

DS Series Condensate Drains

For Compressed Air Systems



GD
GARDNER DENVER™

Experience Proven Results™

DS1 Mechanical Drain

The DS1 Mechanical Drain is designed to automatically remove liquid, oil, and water contaminants from compressed air system components.

Liquid contaminants collected in the bowl cause the float mechanism to rise. When the liquid reaches a specific level, the float actuates the pilot drain orifice which allows line pressure to open the valve and evacuate the liquid/particulate contaminants. As the liquid level falls, the float closes the pilot drain orifice prior to any significant air loss from the system.

A manual override is provided as an option which allows for drainage of the system on demand. To drain, simply push up on the attachment. Pull attachment back down when draining is complete. The manual override only adds 1.3" to the total length of the unit. (Available on the DS-5 only)



DS1-5



DS1-32

Operating Conditions	Features	Benefits
Maximum operating pressure 200 psig (14 bar) Maximum fluid temperature 75° F (79° C)	Minimal air loss	Energy efficient
	Efficient bowl size with large quiet zone	No re-entrainment of liquid back into the air system
	Manual override option	Drain on demand
	Metal bowl	Compatible with all compressor lubricants and high pressure 200 psig (14 bar)
	Float type operation	No electricity needed

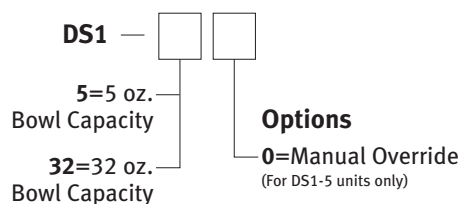
Standard Specifications: Mechanical Drain

Inlet pipe size	1/2" NPT
Drain connections	1/8" NPT
Drain orifice	1/8"
Bowl capacity	5 oz. and 32 oz.
Maximum drain rate	1.3 GPM and 2.5 GPM
Bowl	Zinc
Float	Plastic with stainless steel internals
Manual override	Brass



Manual Override
Options for DS1-5 Only

Ordering Information



DS2 Evacuator™ Drain



The DS2 Evacuator Drain Valve is a state-of-the-art, automatic solution for compressed air condensate removal. Since power costs are by far the single largest expense in operating air compressors, cost-conscious consumers frequently install the Evacuator. Not only does the Evacuator's rugged design effectively prevent moisture damage to dryers, air tools, gauges and other critical components, it **WASTES NO COMPRESSED AIR** —**AS DO MANY COMPETITIVE MODELS!**

This is critical to an air system, as a **single drain allowing compressed air to escape can easily cost \$1,500* a year in hidden expenses.** The demand-operated Evacuator eliminates the need to constantly make adjustments as ambient conditions change. If you are looking for maintenance-free draining that wastes no compressed air, the DS2 Evacuator is the answer!

*Based on 1/2" orifice size, 100 psig, intermittent flow, \$.06/KWH

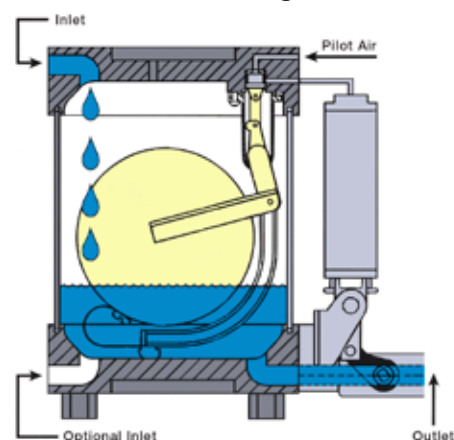
Operating Conditions	Features	Benefits
Maximum operating pressure 200 psig (14 bar) 450 psig (31 bar) (High pressure units) Fluid temperature 34–180° F (1–80° C)	Pneumatic action	Permits installation anywhere without concerns for electrical safety issues
	Non-Magnetic	Means no magnets to attract metallic trash and cause fouling
	No air loss	Energy efficient
	Automatic	Operates on demand
	52 oz. Static capacity	Meets the demands of almost any application and its capacity is 40% more than other models
	5/8" Ports	Substantially minimizes clogging problems
	Self-purging	Trouble-free / Maintenance-free
	Corrosion resistant construction	Permits installation in most hostile environments
	Trunion-mounted actuator	Reduces side pressure and wear, while increasing ball valve life
	Shear-action ball valve	Ensures durable performance
	Manual bypass button kit	Easy and safe maintenance

Standard Specifications: DS2 Evacuator™	
Voltage	Not required
Maximum capacity	52 oz. Static
Intermittent discharge capacity	42 oz. Discharge @ 100 psig (7 bar)
Continuous capacity	16 gal. per min. @ 100 psig (7 bar)
Reservoir material	Aluminum and composite
Pilot air and pressure differential line	1/4" tubing
Condensate pipe size	Inlet/outlet 1/2" NPT

Ordering Information

DS2 —	☐	☐	
L =200 psig (14 bar)			Options
H =450 psig (31 bar)			C =Cycle Counter Kit
			F =Float Alarm Kit
			H =Heater Kit
			P =Corrosion Protection

DS2 Evacuator™ Diagram



DS3 Electric Timed Drain

Gardner Denver has developed two electrical timed drains: the *mini* and the *general*. The mini is ideal for smaller filters. The general is better suited for larger filters, refrigerated dryers, receiver tanks, and other general purpose applications.

Both drain valves feature state of the art electronic timers and brass valve bodies, which come standard. The general model is also available in corrosion free stainless steel and high pressure.

Standard Specifications: Mini	
Cycle time	1–120 min.
Open time	2 sec. fixed
Power cord with plug	6 ft. Heavy duty
Seals	Viton
Enclosure	ABS plastic
Valve body	Brass
Power rating	4MA max.
Voltage	24–240V AC/DC 50/60 Hz

Standard Specifications: General	
Cycle time	30–45 sec.
Open time	1/2–10 sec.
Power cord with plug	6 ft. Heavy duty
Seals	Viton
Enclosure	ABS plastic
Valve body	Brass/stainless steel
Power rating	4MA max.
Voltage	24–240V AC/DC 50/60 Hz

DS3–M



DS3–G

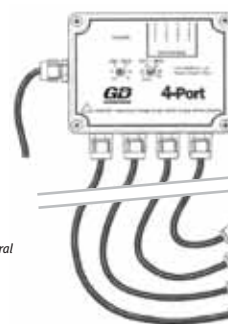
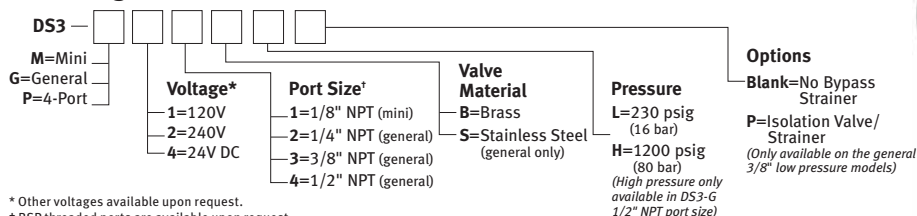
Operating Conditions	Features	Benefits
Maximum operating pressure 230 psig (16 bar) 1200 psig (80 bar) (general only) Fluid temperature 33–190° F (0–87° C) Ambient temperature 33–130° F (0–54° C)	Reliable operation	No down time
	Solid state timer—surface mount technology vs. failure prone pin soldering	High reliability, no board shorting
	NEMA 4	Indoor/outdoor application
	Manual push-to-test button (true micro-switch)	Reliable test on demand
	Class H coil installation	Higher temperatures, longer lasting
	Can be mounted in any position	Versatility in installation
	UL, CSA, and CE certified	World wide applications
	Direct acting valves	More positive closure – no clogging
	Dual surge protectors in timer vs. one or none in competitor's units.	Continues to work even in adverse electrical conditions
	Indicating lights of valve open and close	Visual indication of operation
	Plug prongs fastened to steel backing plate vs. glued to electrical board, causing board failure	High reliability

The Gardner Denver “4-Port” automatically controls four independent solenoid drains. Gardner Denver realizes the need to have Electric Timed Drain Valves operated at various intervals, therefore, the connections are designed to operate independently with separate “open” (0–15 seconds) and “dwell” (1–50 minutes) control dials.

The controller will not allow more than one drain to open at a time, thus it will not deplete the system of air pressure, allow back flow due to differential pressure or upset downstream oil/water separators.

(Check price sheet for availability of solenoid valves.)

Ordering Information



Gardner Denver DS3–P 4–Port

Aftercooler
Pre-filter
Receiver tank
Dryer

DS4 Motorized Ball Valve Drain

When pipe scale contaminants from deliquescent dryers or other large particles present in your condensate keep plugging or holding open your common drain valve, it's time for the DS4 motorized ball drain valve from Gardner Denver. This valve is designed to handle all types of contaminants without clogging or sticking open. It consists of a 1/2" full-flow ball valve will perform one full rotation in 7.5 seconds. Battery backup will provide continued operation in the event of a power failure.

Standard Specifications: DS4 Motorized Drain

Cycle time	4 min.–24 hrs.
On time	7.5 Sec.
Programmed settings	10
Valve	Nickle plated brass with stainless steel ball
Connections	1/2" NPT*
Valve sealing	Viton o-rings with teflon seal
Voltage**	Non-corrosive plastic

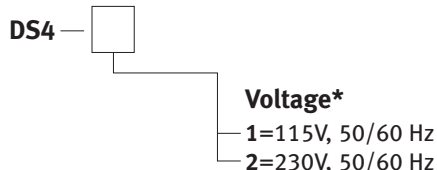
*Other sizes available upon request

**Consult factory for other available voltages



Operating Conditions	Features	Benefits
Maximum operating pressure 600 psig (40 bar) Max Fluid temperature 33–190° F (0–87° C) Max Ambient temperature 33–130° F (0–54° C)	Designed for heavy duty applications	Reliable-long life
	High pressure capabilities	Versatile applications
	Microprocessor based electronics	High reliability
	Weatherproof enclosure	Indoor/outdoor operation
	Battery back up protection against power failure (not available on competitors units)	Continuous operation
	Double o-ring seal on valve shaft vs. competitors with only one o-ring seal	No leak of condensate into electronics
	Corrosion resistant valve coating	Can be used in harsh environments like deliquescent dryers
	10 programmable settings from 4 min.–24 hrs. vs. competitors dip switch selections from 6–10 hrs.	Versatility
	Manual test button	On demand operation
	Valve open and program indicator	Visual indication of operation
	Anti-blockage system to protect motor	Motor will not burnout even under adverse conditions

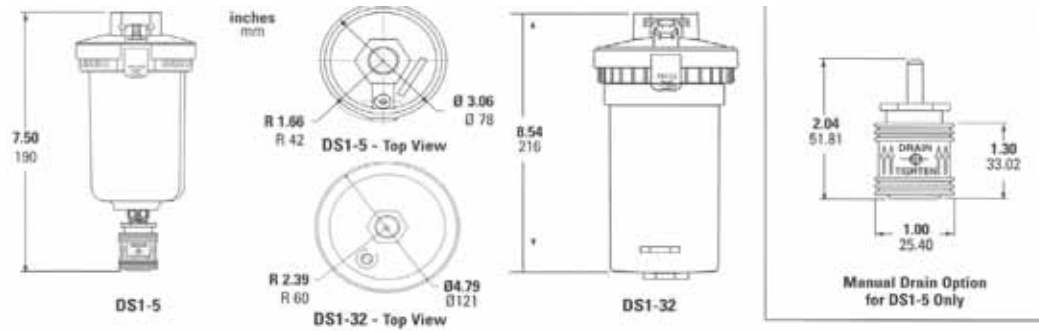
Ordering Information



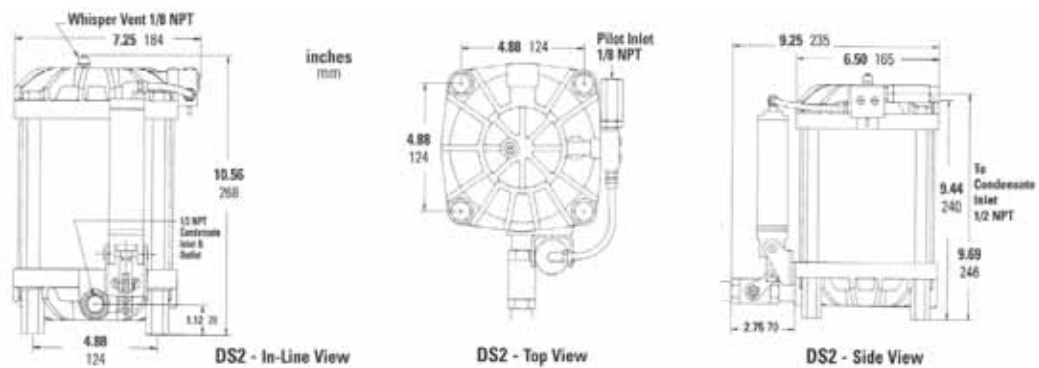
* Other voltages available upon request.

Dimensions

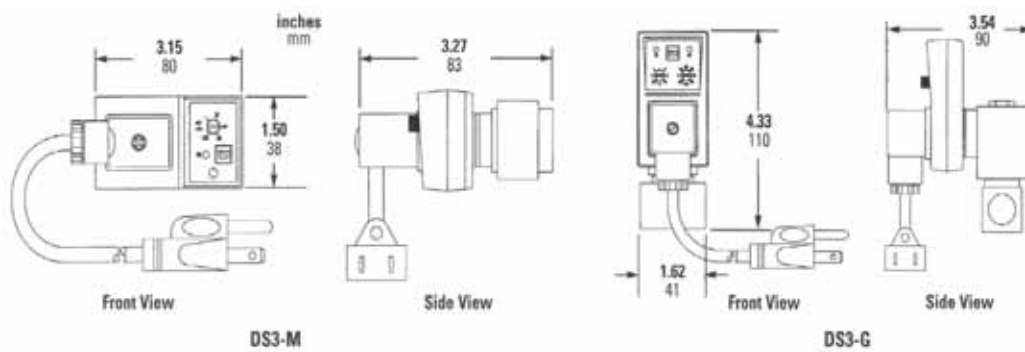
DS1



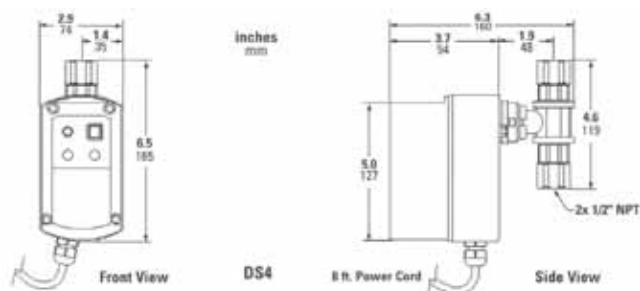
DS2



DS3



DS4

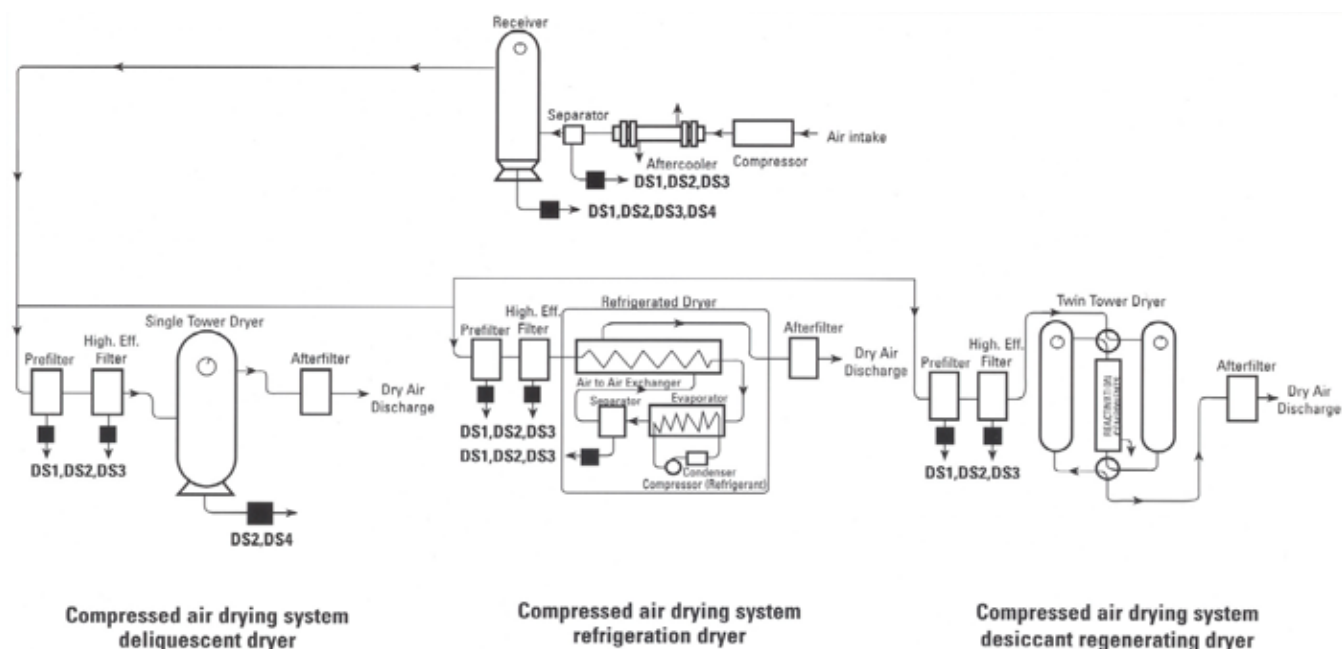


Why Use Drain Valves

One of the most problematic contaminants in your compressed air system is the condensate from your compressors, aftercoolers, receivers, filters, and dryers. Condensate consists of compressor oil, condensed water, dirt, and other contaminants that are being introduced into the inlet of the compressor. Condensate, if not properly removed from the system, can be detrimental to your process and results in downtime and equipment failure.

This is why Gardner Denver has developed a comprehensive line of condensate drain valves to suit all your system needs. The following chart shows suggested uses for each type of valve.

DS1 Mechanical Drain	DS2 Evacuator™ Drain	DS3 Electric Timer	DS4 Motorized Ball Valve
Receiver Tanks	Receiver Tanks	Receiver Tanks	Receiver Tanks
Separators	Separators	Separators	Deliquescent Dryers
Filters	Filters	Filters	
Drip Leg	Refrigerated Dryers	Refrigerated Dryers	
	Drip Leg	Drip Leg	



Total System Reliability

All compressed air systems require dry, clean air, and environmentally sound disposal of by-products. That is why Gardner Denver's support does not stop at the compressor or blower stage of your air system.

Rust, oil vapors, wear particles, air pollution, industrial gases, and humidity all can foul pressurized air flows. Proper removal of these contaminants is essential in preventing costly damage to air tools, machine centers, gauges, and other critical components.

To ensure total system reliability, Gardner Denver provides a broad range of dryers, coalescing filters, oil/water separators, mechanical-electrical or pneumatic drains, compressor lubricants, cleaning fluids, particulate filters, and aftercoolers. ONE STOP shopping from Gardner Denver assures that all components of the system are designed to work together and are backed by customer support today and for years to come.

Ancillary Equipment	Category	Capacity
Dryers	Refrigerated dryers	10–2,000 scfm
	Twin tower regenerative dryers	50–2,070 scfm
Filters	Particulate filters (5 micron)	Up to 4,143 scfm
	Coalescing filters (.01–1 micron)	Up to 3,200 scfm
Condensate Drains	Automatic mechanical drain	Up to 200 psig
	Evacuator pneumatic condensate drain	52 oz. & up to 450 psig
	Automatic electrical drain valve	Up to 1,200 psig
	Motorized ball valve drain	Up to 600 psig
Compressor & Blower Lubricants	Eliminator oil/water separator	20–90 gallon reservoirs
	Liquid separators	25–1,700 scfm
	Food grade, Biodegradable, Petroleum and Synthetic bases, Free oil analysis program	2,000–8,000 hours service life

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