



## Heatless Desiccant Dryers



### **Installation, Operating and Maintenance Manual**

All models (AMD4 – AMD365)

The product to which this manual refers must not be supplied, installed, used, operated or serviced until the contents of the manual has been fully read and understood by all relevant personnel.

**Please complete the following information at the time of installation**

*found on the rating label on the upper right hand side of dryer*

---

Model Number

---

Serial Number

---

Regulated Inlet Pressure

---

Filtration present with Dryer

---

Outlet Flow of Dryer

---

Compressor Outlet Flow

---

Supply Voltage

---

When contacting the manufacturer regarding this product, please have the above stated information at hand to speed up your query.

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# Safety

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**The following safety guidelines must be strictly observed.**

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- Leave this manual at the place of installation of the product.
- It is essential that only the manufacturer or its appointed agents carry out maintenance and servicing work.
- Standard dryers may contain combustible substances (grease) and are therefore not suitable for Oxygen or Oxygen rich service. Dryers for Oxygen service may be available upon request.

Users, maintenance and servicing personnel must be familiar with:

- Accident prevention regulations.
- Safety information (general and specific to the unit).
- Safety devices of the unit.
- Measures to be taken in case of an emergency.
- Allow only suitably trained persons to be involved with installation, start-up, operation, servicing and maintenance of the product.
- It is the responsibility of the installer to ensure that the pipe work to and from the dryer is suitable, in accordance with applicable legislation and subject to inspection and testing prior to being put into service. All piping must be adequately supported.
- Before carrying out any maintenance or servicing work the unit must be taken out of operation. Users and others will be exposed to risk if work is carried out while the unit is running. This means electrical disconnection plus isolation from the compressed air supply and full depressurisation.
- Only trained and competent persons familiar with the electrical requirements of the unit as laid out in this manual and electrical safety rules and regulations should be allowed to carry out work on the electrical components and power supply to the unit.
- When carrying out any work on the unit, use only correctly sized appropriate tools in good condition.
- Only use original spare parts and accessories from the manufacturer. There is no guarantee that non-original parts have been designed and manufactured to meet the safety and operational requirements of the unit. manufacturer assume no liability for any equipment malfunction resulting from the use of non-approved parts.

- If carrying out installation work above head height, use suitable and safe working platforms or other means of working access.
- Do not make any constructional changes to the product. Any changes or modifications may only be carried out by the manufacturer.
- Any faults or defects that could affect safety must be put right fully before using the unit.
- Used items and materials must be disposed of in the correct manner, complying with local laws and regulations, in particular the desiccant cartridge.

Figure 1.1: Definition of symbols



## Manual Handling

As with all areas of the workplace, Health and Safety is of great importance and must be given due care and attention. While working with this equipment, manual handling regulations must be considered and adhered to.

Full advice, support and guidance on this area is detailed in our Health and Safety Policy and Manual Handling guide; Please take the time to familiarize yourself with these documents.

The Manual Handling Operations Regulations apply to a wide range of manual handling activities, including lifting, lowering, pushing, pulling or carrying.

We ask every person handling this product to take the responsibility for their own Health and Safety and the Health and Safety of others around them. If you feel there is a significant risk, you must take steps to either remove the risk altogether, or reduce the risk prior to carry out the activity. If you need further support or guidance with this, please consult your line manager or the HR Department.

There are safe systems of work and correct procedures in relation to manual handling, please consult these documents available within the workplace.

We ask everyone handling this product to:

- Follow appropriate systems of work laid down for their safety.
- Make proper use of any equipment provided for their safety.
- Inform the company if they identify hazardous handling activities.
- Take care to ensure that their activities do not put others at risk.

If in doubt, please seek further advice and ensure you always follow the correct procedures and guidance.



For more information please see our Health and Safety manual attached.

# General Description

**This manual is valid for the following dryer models**

AMD4 (4 SCFM)	AMD6 (6 SCFM)	AMD8 (8 SCFM)
AMD10 (10 SCFM)	AMD15 (15 SCFM)	AMD25 (25 SCFM)
AMD35 (35 SCFM)	AMD45 (45 SCFM)	AMD55 (55 SCFM)
AMD65 (65 SCFM)	AMD85 (85 SCFM)	AMD105 (105 SCFM)
AMD135 (135 SCFM)	AMD175 (175 SCFM)	AMD215 (215 SCFM)
AMD275 (275 SCFM)	AMD365 (365 SCFM)	

## Function of the dryer

The dryer is designed to provide a smooth, controlled and uninterrupted delivery of dry compressed air. Wet air passes through a pre-filter and travels down to the bottom valve assembly. The air is then fed through the bottom of the desiccant bed and moves through the high performance desiccant until it becomes dry. On exit from the desiccant cartridge, the air is passed through the outlet valve assembly.

During this process, the dryer control system cycles the process air between the two desiccant towers. While one chamber is on stream removing water vapor, the other is being carefully depressurized in preparation for regeneration. The desiccant bed is regenerated by expanding a small amount of dry process air, or purge air, through the saturated desiccant.

Purge air passes to atmosphere through the silencer, which is fitted to an exhaust valve. The chamber is then repressurized, with the control system assuring each chamber is at full operational pressure prior to changeover.

This ensures a reliable and efficient operation. The air stream is switched and the cycle repeats on a continuous basis.

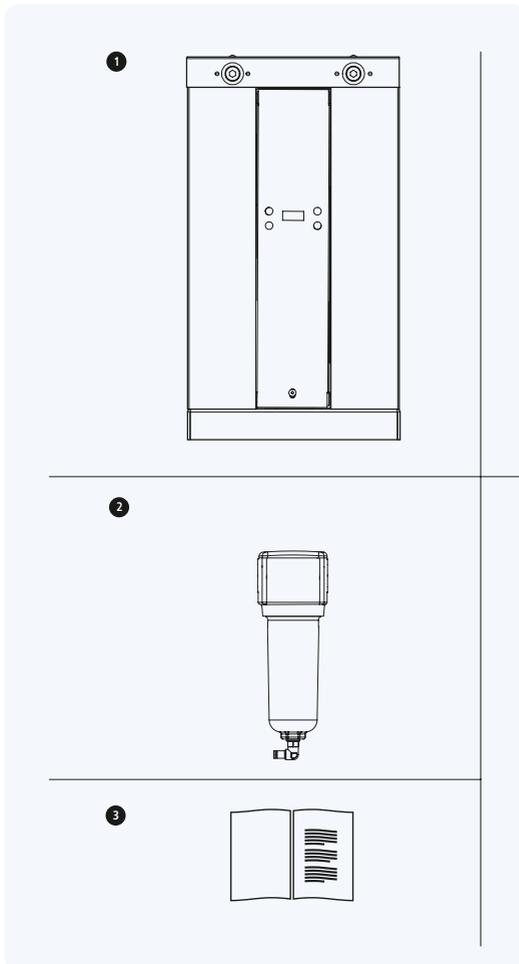
## Section 2: General Description

### Package Contents

The dryer is delivered in protective packaging. Take care when transporting, loading and unloading the unit. The package contains the following items (refer to figure 2.1):

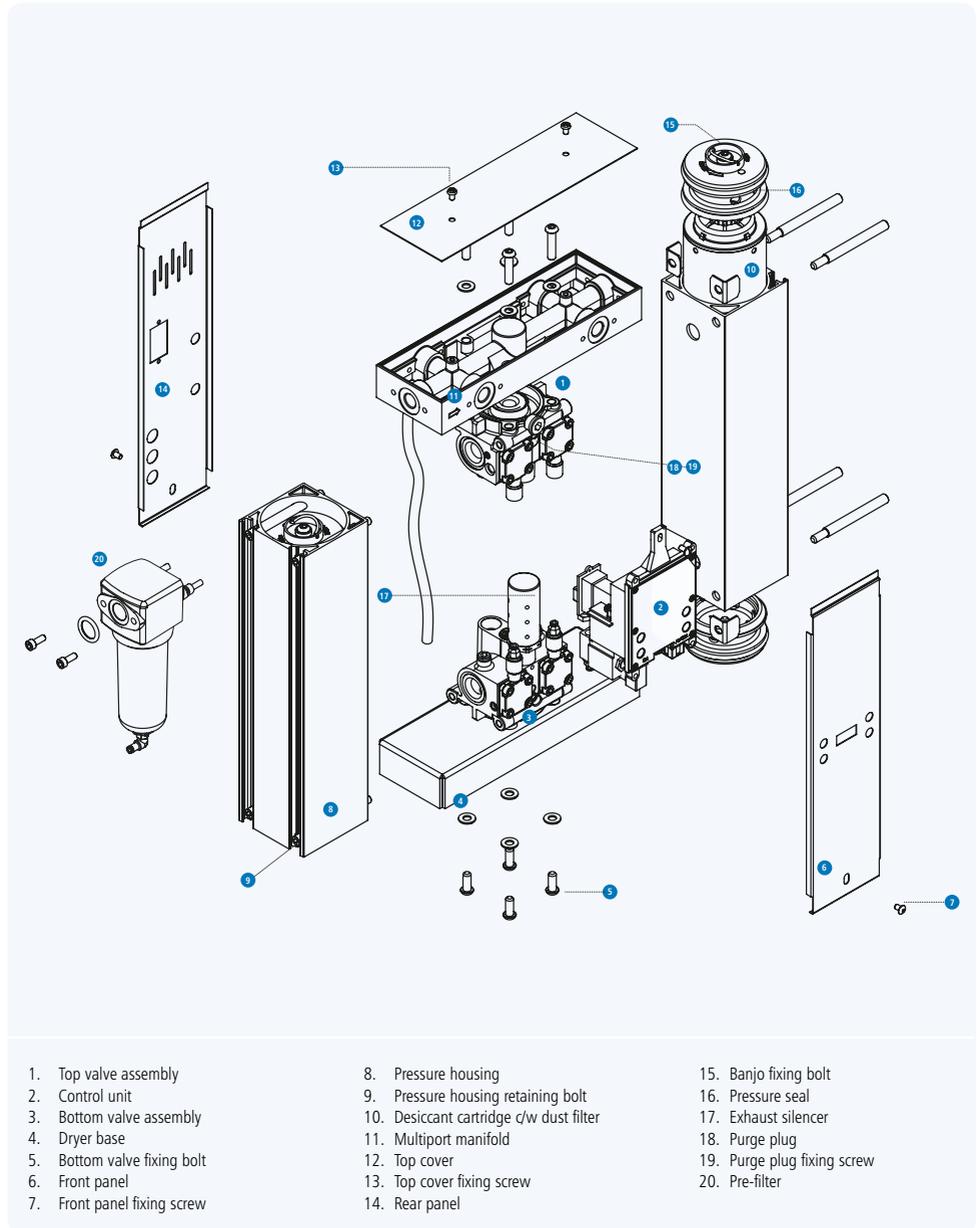
1. Dryer unit (6 SCFM shown)
2. Instruction manual (including Declaration of Conformity)
3. Power connector

Figure 2.1: Package contents



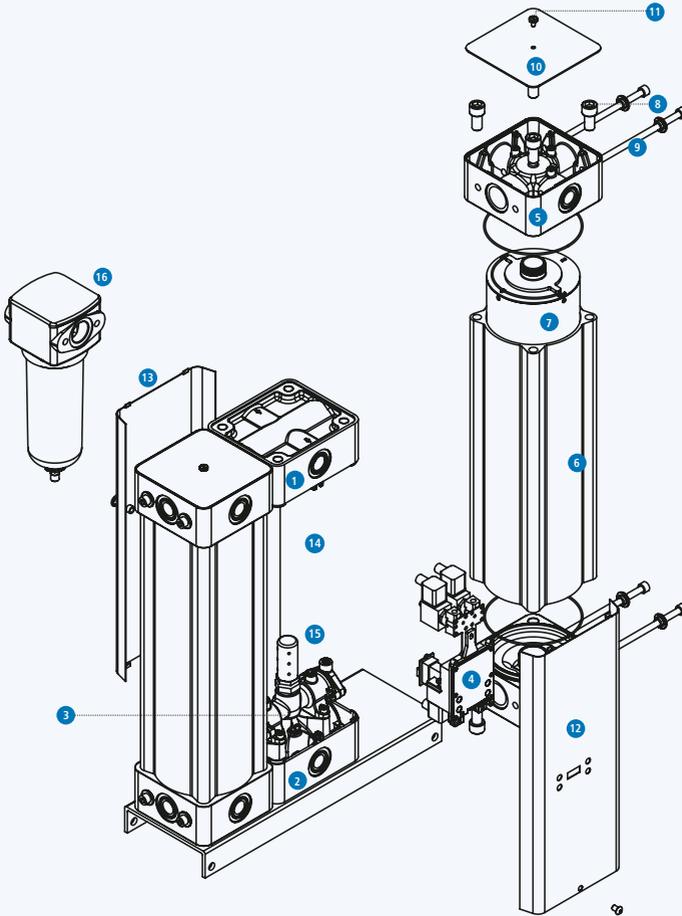
## Section 2: General Description

Figure 2.2: Models 4 SCFM – 35 SCFM



## Section 2: General Description

Figure 2.3: Models 45 SCFM – 365 SCFM



\* Models 215 SCFM – 365 SCFM are duplex

- |                           |  |                            |
|---------------------------|--|----------------------------|
| 1. Inlet valve assembly   | 7. Desiccant cartridge c/w dust filter | 13. Back panel             |
| 2. Bottom valve assembly  | 8. Pressure housing retaining bolt     | 14. Air transfer down-pipe |
| 3. Exhaust valve assembly | 9. Quadra-port manifold retaining bolt | 15. Silencer               |
| 4. Control/valve unit     | 10. Quadra-port manifold top cover     | 16. Pre-Filter             |
| 5. Quadra-port manifold   | 11. QPM fixing screw                   |                            |
| 6. Pressure housing       | 12. Front panel                        |                            |

# Mechanical Installation

## Connecting the pre-filter to the dryer

- 4 SCFM-35 SCFM, Utilize O Ring and bolt supplied to assemble filter as per figure 3.1.
- 45 SCFM-365 SCFM, Attach pre-filter using customer supplied pipe work
- Fit 4mm (5/32") black tubing to filter and drain valve inlet.
- Pipe away condensate with 4mm (5/32") tubing from drain outlet. Ensure condensate is drained into an oil/water separator.
- Fit any further filtration or ancillary equipment.
- Drain kits is supplied with dryer. Kit includes: Swivel elbow adapter and 4mm tubing.

 **All tubing should be secured up to the point of drain to prevent whipping during discharge.**

It is recommended that a bypass line including filter is installed, as per figure 3.13

Figure 3.1: Connecting pre-filter

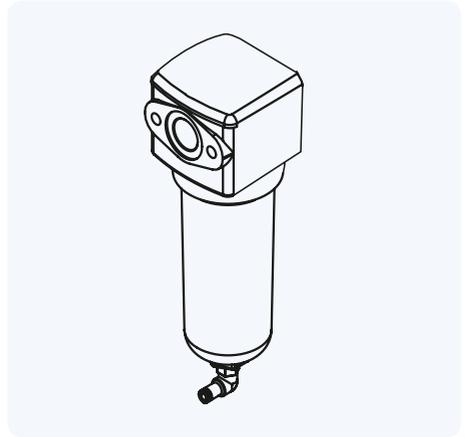
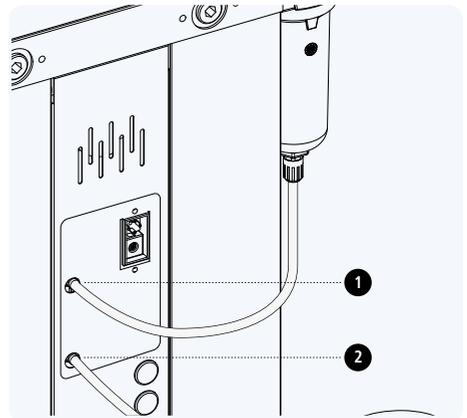


Figure 3.2: Connecting filter drain



1. Inlet
2. Outlet

### Orientation

The range of dryers is designed to operate in both vertical and horizontal orientation.

Figure 3.3: Horizontal orientation

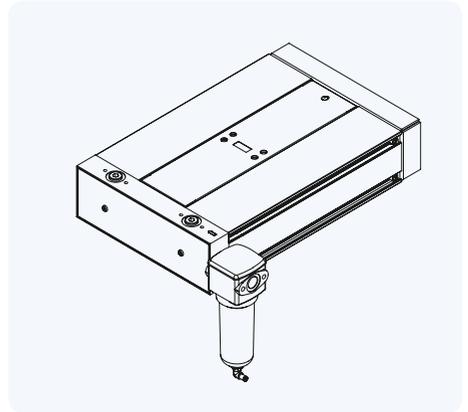
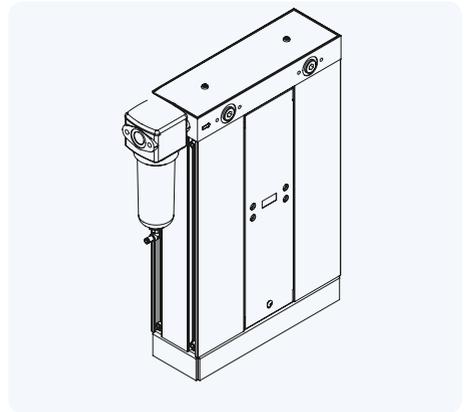


Figure 3.4: Vertical orientation



**Reconfiguration of the inlet / outlet port**

**4 SCFM – 35 SCFM models only**

The dryer has three ports on the inlet (A, B and C) and three ports on the outlet (D, E and F). Any of the three can be used for inlet (A, B or C) and outlet (D, E or F). Make sure the remaining two are blanked off with provided pressure plugs.

Dryer can be reconfigured to interchange position of inlet and outlet ports (Figure 3.6).



**Directional arrows are etched into the inlet manifold.**

**Any / all of the three outlet ports can be used on occasion. Please ensure combined flow at outlet should not exceed specification. Please adhere to regional regulations.**

**It is strongly advised to connect a non-return valve to each outlet used.**

**Only use one inlet port at any one time**

**Ensure original seals are in place.**

**Check dryer is leak-free prior to operation.**

**Tools required**

- 4mm hex key
- 6mm hex key

Figure 3.5: Inlet/outlet ports

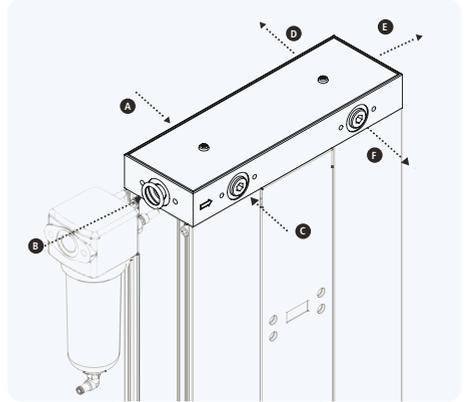
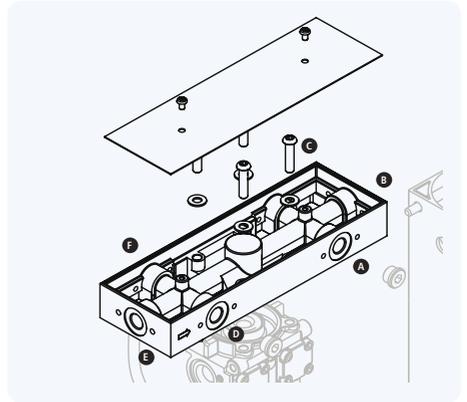


Figure 3.6: Reconfiguration of inlet/outlet ports



### Section 3: Mechanical Installation

Figure 3.7: Level ground

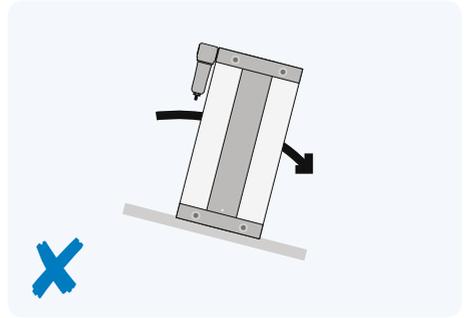
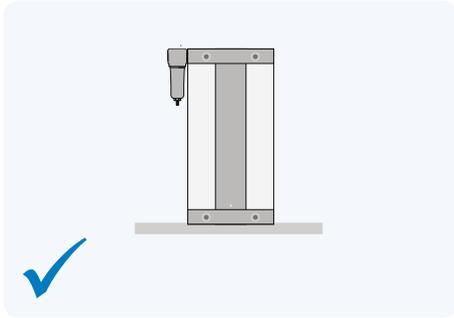
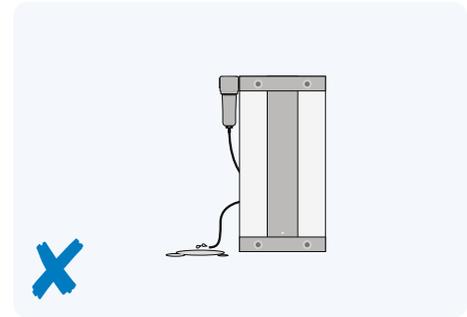
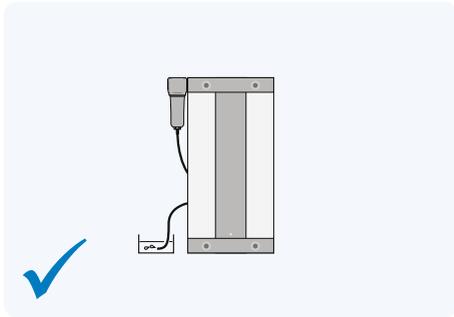


Figure 3.8: Drainage (all tubing should be secured up to the point of drain to prevent whipping during discharge)



Section 3: **Mechanical Installation**

Figure 3.9: Location

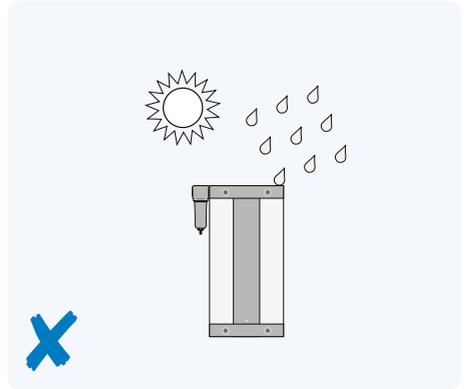


Figure 3.10: Hard piped installation

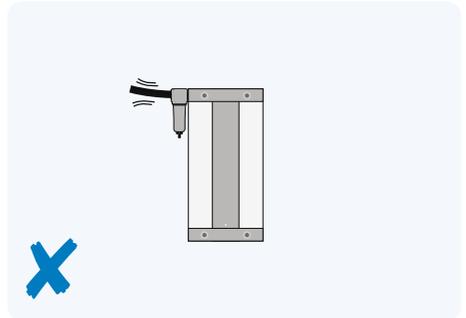
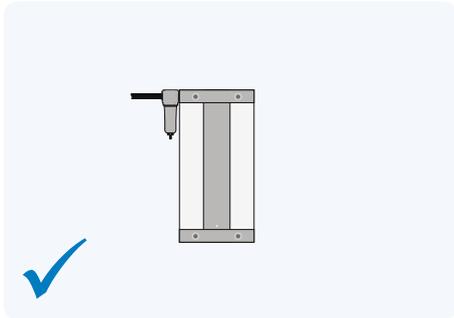
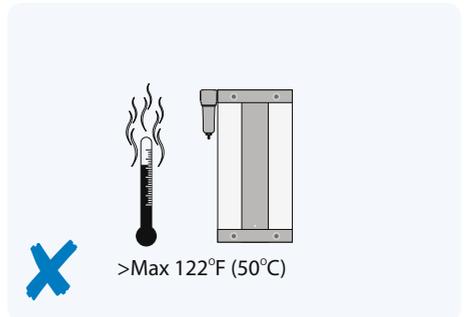
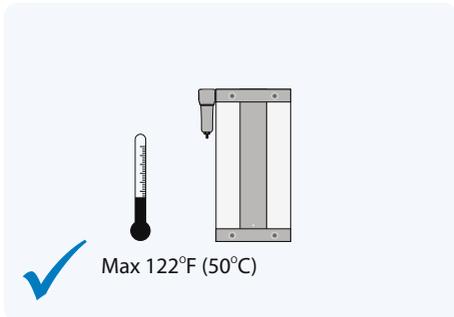


Figure 3.11: Exposure to heat



### Section 3: Mechanical Installation

Figure 3.12: Direction of flow

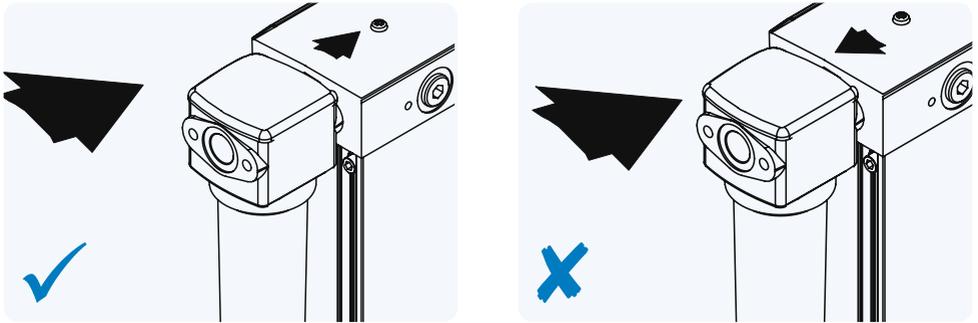
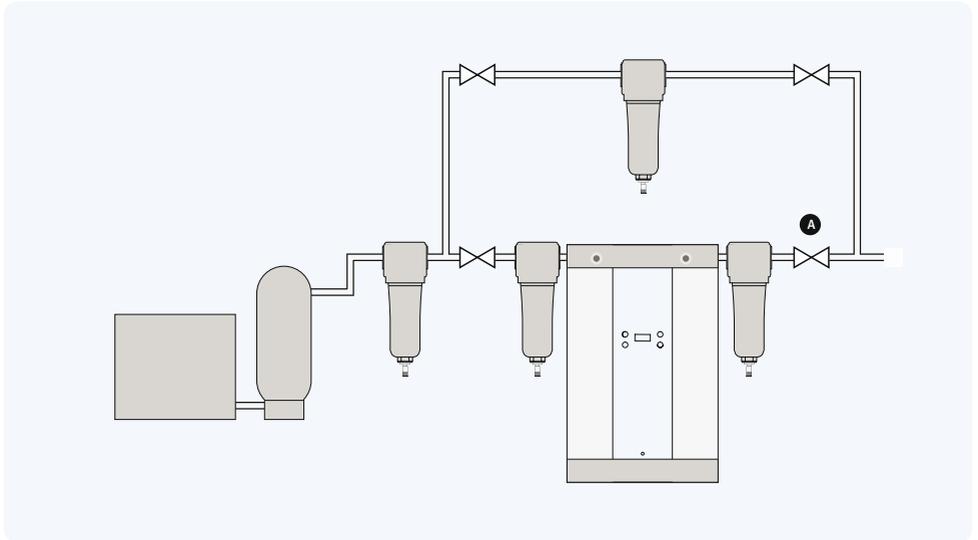


Figure 3.13: Typical installation



To prevent back flow into the dryer a non-return valve should be placed in-line, downstream of the dryer. This is essential when more than one dryer is used in a single application.

# Electrical Installation

## Connection

The dryer is designed to operate on either AC or DC supply voltage.

Electrical wiring must comply with local regulations. Voltage requirements must be confirmed to be within the specification on the dryers rating plate.

Ensure only one power source is connected at any one time and is connected to the correct socket as shown in figure 4.3 and 4.4.

The dryer controller is double insulated therefore no earth is required on the power connector. External fuse to be connected to plug.

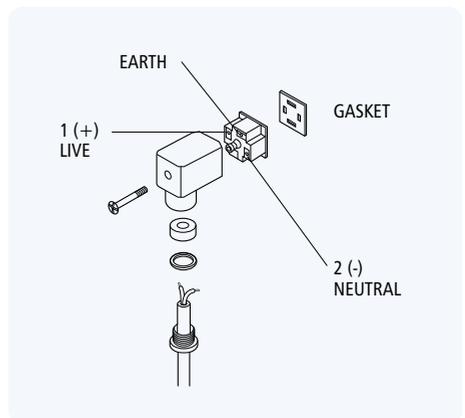
The cable selection must suit local installation regulations and be appropriate to power consumption as shown in the Power Supply table.

Power Supply	
Supply	Amp
12 VDC	0.80
24 VDC	0.40
100 VAC	0.16
115 VAC	0.14
230 VAC	0.07
240 VAC	0.07

## How to wire a power connector

Figure 4.1 illustrates how to wire power connector. Please refer to wiring diagram, figure 4.2, page 17, for further information.

Figure 4.1: Din connector





### Controller Description

#### Controller Specification

Ambient temperature	35°F to 122°F (1.5°C to 50°C)
Max.relative humidity	80% up to 87.8°F, decreasing linearly to 50% RH at 122°F
Input voltage range	100–240VAC, 50–60Hz, 12–24VDC Mains supply voltage not to exceed $\pm 10\%$ of nominal
Protection class	IP65
Transient over voltage	IEC 60664 Class II
Pollution degree	2, IEC 60664

For energy and alarm installation management please see section 8



**A circuit breaker or switch must be installed near the dryer. This should be easy to reach and shall be certified according to EN60947-1 and EN60947-3. The switch or circuit breaker shall be marked as the disconnecting device for the dryer and needs to be marked with on and off positions.**

**Output connections do not provide isolation from the mains connectors and interconnecting wiring must meet EN61010-1:2001 requirements for reinforced insulation.**

When used in the UK, a 3 amp fuse should be fitted as per the wiring diagram (figure 4.5).

# Operation

## Background / Function of the dryer

The dryer operation is designed to give smooth, uninterrupted delivery of compressed air to the designated specification.

During the cycle of operation, the first pressure housing is fully pressurized and airflow is directed upwards through the desiccant cartridge, removing moisture from the air during its passage, to the minimum specified dewpoint.

During the drying cycle, a small bleed of process air is directed to the opposite pressure housing. This process air flows down through the desiccant cartridge and into the atmosphere by means of an exhaust silencer, thereby affecting regeneration of the desiccant.

After 120 seconds of operation, the cartridge under regeneration is sealed by closing of the exhaust valve and the pressure housing is brought up to full system pressure by the purge air.

After an extended time (See start-up procedure for individual sizes) the pressure in the first housing is released into the atmosphere by means of the corresponding exhaust valve and the desiccant cartridge then operates in regeneration mode. The main air flow and drying function is then transferred to the desiccant cartridge that was previously under regeneration.

The cycle of operation continues in this pattern with the cartridges switching alternately between drying and regenerating.

## Start-up procedure 4 SCFM - 35 SCFM

- See figure 5.1 and 5.2.
  - Close valves A, B, C and D.
  - Switch on compressor.
  - Open valve A slowly.
  - Check there are no leaks from the dryer.
  - Switch on electric power. All four display panel LED's will flash simultaneously green four times then simultaneously red four times to acknowledge application of power and readiness to function. Observe display panel for one complete cycle. Note: cycle described is factory setting.
- a. Power LED illuminates green and tower LED X illuminates green.

- b. After 120 seconds, tower LED X switches off and drain LED Z illuminates green.
  - c. After a further 50 seconds drain LED Z switches off and tower LED Y illuminates green.
  - d. After a further 120 seconds, tower LED Y switches off.
  - e. After a further 50 seconds, tower LED X illuminates green - this is point 'a' in the cycle described above.
- The above cycle (a – e) repeats.
- On initial commissioning only run the dryer for a minimum of six hours to ensure dewpoint is adequate. Thereafter, continue directly to next point.
- Open valve B slowly.

## Start-up procedure 45 SCFM - 365 SCFM

- See figure 5.1 and 5.2.
  - Close valves A, B, C and D.
  - Switch on compressor.
  - Open valve A slowly.
  - Check there are no leaks from the dryer.
  - Switch on electric power. All four display panel LED's will flash simultaneously green four times then simultaneously red four times to acknowledge application of power and readiness to function. Observe display panel for one complete cycle. Note: cycle described is factory setting.
- a. Power LED illuminates green and tower LED X illuminates green.
  - b. After 120 seconds, tower LED X switches off and drain LED Z illuminates green.
  - c. After a further 20 seconds drain LED Z switches off and tower LED Y illuminates green.
  - d. After a further 120 seconds, tower LED Y switches off.
  - e. After a further 20 seconds, tower LED X illuminates green - this is point 'a' in the cycle described above.
- The above cycle (a – e) repeats.
- On initial commissioning only run the dryer for a minimum of six hours to ensure dewpoint is adequate. Thereafter, continue directly to next point.
- Open valve B slowly.

## Section 5: Operation

### Shut-down Procedure

- Close valve B.
- Close valve A.
- Leave dryer running for 15 minutes to fully de-pressurize.
- Switch off all electrical power to the dryer.



**Under no circumstances must compressed air be allowed to flow through the dryer following switch off of electrical power. This will result in terminal failure of the desiccant cartridges and regeneration will not be possible.**

Figure 5.1: Typical installation

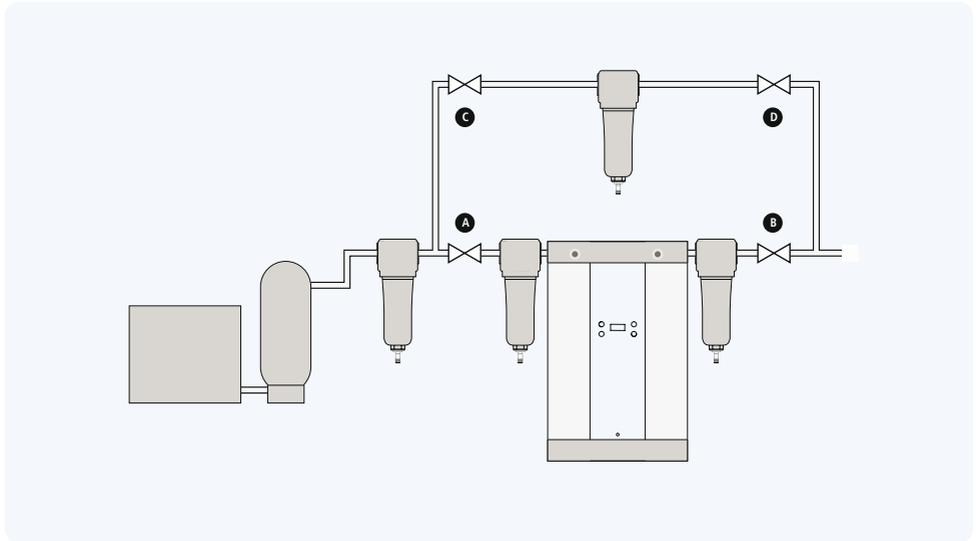
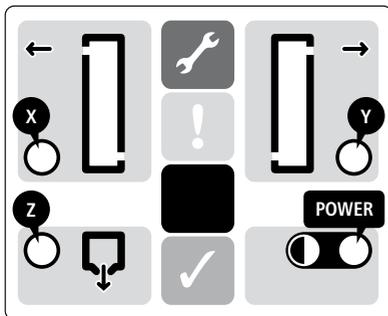


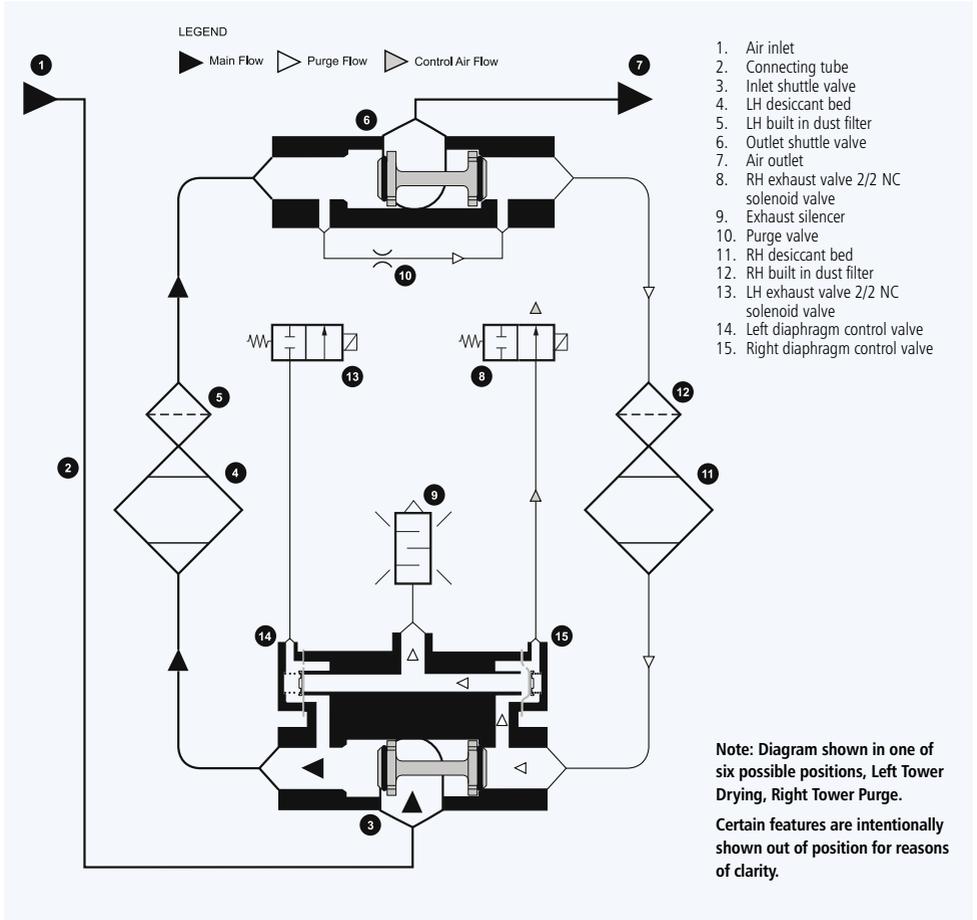
Figure 5.2: Controller description



- X Left tower regenerating (Right tower drying)
- Y Right tower regenerating (Left tower drying)
- Z Drain solenoid
- Power Power connected to controller

## Section 5: Operation

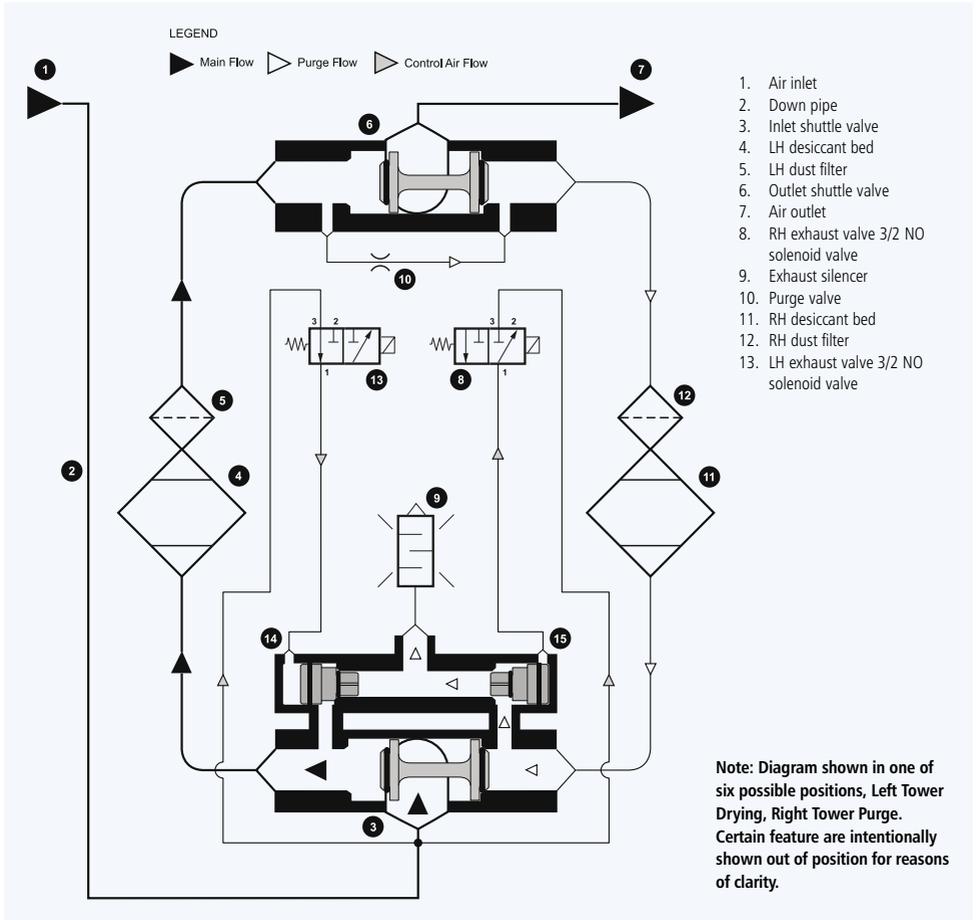
Figure 5.3: Process & Instrumentation diagram (4 SCFM – 35 SCFM)



Stage	Time (Seconds)	SV Valve Status	Dryer Operation
1.	0	Left valve closed, right valve opens	Left tower at pressure (drying), right tower depressurizes and Then purges (this stage is shown on 4-35 SCFM pneumatic schematic)
2.	120	Both valves closed	Right tower repressurizing
3.	170	Left valve opens, right valve closed	Left tower depressurizes and then purges, right tower at pressure (drying)
4.	290	Both valves closed	Left tower repressurizing
	340	Back to stage 1	-

## Section 5: Operation

Figure 5.4: Process & Instrumentation diagram (45 SCFM – 365 SCFM)



Stage	Time (Seconds)	SV Valve Status	Dryer Operation
1.	0	Left valve closed, right valve opens	Left tower at pressure (drying), right tower depressurizes and Then purges (this stage is shown on 45-365 SCFM pneumatic schematic)
2.	120	Both valves closed	Right tower repressurizing
3.	140	Left valve opens, right valve closed	Left tower depressurizes and then purges, right tower at Pressure (drying)
4.	260	Both valves closed	Left tower repressurizing
	280	Back to stage 1	-

# Maintenance

## Servicing



### Important information.



Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.



The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Please refer to Section 11-Spares Information.

### Service Intervals

Pre-Filter Element	Annually (6000 hrs)
Cartridges	Every Two Years (12000 Hrs)
Valves	Every Four Years (24000 Hrs)

## Front Panel Removal

### Models 4 SCFM – 35 SCFM only

- See figure 6.1.
- Using a hex key remove screw from the front panel.
- Open from bottom, allowing top to drop out releasing the panel entirely.

### Tools required



- 4mm hex key

Figure 6.1: Models 4 SCFM – 35 SCFM

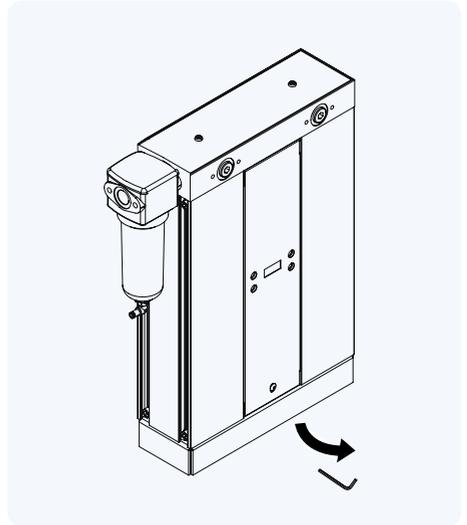
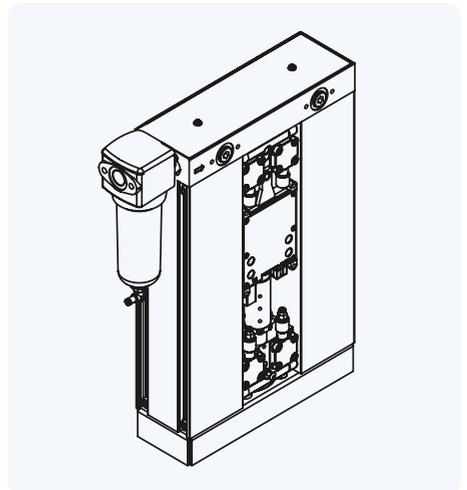


Figure 6.2: Models 4 SCFM – 35 SCFM with front panel removed



### Front Panel Removal

#### Models 45 SCFM – 365 only

- See figure 6.3.
- Using a hex key remove screw from the front panel.
- Open from bottom, allowing top to drop out releasing the panel entirely.

#### Tools required



- 5mm hex key.



#### Important information.



Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.



The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Figure 6.3: Models 45 SCFM – 365 SCFM

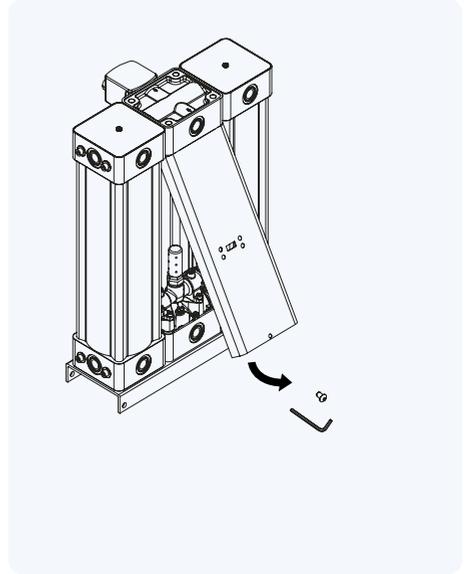
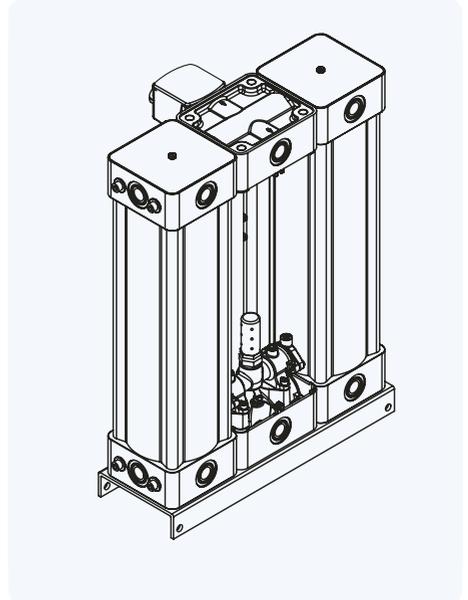


Figure 6.4: Models 45 SCFM – 365 SCFM with front panel removed



### Desiccant Changeout

#### Models 4N SCFM – 35 SCFM only

1. See figure 6.5.
2. Remove pre-filtration.
3. Unscrew four bolts  $\frac{3}{4}$  turn on the opposite tower to aid desiccant changeout process.
4. Unscrew the four pressure housing retaining bolts and slide out the pressure housing.
5. Remove banjo fixing bolt using hex key.
6. Extract end cap and banjo assembly from pressure housing.
7. Using banjo fixing bolt, retract the cartridge from pressure housing.
8. Replace with new cartridge supplied as part of the cartridge service kit.
9. Ensure O-ring seals are in place when installing cartridge and assembly in pressure housing.
10. Follow above steps in reverse to finish installing new cartridge into the dryer.
11. Repeat steps 1 – 10 for the second pressure housing.
12. Ensure the dryer is leak-free before operating pressure is applied to the dryer.
13. Follow start up procedure as stated on page 19 of this manual.
14. Continue to page 27 to reset the controller.

#### Tools required



- 5mm hex key.
- 6mm hex key.

#### Important information

-  Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.5: Models 4 SCFM – 35 SCFM with pre-filter removed

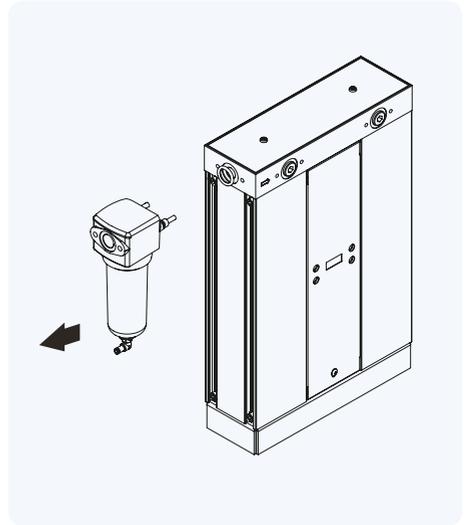
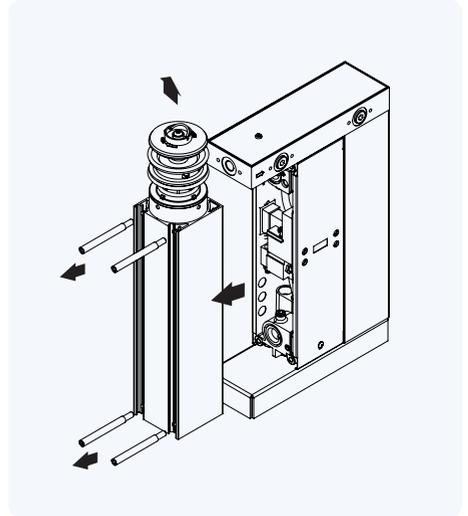


Figure 6.6: Models 4 SCFM – 35 SCFM with tower assembly removed



Desiccant Changeout

Models 45 SCFM – 365 SCFM only

See figure 6.7.

1. Unscrew QPM cover fixing screw, remove QPM cover.
2. Unscrew QPM retaining bolts.
3. Unscrew pressure housing retaining bolts.
4. Remove QPM.
5. Pull out desiccant cartridge using the handle.

 For dryer models 105 SCFM - 365 SCFM each tower assembly includes 2 desiccant cartridges.

6. Replace installed desiccant cartridges with new cartridges supplied as part of the cartridge service kit.
7. Ensure o-ring seals are in place when installing desiccant cartridges.
8. Follow steps 1 to 4 in reverse order to finish installing in tower assembly.
9. Repeat steps 1-8 for remaining tower assemblies.
10. Ensure dryer is leak free at lower pressure prior to applying operating pressure to dryer.
11. Follow start-up procedure as stated on page 19 of this manual.
12. Continue to page 27 to reset the controller.

Tools required



- 5mm hex key
- 6mm hex key
- 8mm hex key
- 16mm hex key
- Adjustable spanner
- Flathead screwdriver

Important information

 Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.

 The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.



Figure 6.7: Models 45 SCFM – 365 SCFM - QPM removal stage 1

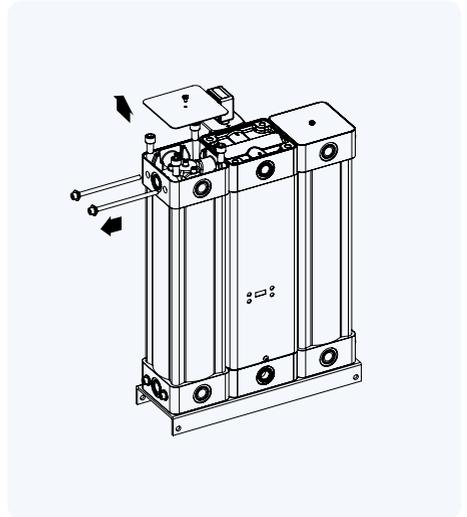
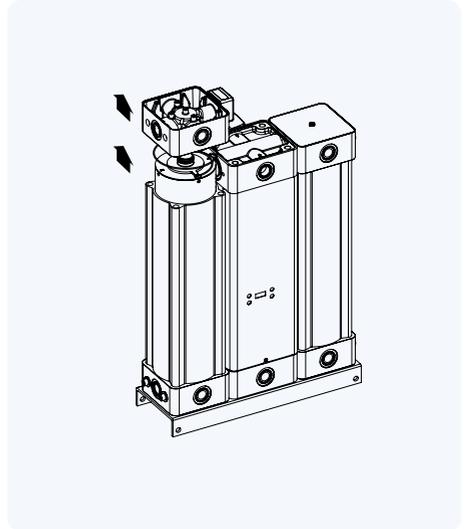


Figure 6.8: Models 45 SCFM – 365 SCFM - QPM removal stage 2



**Resetting the Controller**

- After following the startup procedure it is necessary to reset the controller. This is done by using the reset disc (supplied with cartridge service kit) then:
- Hold the disc against the blue pad on the front display of the dryer panel for five seconds.
- During the five second period the power indicator will flash green. When the reset has been successful, indicator X will flash green once to confirm that it has been completed successfully.

 Sweep the reset disc on the blue pad if the LEDs do not flash as stated.

**Please note:** If Energy Management is activated, there will be a six hour delay after reset before Energy Management will be operational again.

Figure 6.9: Controller reset

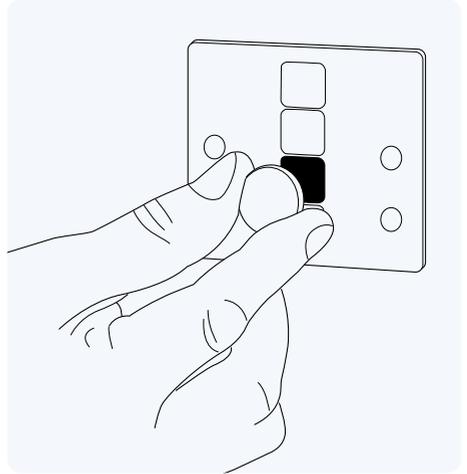
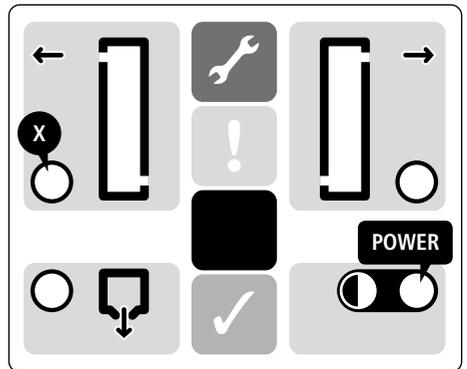


Figure 6.10: Controller description



### Purge Plug Removal

#### Models 4 SCFM – 35 SCFM only

- Remove dryer front panel.
- Remove purge plug securing screw from the upper valve block.
- Remove purge plug.
- Replace with appropriate purge plug according to inlet pressure. Refer to Spares section, page 56
- Grease purge plug O-ring to ensure ease of fit

 **Appropriate purge plug selection is very important for function of the dryer. Failure to comply with this may affect your warranty.**

#### Tools required



- Pozidrive screwdriver

#### Important information

 Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.

 The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Figure 6.11: 4 SCFM - 35 SCFM - Purge plug changeout stage 1

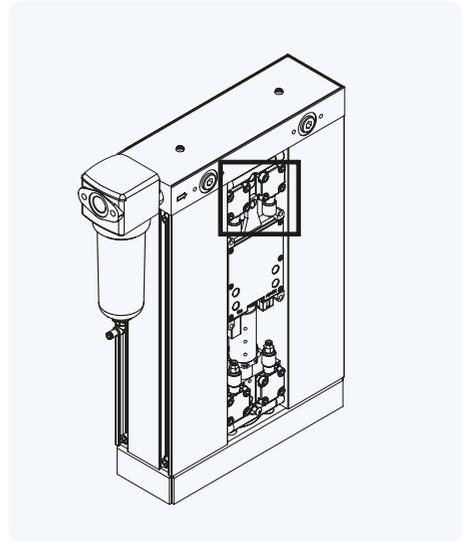
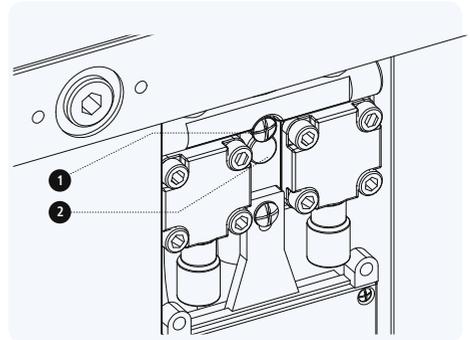


Figure 6.12: 4 SCFM - 35 SCFM - Purge plug changeout stage 2



1. Securing screw
2. Purge plug

---

**Purge Plug Removal**

---

**Models 45 SCFM – 365 SCFM only**

- Remove dryer front panel.
- Remove fixing screws from one of the bonnets holding the purge orifice.
- Remove purge plug from remaining bonnet.

---

**Tools required**



- 6mm hex key

---

**Important information**

---

-  Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

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Figure 6.13: 45 SCFM - 365 SCFM Purge plug changeout stage 1

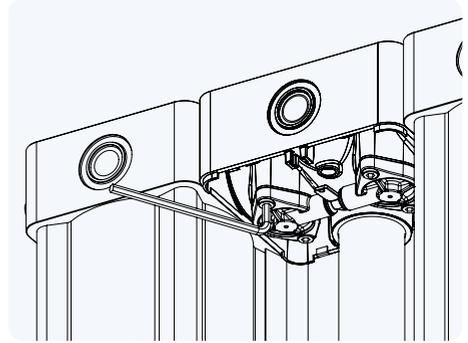


Figure 6.14: 45 SCFM - 365 SCFM Purge plug change out stage 2



---

### Exhaust Silencer Changeout

---

#### Models 4 SCFM – 35 SCFM only

- *Remove dryer front panel.*
- *Unscrew silencer from bottom valve block and remove.*
- *Replace with new silencer.*

---

#### Important information

---

 Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.

Please note: The bottom valve bonnets should be removed to allow access to base of silencer.

 The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.



Figure 6.15: 4 SCFM - 35 SCFM Silencer changout stage 1

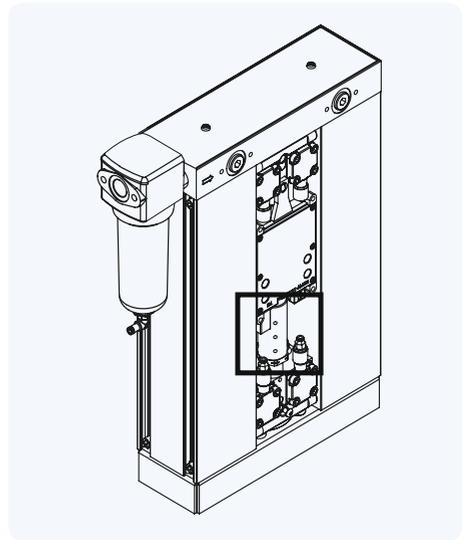


Figure 6.16: 4 SCFM - 35 SCFM Silencer changout stage 2

---

**Exhaust Silencer Changeout**

---

**Models 45 SCFM – 85 SCFM only**

- *Remove dryer front panel.*
- *Unscrew silencer from bottom valve block and remove.*
- *Replace with new silencer.*

---

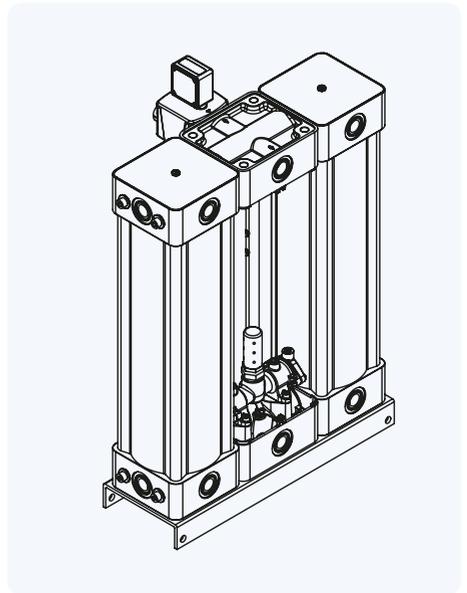
**Important information**

---

-  Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

---

Figure 6.21: 45 SCFM - 85 SCFM Silencer changout stage 1



### Exhaust Silencer Changeout

#### Models 105 SCFM – 175 SCFM

- Remove dryer front panel.
- Unscrew silencer from bottom valve block and remove.
- Replace with new silencer.

#### Tools required



- *Spanner*

#### Important information

-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.19: 105 SCFM - 175 SCFM Silencer changeout stage 1

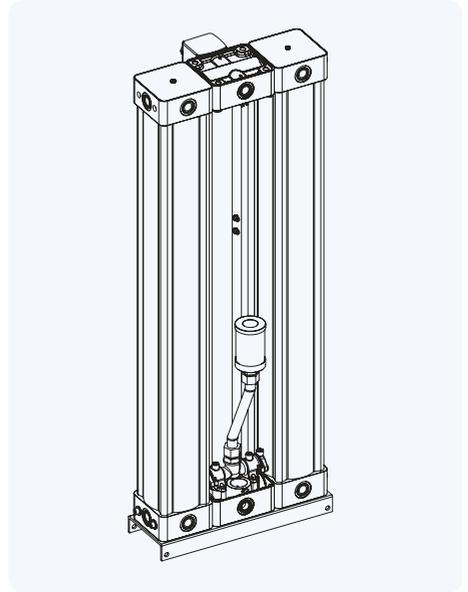
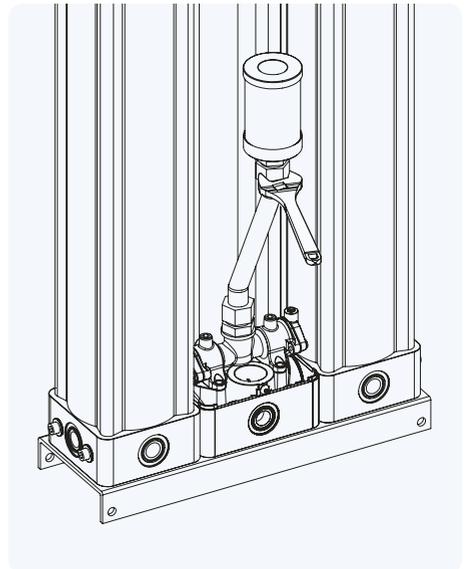


Figure 6.20: 105 SCFM - 175 SCFM Silencer changeout stage 2



### Exhaust Silencer Changeout

#### Models 215 SCFM – 365 SCFM

- Remove dryer front panel.
- Unscrew silencer from bottom valve block and remove.
- Replace with new silencer.

#### Tools required



- Spanner

#### Important information

-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.21: 215 SCFM - 365 SCFM Silencer changeout stage 1

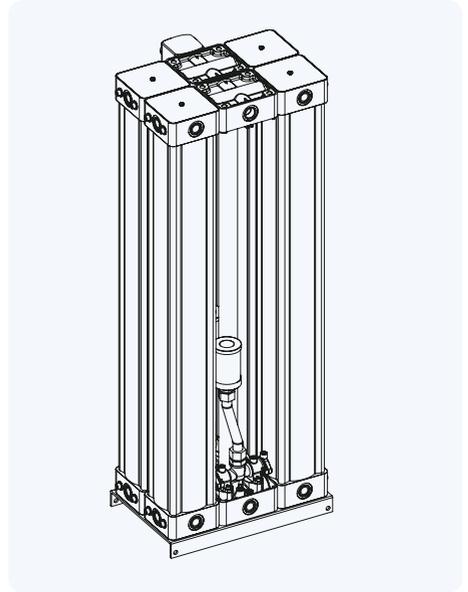
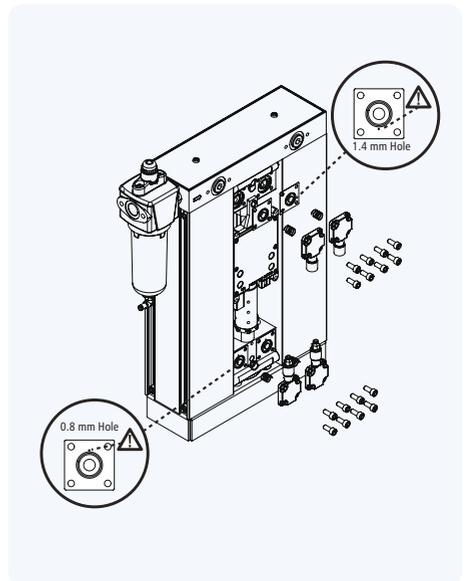


Figure 6.22: 215 SCFM - 365 SCFM Silencer changeout stage 2



### Diaphragm Replacement

#### Models 4 SCFM – 35 SCFM only

- Remove front panel.
- Remove bonnets by means of four fixing screws.
- Separate bonnet from valve block.
- Disconnect tubing from fitting on bonnet.
- Remove diaphragm assembly.
- Insert new Diaphragms and springs, ensuring Diaphragm holes are clear.

#### Tools required



- 4mm hex key

#### Important information

- Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.
- The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

- An IOM is included in the change-out kit to assist Diaphragm Replacement

Figure 6.25: 4 SCFM - 35 SCFM Diaphragm changeout stage 1

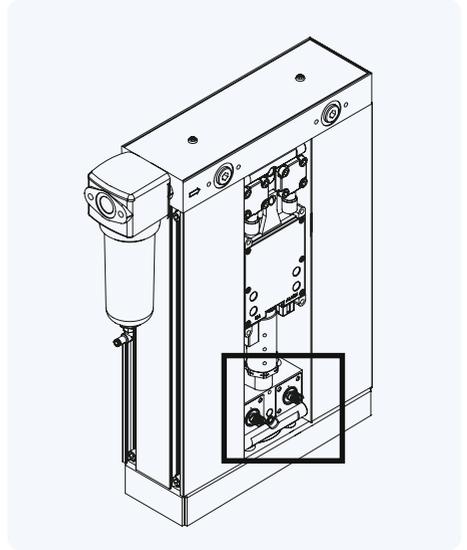
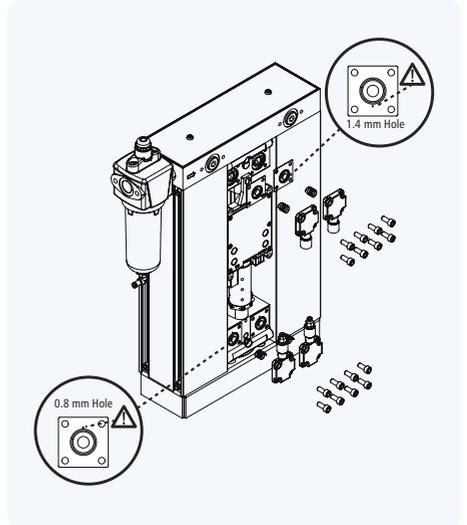


Figure 6.26: 4 SCFM - 35 SCFM Diaphragm changeout stage 2



1. Diaphragm
2. Spring

### Replacing Shuttle Valves

#### Models 4 SCFM - 35 SCFM

- Remove tower
- Pull out shuttle seat
- Remove shuttle
- Replace shuttle
- Reinsert shuttle seat
- Re-secure tower

#### Tools required



- 5mm hex key

Figure 6.27: 4 SCFM - 35 SCFM Filter and tower removal

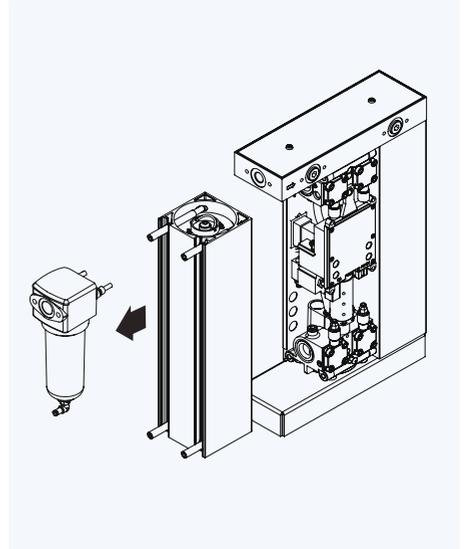
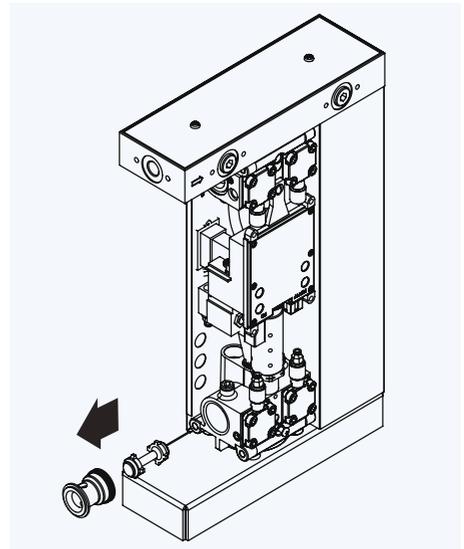


Figure 6.28: 4 SCFM - 35 SCFM Shuttle seat and shuttle removal



### Replacing Shuttle Valves

#### Models 45 SCFM - 365 SCFM

- Remove tower
- Pull out shuttle seat
- Remove shuttle
- Replace shuttle
- Reinsert shuttle seat
- Re-secure tower

#### Tools required



- 8mm hex key

#### Important information

-  Ensure shutdown and startup procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.29: 45 SCFM - 365 SCFM Tower removal

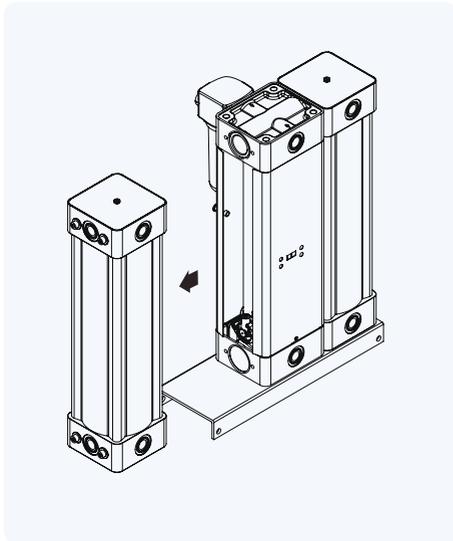


Figure 6.30: 45 SCFM - 365 SCFM Shuttle seat and shuttle removal (Top block)

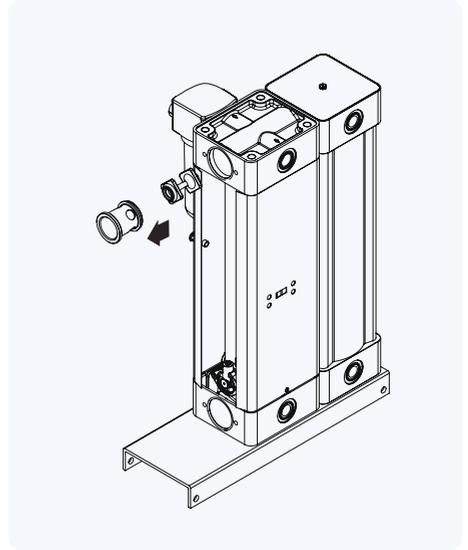
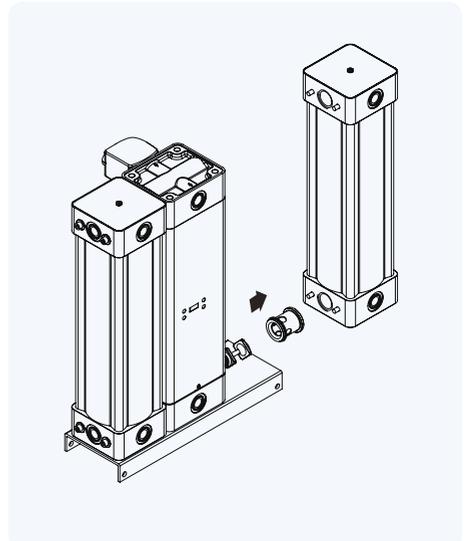


Figure 6.31: 45 SCFM - 365 SCFM Shuttle seat and shuttle removal (Bottom block)



# Energy Management

## Overview

Regenerative dryers must expel a portion of the process air in order to free themselves of accumulated moisture. During periods of low air demand, however, this air loss is not necessary and is therefore undesirable. In many cases, the compressor runs almost continuously in order to keep up with the dryer's purge loss.

All dryers are equipped with an Energy Management feature that allows the purge to be shut off during periods of low or no demand. The dryer controller is fitted with a set of field accessible contacts, that can be employed to shut off the solenoid valves which control the purge function of the dryer, therefore eliminating any air loss from the dryer.

## Developing a Purge Control Strategy

In order to utilize this function, the operator must provide a switching system that provides acceptable logic to indicate to the dryer that there is little or no air demand. On the following pages, some examples of commonly used switching systems are provided in ascending order of complexity.

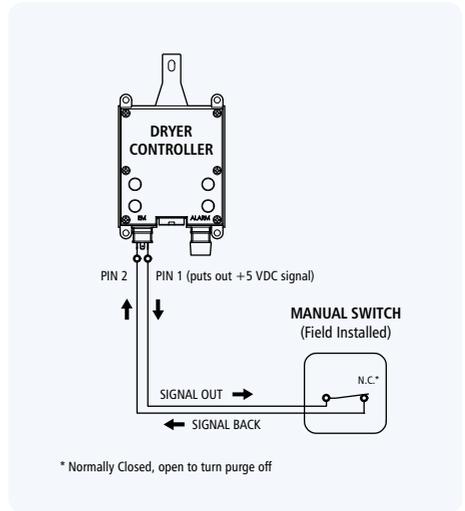
## Using a Manual Switch for Purge Control

The simplest of arrangements, a manual switch may be employed to shut the purge off when the air downstream of the dryer is not being used. Commonly used on point of use systems. For example, if the dryer is only used to supply air of an appropriate dryness to a specific machine or application, the dryer will only be required when the machine is in use and may be shut off either manually or possibly via extra contacts provided in the machine's on/off switch.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

The following schematic ( Fig 8.1) offers an overview of the devices mentioned as they might be connected for use in controlling a dryer's purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer's specifications should be adhered to.

Fig 8. 1 Manual switch purge control



Using a Standard Pressure Switch for Purge Control

Many compressors come equipped with pressure switches with extra contacts that can be utilized to switch off the dryer’s purge when the compressor is in an unloaded state. Unfortunately, many of these switches have significantly large dead bands (difference between the load (on) and unload (off) settings that in most cases cannot be altered). The amount of air that can pass downstream, through the dryer, while the compressor is unloaded must be taken into consideration as it can be significant, especially if there is a large dead band and/or large wet receiver.

Often, a stand-alone pressure switch is a better option as it allows the user to adjust it independently from the compressor’s pressure switch. When selecting a stand-alone pressure switch, the smaller the dead band the better.

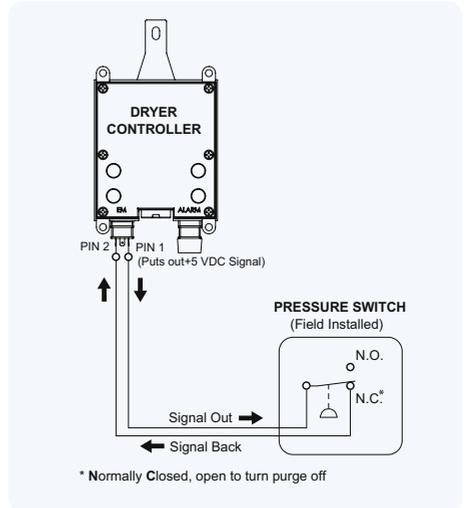
When using a stand-alone pressure switch, the dryer is wired into the normally closed contacts on the pressure switch. When the switch is actuated (at 100 psig in the example), the purge shuts off until the pressure switch deactuates (at 95 psig in example). The point at which the switch deactuates, may be adjusted to suit the system.

If it is determined that the dew point drops to an unacceptable level, the deactuation point must be increased. Please note that with most standard pressure switches, the dead band is fixed such that the activation and deactuation points move together.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

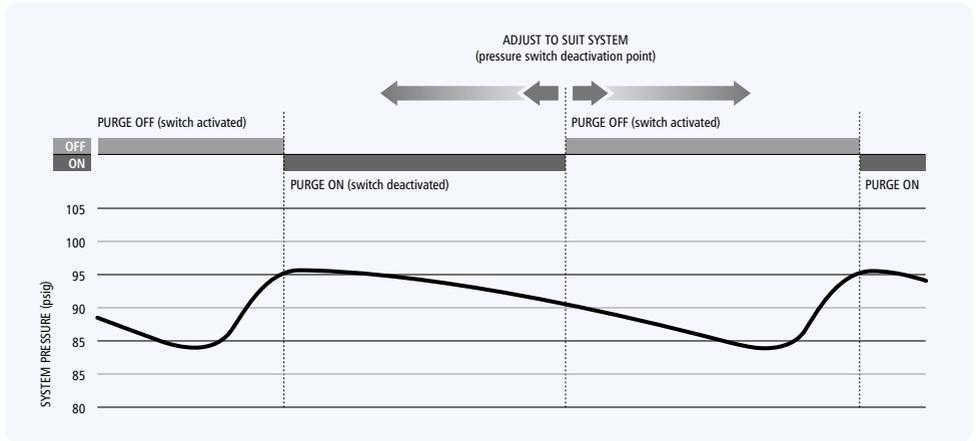
The following schematic offers an overview of the devices mentioned as they might be connected for use in controlling a dryer’s purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer’s specifications should be adhered to.

Figure 8.2: Using a standard pressure switch for Purge Control.



## Section 7: Energy Management

Fig 8. 3 Pressure switch setting



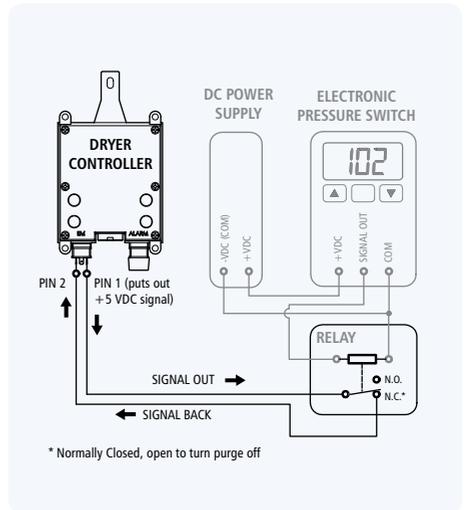
### Using an Electronic Pressure Switch for Purge Control

The best choice if using a pressure switch is to select an electronic programmable type pressure switch which is effectively a pressure transmitter and process controller built into one device. While significantly more costly than a standard pressure switch, an electronic programmable pressure switch can be setup to provide a much more customized operation. Typically, the dead band can be reduced or eliminated so that an immediate reaction to changes, in system pressure indicating air flow, can be obtained.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

The following schematic offers an overview of the devices mentioned as they might be connected for use in controlling a dryer's purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer's specifications should be adhered to.

Figure 8.4 Using an Electronic Pressure Switch for Purge Control



 This setup is for example only. This configuration can be amended, depending on application.

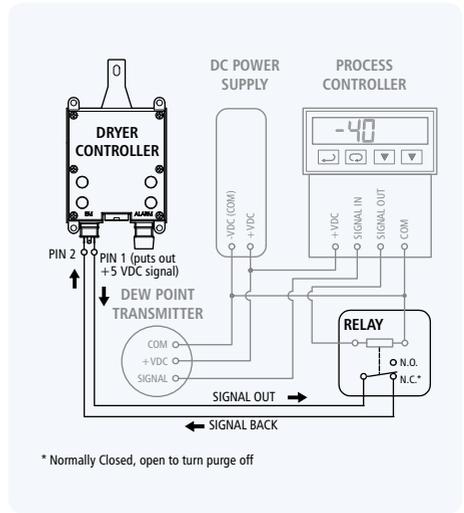
**Using a Dew Point Transmitter and Process Controller for Purge Control**

The best option for purge control if the delivered dryness (pressure dew point) of the air from the dryer is critical. If the air is deemed dry enough, than the purge can be shut off until the air's moisture starts to climb. If the purge is turned off, care must be taken to ensure that the desiccant beds are not allowed to wet out too far before the purge is turned back on. Also, after turning the purge back on, the air's pressure dew point may increase a bit before starting to drop again. This should be taken into consideration to ensure that the air flow remains sufficiently dry.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

The following schematic offers an overview of the devices mentioned as they might be connected for use in controlling a dryer's purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer's specifications should be adhered to.

Figure 8.5: Using process controller



**This setup is for example only. This configuration can be amended, depending on application.**

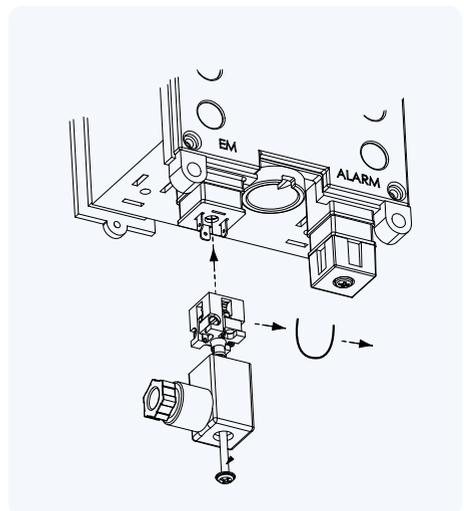
**Making Connections between a Switching Device & Dryer EM Contact**

**Cable / Wire Selection Criteria:**

Selected wire should have...

- at least two conductors. More conductors can be useful in the case of a conductor break. Conductors can be swapped without having to run new cable.
- a conductor gauge of no greater than 18 awg is recommended to fit comfortably into the DIN connector insert.
- an outside diameter of no greater than 1/4" (6mm). Larger diameters do not fit well into the cable gland of the EM DIN connectors.
- an insulation type compatible with the environment that it will be run in.

Figure 8.6: connecting to EM port

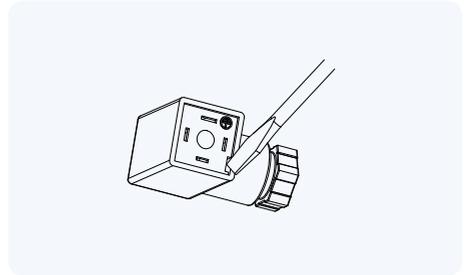


### Installation

- *Make the connection at the switch end first. This way you can check continuity at the dryer end before connecting to the dryer. Make sure that the contacts on the switch are normally closed. Pin 1 of the dryer EM connection puts out a 5 VDC signal. Take care to ensure that the contacts on the switching device are 'dry' and free of any voltage which could harm the dryer controller.*
- *Remove the DIN connector on the base of the controller*
- *Locate the DIN connector that comes with the Energy Management kit.*
- *Remove the screw completely from the center of the connector.*
- *Remove the blanking plug from the connector and discard.*
- *Remove the jumper wire which is between plug 1 and 2 and discard.*
- *Insert a small flat screwdriver into the small recess at the edge of the insert, pry the insert out of the DIN connectors outer shell (Figure 8.7).*
- *Slip cable end through DIN connector's cable gland and out through the front of the DIN connector.*
- *Strip the outer insulation of the cable back approx 20mm (3/4").*
- *Strip the conductor insulation back approx 3mm (1/8").*
- *If possible using a meter, check the continuity between the two wires to ensure that the switch is in a closed position. If it is possible to verify the switch function as well this may be helpful.*
- *Insert conductors into pins 1 & 2 of insert. Tighten retaining screws securely.*
- *Determine which direction the cable gland should point.*
- *Carefully pull the cable back through the shell until the insert snaps back into place. Take care to work the wires around the retaining screw hole as they can become fairly easily pinched.*
- *Plug the DIN connector back onto the dryer's EM connection taking care to make sure that sealing gasket is in place.*

**Note: The male ground pin is slightly wider than pins 1 & 2. Take care to ensure that the female connector is oriented correctly.**

Figure 8.7: DIN connector



**Alarm**

**Remote fault alarm: -**

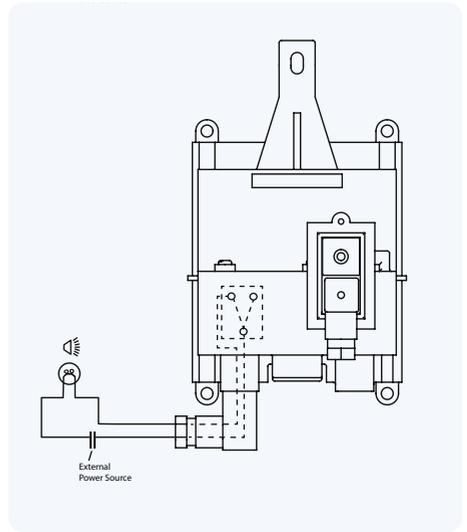
A remote alarm relay is built into the controller. This facilitates the activation of a remote audible or visual indicator. The alarm can be set to activate at the service interval and/or after a pre-defined number of electrical faults.

**Alarm connection details**

To enable the alarm facility it is recommended that a suitable cable is brought into the controller via the rear panel with a grommet. An external power source is required.:

1. Connect the switching pole of an externally powered alarm device to terminals 1 and 2 of alarm DIN connector.
2. With the power removed from the dryer and the alarm lead wired as described in 1 above, remove the cover from the DIN connection marked 'Alarm' and connect the wired DIN connector ensuring the seal and screw are fitted.

Remote alarm wiring diagram



Alarm relay rating	Alarm connection type
3 Amp Max 28 VDC	Hirschmann GDS 207 industrial standard DIN connector or equivalent

# Troubleshooting

## General troubleshooting

Before specific identification of any fault is looked for, the following general points must be verified:

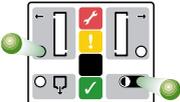
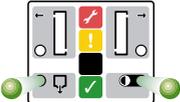
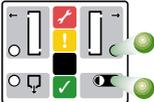
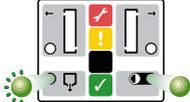
- *Has the unit been damaged externally or are any parts missing?*
- *Is power being supplied to the unit?*
- *Was start-up carried out in accordance with the instructions in this manual?*
- *Are all external valves correctly set for operation?*
- *Do the operational conditions meet those specified at time of ordering and used for product selection?*

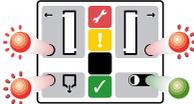
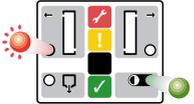
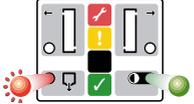
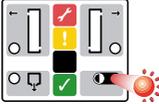
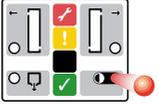
Troubleshooting: General		
Problem	Possible Cause	Action
Poor dewpoint	Liquid water at dryer inlet	Check pre-filtration and drains
	Excessive flow	Check actual flow against maximum specified
	Low inlet pressure	Check against specification
	High inlet temperature	Check against specification
	Silencer blocked or damaged	Replace silencer
	Air leaks	Tighten joints or fit new seals
	Desiccant life exceeded	Replace desiccant cartridges
	Desiccant contaminated	Check inlet filter and drains, replace cartridges
	EM is active when air is flowing through dryer	Check EM wiring, logic and/or control method used
	Power to dryer off while air is flowing through dryer	Ensure that power is on whenever air is flowing through dryer
Incorrect dryer operation	Jammed shuttle valves or faulted electrical components	See electrical operation troubleshooting section
Excessive or loud purge, or purge on only one tower	Jammed Main Shuttle Valve	Clean or replace shuttles
	Jammed Purge Exhaust Shuttle (45-365 SCFM)	Clean or replace exhaust shuttles
	Faulty Solenoid Valve	Clean or replace solenoid valve
	Not utilizing Energy Management feature	Refer to Energy Management instructions (Section 8)

## Section 8: Troubleshooting

Troubleshooting: Electrical					
Problem	Possible Cause	Display	Priority	Location	Action
No dryer function	No power supply	None	-	-	Check supply
Incorrect dryer operation	Left solenoid open or short circuit	Flashing red	P1	X LED	Replace solenoid valve
	Right solenoid open or short circuit	Flashing red	P1	Y LED	Replace solenoid valve
	Controller fault	Flashing red	P2	POWER LED	Replace controller
	Low power fault	Continuous red	P1	POWER LED	Check supply
Drain not operating	Energy Management active	None	-	-	Check installation
	Drain solenoid open or short circuit	Flashing red	P1	Z LED	Replace solenoid valve
	Controller fault	Flashing red	P2	POWER LED	Replace controller
	Tube connections from filter into dryer and from filter to drain reversed	None	-	-	Reverse tubes

Troubleshooting: Energy Management		
Problem	Possible Cause	Action
Dryer does not enter Energy Management when switching device is activated <i>and/or</i> Dryer does not enter Energy Management when EM contacts are opened.	Shorted or incorrect device wiring	Remove external wiring from the dryers EM contacts and place jumper between pins 1 & 2. To test with EM not connected.
	Faulty switching device	Consult device manufacturer
	Recent cartridge change, where the control does not have a minimum of 6 hours on the 'Service hours from new' found on the dryer's main software window	Allow dryer to be energised for 6 hours

LED Controller Display		
Status	LED Signal	Description
		Power off
		Left-hand tower purge cycle
		Repressurization cycle
		Right-hand tower purge cycle
		Repressurization including second drain
		Service warning every 11,500 hours

LED Controller Display		
Status	LED Signal	Description
		Service due every 12,000 hours
		Right-hand solenoid fault
		Left-hand solenoid fault
		Drain valve fault
		Controller fault
		Low power fault

# Technical Data

## Environmental Conditions

All dryers are designed to be safe under the following conditions:

- *Indoor use*
- *Altitude up to 2,000m*
- *Ambient temperature 41°F to 104°F*
- *Maximum RH 80% for temperatures up to 88°F; decreasing linearly to 50% RH at 104°F*
- *Mains supply voltage fluctuations not to exceed +/- 10% of nominal*
- *Transient over voltage IEC 60664 Class II*
- *Pollution degree 2, IEC 60664*

For operation extended from the above conditions, please contact the manufacturer.



**Excessive vibrations from external sources may cause failure of this product.**

### Reference Conditions

Measurement		
Effective inlet pressure	101.5 psig	7 barg
Effective inlet temperature	95°F	35°C
Relative humidity of air at inlet		95%
Pressure dewpoint, standard version	-40°F	-40°C

### Specified Limitation for Operation

Measurement	Performance	
Maximum inlet air pressure	232 psig	16 barg
Minimum inlet air pressure	58 psig	4 barg
Maximum ambient air temperature	122°F	50°C
Minimum ambient air temperature	41°F	5°C
Standard pressure dewpoint	-40°F	-40°C
Optional pressure dewpoint with application of flow correction factor	-100°F	-70°C
Electrical supply voltage	100 VAC to 240 VAC	12 VDC to 24 VDC

**Dryer Sizing Table**

dryer model	pipe size"	inlet flow rate			dryer config.	supplied pre-filtration	dimensions (inches)			weight		dimensions (mm)		
		SCFM	NI/sec	l/sec			a	b	c	lbs	Kg	a	b	c
AMD4	3/8	4	2	1.9	simplex	AF30PFC01	17.5	11	3.6	29	13	445	281	92
AMD6	3/8	6	3	2.8	simplex	AF30PFC01	20	11	3.6	31	14	508	281	92
AMD8	3/8	8	4	3.8	simplex	AF30PFC01	22.2	11	3.6	33	15	565	281	92
AMD10	3/8	10	5	4.7	simplex	AF30PFC01	25	11	3.6	36	16.5	635	281	92
AMD15	3/8	15	7	7.1	simplex	AF30PFC01	32.0	11	3.6	43	19.5	815	281	92
AMD25	3/8	25	12	11.8	simplex	AF30PFC01	41.9	11	3.6	53	24	1604	281	92
AMD35	3/8	35	17	16.5	simplex	AF30PFC01	57.4	11	3.6	68	31	1459	281	92
AMD45	3/4	45	21	21.2	simplex	AF65PFC01	27.6	20.9	7.1	120	55	702	530	180
AMD55	3/4	55	26	26.0	simplex	AF65PFC01	31.6	20.9	7.1	135	61	802	530	180
AMD65	3/4	65	31	30.7	simplex	AF65PFC01	35.5	20.9	7.1	148	67	902	530	180
AMD85	1	85	40	40.0	simplex	AF100PFC01	43.4	20.9	7.1	172	78	1102	530	180
AMD105	1	105	50	49.6	simplex	AF100PFC01	55.6	20.9	7.1	212	96	1412	530	180
AMD135	1 1/4	135	64	63.7	simplex	AF150PFC01	63.5	20.9	7.1	238	108	1612	530	180
AMD175	1 1/4	175	83	82.6	simplex	AF225PFC01	79.2	20.9	7.1	284	129	2012	530	180
AMD215	1 1/2	215	101	101.5	duplex	AF225PFC01	55.6	20.9	13.6	401	182	1412	530	345
AMD275	1 1/2	275	130	129.8	duplex	AF300PFC01	63.5	20.9	13.6	450	205	1612	530	345
AMD365	1 1/2	365	172	172.3	duplex	AF450PFC01	79.2	20.9	13.6	538	245	2012	530	345

**Pressure Correction Factor (PCF)**

**Operating Pressure**

psig	58	73	87	102	116	131	145	160	174	189	203	218	232
barg	4	5	6	7	8	9	10	11	12	13	14	15	16
PCF*	0.62	0.75	0.87	1.00	1.12	1.25	1.37	1.50	1.62	1.75	1.87	2.00	2.12

**Temperature Correction Factor (TCF)**

**Temperature**

°F	68	77	86	95	104	113	122
°C	20	25	30	35	40	45	50
TCF	1.07	1.06	1.04	1.00	0.88	0.67	0.55

**Dewpoint Correction Factor (DCF)**

**Temperature**

°F	-40	-94
°C	-40	-70
DCF	1.0	0.7

**Correction Factor Examples:**

$$\text{Target Dryer Inlet Flow Rate}^{**} = \frac{\text{Compressor Flow Rate}}{\text{PCF} \times \text{TCF} \times \text{DCF}} = \frac{66 \text{ scfm}}{0.8 \times 0.88 \times 0.7} = 133.9 \text{ scfm} = 135 \text{ SCFM}$$

Or

$$\text{Adjusted Dryer Inlet Flow Capacity} = \text{Dryer Rated Inlet Flow Rate} \times \text{PCF} \times \text{TCF} \times \text{DCF} = 105 \text{ scfm} \times 0.8 \times 0.88 \times 0.7 = 52 \text{ scfm}$$

\*\*Select dryer with closest ow capacity above target ow rate.

**Dimensional drawings**

Figure 10.1: Models 4 SCFM – 35 SCFM

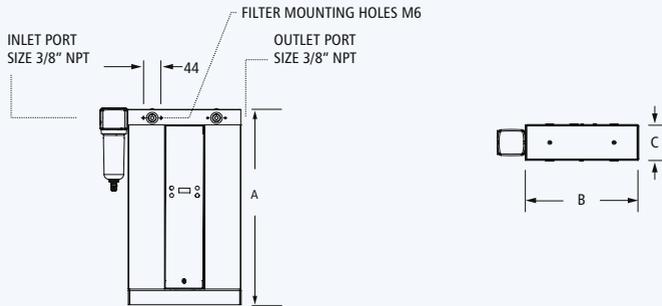


Figure 10.2: Models 45 SCFM – 175 SCFM

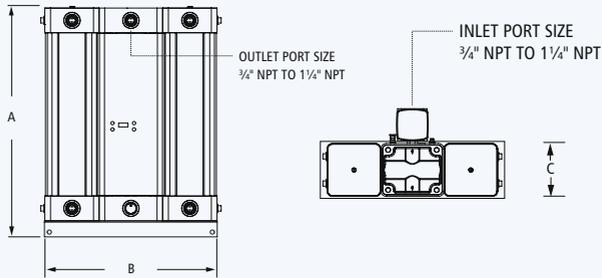
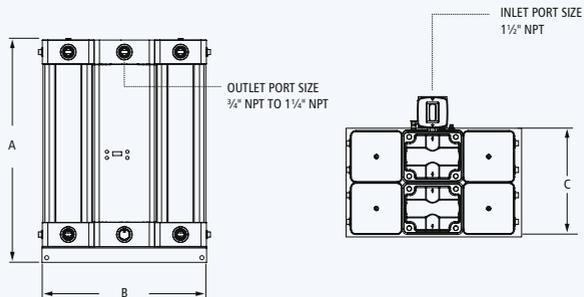
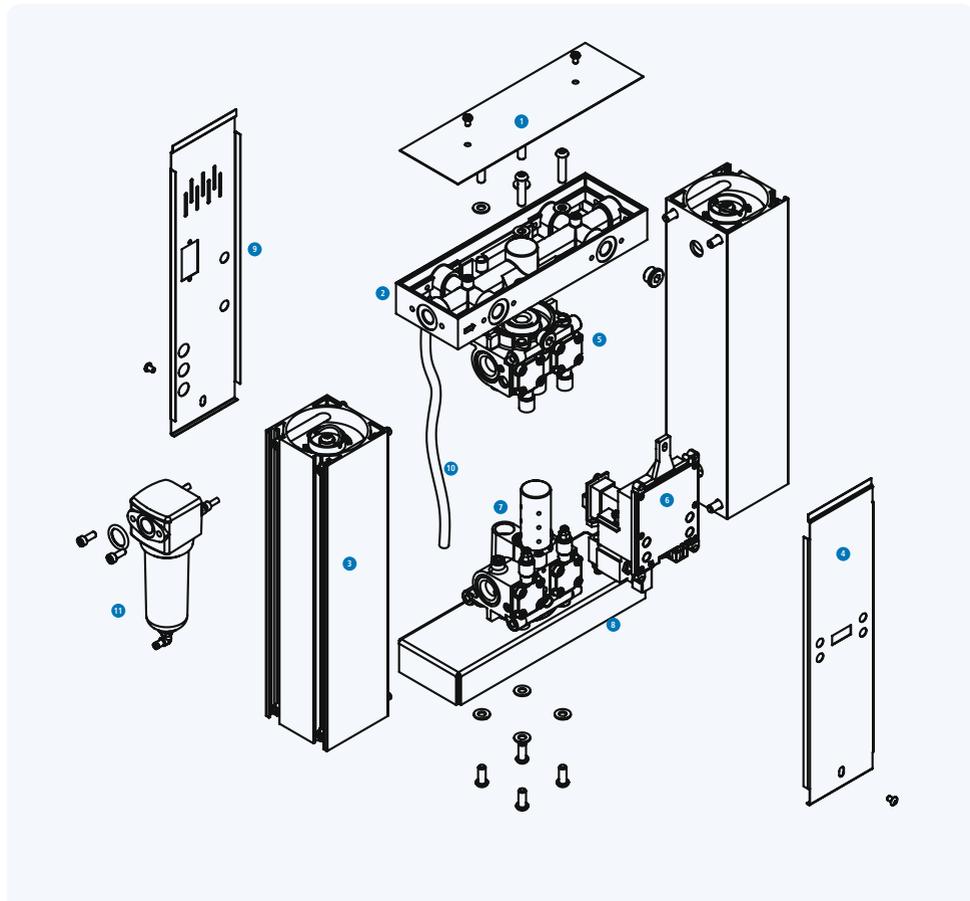


Figure 10.3: Models 215 SCFM – 365 SCFM



4 SCFM -- 35 SCFM

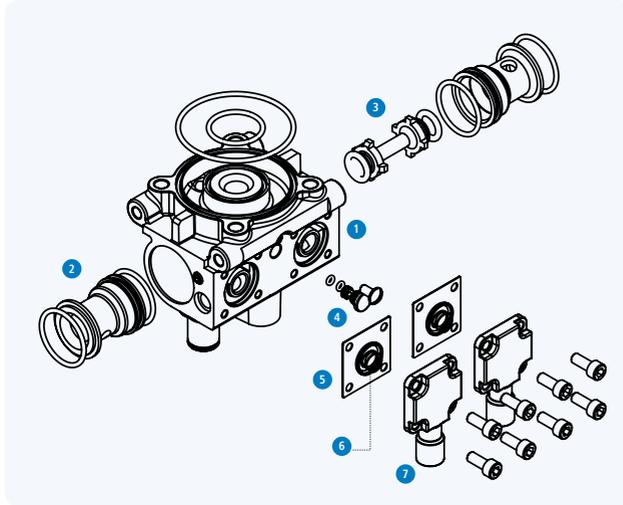
Fig 11.1 4 SCFM – 35 SCFM



- |                       |                          |
|-----------------------|--------------------------|
| 1. Cover plate        | 7. Bottom block assembly |
| 2. Cruciform          | 8. Base/skid             |
| 3. Tower assembly     | 9. Back panel            |
| 4. Front panel        | 10. Downpipe             |
| 5. Top block assembly | 11. 0.01µ pre-filter     |
| 6. Controller         |                          |

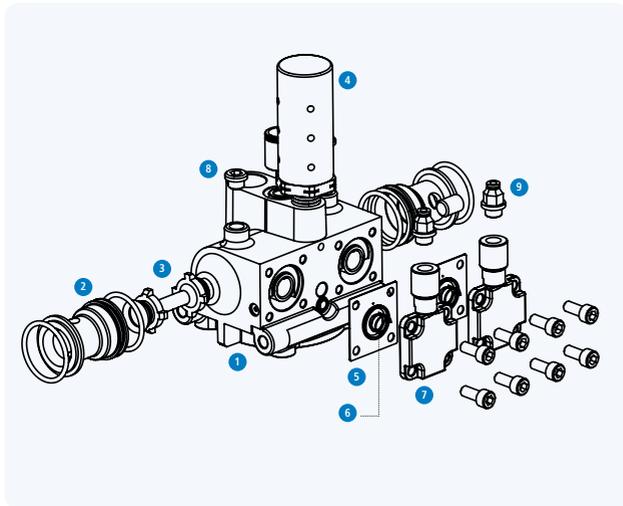
4 SCFM -- 35 SCFM

Fig 11.2 Top block assembly



1. Top Block
2. Shuttle seat
3. Shuttle
4. Purge Plug
5. Diaphragm with disc
6. Compression spring
7. Top bonnet

Fig 11.3 Bottom block assembly



1. Bottom block
2. Shuttle seat
3. Shuttle
4. Silencer
5. Diaphragm with disc
6. Compression spring
7. Bottom bonnet
8. 1/8 pressure plug
9. 4mm (5/32") x Rp 1/8 straight adapter

4 SCFM -- 35 SCFM

Fig 11.4 Tower assembly

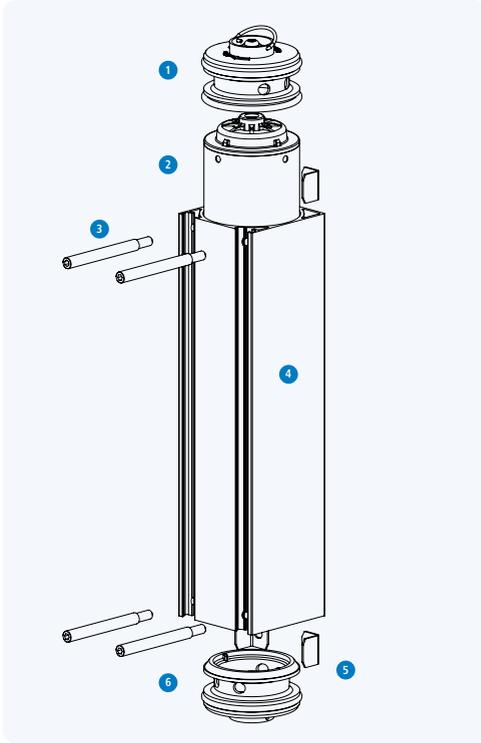


Fig 11.5 Top tower plug assembly

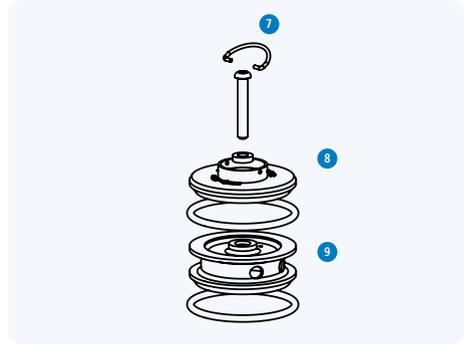
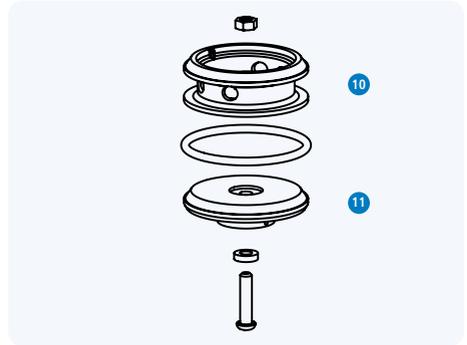


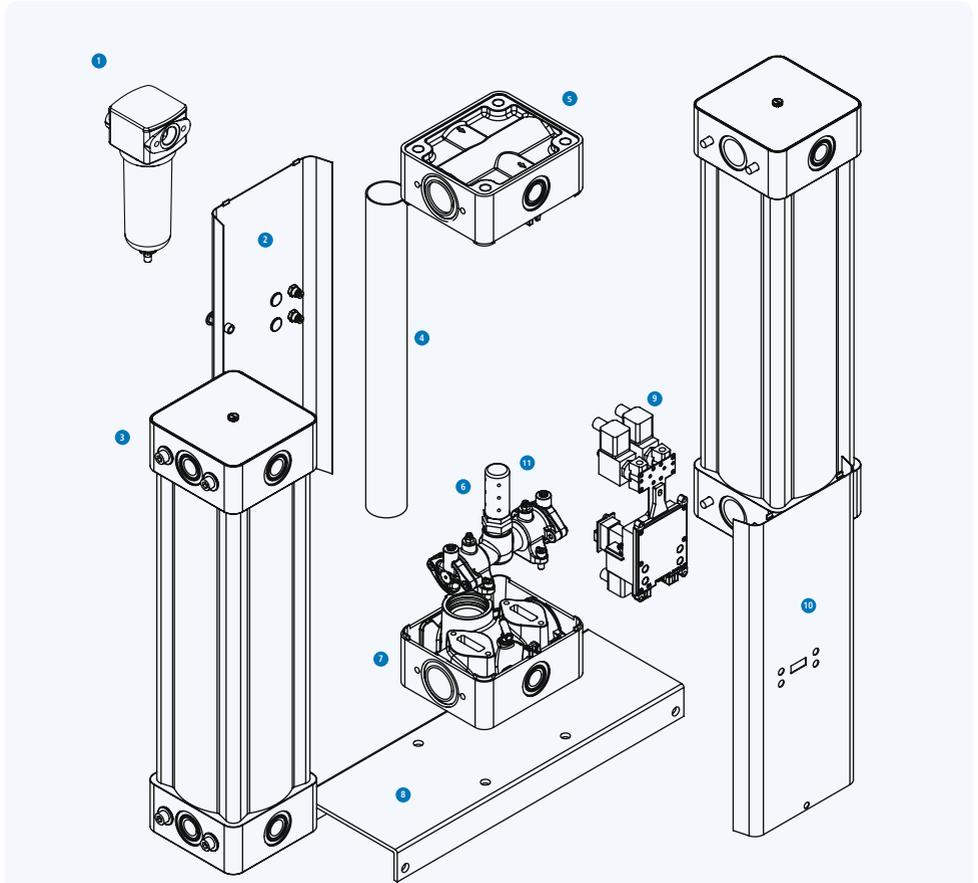
Fig 11.6 Bottom tower plug assembly



1. Top tower plug assembly
2. Cartridge
3. Extrusion bolt
4. Extrusion
5. Extrusion corner bracket
6. Bottom tower plug assembly
7. Wire handle
8. Tower plug
9. Banjo adaptor
10. Banjo adaptor
11. Tower plug

45 SCFM - 365 SCFM

Fig 11.7 45 SCFM – 365 SCFM



\* Models 215 SCFM – 365 SCFM are duplex

- |                              |                                |
|------------------------------|--------------------------------|
| 1. 0.01 $\mu$ pre-filter     | 7. Bottom valve block assembly |
| 2. Back panel                | 8. Base/skid                   |
| 3. Tower assembly            | 9. Controller                  |
| 4. Downpipe                  | 10. Front panel                |
| 5. Top valve block assembly  | 11. Silencer                   |
| 6. Exhaust manifold assembly |                                |

45 SCFM - 365 SCFM

Fig 11.8 Tower assembly

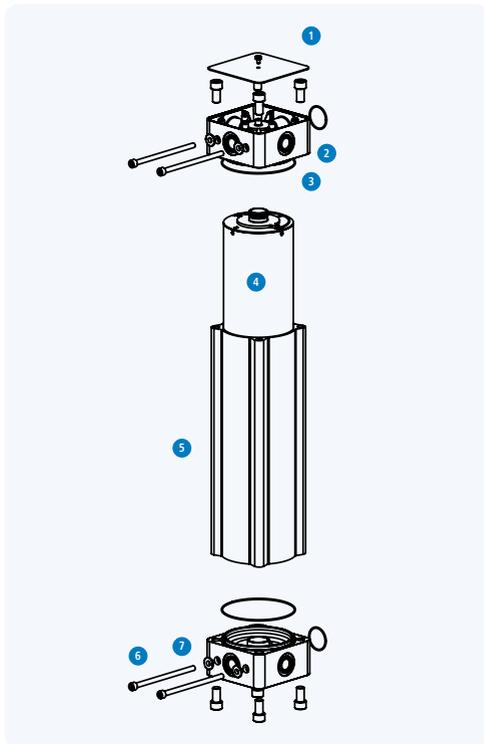


Fig 11.9 Top valve block assembly

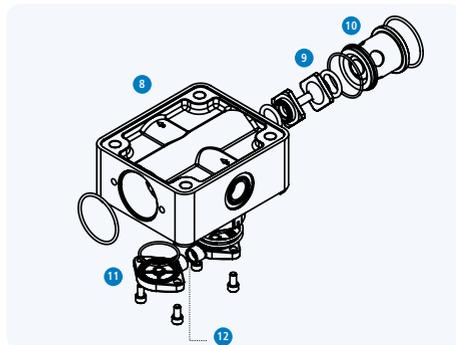


Fig 11.10 Exhaust manifold assembly

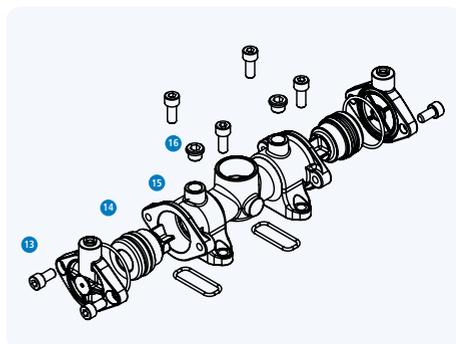
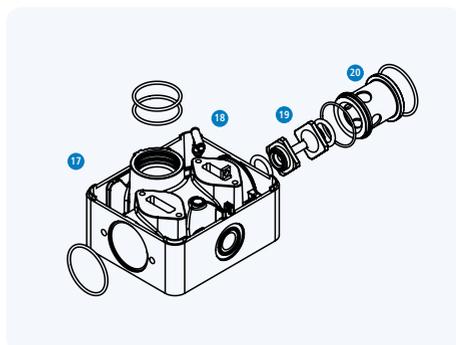


Fig 11.11 Bottom valve block assembly

- |                     |                           |
|---------------------|---------------------------|
| 1. QPM cover        | 12. Purge plug            |
| 2. QPM              | 13. Exhaust bonnet        |
| 3. Extrusion gasket | 14. Exhaust shuttle       |
| 4. Cartridge        | 15. Exhaust manifold      |
| 5. Extrusion        | 16. 1/4 Rp blanking plug  |
| 6. Extrusion bolt   | 17. Bottom valve manifold |
| 7. QPM bush         | 18. 6mm swivel tee        |
| 8. Top manifold     | 19. Shuttle               |
| 9. Shuttle          | 20. Valve seat            |
| 10. Valve seat      |                           |
| 11. Purge bonnet    |                           |



# Spares

## Purge Plug Identification

Each dryer is set with the appropriate purge plug for the operating pressure specified at point of order. The purge plug fitted on the unit will be identified on the purge plug label, located underneath the rating plate on the right. If the inlet pressure to the dryer is adjusted to operate at an alternative working pressure other than initially specified, please contact the manufacturer and order an appropriate purge plug (identified in the table below). Before operating at the new working pressure this purge plug must be installed into the dryer. Failure to comply with these instructions could result in component failure and affect any warranty claims.

Purge Plug Identification													
Model	Operating Pressure (barg)												
	4	5	6	7	8	9	10	11	12	13	14	15	16
AMD4	APPK008	APPK008	APPK007	APPK007	APPK006.5	APPK006.5	APPK006	APPK006	APPK006	APPK006	APPK005	APPK005	APPK005
AMD6	APPK011	APPK010	APPK009	APPK008	APPK007.5	APPK007.5	APPK007.5	APPK007	APPK007	APPK007	APPK006.5	APPK006.5	APPK006.5
AMD8	APPK012	APPK011	APPK010	APPK010	APPK009	APPK008	APPK008	APPK007.5	APPK007.5	APPK007.5	APPK007	APPK007	APPK007
AMD10	APPK013	APPK012	APPK011	APPK011	APPK010	APPK009	APPK009	APPK009	APPK008.5	APPK008.5	APPK008.5	APPK008	APPK008
AMD15	APPK015	APPK014	APPK013	APPK013	APPK012	APPK011	APPK011	APPK010	APPK010	APPK010	APPK009	APPK009	APPK009
AMD25	APPK020	APPK018	APPK016	APPK015	APPK014	APPK014	APPK013	APPK013	APPK013	APPK012	APPK012	APPK012	APPK012
AMD35	APPK028	APPK023	APPK021	APPK020	APPK018	APPK018	APPK016	APPK015	APPK015	APPK014	APPK014	APPK014	APPK014
AMD45	APPK28	APPK25	APPK23	APPK22	APPK20	APPK19	APPK18	APPK17	APPK17	APPK16	APPK16	APPK15	APPK15
AMD55	APPK31	APPK28	APPK26	APPK24	APPK23	APPK21	APPK20	APPK19	APPK19	APPK18	APPK17	APPK17	APPK16
AMD65	APPK33	APPK30	APPK28	APPK26	APPK25	APPK23	APPK22	APPK21	APPK20	APPK20	APPK19	APPK18	APPK18
AMD85	APPK38	APPK35	APPK32	APPK30	APPK28	APPK27	APPK26	APPK24	APPK23	APPK23	APPK22	APPK21	APPK20
AMD105	APPK43	APPK39	APPK36	APPK34	APPK32	APPK30	APPK29	APPK27	APPK26	APPK25	APPK24	APPK23	APPK23
AMD135	APPK49	APPK44	APPK41	APPK38	APPK36	APPK34	APPK32	APPK31	APPK30	APPK29	APPK28	APPK27	APPK26
AMD175	APPK55	APPK51	APPK47	APPK44	APPK41	APPK39	APPK37	APPK36	APPK34	APPK33	APPK32	APPK31	APPK30
AMD215	APPK43	APPK39	APPK36	APPK34	APPK32	APPK30	APPK29	APPK27	APPK26	APPK25	APPK24	APPK23	APPK23
AMD275	APPK49	APPK44	APPK41	APPK38	APPK36	APPK34	APPK32	APPK31	APPK30	APPK29	APPK28	APPK27	APPK26
AMD365	APPK55	APPK51	APPK47	APPK44	APPK41	APPK39	APPK37	APPK36	APPK34	APPK33	APPK32	APPK31	APPK30

\* 2 purge plugs are required

 Appropriate purge plug selection is very important for function of the dryer. Failure to comply with this may affect your warranty.

## Section 11: Spares Information

	Dryer Model	Description	Kit Number	Service Kit Includes
Service Kit 1	AMD4	Service Cartridge Kit (2 cartridges)	AMDM 4-12000	<b>12,000 hour service cartridge kit includes:</b> desiccant cartridges, spare pre-filter element, pack of sealing 'O' rings and washers, instruction leaflet.
	AMD6		AMDM 6-12000	
	AMD8		AMDM 8-12000	
	AMD10		AMDM 10-12000	
	AMD15		AMDM 15-12000	
	AMD25		AMDM 25-12000	
	AMD35		AMDM 35-12000	
	AMD45		AMDM 45-12000	
	AMD55		AMDM 55-12000	
	AMD65		AMDM 60-12000	
	AMD85		AMDM 85-12000	
	AMD105		AMDM 105-12000	
	AMD135		AMDM 135-12000	
	AMD175	AMDM 175-12000		
	AMD215	AMDM 215-12000		
	AMD275	AMDM 275-12000		
	AMD365	AMDM 365-12000		
Service Kit 2	AMD4	Valve Service Kit	AVSKS 4-35	<b>24,000 hour valve service kit includes:</b> exhaust solenoid valves, diaphragms, shuttle valve and 'O' rings, required seals (not including desiccant cartridges).  To complete a 24,000 hour service, both cartridge service kit and valve service kit will be required.
	AMD6		AVSKS 4-35	
	AMD8		AVSKS 4-35	
	AMD10		AVSKS 4-35	
	AMD15		AVSKS 4-35	
	AMD25		AVSKS 4-35	
	AMD35		AVSKS 4-35	
	AMD45		AVSKS 45-175	
	AMD55		AVSKS 45-175	
	AMD65		AVSKS 45-175	
	AMD85		AVSKS 45-175	
	AMD105		AVSKS 45-175	
	AMD135		AVSKS 45-175	
	AMD175		AVSKS 45-175	
	AMD215		AVSKS 215-365	
	AMD275		AVSKS 215-365	
	AMD365		AVSKS 215-365	
Spares	All models	Optional Software	A-FS 01	<b>Optional software includes:</b> energy management, monitoring and diagnostics software
	AMD4-AMD35	Wall Mounting Bracket	A-WMB 4-35	
	AMD4-AMD35	Foot Mounting Bracket	A-FMB 4-35	
	AMD4	Silencer Kit	AMD1SK01	
	AMD6-AMD35		AMD1SK02	
	AMD45-AMD85		AMD2SK01	
	AMD105-AMD175		AMD2SK02	
AMD215-AMD365	AMD2SK03			

## Warranties and liabilities

Claims for warranty and liability concerning personal injury or material damage are excluded if they resulted due to one or more of the following factors:

- *Inappropriate use*
- *Inappropriate application of the dryer.*
- *Technically incorrect installation, startup operation or maintenance of the dryer.*
- *Operation of a known damaged dryer.*
- *Failure to observe the information given in this manual concerning all life phases of the dryer.*
- *Undertaking constructional or operational modifications to the dryer without prior agreement with the manufacturer.*
- *Inadequate monitoring and replacement of components of the dryer that are subject to wear.*
- *Improper completion of repairs.*
- *Use of non-original or non-approved parts for service or maintenance.*

### Important Note

## Industrial Compressed Air Desiccant Dryers

The desiccant dryer range is designed for, warranted and intended for use in fixed industrial compressed air applications only.

Use on non-fixed installations such as :

- *marine (e.g. offshore, shipboard)*
- *transportable (e.g. portable air treatment units)*
- *non-fixed (e.g. rolling stock, railway etc)*

are not strictly prohibited, however use in such applications is not recommended nor endorsed as additional design features, function testing, certification (both mechanical and electrical) and validation may be required to satisfy relevant end user application specific specifications and/or mandatory and non-mandatory local, national or international standards and legislation.



Such additional undertakings are the responsibility of the package or system builder, installer or end user.







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