AirMaster™

Q1 – DESICCANT DRYER
Software Manual

DOCUMENT NUMBER: MANY1204A.EN

Contents:

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Section 1: Safety Warning:

Do not operate the Airmaster™ Q1 until you and all personnel concerned have read and understood this software manual

Operation may only be done by trained personnel according to safe engineering practises and with the observance of all relevant local health and safety requirements and regulations.

A requirement of fault-free operation and fulfilment of any right to claim under guarantee is that documentation is observed.

This document is subject to changes without notice, if in doubt, do not proceed!

Section 2: Version Revision notes:

Version	Revision notes
E01	STD release packet

Section 3: General description

3.1 Airmaster™

Airmaster™ sets the standard for pre-programmed logic controllers in air compressor, vacuum and related applications. For nearly 30 years, Airmaster™ products have pioneered developments in compressed air and vacuum application PLC's, ensuring our customers remain at the forefront in their chosen area of expertise. Our continued commitment to product development has positioned Airmaster™ as the global leader and choice solution for compressed air and vacuum application PLC controls.

3.2 Airmaster™ Q1

Airmaster™ Q1 is a 'mid-range' member of the Airmaster™ product family ideally suited to positive displacement rotary screw, vane and piston compressor, and vacuum and related air treatment equipment applications. Using the powerful ARM CORTEX-M3 processor from NXP, product features are arranged to ensure a cost effective and feature rich PLC with options that enhance where required.

3.3 Airmaster™ RS485 card option

Airmaster™ RS485 option cards are available where required. Two RS485 option cards can be added to the Airmaster™ Q1. Once installed, the RS485 communication port can support communication with the Airmaster™ Q1 using either the Airbus485™ protocol or the MODBUS RTU protocol.

Airbus485™ is a dedicated application specific protocol uniquely designed to accelerate communication between Airmaster™ and Metacentre™ devices and improves device responsiveness when compared to conventional network protocols such as MODBUS RTU and is of significant benefit in larger device networks (e.g. larger compressed air or vacuum systems)

MODBUS RTU is a proprietary protocol supported by Airmaster™ Q1. In use, the Airmaster™ Q1 operates as a MODBUS slave to a MODBUS Master that has access to the Airmaster™ Q1's RS485 communication port and field bus registers than describe how to interrogate the Airmaster™ Q1's application software. Note: Field bus registers are not supplied with the Airmaster™ Q1 and must be sources separately (consult your product supplier or visit www.controlcompressors.com).

3.4 Airmaster™ ECO card option

An Ethernet card option (ECO) is available where required. A Micro SD card is supplied as part of the ECO card option assembly. One ECO card option can be added to the Airmaster™ Q1. Once installed, the ECO card option can support communication with the Airmaster ™ Q1 over Ethernet using the TCP/IP protocol.

3.5 Airmaster™ XPM card option

Airmaster™ XPM card options are available. Airmaster™ XPM card options provide additional analogue or digital inputs and analogue or relay outputs. XPM card options are DIN rail mounted within the electrical enclosure of the host equipment and communicate with the Airmaster™ Q1 using the Airbus485™ protocol.

3.6 Airmaster™ network card options

Airmaster™ network cards are available. Airmaster™ network cards support networking with network protocols not directly supported by Airmaster™ Q1 e.g. Profibus or DeviceNet etc (consult your product supplier or visit www.controlcompressors.com)

3.7 Metacentre™ system networking

Metacentre™ is the compressor and vacuum

system product range of CMC NV. Metacentre™ products are used to fully integrate compressed air or vacuum systems on a production site, optimise air or vacuum generation and manage key aspects of the system with dedicated, but easy to use, visual software. For multiple compressor or vacuum pump installations, Metacentre products can reduce energy usage by well over 30%, typically delivering savings in the tens of thousands of pounds, dollars or Euros per year (consult your product supplier or visit www.metacentre.eu)

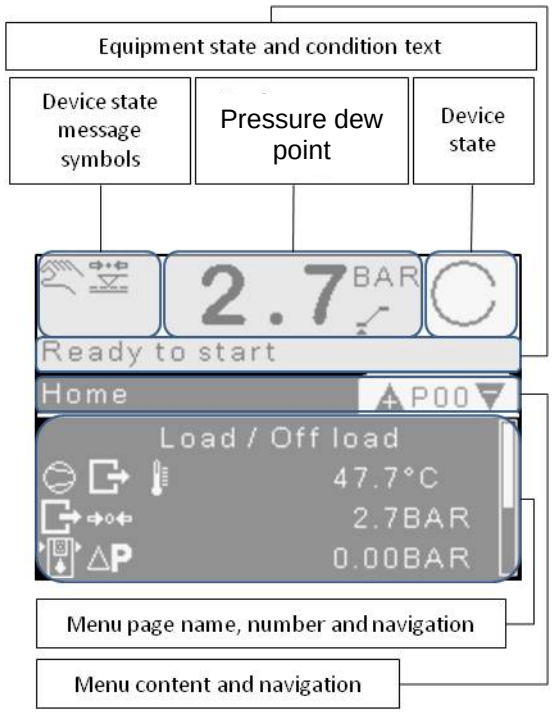
Section 4: User interface

4.1 Keypad

Key: image	Key: Function
	Start
	Stop
	Reset
	Enter
	Up
	Down
	Escape

4.2 Graphic display

The graphic display is intuitively arranged...



After a period of non-use the graphic display light level will reduce until a key is pressed.

P00 is the default view after power up and where the display will return after a period of non-use.

Use the Up & Down keys to navigate between menus.

Where applicable, the menu item highlighted will toggle between the default menu display and additional menu information.

For example: P00.02

Control mode
Load / off load

4.3 User Account Controls

Airmaster™ Q1 is supplied with a 'Default' user account, an 'ADMIN' user account and a further 10 configurable User accounts. Only the 'ADMIN' user can configure additional User accounts.

The 'Default' user account does not require a PIN code. The Default user can view menus 00 – 09 only. These menus cannot be edited.

All other User accounts are protected via a 4 digit PIN code. If you enter a 4 digit PIN code incorrectly, after pressing ENTER the user will be returned to Menu P09.01 (i.e. default user)

The ‘ADMIN’ User PIN code is intentionally not printed. If you do not know or require the ‘ADMIN’ user PIN code, contact your product supplier. Change the ‘ADMIN’ user PIN code as necessary. The reset ‘ADMIN’ User PIN code feature is intentionally not printed. If you do not know or require the reset ‘ADMIN’ User PIN code feature, contact your product supplier.

The ‘ADMIN’ User name cannot be changed and remains ‘ADMIN’ User.

Use ‘ADMIN’ User access to configure additional User accounts and User account preferences as required.

Item	Edit
P09.03~10.01	Edit user name
P09.02~10.02	User PIN code
P09.02~10.03	Language
P09.02~10.04	Time format
P09.02~10.05	Date format
P09.02~10.06	Pressure unit
P09.02~10.07	Temperature unit
P09.03~10.08 ~ 17	No edit
P09.03~10.18 ~ 32	Access: Not available Read access Edit access

In addition to personal preferences, the ‘ADMIN’ User can configure menus access rights for each Additional User.

Menu access configuration options are ‘Not available’ which makes the menu invisible to the User, ‘Read access’ which makes the menu visible and NOT editable to the User and ‘Edit access’ which makes the menu both visible and editable to the User.

Note: This software manual describes all software menus. If software menus are not visible, check User access configuration before troubleshooting elsewhere!

To return to ‘Default’ User, navigate to Menu P09.01 ‘Default user’ and press ‘ENTER’ whereby the Default user will become the Active user once more

Use ‘ADMIN’ user access to edit the Default User configuration. Use the parameters menu location to adjust the ‘Default’ User configuration.

Notes: Understand how to edit the ‘Default’ User account which is done differently from the ‘ADMIN’ or the Additional User accounts.

Monitor which User account is active when evaluating configuration or menu access restrictions!

After a period of non-use Airmaster™ Q1 will always return to ‘Default’ User and ‘P00 Home page’.

4.4 Menu Navigation

Menu tabs are arranged sequentially and in a continuous loop.

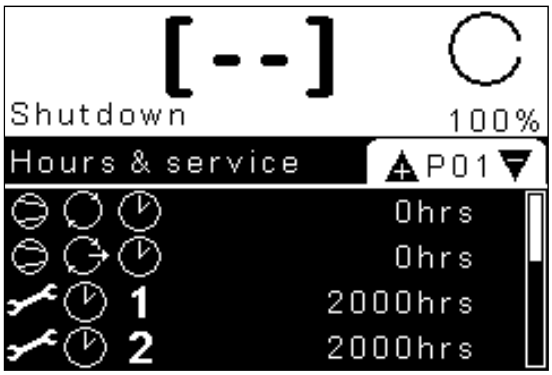
The graphical interface inverts to identify the ‘on screen’ navigation location and the navigation location is indicated on the vertical scroll bar.

Additionally the menu tab extends to identify the navigation location. For example...

Item	Description
P02	Menu: Utilisation
P02.10	VSD average RPM
P02.10.01	AVG RPM 1 – 25%

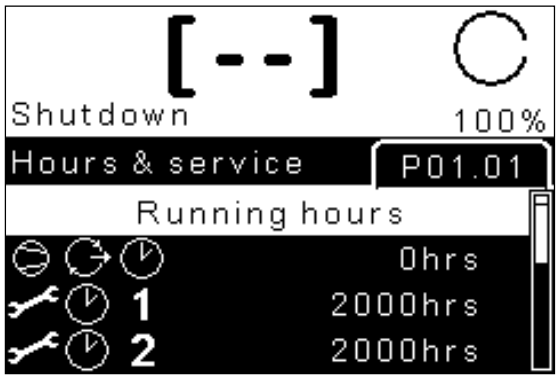
Note: menu content items are only visible when the device is appropriately configured!

Menu items are indexed sequentially and without omission. If a menu item is not present it’s most likely due to configuration!

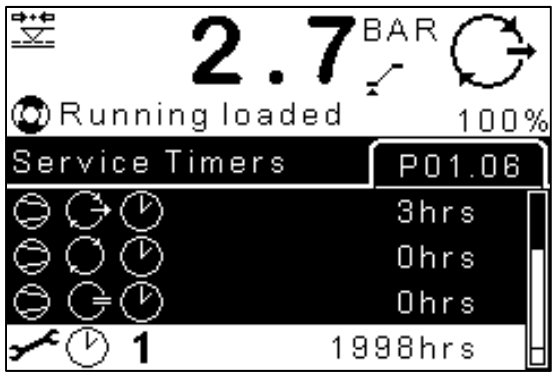


Use the Enter key (enter) and the clear key (exit) to navigate between menu page navigation and menu content navigation.

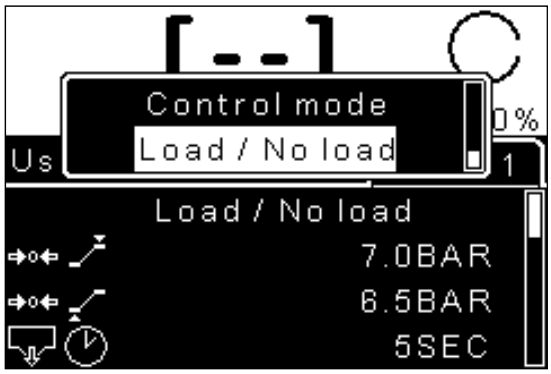
display value



Entering the menu content area navigates to the first item of the menu. Use the Up and Down keys to navigate between menu content items. Menu content items are vertically assembled and in a continuous loop. For example, below indicates the user has navigated to P01 menu item 06



To edit an accessible and editable menu item, navigate to it and press the enter key.



An edit menu popup window will appear. Use the Up and Down keys to select an available option. Press and hold the Up or Down key to increase the speed at which a selectable value is reached. Press the enter key to confirm a selection or use the clear key to exit without making a new selection. With the popup window displayed, press and hold the 'ENTER' button to alternate between display text and

4.5 Menu map (Display menus will vary based on device configuration)

Colour key:	Read only menu	Read and Edit menu (Keyboard or ECO card option)	Read and Edit menu (edit using ECO card option only)
	BLACK = EDIT IN ANY DEVICE STATE, RED = EDIT IN DEVICE STOPPED STATE ONLY		
↵	**Press ENTER key to access sub menu item (e.g. P02.10.01)**		

P00 – Home	P01 – Service timers	P02 – Utilisation	P03 – Error Log	P04 – Event Log	P05 – Service Provider
01 Any active alarm ↵	01 Total hours	01 EQUIP status	01 Error 1 ↵	01 Event 1 ↵	01 Company name
02 P00.02 user DEF	02 Active hours	02 Active HRS	…	…	02 Company name
03 P00.03 user DEF	03 Stopped hours	03 Stopped hours	50 Error 50 ↵	200 Event 200 ↵	03 Street name
04 P00.04 user DEF	04 Service hours 1	04 REGEN hours L			04 Street name
05 L tower state	05 Service hours 2	05 REGEN hours R			05 City
06 R tower state	06 Service hours 3				06 State / Province
07 Cycle countdown	07 Service hours 4				07 ZIP / Postal
08 Half cycle time	08 Service hours 5				08 Country
09 Overlap time					09 Telephone
10 REGEN delay					10 Fax
11 REGEN time					11 E Mail
12 REPRESS time					12 Web
13 PRESS dew point					
14 L tower PRESS					
15 R tower PRESS					
16 Time					
17 Date					
18 Daylight saving					

P06 – Controller Data	P07 – Equipment Data	P08 – Message Codes	P09 – Access	P10 – Equip settings 1	P11 – Equip settings 2
01 Controller ID	01 MANUF name	Consult this manual ↵	01 DEFAULT USER ↵	01 RS485: 1 CONFIG ↵	01 AUTO restart INH ↵
02 Serial number	02 EQUIP model		02 ADMIN USER ↵	02 RS485: 2 CONFIG ↵	02 Dew point target ↵
03 Software ID	03 MDL SER number		03 USER 1 ↵	03 Start source ↵	03 CNDS drain open ↵
04 Software version	04 MDL rated PRESS		04 USER 2 ↵	04 Language ↵	04 CNDS drain INT ↵
05 Software time	05 MDL rated output		05 USER 3 ↵	05 Time ↵	02 Service hours 1 ↵
06 Software date	06 MDL YR MANUF		06 USER 4 ↵	06 Time format ↵	03 Service hours 2 ↵
07 Software ©			07 USER 5 ↵	07 Daylight saving ↵	04 Service hours 3 ↵
			08 USER 6 ↵	08 Date ↵	05 Service hours 4 ↵
			09 USER 7 ↵	09 Date format ↵	06 Service hours 5 ↵
			10 USER 8 ↵	10 LCD light level ↵	
			11 USER 9 ↵	11 Pressure unit ↵	

			12 USER 10 ↵	12 Temperature unit ↵	

P12 – Equip settings 3	P13 (not used)	P14 (not used)	P15 – Inhibits	P16 – Warning alarm	P17 (not used)
01 Parameter reset ↵			01 Operator ↵	01 Service hours 1 ↵	
02 Save as CONFIG ↵			02 Door open ↵	02 Service hours 2 ↵	
03 Use custom SENS ↵				03 Service hours 3 ↵	
04 L TOW PRESS ↵				04 Service hours 4 ↵	
05 R TOW PRESS ↵				05 Service hours 5 ↵	
06 Error log reset ↵				09 Door open	
07 Event log reset ↵				10 CONF alarm 1 ↵	
08 Total HRS STR ↵				11 CONF alarm 2 ↵	
09 Set active hours ↵				12 CONF alarm 3 ↵	
10 Set stopped hours ↵				13 PDP alarm ↵	
11 REGEN hours L ↵				14 REGEN alarm ↵	
12 REGEN hours R ↵				15 Tower DIFF alarm ↵	
13 Cycle type ↵					
14 REGEN type ↵					
15 PDP sensor ON ↵					
16 PDP sensor type ↵					
17 L tower SENS ↵					
18 R tower SENS ↵					
19 Cycle time ↵					
20 Overlap time ↵					
21 REGEN delay ↵					
22 REGEN time ↵					
23 REPRESS time					
24 Cooling time					
25 Max DDC time					
26 RO1 rest state					
27 RO2 rest state					
28 RO3 rest state					
29 RO4 rest state					
30 RO5 rest state					
31 RO6 rest state					
32 RO7 rest state					
33 RO8 rest state					

P18 – I/O CONFIG	P19 – Sensor CONFIG	P20 – Diagnostics
01 AO function ↵	01 L tower PRESS↵	01 Digital input 1 ↵
02 DI2 function ↵	02 R tower PRESS ↵	02 Digital input 2 ↵
03 DI2 OK: NO/NC ↵	03 Press dew point ↵	03 Digital input 3 ↵

04 DI3 function ↵	04 No. of sensors ↵	04 Digital input 4 ↵
05 DI3 OK: NO/NC		05 Digital input 5 ↵
06 DI4 function ↵		06 Digital input 6 ↵
07 DI4 OK: NO/NC ↵		07 Digital input 7 ↵
08 DI5 function ↵		08 Digital input 8 ↵
09 DI5 OK: NO/NC ↵		09 Analogue input 1 ↵
10 DI6 function ↵		10 Analogue input 2 ↵
11 DI6 OK: NO/NC ↵		11 Analogue input 3 ↵
12 DI7 function ↵		12 Analogue input 3 ↵
13 DI7 OK: NO/NC ↵		13 Analogue input 3 ↵
14 DI8 function ↵		14 Analogue input 4 ↵
15 DI8 OK: NO/NC ↵		15 Relay output 1 ↵
16 Relay 1 function ↵		16 Relay output 2 ↵
17 Relay 2 function ↵		17 Relay output 3 ↵
18 Relay 3 function ↵		18 Relay output 4 ↵
19 Relay 4 function ↵		19 Relay output 5 ↵
20 Relay 5 function ↵		20 Relay output 6 ↵
21 Relay 6 function ↵		21 Relay output 7 ↵
22 Relay 7 function ↵		22 Relay output 8 ↵
23 Relay 8 function ↵		23 Analogue output 1 ↵
		24 Manual mode ↵
		25 Key switch test ↵

4.6 Menu detail

Menu name	Menu code	Menu text	Additional information
Home	**The home page is the where the display will default after any period of non use. The home page provides routine status and condition information**		
	P00.01 ↵	Any active alarm	Where present, any one active alarm will be displayed. If more than one active alarm exists, active alarms will be displayed in chronological order. The active alarm with the highest chronological priority only will be displayed. Active alarms are displayed until action has been taken to remove the alarm condition. To view all active alarms press 'ENTER'. Use 'UP' and 'DOWN' keys to view all active alarms. Press 'ENTER' or 'ESCAPE' to return to P00.01
	P00.02	P00.02 user DEF	User defined home page P00.02 display menu item
	P00.03	P00.03 user DEF	User defined home page P00.03 display menu item
	P00.04	P00.04 user DEF	User defined home page P00.04 display menu item
	P00.05	L tower state	Left tower state, Indicates the active state of the left tower
	P00.06	R tower state	Right tower state, Indicates the active state of the right tower
	P00.07	Cycle countdown	Decrements to the next tower cycle

Home	P00.08	Half cycle time	Indicates 'half cycle' time
	P00.09	Overlap time	Indicates tower overlay time
	P00.10	REGEN delay	Indicates regeneration delay time
	P00.11	REGEN time	Indicates regeneration time
	P00.12	REPRESS time	Indicates re-pressurisation time
	P11.13	PRESS dew point	Indicates pressure dew point
	P00.14	L tower PRESS	Indicates left tower pressure
	P00.15	R tower PRESS	Indicates right tower pressure
	P00.16	Time	The current time (configured)
	P00.17	Date	The current date (configured)
	P00.18	Daylight saving	Active daylight saving offset
Service timers	**Service timers provide a method of managing device service condition and preventative maintenance programmes that begin from the device commissioning date (i.e. when the device was first put into service)**		
	P01.01	Total hours	Hour counter , Total hours indicates the number of hours since device commissioning date
	P01.02	Active hours	Hour counter, Active hours indicates the number of hours the device has been active
	P01.05	Stopped hours	Hour counter, Stopped hours indicates the number of hours the device has operated in any stopped state
	P01.06	Service hours 1	Hour counter, visible when configured and displays assignment (e.g. routine service)
	P01.07	Service hours 2	Hour counter, visible when configured and displays assignment (e.g. cabinet filter)
	P01.08	Service hours 3	Hour counter, visible when configured and displays assignment (e.g. air filter)
	P01.09	Service hours 4	Hour counter, visible when configured and displays assignment (e.g. oil filter)
	P01.10	Service hours 5	Hour counter, visible when configured and displays assignment (e.g. oil service)
Utilisation	**Utilisation provides a method of interrogating the devices routine operation. The equipment utilisation menu can provide useful information when diagnosing device efficient operation or reliability.**		
	P02.01	EQUIP status	Equipment status, annunciate as a numeric value. Refer to machine state diagram
	P02.02	Active hours	Hour counter, Active hours indicates the number of hours the device has been active
	P02.03	Stopped hours	Hour counter, Stopped hours indicates the number of hours the device has operated in any stopped state
	P02.04	REGEN hours L	Hour counter, Regenerating hours left indicates the total number of hours the left tower has been in the regenerative state
	P02.05	REGEN hours R	Hour counter, Regenerating hours right indicates the total number of hours the right tower has been in the regenerative state
Error log	**The error log provides a log of error conditions. Error conditions can be grouped into 4 categories; Warning conditions, Immediate stop (or shutdown) conditions, Start inhibit conditions and Run inhibit conditions. Each error condition consists of an error code and condition text. A list of error codes and condition text is contained in this publication. When an error condition occurs, the error is immediately logged and stored in the internal memory of the Airmaster™ Q1. In addition to the error condition being logged, additional key data is simultaneously logged and stored with the error condition. The error log stores the previous 50 errors in chronological order beginning with the most recent error condition at menu location P03.01. To view additional data relating to any error condition, navigate to the error condition in the error log and press 'ENTER'. Then use the 'UP' and 'DOWN' keys to view the data relating to the selected error condition.**		

Error log			
	P03.01 ~ 50	Error log 1 – 50	Error condition code and condition text
	P03.##.01	Index	Where ## = 01 to 50, Error index
	P03.##.02	Error code / Description	Where ## = 01 to 50, Error message code and short description of error
	P03.##.03	Time	Where ## = 01 to 50, Time when error occurred
	P03.##.04	Date	Where ## = 01 to 50, Date when error occurred
	P03.##.05	Equipment status	Where ## = 01 to 50, Device state when error occurred
Event log	**The event log provides a log of event conditions. Event conditions include START button pressed, STOP button pressed, Parameter adjustment or reset of parameter to default and USER ACCESS. When an event condition occurs, the event is immediately logged and stored in the internal memory of the device. In addition to the event being logged, additional data is simultaneously logged and stored with the event. The event log stores the previous 200 events in chronological order beginning with the most recent event at menu location P04.01. To view additional data relating to any event, navigate to the event in the event log and press 'ENTER'. Then use the 'UP' and 'DOWN' keys to view the data relating to the event.**		
	P04.01 ~ 200	Event log 1 – 200	Event
	P04.###.01	Index	Where ### = 001 – 200, Event index
	P04.###.02	Event description	Where ### = 001 – 200, Description of the event
	P04.###.03	Time	Where ### = 001 – 200, Time when event occurred
	P04.###.04	Date	Where ### = 001 – 200, Date when event occurred
Service provider, Airmaster™ Q1 controller and Equipment data	**Service provider, Airmaster™ Q1 controller and equipment data are menus that retain specific data regarding the device and the device service provider. Note that these menus cannot be configured from the Airmaster™ Q1 keypad. Menus can be configured via a browser (e.g. Internet Explorer) and accessing the menu parameters via an installed Airmaster™ Q1 ECO option card.**		
	P05.01	Company name	Service provider, company name
	P05.02	Company name	Service provider, company name
	P05.03	Street name	Service provider, street name
	P05.04	Street name	Service provider, street name
	P05.05	City	Service provider, city
	P05.06	State / Province	Service provider, state or province
	P05.07	ZIP / Postal	Service provider, ZIP or postal
	P05.08	Country	Service provider, Country
	P05.09	Telephone	Service provider, Telephone
	P05.10	Fax	Service provider, Fax
	P05.11	Email	Service provider, Email
	P05.12	Web	Service provider, Web
	P06.01	Controller ID	Airmaster™ Q1 part number
	P06.02	Serial number	Airmaster™ Q1 serial number
	P06.03	Software ID	Airmaster™ Q1 software ID
	P06.04	Software version	Airmaster™ Q1 software version
	P06.05	Software time	Time, software version installed

	P06.06	Software date	Date, software version installed
	P06.07	Software ©	Software copyright
	P07.01	MANUF name	Name of the original equipment manufacturer
	P07.02	EQUIP model	Equipment (Compressor package) model
	P07.03	MDL SER number	Model serial number
	P07.06	MDL rated PRESS	Model rated pressure
	P07.07	MDL rated output	Model rated output
Message Codes	**Message codes are used to annunciate equipment alarm conditions in message code form. Message codes are used to allow information to pass more freely where language restrictions may exist. Message codes are supported by message text and condition symbols left and right of text. A flashing symbol to the right of the message code indicates that a software hard coded delay offset exists (i.e. the offset timer must decrement before the error annunciates).** **Alarm condition key to prefix letter: A = Warning, E = Immediate stop, R = 'run' inhibit, S = 'start' inhibit**		
	P08.01 ~ 41	Code / Text	Message code and message text
	P08.01	A:5000	System error
	P08.02	E:0010	Emergency stop. Digital input not OK, emergency stop button pressed!
	P08.03	E:0821	Short circuit. Wiring error. Consult manual.
	P08.04	E:0901	User trip 1. User configurable immediate stop 1
	P08.05	E:0902	User trip 2. User configurable immediate stop 2
	P08.06	E:0903	User trip 3. User configurable immediate stop 3
	P08.07	E:3230	Door open. Digital input not OK.
	P08.08	A:0030	Door open. Digital input not OK
	P08.09	A:0901	CONF alarm 1. Configurable alarm 1. Digital input not OK
	P08.10	A:0902	CONF alarm 2. Configurable alarm 2. Digital input not OK
	P08.11	A:0903	CONF alarm 3. Configurable alarm 3. Digital input not OK
	P08.12	A:2816	Power failure
	P08.13	A:2836	RTC error. A real time clock error
	P08.14	S:3500	Start inhibit
	P08.15	S:3501	Start inhibit
	P08.16	R:3123	Package discharge temperature low
	P08.17	R:3137	Internal pressure high
	P08.18	E:4804	Service hours. Consult manual.
	P08.19	E:4805	Cabinet filters. Digital input not OK.
	P08.20	E:4806	Air filter service. Service timer elapsed
	P08.21	E:4807	Oil filter service. Service timer elapsed
	P08.22	E:4808	Separator service. Service timer elapsed
	P08.23	E:4809	Grease service. Service due

Message Codes	P08.24	E:4810	Valves service. Service due
	P08.25	E:4811	Belt drive service. Service due
	P08.26	E:4812	Electrical system service. Service due
	P08.27	E:4813	Motor bearing service. Service due
	P08.28	E:4814	Compressor bearing service. Service due
	P08.29	E:4815	Weekly service. Service due
	P08.30	E:4816	Annual service. Service due
	P08.31	E:4817	Bi-annual service. Service due
	P08.32	E:4818	Refrigerant service. Service due
	P08.33	A:2831	Airbus™ RS485 HW
	P08.34	A:2832	Airbus™ RS485 HW
	P08.35	A2010	Pressure, left hand tower
	P08.36	A2020	Pressure, right hand tower
	P08.37	A2050	Differential pressure high
	P08.38	A2115	Pressure, left sensor
	P08.39	A2125	Pressure, right sensor
	P08.40	A2135	Pressure dew point sensor
	P08.41	A2139	Dew point high
Access	**The Access menu is used to both manage access and administer access rights to all Airmaster™ Q1 users. Begin by choosing an administrator (the ADMIN user). The ADMIN user must read and understand '4.3 User Access Controls' and be acquainted with the 'DEFAULT USER', 'ADMIN user'; all other USER PROFILE options and also have the ADMIN user default PIN code before attempting to access the Airmaster™ Q1's PIN code protected menus.**		
	P09	Active: ########	The 'Active: User' is displayed above P09.01 when the operator navigates to P09
	P09.01 ↵	Default user	Use to return User Access to 'Default user'. Press 'ENTER'. User Account will return to 'Default' user and the operator is returned to Menu P09.01
	P09.02 ↵	ADMIN user	Use to enter the 'ADMIN' user account. Press 'ENTER' to access the 'ADMIN' User PIN code sub menu
	P09.02.01	ADMIN user	No edit
	P09.02.02 ↵	User PIN code	The 'ADMIN' User PIN code is a four digit numeric number. Press 'ENTER' to access the 'ADMIN' User PIN code sub menu. The current 'ADMIN' User PIN code is displayed and first digit is selected. Use the 'UP' and 'DOWN' keys to configure and then press 'ENTER'. The configured value is stored and the second digit is selected. Complete the process for digits two, three and four. Use the 'ESCAPE' key to go back at any time. When the operator presses 'ENTER' after configuring the fourth digit, the configured value is committed permanently to memory and the operator is returned to menu P09.02.02
	P09.02.03 ↵	Language	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure from language list options. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.02.03
	P09.02.04 ↵	Time format	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 24:00 (24 hour) or 12:00 a/p (12 hour AM / PM). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.02.04.

Access	P09.02.05 ↵	Date format	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure date format display for 'DD/MM/YYYY', 'MM/DD/YYYY' or YYYY/MM/DD'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.02.05. Note: DD = Day. For example 21 = the 21st day of the month MM = Month. For example 12 = the 12th Month of the Year or 'December' YYYY = Year. For example 2011
	P09.02.06 ↵	Pressure unit	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'BAR', 'PSI', 'kPA' or 'MPA'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.02.06.
	P09.02.07 ↵	Temperature unit	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for °C or °F. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.02.07.
	P09.03 ↵	User 1	Use to enter the User 1 user account. Press 'ENTER' to access the User 1 sub menu.
	P09.03.01 ↵	Edit user name	The User name is an eight digit alpha number value. Press 'ENTER' to access the Edit user name sub menu. The current User name is displayed and first digit is selected. Use the 'UP' and 'DOWN' keys to configure and then press 'ENTER'. The configured value is stored and the second digit is selected. Complete the process for digits two, three, four, five, six, seven and eight. Use the 'ESCAPE' key to go back at any time. When the operator presses 'ENTER' after configuring the eighth digit, the configured value is committed to memory and the operator is returned to menu P09.03.01
	P09.03.02 ↵	User PIN code	The User PIN code is a four digit numeric number. Press 'ENTER' to access the User PIN code sub menu. The current User PIN code is displayed and first digit is selected. Use the 'UP' and 'DOWN' keys to configure and then press 'ENTER'. The configured value is stored and the second digit is selected. Complete the process for digits two, three and four. Use the 'ESCAPE' key to go back at any time. When the operator presses 'ENTER' after configuring the forth digit, the configured value is committed to memory and the operator is returned to menu P09.03.02
	P09.03.03 ↵	Language	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure from language list options. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.03.03.
	P09.03.04 ↵	Time format	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 24:00 (24 hour) or 12:00 a/p (12 hour AM / PM). Press ENTER. The configured value has been committed to memory and the operator returned to menu P09.03.04.
	P09.03.05 ↵	Date format	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure date format display for 'DD/MM/YYYY', 'MM/DD/YYYY' or YYYY/MM/DD'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.03.05. Note: DD = Day. For example 21 = the 21st day of the month MM = Month. For example 12 = the 12th Month of the Year or 'December' YYYY = Year. For example 2011
	P09.03.06 ↵	Pressure unit	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'BAR', 'PSI', 'kPA' or 'MPA'. Press 'ENTER'.

			The configured value has been committed to memory and the operator returned to menu P09.03.06.
	P09.03.07 ↵	Temperature unit	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for °C or °F. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P09.03.07.
	P09.03.08 ↵	P00 Home	Locked, No edit 'Read access'
	P09.03.09 ↵	P01 Service timers	Locked, No edit 'Read access'
	P09.03.10 ↵	P02 Utilisation	Locked, No edit 'Read access'
	P09.03.11 ↵	P03 Error log	Locked, No edit 'Read access'
	P09.03.12 ↵	P04 Event log	Locked, No edit 'Read access'
	P09.03.13 ↵	P05 Service provider	Locked, No edit 'Read access'
	P09.03.14 ↵	P06 Controller data	Locked, No edit 'Read access'
	P09.03.15 ↵	P07 Equipment data	Locked, No edit 'Read access'
	P09.03.16 ↵	P08 Message codes	Locked, No edit 'Read access'
	P09.03.17 ↵	P09 Access	Locked, No edit 'Edit access'
	P09.03.18 ↵	P10 Equip settings 1	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.18.
	P09.03.19 ↵	P11 EQUIP settings 2	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.19
Access	P09.03.20 ↵	P12 EQUIP settings 3	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.20
	P09.03.21 ↵	P13 VSD settings	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.21
	P09.03.22 ↵	P14 Motor protection	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.22
	P09.03.23 ↵	P15 Inhibits	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.23
	P09.03.24 ↵	P16 Warning alarm	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.24
	P09.03.25 ↵	P17 IMM stop alarm	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.25
	P09.03.26 ↵	P18 I/O CONFIG	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.26
	P09.03.27 ↵	P19 Sensor CONFIG	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the

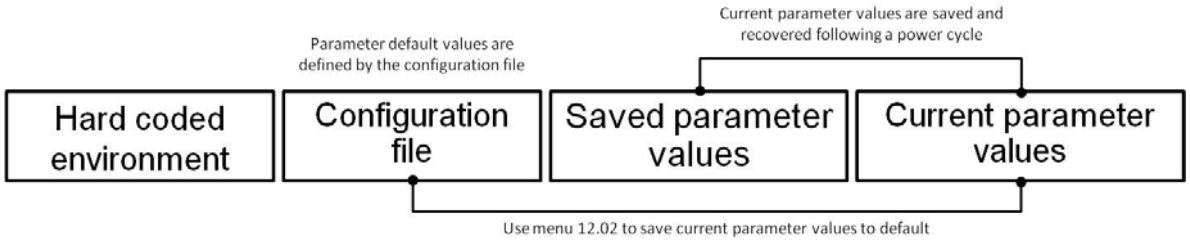
Access			operator returned to menu P09.03.27
	P09.03.28 ↵	P20 Diagnostics	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.28
	P09.03.29 ↵	P21 Run schedule	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.29
	P09.03.30 ↵	P80 ISC Main menu	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.30
	P09.03.31 ↵	P81 ISC Settings	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.31
	P09.03.32 ↵	P82 ISC Priority	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Not available', 'Read access' or 'Edit access' using the 'Rights for' sub menu. Press 'ENTER' The configured value has been committed to memory and the operator returned to menu P09.03.32
	P09.04 ↵	User 2	Use to enter the User 2 user account. Press 'ENTER' to access the User 2 sub menu. Follow procedures described for User 1.
	P09.05 ↵	User 3	Use to enter the User 3 user account. Press 'ENTER' to access the User 3 sub menu. Follow procedures described for User 1.
	P09.06 ↵	User 4	Use to enter the User 4 user account. Press 'ENTER' to access the User 4 sub menu. Follow procedures described for User 1.
	P09.07 ↵	User 5	Use to enter the User 5 user account. Press 'ENTER' to access the User 5 sub menu. Follow procedures described for User 1.
	P09.08 ↵	User 6	Use to enter the User 6 user account. Press 'ENTER' to access the User 6 sub menu. Follow procedures described for User 1.
	P09.09 ↵	User 7	Use to enter the User 7 user account. Press 'ENTER' to access the User 7 sub menu. Follow procedures described for User 1.
	P09.10 ↵	User 8	Use to enter the User 8 user account. Press 'ENTER' to access the User 8 sub menu. Follow procedures described for User 1.
	P09.11 ↵	User 9	Use to enter the User 9 user account. Press 'ENTER' to access the User 9 sub menu. Follow procedures described for User 1.
	P09.12 ↵	User 10	Use to enter the User 10 user account. Press 'ENTER' to access the User 10 sub menu. Follow procedures described for User 1.
Equipment settings 1	**Equipment settings have been arranged over a series of Equipment setting menus. Menu items are grouped together allowing Administrators to provide menu access to equipment setting menus as appropriate. Equipment settings 1 allow users with access to configure routine operating parameters.**		
	P10.01 ↵	RS485: 1 CONFIG	Press 'ENTER' to enter the RS485: 1configuration sub menu
	P10.01.01 ↵	RS485: 1 CONFIG	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to select between Airbus485™, MODBUS Master or MODBUS slave. Press 'ENTER'. The configured value has been committed to memory and the operator returned to

			menu P10.01.01
	P10.01.02 ↵	Airbus485™ address	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 1 and 200. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.01.02
	P10.01.03 ↵	MODBUS address	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 1 and 200. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.01.03
	P10.01.04 ↵	MODBUS baud rate	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to select between 300, 600, 1200, 1800, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400, 460800 and 931600. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.01.04
	P10.01.05 ↵	MODBUS parity	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to select for 'no parity', 'odd parity', 'even parity', 'zero parity' or 'one parity'. Press ENTER. The configured value has been committed to memory and the operator returned to menu P10.01.05
	P10.01.06 ↵	MODBUS data bits	Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 5 and 8. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.01.06
	P10.01.07 ↵	MODBUS end bits	Press 'ENTER'. Use the 'UP and 'DOWN' keys to configure between 1 and 3. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.01.07
	P10.02 ↵	RS485: 2 CONFIG	Press 'ENTER' to enter the RS485: 2 configuration sub menu
	P10.02.01 ↵	RS485: 2 CONFIG	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to select between Airbus485™, MODBUS Master or MODBUS slave. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.02.01
Equipment settings 1	P10.02.02 ↵	Airbus485™ address	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 1 and 200. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.02.02
	P10.02.03 ↵	MODBUS address	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 1 and 200. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.2.03
	P10.2.04 ↵	MODBUS baud rate	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to select between 300, 600, 1200, 1800, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400, 460800 and 931600. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.02.04
	P10.2.05 ↵	MODBUS parity	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to select for 'no parity', 'odd parity', 'even parity', 'zero parity' or 'one parity'. Press ENTER. The configured value has been committed to memory and the operator returned to menu P10.02.05
	P10.2.06 ↵	MODBUS data bits	Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 5 and 8. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.02.06
	P10.2.07 ↵	MODBUS end bits	Press 'ENTER'. Use the 'UP and 'DOWN' keys to configure between 1 and 3. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.2.07
	P10.03 ↵	Start source	Start source is associated with pressing the keypad 'START' button. In addition to the keypad 'START' button, Airmaster™ Q1 features configurable alternatives for start source. See notes below! Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Keypad', 'Equipment DI' or 'Communications'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.03 Notes: **Only the selected start source method is active. When selected, all alternative start source methods are inactive!**

Equipment settings 1			Any 'start' command merely invokes the device to move to a started state. A device in a started state may not necessarily move to any other state. Inhibit functions and timers will continue to influence operating characteristics following a 'START' command. When configured for 'keypad' the keypad 'START' button functions as the start source. The keypad 'STOP' button functions as the stop source. When configured for 'Equipment DI', digital input 'normal' state (i.e. normally open or normally closed) functions as the start source. The digital input alternative state functions as the stop source. The digital inputs normal state is configurable (i.e. normally open or normally closed). Carefully consider the characteristics of the digital input circuit during all operating conditions to determine the appropriate 'normal' state. When configured for 'Equipment DI', an available digital input must be appropriately configured for 'Dryer start / stop'. When configured for 'Communications' an appropriate RS485 option card must be installed and configured for use
	P10.04 ↵	Language	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure from language options listed. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.04
	P10.05 ↵	Time	Press 'ENTER'. Use 'UP' and 'DOWN' key to set Time. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.05
	P10.06 ↵	Time format	Press 'ENTER'. Configure for 24:00 (24 hour) or 12:00 a/p (12 hour AM / PM). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.06
	P10.07 ↵	Daylight saving	Press 'ENTER'. Configure '+0h' or '+1h'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.07
	P10.08 ↵	Date	Press 'ENTER' to access the Date edit sub menu
	P10.08.01 ↵	Edit year	Use 'UP' and 'DOWN' key to set the Year
	P10.08.02 ↵	Edit month	Use 'UP' and 'DOWN' key to set the Month
	P10.08.03 ↵	Edit day	Use 'UP' and 'DOWN' key to set the Day
	P10.08.04 ↵	Save changes	Press 'ENTER' to commit the configured values on P10.08.01 – P10.08.03 to memory. Pressing 'ENTER' commits the configured values to memory are returns the operator to P10.08. Note: You must save the newly configured values in P10.08.01 – P10.08.03 using P10.08.04 before leaving the sub menu!
	P10.09 ↵	Date format	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure date format display for 'DD/MM/YYYY', 'MM/DD/YYYY' or YYYY/MM/DD'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.09. Note:

Equipment settings 1			DD = Day. For example 21 = the 21st day of the month MM = Month. For example 12 = the 12th Month of the Year or 'December' YYYY = Year. For example 2011
	P10.10 ↵	LCD Light level	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 100% and 0%. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.10.
	P10.11 ↵	Pressure unit	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'BAR', 'PSI', 'kPA' or 'MPA'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.11.
	P10.12 ↵	Temperature unit	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for °C or °F. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.12.
Equipment settings 2	**Equipment settings have been arranged over a series of Equipment setting menus. Menu items are grouped together allowing Administrators to provide menu access to equipment settings menus as appropriate. Equipment settings 2 allow users with access to important operating parameters.**		
	P11.01 ↵	AUTO restart INH	Automatic restart inhibit. Use to inhibit automatic restarting of the device or to return the device to the started state following a power source failure. Once the source of power has been restored, the device will decrement the automatic restart inhibit time period and then return to the started state. Note: The automatic restart INH function can only restart a device that was in the started state prior to the power source failure. A device configured for auto restarting that was not in the started state prior to the power source failure will not automatically restart! Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. no automatic restart) and 120 Seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.01
	P11.02 ↵	Dew point target	Dew point target. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.02
	P11.03 ↵	CNDS drain open	The condensate drain is the component employed by the device to collect and eject condensed water from the device. These components are typically energised and de-energised using a relay output. Before proceeding to configure drain open and drain interval times, be sure to assign a relay output to 'Drain' Condensate drain load open time. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF, 1 and 30 seconds. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.03 Condensate drain interval time. The interval time between condensate drain open events. Press 'ENTER' Use the 'UP' and 'DOWN' keys to configure between 60 and 3600 seconds. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.04 **Note:** **Condensate drain open and condensate drain interval time does not index when the device is in any**
	P11.04 ↵	CNDS drain INT	

			stopped states
Equipment settings 2	P11.06 ↵	Service hours 1	Configure hour timer for a variety of service functions. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for OFF, Desiccant SERV, Dryer service, Dust filter SERV, ELEC SYS SERV, Filter SERV, Hygro SERV, Pre filter SERV, PV Inspect, Routine SERV, Silencer SERV, Valve service. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.05. **Note: Set hours value at P16.01**
	P11.07 ↵	Service hours 2	Configure hour timer for a variety of service functions. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for OFF, Air filter SERV, Belt drive SERV, Cabinet filters, COMP BRG SERV, Cooler SERV, Dryer SERV, ELEC SYS SERV, Grease service, MTR bearing SERV, Oil filter SERV, Oil service, Routine SERV, Separator SERV, Valves service, PV Inspect, Air End SERV. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.06. **Note: Set hours value at P16.02**
	P11.08 ↵	Service hours 3	Configure hour timer for a variety of service functions. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for OFF, Air filter SERV, Belt drive SERV, Cabinet filters, COMP BRG SERV, Cooler SERV, Dryer SERV, ELEC SYS SERV, Grease service, MTR bearing SERV, Oil filter SERV, Oil service, Routine SERV, Separator SERV, Valves service, PV Inspect, Air End SERV. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.07. **Note: Set hours value at P16.03**
	P11.09 ↵	Service hours 4	Configure hour timer for a variety of service functions. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for OFF, Air filter SERV, Belt drive SERV, Cabinet filters, COMP BRG SERV, Cooler SERV, Dryer SERV, ELEC SYS SERV, Grease service, MTR bearing SERV, Oil filter SERV, Oil service, Routine SERV, Separator SERV, Valves service, PV Inspect, Air End SERV. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.08. **Note: Set hours value at P16.04**
	P11.10 ↵	Service hours 5	Configure hour timer for a variety of service functions. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for OFF, Air filter SERV, Belt drive SERV, Cabinet filters, COMP BRG SERV, Cooler SERV, Dryer SERV, ELEC SYS SERV, Grease service, MTR bearing SERV, Oil filter SERV, Oil service, Routine SERV, Separator SERV, Valves service, PV Inspect, Air End SERV. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.09. **Note: Set hours value at P16.05**
Equipment settings 3	**Equipment settings have been arranged over a series of Equipment setting menus. Menu items are grouped together allowing Administrators to provide menu access to equipment settings menus as appropriate. Equipment settings 3 allow users with access to make adjustment to critical operating parameters.**		
	P12.01 ↵	Parameter reset	Parameter default values are defined by the application software configuration file. The application software

Equipment settings 3			configuration file is part of the Airmaster™ Q1 software. Press ‘ENTER’. Use the ‘UP’ key to select ‘YES’. Press ‘ENTER’. The Airmaster™ Q1’s parameter default values have been reset. Note: The Airmaster™ Q1 will power cycle following a parameter reset The Event Log will indicate that a parameter reset to default event was carried out
	P12.02 ↵	Save as defaults	Creates a new default configuration file, replacing the existing configuration file. Press ‘ENTER’. Use the ‘UP’ key to select ‘YES’. Press ‘ENTER’. The current parameter values have been saved as the configuration file. Notes: Understand how the Airmaster™ Q1 manages parameter data…  Each Airmaster™ Q1 controller is delivered complete with a hard coded environment and configuration file. Parameter default values are defined by the application software configuration file. Current parameter values are parameter values configured during normal operation. Current parameter values can differ from the original configuration file. Saved parameter values are the then ‘Current parameter values’ and saved by the Airmaster™ Q1 following power down. The current parameter values are instantly recovered and re-instated by the Airmaster™ Q1 following power up. Following a parameter reset the current parameter values are replaced by the original or previously saved configuration file.
	P12.03 ↵	Use custom sensor	Use custom pressure sensor range. The default pressure sensor range is 0 – 16 BAR (or other selectable unit of measure). To use an alternative pressure sensor range press ‘ENTER’. Select ON. Press ‘ENTER’. The configured value has been committed to memory and the operator returned to Menu P12.03.
	P12.04 ↵	L TOW PRESS	Set left tower pressure. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing

Equipment settings 3			‘ENTER’ saves the configured value and returns the operator to P12.04
	P12.05 ↵	R TOW PRESS	Set right tower pressure. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.04
	P12.06 ↵	Error log reset	Use to purge Error log from memory. Press ‘ENTER’. Use the ‘UP’ key to select ‘YES’. PRESS ‘ENTER’. The Error log has been deleted from memory and the operator has been returned to P12.06. Note: ‘NO’ will remain the default state following the log reset!
	P12.07 ↵	Event log reset	Use to purge Event log from memory. Press ‘ENTER’. Use the ‘UP’ key to select ‘YES’. PRESS ‘ENTER’. The Event log has been deleted from memory and the operator has been returned to P12.07. Note: ‘NO’ will remain the default state following the log reset!
	P12.08 ↵	Total HRS STR	Total hours start date. Total hours start date is intended to synchronise with the device commissioning date and thus provide a controller accessible indication of device ‘total in service’ hours. Total hours = Number of chronological hours elapsed since 00:00 on date configured Note: The date configured should correspond with the device commissioning date (i.e. the date the device was put into first service)
	P12.08.01	Year	Press ‘ENTER’. Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.08.01
	P12.08.02	Month	Press ‘ENTER’. Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.08.02
	P12.08.03	Day	Press ‘ENTER’. Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.08.03
	P12.08.04	Date	Press ‘ENTER’. The configured values in P12.08.01 ~ P12.08.03 have been committed to memory and the operator returned to Menu P12.08 Note: You must save the newly configured values in P12.08.01 – P12.08.03 using P12.08.04 before leaving the sub menu!
	P12.09 ↵	Active hours	Set active hours provide a controller accessible indication of device active hours. The set active hour’s feature is typically only used to purge pre commissioning active hours from memory or to synchronise with other hour counters. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.09
	P12.10 ↵	Stopped hours	Set stopped hours provides a controller accessible indication of device stopped hours. The set stopped hours feature is typically only used to purge pre commissioning stopped hours from memory or to synchronise with other hour counters. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured

Equipment settings 3			value and returns the operator to P12.10
	P12.11 ↵	REGEN hours L	Set regenerating hours left provides a controller accessible indication of the total left tower regenerating hours. The feature is typically used to purge pre commissioning hour data from memory or to synchronise with other hour counters. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.11
	P12.12 ↵	REGEN hours R	Set regenerating hours right provides a controller accessible indication of the total right tower regenerating hours. The feature is typically used to purge pre commissioning hour data from memory or to synchronise with other hour counters. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.12
	P12.13 ↵	Dryer cycle type	Use to configure between 'Fixed cycle' or 'Dew point dependent switching'. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.13
	P12.14 ↵	REGEN type	Use to configure between 'Heatless', 'Heated' or 'Blower' Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.14
	P12.15 ↵	PDP sensor ON	Use to configure between 'YES' or 'NO' Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.15
	P12.16 ↵	PDP sensor type	Use to configure between ''4 -20mA', '4 – 20mA earth REF' or '0 – 10V' Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.15
	P12.17 ↵	L tower SENS	Use to configure between NO (or not present) and YES (present) Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.17
	P12.18 ↵	R tower SENS	Use to configure between NO (or not present) and YES (present) Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.18
	P12.19 ↵	Cycle time	Cycle time. Use to configure accordingly. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.19
	P12.20 ↵	Overlap time	Overlap time. Use to configure accordingly.

Equipment settings 3			Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.20
	P12.21 ↵	REGEN delay	Regeneration delay time. Use to configure accordingly. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.21
	P12.22 ↵	REGEN time	Regeneration time. Use to configure accordingly. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.22
	P12.23 ↵	REPRESS time	Re-pressurisation time. Use to configure accordingly. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.23
	P12.24 ↵	Cooling time	Cooling time. Use to configure accordingly. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.24
	P12.25 ↵	Max DDC time	Maximum dew point dependent cycle time. Use to configure accordingly. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.25
	P12.26 ↵	RO1 rest state	Relay output 1 rest state. Use to configure the relay output ‘rest’ state. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.26
	P12.27 ↵	RO2 rest state	Relay output 2 rest state. Use to configure the relay output ‘rest’ state. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.27
	P12.28 ↵	RO3 rest state	Relay output 3 rest state. Use to configure the relay output ‘rest’ state. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.28
	P12.29 ↵	RO4 rest state	Relay output 4 rest state. Use to configure the relay output ‘rest’ state. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.29
	P12.30 ↵	RO5 rest state	Relay output 5 rest state. Use to configure the relay output ‘rest’ state. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure as required. Pressing ‘ENTER’ saves the configured

Equipment settings 3			value and returns the operator to P12.30
	P12.31 ↵	RO6 rest state	Relay output 6 rest state. Use to configure the relay output 'rest' state. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.31
	P12.32 ↵	RO7 rest state	Relay output 7 rest state. Use to configure the relay output 'rest' state. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.32
	P12.33 ↵	RO8 rest state	Relay output 8 rest state. Use to configure the relay output 'rest' state. Press 'ENTER' Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.33
Inhibits	**Airmaster™ Q1 features a variety of menu configurable inhibits that restrict running of the device.**		
	P15.01 ↵	Operator	The operator inhibit is intended for operators to intentionally inhibit the device from operation Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P15.01.
	P15.02 ↵	Door open	Some devices require the device enclosure door(s) to be closed. To prevent running when the device enclosure door(s) are open the Door open inhibit can be used to prevent the device from starting. The Door open inhibit uses an assigned digital input as a reference condition. If a digital input has been assigned to 'door open' (see digital input assignment) then the door open inhibit can be used to prevent the device from operating if the digital input is in an alarm state during a start event. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P15.02. Note: A digital input must be configured to 'door open' for the door open inhibit feature to function
Warnings / IMM stop alarms	**Airmaster™ Q1 features a variety of menu configurable WARNING ALARM and IMMEDIATE STOP ALARM conditions.**		
	P16.01 ↵	Service hours 1	Service hours 1 warning alarm. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 0 and 10,000 hours. Step = 100 hours. Default = 2,000. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.01. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.02 ↵	Service hours 2	Service hours 2 warning alarm. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 0 and 10,000 hours. Step = 100 hours. Default = 2,000. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.02.

Warnings / IMM stop alarms			Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.03 ↵	Service hours 3	Service hours 3 warning alarm. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 0 and 10,000 hours. Step = 100 hours. Default = 2,000. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.03. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.04 ↵	Service hours 4	Service hours 4 warning alarm. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 0 and 10,000 hours. Step = 100 hours. Default = 2,000. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.04. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.05 ↵	Service hours 5	Service hours 5 warning alarm. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 0 and 10,000 hours. Step = 100 hours. Default = 2,000. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.05. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.09 ↵	Door open	Device enclosure door open warning alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.19 Note: Requires appropriate digital input assignment. See Menu P18
	P16.10 ↵	Conf alarm 1	Configurable warning alarm 1. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.33
	P16.11 ↵	Conf alarm 2	Configurable warning alarm 2. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.34
	P16.12 ↵	Conf alarm 3	Configurable warning alarm 3. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.34
	P16.13 ↵	PDP alarm	Pressure dew point alarm. Press 'ENTER' to access sub menu P16.13.##
	P16.13.01 ↵	PDP alarm	Pressure dew point alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.13.01
	P16.13.02 ↵	PDP alarm delay	Pressure dew point alarm delay time. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 0 and 255. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.13.02
	P16.14 ↵	REGEN alarm	Regeneration alarm. Press 'ENTER' to access sub menu P16.14.##
	P16.14.01 ↵	REGEN alarm	Regeneration alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.14.01

Warnings / IMM stop alarms	P16.14.02 ↵	Alarm delay	Regeneration alarm delay time. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 0 and 255. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.14.02
	P16.14.03 ↵	REGEN pressure	Regeneration pressure. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.14.03
	P16.15 ↵	Tower DIFF alarm	Tower differential alarm. Press 'ENTER' to access sub menu P16.15.##
	P16.15.01 ↵	Tower DIFF alarm	Tower differential alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.15.01 Note: Requires appropriate digital input assignment. See Menu P18
	P16.15.02 ↵	DIFF pressure	Tower differential pressure. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.15.02
I/O (Input / Output) CONFIG	**Airmaster™ Q1 features a variety if input / output configuration options.** **Note: When configuring I/O assignments in menu P18 you must also configure the associated menu item(s) in the respective menus. For example; if you want to configure digital input 2 of menu item P18.02 for 'Oil filter DP alarm monitoring', you must also enable the Oil filter DP alarm function by navigating to the Oil filter DP alarm menu item at P16.19 and select ON. In summary, remember to enable a function you require and assign it to an input or an output!** **Airmaster™ Q1 features 1 menu configurable Analogue output. Selectable options are tabled below** **Note: some analogue output options require the addition of an external physical relay**		
	P18.01 ↵	AO function	Analogue output function. Press ENTER. Select from function list. Press ENTER. The configured value has been committed to memory and the operator returned to menu P18.01.
		OFF	Feature disable
		EQUIP OUT PRESS	Repeat Equipment output pressure value via 4-20mA output signal
		EQUIP INT PRESS	Repeat Equipment internal pressure value via 4-20mA output signal
		COMP OUT TEMP	Repeat Compressor output temperature value via 4-20mA output signal
		Main MTR current	Repeat Main motor current value via 4-20mA output signal
		Fan MTR current	Repeat Fan motor current value via 4-20mA output signal
		PRESS dew point	Repeat Pressure dew point value via 4-20mA analogue output
	Airmaster™ Q1 features 7 menu configurable Digital inputs. Each menu configurable digital input parameter (e.g. P18.02) is followed by a configurable digital input state selection parameter (e.g. P18.03). Selectable options are tabled below. Each warning or stop condition uses condition codes as well as text to display condition information on the Airmaster™ Q1 graphical user interface.		
	P18.02 ~ 14 ↵	OFF	Feature disable

I/O (Input / Output) CONFIG	P18.02 ~ 14 ↵ (Continued)	Doors open alarm	Select for doors open alarm
		REM. Start/stop	Select for remote start stop
		Conf ALM 1	Select
		Conf IMM stop 1	Select
		Conf ALM 2	Select
		Conf IMM stop 2	Select
		Conf ALM 3	Select
		Conf IMM stop 3	Select
		Pressure left	Select for left tower pressure alarm
		Pressure right	Select for right tower pressure alarm
		Pressure DIFF	Select for differential pressure alarm
		Thermostat Left	Select for left tower thermostat alarm
		Thermostat Right	Select for right tower thermostat alarm
		DEWP override	Select for dew point override alarm
	P18.03 ~ 15 ↵	NO / NC	Configure input for normally open (NO) or normally closed (NC) state Note: 'Normally' = healthy or OK
	Airmaster™ Q1 features 8 relay outputs. Menu configurable options are as follows:		
	P18.16 ~ P18.23 ↵	OFF	Feature enable / disable
		Alarm	Energised for any active Alarm fault (not including run Inhibit)
		Immediate stop	Energised for any active Shutdown fault (not including Start/Run Inhibit)
		Group fault	Energised for any active Alarm, Star/Run Inhibit or Shutdown fault
		Alarm & service	Energised for any Alarm fault or Service Due alarm (not including run Inhibit)
		Service	Energised for Service due alarm conditions
		Running	Energised in all 'Running' state conditions
		Started	Energised in all 'Started' state conditions
		RC Start / Stop	Energised when remote start / stop is enabled
		Alarm NO	De-energised for any active Alarm fault (not including run Inhibit)
		IMM stop NO	De-energised for any active Shutdown fault (not including Start/Run Inhibit)
		Group fault NO	De-energised for any active Alarm, Star/Run Inhibit or Shutdown fault
		Alarm & Service NO	De-energised for any Alarm fault or Service Due alarm (not including Start/Run Inhibit)
		L tower VLV NO	Left tower valve, normally open
		L tower VLV NC	Left tower valve, normally closed
		R tower VLV NO	Right tower valve, normally open
		R tower VLV NC	Right tower valve, normally closed
		Inlet valve NO	Common inlet valve, normally open
		Inlet valve NC	Common inlet valve, normally closed
		L tower EXH NO	Left tower exhaust valve, normally open
		L tower EXH NC	Left tower exhaust valve, normally closed

I/O (Input / Output) CONFIG	P18.16 ~ P18.23 ↵ (Continued)	R tower EXH NO	Right tower exhaust valve, normally open
		R tower EXH NC	Right tower exhaust valve, normally closed
		EXHST VLV NO	Common exhaust valve, normally open
		EXHST VLV NC	Common exhaust valve, normally closed
		Ltower HEAT NO	Left tower heater, normally open
		Ltower HEAT NC	Left tower heater, normally closed
		Rtower HEAT NO	Right tower heater, normally open
		Rtower HEAT NC	Right tower heater, normally closed
		Heater NO	Common heater, normally open
		Heater NC	Common heater, normally closed
		Heater	Energises if detected temperature falls below set low temperature run inhibit + 2°C. De-energises if detected temperature increases above set low temp run inhibit + 3°C. Can be used to energise anti-condensate heater contactor or as low temperature warning auxiliary output.
Sensor CONFIG	**Sensor configuration.** **Caution: Incorrectly configured sensor calibration can influence device performance and device related safety features and function.**		
	P19.01 ↵	L tower PRESS	Left tower pressure. Press 'ENTER' to access the left tower pressure sub menu.
	P19.01.01 ↵	Value offset	Use to calibrate the sensor offset. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to adjust within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.01.01 Note: To calibrate an offset, expose the sensor to atmosphere and adjust the offset value until Menu P19.01.03 displays 0.0bar. If, for example, the sensor has a –1.0 (minus one) to 15.0bar range; set to –1.0bar.
	P19.01.02 ↵	SENS range HI	Use to calibrate the sensor range maximum. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to adjust within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.01.02 Note: To calibrate the 'range maximum', apply an accurately known pressure to the sensor and adjust the range value until the value displayed in Menu P19.01.03 matches the applied pressure. The range value can be calibrated with static or changing applied pressure. If, for example, the sensor has a –1.0 (minus one) to 15.0bar range; set initially to 15.0bar then adjust as necessary.
	P19.01.03	L tower PRESS	Equipment outlet pressure. No edit. Equipment outlet pressure measured value display menu
	P19.02 ↵	R tower PRESS	Right tower pressure. Press ENTER to access the right tower pressure sub menu.
	P19.02.01 ↵	Value offset	Use to calibrate the sensor offset. Press 'ENTER'. Adjust within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.02.01.

Sensor CONFIG			Note: To calibrate an offset, expose the sensor to atmosphere and adjust the offset value until Menu P19.02.03 displays 0.0bar. If, for example, the sensor has a –1.0(minus one) to 15.0bar range; set to –1.0bar.
	P19.02.02 ↵	SENS range HI	Use to calibrate the sensor range maximum. Adjust within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.01.02. Note: To calibrate the 'range maximum', apply an accurately known pressure to the sensor and adjust the range value until the value displayed in Menu P19.01.03 matches the applied pressure. The range value can be calibrated with static or changing applied pressure. If, for example, the sensor has a –1.0 (minus one) to 15.0bar range; set initially to 15.0bar then adjust as necessary.
	P19.02.03	R tower PRESS	Right tower pressure. No edit. Right tower pressure measured value display menu
	P19.03 ↵	PRESS dew point	Pressure dew point. Press 'ENTER' to access the PRESS dew point sub menu.
	P19.03.01 ↵	PDP sensor MIN	Use to configure the sensor minimum. Press 'ENTER'. Adjust within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.03.01.
	P19.03.02 ↵	PDP sensor MAX	Use to configure the sensor maximum. Press 'ENTER'. Adjust within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.03.02.
	P19.03.03	PRESS dew point	No edit. Equipment pressure dew point measured value display menu
Diagnostics	**The diagnostics menu provides a keypad accessible method if testing or interrogating digital inputs, analogue inputs, relay outputs, current transformer analogue inputs, phase frequency inputs, phase angle and the controllers power supply and membrane key switch panel.**		
	P20.01	Digital input 1	Digital input diagnostics. The information display alternates between digital input number and the current state for the digital input. Press 'ENTER' to view the digital input's condition state. Digital input condition states: INACTIVE = OK ACTIVE = NOT OK
	P20.02	Digital input 2	
	P20.03	Digital input 3	
	P20.04	Digital input 4	
	P20.05	Digital input 5	
	P20.06	Digital input 6	
	P20.07	Digital input 7	
	P20.08	Digital input 8	
	P20.09	Analogue input 1 (mA)	Analogue input diagnostics. The information display alternates between analogue input number and the measured value (mA, resistive, current or voltage) for the analogue input. Press 'ENTER' to view the analogue assignment and conditioned value (e.g. EQUIP OUT PRESS, 7.3BAR)
	P20.10	Analogue input 2 (mA)	
	P20.11	Analogue input 3 (resistive)	
	P20.12	Analogue input 3 (current)	
	P20.13	Analogue input 3 (voltage)	
	P20.14	Analogue input 4 (voltage)	Airmaster™ Q1 power supply voltage (X13). The information display alternates between analogue input number and the measured voltage. Note: Analogue input 4 is the voltage detected at X13 of the Airmaster™ Q1 and has no other configurable purpose or function!

Diagnostics	P20.15 ↵	Relay output 1	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 1
	P20.16 ↵	Relay output 2	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 2
	P20.17 ↵	Relay output 3	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 3
	P20.18 ↵	Relay output 4	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 4
	P20.19 ↵	Relay output 5	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 5
	P20.20 ↵	Relay output 6	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 6
	P20.21 ↵	Relay output 7	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 7
	P20.22 ↵	Relay output 8	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 8
	P20.23 ↵	Analogue output 1	Press 'ENTER' Use 'UP' and 'DOWN' keys to adjust the mA output value.
	P20.24 ↵	Manual mode	Press 'ENTER' Use the 'Up and 'DOWN' keys to configure between 'ON' and 'OFF'
	P20.25 ↵	Key switch test	Press 'ENTER' perform key switch test using display acknowledgment if key pressed

5.0 General operation and control modes

Typical dryer construction:

Packaged, fully assembled, piped, and wired desiccant compressed air dryer. Dryer shall be complete with: two pressure vessels (towers) each containing a desiccant bed fully charged with drying media (e.g. activated alumina); controller and control valves to direct inlet and purge air flows from tower to tower; and a means of regulating purge air usage. All components are typically assembled onto a structural steel frame with protection to shield valves, piping, pre-filtration, and after-filtration from accidental impact. Package shall typically be produced by an ISO 9001 registered manufacturer and, carry agency approvals for CE and CSA

Dryer design shall incorporate upward gas flow transmission during the compressed air stream dehydration cycle for maximum efficiency and desiccant bed protection and, operate automatically and continuously in producing ISO 8573.1 Quality Class levels for Solids, Moisture, and Oil as specified for the site conditions. Purge air shall flow downward.

Industry Standard product design typically dictates an ISO Air Quality Class 2 Pressure Dew Point of -40°C (-40°F) at 7 bar (100 psig) with ambient conditions of 37.8°C (100°F) and, 37.8°C (100°F) inlet air temperature at pressure. Integral package filtration is common to afford the Desiccant bed protection from particulate and oleophilic contamination and located prior to the compressed air ingress portal. At a minimum, ISO Class 2 Filtration shall take the forms of a Particulate (1micron) Pre-filter and a Coalescing (0.008 ppm) Filter. Similarly Plant piping is commonly protected from desiccant particulate migration by a (1 micron) Desiccant After-filter located within the discharge conduit after the dry compressed air egress portal.

Typically the dryer shall include two (2) drying towers (pressure vessels) containing the desiccant beds. Towers shall be designed so that compressed air velocity does not exceed 18.3 meters (60 feet) per minute @ 6.9 bar (100 psig), through the desiccant bed to ensure bed stability and prevent premature desiccant deterioration. This velocity shall provide each tower with a minimum contact (residence) drying time of 4.8 seconds per measured unit of gas flow to ensure the specified dew point can be delivered and maintained with saturated inlet conditions.

Purge air shall be regulated by an adjustable valve and / or pressure-reducing orifice. Purge air shall be exhausted through oversized mufflers to minimize backpressure and reduce the noise level as it expands back to atmosphere. Each tower shall have its own muffler. Mufflers shall be equipped with a pressure

relief device to prevent excessive backpressure.

After the purge process is completed and prior to tower switchover, the tower being purged shall slowly be re-pressurized to line pressure to prevent bed movement and desiccant abrasion. Minimum acceptable re-pressurization cycle times per ISO 8573.1 for moisture content shall be as follows for 150 psig models: ISO Class 1 (48 seconds); Class 2 (60 seconds); Class 3 (65 seconds) and, Class 4 (70 seconds.) 250 psig models shall be as follows: ISO Class 1 (72 seconds); Class 2 (120 seconds); Class 3 (140 seconds) and, Class 4 (160 seconds.)

Airmaster™ Q1

An Airmaster™Q1 shall be used to sequence operation of inlet and purge/re-pressurization valves so that one tower is drying the inlet compressed air stream while the other tower is depressurized, regenerated, and re-pressurized. Controller shall be panel mounted in a suitably rated control box affixed to the front of the package. Controller design shall accept a customer supplied open/closed electrical contact signal to initiate a Controlled Dryer Shut-Down sequence to maximize efficiencies by synchronizing dryer to an air compressor's "unloaded" or, "off" operational status. Controller cycle time shall be field adjustable via an operator user interface to afford the flexibility of selection from four outlet pressure dew point (pdp) quality class levels per ISO 8573.1 as follows:

Quality Class ISO Class 8573.1	Pressure Dew Point Degrees F/C	Cycle Time Minutes
1	-100 / -73	4
2	-40 / -40	10
3	-4 / -20	16
4	+38 / +3	24

Economies of operation shall be further achieved with an external panel mount dial to manually vary the regeneration time cycle and ensure accurate settings. Said dial shall allow the user to save up to seventy percent (70%) of purge air energy by reducing purge air consumption in relation to actual load levels. Savings shall be expressed as an inverse percentage of maximum design flow capacity. Controller shall provide a method to allow manual sequencing through the modes of operation to verify proper operation of control valves.

Instrumentation:

NEMA 4 (IP65) control panel construction
Soft on/off switch with two power recovery modes
Tower status LED's (green=drying, yellow-regenerating)
Process valve status LED's (on=valve open, off=valve closed)
Operating mode LED's (ISO Class fixed cycle)
Load Factored Purge Savings LED's (user selectable from 0 to 70%)
Alarm LED (red)
Voltage-free alarm contacts, 5A rating
Alarm reset button/Manual cycle advance
Service Reminder LED's (Filters & Drains (3), Inlet, Purge & Tower Switching (6), and Desiccant Towers (4)
RS-485 Communications Capabilities

Moisture Indicator (indicates elevated outlet dew point)
Tower pressure gauges (indicate pressure in tower)
Purge rate indicator (indicates pressure of purge air upstream of pressure reducing orifice)
Switching failure alarm (monitors system and indicates if tower fails to pressurize or depressurize after switchover)

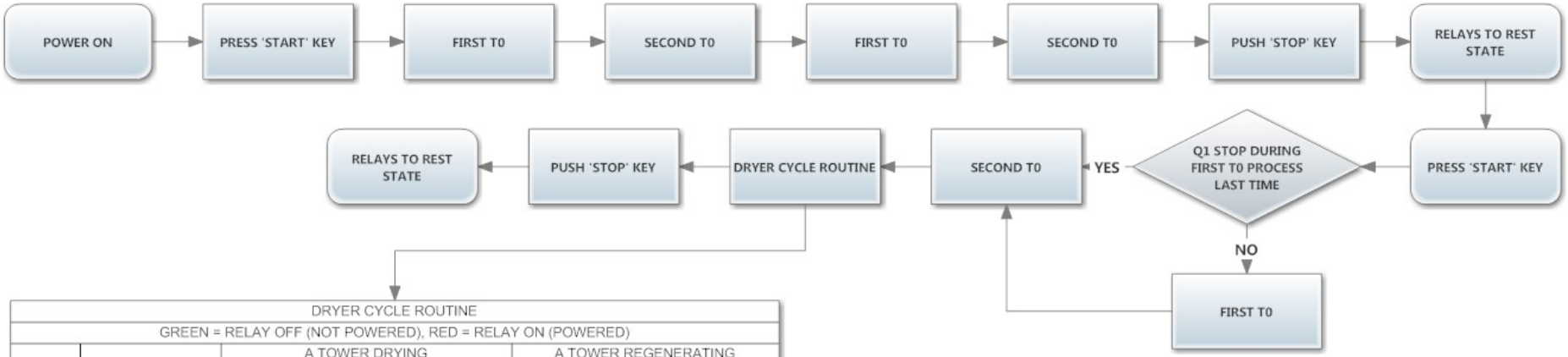
Automatic Energy Saving Purge Control – Level 2

Swift Return-on-Investment shall be achieved through the addition of an automatic Energy Saving Purge Control System. Said system shall utilize feedback from temperature thermostats to calculate the actual load on the desiccant bed to determine the precise purge time required for efficient tower regeneration. Once regenerated, said off-line tower shall become a re-pressurized sentinel in preparation for its future drying cycle. Purge air losses shall then be eliminated until the on-line drying tower has achieved optimal desiccant bed saturation levels. Only then, shall the tower switchover sequence be initiated and the process begins anew. Systems that use flow meters or hygrometers instead are not deemed acceptable.

Optional Level 2:

Automatic, load-matched, purge air Energy Savings
Vacuum Fluorescent Text Display (complete text communications)
Demand Sensitive Thermostats (two per tower to establish purge requirements)
High Humidity or Dew Point Alarm
Filter Monitor Alarm (1 or 2 filters with optional Filter Monitor)
Electric Drain Alarms (1 or 2 filters with optional Demand Drains)
Electric Drain Test (1 or 2 filters with optional Demand Drains)

5.1 Airmaster™ Q1 state diagram



DRYER CYCLE ROUTINE									
GREEN = RELAY OFF (NOT POWERED), RED = RELAY ON (POWERED)									
RELAY	BEFORE PUSH START BUTTON	A TOWER DRYING B TOWER REGENERATING				A TOWER REGENERATING B TOWER DRYING			
		FIRST T0				SECOND T0			
		T0				T0			
		A1	T1	T2	C1	A1	T1	T2	C1
R1	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
R2	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
R3	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
R4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF

6.0 Technical data

6.1 Terms used:

Term used:	Description:
+# hour DST	+# hour daylight saving time
12 hour clock	Display, Unit of measure, time
24 hour clock	Display, Unit of measure, time
°C	Unit of measure, temperature
°F	Unit of measure, temperature
%	Unit of measure, percentage
ADMIN	Administrator access control and configuration
Airbus485™	Airbus485™ application optimised RS485 network protocol
Airbus485™ address	Device Airbus485™ address, Select between 01 and 200
Air filter DP	Air filter differential pressure
Air filter DP alarm	Air filter differential pressure alarm, warning
Alarm – run inhibit	Run inhibit
Alarm – start inhibit	Alarm – start inhibit
Alarm – stop	Alarm – immediate stop
Alarm – warning	Alarm – warning
Allow force offload	If active (ON), use keypad to change device state from state 09 to state 11. Hold ‘START’ key and then press ‘DOWN’ key
Annual service	Calendar time to annual service, Select between
Any active alarm	Any active alarm
AO function	Analogue output function
AUTO restart	Auto restart (e.g. after power interruption)
AUTO restart INH time	Automatic restart inhibit time
BAR	Unit of measure, pressure
BE	Display language, Belarusian
Belt drive SERV	Belt drive service
Belt drive alarm	Belt drive alarm, immediate stop
Bi-annual SERV	Calendar time to annual service
CAB filter DP	Cabinet filter differential pressure
CAB filter DP alarm	Cabinet filter differential pressure alarm, warning
CLR SER number	Cooler serial number
CLR YR MANUF	Cooler year of manufacture
COOL water alarm	Coolant water alarm, warning
COOL water alarm	Coolant water alarm, immediate stop
Common fault	Common fault
COMP MTR current	Motor current

COMP MTR SER NUM	Motor serial number
COMP MTR STR INH/HR	Inhibit compressor motor starts, inhibit (per hour)
COMP MTR STR INH/DAY	Inhibit compressor motor starts, 24 hours
COMP MTR YR MANUF	Compressor motor year of manufacture
COMP MTR ELEC lock	Compressor motor electrical lock
COMP MTR ELEC OVLD	Compressor motor electrical overload
COMP MTR ELEC short	Motor short
COMP OUT TEMP	Air end (COMP = compressor or compressor engine) outlet temperature
COMP OUT TEMP High	Air end (COMP = compressor or compressor engine) outlet temperature high
COMP SER NUM	Compressor serial number (compressor ‘air end’ not compressor package)
COMP YR MANUF	Compressor year of manufacture (compressor ‘air end’ not compressor package)
COMP start/stop	Compressor start / stop
CONF alarm 1	Configured alarm 1
CONF alarm 2	Configured alarm 2
CONF alarm 3	Configured alarm 3
CNDS drain	Condensate drain
CNDS drain alarm	Condensate drain alarm, warning
CNDS drain open	Time value, equipment condensate drain open time, Select between OFF and 30 seconds
CNDS drain INT	Time value, equipment condensate interval time, elect between 60 and 3600 seconds
Continuous run	Control algorithm, See control algorithm state diagram
Control mode	Control algorithm
CZE	Display language, Czech
Data bytes	Data as response or commands
Date	Unit of measure, date
Date format	Value, on screen display format, Select between dd/mm/yyyy, mm/dd/yyyy or yyyy/mm/dd
Day	Unit of measure, day
Daylight saving time	Daylight saving time, Select between +0h and +1h
DD/MM/YYYY	Display, Unit of measure, date
DEF	Default
Default configuration	The specified default configuration for the device software
DE	Display, language, German
Device stopped	Device state, Device stopped, stop button pressed
DI# function	Digital input # function
DI# OK: NO/NC	Digital input # OK: normally open or normally closed
DIFF pressure	Differential pressure
DIFF PRESS high	Differential pressure high
DP inhibit time	Differential pressure inhibit time
Door open	Enclosure door open
Door open alarm	Door open alarm, warning
Door open alarm	Door open alarm, immediate stop
Due	Due (required or elapsed)

Dynamic off load	Control algorithm, See control algorithm state diagram
Edit	The process of revising or changing a value
Edit day	Day of month, Select between 1 and 31
Edit month	Month of year, Select between 1 and 12 (January = 1, December = 12)
Edit year	Select year
ELEC phase Loss / IMB	Electrical phase loss or phase imbalance
EN	Display, language, English
EO pressure	Equipment outlet pressure
EO PRESS control	Equipment outlet pressure control
EO PRESS high	Equipment outlet pressure high
EO PRESS range	Equipment outlet pressure range
EQUIP MANUF	Equipment manufacturer
EQUIP service now	Equipment service now
EQUIP settings	Equipment settings
EQUIP status	Equipment status
Error	Error
Error log	Error log
Error log reset	Error log reset
ES	Display, language, Spanish
Event log	Event log
Event log reset	Event log reset
Fan control	Fan control
Fan motor current	Fan motor current
Fan motor	Fan motor
Fan motor alarm	Fan motor alarm, warning
Fan motor alarm	Fan motor alarm, immediate stop
Fan MTR protect	Fan motor protection, Select ON or OFF
FR	Display, language, French
Friday	Weekday or weekend
GRE	Display language, Greek
Home	Refers to the initial or main page of the device graphical interface
LCD light level	LCD light level (LCD backlight)
Low AMB heater	Low ambient heater
Inhibit	Something that restrains, blocks, delays or suppresses
Inhibit time	Time, something that restrains, blocks, delays or suppresses
INT pressure	Internal pressure
INT PRESS high	Internal pressure high during equipment start sequence
INT PRESS range	Internal pressure range
INT PRESS rise CONFIG	Internal pressure rise configuration
IT	Display, language, Italian
ISC	Internal system control

ISC # compressors	ISC number of compressors, select between 02 and 08
ISC damping	ISC damping factor (see Airmaster™ ISC technical manual). Select between 0.1 and 10.0
ISC DI# FCN	ISC XPM option card digital input function (see Airmaster™ ISC technical manual)
ISC PRESS sense	
ISC PRESS setup	
ISC start delay	ISC start delay, staggered start of ISC managed air compressors, select between 0 and 60 seconds
ISC tolerance	ISC tolerance factor (see Airmaster™ ISC technical manual). Select between pressure unit min and pressure unit max
JPN	Display language, Japanese
KOR	Display language, Korean
kPA	Unit of measure, pressure
Language	Display, language, Select between EN, BEL, CZE, DE, ES, FR, GRE, IT, JPN, KOR, NL, PL, PT, RU, TH, TR, UKR, VI, ZH (S) or ZH (T)
Line FTR DP alarm	Line filter differential pressure alarm, warning
Line FTR DP alarm	Line filter differential pressure alarm, immediate stop
Line FTR DRN ALM	Line filter drain alarm, warning
Load	See equipment state diagram
Load % last hour	Load % last hour
Load % last 24 HR	Load % last 24 hours
Load hours	Load hours total
Load hours edit	Load hours edit
Load inhibit time	Load inhibit time, Select between OFF and 30 seconds
Load / offload hrs	Load hours / offload hours, sum total
Load pressure	Load pressure, equipment moves from offload state to load state
Load frequency	Load frequency
Load source	Load source select between equipment EQUIP OUT PRESS, Equipment DI, Communications
Load state	Load (or loaded) state
Low temperature	Low temperature start inhibit, Select between -20°C and +10°C
Main MTR NOM CURR	Main motor nominal current
Main MTR protect	Main motor protection. Select On or OFF
Main MTR SDTTF	Main motor star delta transition time factor
Main MTR ROT lock	Main motor rotor lock
Main MTR phase IMB	Min motor phase imbalance
MANUF model	Manufacturer model
MANUF name	Manufacturer name
MDL rated pressure	Model rated pressure
MDL SER number	Model serial number
MDL YR MANUF	Model year of manufacture
Menu not visible	Menu not visible
Menu visible	Menu visible
Menu editable	Menu visible and editable
MM/DD/YYYY	Display, Unit of measure, date
MODBUS	Serial communication protocol

MODBUS address	Device MODBUS address, Select between 01 and 247
MODBUS baud rate	Select between 1200, 2400, 4800, 9600, 14400, 19200, 38,400, 57,600 or 115,200
MODBUS parity	Indicates whether a number is even or odd. Select between no, even or odd
MODBUS data bits	Data length will be filled depending on the message type. Select between 5, 6, 7 or 8
MODBUS end bits	Character times of silence between frames (1, 1.5 or 2)
Modify	Adjust
Monday	Weekday or weekend
MTR STR last HR	Main motor starts – last hour
MTR STR last 24h	Main motor starts – last 24 hours
MTH	Unit of measure, month(s)
Next service	Next service
NL	Display, language, Dutch (Netherlands)
Offload	Device in offload state. See equipment state diagram
NO	Normally open, healthy or OK
Offload hours	Offload hours total
Offload pressure	Offload pressure, device moves from load state to offload state
Offload run time	Time value, offload run time
Offset	A value indicating the distance from the start of a data structure up to a given element
Oil filter DP	Oil filter differential pressure
Oil filter DP alarm	Oil filter differential pressure alarm
Oil level alarm	Oil level alarm, warning
Oil level alarm	Oil level alarm, immediate stop
Oil/water SEP ALM	Oil water separator alarm, warning
OK	Healthy or normal condition text
On load LST HR	On load last hour
On load last 24h	On load last 24 hours
Optimum speed	Device optimum speed. See equipment state diagram
Parameter reset	Parameter reset, returns all editable parameters to default
PER	Display language, Persian
Phase detection	Phase detection
PR decay / no load	Control algorithm, See control algorithm state diagram
PRESS unit	Value, unit of pressure
PSI	Unit of measure, pressure
PL	Display language, Polish
PT	Display, language, Portuguese
PV inspection date	Pressure vessel inspection date
Range	Range between minimum and maximum
RD alarm	Refrigerant dryer alarm, warning
RD alarm	Refrigerant dryer alarm, immediate stop
RD control	Refrigerant dryer control
Read access while running	Configuration not permissible while device remains in a running state

Ready to start	Ready to start
Relay # FUNCT	Relay # function
Reload inhibit time	Reload inhibit time, Select between OFF and 10 seconds
Remote control	Remote control
REM load enable	Remote load enable
Remote META control	Remote Metacentre control
Remote off load	Remote off load
Remote load	Remote load
Remote stopped	Remote stopped
Reset	Clear errors or events or bring to normal condition or initial state
RS485	Specifies electrical characteristics of the driver and receiver for use in balanced digital multipoint systems
RS485 address	Device RS485 address
RS485 1 CONFIG	RS485 1 configuration, Select between Airbus485™ or MODBUS Slave
RS485 2 CONFIG	RS485 2 configuration, Select between Airbus485™ or MODBUS Slave
RU	Display language, Russian
Run	Run on load or off load
Run inhibit	Inhibit the device from running
Run load	Load
Run off load	Run off load
Run hours	Run hours
Run schedule	Run schedule, select between ON and OFF
Run hours edit	Run hours edit
Saturday	Weekday or weekend
Save date edit	Save parameter edit
Schedule entry	Select load and offload pressure or OFF at calendar date and time, When Run schedule = ON, use schedule configuration in chronological order
SEC	Unit of measure, seconds
Sensor CONFIG	Sensor configuration
SEP filter DP	Separator filter differential pressure
SEP filter DP alarm	Separator filter differential pressure alarm
Service	Service
Service hours #	Service hour counter
Set	Configure
Standby	Device started in stopped state
Stopped hours	Stopped hours total
Star delta TRANS time	Start / delta transition time, Select between 1 and 30 seconds
Start button	Start button
Start source	Equipment start source, Select between equipment Keypad, Equipment DI, Communications
Start state	Start (or started) state
Started	Started
Stop MIN time	Time value, stop state, Select between OFF and 60 seconds

Sunday	Weekday or weekend
System error	System error
TCP/IP	Transmission control protocol / internet protocol
TEMP rise CONFIG	Compressor 'Air end' outlet temperature rise configuration
TEMP unit	Value, unit of temperature
TH	Display language, Thai
Thursday	Weekday or weekend
Time	Unit of measure, time
Time format	Value, on screen display format, Select between 12:00 a/p and 24:00
Total hours	Total hours (hour count from 00:01 on STR date to RTC hours now)
Total hours STR date	Total hours STR date (00:01 of STR date)
TR	Display, language, Turkish
Tuesday	Weekday or weekend
UKR	Display language, Ukrainian
UOM offset	Unit of measurement offset
UOM range	Unit of measurement range
User #	User # access control
Variable speed	Control algorithm, See equipment state diagram
Vent time	Time value, venting internal pressure to atmosphere, Select between OFF and 60 sends
VSD average RPM	VSD average RPM
VI	Display language, Vietnamese
Wednesday	Weekday or weekend
Weekly service	Calendar time to weekly service
Workday edit	Edit working days. Monday through Sunday select between Weekday or Weekend
YR	Unit of measure, year
YYYY/MM/DD	Display, Unit of measure, date
ZH (S)	Display, language, Chinese, simplified
ZH (T)	Display, language, Chinese, traditional

6.2 Text abbreviations:

Abbreviation	Text	Abbreviation	Text
ACTIVE	Active or Activated	MANUF	Manufacture
ADCT	Air end (compressor) discharge temperature	MAR	March
ADV	Automatic drain valve	MAX	Maximum
AI	Analogue input	MAY	May
AIR	Air	MDL	Model
ALM	Alarm or alarm message	META	Metacentre
AMB	Ambient	MIN	Minimum
ANAL	Analogue	MIN'S	Minutes
AO	Analogue out	MMT	Measurement

APR	April	MON	Monday
AUG	August	MOD	Modulation
AUTO	Automatic	MOTOR	Motor
AVAIL	Available, already existing	MOPS	Motor overload protection switch
BRG	Bearing(s)	MPA	Mega Pascal
BELT	Belt	MPV	Minimum pressure valve
BIN	Binary	MTH	Month(s)
BUVV	Butterfly valve	NC	Normally closed
CAB	Cabinet (package enclosure)	NO	Normally open (healthy or OK)
CBV	Compressor bypass valve	NOM	Nominal
CFG	Configuration	NUM	Number
CLK	Clock	OCT	October
CLR	Cooler	OIL	Oil
CNDS	Condensate	OK	Healthy or normal
COOL	Coolant	OVLD	Overload
COMP	Compressor	OPT	Optimum
COMMS	Communications	OR	Operating range
COP	Changeover point	OP CRT	Open circuit
CO BK	Continuity break	OS	Oil separator
CO	Compressor outlet	OSD	On screen display
CONFIG	Configuration or configured	OUT	Outlet
CONT	Contactor	P#	Parameter 0, 1, 2, …
CORR	Correction	PARA	Parameter
CT	Current transmitter	PD	Package discharge
CURR	Current	PERMS	Permissible
CW	Cooling water	PLC	Pre-programmed logic controller
CWT	Cooling water temperature	PR	Pressure
DAY	Day	PRESS	Pressure
DEC	December	PROT	Protection
DEF	Default	PRV	Pressure relief valve
DI	Digital input	PSENS	Pressure sensor
DISCH	Discharge	PSWITCH	Pressure switch
DIFF	Differential	PV	Pressure vessel
DP	Differential pressure	REF	Refrigerant
DT	Differential temperature	RNG	Range
DIR	Direction	RAM	Random access memory
DO	Digital output	RB	Remote bus
DOL	Direct online	RC	Remote contact
DIR ROTO	Direction of rotation	RD	Refrigerant dryer
DELTA P	Delta pressure (pressure differential)	READY	Ready
DEL	Delivery	REF	Refrigerant

DEL PO	Delivery pressure offset	REM	Remote
DEL PR	Delivery pressure range	RPM	Revolutions per minute
DELTA T	Delta T (temperature differential)	RT	Running hours
DRN	Drain	RTC	Real time clock
Dryer	Dryer (Refrigerant dryer)	SAT	Saturday
DST	Daylight saving time	SC	Short circuit
ELEC	Electrical	SCH	Schedule
EQUIP	Equipment	SDTTF	Star delta transition time factor
ERR	Error	SEC	Second(s)
EXT	External	SEP	Separator or September
FAULT	Fault	SEQ	Sequence
FEB	February	SEP FIL	Separator filter
FTR	Filter	SERV	Service
FM	Frequency modulate	SN	Serial number
FRI	Friday	SP	Switching point
FUNCT	Function	SPD	Speed
H	Hours	STAGE	Stage
HR	Hours	STOP	Stop
HRS	Hours	STR	Start(s)
INH	Inhibit	SUN	Sunday
IIPT	Input	SYS	System
INT	Internal	TEMP	Temperature
INT PRESS	Internal pressure	THU	Thursday
INTVL	Interval	TIMEV	Time valve
IMB	Imbalance	TNS	Tension
IMM	Immediate	TRANS	Transition
ISC	Internal system control	TT	Transition time
JAN	January	TUE	Tuesday
JULY	July	UOM	Unit of measurement
JUNE	June	VS	Variable speed
K	Kelvin		
LOCAL	Local		
LUB	Lubrication		

6.3 Language codes

Code	Language
EN	English (English)
BEL	Беларуская (Belarusian)
CZE	Czech (Czech)

DE	Deutsch (German)
ES	Espanol (Spanish)
FR	Français (French)
GRE	Ελληνικά (Greek)
IT	Italiano (Italian)
JPN	日本 (Japanese)
KOR	한국어 (Korean)
NL	Nederlands (Dutch)
PER	Persian
PL	Polski (Polish)
PT	Português (Portuguese)
RU	Русский (Russian)
TH	ไทย (Thai)
TR	Türk (Turkish)
UKR	Український (Ukrainian)
VI	Việt (Vietnamese)
ZH (S)	简体中文 (Simplified Chinese)
ZH (T)	繁体中文 (Traditional Chinese)

6.4 Logged events

Each logged event (P04.01.01 – P04.01.200) includes an event index, event description and an event time and date.

Logged events
START button pressed
STOP button pressed
PARA reset to DEF (Parameter reset to default)
Active ‘USER #’ access
Modify parameter

6.5 ADMIN edit user # configurable parameters

Parameter
User name (P09.03.01)
User PIN code (P09.03.02)
Display language (P09.03.03)
Time format (P09.03.04)

Date format (P09.03.05)
Pressure unit (P09.03.06)
Temperature unit (P09.03.07)
Menu # access (P09.03.08) (Not available, Read access, Edit access)

6.6 Start and / or load source configurable parameters

Parameter (notes)
Equipment outlet pressure sensor (default)
Equipment digital input (requires setup of configurable digital input)
Airbus485™ (requires RS485 card option)
MODBUS (requires RS485 card option)
TCP/IP (required ECO card option)

6.7 Use of Menu pages and page items

Users of Airmaster™ Q1 should note that Menu pages and Menu page items are arranged sequentially from P00 to P99 and item 01 through item 99 and that some Menu pages and Menu page items are intentionally omitted or not displayed. This can be for a number of reasons and is perfectly normal!

Default page numbers and display names are as follows:

Page	Display name	Page	Display name	Page	Display name
P00	Home	P10	EQUIP settings 1	P20	Diagnostics
P01	Service Timers	P11	EQUIP settings 2	P21	Not used
P02	Utilisation	P12	EQUIP settings 3	P30	Not used
P03	Error Log	P13	Not used	P31	
P04	Event Log	P14	Not used	P32	
P05	Service Provider	P15	Inhibits	P40	Not used
P06	Controller Data	P16	Warning alarm	P80	Not used
P07	Equipment data	P17	Not used	P81	Not used
P08	Message codes	P18	I/O CONFIG	P82	Not used
P09	Access	P19	Sensor CONFIG		

6.8 Equipment status or state codes

Status No	State
01	
02	Power up Airmaster™ Q1 initialisation

03	Ready to start
04	Shutdown
05	Regeneration delay time
06	
07	
08	Regeneration time
09	Re-pressurisation time
10	
11	Overlap time
12	Regeneration delay time
13	
14	
15	Regeneration time
16	Re-pressurisation time
17	
18	Overlap time

6.9 I/O function assignments

Item		Configuration options
Analogue output	Function	Equipment outlet pressure, Equipment internal pressure, Comp out temperature, Main motor current, Fan motor current, Pressure dew point
Digital input	Function	Doors open, REM. Start/stop, CONF alarm 1, CONF alarm 2, CONF alarm 3, Pressure left, Pressure right, Pressure Diff., Thermostat left, Thermostat right, Dew point override
Digital input	State	Normally open or Normally closed = OK

7.0 Symbols used

Airmaster™ Q1 uses a variety of symbols alongside text descriptions to annunciate device conditions or states. Symbols are used individually or with other symbols to annunciate a specific message. For example:

The following table describes each symbol and its intended use...

Symbol	Description	Symbol	Description	Symbol	Description
	Management or sequence control		Phase angle		Immediate stop
	Remote control		Upper or Lower range		Warning
	Start inhibit		Fan		Status (animated)

	Running, load		Running, off load		Stopped
	Run inhibit		Load inhibit		Condensate drain
	Time		Edit		Sensor
	Temperature		User configurable		Compressor or package
	Key		Schedule		Timer
	Motor		Range or detect		Total hours
	Set point		Set point, upper limit		Set point, lower limit
	Oil		Read only		Unlocked or accessible
	Locked or not accessible		Date		Start delta
	Delta pressure		Up		Auto restart
	Filter		Down		Audible alarm
	Service or maintenance		Stop		Time
	Set point		Enter or inlet		Exit of outlet
	Emergency stop		Next forward		Page back
	Status		Compressor ‘air end’		Frequency
	Daylight		Water		Controller, Airmaster™ Q1
	4 – 20mA output		Number or frequency		Percent
	Average		Compressor, Cabinet door open		Analogue
	Up		Down		Enter
	Stop		Start		Edi
	Less than		Greater than		Last 24 hours

	Starts last 24 hours		Starts last hour		Last hour
	Normally open / normally closed		Digital input		Relay output
	Phase, L1		Phase, L2		Phase, L3
	Phase		current sensor		Running (animated)
	Analogue value		Network or system		Inlet
	Separator filter		Valve		Belt drive
	Power		Pressure set point		Yes

7.1 Release notes

Release	Description
E01	First production release. Manual covers all STD features and functions

8.0 Help and support

8.1 What you need to know first!

Compressor & Machine Controls NV (CMC NV) is a provider of Airmaster™ products to original equipment manufacturers (OEM's) only. CMC NV is not able to support end users of OEM equipment in the use, operation or fault diagnostics of Airmaster™ products.

8.2 Where to go for help and support

If you are not the original equipment manufacturer of the device, **DO NOT CONTACT CMC NV** for Airmaster™ product support. Instead, contact your original equipment manufacturer or your original equipment manufacturers nominated representative.

If you are the device original equipment manufacturer and you require Airmaster™ product support, please contact sales@cmcnv.com.