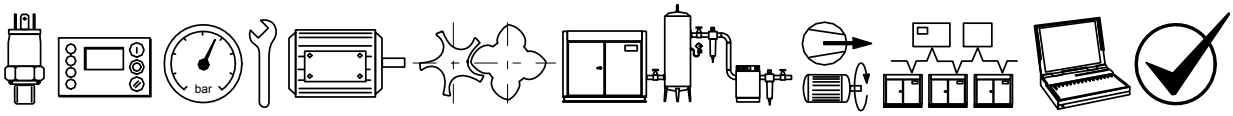

AirMaster™

Q1

POSITIVE DISPLACEMENT ROTARY COMPRESSOR

Software Manual

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
E03	Phase 3 release
E06	Sprint 2
E07	Sprint 3
E08	STD release_E08

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 or vacuum 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

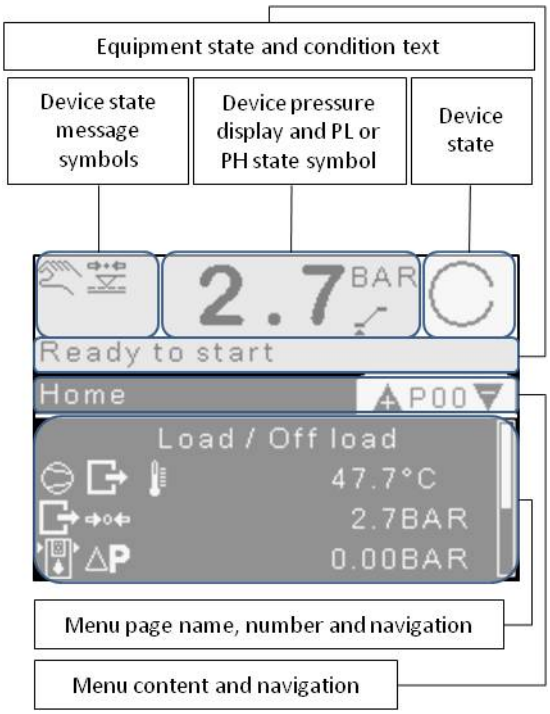
Key: image	Key: Function
	**Start**
	**Stop**
	**Reset**
	**Enter**
	**Up**
	**Down**
	**Escape**

Icon: image	Icon: Function
	Advanced Power Monitoring
	Metacentre™ compatible
	SD Card option

	Airbus485™ compatible
	MODBUS compatible
	Advanced Control Algorithms
	Internal System Control
	Ethernet card option

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.

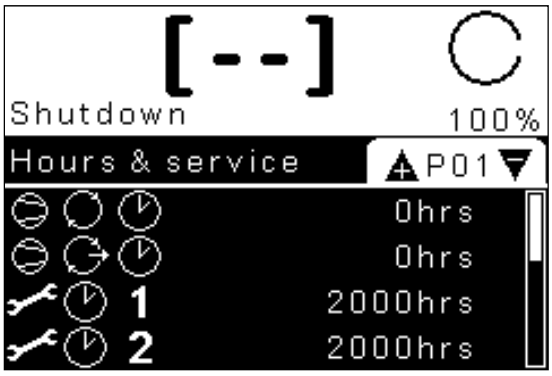
The graphical interface inverts to identify the 'on screen' navigation location and the navigation location is indicated on the vertical scroll bar.

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

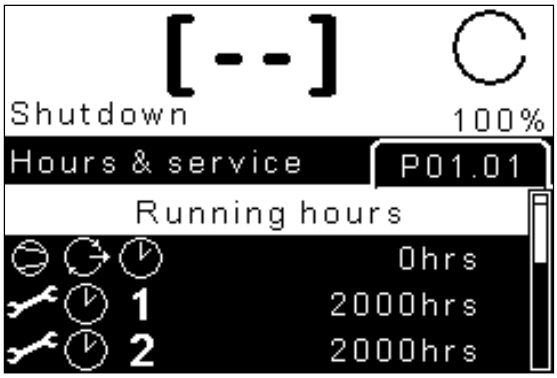
Item	Description
P02	Menu: Utilisation
P02.10	VSD average RPM
P02.10.01	AVG RPM 1 – 25%

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

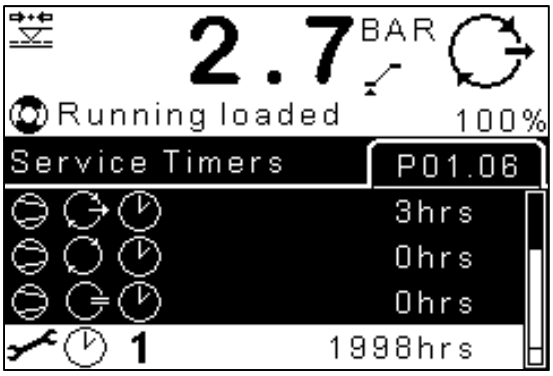
Menu items are indexed sequentially and without omission. If a menu item is not present it's most likely due to configuration!



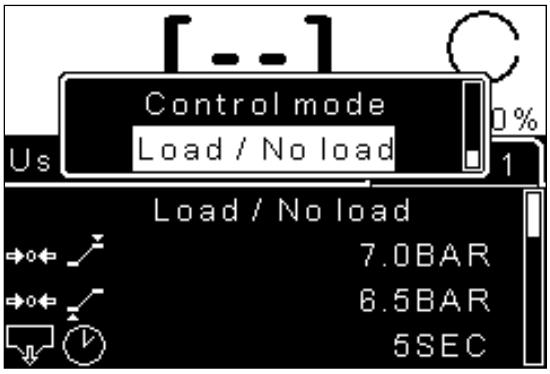
Use the Enter key (enter) and the clear key (exit) to navigate between menu page navigation and menu content navigation.



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 display value

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 Control mode	02 Load / off load HRS	02 Load / offload hours	…	…	02 Company name
03 P00.03 user DEF	03 Load hours	03 MTR STR last HR	50 Error 50 ↵	200 Event 200 ↵	03 Street name
04 P00.04 user DEF	04 Off load hours	04 MTR STR last 24H			04 Street name
05 P00.05 user DEF	05 Stopped hours	05 Load frequency			05 City
06 COMP OUT TEMP	06 Service hours 1	06 Load % last hour			06 State / Province
07 EQUIP OUT PRESS	07 Service hours 2	07 Load % last 24 hours			07 ZIP / Postal
08 EQUIP INT PRESS	08 Service hours 3	08 Load time last hour			08 Country
09 DIFF pressure	09 Service hours 4	09 Load time last 24HRS			09 Telephone
10 Oil/Air SEP DP	10 Service hours 5	10 VSD average RPM ↵			10 Fax
11 Main MTR current	11 Service hours 6				11 E Mail
12 Fan MTR current	12 Service hours 7				12 Web
13 Time	13 Service hours 8				
14 Date	14 Weekly service				
15 Daylight saving	15 Annual service				
16 ISC Sequence	16 Bi-annual SERV				
17 ISC rotate in HRS					
18 ISC XPM pressure					

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	01 Message code	01 DEFAULT USER ↵	01 Control mode ↵	01 Star delta TRANS ↵
02 Serial number	02 EQUIP model	…	02 ADMIN USER ↵	02 Force offload ↵	02 MIN MTR run time ↵
03 Software ID	03 MDL SER number	134 Message code	03 USER 1 ↵	03 Start pressure ↵	03 Load INH time ↵
04 Software version	04 MDL rated PRESS		04 USER 2 ↵	04 Load pressure ↵	04 Reload INH time ↵
05 Software time	05 MDL rated output		05 USER 3 ↵	05 Off load pressure ↵	05 Off load run time ↵
06 Software date	06 MDL YR MANUF		06 USER 4 ↵	06 Run period ↵	06 Stop MIN time ↵
07 Software CFG	07 COMP SER NUM		07 USER 5 ↵	07 Offload period ↵	07 Vent time ↵
08 Software ©	08 COMP YR MANUF		08 USER 6 ↵	09 RS485 X04 CONFIG ↵	08 AUTO restart INH ↵
	09 MTR SER NUM		09 USER 7 ↵	10 RS485 X05 CONFIG ↵	09 CNDS drain open ↵
	10 MTR YR MANUF		10 USER 8 ↵	11 RS485 X06 CONFIG ↵	10 CNDS drain INT ↵
	11 CLR SER NUM		11 USER 9 ↵	12 Start source ↵	11 CNDS off load ↵

	12 CLR YR MANUF		12 USER 10 ↵	13 Load source ↵	12 MTR STR HR INH ↵
	13 PV inspect date			14 Language ↵	13 DP inhibit time ↵
				15 Time ↵	14 Service hours 1 ↵
				16 Time format ↵	15 Service hours 2 ↵
				17 Daylight saving ↵	16 Service hours 3 ↵
				18 Date ↵	17 Service hours 4 ↵
				19 Date format ↵	18 Service hours 5 ↵
				20 LCD light level ↵	19 Service hours 6 ↵
				21 Pressure unit ↵	20 Service hours 7 ↵
				22 Temperature unit ↵	21 Service hours 8 ↵
					22 Weekly service ↵
					23 Annual service ↵
					24 Bi-annual service ↵

P12 – Equip settings 3	P13 – VSD settings	P14 – Motor protection	P15 – Inhibits	P16 – Warning alarm	P17 – IMM stop alarm
01 Parameter reset ↵	01 VSD control mode ↵	01 Main MTR protect ↵	01 Operator ↵	01 Service hours 1 ↵	01 COMP OUT TEMP ↵
02 Save as CONFIG ↵	02 VSD target PRESS ↵	02 Fan MTR protect ↵	02 Door open ↵	02 Service hours 2 ↵	02 TEMP rise CONFIG ↵
03 Use custom SENS ↵	03 VSD MAX speed ↵	03 Main MTR NOM CUR ↵	03 Low temperature ↵	03 Service hours 3 ↵	03 EQUIP OUT PRESS ↵
04 EO PRESS range ↵	04 VSD MIN speed ↵	04 Main MTR SDTTF ↵	04 INT PRESS high ↵	04 Service hours 4 ↵	04 EQUIP INT PRESS ↵
05 EI PRESS range ↵	05 VSD OPT speed ↵	05 Main MTR ROT LOC ↵		05 Service hours 5 ↵	05 PRESS rise CONFIG ↵
06 Error log reset ↵	06 VSD offload SPD ↵	06 Main MTR PH IMB ↵		06 Service hours 6 ↵	06 DIFF pressure ↵
07 Event log reset ↵	07 VSD speed RPM	07 Fan MTR NOM CURR ↵		07 Service hours 7 ↵	07 Main motor lock ↵
08 Total HRS STR ↵	08 VSD output CURR	08 Fan MTR OVLD INH ↵		08 Service hours 8 ↵	08 Main motor OVLD ↵
09 Set load hours ↵	09 VSD P factor ↵			09 Weekly service ↵	19 Motor phase IMB↵
10 Set off load HRS ↵	10 VSD I factor ↵			10 Annual service ↵	10 Fan MTR overload
11 Set stopped HRS ↵	11 VSD D factor ↵			11 Bi-annual SERV ↵	11 Phase detection ↵
12 TEMP sensor type ↵	12 VSD speed %			12 COMP OUT TEMP ↵	12 Door open ↵
13 AI5 sensor type ↵	13 VSD MAX RMP rate ↵			13 EQUIP OUT PRESS ↵	13 Fan motor alarm ↵
14 EI sensor active ↵	14 Speed limit line ↵			14 EQUIP INT PRESS ↵	14 COOL water alarm ↵
15 ISC available ↵	25 Skip Hz 1 low			15 DIFF pressure ↵	15 Oil level alarm ↵
16 ISC P SENS range	26 Skip Hz 1 high			16 Oil Air SEP DP HI ↵	16 Belt drive alarm ↵
17 Fan TEMP high	27 Skip Hz 2 low			17 Phase detection ↵	17 RD alarm ↵
18 Fan TEMP low	28 Skip Hz 2 high			18 HI MTR STR HR ↵	18 Water flow ↵
19 Fan run period	29 Skip Hz 3 low			19 Door open ↵	19 Inverter fault ↵
20 Boot screen BMP	30 Skip Hz 3 high			20 CAB filter DP ↵	20 Main MTR temp HI ↵
21 P00.03 CONFIG ↵				21 Air filter DP ↵	21 EQUIP out TEMP HI ↵
22 P00.04 CONFIG ↵				22 Oil filter DP ↵	22 Cooling system ↵
23 P00.05 CONFIG ↵				23 SEP filter DP HI ↵	23 Main motor ↵
				24 Fan motor alarm ↵	24 CONF IMM stop 1 ↵
				25 CNDS Drain alarm ↵	25 CONF IMM stop 2 ↵
				26 COOL Water alarm ↵	26 CONF IMM stop 3 ↵

				27 Oil level alarm ↵	
				28 RD alarm ↵	
				29 Line FTR DP ALM ↵	
				30 FTR drain alarm ↵	
				31 Oil/WTR SEP ALM ↵	
				32 Ambient TEMP HI ↵	
				33 CONF alarm 1 ↵	
				34 CONF alarm 2 ↵	
				35 CONF alarm 3 ↵	

P18 – I/O CONFIG	P19 – Sensor CONFIG	P20 – Diagnostics	P21 – Run schedule	P80 – ISC Main menu	P81 – ISC Settings
01 AO function ↵	01 EQUIP OUT PRESS ↵	01 Digital input 1 ↵	01 Run schedule ↵	01 ISC enabled ↵	01 ISC # compressors ↵
02 DI2 function ↵	02 EQUIP INT PRESS ↵	02 Digital input 2 ↵	02 Workday edit ↵	02 Offload pressure ↵	02 ISC start delay ↵
03 DI2 OK: NO/NC ↵	03 COMP OUT TEMP ↵	03 Digital input 3 ↵	03 Schedule entry ↵	03 Load pressure ↵	03 ISC damping ↵
04 DI3 function ↵	04 Main MTR current ↵	04 Digital input 4 ↵	...	04 ISC rotate INT ↵	04 ISC tolerance ↵
05 DI3 OK: NO/NC	05 Fan MTR current ↵	05 Digital input 5 ↵	30 Schedule entry ↵		05 ISC DI1 FCN ↵
06 DI4 function ↵		06 Digital input 6 ↵			06 ISC DI2 FCN ↵
07 DI4 OK: NO/NC ↵		07 Digital input 7 ↵			07 ISC DI3 FCN ↵
08 DI5 function ↵		08 Digital input 8 ↵			08 ISC XPM pressure ↵
09 DI5 OK: NO/NC ↵		09 Analogue input 1 ↵			09 ISC PRESS SENS ↵
10 DI6 function ↵		10 Analogue input 2 ↵			
11 DI6 OK: NO/NC ↵		11 AI 3 - Ohms ↵			
12 DI7 function ↵		12 AI 3 - Amps ↵			
13 DI7 OK: NO/NC ↵		13 AI 3 - Volts ↵			
14 DI8 function ↵		14 Analogue input 4 ↵			
15 DI8 OK: NO/NC ↵		15 AI 5 - Ohms ↵			
16 Relay 5 function ↵		16 AI 5 - Amps ↵			
17 Relay 6 function ↵		17 AI 5 - Volts ↵			
18 Relay 7 function ↵		18 Relay output 1 ↵			
19 Relay 8 function ↵		19 Relay output 2 ↵			
		20 Relay output 3 ↵			
		21 Relay output 4 ↵			
		22 Relay output 5 ↵			
		23 Relay output 6 ↵			
		24 Relay output 7 ↵			
		25 Relay output 8 ↵			
		26 Analogue output 1 ↵			
		27 ANAL input CT1A ↵			
		28 ANAL input CT1B ↵			
		29 ANAL input CT1C ↵			

		30 ANAL input CT2A ↵			
		31 L1 Frequency ↵			
		32 L2 Frequency ↵			
		33 L3 Frequency ↵			
		34 L1 Phase angle ↵			
		35 L2 Phase angle ↵			
		36 L3 Phase angle ↵			
		37 Key switch test ↵			
		38 LED test ↵			

P82 – ISC Priority
01 COMP1 priority ↵
02 COMP2 priority ↵
03 COMP3 priority ↵
04 COMP4 priority ↵
05 COMP5 priority ↵
06 COMP6 priority ↵
07 COMP7 priority ↵
08 COMP8 priority ↵

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	Control mode	The control mode selected
	P00.03	P00.03 user DEF	User defined home page P00.02 display menu item
	P00.04	P00.04 user DEF	User defined home page P00.03 display menu item
	P00.05	P00.05 user DEF	User defined home page P00.04 display menu item
	P00.06	COMP OUT TEMP	The compressor (air end or engine) outlet temperature
	P00.07	EQUIP OUT PRESS	The equipment or device outlet pressure value
	P00.08	EQUIP INT PRESS	The equipment or device internal pressure value
	P00.09	DIFF pressure	The differential pressure value (EQUIP INT PRESS minus EQUIP OUT PRESS)

Home			Note: EQUIP INT PRESSURE should always be greater than EQUIP OUT PRESS during normal operation. As such, no negative range values will be displayed
	P00.11	Main MTR current	The main motor current value
	P00.12	Fan MTR current	The fan motor current value
	P00.13	Time	The current time (configured)
	P00.14	Date	The current date (configured)
	P00.15	Daylight saving	Indicated active daylight saving
	P00.16	ISC Sequence	Indicates if ISC Sequence control is ON or OFF. When ON, annunciates the active Sequence assignment
	P00.17	ISC rotate in HRS	Decrements the value in HRS when the next ISC rotate event will occur
	P00.18	ISC XPM pressure	The ISC XPM pressure sensor value
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	Load / off load hours	Hour counter, Load / off load hours indicates the number of hours the device has operated in any load or off load state
	P01.03	Load hours	Hour counter, Load hours indicates the number of hours the device has operated in any load state
	P01.04	Off load hours	Hour counter, Off load hours indicates the number of hours the device has operated in any off load state
	P01.05	Stopped hours	Hour counter, Standby 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)
	P01.11	Service hours 6	Hour counter, visible when configured and displays assignment
	P01.12	Service hours 7	Hour counter, visible when configured and displays assignment
	P01.13	Service hours 8	Hour counter, visible when configured and displays assignment
	P01.14	Weekly service	Time counter, visible when configured
	P01.15	Annual service	Time counter, visible when configured
	P01.16	Bi-annual SERV	Time counter, visible when configured
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, Consult this manual
	P02.02	Load / offload hours	Hour counter, Load / offload hours indicates the number of hours the device has operated in any load or offload state
	P02.03	MTR STR last HR	Frequency counter, number of times the device main motor starts in the prior 1 hour of utilisation
	P02.04	MTR STR last 24H	Frequency counter, number of times the device main motor starts in the prior 24 hours of utilisation
	P02.05	Load frequency	Frequency counter, number of times the device moves from the offload state to the load state

Utilisation	P02.06	Load % last hour	Total of load state in the prior 1 hour expressed as a percentage
	P02.07	Load % last 24 hours	Total of load state in the prior 24 hours expressed as a percentage
	P02.08	Load time last hour	Total of load state in the prior 1 hour displayed in minutes
	P02.09	Load time last 24 hours	Total of load state in the prior 24 hours displayed in hours and minutes (HH:MM)
	P02.10	VSD average RPM ↵	VSD average RPM 1 – 100% expressed as a percentage
	P02.10.01	VSD average RPM ##%	VSD average RPM 1 – 25% expressed as a percentage
	P02.10.02	VSD average RPM ##%	VSD average RPM 26 – 50% expressed as a percentage
	P02.10.03	VSD average RPM ##%	VSD average RPM 51 – 75% expressed as a percentage
	P02.10.04	VSD average RPM ##%	VSD average RPM 76 – 100% expressed as a percentage
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. 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.** **Note: Some data is dependent on device setup!**		
	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	EQUIP status	Where ## = 01 to 50, Equipment status when error occurred
	P03.##.06	EQUIP OUT PRESS	Where ## = 01 to 50, Equipment outlet pressure when error occurred
	P03.##.07	EQUIP INT PRESS	Where ## = 01 to 50, Equipment internal pressure when error occurred
	P03.##.08	COMP OUT TEMP	Where ## = 01 to 50, Compressor outlet temperature when error occurred
	P03.##.09	Main MTR current	Where ## = 01 to 50, Main Motor current when error occurred
	P03.##.10	Fan MTR current	Where ## = 01 to 50, Fan current 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 CFG	Software configuration ID
	P06.08	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
	P07.04	MDL rated PRESS	Model rated pressure
	P07.05	MDL rated output	Model rated output
	P07.06	MDL YR MANUF	Model year of manufacture
	P07.07	COMP SER NUM	Compressor (air end or compressor engine) serial number
	P07.08	COMP YR MANUF	Compressor (air end or compressor engine) year of manufacture
	P07.09	MTR SER NUM	Main motor serial number
	P07.10	MTR YR MANUF	Main motor year of manufacture
	P07.11	CLR SER NUM	Cooler serial number
	P07.12	CLR YR MANUF	Cooler year of manufacture
	P07.13	PV inspect date	Pressure vessel inspection date
	Message codes are used to annunciate equipment alarm conditions in message code form. Message codes are used to allow information to pass		

Message Codes	**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 is annunciated).** **Alarm condition key to prefix letter: A = Warning, E = Immediate stop, R = 'run' inhibit, S = 'start' inhibit**		
	P08.01	A:0030	Door open. Digital input not OK
	P08.02	A:0031	CAB filter DP. Cabinet filter differential pressure, digital input not OK
	P08.03	A:0040	Oil level alarm. Digital input not OK
	P08.04	A:0050	RD alarm. Refrigerant dryer alarm, digital input not OK
	P08.05	A:0070	Fan motor alarm. Digital input not OK
	P08.06	A:0083	Motor phase IMB. Main motor phase imbalance. Consult manual
	P08.07	A:0085	Motor starts HR INH. Number of permissible motor starts exceeded. Consult manual
	P08.08	A:0119	EO PRESS high. Equipment outlet pressure high.
	P08.09	A:0129	COMP out TEMP HI. Compressor outlet temperature high
	P08.10	A:0139	EI PRESS high. Equipment internal pressure high.
	P08.11	A:0200	COOL water alarm. Cooling water alarm. Digital input not OK.
	P08.12	A:0201	CNDS drain alarm. Condensate drain alarm. Digital input not OK.
	P08.13	A:0809	DIFF PRESS high. Differential pressure high. EI – EO pressure out of permissible range. Consult manual.
	P08.14	A:0901	CONF alarm 1. Configurable alarm 1. Digital input not OK
	P08.15	A:0902	CONF alarm 2. Configurable alarm 2. Digital input not OK
	P08.16	A:0903	CONF alarm 3. Configurable alarm 3. Digital input not OK
	P08.17	A:1888	Run check alarm. Digital input not OK
	P08.18	A:1903	Ambient TEMP HI. Digital input not OK
	P08.19	A:2030	Air filter DP. Air filter differential pressure. Digital input not OK
	P08.20	A:2032	Line FTR DP alarm. Line filter differential pressure. Digital input not OK
	P08.21	A:2035	SEP filter DP HI. Separator filter differential pressure high
	P08.22	A:2036	SEP filter DP HI. Separator filter differential pressure high
	P08.23	A:2040	Oil filter DP. Oil filter differential pressure. Digital input not OK
	P08.24	A:2201	Line FTR DRN ALM. Line filter drain alarm. Digital input not OK.
	P08.25	A:2240	Oil / water SEP ALM. Oil water separator. Digital input not OK.
	P08.26	A:2602	No COMM fan DRV. (MODBUS comm's with 3rd party drive)
	P08.27	A:2604	COM INI fan DRV (MODBUS comm's with 3rd party drive)
	P08.28	A:2606	COM ERR fan DRV (MODBUS comm's with 3rd party drive)
	P08.29	A:2608	COM XPC fan DRV (MODBUS comm's with 3rd party drive)
	P08.30	A:2610	Fan Drive Faul EO PRESS high (MODBUS comm's with 3rd party drive)
	P08.31	A:2610	Fan DRV LNK FLT (MODBUS comm's with 3rd party drive)
	P08.32	A:2816	Power failure. 24v @ X13 is below permissible level

Message Codes	P08.33	A:2831	Airbus™ RS485 HW (Hardware not detected in X04)
	P08.34	A:2832	Airbus™ RS485 HW (Hardware not detected in X05)
	P08.35	A:2833	Airbus™ RS485 HW (Hardware not detected in X06)
	P08.36	A:2836	RTC error. A real time clock error
	P08.37	A:2970	ISC XPM DI alarm. An Internal System Control 'XPM' digital input alarm. Consult manual
	P08.38	A:4804	Service due
	P08.39	A:4805	Cabinet filter. Service due
	P08.40	A:4806	Air filter SERV. Service due
	P08.41	A:4807	Oil filter SERV. Service due
	P08.42	A:4808	SEP filter SERV. Service due
	P08.43	A:4809	Grease service. Service due
	P08.44	A:4810	Valves service. Service due
	P08.45	A:4811	Belt drive SERV. Service due
	P08.46	A:4812	ELEC SYS SERV. Service due
	P08.47	A:4813	MTR bearing SERV. Service due
	P08.48	A:4814	COMP BRG SERV. Service due
	P08.49	A:4815	Weekly service. Service due
	P08.50	A:4816	Annual service. Service due
	P08.51	A:4817	Bi-annual service. Service due
	P08.52	A:4818	Dryer service. Service due
	P08.53	A:4819	Oil Service. Service due
	P08.54	A:4820	Cooler service. Service due
	P08.55	A:4821	Oil/Fog SEP SERV. Service due
	P08.56	A:4822	Routine service. Service due
	P08.57	A:5000	Default CONFIG. Incompatible software version and parameter values. Reset to default configuration.
	P08.58	A:5100	Default CONFIG. Invalid settings. Reset to default configuration.
	P08.59	A:5200	Default CONFIG. Parameter consistency error. Reset to default configuration.
	P08.60	E:0010	Emergency stop. Digital input not OK, emergency stop button pressed!
	P08.61	E:0030	Door open. Digital input not OK
	P08.62	E:0040	Oil level. Digital input not OK
	P08.63	E:0050	RD alarm. Digital input not OK
	P08.64	E:0060	Belt drive SERV. Digital input not OK
	P08.65	E:0070	Fan MTR IMM stop. Digital input not OK
	P08.66	E:0080	Main MTR short. Consult manual
	P08.67	E:0081	Main motor lock. Consult manual
	P08.68	E:0082	Main MTR OVLD. Main motor overload. Consult manual
	P08.69	E:0083	Motor phase IMB. Main motor phase imbalance. Consult manual

Message Codes	P08.70	E:0084	Main MTR CT SENS. Main motor current sensor. Consult manual
	P08.71	E:0085	Fan motor CT sensor. Fan motor current sensor. Consult manual
	P08.72	E:0086	Fan motor overload. Consult manual
	P08.73	E:0090	Phase sequence. Consult manual
	P08.74	E:0091	Phase L1 fault. Consult manual
	P08.75	E:0092	Phase L2 fault. Consult manual
	P08.76	E:0093	Phase L3 fault. Consult manual
	P08.77	E:0115	EO PRESS sensor. Equipment outlet pressure sensor. Wiring error or faulty sensor
	P08.78	E:0119	EO PRESS high. Equipment outlet pressure high
	P08.79	E:0125	CO TEMP sensor. Compressor outlet temperature sensor Wiring error or faulty sensor
	P08.80	E:0129	COMP out TEMP HI. Compressor outlet temperature high
	P08.81	E:0131	INT PRESS low. Internal pressure low. Consult manual: See pressure rate rise feature
	P08.82	E:0135	INT PRESS sensor. Internal pressure sensor. Wiring error or faulty sensor
	P08.83	E:0139	INT PRESS high. Internal pressure high.
	P08.84	E:0179	EQUIP out TEMP HI. Equipment outlet temperature high.
	P08.85	E:0200	COOL water IMM stop. Cooling water immediate stop. Digital input not OK
	P08.86	E:0229	TEMP rise rate. Consult manual.
	P08.87	E:0603	COM INI main DRV (MODBUS comm's with 3rd party drive)
	P08.88	E:0605	COM ERR main DRV (MODBUS comm's with 3rd party drive)
	P08.89	E:0607	COM XPC main DRV (MODBUS comm's with 3rd party drive)
	P08.90	E:0909	Main drive Fault (MODBUS comm's with 3rd party drive)
	P08.91	E:0911	Main DRV LNK FLT (MODBUS comm's with 3rd party drive)
	P08.92	E:0809	DIFF PRESS high. EI – EO pressure out of permissible range. Consult manual
	P08.93	E:0814	Venting error. Excess pressure after vent time has elapsed. Consult manual
	P08.94	E:0821	Short circuit. Wiring error. Consult manual.
	P08.95	E:0846	Not used
	P08.96	E:0856	Not used
	P08.97	E:0901	User trip 1. User configurable immediate stop 1
	P08.98	E:0902	User trip 2. User configurable immediate stop 2
	P08.99	E:0903	User trip 3. User configurable immediate stop 3
	P08.100	E:0971	Cooling SYS FLT. Digital input not OK.
	P08.101	E:1887	Main motor fault. Digital input not OK.
	P08.102	E:1888	Run CHK IMM stop. Digital input not OK.
	P08.103	E:1901	Water flow. Digital input not OK.
	P08.104	E:1902	Inverter fault. Digital input not OK.
	P08.105	E:1903	Main MTR TEMP HI. Digital input not OK.
	P08.106	E:2032	Line FTR DP stop. Line filter differential pressure. Digital input not OK.

Message Codes	P08.107	E:2915	ISC PRESS SENS
	P08.108	E:2950	ISC sensor range
	P08.109	E:2960	ISC XPM COMMS
	P08.110	E:2980	ISC XPM DI
	P08.111	E:3230	Door open. Digital input not OK.
	P08.112	E:4804	Service hours. Consult manual.
	P08.113	E:4805	Cabinet filters. Digital input not OK.
	P08.114	E:4806	Air filter SERV. Air filter service. Service timer elapsed
	P08.115	E:4807	Oil filter SERV. Oil filter service. Service timer elapsed
	P08.116	E:4808	Separator SERV. Separator service. Service timer elapsed
	P08.117	E:4809	Grease service. Service due
	P08.118	E:4810	Valves service. Service due
	P08.119	E:4811	Belt drive SERV. Service due
	P08.120	E:4812	ELEC SYS SERV. Service due
	P08.121	E:4813	MTR bearing SERV. Service due
	P08.122	E:4814	COMP BRG SERV. Service due
	P08.123	E:4815	Weekly service. Service due
	P08.124	E:4816	Annual service. Service due
	P08.125	E:4817	Bi-annual SERV. Service due
	P08.126	E:4818	Dryer service. Service due
	P08.127	E:4819	Oil service. Service due
	P08.128	E:4820	Cooler service. Service due
	P08.129	E:4821	Oil/Fog SEP SERV. Service due
	P08.130	E:4822	Routine service. Service due
	P08.131	R:3123	COMP out TEMP LO. Compressor outlet temperature low
	P08.132	R:3137	INT PRESS high. Internal pressure high
	P08.133	S:3500	Start inhibit (operator inhibit)
	P08.134	S:3501	Start inhibit (enclosure doors)
	P08.135	S:3601	MTR VSD COMM ?
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

Access	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.
	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'
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
	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'

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 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

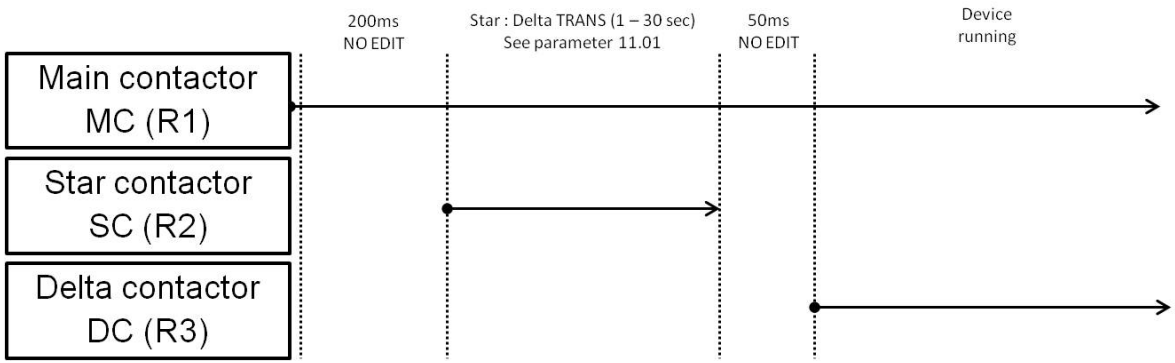
Access			described for User 1.
	P09.11 ↵	User 9	Use to enter the User 9 user account. Press 'ENTER' to access the User 9 sub menu. Follow procedures described for User 1.
	P09.12 ↵	User 10	Use to enter the User 10 user account. Press 'ENTER' to access the User 10 sub menu. Follow procedures described 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 ↵	Control mode	See 5.0 'Control modes and device state diagram' for a detailed explanation of each control mode. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'Load / off load', 'Continuous run', 'Pressure decay / no load', 'Dynamic / no load', 'Variable speed', 'Modulation' or 'ACS Modulation' . Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.01 Notes: When selecting 'Variable speed', parameters in menu P13 must be configured accordingly!
	P10.02 ↵	Force offload	When active (ON) the feature allows the operator to force the device from the load state to the offload state. Once active, to force off load, press and hold the 'START' key and then press the 'DOWN' key. The device will move from the load state to the offload state. The device will remain in the offload state until the force offload condition has been removed. If the offload period expires during the force offload condition the device will vent and move to the started state. To remove the force offload condition repeat the key stroke sequence. Stopping the device will remove the force offload condition. Note: If during a force offload condition the device vents and returns to the started state the operator must remove the force offload condition for the device to move from the started state to the loaded state. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.02
	P10.03 ↵	Start pressure	When active the start pressure value provides an alternative load pressure value to the load pressure value used during normal load operation (P10.04). In use, the device will move from the started state to the loaded state when the equipment outlet pressure decreases to the start pressure value. Once loaded, the load pressure (P10.04) and off load pressure (P10.05) are used to cycle the device between load and offload states. Only after the device enters the stopped state is the start pressure value used as the load pressure value once more. Press 'ENTER' Use the 'UP' and 'DOWN' keys to configure between OFF, 5 BAR and a maximum pressure value equal to load pressure (P10.04) minus 0.2 BAR (or other selectable unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.03
	P10.04 ↵	Load pressure	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible values. Press 'ENTER'. The

Equipment settings 1	P10.05 ↵	Off load pressure	configured value has been committed to memory and the operator returned to menu P10.04 ~ 05. The minimum differential between Load pressure and Off load pressure is 0.2 BAR (or other selectable unit of measure)
	P10.06 ↵	Run period	Run period. Consult this manual; control modes: Pressure decay / no load 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 P10.06
	P10.07 ↵	Off load period	Offload period. Consult this manual. control modes: Pressure decay / no load. 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 P10.07
	P10.09 ↵	RS485: X04 CONFIG	Press 'ENTER' to enter the RS485: X04 configuration sub menu
	P10.09.01 ↵	RS485: X04 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 P10.09.01
	P10.09.02 ↵	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 P10.09.02
	P10.09.03 ↵	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 P10.09.03
	P10.09.04 ↵	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 P10.09.04
	P10.09.05 ↵	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 P10.09.05
	P10.09.06 ↵	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 P10.09.06
	P10.09.07 ↵	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 P10.09.07
	P10.10 ↵	RS485: X05 CONFIG	Press 'ENTER' to enter the RS485: X05 configuration sub menu
	P10.10.01 ↵	RS485: X05 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 P10.10.01
	P10.10.02 ↵	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 P10.10.02
	P10.10.03 ↵	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 P10.10.03
	P10.10.04 ↵	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 P10.10.04
	P10.10.05 ↵	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 P10.10.05
	P10.10.06 ↵	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 P10.10.06
	P10.10.07 ↵	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 P10.10.07
	P10.11 ↵	RS485: X06 CONFIG	Press 'ENTER' to enter the RS485: X06 configuration sub menu
	P10.11.01 ↵	RS485: X06 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 P10.11.01
	P10.11.02 ↵	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 P10.11.02
	P10.11.03 ↵	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 P10.11.03
	P10.11.04 ↵	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 P10.11.04
	P10.11.05 ↵	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 P10.11.05
Equipment settings 1	P10.11.06 ↵	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 P10.11.06
	P10.11.07 ↵	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 P10.11.07
	P10.12 ↵	Start source	Start source is commonly 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 P10.12 Notes: **Only the selected start source method is active. When selected, all alternative start source methods are inactive!** 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 (e.g. running, loaded). Inhibit functions, timers and the load source configuration 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

Equipment settings 1			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 'COMP start / stop'. When configured for 'Communications' an appropriate RS485 option card must be installed and configured for use
	P10.13 ↵	Load source	Device Load source configuration. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure for 'EQUIP OUT PRESS', 'Equipment DI' or 'Communications'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.13 Notes: When configured for 'Equipment DI', Available digital input must be configured for Remote load enable and Remote load / offload. Remote load enable purpose: Manages device master or local control. Can be used to return the device to local if the remote load / offload signal is lost. Remote load / offload purpose: Moves the device state When configured for 'Communications' an appropriate RS485 option card must be installed and configured for use
	P10.14 ↵	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 P10.14
	P10.15 ↵	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 P10.15
	P10.16 ↵	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 P10.16
	P10.17 ↵	Daylight saving	Press 'ENTER'. Configure '+0h' or '+1h'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P10.17
	P10.18 ↵	Date	Press 'ENTER' to access the Date edit sub menu
	P10.18.01 ↵	Edit year	Use 'UP' and 'DOWN' key to set the Year
	P10.18.02 ↵	Edit month	Use 'UP' and 'DOWN' key to set the Month

Equipment settings 1	P10.18.03 ↵	Edit day	Use 'UP' and 'DOWN' key to set the Day
	P10.18.04 ↵	Save changes	Press 'ENTER' to commit the configured values on P10.18.01 – P10.18.03 to memory. Pressing 'ENTER' commits the configured values to memory are returns the operator to P10.18. Note: You must save the newly configured values in P10.18.01 – P10.18.03 using P10.18.04 before leaving the sub menu!
	P10.19 ↵	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 P10.19. 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
	P10.20 ↵	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 P10.20.
	P10.21 ↵	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 P10.21.
	P10.22 ↵	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 P10.22.
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 ↵	Star delta TRANS	Star / Delta contactor transition time. Press ENTER. Use the 'UP' and 'DOWN' keys to configure between 1 and 30 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.01 Note: Understand the operation of R1: Main contactor relay, R2: Star contactor relay, R3: Main contactor relay. See diagram below…

Equipment settings 2			 Note: R1, R2 and R3 and R4 have no function edit. R5, R6, R7 and R8 have function edit. Refer to menu P18 for more information about I/O configuration options.
	P11.02 ↵	MIN MTR run	Minimum main motor run time. Used to fix the main motor minimum run time following a main motor start event. Notes: Load / Offload state is independent of minimum main motor run time setting (i.e. irrespective of device state the minimum main motor run time is fixed). Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between Off, 1 and 1800 seconds. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.02. Note: Device state timers (e.g. Off load run time) remain active and can influence the total main motor run time.
	P11.03 ↵	Load INH time	Load inhibit time. Inhibits the device from moving to the initial load state for the initial load inhibit time duration. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. not required) and 30 seconds. Step = 1 second. Press ENTER. The configured value has been committed to memory and the operator returned to menu P11.03.
	P11.04 ↵	Reload INH time	Reload inhibit time. Inhibits the device from moving to the load state for the reload inhibit time during normal operation. Press ENTER. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. not required) and 10 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.04.
	P11.05 ↵	Off load run time	The time the device will continue to run in an offload state. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 3 and 3600 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.05.
	P11.06 ↵	Stop MIN time	Stop minimum time. The minimum time the device will remain in the stopped state before moving to any new state. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. not required) and 60

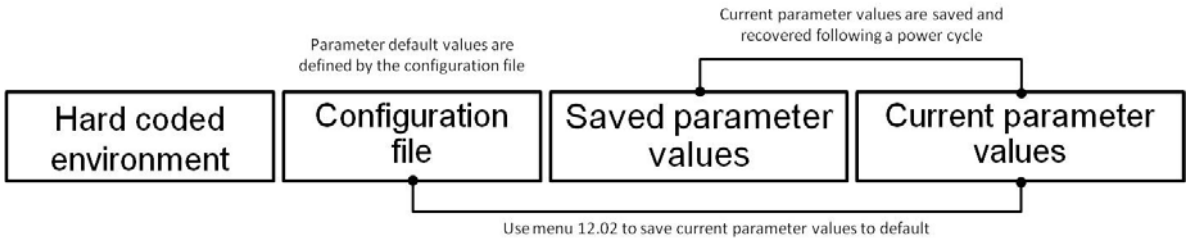
Equipment settings 2			seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.06.
	P11.07 ↵	Vent time	Vent time (Sometimes described as the blow down time). The period of time required to discharge pressure from the device. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. not required) and 600 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.07.
	P11.08 ↵	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 P11.08
	P11.09 ↵	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, drain interval and off load drain 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 P11.09 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 P11.010 Condensate drain off load open time is only active during all device off load running or other no load started state. 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 P11.11 Configuring the condensate drain off load open time to 'OFF' will disable the condensate drain function during off load running or other no load started state. **Note:** **Device state influences how the condensate drain interval times are used!** When in the load state; cycle in accordance with P11.09 drain open and P11.10 drain interval times. When the device is off load, any elapsed interval time is stored in memory and the remaining interval time applied when the device returns to the loaded state.
	P11.10 ↵	CNDS drain INT	
	P11.11 ↵	CNDS off load	

Equipment settings 2			When in off load running or other no load started state; cycle in accordance with P11.11 drain open and 10 X P11.10 CNDS drain INT. The cycle begins with the calculated X10 condensate drain interval time. No elapsed time is stored and the cycle is reset each time the device enters a state which invokes the use of the off load drain open and interval times.
	P11.12 ↵	0MTR STR HR INH	Main motor starts per hour inhibit. The maximum permissible main motor starts in any one chronological hour Every time a main motor start occurs, a 'start event' entry is made in a perpetual 'first in first out' list. The list entry begins at 3600 seconds (or 1 hour) and decrements from that value. For each additional main motor start up to the maximum permissible number of main motor starts in any one chronological hour, a further entry is made. When an entry expires (i.e. after 3600 seconds) the total number of listed main motor starts entries decrements accordingly. If the total number of main motor starts registered (motor start events within the last 3600 seconds) equals the number of permissible starts, an adjustment to the off load run time is made. The new off load run time is calculated so that the main motor will continue to run until the number of registered main motor start events within the last one hour period reduces below the permissible maximum, allowing another main motor start event to occur. Note: The 'main motor starts per hour inhibit' function only influences the off load run time, it will not prevent the main motor from starting. If a main motor start is performed after the maximum permissible number of main motor starts have been registered, the oldest register is removed from the list, causing the off load run time to increase. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF (i.e. not required), 1 and 20. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.12.
	P11.13 ↵	DP inhibit time	Differential pressure inhibit time. Measures the differential pressure between the Equipment outlet pressure and the Equipment internal pressure. Use the Differential pressure inhibit time to filter (ignore) instantaneous or short periods where the differential pressure alarm or trip levels are exceeded. Press 'ENTER'. Configure between 1 and 600 Seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.13.
	P11.14 ↵	Service hours 1	Enter sub menu
	P11.14.01 ↵	Function	Configure 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 service, 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 P11.14.01 **Note: Set hours value at P16.01**
	P11.14.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.14.02

Equipment settings 2			Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.14.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.14.03
	P11.15 ↵	Service hours 2	Enter sub menu
	P11.15.01 ↵	Function	Configure 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 service, 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 P11.15.01 **Note: Set hours value at P16.02**
	P11.15.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.15.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.15.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.15.03
	P11.16 ↵	Service hours 3	Enter sub menu
	P11.16.01 ↵	Function	Configure 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 P11.16.01 **Note: Set hours value at P16.03**
	P11.16.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.16.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.16.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.16.03
	P11.17 ↵	Service hours 4	Enter sub menu
	P11.17.01 ↵	Function	Configure 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

Equipment settings 2			committed to memory and the operator returned to menu P11.17.01 **Note: Set hours value at P16.04**
	P11.17.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.17.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.17.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.17.03
	P11.18 ↵	Service hours 5	Enter sub menu
	P11.18.01 ↵	Function	Configure 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 P11.18. 01 **Note: Set hours value at P16.05**
	P11.18.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.18.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.18.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.18.03
	P11.19 ↵	Service hours 6	Enter sub menu
	P11.19.01 ↵	Function	Configure 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 P11.19.01 **Note: Set hours value at P16.06**
	P11.19.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.19.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.19.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The

Equipment settings 2			configured value has been committed to memory and the operator returned to menu P11.19.03
	P11.20 ↵	Service hours 7	Enter sub menu
	P11.20.01 ↵	Function	Configure 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 P11.20.01 **Note: Set hours value at P16.07**
	P11.20.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.20.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.20.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.20.03
	P11.21 ↵	Service hours 8	Enter sub menu
	P11.21.01 ↵	Function	Configure 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 P11.21.01 **Note: Set hours value at P16.08**
	P11.21.02 ↵	Pre condition	Use pre condition to annunciate Service hour conditions up to 200 hours before the timer decrements to 0. Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure between OFF, o and 200 hours. Step = 10. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.21.02 Note: The Pre condition menu item will not reveal until the corresponding Immediate stop enable is set to ON.
	P11.21.03 ↵	IMM stop enable	Use immediate stop enable to create an Immediate stop condition once the service hours timer decrements to 0. Press 'ENTER'. Use the 'Up and 'DOWN' keys to configure between ON or OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.21.03
	P11.22 ↵	Weekly service	Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for 'ON' or 'OFF'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.19. **Note: Set time value at P16.09**
	P11.23 ↵	Annual service	Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for 'ON' or 'OFF'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P11.20. **Note: Set time value at P16.10**
	P11.24 ↵	Bi-annual service	Press 'ENTER'. Use the 'UP' and 'DOWN' key to configure for 'ON' or 'OFF'. Press 'ENTER'. The configured

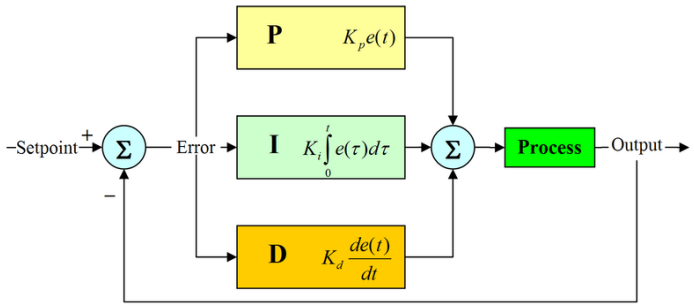
			value has been committed to memory and the operator returned to menu P11.21. **Note: Set time value at P16.11**
Equipment settings 3	**Equipment settings have been arranged over a series of Equipment setting menus. Menu items are grouped together allowing Administrators to provide menu access to equipment 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 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 CONFIG	Creates a new 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

Equipment settings 3			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 ↵	EO PRESS range	Equipment outlet pressure sensor range. Press 'ENTER'. Configure between 5.0 BAR and 100 BAR (or other selectable unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to Menu P12.04. Note: In standard hardware, the pressure sensor signal is 4-20mA In standard software, the 4mA signal is referenced to 0 Bar In standard software, the 20mA signal is the maximum range of the sensor up to a maximum of 100 Bar
	P12.05 ↵	EI PRESS range	Equipment internal pressure sensor range. Press 'ENTER'. Configure between 5.0 BAR and 100 BAR (or other selectable unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to Menu P12.05. Note: In standard hardware, the pressure sensor signal is 4-20mA In standard software, the 4mA signal is referenced to 0 Bar In standard software, the 20mA signal is the maximum range of the sensor up to a maximum of 100 Bar
	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 the date the device was commissioned Note: The date configured should correspond with the device commissioning date (i.e. the date the device was put into first service)

Equipment settings 3	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 ↵	Set load hours	Set load hours provide a controller accessible indication of device load hours. The set load hour’s feature is typically only used to purge pre commissioning load 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 ↵	Set off load HRS	Set off load hours provides a controller accessible indication of device off load hours. The set off load hour’s feature is typically only used to purge pre commissioning off load 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 P12.10
	P12.11 ↵	Set 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 value and returns the operator to P12.11
	P12.12 ↵	AI3 sensor type	Configure for sensor type. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure for ‘PT1000’, ‘PT100’, ‘KTY’ or ‘OFF’. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.12 Note: We recommend the use of PT1000 temperature sensor types When using KTY sensor types always specify 2000 Ohm @ 25°C rated sensors
	P12.13 ↵	AI5 sensor type	Configure for sensor type. Press ‘ENTER’ Use ‘Up’ and ‘DOWN’ keys to configure for ‘PT1000’, ‘PT100’, ‘KTY’ or ‘digital’. Pressing ‘ENTER’ saves the configured value and returns the operator to P12.13 Note:

Equipment settings 3			We recommend the use of PT100 or PT1000 temperature sensor types When using KTY sensor types always specify 2000 Ohm @ 25°C rated sensors
	P12.14 ↵	EI sensor active	Equipment internal pressure sensor. When installed use the Internal pressure sensor parameter to enable its use and function in conjunction with the Equipment outlet pressure sensor. 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 ↵	ISC available	Internal system control available. Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.15. When enabled, the Airmaster™ Q1 Internal system control menu's P80, P81 and P82 become available. Note: Menu P12.15 merely activates ISC menu access. Once activated, configure the use of the ISC function in menu's P80, P81 and P82
	P12.16 ↵	ISC P SENS range	Internal System Control Pressure Sensor range. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.16.
	P12.17 ↵	Fan TEMP high	Fan TEMP high setting. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.17. Notes: When COMP OUT TEMP ≥ Fan TEMP high the relay output assigned to 'fan' function is activated
	P12.18 ↵	Fan TEMP low	Fan TEMP low setting. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure as required. Pressing 'ENTER' saves the configured value and returns the operator to P12.18. Notes: When COMP OUT TEMP ≤ Fan T° low the relay output assigned to 'fan' function is de-activated
	P12.19 ↵	Fan run period	Fan run period. Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 0 and 600 seconds. Step = 1. Pressing 'ENTER' saves the configured value and returns the operator to P12.19.
	P12.20 ↵	Boot screen BMP	Use to enable (ON) or disable (OFF) the bitmap screens displayed during a power cycle. 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 P12.20.
	P12.21 ↵	P00.03 CONFIG	P00.03 User defined menu display configuration. Press 'ENTER'. Use the 'UP' and 'DOWN' to configure between OFF, P##.## or other accessible menu page name. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P12.21
	P12.22 ↵	P00.04 CONFIG	P00.04 User defined menu display configuration. Press 'ENTER'. Use the 'UP' and 'DOWN' to configure between OFF, P##.## or other accessible menu page name. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P12.22

Equipment settings 3	P12.23 ↵	P00.05 CONFIG	P00.05 User defined menu display configuration. Press 'ENTER'. Use the 'UP' and 'DOWN' to configure between OFF, P##.## or other accessible menu page name. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P12.23
VSD settings	**Variable speed drive (hereinafter referred to as the VSD) settings manage the relationship between the VSD and the device main motor.**		
	P13.01 ↵	VSD control mode	VSD control modes selection. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 'VAR speed CTRL' or 'Fixed speed control'. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.01. Notes: In variable speed control mode, the VSD functions across the available and configured speed range In fixed speed control mode, the VSD functions like an electronic gearbox, regulating between… • At PL change device state, go to OPTIMUM SPEED • At PH change device state, go to OFFLOAD SPEED
	P13.02	VSD target PRESS	VSD target pressure. Press 'ENTER' Use the 'UP' and 'DOWN' keys to configure between permissible values. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.02. Note: Maximum permissible value = Equipment outlet pressure alarm value minus 0.2 bar (or other unit of measure)
	P13.03 ↵	VSD MAX speed	Variable speed drives maximum speed. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 100 and 10,000 RPM. Step = 100 RPM. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.03.
	P13.04 ↵	VSD MIN speed	Variable speed drives minimum speed. Press 'ENTER'. Configure between 0 and 9900 RPM. Step = 100 RPM. Press 'ENTER'. The configured value has been committed to memory and the operator returned to

VSD settings			menu P13.04.
	P13.05 ↵	VSD OPT speed	Variable speed drives optimum speed. Press 'ENTER'. Configure between 100 and 10,000 RPM. Step = 100 RPM. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.05. Note: Variable speed drive optimum speed is used to broadcast device optimum speed to Metacentre™ system controllers via the Airbus485™ network protocol. Using this parameter and its intelligent software algorithms, Metacentre™ system controllers are able to optimise the utilisation of multiple variable speed drive devices that feature Airmaster™ device controllers.
	P13.06 ↵	VSD off load speed	Variable speed drive off load speed. The drive speed used when the device moves to the off load state. Press 'ENTER'. Configure between 0 and 9900 RPM. Step = 100 RPM. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.07.
	P13.07	VSD speed RPM	Variable speed drive speed RPM. No edit. Airmaster Q1™ PID output to variable speed drive.
	P13.08	VSD output CURR	Variable speed drive output current. No edit. Airmaster Q1™ PID output to variable speed drive.
	P13.09 ↵	VSD P factor	Variable speed drive proportional loop factor (See diagram below). Press 'ENTER'. Configure between 0 and 100. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.09. 
	P13.10 ↵	VSD I factor	Variable speed drive Integration factor (see diagram above). Press 'ENTER'. Configure between 0 and 100. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.10.
	P13.11 ↵	VSD D factor	Variable speed drive derivative factor (see diagram above). Press 'ENTER'. Configure between 0 and 100. Press ENTER. The configured value has been committed to memory and the operator returned to menu P13.11.
	P13.12	VSD speed %	Variable speed drive speed %. No edit. Airmaster Q1™ PID output to variable speed drive.
	P13.13 ↵	VSD MAX RMP rate	Variable speed drive maximum ramp rate. Press 'ENTER'. Configure between 5% and 100%. Step = 1%. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.13.
	P13.25 ↵	Skip Hz 1 low	VSD skip frequency 1 low set point. Press 'ENTER'. Configure between OFF and 100 Hz. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.25

VSD settings			Notes: Logical skip frequency low and high set point value restrictions apply When skip frequency 1 low set point is adjusted to a value greater than OFF, skip frequency 1 high menu and skip frequency 2 low menus are revealed. Similarly, when skip frequency 2 low set point is adjusted to a value greater than OFF, skip frequency 2 high menu and skip frequency 3 low menus are revealed. There are a total of 3 skip frequency ranges that can be configured
	P13.26 ↵	Skip Hz 1 high	VSD skip frequency 1 high set point. Press 'ENTER'. Configure between skip Hz 1 low +1 and 100 Hz. Step = 1. Press ENTER. The configured value has been committed to memory and the operator returned to menu P13.26
	P13.27 ↵	Skip Hz 2 low	VSD skip frequency 2 low set point. Press 'ENTER'. Configure between OFF, skip Hz 1 high +2 and 100 Hz. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.27
	P13.28 ↵	Skip Hz 2 high	VSD skip frequency 2 high set point. Press 'ENTER'. Configure between skip Hz 2 low +1 and 100 Hz. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.28
	P13.29 ↵	Skip Hz 3 low	VSD skip frequency 3 low set point. Press 'ENTER'. Configure between OFF, skip Hz 2 high +2 and 100 Hz. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.29
	P13.30 ↵	Skip Hz 3 high	VSD skip frequency 3 high set point. Press 'ENTER'. Configure between skip Hz 3 low +1 and 100 Hz. Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P13.30
Motor protection	**Motor protection is part of Airmaster™ Q1's Advanced Power Monitoring feature. Advanced power monitoring is provided in two ways. First, frequency and phase protection is provided via the high voltage phase connection (X12). Refer to Menu P16 and P17 for a detailed description of this feature. Secondly, phase angle, under current detection, rotor lock overload and phase imbalance protection is provided. Menu P14 describes these features in detail.** **Combined, Advanced Power Monitoring offers protection equivalent to Trip Class 10A for the main motor and motor overload protection equivalent to Trip Class 10A for the fan motor of the device as well as current sensor and / or wiring error protection.**		
	P14.01 ↵	Main MTR protect	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 P14.01.
	P14.02 ↵	Fan MTR protect	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 P14.02.
	P14.03 ↵	Main MTR NOM CUR	Main motor nominal current is described below. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 5.0Amps and 1000Amps. Step = 0.1A. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P14.03.
	P14.04 ↵	Main MTR SDTTF	Main motor star delta transition time factor is described below. Press 'ENTER'. Use the 'Up' and 'DOWN' keys

Motor protection			to configure between 1.1 and 3.0. Step = 0.1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P14.04. (See example below)
	P14.05 ↵	Main MTR ROT LOC	Main motor rotor lock protection is described below. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between OFF (i.e. not required) and 5.0. Step = 0.1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P14.05.
	P14.06 ↵	Main MTR PH IMB	Main motor phase imbalance protection is described below. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 5% and 40%. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P14.06.
	P14.07 ↵	Fan MTR NOM CURR	Fan motor nominal current is described below. Fan motor nominal current. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 0.50Amps and 100Amps. Step = 0.01A. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P14.07. (See example below)
	P14.08 ↵	Fan MTR OVLD INH	Fan motor overload inhibit time. Used to inhibit the current value measured during the Fan motor overload inhibit time. Note: The Fan motor overload inhibit time starts following a fan motor start event. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 1 second and 10 seconds. Step = 0.1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P14.08.

Establishing motor nominal current:

For the motor protection feature to function effectively it is important to configure the main motor nominal current at P14.03 and the fan motor nominal current at P14.07. Motor nominal current can be calculated as follows...

First, establish the nominal motor kW rating, service factor (if any), power factor cos phi and the line voltage for the motor concerned (i.e. main motor and / or fan motor where applicable).

Because the CT's are placed on only one of the 3 phases we're going to add 1.73 (the square root of 3) to our calculation. So, for example a main motor with a nominal motor rating of 37kW, service factor of 1.05, power factor cos phi of 0.85 and line voltage of 400 volts, the nominal current would equal...

(37kW * 1.05) / (400V * 0.85 * 1.73) = 66 AMPS

So, for example a fan motor with a nominal motor rating of 1.1kW, service factor of 1.0.5, power factor cos phi of 0.85 and line voltage of 400 volts, the nominal current would equal...

(1.1kW * 1.05) / (400V * 0.85 * 1.73) = 2 AMPS

C.T. selection and physical location:

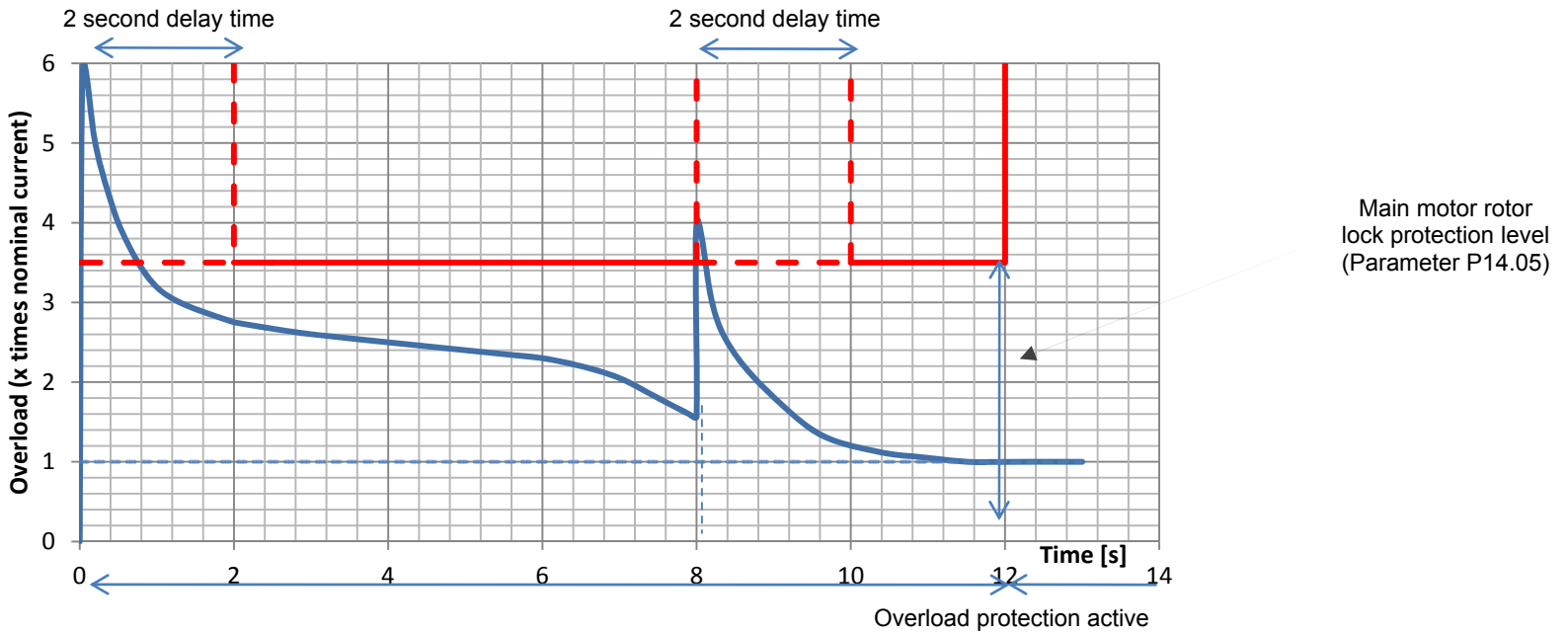
C.T. selection:

A comprehensive range of C.T.'s from 5 AMP to 650 AMP exist.

Do not select a C.T. where the nominal current measured is less than 40% of the C.T.'s rating. The available range of C.T.'s overlap between 40% and 50% at which point two options may be possible!

Motor protection	Loop or wind the current cable through the C.T. for greater accuracy where necessary (1 x = current, 2 x = 2 x current, 3 x = 3 x current etc) Main motor: The main motor C.T.'s (2) are placed on the phase current, which is 1.73 times lower than the line current in the delta state. Factor accordingly! Using our example above, 66A / 1.73 = 38 AMPS so selecting a 40 AMP C.T. is appropriate. Fan motor: The fan motor C.T. (1) is placed on the line current so there is no reduction in current measured. Again using our example above, fan current is 2 AMPS so selecting a 5 AMP C.T. is appropriate. Because the nominal current measured is 40% of the C.T.'s rating it is possible to loop or wind the line current through the C.T. twice for greater accuracy (i.e. increasing the line current measured to 4 AMPS) **Note: When looping or winding the current through the C.T. remember to adjust the corresponding C.T. winding parameter in Menu P19** Note: Consult the Airmaster™ Q1 installation guide for a comprehensive guide to main and fan motor C.T. physical location **Rotor lock and overload protection:** Rotor lock and overload protection are never active simultaneously! During a motor start event, rotor lock protection is active for a factor of time determined by the star delta transition time factor parameter at P14.04. Following the aforementioned period of time, rotor lock protection is deactivated and overload protection is simultaneously activated. **Rotor lock protection (providing enhanced motor start event protection):** Rotor lock protection will immediately stop the main motor if the starting current is too high. The protection has a delay time of 2 seconds to allow current peaks that occur when the main motor is initially started and / or during a main motor star-delta transition event. The following method is provided for guidance only! It can be used to establish a parameter value for the main motor ROT lock parameter at menu P14.05. If in doubt, contact your product supplier

Motor protection



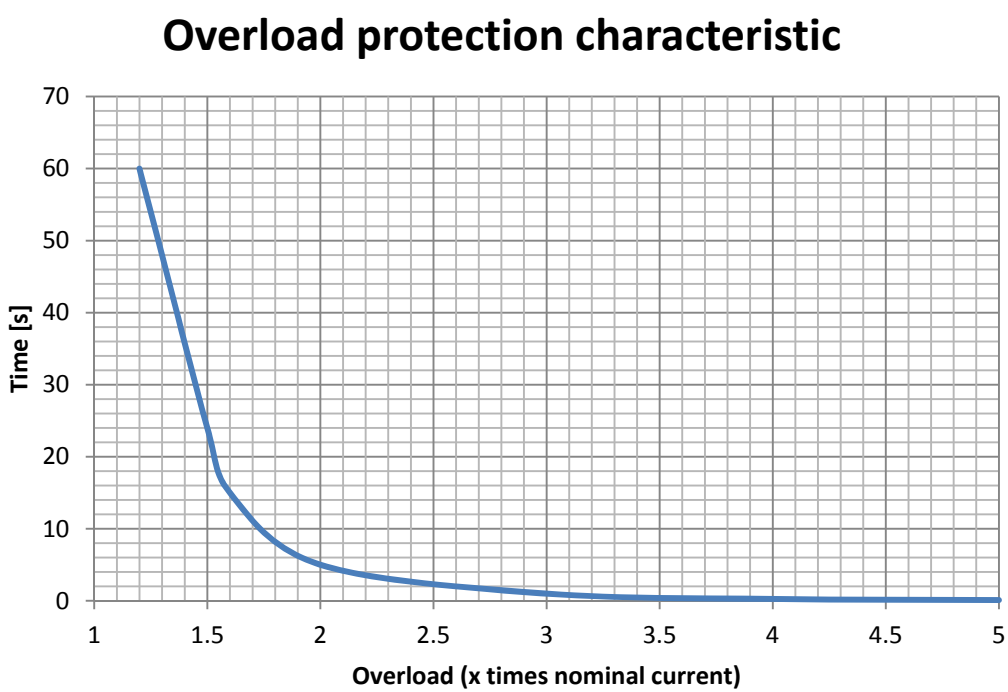
Typical parameter values are between 2.5 and 4. A simple method of establishing a parameter value is to gradually lower the parameter value until a main motor ROT lock immediate stop event occurs. The motor should be COLD when using this method to establish a parameter value. Once established, set the parameter value higher (for example... add 1.0) to compensate for performance variation due to general wear and tear, filter blockages and lower device oil temperature.

Overload protection (providing continuous motor overload protection):

Following star delta transition time factor period, overload protection of the main motor is activated. Following the fan motor overload inhibit period, overload protection of the fan motor is activated. The fan motor overload inhibit is intended to allow current peaks that can occur during a fan motor start event.

It is not necessary to configure the characteristics of the overload protection. Instead, overload protection is determined by Airmaster™ Q1 using the configured nominal current for the respective motor and the following...

Motor protection



Overload factor	Time [s]
1,2	60
1,3	48
1,5	24
1,6	15
2	5
3	1
4	0,25
5	0,1

Under current detection:

No configuration is necessary! Following a delay tim of 2 seconds, the Airmaster™ Q1 monitors the presence of current in any running state. If the detected current is less than 20% of the nominal motor current the Airmaster™ Q1 will assume this to be an abnormal under current condition and an immediate stop event will occur.

Note: 20% is a value sufficiently high to filter out noise and sufficiently low to avoid reporting low operating current as a fault (e.g. no load running current)

Main motor phase imbalance protection:

The value measured in each phase should be equal. Main motor phase imbalance measures any deviation in the phase value measured. If the measured value in any of the 3 phases deviates by more than the configured value (configured as a percentage), an immediate stop event will occur.

Main motor phase angle protection:

Motor protection	No configuration is necessary! The Airmaster™ Q1 monitors the sequential use of Phase 1, 2 and 3 and the corresponding phase angle. L1 = 0° L2 phase angle = 100° and 140° L3 phase angle = 220° and 260° If a phase angle error occurs and the immediate stop condition is configured, an immediate stop event will occur. **Current sensor or wiring error protection:** If the measured current is lower than 20% of the nominal current when the respective motor is running, the Airmaster™ Q1 will assume there is a current sensor defect or that there is a wiring fault.		
Inhibits	**Airmaster™ Q1 features a variety of menu configurable inhibits that restrict the device moving to a running state.**		
	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 starting 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
	P15.03 ↵	Low temperature	To prevent starting during extreme ambient conditions the low temperature inhibit can be used to prevent the device from starting. The low temperature inhibit uses the COMP OUT TEMP sensor value as a reference condition. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between -20°C and +10°C (or other selectable unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P15.03.
	P15.04 ↵	INT PRESS high	To prevent starting when excessive internal pressure exists the internal pressure high inhibit can be used to prevent the device from starting. The internal pressure high inhibit uses the internal pressure sensor value as a reference condition. Press 'ENTER'. Use the 'Up' and 'DOWN' keys to configure between 0.1 BAR and 2.0 BAR (or other

			selectable unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P15.04.
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 alamr. 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. 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!
	P16.06 ↵	Service hours 6	Service hours 6 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 P16.06. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.07 ↵	Service hours 7	Service hours 7 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 P16.07. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.08 ↵	Service hours 8	Service hours 8 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

Warnings / IMM stop alarms			to memory and the operator returned to menu P16.08. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.09 ↵	Weekly service	Weekly service warning alarm. Press 'ENTER' to access sub menu P16.09.## Note: To function, the parameter must be enabled in menu P11 – Equip settings 2!
	P16.09.01 ↵	AUTO SCH service	Automatic schedule next service. Press 'ENTER'. Use 'UP' or 'DOWN' keys to select 'YES'. Press 'ENTER'. The next weekly service has been chronologically configured. Note: The auto schedule feature adds 7 calendar days to the currently configured values in P16.09.02 ~ P16.09.05
	P16.09.02 ↵	Year	Manually configure the Year of the next service. Press 'ENTER'. Use 'Up' or 'DOWN' keys to configure 'Year', Press 'ENTER'. The configured value has been updated and the operator returned to menu P16.09.02.
	P16.09.03 ↵	Month	Manually configure the Month of the next service. Press 'ENTER'. Use 'Up' or 'DOWN' keys to configure 'Month', Press 'ENTER'. The configured value has been updated and the operator returned to menu P16.09.03.
	P16.09.04 ↵	Day	Manually configure the Day of the next service. Press 'ENTER'. Use 'Up' or 'DOWN' keys to configure 'Day', Press 'ENTER'. The configured value has been updated and the operator returned to menu P16.09.04.
	P16.09.05 ↵	Time	Manually configure the Time of the next service. Press 'ENTER'. Use 'Up' or 'DOWN' keys to configure 'Time', Press 'ENTER'. The configured value has been updated and the operator returned to menu P16.09.05.
	P16.09.06 ↵	Save changes	Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.09
	P16.10 ↵	Annual service	Annual service warning alarm. Press 'ENTER' to access sub menu P16.10.##. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2! Note: Following Year, Month, Day and Time configuration procedure described above!
	P16.11 ↵	Bi-annual service	Bi-annual service warning alarm. Press 'ENTER' to access sub menu P16.11.##. Note: To function, the parameter must be enabled in menu P11 – Equip settings 2! Note: Following Year, Month, Day and Time configuration procedure described above!
	P16.12 ↵	COMP OUT TEMP	Analogue type (See Menu P12.12): Device 'compressor engine' outlet temperature warning alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. not required), 70°C and 240°C (or other selectable unit of measure). Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.12. Digital type (See Menu P12.12): Device 'compressor engine' outlet temperature warning alarm. Press 'ENTER'. Configure between OFF and

Warnings / IMM stop alarms			ON. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.12.
	P16.13 ↵	EQUIP OUT PRESS	Equipment outlet pressure warning alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF and the maximum permissible value. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.13. Note: Minimum permissible value = 0.1 BAR (or other unit of measure) above Off load pressure Note: Maximum permissible value = 0.1 BAR (or other unit of measure) below Equipment outlet pressure immediate stop value.
	P16.14 ↵	EQUIP INT PRESS	Equipment internal pressure warning alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF and the maximum permissible value. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.14. Note: Minimum permissible value = 0.1 BAR (or other unit of measure) above Equipment outlet pressure warning. Note: Maximum permissible value = 0.1 BAR (or other unit of measure) below Equipment internal pressure immediate stop alarm
	P16.15 ↵	DIFF pressure	Differential pressure warning alarm (EQUIP INT PRESS MINUS EQUIP OUT PRESS). Press 'ENTER'. Configure between OFF, 0.2 BAR and the maximum permissible value. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.15. Note: The minimum differential between differential pressure warning and differential pressure immediate stop = 0.2 BAR. Note: DIFF pressure warning monitoring is disabled when delivery temperature is below 50°C (or other unit of measure) Note: DIFF pressure must continuously exceed the set value for more than 10 seconds for a warning to occur
	P16.16 ↵	Oil Air SEP DP HI	Device 'Oil / Air Separator' differential pressure high warning alarm (Oil Air SEP DP HI MINUS EQUIP OUT PRESS). Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF, 0.01 BAR and 2.00 BAR (or other selectable unit of measure). Step = 0.01 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.16 Note: Device pressure warning monitoring is disabled when delivery temperature is below 50°C (or other unit of measure) Note: DIFF pressure must continuously exceed the set value for more than 10 seconds for a warning to occur
	P16.17 ↵	Phase detection	Power source phase detection 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 P16.17.

Warnings / IMM stop alarms			If ON this parameter will warn if a loss of phase occurs or if the frequency is lower that 40Hz or greater than 70Hz for more than 500milliseconds (or 25 cycles).
	P16.18 ↵	HI MTR STR HR	High main motor starts per hour warning alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF, 1 and 20. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P16.18
	P16.19 ↵	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
	P16.20 ↵	CAB filter DP	Device cabinet filter differential pressure 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 P16.20. Note: Requires appropriate digital input assignment. See Menu P18
	P16.21↵	Air filter DP	Device air filter differential pressure 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 P16.21. Note: Requires appropriate digital input assignment. See Menu P18
	P16.22 ↵	Oil filter DP	Oil filter differential pressure 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 P16.22. Note: Requires appropriate digital input assignment. See Menu P18
	P16.23 ↵	SEP filter DP HI	Device separator filter differential pressure 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 P16.23. Note: Requires appropriate digital input assignment. See Menu P18
	P16.24 ↵	Fan motor alarm	Fan motor alarm 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 P16.24. Note: Requires appropriate digital input assignment. See Menu P18
	P16.25 ↵	CNDS drain alarm	Device condensate drain 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 P16.25. Note: Requires appropriate digital input assignment. See Menu P18
	P16.26 ↵	COOL water alarm	Device cooling water 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 P16.26. Note: Requires appropriate digital input assignment. See Menu P18
	P16.27 ↵	Oil level alarm	Device oil level 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 P16.27. Note: Requires appropriate digital input assignment. See Menu P18
	P16.28 ↵	RD alarm	Device refrigerant dryer 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 P16.28. Note: Requires appropriate digital input assignment. See Menu P18
	P16.29 ↵	Line FTR DP ALM	Device line filter differential pressure 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 P16.29. Note: Requires appropriate digital input assignment. See Menu P18
	P16.30 ↵	FTR drain ALM	Device filter drain 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 P16.30. Note: Requires appropriate digital input assignment. See Menu P18
Warnings / IMM stop alarms	P16.31 ↵	Oil/WTR SEP ALM	Device oil / water separator 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 P16.31. Note: Requires appropriate digital input assignment. See Menu P18
	P16.32 ↵	Ambient TEMP HI	Ambient temperature high 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 P16.32. Note: Requires appropriate digital input assignment. See Menu P18
	P16.33 ↵	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
	P16.34 ↵	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
	P16.35 ↵	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

Warnings / IMM stop alarms			menu P16.34
	P17.01 ↵	COMP OUT TEMP	Analogue type (See Menu P12.12): Device 'compressor engine' outlet temperature immediate stop alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF (i.e. not required), 70°C and 240°C (or other selectable unit of measure). Step = 1. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.01 Digital type (See Menu P12.12): Device 'compressor engine' outlet temperature immediate stop alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF and ON. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.01
	P17.02 ↵	HI TEMP rise	High temperature rise immediate stop alarm. The purpose of the high temperature rise parameter is to monitor any abnormally high rise in device temperature following a run condition. Press ENTER to access the HI TEMP rise sub menu
	P17.02.01 ↵	Delta TEMP	Delta temperature immediate stop alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 1 and 60°C (or other selectable unit of measure). Step = 1°C. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.02.01.
	P17.02.02 ↵	Delta time	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 5 and 30 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.02.02.
	P17.02.03 ↵	Active time	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF, 0 and 60 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.02.03 Note: Active time = The period of time defined in seconds that the high temperature rise parameter remains active following a state change to 'run'.
	P17.03 ↵	EQUIP OUT PRESS	Equipment outlet pressure immediate stop alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible values. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.03. Note: Minimum permissible value = 0.1 BAR (or other unit of measure) above Equipment outlet pressure warning alarm.
	P17.04 ↵	EQUIP INT PRESS	Equipment internal pressure immediate stop alarm. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between permissible value. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.04. Note: Minimum permissible value = 0.1 BAR (or other unit of measure) above Equipment internal pressure warning.
	P17.05 ↵	Low PRESS rise	Low pressure rise immediate stop alarm. The purpose of the pressure rise parameter is to monitor any abnormally low rise in internal pressure following a run condition. Press 'ENTER' to access the Low pressure rise sub menu.

Warnings / IMM stop alarms			Note: Only active when an internal pressure sensor is installed.
	P17.05.01 ↵	Min INT PRESS	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between 0 and 2 BAR (or other selectable unit of measure). Step = 0.1 BAR. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.05.01.
	P17.05.02 ↵	Active time	Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between OFF, 0 and 60 seconds. Step = 1 second. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.05.02
	P17.06 ↵	DIFF pressure	Differential pressure immediate stop alarm (EQUIP INT PRESS MINUS EQUIP OUT PRESS). Press ENTER. Use the 'UP' and 'DOWN' keys to configure between OFF, 0.4 BAR and the maximum permissible value. Step = 0.1 BAR (or other unit of measure). Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.06. Note: The minimum differential between differential pressure warning and differential pressure immediate stop = 0.2 BAR. Note: DIFF pressure immediate stop alarm monitoring is disabled when delivery temperature is below 50°C (or other unit of measure) Note: DIFF pressure must continuously exceed the set value for more than 10 seconds for a warning to occur
	P17.07 ↵	Main motor lock	Device main motor locked immediate stop alarm. Press 'ENTER'. Use the 'Up' and 'DOWN' to configure between ON and OFF. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P17.07.
	P17.08 ↵	Main motor OVLD	Device main motor overload immediate stop 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 P17.08. If ON this parameter will immediately stop the device of a motor overload determined by P14 menu configuration or if a main motor overload digital input registers a 'NOT OK' condition
	P17.09 ↵	Motor phase IMB	Device main motor phase imbalance immediate stop 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 P17.09. If ON this parameter will immediately stop the device if a phase imbalance occurs
	P17.10 ↵	Fan MTR overload	Device fan motor overload immediate stop 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 P17.10. If ON this parameter will immediately stop the device of a motor overload determined by P14 menu configuration or if a fan motor overload digital input registers a 'NOT OK' condition
	P17.11 ↵	Phase detection	Device phase detection immediate stop 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

Warnings / IMM stop alarms			operator returned to menu P17.11. If ON this parameter will immediately stop the device if phase order (L1, L2, L3) is incorrect or if a loss of phase occurs
	P17.12 ↵	Door open	Device enclosure door open immediate stop 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 P17.12. Note: Requires appropriate digital input assignment. See Menu P18
	P17.13 ↵	Fan motor alarm	Fan motor immediate stop 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 P7.13. Note: Requires appropriate digital input assignment. See Menu P18
	P17.14 ↵	COOL water alarm	Device cooling water immediate stop 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 P17.14. Note: Requires appropriate digital input assignment. See Menu P18
	P17.15 ↵	Oil level alarm	Device oil level immediate stop 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 P17.15. Note: Requires appropriate digital input assignment. See Menu P18
	P17.16 ↵	Belt drive SERV	Device belt drive service immediate stop 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 P17.16. Note: Requires appropriate digital input assignment. See Menu P18
	P17.17 ↵	RD alarm	Device refrigerant dryer immediate stop 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 P17.17. Note: Requires appropriate digital input assignment. See Menu P18
	P17.18 ↵	Water flow	Water flow immediate stop 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 P17.18. Note: Requires appropriate digital input assignment. See Menu P18
	P17.19 ↵	Inverter fault	Inverter fault immediate stop 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 P17.19.

Warnings / IMM stop alarms			Note: Requires appropriate digital input assignment. See Menu P18
	P17.20 ↵	Main MTR temp HI	Main motor temp high immediate stop 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 P17.20. Note: Requires appropriate digital input assignment. See Menu P18
	P17.21 ↵	EQUIP out TEMP HI	Equipment outlet temp high immediate stop 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 P17.21. Note: Requires appropriate digital input assignment. See Menu P18
	P17.22 ↵	Cooling SYS FLT	Cooling system fault immediate stop 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 P17.22. Note: Requires appropriate digital input assignment. See Menu P18
	P17.23 ↵	Main motor fault	Main motor fault immediate stop 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 P17.23. Note: Requires appropriate digital input assignment. See Menu P18
	P17.24 ↵	Conf IMM stop 1	Configured immediate stop 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 P17.21 Note: Requires appropriate digital input assignment. See Menu P18
	P17.25 ↵	Conf IMM stop 2	Configured immediate stop 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 P17.22 Note: Requires appropriate digital input assignment. See Menu P18
	P17.26 ↵	Conf IMM stop 3	Configured immediate stop 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 P17.23 Note: Requires appropriate digital input assignment. See Menu P18
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**		

I/O (Input / Output) CONFIG	**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
		Alarm	Energised for any active Alarm fault (not including Start/Run Inhibit)
		Alarm NO	De-energised for any active Alarm fault (not including Start/Run Inhibit)
		Alarm & service	Energised for any Alarm fault or Service Due alarm (not including Start/Run Inhibit)
		Alarm & Service NO	De-energised for any Alarm fault or Service Due alarm (not including Start/Run Inhibit)
		Drain	See P11.08 & P11.09
		Dryer control	Energised in all RUNNING state conditions
		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
		Fan	Energised in all RUNNING states except 'motor starting' and 'load delay'. Can be used to energise internal and/or external cooling fan motor contactor
		Fan control	Enabled to operate in all RUNNING states except 'motor starting' and 'load delay'. If enabled to operate the output will only energise if delivery temperature exceeds the set 'Fan High' temperature setting. If delivery temperature falls below the set 'Fan Low' temperature setting the output will de-energise. Once energised the output will remain energised for a minimum of the set 'Fan Minimum Run Time' regardless of delivery temperature. Can be used to energise internal and/or external cooling fan
		Fan MTR current	Repeat Fan motor current value via 4-20mA output signal
		Group fault	Energised for any active Alarm, Star/Run Inhibit or Shutdown fault
		Group fault NO	De-energised for any active Alarm, Star/Run Inhibit or Shutdown fault
		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.
		Immediate stop	Energised for any active Immediate stop condition. (not including Start/Run Inhibit)
		IMM stop NO	De-energised for any active Shutdown fault (not including Start/Run Inhibit)
		Loaded	Energised in all LOADED state conditions
		Main MTR current	Repeat Main motor current value via 4-20mA output signal
		Running	Energised in all RUNNING state conditions
		Service	Energised for Service due alarm only
		Standby	Energised in 'Standby' and 'Venting' states
		Started	Energised in all STARTED state conditions
	Airmaster™ Q1 features 7 menu configurable Digital inputs. Each menu configurable digital input parameter (e.g. P18.02) is followed by a		

I/O (Input / Output) CONFIG	**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
		Air filter DP alarm	Select
		Air filter DP stop	Select
		CAB filter DP alarm	Select
		CAB filter DP stop	Select
		CNDS drain alarm	Select
		COMP start/stop	Select
		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
		COOL water alarm	Select
		COOL WTR IMM stop	Select
		Doors open alarm	Select
		Doors open stop	Select
		Dryer alarm	Select
		Dryer IMM stop	Select
		Fan motor alarm	Select
		Fan MTR IMM stop	Select
		FTR drain ALM	Select
		FTR drain stop	Select
		Line FTR DP ALM	Select
		Line FTR DP stop	Select
		Main motor OVLD	Select
		Main MTR TEMP HI	Select
		Oil filter DP alarm	Select
		Oil filter DP stop	Select
		Oil level alarm	Select
		Oil LVL IMM stop	Select
		Oil/WTR SEP ALM	Select
		Oil/WTR SEP stop	Select
		REM load enable	Select
		REM load/offload	Select
		Run SCH On/Off	Select
		SEP filter DP alarm	Select
		SEP filter DP stop	Select

I/O (Input / Output) CONFIG	P18.02 ~ 14 ↵ (Continued)	V belt IMM stop	Select
		Water flow	Select
		Inverter fault	Select
		Ambient TEMP HI	Select
		R1 run warning	Select (hard coded delay of 10 seconds)
		R1 run IMM stop	Select (hard coded delay of 10 seconds)
	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 of which 4 relay outputs are configurable. Menu configurable options are as follows:		
	P18.16 ~ P18.19 ↵	OFF	Feature enable / disable
		Alarm	Energised for any active Alarm fault (not including run Inhibit)
		Alarm NO	De-energised for any active Alarm fault (not including run Inhibit
		Alarm & service	Energised for any Alarm fault or Service Due alarm (not including run Inhibit)
		Alarm & Service NO	De-energised for any Alarm fault or Service Due alarm (not including Start/Run Inhibit)
		Drain	See P11.08 & P11.09
		Dryer control	Energised in all RUNNING state conditions
		Fan	Energised in all RUNNING states except 'motor starting' and 'load delay'. Can be used to energise internal and/or external cooling fan motor contactor
		Fan control	Enabled to operate in all RUNNING states except 'motor starting' and 'load delay'. If enabled to operate the output will only energise if delivery temperature exceeds the set 'Fan High' temperature setting. If delivery temperature falls below the set 'Fan Low' temperature setting the output will de-energise. Once energised the output will remain energised for a minimum of the set 'Fan Minimum Run Time' regardless of delivery temperature. Can be used to energise internal and/or external cooling fan motor contactor; the minimum run time is intended as a means of limiting Fan motor starts per hour.
		Group fault	Energised for any active Alarm, Star/Run Inhibit or Shutdown fault
		Group fault NO	De-energised for any active Alarm, Star/Run Inhibit or Shutdown fault
		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.
		Immediate stop	Energised for any active Shutdown fault (not including Start/Run Inhibit)
		IMM stop NO	De-energised for any active Shutdown fault (not including Start/Run Inhibit)
		RESET Inverter	Energises when digital input assigned to 'Inverter Fault' is NOT OK. Note: The digital output should be used in conjunction with an inverter digital input assigned to reset the inverter
		Loaded	Energised in all LOADED state conditions
		RC Load/Off load	Energised when remote load / offload is enabled
		RC Start / Stop	Energised when remote start / stop is enabled

I/O (Input / Output) CONFIG	P18.16 ~ P18.19 ↵ (Continued)	Running	Energised in all RUNNING state conditions
		Service	Energised for Service due alarm condition only
		Standby	Energised in 'Standby' and 'Venting' states
		Started	Energised in all 'Started' state conditions
	P18.20 ↵	AI3 function	Used to configure the function associated with analogue input 3. Press 'ENTER'. Use the 'UP' or 'DOWN' key to configure between 'OFF', 'COMP OUT TEMP' and 'EQUIP OUT TEMP'. Press 'ENTER'. The configured value has been committed to memory and the user returned to Menu P18.20. Note: When configured for 'COMP OUT TEMP' associated logic is active (e.g. 17.02 TEMP rise CONFIG)
	P18.21 ↵	AI5 function	Note: Only visible when AI5 is detected! Used to configure the function associated with analogue input 5. Press 'ENTER'. Use the 'UP' or 'DOWN' key to configure between 'OFF', 'COMP OUT TEMP' or 'EQUIP OUT TEMP'. Press 'ENTER'. The configured value has been committed to memory and the user returned to Menu P18.21. Note: When configured for 'COMP OUT TEMP' associated logic is active (e.g. 17.02 TEMP rise CONFIG)
Sensor CONFIG	**Sensor configuration.** **Caution: Incorrectly configured sensor calibration can influence device performance and device related safety features and function.**		
	P19.01 ↵	EQUIP OUT PRESS	Equipment outlet pressure. Press 'ENTER' to access the EQUIP OUT PRESS 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	EQUIP OUT PRESS	Equipment outlet pressure. No edit. Equipment outlet pressure measured value display menu
	P19.02 ↵	EQUIP INT PRESS	Equipment internal pressure. Press ENTER to access the EQUIP INT PRESS sub menu.

Sensor CONFIG	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. 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	EQUIP INT PRESS	Equipment internal pressure. No edit. Equipment internal pressure measured value display menu
	P19.03 ↵	COMP OUT TEMP	Compressor (device engine) outlet temperature. Press ENTER to access the COMP OUT TEMP sub menu.
	P19.03.01 ↵	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 P19.03.01.
	P19.03.02	COMP OUT TEMP	No edit. Equipment internal pressure measured value display menu
	P19.04 ↵	Main MTR current	Main motor current. Press 'ENTER' to access the Main MTR current sub menu
	P19.04.01 ↵	Main MTR CT RTG	Main motor current transformer rating. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.04.01 Note: The main motor current rating must match the current transformer rating
	P19.04.02 ↵	CT windings	Current transformer windings. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.04.01 Note: The configured value must match the number of times the source power cable is wound around the current transformer
	P19.04.03 ↵	Sensor range	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 P19.04.03
	P19.04.04 ↵	Main MTR current	No edit. Main motor current measured value display menu
	P19.05 ↵	Fan MTR current	Fan motor current. Press 'ENTER' to access the Fan MTR current sub menu

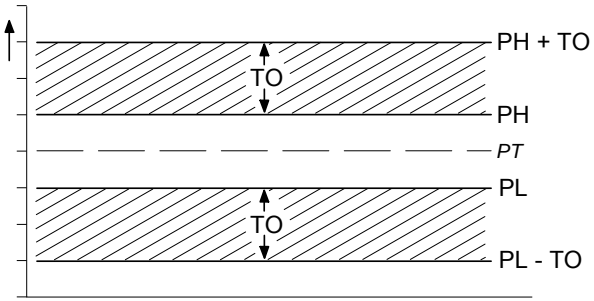
Sensor CONFIG	P19.05.01 ↵	Fan MTR CT RTG	Fan motor current transformer rating. Press 'ENTER'. Configure within permissible values and to match device current transformer. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.05.01
	P19.05.02 ↵	CT windings	Current transformer windings. Press 'ENTER'. Use the ''UP' and 'DOWN' keys to configure within permissible values. Press 'ENTER'. The configured value has been committed to memory and the operator returned to menu P19.05.02 Note: The configured value must match the number of times the source power cable is wound around the current transformer
	P19.05.03 ↵	Sensor range	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 P19.05.03.
	P19.05.04 ↵	Fan MTR current	No edit. Fan motor current 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!
	P20.15	Analogue input 5 (resistive)	Note: Only visible when AI5 is detected! Analogue input diagnostics. The information display alternates between analogue input number and the
	P20.16	Analogue input 5 (current)	
	P20.17	Analogue input 5 (voltage)	

Diagnostics			measured value (resistive, current or voltage) for the analogue input. Press 'ENTER' to view the analogue assignment and conditioned value (e.g. COMP OUT TEMP, 85°C)
	P20.18 ↵	Relay output 1	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 1
	P20.19 ↵	Relay output 2	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 2
	P20.20 ↵	Relay output 3	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 3
	P20.21 ↵	Relay output 4	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 4
	P20.22 ↵	Relay output 5	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 5
	P20.23 ↵	Relay output 6	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 6
	P20.24 ↵	Relay output 7	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 7
	P20.25 ↵	Relay output 8	Press 'ENTER' Use 'UP' and 'DOWN' keys to energise and de-energise relay 8
	P20.26 ↵	Analogue output 1	Press 'ENTER' Use 'UP' and 'DOWN' keys to adjust the mA output value.
	P20.27	ANAL input CT1A	
	P20.28	ANAL input CT1B	
	P20.29	ANAL input CT1C	
	P20.30	ANAL input CT2A	
	P20.31	L1 frequency	
	P20.32	L2 frequency	
	P20.33	L3 frequency	
	P20.34	L1 phase angle	
	P20.35	L2 phase angle	
	P20.36	L3 phase angle	
	P20.37 ↵	Key switch test	Press 'ENTER' perform key switch test using display acknowledgment if key pressed
	P20.38 ↵	LED test	Note: Only visible when LED driver PCB is detected! Press 'ENTER' and select 'ON' or 'OFF'. When 'ON' the LED's are sequentially illuminated and extinguished. The LED test will continuously cycle until 'OFF' is selected.
Run schedule	**The run schedule provides a internal diary feature that schedules the device controlled by Airmaster™ Q1 to run at a configured load and off load pressure. The run schedule achieves this by associating the configured load and off load pressure values with the run schedule entry.**		
	P21.01↵	Run schedule	Press 'ENTER', Use 'UP' or 'DOWN' keys to select ON or OFF, Press 'ENTER', he configured value has been committed to memory and the operator returned to menu P21.01
	P21.02 ↵	Workday edit	Press 'ENTER' to access sub menu P21.02.## The workday edit is used to associate each day of the week with the working week and thereby allowing for territorial variations. Use the sub menu to associate accordingly... Note: Workday = numeric value... Monday = 1 Tuesday = 2

Run schedule			Wednesday = 3 Thursday = 4 Friday = 5 Saturday = 6 Sunday = 7 Weekend = # For example; if the working week is Monday to Friday and the weekend is Saturday and Sunday, following configuration, P21.02 should annunciate 12345##
	P21.02.01 ↵	Monday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.01
	P21.02.02 ↵	Tuesday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.02
	P21.02.03 ↵	Wednesday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.03
	P21.02.04 ↵	Thursday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.04
	P21.02.05 ↵	Friday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.05
	P21.02.06 ↵	Saturday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.06
	P21.02.07 ↵	Sunday	Press ‘ENTER’, Use ‘UP’ or ‘DOWN’ keys to select Weekday or Weekend, Press ‘ENTER’, he configured value has been committed to memory and the operator returned to menu P21.02.07
	P21.03 ↵	Schedule entry	Press ‘ENTER’ to access sub menu P21.03.## Note: Schedule entry options include Never, Every Monday, Every Tuesday, Every Wednesday, Every Thursday, Every Friday, Every Saturday, Every Sunday, Every day, Every Work day, Weekend or Configured date. Irrespective of the menu location used to add a run schedule entry, schedule entries are arranged chronologically. Consequently, schedule entries ascend the run schedule menu P21.03 ~ P21.30. Once a run schedule entry has elapsed, it is either removed from the schedule, or schedule entries that repeat (e.g. Every work day) are once again chronologically arranged.
	P21.03.01 ↵	Frequency	Press ‘ENTER’ Use ‘UP’ or ‘DOWN’ keys to select between Off, Every Monday, Every Tuesday, Every Wednesday, Every Thursday, Every Friday, Every Saturday, Every Sunday, Every day, Every Work day, Weekend or Configured date, Press ‘ENTER’, The configured value has been committed to memory and the operator returned to menu P21.03.01
	P21.03.02 ↵	Function	Press ‘ENTER’ Use ‘UP’ or ‘DOWN’ keys to select between… START device using default PL / PH (disables P21.03.03 & 04, use device PL / PH) START device using schedule PL / PH (enables P21.03.03 & 04, ignores device PL / PH)

Run schedule			STOP device
	P21 03.03 ↵	Load pressure	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between permissible values, Press 'ENTER', The configured value has been committed to memory and the operator returned to menu P21.03.02 Note: Select 0 BAR to configure the device to target 0 BAR at the schedule entry. Consequently the device will change from the its prior device state to off load, stop and thereafter remain in the ready to start state until the load pressure changes to a value that invokes the device to load. The load pressure value can change as a consequence of a subsequent run schedule entry or the run schedule feature being disabled and thereby returning the load pressure and off load pressure values configured in menu P10 - EQUIP settings 2 to an active state.
	P21.03.04 ↵	Off load pressure	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between permissible values, Press 'ENTER', The configured value has been committed to memory and the operator returned to menu P21.03.03
	P21.03.05 ↵	Year	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between permissible values, Press 'ENTER', The configured value has been committed to memory and the operator returned to menu P21.03.04
	P21.03.06 ↵	Month	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between permissible values, Press 'ENTER', The configured value has been committed to memory and the operator returned to menu P21.03.05
	P21.03.07 ↵	Day	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between permissible values, Press 'ENTER', The configured value has been committed to memory and the operator returned to menu P21.03.06
	P21.03.08 ↵	Time	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between permissible values, Press 'ENTER', The configured value has been committed to memory and the operator returned to menu P21.03.07
	P21.03.09 ↵	Save changes	
ISC (Internal System Control)	**Airmaster™ ISC software is compatible with current and legacy Airmaster™ controllers equipped with serial communications and the Airbus485™ (formerly Multi485) field bus protocol.** **In use, as demand for compressed air fluctuates and as system pressure decays or increases in response to that demand, the Airmaster™ ISC software ensures that network compressors are harnessed as 1 to obtain an equilibrium where efficiency, equipment utilisation and system pressure are in perfect balance. In unmanaged compressed air systems that equilibrium represents a significant energy & cost saving opportunity.** **The primary function of the Airmaster™ ISC's pressure control strategy is to maintain system pressure between the 'High Pressure' set point & the 'Low Pressure' set point in conjunction with targeting energy efficiency through optimal compressor utilisation. The Airmaster™ ISC software calculates a 'Target' pressure level which is used as the nominal 'target' pressure level for the system. Rate of change in pressure, is largely determined by system volume and the scale, and/or abruptness, of air demand fluctuations; these characteristics will differ from installation to installation. To accommodate for variations in installation characteristics the 'Tolerance' pressure level (tP) and an influence on the dynamic reaction time (or 'Damping' (dA)) of the Airmaster™ is adjustable.** **The Airmaster™ ISC (Internal System Control) option kit consists of a dedicated option card, AC / DC power supply and a remote pressure sensor. The kit is intended for use in compressor systems with up to 8 Airmaster™ equipped air compressors. The ISC option card is located within the electrical enclosure of a host air compressor and connected with the compressors Airmaster™ controller using Airbus485™ serial communications. The supplied pressure sensor should be mounted vertically upwards in a suitable location (e.g. air reservoir). Once installed, the host air**		

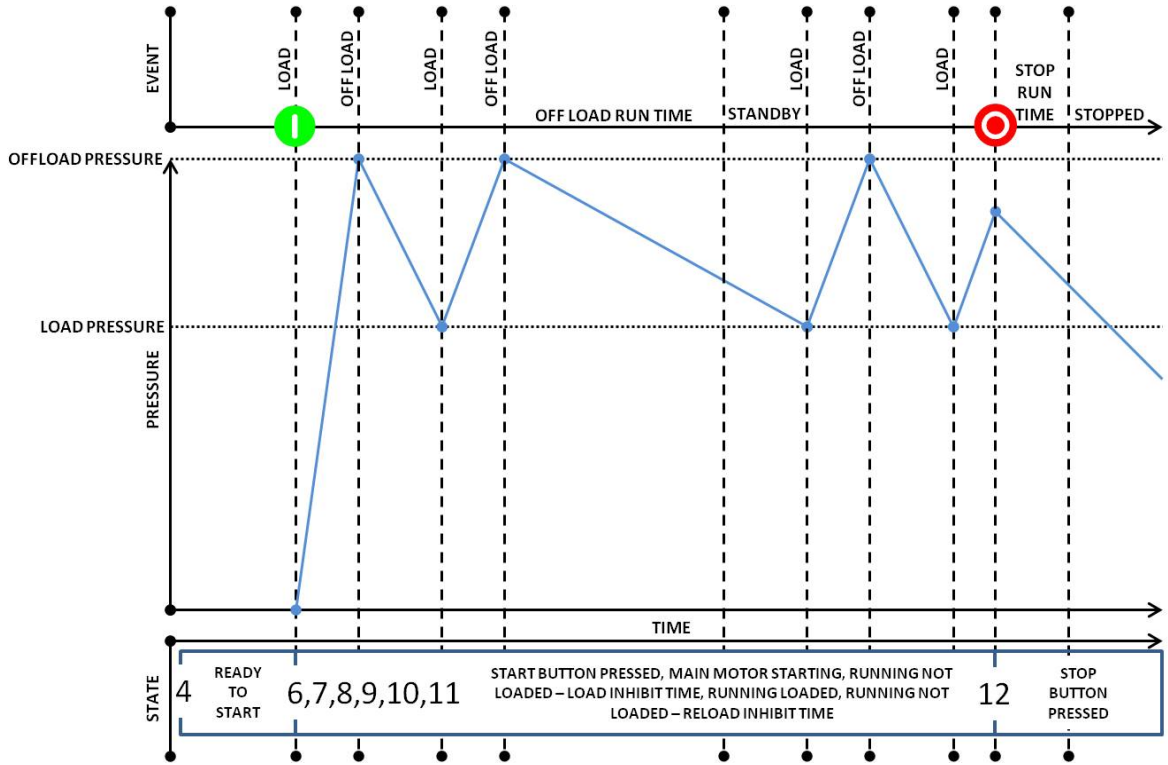
ISC (Internal System Control)	**compressors Airmaster™ ISC software feature can be configured to provide narrow pressure band control of up to 8 Airmaster™ equipped and networked air compressors.** **For more information on the Airmaster™ ISC option kit contact your product supplier requesting product factsheet 'Airmaster™ ISC Option kit – A21.1_EN'**		
	P12.13 ↵	ISC available	Select On or Off to enable and disable the ISC feature. Enabling the ISC feature activates menu P80, P81 and P82
	P80.01 ↵	ISC enabled	Enable or enable with stop control feature or disable the use of the ISC feature. Note 1: If enabled... If subsequently ISC becomes unavailable for any reason, ISC controlled air compressors revert to local control! Note 2: if enabled with stop control feature... If subsequently ISC is 'stopped' (via the stop control routine described above), ISC retains control of all ISC controlled air compressors in a offload or stopped state (the offload to stopped state and time remain a function of the local air compressor)
	P80.02 ↵	Offload pressure	ISC control offload pressure. Offload pressure range = no less than 0.2 above load pressure
	P80.03 ↵	Load pressure	ISC control load pressure. Range = Sensor range and host Airmaster controller's load and offload pressure limits
	P80.04 ↵	ISC rotate INT	ISC rotation interval or sequence interval. Range = 1 – 720 hours. Default = 24 hours
	P81.01 ↵	ISC # compressors	Number of ISC controlled air compressors. Range = 2 – 8 compressors. Default = 4 compressors
	P81.02 ↵	ISC start delay	Start Delay Time. Range = 0 – 60 seconds. Default = 3 seconds Staggered start function; when the ISC is started compressors will be loaded, as required, with this interval time between each load request. This feature is intended to prevent all compressors starting at once during system start.
	P81.03 ↵	ISC damping	Damping. Range = 0.1 – 10 bar. Default = 1.0 bar. In situations where the loading of an additional compressor, at the PL pressure set point, is inadequate to match a significant and/or abrupt increase in air demand the additional reaction of the ISC, while pressure deviates into the 'tolerance' limit, is dynamically calculated. The time before an additional compressor is loaded, to increase generation capacity further, will vary in accordance with the urgency of the situation. The ISC's dynamic reaction algorithm is pre-set by default to accommodate for the majority of installation characteristics. In some situations, of which the following are examples, the rate of pressure change may be aggressive and disproportionate: a) Inadequate system volume b) Excessive air treatment equipment pressure differential c) Inadequately sized pipe work

ISC (Internal System Control)			d) Delayed compressor response In such instances the ISC may over-react and attempt to load an additional compressor that may not be necessary once the initial compressor is running, loaded, and able to contribute adequate additional generation capacity. If an increase in the 'tolerance' band is insufficient, the ISC's dynamic reaction response can be influenced by increasing the 'Damping' factor (DA) reducing tendency to over-react. The 'Damping' factor is adjustable and scaled from 0.1 to 10 with a default factor of 1. A factor of 0.1 equates to 10 times faster than default and a factor of 10 equates to 10 times slower than default.
	P81.04 ↵	ISC tolerance	Tolerance is a pressure band above and below the set pressure control levels that accommodates for an exceptional instance of abrupt and/or significant increase, or decrease, in demand without compromise to optimal control.  Tolerance (TO) is expressed as a pressure defining the width of the tolerance 'band'. For example; a tolerance setting of 3psi (0.2bar) means the ISC will implement appropriate optimal response(s) during a deviation of pressure 3psi below the set PL pressure level. If pressure ever deviates beyond the 'tolerance' limit the ISC will proportionally increment an emergency response until pressure is returned to normal levels. If system volume is inadequate, and/or demand fluctuations are significantly large, it is advisable to increase the 'Tolerance' band to maintain optimum control, and reduce over-reaction, during such transition periods. If system volume is generous, rate of pressure change is slow and demand fluctuations are insignificant and gradual, the 'Tolerance' band can be reduced to optimise pressure control.
	P81.05 ~ 07 ↵	ISC DI1 – DI3 FCN	Digital Input # Function... No ISC DI FUNCT, ISC DI Start Stop, ISC DI alarm NO, ISC DI alarm NC, DI delay alarm, DI delay alarm NC, ISC DI STOP NO, ISC DI STOP NC, DI delay STOP NO, DI delay STOP NC, ISC DI SEQ COP
	P81.08 ↵	ISC XPM pressure	Setup ISC XPM pressure
	P81.08.01	MMT offset	Measurement offset +/- 0.5 BAR or setup pressure equivalent
	P81.08.02	MMT range	Measurement range MIN = 0, MAX = 60 BAR or setup pressure equivalent

	P81.08.02	EQUIP INT PRESSS	Equipment internal pressure
	P81.09	ISC PRESS SENS	Internal system control pressure sensor.

5.0 General operation and control modes

In general operation, the measured equipment outlet (EO) pressure regulates the device once the 'START' button has been pressed. The Airmaster™ Q1 will perform condition checks and start the device if no condition inhibit exists. If a condition inhibit exists the device will not enter the Started state and a condition inhibit message will be displayed. If a run inhibit condition exists the device will enter the Started state but a main motor start will be inhibited; the device will remain in the Standby state and a run inhibit condition message will be displayed. If a load request exists, the main motor is started in a star/delta sequence. When running in delta configuration, after the star/delta transition time (configurable) has expired, the load inhibit time (configurable) prevents loading for a period to allow motor speed to stabilise. The load inhibit time can be set to 'OFF' if required. When the load inhibit time has expired the load relay output is energised and the device will load. If the unload pressure setting is reached, or a remote offload command is received, the load relay output is de-energised and the device will run offload for the offload run time (configurable) before the main motor stops and the device enters the Standby state. The device will load once more if pressure falls below the load setting before the offload run time expires. From the Standby state, a motor start sequence is performed once more.



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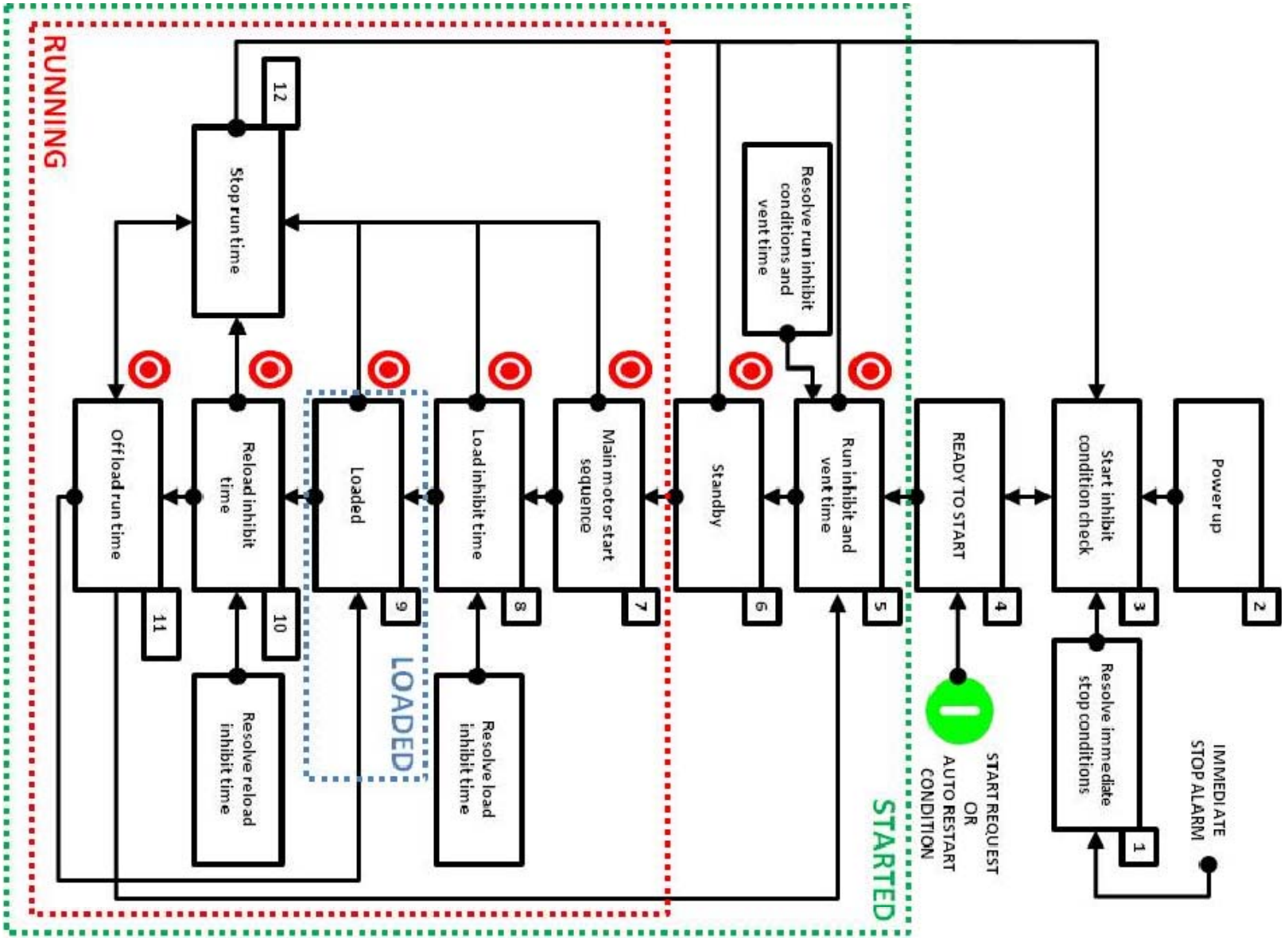
In the event of a motor stop, initiated by a stop command or when entering standby state, a vent time (configurable) is started. If a start request is made during the vent time the device will enter the Standby state until the vent time expires. If already in the Standby state and a load request is present, the device will remain in the Standby state until the vent time has expired. For units with internal pressure detection enabled, a minimum internal pressure can be configured to prevent a motor start event before internal pressure is vented. If after 2 minutes, the internal pressure does not fall below the set minimum and the configured vent time has expired, an alarm condition is generated and the device will immediately stop. After an offload event a re-load inhibit time (configurable) is initiated that will prevent re-loading, this time can be adjusted to 'OFF' if required.

Normal automated operation is ended by pushing the stop button, a remote stop command or in the event of an immediate stop condition. When stopped manually, or by a remote command, the load relay is de-energised. The main motor continues to run for the stop run time (configurable). This time can be adjusted to 'OFF' if required.

5.1 Airmaster™ Q1 state diagram

State	State
01	Device stop. A device stop follows all immediate stop conditions and cannot be extinguished or removed from the OUI until the immediate stop condition is resolved
02	Power up. Airmaster™ Q1 initialisation
03	Start inhibit A start inhibit is commonly associated with an operator invoked inhibit, door open inhibit, low temperature inhibit or high internal pressure inhibit.
04	Ready to start
05	Venting When configured, the Vent state precedes a device running state. When configured, the Venting time is a measured period of time used to ensure that device internal pressure has reached a sufficiently low value to permit the device to physically start. Note: Device pressure venting is a mechanical function performed independently by the device itself. For maximum safety, the time required to vent pressure should never exceed the venting time configured.
06	Standby Other conditions can prevent device from physically starting. When this condition occurs the graphical user interface will annunciate that device has started. Physical starting of device will occur when condition(s) preventing physical start is removed. These conditions can occur during normal operation. For example if the start button is pressed when the pressure measured by the device pressure sensor is greater than the load pressure setting; the device will remain in a state 6 until pressure decays to the load pressure setting.
07	Main motor start sequence. Main motor starting is commonly associated with a device main motor starting time and always prior to any device load state. For example: if the device featured a start / delta starting contactor arrangement
08	Running not loaded, load inhibit time When configured, the load delay time precedes a device initial load state (See P11.02)
09	Running, loaded
10	Running, not loaded, reload inhibit time When configured, the reload delay time precedes a device returning to the running, loaded state (See P11.03)
11	Running, not loaded, off load run time The running, not loaded state is commonly associated with managing main motor starting frequency
12	Running, not loaded, stop run time The running, not loaded, stop run time state is commonly associated with stopping the main motor and returning the device to the ready to start state. The configured stop minimum time should suffice for the device to independently perform all mechanical functions following a stop button event; thereafter the device will return to the ready to start state (See P11.05)


RUNNING
STARTED
LOADED
Power up
2
Start inhibit condition check
3
Resolve immediate stop conditions
1
IMMEDIATE STOP ALARM
READY TO START
4
START REQUEST OR AUTO RESTART CONDITION
Run inhibit and vent time
5
Standby
6
Main motor start sequence
7
Load inhibit time
8
Resolve load inhibit time
Loaded
9
Reload inhibit time
10
Resolve reload inhibit time
Offload run time
11
Stop run time
12
Resolve run inhibit conditions and vent time

5.2 Load / off load:

Device runs load / off load between device start and device stop. When running off load for longer than the “off load run time” the device will stop, go to ‘standby state’ and automatically restart when requested.

5.3 Continuous run

Device runs continuously load or off load between device start and device stop

5.4 Pressure decay / no load

Two fixed periods; the ‘run period’ and ‘off load run period’ are taken as the criteria for selecting the operating mode of the device when device outlet pressure reaches the off load pressure value. These two periods are set according to the maximum permissible starts of the compressor motor. The run period starts each time the device is switched on. The run period lasts as long as the compressor motor runs and stops when the device switches to standby state. The ‘off load run period’ starts every time the operating mode changes from load to off load. It runs during off load run time and also when the device is switched to standby state. It stops when the device switches to load. Every cut out point is delayed by the vent time, so that the device vents.

The following switching cycles are possible:

If device outlet pressure decays to the load pressure value, the device switches to load (1) irrespective of its previous operating mode. If the drive motor was in a stop state, the opening of the inlet valve is delayed to allow vented device to start.

If device outlet pressure rises to the off load pressure value and the ‘off load run period’ has already expired, the device switches off after the off load run time has expired (2).

If device outlet pressure rises to the off load pressure value before the off load run period has expired, the pressure decay time of the previous switching cycle is taken as the criteria for the selection of the operating mode:

If the pressure decay time (the time during which device outlet pressure decays from the off load pressure value to the load pressure value) was longer than the off load / stop (standby state) period, the device switches to stop (standby state) after the off load run time has expired (3).

If the pressure decay time was shorter than the period set for the off load / stop (standby state) time, then off load is selected (4), that is, the inlet valve closes and the equipment is vented with the motor running. When the off load run period expires the equipment is also switched to stop (standby state) after the off load run period has expired (5).

5.5 Dynamic no load control

The off load period is dynamically lengthened or shortened by dynamic off load control in relation to the number of permissible motor starts. The number of permissible motor starts during the preceding 1 hour is measured. A high switching frequency leads to longer idle periods. A low switching frequency leads to shorter idle periods.

5.6 Variable speed

The speed regulation function provides PID control of a variable speed drive (VSD) using a 4-20mA analogue output in order to maintain a steady target pressure level (load pressure).

Speed regulation is used to maintain package delivery pressure at the load pressure value. If pressure rises to the off load pressure set point the load solenoid output is de-energised and the compressor off loads. While in the off load state the equipment will maintain speed at the set off load speed value. If pressure remains above the load pressure value for longer than the set off load run time the main motor will stop and the equipment will move to the standby state. When pressure falls below the load pressure set point the motor is re-started, if in standby state, and the load solenoid output is energised, full range speed regulation is then applied.

If connected to a Metacentre™ system controller and the compressed air system consists of more than one VSD air compressor, any VSD air compressor assigned as 'base load' will be biased to operate at the set optimum speed setting. Any VSD compressor assigned as 'top-up' will use full range speed regulation. In addition, the target pressure of each VSD compressor is automatically referenced to the Metacentre™ system controller to maintain exact pressure control regardless of pressure differential between equipment. In this way up to 12 VSR compressors can be controlled as a single coherent system with full efficiency capacity matched management, utilisation and single pressure set point control.

6.0 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	TCP/IP	Transmission control protocol / internet protocol
INT PRESS	Internal pressure	TEMP	Temperature
INTVL	Interval	THU	Thursday
IMB	Imbalance	TIMEV	Time valve
IMM	Immediate	TNS	Tension
ISC	Internal system control	TRANS	Transition
JAN	January	TT	Transition time
JULY	July	TUE	Tuesday
JUNE	June	UOM	Unit of measurement
K	Kelvin	VSD	Variable speed drive
LOCAL	Local	YR	Year
LUB	Lubrication		

6.1 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)

6.2 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

6.3 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)

6.4 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)

6.5 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	Run schedule
P02	Utilisation	P12	EQUIP settings 3	P30	Programmer CONFIG page views
P03	Error Log	P13	VSD settings	P31	
P04	Event Log	P14	Motor protection	P32	
P05	Service Provider	P15	Inhibits	P40	Programmer CONFIG lookup tables
P06	Controller Data	P16	Warning alarm	P80	ISC – Main menu
P07	Equipment data	P17	IMM stop alarm	P81	ISC – Settings
P08	Message codes	P18	I/O CONFIG	P82	ISC - Priority
P09	Access	P19	Sensor CONFIG		

6.6 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

6.7 Standard software - parameter configuration (Not listed = config OFF / item not displayed)

Item	Menu	Set configuration	Item	Menu	Set configuration
Control mode	P10.01	Load / off load	INT PRESS HIGH	P15.04	0.5BAR
Allow force load	P10.02	OFF	Service hours 1	P16.01	2000 hours
Load pressure	P10.04	6.3BAR	Service hours 2	P16.02	4000 hours
Off load pressure	P10.05	7.0 BAR	Service hours 3	P16.03	4000 hours
RS485 X05 CONFIG	P10.10.01	Airbus485™	Service hours 4	P16.04	500 hours
Airbus485™ address	P10.10.02	1	Service hours 5	P16.05	2000 hours
MODBUS address	P10.10.03	1	COMP OUT TEMP	P16.12	105°C
MODBUS baud rate	P10.10.04	57600	EQUIP OUT PRESS	P16.13	7.6 BAR
MODBUS parity	P10.10.05	No parity	EQUIP INT PRESS	P16.14	8.6 BAR
MODBUS data bits	P10.10.06	8	DIFF pressure	P16.15	0.8 BAR
MODBUS end bits	P10.10.07	1	Oil Air SEP DP HI	P16.16	OFF
RS485 X06 CONFIG	P10.11.01	MODBUS slave	Phase detection	P16.17	ON
Airbus485™ address	P10.11.02	1	HI MTR STR HR	P16.18	OFF
MODBUS address	P10.11.03	1	Door open	P16.19	OFF
MODBUS baud rate	P10.11.04	57600	CAB filter DP	P16.20	OFF
MODBUS parity	P10.11.05	No parity	Air filter DP	P16.21	OFF
MODBUS data bits	P10.11.06	8	Oil filter DP	P16.22	OFF
MODBUS end bits	P10.11.07	1	SEP filter DP HI	P16.23	OFF
Start source	P10.11	Keypad	Fan motor alarm	P16.24	ON
Load source	P10.12	Equip out pressure	CNDS drain alarm	P16.25	OFF
Language	P10.13	English	Cool water alarm	P16.26	OFF
Time	P10.14	Current time	Oil level alarm	P16.27	OFF
Time format	P10.15	24:00	RD alarm	P16.28	OFF

Daylight saving	P10.16	+0h	Line FTR DP alarm	P16.29	OFF
Date	P10.17	Current date	FTR drain alarm	P16.30	OFF
Date format	P10.18	DD/MM/YYYY	Oil/WTR SEP ALM	P16.31	OFF
LCD light level	P10.19	90%	Ambient TEMP HI	P16.32	OFF
Pressure unit	P10.20	bar	CONF alarm 1	P16.33	OFF
Temperature unit	P10.21	°C	CONF alarm 2	P16.34	OFF
Start/delta TRANS	P11.01	10 seconds	CONF alarm 3	P16.35	OFF
MIN MTR run time	P11.02	OFF	COMP OUT TEMP	P17.01	110°C
Load INH time	P11.03	1 second	TEMP rise CONFIG	P17.02	0°C
Reload INH time	P11.04	1 second	EQUIP OUT PRESS	P17.03	8.5 BAR
Off load run time	P11.05	600 SEC	EQUIP INT PRESS	P17.04	9.0 BAR
Stop MIN time	P11.06	OFF	DIFF PRESS	P17.06	1.0 BAR
Vent time	P11.07	20 SEC	Main motor lock	P17.07	ON
AUTO restart INH	P11.08	OFF	Main motor OVLD	P17.08	ON
CNDS drain open	P11.09	5 SEC	Motor phase IMB	P17.09	ON
CNDS drain interval	P11.10	60 SEC	Fan MTR overload	P17.10	ON
CNDS off load	P11.11	1 SEC	Phase detection	P17.11	ON
MTR SRT HR INH	P11.12	OFF	Door open	P17.12	OFF
DP inhibit time	P11.13	10 SEC	Fan motor alarm	P17.13	ON
Service hours 1	P11.14	Routine SERV	Cool water alarm	P17.14	OFF
	P11.14.02	100 hours	Oil level alarm	P17.15	OFF
	P11.14.03	ON	Belt drive alarm	P17.16	OFF
Service hours 2	P11.15	Oil service	RD alarm	P17.17	OFF
	P11.15.02	100 hours	Water flow	P17.18	OFF
	P11.15.03	ON	Inverter fault	P17.19	OFF
Service hours 3	P11.16	Separator SERV	Main MTR temp HI	P17.20	OFF
	P11.16.02	100 hours	EQUIP out TEMP H	P17.21	OFF
	P11.16.03	ON	Cooling system	P17.22	OFF
Service hours 4	P11.17	Cabinet filters	Main motor fault	P17.23	OFF
	P11.17.03	OFF	Conf IMM stop 1	P17.24	OFF
Service hours 5	P11.18	Air filter SERV	Conf IMM stop 2	P17.25	OFF
	P11.18.03	OFF	Conf IMM stop 3	P17.26	OFF
Service hours 6	P11.19	OFF	AO function	P18.01	EQUIP OUT PRESS
Service hours 7	P11.20	OFF	DI2 function	P18.02	Remote load enable
Service hours 8	P11.21	OFF	DI2 OK	P18.03	Closed
Weekly service	P11.22	OFF	DI3 function	P18.04	Remote load / off load
Annual service	P11.23	OFF	DI3 OK	P18.05	Closed
Bi-annual service	P11.24	OFF	DI4 function	P18.06	OFF
Use custom SENS	P12.03	OFF	DI4 OK	P18.07	Closed
Year	P12.08.01	Current Year	DI5 function	P18.08	OFF
Month	P12.08.02	Current month	DI5 OK	P18.09	Closed

Day	P12.08.03	Current day	DI6 function	P18.10	OFF
Load hours	P12.09	0	DI6 OK	P18.11	Closed
Off load hours	P12.10	0	DI7 function	P18.12	OFF
Stopped hours	P12.11	0	DI7 OK	P18.13	Closed
TEMP sensor type	P12.12	PT1000	DI8 function	P18.14	OFF
EI sensor active	P12.13	YES	DI8 OK	P18.15	Closed
ISC available	P12.15	OFF	Relay 5 function	P18.16	Drain
Boot screen BMP	P12.20	ON	Relay 6 function	P18.17	Group fault
P00.03 CONFIG	P12.21	OFF	Relay 7 function	P18.18	RC Load/Off Load
P00.04 CONFIG	P12.22	OFF	Relay 8 function	P18.19	RC Start/Stop
P00.05 CONFIG	P12.23	OFF			
Main MTR protect	P14.01	OFF			
Fan MTR protect	P14.02	OFF			
Main MTR NOM CUR	P14.03	40.0A			
Main MTR SDTTF	P14.04	1.5			
Main MTR ROT LOC	P14.05	3.0			
Main MTR PH IMB	P14.06	15%			
Fan MTR NOM CURR	P14.07	1.0A			
Fan MTR OVLD IMH	P14.08	5 SEC			
Operator	P15.01	OFF			
Door open	P15.02	OFF			
Low temperature	P15.03	0°C			

7.0 Release notes

Release	Description
E08	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™ product solutions to original equipment manufacturers (OEM's) only. CMC NV is not able to support end users or nominated representatives 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 visit support.controlcompressors.com and use the knowledge base and resources provided. If afterwards you still require assistance, please use the helpdesk sidebar to contact us.