



an EnPro Industries company

# QMOD Heatless Desiccant Compressed Air Dryers

Models QMOD00045 thru QMOD00365



## Operating Instructions & Parts List

This manual contains important safety information and should be made available to all personnel who operate and/or maintain this product. Carefully read this manual before attempting to operate or perform maintenance on this equipment.

Manual No. 65108-2A

December 2007 Edition

Update: January 2008



# Table of Contents

---

## **Section I - General Information**

Safety Alert Symbols .....	1
Safety Precautions .....	1
Warranties and Liabilities .....	3

## **Section II - Description**

Introduction .....	4
Dryer Operation .....	5
Component Description .....	5
Remote Fault Alarm .....	7
Energy Management Feature (EM) .....	7
Energy Management Memory Retention .....	7

## **Section III - Installation**

Connecting the Prefilter .....	8
Installation .....	9
Electrical Supply .....	9
Connection .....	9
Energy Management and PC Interface .....	10
Interfacing the controller with a PC .....	10
PC Requirements .....	10
Connecting the PC to the Controller .....	10
Energy Management Connection .....	11
Alarm Connection .....	11

## **Section IV - Operating Procedures**

Start-up Procedure .....	12
Starting the Interface Program .....	13
Programming the Dryer .....	14
Interface Screen .....	14
Energy Management Application Selection .....	15

## **Section V - Servicing**

Service and Fault Diagnosis .....	18
Service Shutdown .....	19
Servicing and Maintenance .....	19
Removing and Replacing the Front Panel .....	20
Purge Plug Removal .....	21
Cleaning the Silencer .....	21
Replacing the Exhaust Valve Assembly and Exhaust Shuttles .....	22
Resetting the Controller .....	23

## **Section VI - Troubleshooting**

General Troubleshooting .....	24
Electrical Troubleshooting .....	25

## **Appendix A - Technical Data**

Environmental Conditions .....	26
Specifications .....	26
Dryer Sizing Table .....	26
Schematic Wiring and Fault Diagrams .....	28

## **Appendix B - Repair & Replacement Parts**

Spare Parts and Options .....	30
Service Kits .....	31



- Safety Alert Symbols
- Safety Precautions
- Warranties and Liabilities

### Safety Alert Symbols

## IMPORTANT!

Throughout this manual we have identified key hazards. The following symbols identify the level of hazard seriousness:



This symbol identifies risk of electric shock which ***could*** result in severe personal injury. All electrical work ***must*** be performed by a qualified electrician.



This symbol identifies hazards or unsafe practices which ***could*** result in personal injury, death or substantial property damage.



This symbol identifies high pressure conditions which ***could*** result in personal injury or property damage.



Identifies important installation, operation or maintenance information which is not hazard related.

---

### Safety Precautions



Quincy explicitly excludes all responsibility and liability for damage and/or injury caused by failure to follow the instructions described in this manual, or by failing to pay necessary attention when operating handling or servicing this product, even if not specifically stated in individual cases.



The unit must be used for its intended purpose. The heatless-regenerating adsorption dryer is designed and manufactured exclusively for drying of compressed air within conditions as described in Appendix A - Technical Data of this manual. Any other use of the unit will be considered inappropriate and Quincy shall not be liable, where this is permitted under law, for any damage incurred as a result of misuse.

## Section I - General Information

---

The following safety guidelines must be strictly observed:

- Leave this manual at the place of installation of the product.
- It is essential that only Quincy or their appointed agents carry out maintenance and servicing work.
- 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 and measures to be taken in case of 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 whilst the unit is running. This means electrical disconnection plus isolation from the compressed air supply and full depressurization.
- 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 meeting the safety and operational requirements of the unit. Quincy 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, Quincy.
- 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.

### Warranties and Liabilities

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

- Inappropriate use or 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 Quincy.
- Inadequate monitoring and replacement of components of the dryer that are subject to wear or consumable.
- Improper completion of repairs.
- Use of non-original or non-approved parts for service or maintenance.

## Section II - Description

---

- Introduction
- Dryer Operation
- Component Description
- Remote Fault Alarm
- Energy Management Feature (EM)

### Introduction

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

This manual, and in particular the safety information, should be kept at the place of installation of the product. All relevant personnel must strictly follow instructions given in the manual.

When contacting Quincy regarding this product or manual, please have the following information available:

Serial number: \_\_\_\_\_

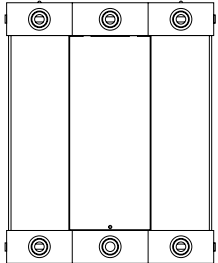

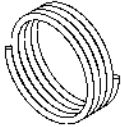
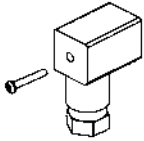
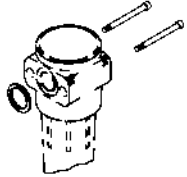
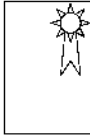
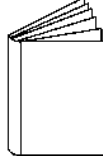
Date of commissioning: \_\_\_\_\_

The serial number can be found on the identification plate located on the rear panel of the unit and this information should be copied into this manual for future use.

The dryer is delivered in protective packaging. Take care when transporting, loading and unloading the unit.

The dryer is delivered configured specifically at the point of order. It is important to ensure that the correct purge plug is installed applicable to the operating pressure. Contact Quincy Compressor for further information.

The dryer package includes:

				
	PRE FILTER	TUBING	DIN PLUG	CONNECTING KIT
				
DRYER	WARRANTY		INSTRUCTION MANUAL	

### Dryer Operation

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 air flow 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 dry air (purge) is directed to the opposite pressure housing. This purge air flows down through the desiccant cartridge and to atmosphere by means of an exhaust silencer, thereby effecting regeneration of the desiccant.

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

After 170 seconds, the pressure in the first housing is released to 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.

---

### Component Description

**Main Components (Reference the illustration on page 6)**

*Item 4 (Control Unit)* - The bottom valve block is operated by solenoids within the control unit that determine the pressure and direction of air flow into the desiccant cartridges, where applicable.

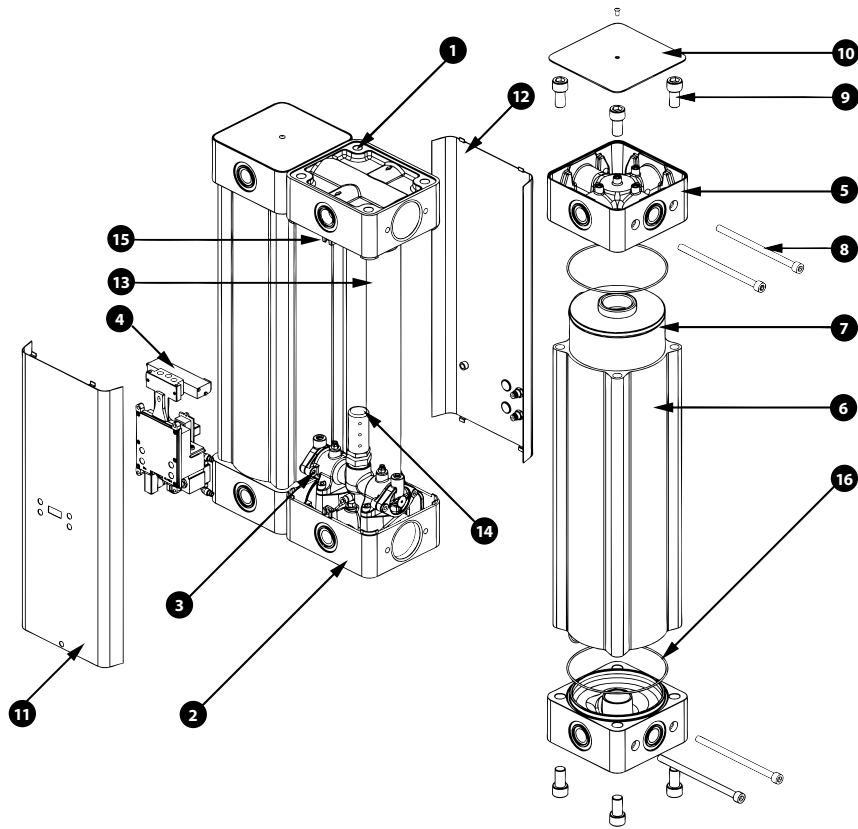
*Item 6 (Pressure Housing)* - The cartridges are contained within an extruded aluminum pressure housing and pressure retaining end plates. Process pressure and flow through each desiccant cartridge is controlled by top and bottom valve manifolds located between the two

pressure housings. The regenerating air flow (purge) is controlled by a small orifice plug located externally on the bottom of the top valve manifold and is accessible with the front panel removed.

*Item 7 (Desiccant Cartridge)* - The cartridges contain the agent (desiccant) for drying compressed air. The desiccant is housed in a clear tube that has a holder permeable to air at both ends. Located in the top of each cartridge is a 1-micron filter for removal of residual dust from the desiccant. The length of the cartridge varies with the flow capacity of the dryer.

## Section II - Description

---



- |   |                                       |
|---|---------------------------------------|
| 1 INLET VALVE ASSEMBLY                                    | 9 QUADRA-PORT MANIFOLD RETAINING BOLT |
| 2 BOTTOM VALVE ASSEMBLY                                   | 10 QUADRA-PORT MANIFOLD TOP COVER     |
| 3 EXHAUST VALVE ASSEMBLY                                  | 11 FRONT PANEL                        |
| 4 CONTROL/VALVE UNIT                                      | 12 BACK PANEL                         |
| 5 QUADRA-PORT MANIFOLD                                    | 13 AIR TRANSFER DOWN-PIPE             |
| 6 PRESSURE HOUSING  | 14 SILENCER                           |
| 7 DESICCANT CARTRIDGE<br>(W/DUST FILTER WHERE APPLICABLE) | 15 PURGE PLUG                         |
| 8 PRESSURE HOUSING RETAINING BOLT                         | 16 O-RING SEAL                        |

### Remote Fault Alarm

A remote alarm relay is built into the controller to facilitate an alarm connection remote from the dryer. This can activate at the service due period or with a predefined number of electrical faults or both. This can be enabled or disabled using the software interface.

The alarm requires a power source to be brought to the controller and on activation the controller will switch on in an alarm condition. This in turn can be used to activate a remote audible or visual indicator.

---

### Energy Management Feature (EM)

The purpose of the energy management feature is to save energy by reducing compressed air consumption during periods of low demand by interrupting the normal purge cycle.

This feature can be activated with a link from the receiver upper and lower pressure switches normally fitted to receivers.

Where the compressor is a continually running type or the dryer is remote from the receiver, a dewpoint dependent switch can be used to activate the energy management feature.

The energy management feature is supplied activated on all controllers. When connected to an external switching system, the energy management process will become operational. For systems where energy management is not required, a jumper link is fitted to the supplied DIN plug.

To allow conditioning of the dryer desiccant beds to optimum condition, the controller has been programmed to delay Energy Management operation six hours from the time of a new installation or from service. Once this time has elapsed, the energy management feature will be activated.

### **Energy Management Memory Retention**

Energy savings are made in the dryer by interrupting the normal purge operation during periods of low demand. To maintain the equilibrium of the dryer towers, the dryer has a memory retention feature. This allows the dryer to remember the point in the operating cycle when the energy management feature was activated and return to it to complete the cycle.

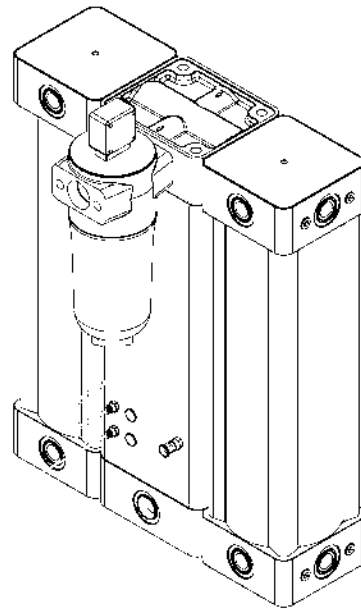
## Section III - Installation

---

- Connecting the Pre-filter
- Installation
- Electrical Supply
- Energy Management and PC Interface
- Energy Management Connection
- Alarm Connection

### Connecting the Pre-filter

1. Fit lubricated o-ring between the filter and top valve manifold, observing the flow direction on both.
2. Fasten filter bolts evenly to 4 Nm / 2.94 Ft. Lbs
3. Fit 4 mm (5/32") black tubing to filter and drain valve inlet.
4. Pipe away condensate with 4 mm (5/32") tubing from drain outlet. Ensure condensate is drained into an oil/water separator.
5. Fit any further filtration or ancillary equipment.

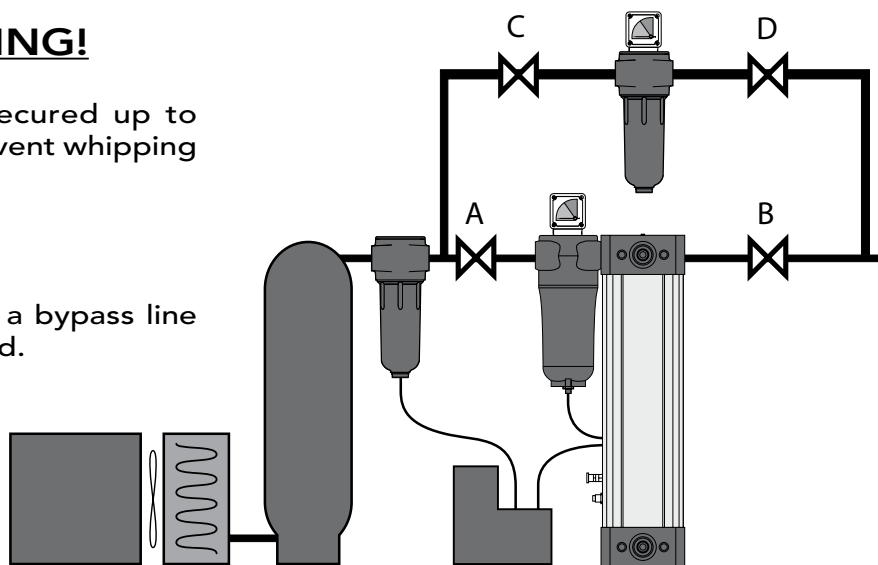


### **WARNING!**

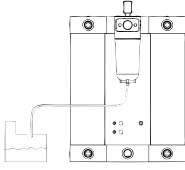
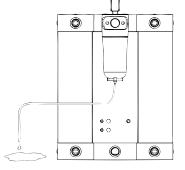
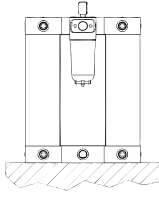
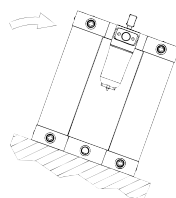
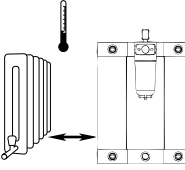
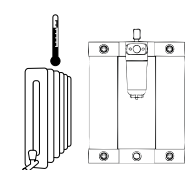
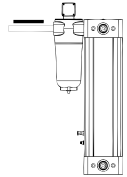
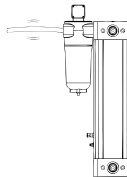
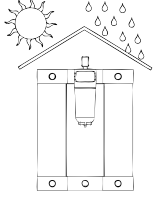
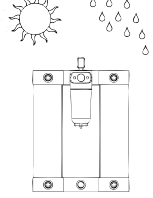
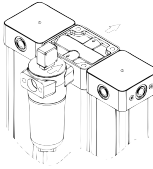
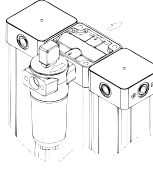
All tubing should be secured up to the point of drain to prevent whipping during discharge.

### **NOTICE!**

It is recommended that a bypass line including filter is installed.



**Installation**

Correct	Wrong	Correct	Wrong
< 35°C / 95°F	> 35°C / 95°F		
< 16 barg / 232 psig	< 4 barg / 58 psig		
> 12V	< 12V		
			
			
			

**Electrical Supply**

**Connection**

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

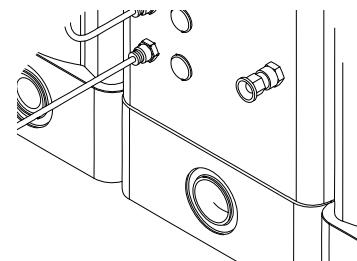
**NOTICE!**

Ensure only one power source is connected at any one time, the power connection is factory fitted and must be specified at the point of order.

Suitable external fuse connection must be provided.

The cable selection must suit local installation regulations and be appropriate to power consumption.

Supply	Amp
12 VDC	0.8
24 VDC	0.4
100 VAC	0.16
115 VAC	0.14
230 VAC	0.07
240 VAC	0.067



## Section III - Installation

### Energy Management and PC Interface

#### Interfacing the controller with a PC

The dryer controller has the ability to interface with a PC. This gives the user or the service engineer the opportunity to interrogate the dryer to check the following:

- Operating stage times
- Service warnings
- Operating history
- Alarm settings
- Fault history
- Fault and service history
- Real Time displays
- Setting Energy Management Parameters – contact Quincy for details

#### PC Requirements

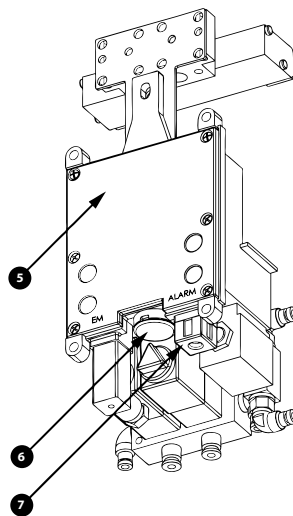
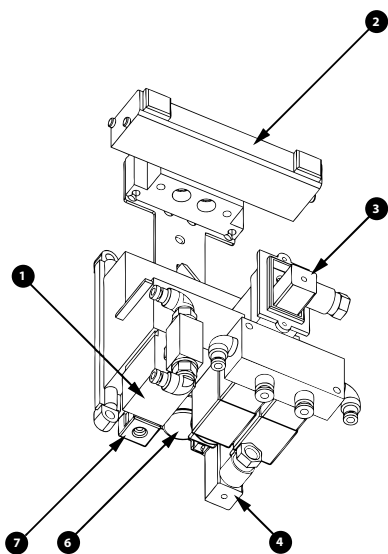
Controller Application software: Windows 95, Windows 98, Windows 2000, Windows ME & Windows XP.

#### Installing the Application Software

Simply load the CD into the PC and the software will automatically load. The CD icon will be visible on the desktop.

#### Connecting the PC to the Controller

- Ensure that power to controller is isolated.
- Access the controller by removing the screw on the front panel and removing the panel.
- Using the lead supplied, connect the serial port connector to the PC. (The RS232 connector is located on the underside of the controller.)
- Remove the blanking plug taking care not to lose it and connect the RS232 connector with the latch to the front of the dryer.

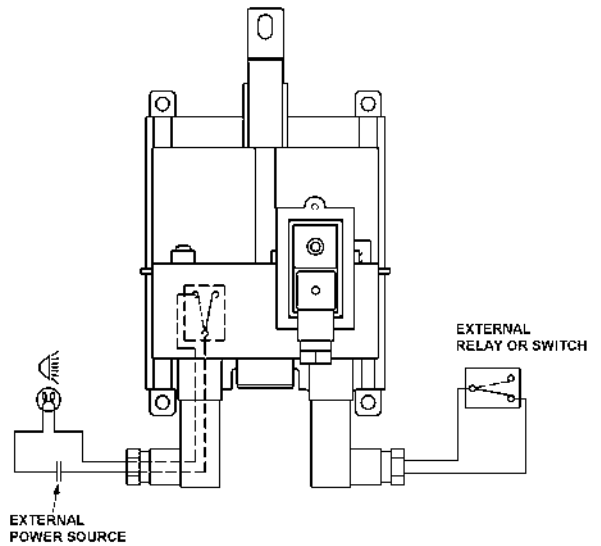


1. CONDENSATE SOLENOID VALVE
2. TOWER CONTROL SOLENOID VALVE
3. AC AND DC SUPPLY DIN CONNECTIONS
4. ENERGY MANAGEMENT DIN CONNECTION
5. CONTROLLER CLEAR LED COVER
6. RS232 SOFTWARE CONNECTION
7. ALARM DIN CONNECTION

#### Controller Components

**Energy Management Connection**

- Remove DIN plug from EM connection on controller.
- Remove blanking plug from cable entry nut on DIN plug.
- Remove fixing screw and gasket from DIN plug body.
- Separate DIN plug body internal from cover.
- Remove jumper wire from pins 1 and 2 on DIN plug body internal.
- Connect external switching device cable to pins 1 and 2 on DIN plug body internal, ensuring that cable entry nut, washer and seal are in place.
- Assemble DIN plug body internal into cover and reconnect DIN plug to EM connection on controller, ensuring that screw and gasket are fitted.
- The controller gives a +5 VDC from pin 1 on the EM DIN. Operation of the EM feature is by opening and closing the circuit.
- Opening the circuit with an appropriate external relay or switch will activate the EM feature.



**NOTICE!**

The user must ensure that the EM DIN plug as supplied with jumper wire, or an external switching arrangement is in place before the dryer becomes operational.

Ensure the energy management switching arrangement is in place before activating the EM facility and flowing air through the dryer.

**Alarm Connection**

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 the alarm DIN connector.

2. With power removed from the dryer and the alarm lead wired as described in step 1, remove the cover from the DIN connection marked 'Alarm' and connect the wired DIN connector ensuring the seal and screw are fitted.

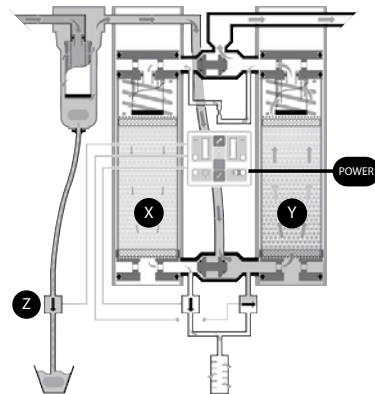
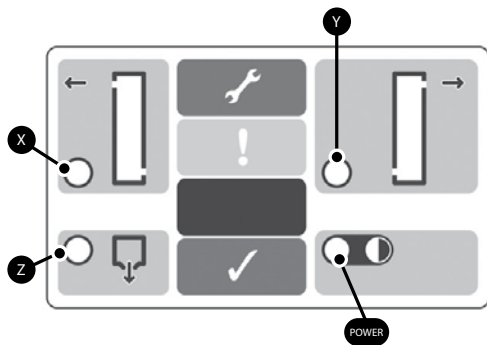
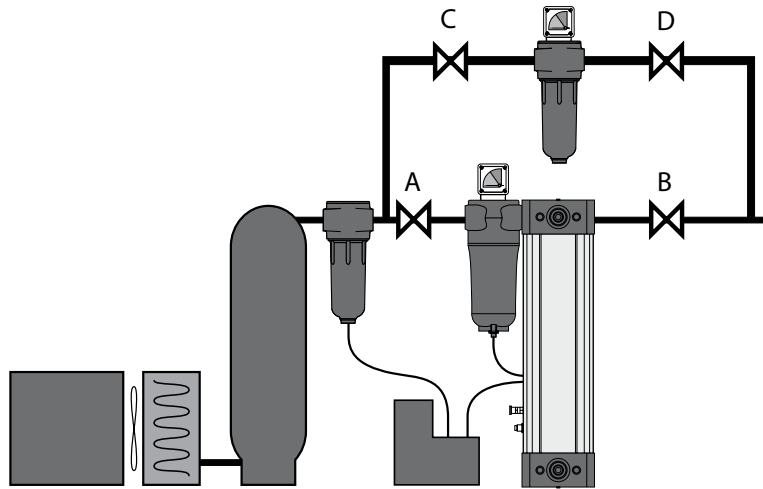
ALARM RELAY RATING	3 AMP MAX 28 VDC
ALARM CONNECTION TYPE	HIRSCHMANN GDS 207 INDUSTRIAL STANDARD DIN CONNECTOR OR EQUIVALENT

## Section IV - Operating Procedures

- Start-up Procedure
- Starting the Interface Program
- Programming the Dryer
- Energy Management Application Selection

### Start-up Procedure

1. Close valves A, B, C and D.
2. Switch on compressor.
3. Open valve A slowly.
4. Verify there are no leaks from the dryer.
5. 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.

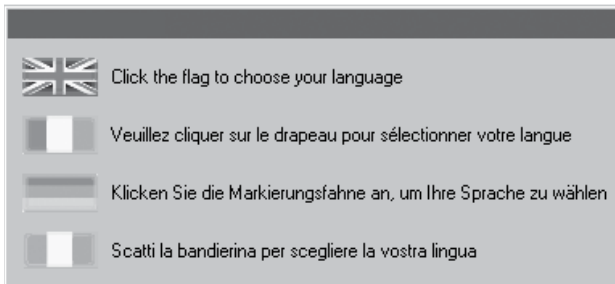


- Power LED illuminates green and tower LED X illuminates green.
- After 120 seconds, tower LED X switches off and drain LED Z illuminates green.
- After a further 50 seconds drain LED Z switches off and tower LED Y illuminates green.
- After a further 120 seconds, tower LED Y switches off
- After a further 50 seconds, tower LED X illuminates green - this is (i) in the cycle described above.
- The above cycle repeats.
- Run the dryer for a minimum of 6 hours to ensure dewpoint is adequate.
- Open valve B slowly.

## Starting the Interface Program

Once connection is established between the controller and the host PC as instructed in Section III - Installation, switch the power to the controller on. Launch the dryer application software by double clicking the CD icon on the PC desktop or by clicking: Start > Programs > Quincy > Dryer Application Software.

The first time the software is used the following window will appear.



Choose your preferred language by clicking the appropriate flag.

The screen below will be displayed.

Click the “Establish Communication” button on the screen to establish the link between the PC and the dryer controller.

The serial number on the software must match the serial number on the controller to allow communications to be established.

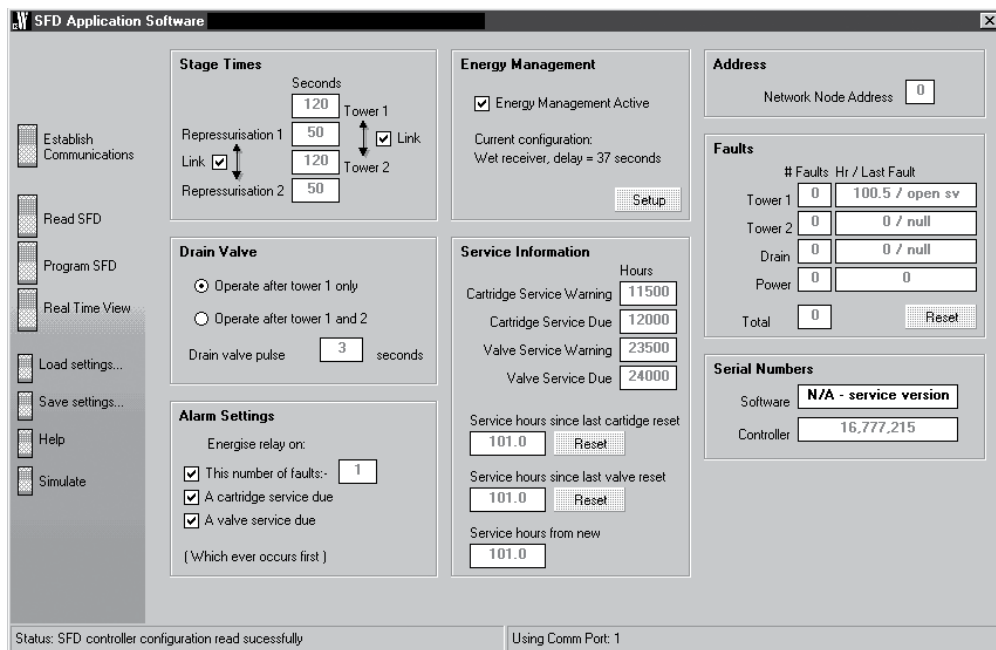
If communication cannot be made, a warning will appear at the bottom of the screen.

Lack of communication may be due to one of the following:

- Poor connections to the controller
- Controller switched off
- Application software/controller serial number mismatch

Once communication has been established, click the “Read SFD” button on the screen to display the default settings or the last settings saved.

It is possible to change some of the controller settings from the factory default settings, however, this should only be done by a qualified service technician.



## Section IV - Operating Procedures

---

### Programming the Dryer

If it is necessary to change the default settings:

Click in the box you wish to change and overwrite the desired items (note stage times are in 10 second intervals).

Click 'Program SFD' ( a warning will appear asking to confirm the change).

Click to confirm and the operating parameters will change.

Click 'Real Time View' to check set up.

#### Interface Screen

**Read SFD** - Reads the current settings of the controller.

**Program SFD** - Programs the controller with the new settings.

**Real Time View** - In addition to the main display panel shown on the previous page, there is also a real time view, which illustrates the current operation of the dryer valves. This screen also counts down the remaining run time on the valve operation. This information can be useful in confirming faults, which are displayed by the LED's on the front display panel.

The following information is shown on the 'Real Time View' screen:

- The stage the controller is in through its cycle, including remaining time on the particular stage.
- Valve conditions
- Power condition
- Cartridge and valve service conditions
- Energy management condition
- Alarm condition

**Load Settings** - Allows previously stored settings to be loaded into the controller.

#### **Stage Times** -

- (Tower 1 & Tower 2) - Indicates the time that a tower is depressurized.
- (Repressurization) - Indicates the repressurization time set on the controller.
- (Link) - Enables or disables the Tower 1 & Tower 2 settings to be linked.

**Drain Valve** - Allows the drain to operation to be toggled to function after Tower 1 only or after both towers and sets the drain operation time.

**Alarm Settings** - Allows the service technician to toggle and adjust the remote alarm activation values from the default values.

**Energy Management** - Allows the user to set application parameters to save energy during periods of low demand.

**Service information** - Indicates the default settings at which the cartridge and valve service indicators will illuminate. The service history of the machine is logged, giving total hours run and hours run since the last service. Service resets provides an alternative method of resetting service hours other than using the reset disc after service has been carried out.

**Address** - Indicates the network address for networked dryers.

**Faults** - The first column indicates the number of faults up to 50 every 30 minutes. The second column indicates the type of fault and the hour it occurred.

**Serial Number** - Indicates software and dryer serial number to ensure they correspond.

### Energy Management Application Selection

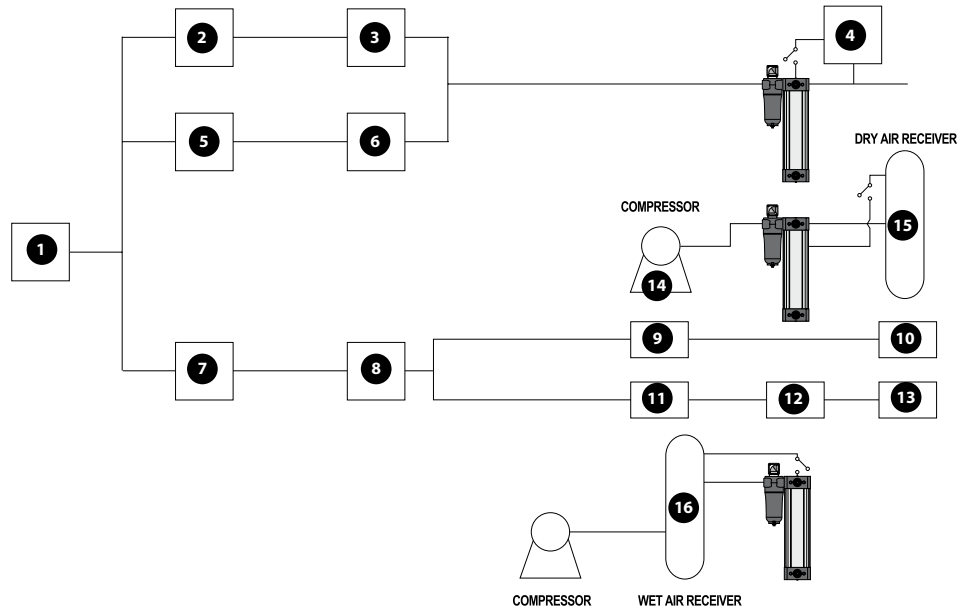
For correct energy management operation it is important to select the correct mode of operation for the application.

For applications where the compressor, receiver and the dryer are in the same location, linking the controller energy management into the compressor pressure limit switch, an effective method of energy saving is offered.

For applications where the compressor is a continual operating type or the dryer is point of use or is remote from the receiver, a dewpoint dependant method of switching should be employed.

This links the operation of the energy management to the outlet dewpoint from the dryer.

The flow diagram below illustrates the correct selection:



- |   |   |                     |
|---|---|---------------------|
| 1 Energy management required                              | 7 Dryer directly connected to local compressor and receiver | 14 Compressor       |
| 2 Point of use dryer application (remote from compressor) | 8 Compressor load energy management switching               | 15 Dry air receiver |
| 3 Dewpoint dependant energy management switching          | 9 Dry receiver application                                  | 16 Wet air receiver |
| 4 Dewpoint monitoring                                     | 10 15 second default EM delay                               |                     |
| 5 Continuous running compressor                           | 11 Wet receiver application                                 |                     |
| 6 Dewpoint dependant energy management switching          | 12 Input compressor/receiver operating parameters           |                     |
|   | 13 Calculated EM delay                                      |                     |

## Section IV - Operating Procedures

---

If energy management is activated, the 'Energy Management Active' box will be checked on the controller program screen. The default delay is 15 seconds.

If this setting is suitable for the application, no further set up is necessary.

If the application requires dedicated settings to be entered, follow the rest of the instructions in this section.

The energy management feature can be deactivated by unchecking the 'Energy Management Active' box.

Alternatively, the DIN plug with jumper link will override the energy management feature providing it is left in place.

To modify the energy management settings, select setup on the controller display screen and proceed as follows:

Select dry or wet receiver from the set-up screen by toggling in the appropriate box.

**Energy Management Setup**

**Wet Receiver System**

Diagram: A compressor is connected to a receiver, which is then connected to an SFD (Separating and Filtering Device).

**Delay Time**  
To calculate the delay time, please enter the parameters below:

Receiver Volume		Litres
Compressor High Pressure Set Point		BarG
Compressor Low Pressure Set Point		BarG
Dryer Size (@7 BARG)		Scfm

Calculated energy management activation delay = ? seconds

**Dry Receiver System**

Diagram: A compressor is connected to an SFD, which is then connected to a receiver.

**Delay Time**  
Default energy management activation delay = 15 seconds (fixed)

 **NOTICE!**

For point of use dryers or constant running dryers utilizing dewpoint monitoring, the dry receiver system should be activated regardless of installation.

By switching to 'Dry Receiver System' the energy management facility will operate after a 15 seconds delay.

For wet receiver applications, select the 'Wet Receiver System' box. With this system active, the high and low pressure

set points of the compressor, the internal volume of the receiver and the flow rate of the dryer must be input to calculate the necessary delay.

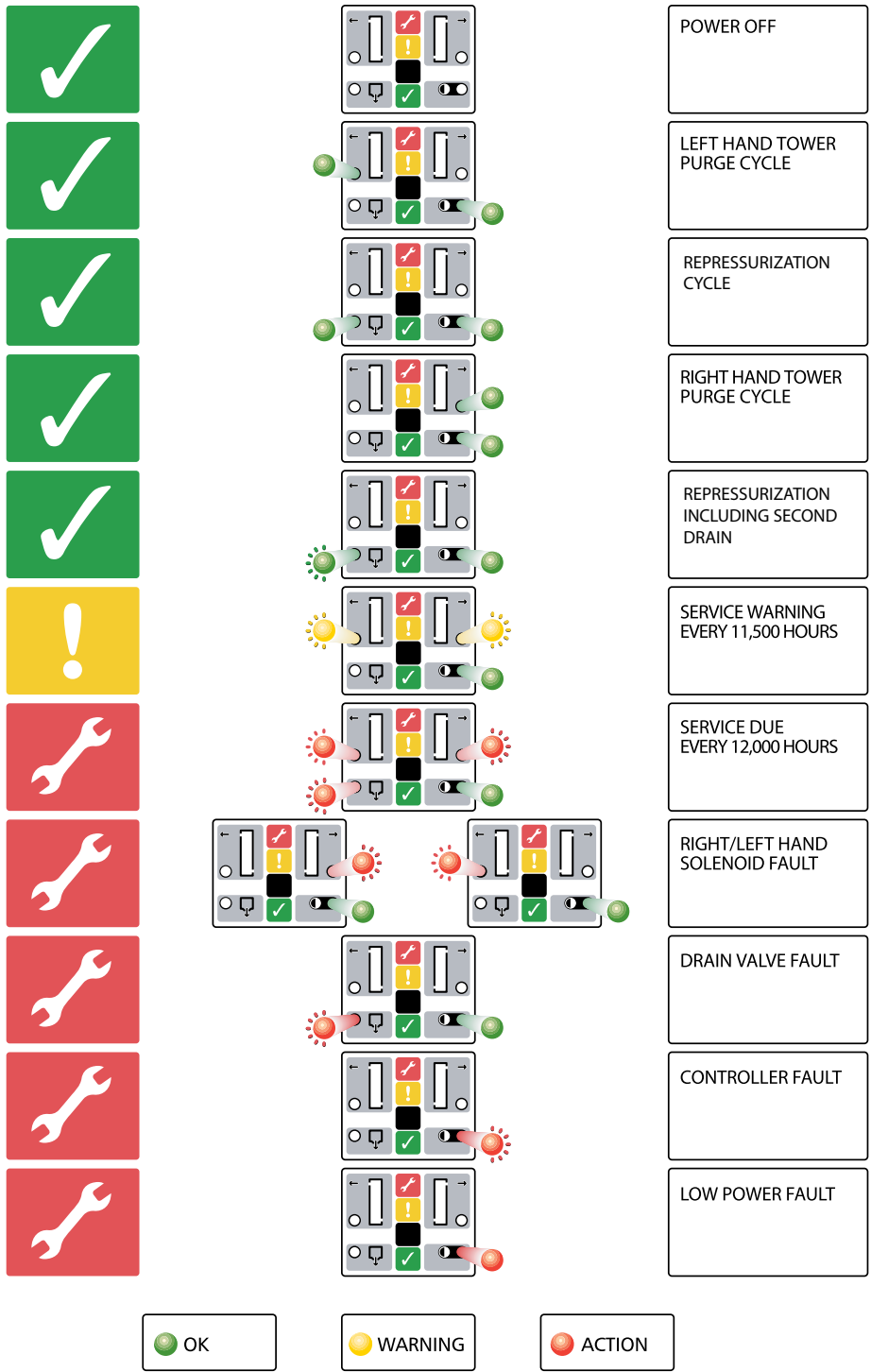
The purpose of the delay is to prevent dryer saturation when using a large receiver with a large range of set pressures.

Once the application conditions have been input, click 'OK' to return the screen to the main application software.

Click 'Program SFD' to save the defined settings.

# Section V - Servicing

## Service and Fault Diagnosis

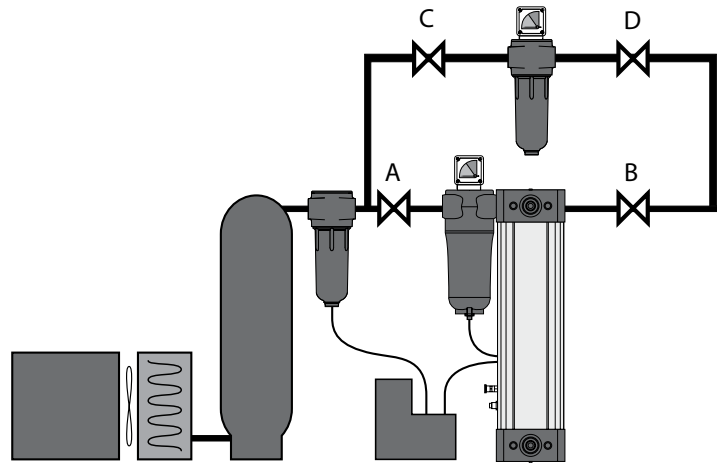


**Service Shutdown**

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

**NOTICE!**

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.



**Servicing and Maintenance**

- Service intervals are every 12,000 operational hours. See chart below.

2 YEARS OR 12,000 HOURS	KIT A
4 YEARS OR 24,000 HOURS	KIT B
6 YEARS OR 36,000 HOURS	KIT A
8 YEARS OR 48,000 HOURS	KIT B
10 YEARS OR 60,000 HOURS	SERVICE OVERHAUL RECOMMENDED. PLEASE CONTACT QUINCY COMPRESSOR.

- The following kits are available (Reference Appendix B - Repair & Replacement Parts for part numbers):

Kit A: 12,000 Hour Service Kit
DESICCANT CARTRIDGES (WHERE APPLICABLE)
PRE-FILTER ELEMENT (WHERE APPLICABLE)
O-RINGS & SEALS
RESET DISC
KIT INSTRUCTIONS

Kit B: 24,000 Hour Service Kit
DESICCANT CARTRIDGES (WHERE APPLICABLE)
PRE-FILTER ELEMENT (WHERE APPLICABLE)
O-RINGS & SEALS
RESET DISC
EXHAUST VALVE SOLENOIDS (CONTROLLER)
EXHAUST SHUTTLES
KIT INSTRUCTIONS

- The shutdown procedure must be carried out before service is carried out.

## Section V - Servicing

---

### Removing and Replacing the Front Panel



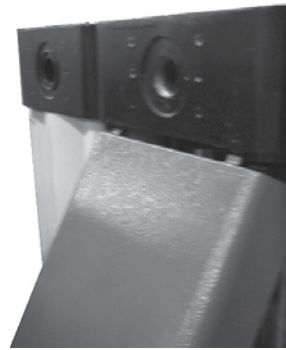
DRYER WITH FRONT FASCIA PANEL FITTED.



DRYER WITH FRONT FASCIA PANEL REMOVED.



REMOVE RETAINING SCREW TO REMOVE FRONT FASCIA PANEL.



REFIT FRONT FASCIA PANEL BY INSERTING TONGUE INTO GROOVE AND PUSHING UPWARDS AND INWARDS.

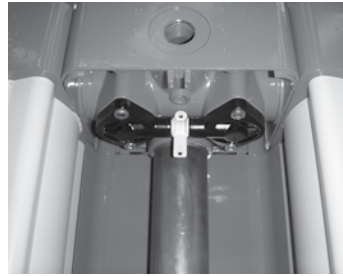


REMOVE FRONT FASCIA PANEL BY TILTING OUTWARDS AND DOWNWARDS.



REPLACE RETAINING SCREW.

Purge Plug Removal



REMOVE FRONT PANEL OF DRYER AS DESCRIBED ON PAGE 20 AND LOCATE PURGE PLUG IN BETWEEN THE TWO BONNETS.



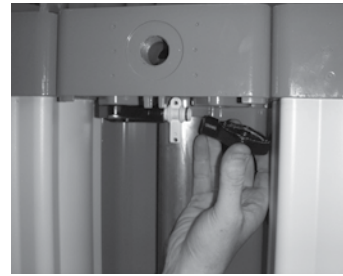
REMOVE BONNET FIXING SCREWS FROM UPPER VALVE BLOCK. REMOVE BONNET FROM VALVE MANIFOLD BLOCK.



REMOVE PURGE PLUG FROM PORT IN BONNET BY TWISTING DOWNWARD.



CLEAN ORIFICE IN PURGE PLUG WITH WARM SOAPY WATER. DO NOT USE SHARP IMPLEMENTS OR TOOLS.

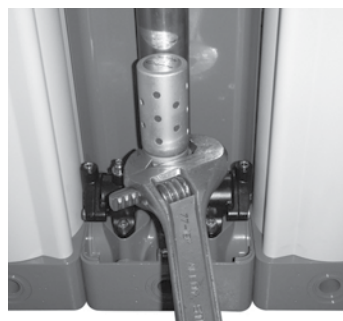


THOROUGHLY DRY THE PURGE PLUG AND ENSURE THAT THE O-RINGS ARE IN PLACE AND IN GOOD CONDITION. PLACE THE PURGE PLUG BETWEEN THE BONNETS.



REPLACE AND TIGHTEN BONNETS.

Cleaning the Silencer



DISCONNECT SILENCER FROM VALVE BLOCK.



THOROUGHLY CLEAN THE SILENCER IN WARM SOAPY WATER. DO NOT USE SHARP INSTRUMENTS OR TOOLS. CLEAN THREADS ON SILENCER.

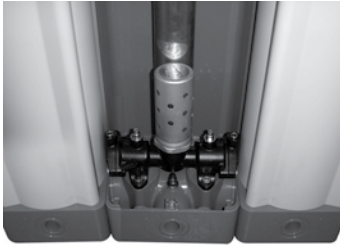
**👉 NOTICE!**

Ensure silencer is thoroughly clean and dry before re-installing.

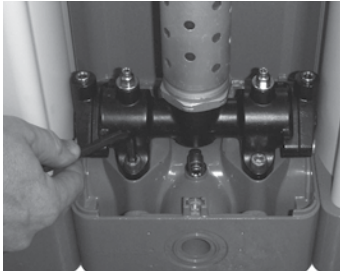
## Section V - Servicing

---

### Replacing the Exhaust Valve Assembly and Exhaust Shuttles



REMOVE FRONT PANEL OF DRYER AS DESCRIBED ON PAGE 20.



REMOVE THE CAPSCREWS SECURING THE MANIFOLD.



REMOVE THE MANIFOLD, TAKING CARE TO RETRIEVE THE INTERFACE O-RINGS. THE SILENCER CAN BE REMOVED FOR MAINTENANCE IF NECESSARY.



REMOVE THE END BONNETS, RETRIEVING THE O-RING.



REMOVE THE EXHAUST SHUTTLE.

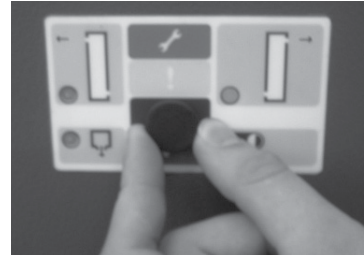


PLACE THE NEW SHUTTLE INTO THE BORE AND GENTLY FOLD THE SEAL INTO THE BORE WHILE KEEPING PRESSURE ON THE END OF THE SHUTTLE. REFIT THE END BONNET AND REINSTALL THE MANIFOLD.

### Resetting the Controller

After performing service, the dryer must be restarted according to the start-up procedure on page 12, and the controller must be reset.

To reset the controller, use the reset disc (supplied with the service kits) as follows:



HOLD THE DISC AGAINST THE BLUE PAD ON THE FRONT DISPLAY OF THE DRYER PANEL FOR 5 SECONDS.

DURING THIS FIVE SECOND PERIOD, THE POWER INDICATOR **D** WILL FLASH GREEN. WHEN THE RESET HAS BEEN SUCCESSFUL INDICATOR **B** WILL FLASH RED ONCE TO CONFIRM THAT IT HAS BEEN COMPLETED SUCCESSFULLY.

## Section VI - 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 startup 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?

The table below gives possible causes and corrective actions to faults that may occur on the dryer:

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
INCORRECT DRYER OPERATION	JAMMED SHUTTLE VALVES OR FAULTED ELECTRICAL COMPONENTS	SEE ELECTRICAL TROUBLESHOOTING

### Electrical Troubleshooting

(Reference wiring diagram in Appendix A  
- Technical Data)

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
	LOWER 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

# Appendix A - Technical Data

## Environmental Conditions

QMOD dryers are designed for operation under the following conditions:

- Indoor use
- Altitude up to 2000 m / 16,565 ft.
- Ambient temperature 5°C / 41°F to 40°C / 104°F
- Maximum RH 80% for temperatures up to 31°C / 88°F, decreasing linearly to 50% RH at 40°C / 104°F

- Main supply voltage fluctuations not to exceed +/- 10% of nominal
- Transient over voltage IEC664 Class II
- Pollution degree 2, IEC 664

 **NOTICE!**

For operation extended from the above conditions, please contact Quincy Compressor.

## Specifications

### Dryer Sizing Table

DRYER MODEL	PIPE SIZE (IN)	INLET FLOW RATE			DRYER CONFIGURATION	DIMENSIONS (MM)			DIMENSIONS (IN)		
		NM <sup>3</sup> /H	SCFM	L/MIN		A	B	C	A	B	C
QMOD00045	3/4	76	45	1274	SIMPLEX	652	520	164	25.7	20.5	6.5
QMOD00055	3/4	93	55	1557	SIMPLEX	752	520	164	29.6	20.5	6.5
QMOD00065	3/4	110	65	1841	SIMPLEX	852	520	164	33.5	20.5	6.5
QMOD00085	1	144	85	2407	SIMPLEX	1052	520	164	41.4	20.5	6.5
QMOD00105	1	178	105	2973	SIMPLEX	1362	520	164	53.6	20.5	6.5
QMOD00135	1-1/4	229	135	3823	SIMPLEX	1562	520	164	61.5	20.5	6.5
QMOD00175	1-1/4	297	175	4955	SIMPLEX	1962	520	164	77.2	20.5	6.5
QMOD00215	1-1/2	365	215	6088	DUPLEX	1362	520	328	53.6	20.5	12.9
QMOD00275	1-1/2	467	275	7787	DUPLEX	1562	520	328	61.5	20.5	12.9
QMOD00365	1-1/2	620	365	10336	DUPLEX	1962	520	328	77.2	20.5	12.9

 **NOTICE!**

The temperature and pressure correction factors in the Specification Tables should be applied to the flow rates in the Dryer Sizing Table to suit the application and ensure dryer performance. All flow rates are based on 7.0 barg (100 psig) and 35°C (95°F) at the dryer inlet.

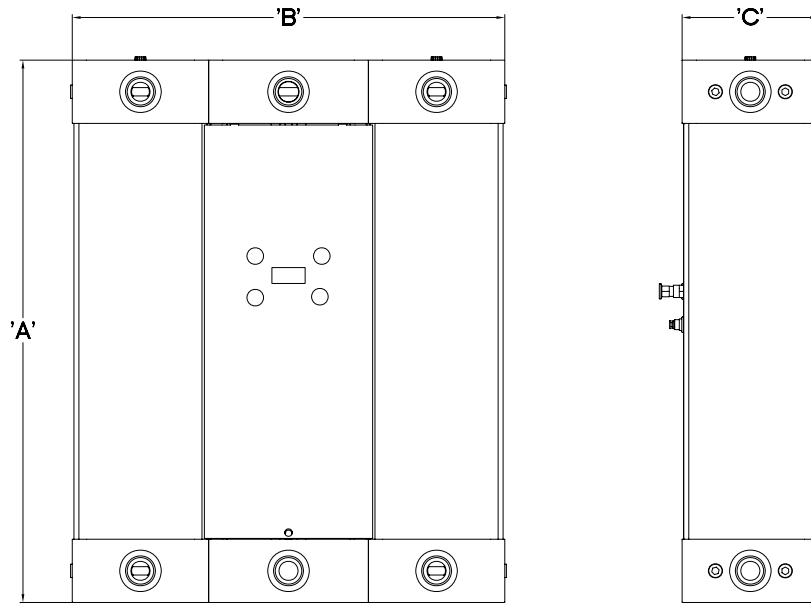
## Appendix A - Technical Data

OPERATING PRESSURE BARG (PSIG)	4 (58)	5 (72)	6 (87)	7 (100)	8 (116)	9 (130)	10 (145)	11 (160)	12 (174)	13 (189)	14 (203)	15 (218)	16 (232)
PRESSURE CORRECTION FACTOR (PCF)	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87	2.0	2.12

Always use the pressure correction factor (PCF) closest to the actual inlet pressure condition.

TEMPERATURE °C (°F)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)
TEMPERATURE CORRECTION FACTOR (TCF)	1.07	1.06	1.04	1.00	0.93	0.78	0.64

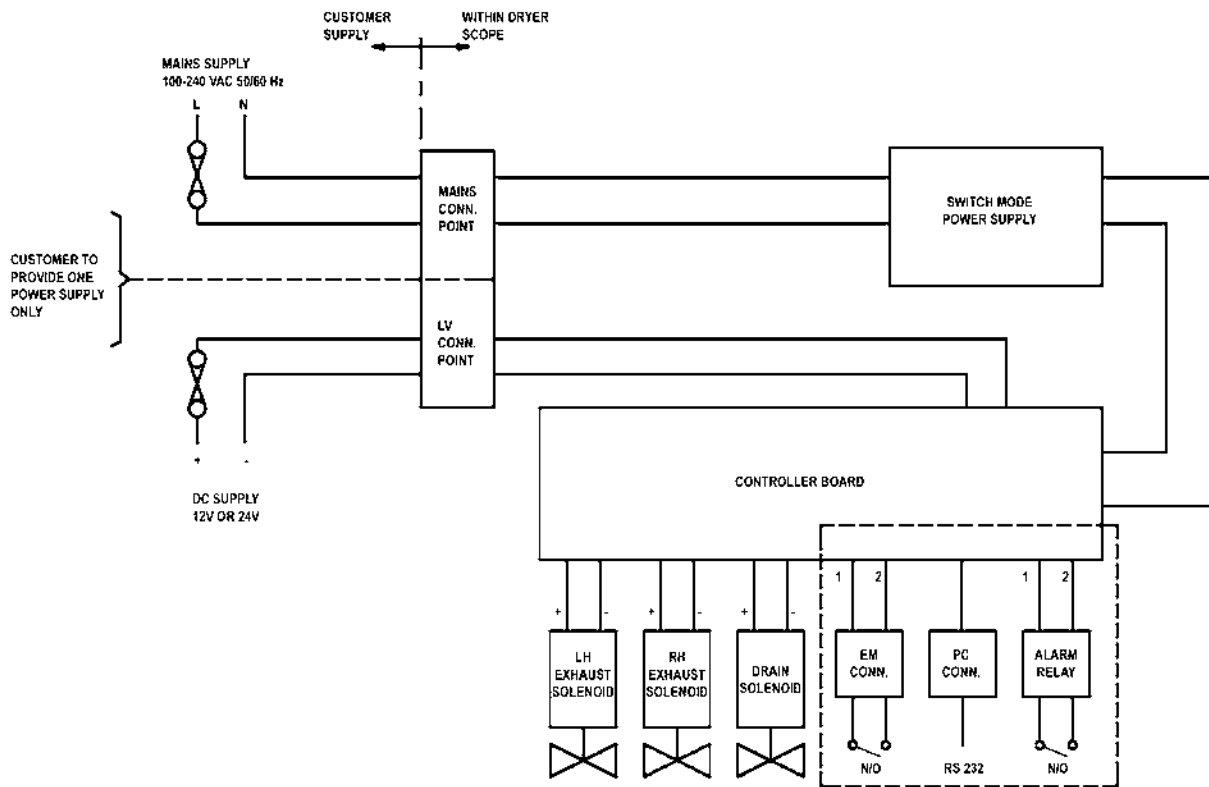
DEWPOINT °C (°F)	-40 (-40)	-70 (-100)
DEWPOINT CORRECTION FACTOR (DCF)	1	0.7



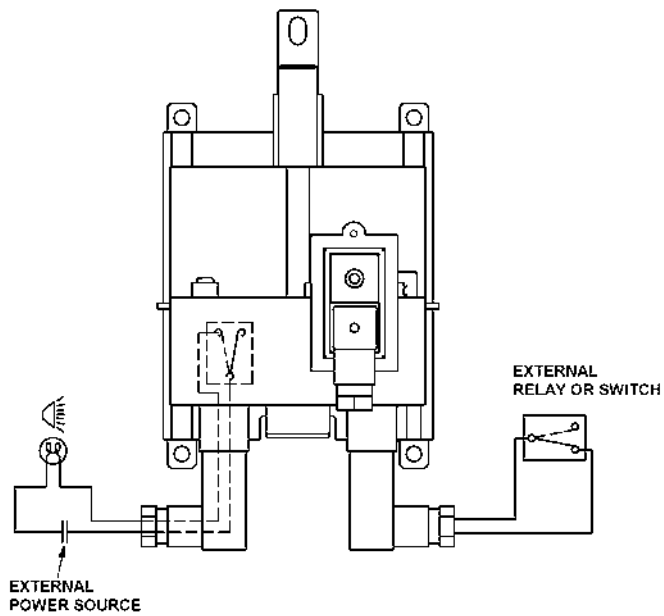
SPECIFICATIONS	
STANDARD PRESSURE DEWPOINT	-40°C (-40°F) -70°C (-100°F) w/APPLICATION OF FLOW CORRECTION FACTOR
MINIMUM WORKING PRESSURE	4 BARG (58 PSIG)
MAXIMUM WORKING PRESSURE	16 BARG (232 PSIG)
ELECTRICAL CONTROLS	12 VDC TO 24 VDC/100 VAC TO 240 VAC
MINIMUM INLET TEMPERATURE	1.5°C (35°F)
MAXIMUM INLET TEMPERATURE	50°C (112°F)
MINIMUM AMBIENT TEMPERATURE	5°C (41°F)

# Appendix A - Technical Data

## Schematic Wiring and Fault Diagrams



General Wiring Diagram



Remote Alarm Wiring Diagram



## Appendix B - Repair & Replacement Parts

This manual covers the following QMOD models:

DRYER ASSEMBLY	PIPE SIZE NPT IN	CAPACITY
		SCFM @100 PSIG (Nm <sup>3</sup> /H @ 7 BARG)
QMOD00045	3/4	45 (76)
QMOD00055	3/4	55 (93)
QMOD00065	3/4	65 (110)
QMOD00085	1	85 (144)
QMOD00105	1	105 (178)
QMOD00135	1-1/4	135 (133)
QMOD00175	1-1/4	175 (297)
QMOD00215	1-1/2	215 (385)
QMOD00275	1-1/2	275 (467)
QMOD00365	1-1/2	365 (620)

SPARE PARTS AND OPTIONS		
PART NUMBER	DESCRIPTION	APPLICABLE DRYER ASSEMBLY
QMEC00365	ELECTRONIC CONTROLLER ASSEMBLY	QMOD00045 THRU QMOD00365
QMCD	ENERGY MANAGEMENT AND SOFTWARE INTERFACE CD	QMOD00045 THRU QMOD00365
QMCP00060	PREFILTER (INCLUDES CONNECTING KIT AND DRAIN PIPE ASSEMBLY FOR SOLENOID DRAIN)	QMOD00045 / QMOD00055
QMCP00125	PREFILTER (INCLUDES CONNECTING KIT AND DRAIN PIPE ASSEMBLY FOR SOLENOID DRAIN)	QMOD00065 THRU QMOD00105
QMCP00150	PREFILTER (INCLUDES CONNECTING KIT AND DRAIN PIPE ASSEMBLY FOR SOLENOID DRAIN)	QMOD00135
QMCP00200	PREFILTER (INCLUDES CONNECTING KIT AND DRAIN PIPE ASSEMBLY FOR SOLENOID DRAIN)	QMOD00175
QMCP00300	PREFILTER (INCLUDES CONNECTING KIT AND DRAIN PIPE ASSEMBLY FOR SOLENOID DRAIN)	QMOD00215 / QMOD00275
QMCP00425	PREFILTER (INCLUDES CONNECTING KIT AND DRAIN PIPE ASSEMBLY FOR SOLENOID DRAIN)	QMOD00365
QMBV00175	BOTTOM VALVE ASSEMBLY (SILENCER NOT INCLUDED)	QMOD00045 THRU QMOD00175
QMBV00365	BOTTOM VALVE ASSEMBLY (SILENCER NOT INCLUDED)	QMOD00215 THRU QMOD00365
QMIV00065	INLET VALVE ASSEMBLY	QMOD00045 THRU QMOD00065
QMIV00105	INLET VALVE ASSEMBLY	QMOD00085 THRU QMOD00105
QMIV00175	INLET VALVE ASSEMBLY	QMOD00135 THRU QMOD00175
QMIV00365	INLET VALVE ASSEMBLY	QMOD00215 THRU QMOD00365
QMMA00085	EXHAUST MANIFOLD ASSEMBLY	QMOD00045 THRU QMOD00085
QMMA00175	EXHAUST MANIFOLD ASSEMBLY	QMOD00105 THRU QMOD00175
QMMA00365	EXHAUST MANIFOLD ASSEMBLY	QMOD00215 THRU QMOD00365
QMSA00085	EXHAUST SILENCER ASSEMBLY	QMOD00045 THRU QMOD00085
QMSA00175	EXHAUST SILENCER ASSEMBLY	QMOD00105 THRU QMOD00175
QMSA00365	EXHAUST SILENCER ASSEMBLY	QMOD00215 THRU QMOD00365

## Appendix B - Repair & Replacement Parts

### Service Kits

SOLENOID VALVE SERVICE KIT	
QMOD00045 THRU QMOD00365	QMVSKS 01

12,000 hour service kits contain:

- Desiccant cartridges
- QPM to tower o-rings
- QPM to valve block o-ring
- Reset disc for controller

12,000 HOUR SERVICE KITS	
MODEL	PART NUMBER
QMOD00045	QMDC045DF-12000
QMOD00055	QMDC055DF-12000
QMOD00065	QMDC065DF-12000
QMOD00085	QMDC085DF-12000
QMOD00105	QMDC105DF-12000
QMOD00135	QMDC135DF-12000
QMOD00175	QMDC175DF-12000
QMOD00215	QMDC215DF-12000
QMOD00275	QMDC275DF-12000
QMOD00365	QMDC365DF-12000

24,000 hour service kits contain:

- Desiccant cartridges
- QPM to tower o-rings
- QPM to valve block o-ring
- Reset disc for controller
- Solenoid valve service kit
- Bonnet seals
- Exhaust shuttle
- Exhaust shuttle lip seal (fitted)
- Shuttle end o-ring
- Exhaust manifold to valve block o-ring

24,000 HOUR SERVICE KITS	
MODEL	PART NUMBER
QMOD00045	QMDC045DF-24000
QMOD00055	QMDC055DF-24000
QMOD00065	QMDC065DF-24000
QMOD00085	QMDC085DF-24000
QMOD00105	QMDC105DF-24000
QMOD00135	QMDC135DF-24000
QMOD00175	QMDC175DF-24000
QMOD00215	QMDC215DF-24000
QMOD00275	QMDC275DF-24000
QMOD00365	QMDC365DF-24000

## STANDARD TERMS AND CONDITIONS

---

### QUINCY COMPRESSOR AND ORTMAN FLUID POWER DIVISIONS

LEGAL EFFECT: Except as expressly otherwise agreed to in writing by an authorized representative of Seller, the following terms and conditions shall apply to and form a part of this order and any additional and/or different terms of Buyer's purchase order or other form of acceptance are rejected in advance and shall not become a part of this order.

The rights of Buyer hereunder shall be neither assignable nor transferable except with the written consent of Seller.

This order may not be canceled or altered except with the written consent of Seller and upon terms which will indemnify Seller against all loss occasioned thereby. All additional costs incurred by Seller due to changes in design or specifications, modification of this order or revision of product must be paid for by Buyer.

In addition to the rights and remedies conferred upon Seller by this order, Seller shall have all rights and remedies conferred at law and in equity and shall not be required to proceed with the performance of this order if Buyer is in default in the performance of such order or of any other contract or order with seller.

TERMS OF PAYMENT: Unless otherwise specified in the order acknowledgment, the terms of payment shall be net cash within thirty (30) days after shipment. These terms shall apply to partial as well as complete shipments. If any proceeding be initiated by or against Buyer under any bankruptcy or insolvency law, or in the judgment of Seller the financial condition of Buyer, at the time the equipment is ready for shipment, does not justify the terms of payment specified, Seller reserves the right to require full payment in cash prior to making shipment. If such payment is not received within fifteen (15) days after notification of readiness for shipment, Seller may cancel the order as to any unshipped item and require payment of its reasonable cancellation charges.

If Buyer delays shipment, payments based on date of shipment shall become due as of the date when ready for shipment. If Buyer delays completion of manufacture, Seller may elect to require payment according to percentage of completion. Equipment held for Buyer shall be at Buyer's risk and storage charges may be applied at the discretion of Seller.

Accounts past due shall bear interest at the highest rate lawful to contract for but if there is no limit set by law, such interest shall be eighteen percent (18%). Buyer shall pay all cost and expenses, including reasonable attorney's fees, incurred in collecting the same, and no claim, except claims within Seller's warranty of material or workmanship, as stated below, will be recognized unless delivered in writing to Seller within thirty (30) days after date of shipment.

TAXES: All prices exclude present and future sales, use, occupation, license, excise, and other taxes in respect of manufacture, sales or delivery, all of which shall be paid by Buyer unless included in the purchase price at the proper rate or a proper exemption certificate is furnished.

ACCEPTANCE: All offers to purchase, quotations and contracts of sales are subject to final acceptance by an authorized representative at Seller's plant.

DELIVERY: Except as otherwise specified in this quotation, delivery will be F. O. B. point of shipment. In the absence of exact shipping instruction, Seller will use its discretion regarding best means of insured shipment. No liability will be accepted by Seller for so doing. All transportation charges are at Buyer's expense. Time of delivery is an estimate only and is based upon the receipt of all information and necessary approvals. The shipping schedule shall not be construed to limit seller in making commitments for materials or in fabricating articles under this order in accordance with Seller's normal and reasonable production schedules.

Seller shall in no event be liable for delays caused by fires, acts of God, strikes, labor difficulties, acts of governmental or military authorities, delays in transportation or procuring materials, or causes of any kind beyond Seller's control. No provision for liquidated damages for any cause shall apply under this order. Buyer shall accept delivery within thirty (30) days after receipt of notification of readiness for shipment. Claims for shortages will be deemed to have been waived if not made in writing within ten (10) days after the receipt of the material in respect of which any such shortage is claimed. Seller is not responsible for loss or damage in transit after having received "In Good Order" receipt from the carrier. All claims for loss or damage in transit should be made to the carrier.

## STANDARD TERMS AND CONDITIONS

---

### QUINCY COMPRESSOR AND ORTMAN FLUID POWER DIVISIONS

**TITLE & LIEN RIGHTS:** The equipment shall remain personal property, regardless of how affixed to any realty or structure. Until the price (including any notes given therefore) of the equipment has been fully paid in cash, Seller shall, in the event of Buyer's default, have the right to repossess such equipment.

**PATENT INFRINGEMENT:** If properly notified and given an opportunity to do so with friendly assistance, Seller will defend Buyer and the ultimate user of the equipment from any actual or alleged infringement of any published United States patent by the equipment or any part thereof furnished pursuant hereto (other than parts of special design, construction, or manufacture specified by and originating with Buyer), and will pay all damages and costs awarded by competent court in any suit thus defended or of which it may have had notice and opportunity to defend as aforesaid.

**STANDARD WARRANTY:** Seller warrants that products of its own manufacture will be free from defects in workmanship and materials under normal use and service for the period specified in the product instruction manual. Warranty for service parts will be ninety (90) days from date of factory shipment. Electric Motors, gasoline and diesel engines, electrical apparatus and all other accessories, components and parts not manufactured by Seller are warranted only to the extent of the original manufacturer's warranty.

Notice of the alleged defect must be given to the Seller, in writing with all identifying details including serial number, type of equipment and date of purchase within thirty (30) days of the discovery of the same during the warranty period.

Seller's sole obligation on this warranty shall be, at its option, to repair or replace or refund the purchase price of any product or part thereof which proves to be defective. If requested by Seller, such product or part thereof must be promptly returned to seller, freight prepaid, for inspection.

Seller warrants repaired or replaced parts of its own manufacture against defects in materials and workmanship under normal use and service for ninety (90) days or for the remainder of the warranty on the product being repaired.

This warranty shall not apply and Seller shall not be responsible or liable for:

- (a) Consequential, collateral or special losses or damages;
- (b) Equipment conditions caused by fair wear and tear, abnormal conditions of use, accident, neglect or misuse of equipment, improper storage or damage resulting during shipping;
- (c) Deviation from operating instructions, specifications or other special terms of sale;
- (d) Labor charges, loss or damage resulting from improper operation, maintenance or repairs made by person(s) other than Seller or Seller's authorized service station.

In no event shall Seller be liable for any claims whether arising from breach of contract or warranty or claims of negligence or negligent manufacture in excess of the purchase price.

**THIS WARRANTY IS THE SOLE WARRANTY OF SELLERS AND ANY OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED IN LAW OR IMPLIED IN FACT, INCLUDING ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE ARE HEREBY SPECIFICALLY EXCLUDED.**

**LIABILITY LIMITATIONS:** Under no circumstances shall the Seller have any liability for liquidated damages or for collateral, consequential or special damages or for loss of profits, or for actual losses or for loss of production or progress of construction, whether resulting from delays in delivery or performance, breach of warranty, negligent manufacture or otherwise.

**ENVIRONMENTAL AND OSHA REQUIREMENTS:** At the time of shipment of the equipment from the factory, Quincy Compressor / Ortman Fluid Power will comply with the various Federal, State and local laws and regulations concerning occupational health and safety and pollution. However, in the installation and operation of the equipment and other matters over which the seller has no control, the Seller assumes no responsibility for compliance with those laws and regulations, whether by the way of indemnity, warranty or otherwise.







an EnPro Industries company

Quincy Compressor Products: 217.222.7700  
E-mail: [info@quincycompressor.com](mailto:info@quincycompressor.com)  
Website: [www.quincycompressor.com](http://www.quincycompressor.com)



© 2008 Quincy Compressor  
All Rights Reserved. Litho in U.S.A.