and Four Compressors

UNIVERSAL AUTODUAL® Model ASPSS Standard Features:

- Universal Autodual Control for two, three or four compressors. Timed-out-to-stop automatic dual control, field adjustable, for one minute to 30 minutes idle period to stop. Switch selectable for start/stop control.
- Selection of either start/stop control or automatic dual control depending on plant load requirements. True hands-off operation for max efficiency operation of the multiple compressor system.
- Fully unloaded soft starts, field selectable from 1-20 seconds
- Hour Meters with compressor loaded indicator lights
- Power On/Off Switches
- Pressure Transducer Pressure Control. Adjustable differential. Range: (A) 15-150psi; (B) 30-300psi; (C) 200-1500psi. Accuracy +/-0.5%.
- Automatic Lead-Lag Switching Cycles 2, 3 or 4 compressor/vacuum pump systems to equally share plant air requirements. Alternates Lead Compressor function between compressors on the clock. Delay is field adjustable between 10min - 7 Days. Lag compressor starts on pressure deterioration due to high air demand and idles to stop when satisfied. Includes manual override to "lock" any compressor in lead mode.
- Emergency shutdown for each compressor. Adapts to LOP, LOL or HAT.
- Remote Signal for Emergency Shutdown Sends remote shutdown signal (24VDC 40ma) to control room console, low voltage relay, etc.
- Includes I.E.C. Starter/Overloads for each compressor for 3/50/60/200/208/460/575 VAC.
- Maximum hp each starter/overload 60hp, 460v.
- 50 VA CVT included if required.
- NEMA 4 Option available. NEMA 12 standard.
- Approximate Enclosure Sizes: ASPSS-2: 17" x 15" x 9"; ASPSS-3 and ASPSS-4: 21" x 21" x 9"



Model ASPSS-3

Model	Description						
ASPSS-2 ASPSS-3 ASPSS-4	Universal Autodual with Auto Lead/Lag and Starters for Two Compressors Universal Autodual with Auto Lead/Lag and Starters for Three Compressors Universal Autodual with Auto Lead/Lag and Starters for Four Compressors						
Options							
-PT-MP -PT-HP	Pressure Transducer - Medium Pressure from 150 to 300 psi. Pressure Transducer - High Pressure to 1500 psi						
-TD	Timed Tank Drain - Blows the electric solenoid for 5, 10 or 20 seconds for every hour of COMPRESSOR PUMPING TIME. Includes front panel mounted manual test button. Drain option supplied with 6' Power Cord & DIN connect ¼" NPT 115V solenoid. Per compressor.						
-TDPS	With Pre-Strainer						
-ES	Emergency Shutdown - Adaptable to normally closed (N/C) low oil pressure, low oil level or high air temperature. Quick connect to controller.						
-LOP	Low Oil Pressure (LOP) Shutdown Switch - Used with Emergency Shutdown above. Activates Shutdown signal if oil pressure drops below 10 PSI. Per compressor.						
-DT	Daytimer – Programmable timer for two compressors to shut down the machines selectively nights or weekends.						
-VC	Voltage Conditioner – Automatic voltage regulation automatically steps up low voltage and steps down high voltage; lightning and surge protection to prevent damage to your equipment from power surges and spikes; resettable circuit breaker for easy recovery from overloads (no need to replace a fuse). Protects logic board only.						
NEMA4	NEMA 4 Switches and Enclosure for ASPSS						

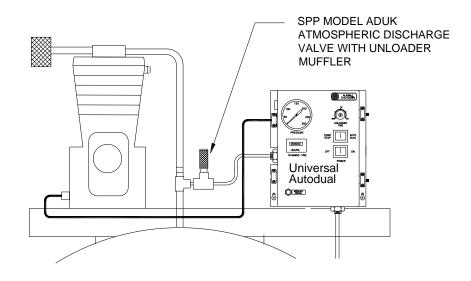


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Compressor Controls Accessories

Autodual Pilot Operated Atmospheric Discharge Unloader Valve – For Recip Compressors without Head Unloaders 15 hp and Smaller and Sump Relief Valves on Rotary Compressors



For Pressures Up to 200 psi and 400°F									
DISCHARGE UNLOADER VALVE					DISCHARGE MUFFLER				
Part Number	Pipe Size	Overall Length	Comp HP	Rated Flow (CFM) at 10 psi Back Pressure	Rated Flow (CFM) at 100 psi	Part Number	Rated Flow (CFM) at 10 psi Back Pressure		
CVD4	1/4"	2.5"	5 HP and below	20	50	MHS-25	50		
CVDL	1/2"	3.5"	10 hp and below	40	130	MHS-50	105		
ADUK-100	1"	5.0"	25 hp and below	100	200	MHS-75	450		