



Q Series Configuration Manual

Positive Displacement Compression



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Section 1: Safety



Danger – High Voltage

Caution



Advisory



Refer to Manual



Emergency Stop



Protective Earth

Do not configure and/or operate the Airmaster[™] until you and all personnel concerned have read and understand the correct use and operation of the product detailed in this 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 change without notice, if in doubt, do not proceed.

Section 2: General Description

2.1 Airmaster™ Q Series

The controller is a machine controller for use with industrial machines that comply with the European Machine EMC Directive EMC 2014/30/EU and LVD 2014/35/EU.

The controller is a component that can not operate without other components. The controller is not a machine or a safety component. The controller can be used in areas of pollution degree 1 or 2.

No part of the controller is under pressure and the controller is not a safety device; there is no requirement for the controller, as a component, to comply with European Pressure Equipment Directive 2014/68/EU.

The controller is not intended for use in military, maritime or explosive environment applications.

2.2 Airmaster™ RS485 Option Card

One or two RS485 option cards can be added to the Airmaster[™] Q Series. The RS485 option card supports the Airbus485[™] (proprietary) or Modbus RTU protocol. Modbus RTU Slave and Master mode is support. Consult your product supplier, or visit www.controlcompressors.com, for the applicable field bus register set for the appropriate Airmaster[™] Q Series application and model type.

2.3 Airmaster™ ECO Option Card

One ECO Ethernet option card can be added to the Airmaster™ Q Series. The ECO option card supports TCP/IP protocol web browser hosting over Ethernet.

2.4 Airmaster™ XPM Option Cards

Airmaster[™] XPM option cards provide additional analogue or digital inputs and analogue or relay outputs. XPM option cards are DIN rail mounted and communicate with the Airmaster[™] Q Series using RS485 supporting the Airbus485[™] protocol.

2.5 Airmaster™ Network Option Cards

Airmaster[™] network cards support networking with field bus protocols (Profibus and DeviceNet for example) not directly supported by the Airmaster[™] Q Series; consult your product supplier or visit: www.controlcompressors.com

2.6 System Management Control

CMC System Management Control products are used to fully integrate, optimise and manage multiple equipment systems. Consult your product supplier or visit: www.metacentre.eu



Section 3: User Interface

3.1 Keypad



Icon: Image	Icon: Function
APM	Advanced Power Monitoring
META	Metacentre™ Compatible
SDO	SD Card Option
AIRBUS	Airbus485™ Compatible
MODBUS	MODBUS Compatible
ACA	Advanced Control Algorithms
ISC	Internal System Control
	Ethernet Card option

3.2 Graphic Display



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

P00 is the default view page after power up and where the display will return after a period of no keypad use.

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

For example: P00.02



1: Control mode 2: Load / off load

3.3 User Account Controls

Airmaster[™] Q Series 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 by 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)

Default 'ADMIN' User PIN Code: 2308

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The 'ADMIN' user PIN Code can be changed as required. The reset 'ADMIN' User PIN code feature is intentionally not printed. If you do not know or require the reset 'ADMIN' User PIN Code, 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
	Access:
P09.03~10.18 ~ 32	Not available
	Read access
	Edit access

In addition to personal preferences, the 'ADMIN' User can configure menu access rights for each Additional User.

Menu access configuration options are:

"Not available" invisible to the User

"Read access" visible but NOT editable by the User

- "Edit access" visible and editable by the User.
- Note: This manual describes all menus and menu items. If menus are not visible, check User access configuration before troubleshooting elsewhere.

To return to 'Default' User, navigate to Menu item P09.01 'Default user' and press 'ENTER'; access is returned to 'Default' user access.

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 the Airmaster™ will always return to 'Default' User and 'P00' Home page.



3.4 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 Airmaster™ 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 and ESCAPE key to navigate between menu page navigation and menu content navigation.

With the menu page item highlighted, use UP and DOWN keys to change menu pages.

Press ENTER to enter the menu:



Entering the menu highlights the first item of the menu.

Use the UP and DOWN keys to navigate between menu items. Menu content items are vertically listed and in a continuous loop.



To edit an accessible and editable menu item, highlight the menu item and press ENTER.



An edit menu popup window will appear. Use the UP and DOWN keys to select an available option or increment and decrement a value. Press and hold the UP or DOWN key to increase the speed at which a selectable value is changed. Press the ENTER key to confirm a selection or use the ESCAPE key to exit without modifying the selection or value. With the popup window displayed, press and hold the 'ENTER' button to alternate between display text and display value.

To exit a menu and highlight the menu page tab selection, press ESCAPE.



3.5 Controls Studio



Controls Studio is a Windows[™] PC software application that allows configuration of an Airmaster[™] Q Series from a PC environment.



CS KIT File Overview

The core application, graphical user interface and default setup 'System Files', and all 'User Configurable' files, are available within a single CS KIT (.kit) file. A CS KIT file is for use with Controls Studio only; the CS KIT file is not stored within the Airmaster[™] Q Series. When an Airmaster[™] controller is programmed Controls Studio will automatically extract the individual files and program them separately.

A CS KIT file consists of the following files:

System Files: .hex Application HMI_FONT.bin Graphical interface text fonts LANGUAGE.bin Graphical interface languages .utf-8 Controls Studio interface/translation .pt Default parameter settings. (custom modifications to the '.pt' file are saved as a '.cpb' file)

User Configurable Files:

.cpb

Parameter settings.

- .cpba
 - Login user account profiles.

.cpbu

OEM equipment data and Service Provider information.

.vis

All user menu item visibility

.cmt

Compressor tables

- .men
 - P40-44 menu item definitions

.fbt

- Custom field bus (Modbus RTU) table .bmp (if applicable)
 - Initialisation screen bitmap image



Optional bitmap image that is displayed during power up initialisation.

Pre-Configured CS KIT Files

A number of pre-configured CS KIT files, to suit a wide selection of generic equipment types, are available. A generic pre-configured CS KIT file can be used 'as is' or as a starting point for the construct of a fully customised file set to suit any applicable target application.

 Some configuration parameters and settings, dependant on model and/or software variant, may only be editable using Controls Studio.

4.0 Menus and Menu Items

(BLACK Q1 and Q2) (BLUE: Q2 only)

4.1 Menu Map (display menus may vary in relation to Airmaster[™] configuration)

Menu Colour Key: Read Only Menu		Read and Edit Menu (Keyboard or Controls Studio)	Read and Edit Menu (edit using Controls Studio)	
Item Key:	∀ Editable in stopped state only			
← (Enter Symbol)	Sub Menu: Press ENTER key to access sub menu items			

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 EQUIP OUT PRESS	06 Service Hours 1	06 Load % Last Hour			06 State / Province
07 EQUIP INT PRESS	07 Service Hours 2	07 Load % Last 24 Hours			07 ZIP / Postal
08 COMP OUT TEMP	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 Initial 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	205 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 CONFIG	07 COMP SER NUM		07 USER 5 ↔	07 Offload period	07 Vent Time
08 Software ©	08 COMP YR MANUF		08 USER 6 ←	08 Cooling DP	08 AUTO Restart INH
	09 MTR SER NUM		09 USER 7 ←	09 RS485 X04 CONFIG ↔	09 CNDS Drain Open
	10 MTR YR MANUF		10 USER 8 🗸	10 RS485 X05 CONFIG ←	10 CNDS Drain INT

11 CLR SER NUM	11 USER 9 🕂	11 RS485 X06 CONFIG ←	11 CNDS Off Load
12 CLR YR MANUF	12 USER 10 ←	12	12 HI MTR STR HR
13 PV Inspect Date		13	13 DP Inhibit Time
		14 Language	14 Service Hours 1 ←
		15 Time ←	15 Service Hours 2 ←
		16 Time Format	16 Service Hours 3 ↔
		17 Daylight Saving	17 Service Hours 4 ←
		18 Date ↔	18 Service Hours 5 ←
		19 Date Format	19 Service Hours 6 ←
		20 LCD Light Level	20 Service Hours 7 🕂
		21 Pressure Unit	21 Service Hours 8 ←
		22 Temperature Unit	22 Weekly Service ←
		23 VSD Target Pressure	23 Annual Service 🕂
		24 N/A	24 Bi-annual Service 🕂
		25 N/A	25 Oil P Delay Time 🕂
		26 N/A	
		27 LCD Contrast	
		Q2: 32 Logout Time	

P12 – Equip Settings 3	P13 – VSD Settings	P14 – Motor Protection	P15 – Inhibits	P16 – Warning Alarm	P17 – IMM Stop Alarm
01	01	01 Main MTR Protect 🕂	01 ∇Operator	01 Service Hours 1	01 COMP OUT TEMP
02	02	02 Fan MTR Protect 🕂	02 Door Open	02 Service Hours 2	02 TEMP Rise CONFIG
03 N/A	03	03 Main MTR NOM CUR	03 Low Temperature	03 Service Hours 3	03 ⊽EQUIP OUT PRESS
04 N/A	04	04 Main MTR SDTT	04 INT PRESS High	04 Service Hours 4	04 ⊽EQUIP INT PRESS
05 N/A	05	05 Main MTR ROT LOC		05 Service Hours 5	05
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	09 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 N/A	12 VSD Speed %			12 COMP OUT TEMP	12 Door Open
13 N/A	13 ∇VSD MAX RMP Rate			13 ⊽EQUIP OUT PRESS	13 Fan Motor Alarm
14 N/A	14 N/A			14 ⊽EQUIP INT PRESS	14 COOL Water Alarm
15 ISC Available	15 N/A			15 DIFF Pressure	15 Oil Level Alarm
16 ISC P SENS Range	16 N/A			16 Oil Air SEP DP HI	16 Belt Drive SERV
17 Fan TEMP High	17 N/A			17 Phase Detection	17 Dryer Alarm
18 Fan TEMP Low	18 N/A			18 HI MTR STR HR	18 Water Flow
19 Fan Run Period	19 N/A			19 Door Open	19 Inverter Fault
20 Boot Screen BMP	20 N/A			20 CAB Filter DP	20 Main MTR Temp HI

21 P00.03 CONFIG ←	21 N/A		21 Air Filter DP	21 EQUIP Out TEMP H
22 P00.04 CONFIG ←	22 N/A		22 Oil Filter DP	22 Cooling System
23 P00.05 CONFIG ←	23 N/A		23 SEP Filter DP HI	23 Main Motor Fault
24 Restart Reminder ←	24 N/A		24 Fan Motor Alarm	24 CONF IMM Stop 1 ←
25 N/A	25 Skip Hz 1 Low		25 CNDS Drain Alarm	25 CONF IMM Stop 2 ←
26 N/A	26 Skip Hz 1 High		26 COOL Water Alarm	26 CONF IMM Stop 3 ↔
27 Dryer Type	27 Skip Hz 2 Low		27 Oil Level Alarm	27 N/A
28 Dryer Off Temp	28 Skip Hz 2 High		28 Dryer Alarm	28 N/A
29 Dryer On Temp	29 Skip Hz 3 Low		29 Line FTR DP ALM	29 N/A
30 Max Dryer Starts	30 Skip Hz 3 High		30 FTR Drain Alarm	Q2: 30 Oil P LD Limit
31 LCO COM Severety			31 Oil/WTR SEP ALM	Q2: 31 Oil P High Limit
32 Resume DI Start ↔			32 Ambient TEMP HI	32 VSD Fan OVLD
33 Run Check Delay ←			33 CONF Alarm 1 ←	33 Fan Motor OVLD
34 Limit SCHED FUNC			34 CONF Alarm 2 ←	34 Oil TEMP HI
35 P Switch Low			35 CONF Alarm 3 ←	35 N/A
36 P Switch High			36 Oil P LD Limit	36 EQUIP INT TEMP
			37 VSD Fan MOT OVLD	
Q2: 46 2 nd Fan Function			38 Fan Motor OVLD	Q2: 63 Oil P Hi Limit
			39 Oil TEMP High	Q2: 64 Dewpoint High
Q2: 51 Heater Off Delta			40 EQUIP INT TEMP	Q2: 65 FLAT Motor PROT
			41 N/A	Q2: 66 FLAT Motor PROT
			42 COMP OUT T° H A	Q2: 67 FLAT Motor PROT
			43 COMP OUT P LL A	Q2: 68 FLAT Motor PROT
			Q2: 54 Oil Temperature	Q2: 74 Blower Start
			Q2: 55 Dewpoint High	
			Q2: 56 FLAT Motor PROT	
			Q2: 57 FLAT Motor PROT	
			Q2: 58 FLAT Motor PROT	
			Q2: 59 FLAT Motor PROT	

P18 – I/O CONFIG		P19 - Sensor CONFIG	P20 - Diagnostics		P21 – Pup Schodulo
Q1	Q2		Q1	Q2	F21 - Run Schedule
01 ∇AO Function ←	01 ∇AO Function ←	01 N/A	01	01	01 Run Schedule ←
02 ∇DI2 Function	02	02 N/A	02	02	02 Workday Edit ←
03 ∇DI2 Config	03 ∇DI2 Function	03 N/A	03	03	03 Parameter Reset
04	04 ∇DI2 Config	04 Main MTR Current	04	04	04 Schedule Entry 1 ←
05 ∇DI3 Config	05 ∇DI3 Function	05 Fan MTR Current	05	05	
06	06 ∇DI3 Config	06	06	06	31 Schedule Entry 28 ←
07	07 ∇DI4 Function	07	07	07	
08 \(\no DI5 Function\)	08 ∇DI4 Config	08 ∇ Analog Input 3	08 ∇Digital Input 8	08	

	09 ∇DI5 Config	09 ∇DI5 Function	Q1: 09 VAnalog Input 5 option	09	09	
	10 ∇DI6 Function	10 ∇DI5 Config	Q2: 09	10	10	
	11 ∇DI6 Config	11	Q2: 10 ▽Analog Input 5	11-13	11	
ſ	12 ∇ DI7 Function	12 ∇DI6 Config	Q2: 11	14 Analogue Voltage (24VDC)	12	
ſ	13 ∇DI7 Config	13 ∇DI7 Function	Q2: 12	15-17	13	
ſ	14 ∇ DI8 Function	14 ∇DI7 Config	Q2: 13	18	14	
ſ	15 ∇DI8 Config	15 ∇DI8 Function	Q2: 14	19	15 ∇Digital Input 15	
ſ	16 \bigtriangledown Relay 5 Function	16 ∇DI8 Config	Q2: 15	20	16	
ſ	17 ∇ Relay 6 Function	17 ∇DI9 Function		21	17	
ľ	18 ∇Relay 7 Function	18 ∇DI9 Config		22 ⊽Relay Output 5	18	
ľ	19 ∇Relay 8 Function	19 ∇DI10 Function		23 ⊽Relay Output 6	19	
ľ	20 VANA IN 1 FUNCT	20 ∇DI10 Config		24	20	
ľ	21 ▽ANA IN 2 FUNCT	21 ∇DI11 Function		25 ⊽Relay Output 8	21	
ľ	22 ▽ANA IN 3 FUNCT	22 ∇DI11 Config		26	22	
ľ	23 ∇ANA IN 3 Type	23 ∇DI12 Function		27 ∇ANAL Input CT1A	23	
ľ	24 ▽ANA IN 5 FUNCT	24 ∇DI12 Config		28 ⊽ANAL Input CT1B	24	
ľ	25 ▽ANA IN 5 Type	25 ∇DI13 Function		29	25 ∇Analog Input 9 option	
ľ	21	26 ⊽DI13 Config		30 ▽ANAL Input CT2A	26 ⊽Analog Input 10 option	
ľ		27 ∇DI14 Function		31 ⊽L1 Frequency	27 ∇Analog Voltage (24VDC)	
ľ		28 ∇DI14 Config		32 ⊽L2 Frequency	28 ⊽Relay Output 1	
ľ		29 ∇DI15 Function		33 ▽L3 Frequency	29 ⊽Relay Output 2	
ľ		30 ∇DI15 Config		34 ⊽L1 Phase Angle	30 ∇Relay Output 3	
ľ		31 ∇DI16 Function		35 ▽L2 Phase Angle	31 ⊽Relay Output 4	
ľ		32 ∇DI16 Config		36 ∇L3 Phase Angle	32 ∇Relay Output 5	
ľ		33 ▽ANA IN 1 Funct		37 ⊽Key Switch Test	33 ⊽Relay Output 6	
ľ		34 ▽ANA IN 1 Type		38 ⊽LED Test	34 ⊽Relay Output 7	
ľ		35 ∇ANA IN 2 Funct		39 ▽MIN Loop Time	35 ⊽Relay Output 8	
ľ		36 ▽ANA IN 2 Type		40 ∇AVG Loop Time	36 ∇Relay Output 9	
ľ		37 ∇ANA IN 3 Funct		41 ▽MAX Loop Time	37 ⊽Relay Output 10	
ľ		38 ▽ANA IN 4 Type			38 ⊽Relay Output 11	
ľ		39 ∇ANA IN 4 Funct			39 ⊽Relay Output 12	
ľ		40 ∇ANA IN 4 Type			40 ∇Relay Output 13	
ľ		41 ▽ANA IN 5 Funct			41 ⊽Relay Output 14	
ľ		42 ▽ANA IN 5 Type			42	
ľ		43 ∇ANA IN 6 Funct			43 ∇Analogue Output 2	
ľ		44 ▽ANA IN 6 Type			44 ▽ANAL Input CT1A	
ľ		45 ▽ANA IN 7 Funct			45 ▽ANAL Input CT1B	
ľ		46 ▽ANA IN 7 Type			46 ▽ANAL Input CT1C	
ľ		47 ▽ANA IN 8 Funct			47 ▽ANAL Input CT2A	
ľ		48 ▽ANA IN 8 Type			48 ⊽L1 Frequency	
ľ		49 ∇ANA IN 9 Funct			49 ▽L2 Frequency	
- 6						

50 ▽ANA IN 9 Type	50 ▽L3 Frequency
51 ∇ANA IN 10 Funct	51 ⊽L1 Phase Angle
52 ▽ANA IN 10 Type	52 ∇ L2 Phase Angle
53 ⊽Relay 1 Function	53
54 ∇Relay 2 Function	54 ∇Key Switch Test
55 ∇Relay 3 Function	55 ⊽LED Test
56 ∇Relay 4 Function	56 ∇MIN Loop Time
57 ∇Relay 5 Function	57 ▽AVG Loop Time
58 ⊽Relay 6 Function	58 ▽MAX Loop Time
59 ⊽Relay 7 Function	
60 ∇Relay 8 Function	
61 ∇Relay 9 Function	
62 ⊽Relay 10 Function	
63 ⊽Relay 11 Function	
64 ⊽Relay 12 Function	
65 ∇Relay 13 Function	
66 ⊽Relay 14 Function	

Q1 & Q2

P30 – Compressor Table	P40-44 – User DEF 1 to 4	P60 – LED Config	P80 – ISC Main Menu	P81 – ISC Settings	P82 – ISC Priority
		LED Config sub-menus	01 ISC Enabled	01 ISC # Compressors	01 COMP1 Priority
			02 Offload Pressure	02 ISC Start Delay	02 COMP2 Priority
			03 Load Pressure	03 ISC Damping	03 COMP3 Priority
			04 ISC Rotate INT	04 N/A	04 COMP4 Priority
				05 ISC DI1 FCN	05 COMP5 Priority
				06 ISC DI2 FCN	06 COMP6 Priority
				07 ISC DI3 FCN	07 COMP7 Priority
				08 ISC XPM Pressure	08 COMP8 Priority
				09 ISC PRESS SENS	
				10 ISC Load Tolerance	
				11 ISC Unload Tolerance	

4.2 Menu Items

(BLACK Q1 and Q2) (BLUE: Q2 only)

Menu name	Menu code	Menu text	Additional information
	Home Page (disp	lay will default to the Home	Page if no keypad activity occurs for a period of time)
	P00.01	Active Alarm	The most recent active alarm. If more than one active alarm exists each will be displayed in chronological order. Active alarm(s) are displayed until reset 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 selected control mode
	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	FQUIP OUT PRESS	The equipment outlet or discharge pressure
	P00.07	EQUIP INT PRESS	The equipment internal or sump pressure
P00	P00.08	COMP OUT TEMP	The compressor (air end or engine) outlet temperature
Home	P00.09	DIFF Pressure	The differential pressure between outlet and internal (EQUIP INT PRESS minus EQUIP OUT PRESS)
	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 System Management Control function is ON or OFF. When ON, shows the active Sequence assignment. A manual sequence rotation can be performed by pressing both Start and Reset buttons together whilst this item is selected and displayed. Manual Start/Stop of the ISC function can be performed by pressing the Start or Stop button whilst this item is selected and displayed.
	P00.17	ISC Rotate in HRS	Time until next ISC sequence rotation event
	P00.18	ISC XPM Pressure	The ISC XPM pressure sensor value
	Service Timers		
	P01.01	Total Hours	Hour counter, Total hours indicates the number of hours since device commissioning date
P01 Service	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
Timers	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	P01.07	Service Hours 2	Hour counter, visible when configured and displays assignment (e.g. cabinet filter)
Service	P01.08	Service Hours 3	Hour counter, visible when configured and displays assignment (e.g. air filter)
Timers	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 Timers	5	
	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	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
P03	Error Log Error conditions ca Error Log: error co information, and st The error log store	an be grouped into 4 categor de and condition text (see E tored in the internal memory as 50 entries in chronological	ies; Warning (Alarm), Immediate Stop (Shutdown / Trip), Start Inhibit and Run Inhibit. rror Codes and Condition Text). When an error occurs, the error is immediately logged, with key data of the Airmaster™. order, beginning with the most recent at menu item P03.01.
Error Log	Note: The storage	of some key data items are	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	P03.##.06	EQUIP OUT PRESS	Where ## = 01 to 50, Equipment outlet pressure when error occurred
Error Log	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
P04 Event Log	Event Log Historical log of e When an event c The event log sto	vent conditions include STAF ondition occurs, the event and res 200 events in chronologic	RT button pressed, STOP button pressed, Parameter adjustment and USER ACCESS. d key data is immediately logged and stored in the internal memory of the Airmaster™. cal order beginning with the most recent event at menu item P04.01.
	P04 ### 01		Where $\#\#\# = 0.01 - 200$. Event index
	P04 ### 02	Event Description	Where $\#\#\# = 0.01 - 200$, Description of the event
	P04 ### 03	Time	Where ### = 001 = 200. The when event occurred
	P04 ### 04	Date	Where $\frac{m}{m} = 001 = 200$, This when event occurred
	Note: menus item P05.01 P05.02	es can only be modified via in Company Name	ternet browser, Airmaster™ ECO Card option, or Controls Studio. Service provider, company name Service provider, company name
	P05.02	Street Name	Service provider, company name
	P05.04	Street Name	Service provider, street name
	P05.05	City	Service provider, city
P05-7	P05.06	State / Province	Service provider, state or province
Service	P05.07	ZIP / Postal	Service provider, ZIP or postal
Provider,	P05.08	Country	Service provider, Country
Airmaster™	P05.09	Telephone	Service provider, Telephone
Information	P05.10	Fax	Service provider, Fax
	P05.11	E-mail	Service provider, Email
	P05.12	Web	Service provider, Web
	P06.01	Controller ID	Airmaster™ Q1 part number
	P06.02	Serial Number	Airmaster™ serial number
	P06.03	Software ID	Airmaster™ software ID
	P06.04	Software Version	Airmaster™ software version
	P06.05	Software Time	Time when software version installed
	P06.06	Software Date	Date when software version installed
	P06.07	Software CONFIG	Software configuration file name
	P06.08	Software ©	Software copyright
	P07.01	MANUF Name	Name of the original equipment manufacturer

	P07.02	EQUIP Model	Equipment (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	P07.06	MDL YR MANUF	Model year of manufacture
Service	P07.07	COMP SER NUM	Compressor serial number
Provider,	P07.08	COMP YR MANUF	Compressor year of manufacture
Airmaster M	P07.09	MTR SER NUM	Main motor serial number
Information	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
	A flashing symbol A = Warning Ala P08.01 P08.02	to the right of the message of the m	code indicates that a software hard coded delay offset time is counting down. hutdown, I = Information / Advisory, L = 'Load' Inhibit, R = 'Run' Inhibit, S = 'Start' Inhibit Dryer power up. Digital input not OK Door open. Digital input not OK
	P08.03	A:0031	CAB filter DP. Cabinet filter differential pressure, digital input not OK
	P08.04	A:0040	Oil level alarm. Digital input not OK
	P08.05	A:0041	Oil TEMP HI. Oil temperature high.
500	P08.06	A:0050	Dryer alarm, digital input not OK
P08	P08.07	A:0070	Fan motor alarm. Digital input not OK
Message	P08.08	A:0071	VSD Fan MOT OVLD
Codes	P08.09	A:0072	FAN MOTOR OVLD
	P08.10	A:0083	Motor phase IMB. Main motor phase imbalance. Consult manual
	P08.11	A:0085	HI MTR STR HR. Number of permissible motor starts exceeded. Consult manual
	P08.12	A:0119	DEL PRESS high. Equipment outlet pressure high.
	P08.13	A:0129	COMP out TEMP HI. Compressor outlet temperature high
	_P08.14	A:0139	INT PRESS high. Equipment internal pressure high.
	P08.15	A:0149	EQUIP INT TEMP Equipment internal temperature high
	P08.16	A:0151	OIL P LO limit. Oil pressure low limit
	P08.17	A:0160	Dew Point. Digital input not OK.
	P08.18	A:0181	Inlet CALIBR.
	P08.19	A:0200	COOL water alarm. Cooling water alarm. Digital input not OK.
	P08.20	A:0201	CNDS drain alarm. Condensate drain alarm. Digital input not OK.
	P08.21	A:0620	Main motor OVLD Main motor overload
	P08.22	A:0809	DIFF PRESS high. Differential pressure high. EI – EO pressure out of permissible range. Consult manual.

	P08.23	A:0901	CONF alarm 1. Configurable alarm 1. Digital input not OK
	P08.24	A:0902	CONF alarm 2. Configurable alarm 2. Digital input not OK
	P08.25	A:0903	CONF alarm 3. Configurable alarm 3. Digital input not OK
	P08.26	A:1001	COMP OUT T° H EN. Compressor outlet Temperature high alarm
	P08.27	A:1002	COMP OUT P LL A. Compressor outlet Pressure low low alarm
	P08.28	A:1003	Main MTR TEMP HI. Main motor temperature high
	P08.29	A:1004	Voltage Low
	P08.30	A:1006	Ambient TEMP HI.
	P08.31	A:1888	Run feedback ALM. Digital input not OK
	P08.32	A:1903	Ambient TEMP HI. Digital input not OK
	P08.33	A:2030	Air filter DP. Air filter differential pressure. Digital input not OK
	P08.34	A:2032	Line FTR DP alarm. Line filter differential pressure. Digital input not OK
	P08.35	A:2035	SEP filter DP HI. Separator filter differential pressure high
	P08.36	A:2036	SEP filter DP HI. Separator filter differential pressure high
	P08.37	A:2040	Oil filter DP. Oil filter differential pressure. Digital input not OK
	P08.38	A:2110	Max MTR run time
	P08.39	A:2201	FTR Drain Alarm. Line filter drain alarm. Digital input not OK.
P08	P08.40	A:2240	Oil / water SEP ALM. Oil water separator. Digital input not OK.
Message	P08.41	A:2602	No COM fan DRV. (MODBUS comm.'s with 3 rd party drive)
Codes	P08.42	A:2604	COM INI fan DRV (MODBUS comm.'s with 3 rd party drive)
	P08.43	A:2606	COM ERR fan DRV (MODBUS comm.'s with 3 rd party drive)
	P08.44	A:2608	COM XCP fan DRV (MODBUS comm.'s with 3 rd party drive)
	P08.45	A:2610	Fan Drive Fault. EO PRESS high (MODBUS comm.'s with 3 rd party drive)
	P08.46	A:2612	Fan DRV LNK FLT (MODBUS comm.'s with 3 rd party drive)
	P08.47	A:2613	Main DRV alarm (MODBUS comm.'s with 3 rd party drive)
	P08.48	A:2816	Power failure. 24v @ X13 is below permissible level
	P08.49	A:2826	Stop@power fail There was an immediate stop at power fail
	P08.50	A:2831	Airbus™ RS485 HW (Hardware not detected in X04)
	P08.51	A:2832	Airbus™ RS485 HW (Hardware not detected in X05)
	P08.52	A:2833	Airbus™ RS485 HW (Hardware not detected in X06)
	P08.53	A:2834	LCO COM alarm.
	P08.54	A:2836	RTC error. A real time clock error
	P08.55	A:2846	Language or font
	P08.56	A:2970	ISC XPM DI alarm. An Internal System Control 'XPM' digital input alarm. Consult manual
	P08.57	A:4804	Service hours
	P08.58	A:4805	Cabinet filter. Service due
	P08.59	A:4806	Air filter SERV. Service due
	P08.60	A:4807	Oil filter SERV. Service due
	P08.61	A:4808	Separator SERV. Service due
	P08.62	A:4809	Grease service. Service due
	P08.63	A:4810	Valves service. Service due

	P08.64	A:4811	Belt drive SERV. Service due
	P08.65	A:4812	ELEC SYS SERV. Service due
	P08.66	A:4813	MTR bearing SERV. Service due
	P08.67	A:4814	COMP BRG SERV. Service due
	P08.68	A:4815	Dryer service. Service due
	P08.69	A:4816	Oil service. Service due
	P08.70	A:4817	Cooler service. Service due
	P08.71	A:4818	Oil/Fog SEP SERV. Service due
	P08.72	A:4819	Routine service. Service due
	P08.73	A:4820	Weekly service. Service due
	P08.74	A:4821	Annual service. Service due
	P08.75	A:4822	Bi-annual service. Service due
	P08.76	A:4823	AIREND SERV ALM
	P08.77	A:4824	Major PREV MAINT
	P08.78	A:4825	Pre COALESC FTR. Pre Coalescing Filter. Service due
	P08.79	A:4826	Post COALESC FTR. Post Coalescing Filter. Service due
	P08.80	A:4827	ACT carbon FTR. Active Carbon Filter. Service due
	P08.81	A:5000	Default CONFIG. Incompatible software version and parameter values. Reset to default configuration.
P08	P08.82	A:5100	Default CONFIG. Invalid settings. Reset to default configuration.
lessage	P08.83	A:5200	Default CONFIG. Parameter consistency error. Reset to default configuration.
Codes	P08.84	A:5300	Default CONFIG. Reset forced by flashtool
	P08.85	A:5999	Test Version
	P08.86	E:0001	Inlet P low I_S. Inlet pressure low Immediately stop
	P08.87	E:0002	DIFF PR Hi I_S. Differential Pressure high Immediately stop
	P08.88	E:0003	Inlet P high I_S. Inlet pressure high Immediately stop
	P08.89	E:0004	Oil PRESS sensor
	P08.90	E:0005	Inlet PRESS SENS. Inlet pressure sensor
	P08.91	E:0006	Ambient T°. Ambient temperature sensor
	P08.92	E:0007	EQUIP OUT PRESS
	P08.93	E:0008	Dryer power SUP
	P08.94	E:0010	Emergency stop. Digital input not OK, emergency stop button pressed!
	P08.95	E:0030	Door open. Digital input not OK
	P08.96	E:0040	Oil LVL IMM stop. Digital input not OK
	P08.97	E:0041	Oil TEMP HI. Digital input not OK
	P08.98	E:0050	Dryer alarm. Digital input not OK
	P08.99	E:0060	Belt drive SERV. Digital input not OK
	P08.100	E:0070	Fan MTR IMM stop. Digital input not OK
	P08.101	E:0071	VSD fan MOT OVLD. Digital input not OK
	P08.102	E:0072	Fan motor OVLD. Digital input not OK.
	P08.103	E:0080	Main motor OVLD. Consult manual (DI function)
	P08.104	E:0081	Main motor lock. Consult manual

	P08.105	E:0082	Main motor OVLD. Main motor overload. Consult manual (CT input function)
	P08.106	E:0083	Motor phase IMB. Main motor phase imbalance. Consult manual
	P08.107	E:0084	Main MTR CT SENS. Main motor current sensor. Consult manual
	P08.108	E:0085	Fan MTR CT sensor. Fan motor current sensor. Consult manual
	P08.109	E:0086	Fan MTR overload. Consult manual
	P08.110	E:0087	Main motor fault
	P08.111	E:0090	Phase sequence. Consult manual
	P08.112	E:0091	Phase L1 fault. Consult manual
	P08.113	E:0092	Phase L2 fault. Consult manual
	P08.114	E:0093	Phase L3 fault. Consult manual
	P08.115	E:0115	EO PRESS sensor. Equipment outlet pressure sensor. Wiring error or faulty sensor
	P08.116	E:0119	EO PRESS high. Equipment outlet pressure high
	P08.117	E:0125	PD TEMP SENS. Compressor outlet temperature sensor Wiring error or faulty sensor
	P08.118	E:0129	COMP out TEMP HI. Compressor outlet temperature high
	P08.119	E:0131	INT PRESS low. Internal pressure low. Consult manual: See pressure rate rise feature
	P08.120	E:0135	INT PRESS sensor. Internal pressure sensor. Wiring error or faulty sensor
	P08.121	E:0139	INT PRESS high. Internal pressure high.
P08	P08.122	E:0145	INT TEMP SENS. Internal temperature sensor. Wiring error or faulty sensor
Message	P08.123	E:0149	EQUIP INT TEMP Equipment internal temperature high
Codes	P08.124	E:0151	Oil P LO limit. Oil pressure low limit
	P08.125	E:0155	Dryer TEMP SENS. Dryer temperature sensor. Wiring error or faulty sensor
	P08.126	E:0159	Oil P HI limit. Oil pressure high limit
	P08.127	E:0160	Dew point. Digital input not OK
	P08.128	E:0165	Motor PTC SENS. Motor PTC sensor. Wiring error or faulty sensor
	P08.129	E:0179	EQUIP out TEMP HI. Equipment outlet temperature high.
	P08.130	E:0185	Reverse rotation.
	P08.131	E:0200	COOL WTR IMM stop. Cooling water immediate stop. Digital input not OK
	P08.132	E:0229	TEMP rise rate. Consult manual.
	P08.133	E:0603	COM INI main DRV (MODBUS comm.'s with 3 rd party drive)
	P08.134	E:0605	COM ERR main DRV (MODBUS comm.'s with 3 rd party drive)
	P08.135	E:0607	COM XCP main DRV (MODBUS comm.'s with 3 rd party drive)
	P08.136	E:0609	Main drive Fault (MODBUS comm.'s with 3 rd party drive)
	P08.137	E:0611	Main DRV LNK FLT (MODBUS comm.'s with 3 rd party drive)
	P08.138	E:0612	Drive activation
	P08.139	E:0620	Main motor OVLD
	P08.140	E:0621	MTR SPD too low Motor speed too low
	P08.141	E:0809	DIFF PRESS high. EI – EO pressure out of permissible range. Consult manual
	P08.142	E:0814	Venting error. Excess pressure after vent time has elapsed. Consult manual
	P08.143	E:0821	Short circuit. Wiring error. Consult manual.
	P08.144	E:0846	DEL PRESS RANGE
	P08.145	E:0856	INT PRESS RANGE

	P08.146	E:0901	CONF ALARM 1. User configurable immediate stop 1
	P08.147	E:0902	CONF ALARM 2. User configurable immediate stop 2
	P08.148	E:0903	CONF ALARM 3. User configurable immediate stop 3
	P08.149	E:0971	Cooling SYS FLT. Digital input not OK.
	P08.150	E:1004	Voltage Low
	P08.151	E:1005	Drain IMM stop. Digital input not OK
	P08.152	E:1006	Ambient TEMP HI
	P08.153	E:1887	Main motor fault. Digital input not OK.
	P08.154	E:1888	Run CHK IMM stop. Digital input not OK.
	P08.155	E:1901	Water flow. Digital input not OK.
	P08.156	E:1902	Inverter fault. Digital input not OK.
	P08.157	E:1903	Main MTR TEMP HI. Digital input not OK.
	P08.158	E:1904	INV FLT MAN. Inverter fault manual
	P08.159	E:2030	Air filter DP. Air filter differential pressure. Digital input not OK
	P08.160	E:2032	Line FTR DP stop. Line filter differential pressure. Digital input not OK.
	P08.161	E:2040	Oil filter DP. Oil filter differential pressure
	P08.162	E:2101	DI oil PRESS on. Digital oil pressure on. Digital input not OK
P08	P08.163	E:2102	DI oil PRESS off. Digital oil pressure off. Digital input not OK
Message	P08.164	E:2120	Stage pressure
Codes	P08.165	E:2121	Stage TEMP
	P08.166	E:2130	Inlet P low I_S. Inlet pressure low Immediately stop
	P08.167	E:2131	Inlet P high I_S. Inlet pressure high Immediately stop
	P08.168	E:2200	Group Fault
	P08.169	E:2826	Stop@power fail There was an immediate stop at power fail
	P08.170	E:2834	LCO COM alarm communication lost with LCO board
	P08.171	E:2915	ISC PRESS SENS
	P08.172	E:2950	ISC sensor range
	P08.173	E:2960	ISC XPM COMMS
	P08.174	E:2980	ISC XPM DI
	P08.175	E:3230	Door open. Digital input not OK.
	P08.176	E:4804	Service hours. Consult manual.
	P08.177	E:4805	Cabinet filters. Digital input not OK.
	P08.178	E:4806	Air filter SERV. Air filter service. Service timer elapsed
	P08.179	E:4807	Oil filter SERV. Oil filter service. Service timer elapsed
	P08.180	E:4808	Separator SERV. Separator service. Service timer elapsed
	P08.181	E:4809	Grease service. Service due
	P08.182	E:4810	Valves service. Service due
	P08.183	E:4811	Belt drive SERV. Service due
	P08.184	E:4812	ELEC SYS SERV. Service due
	P08.185	E:4813	MTR bearing SERV. Service due
	P08.186	E:4814	COMP BRG SERV. Service due

	P08.187	E:4815	Drver service. Service due
P08	P08.188	E:4816	Oil service. Service due
Message	P08.189	E:4817	Cooler service. Service due
Codes	P08.190	E:4818	Oil/Fog SEP SERV. Service due
	P08.191	E:4819	Routine service. Service due
	P08.192	E:4820	Weekly service. Service due
	P08.193	E:4821	Annual service. Service due
	P08.193	E:4822	Bi-annual service. Service due
	P08.194	E:4823	AIREND SERV ALM
	P08.195	E:4824	Major PREV MAINT
	P08.196	E:4825	Pre COALESC FTR. Pre Coalescing Filter. Service due
	P08.197	E:4826	Post COALESC FTR. Post Coalescing Filter. Service due
	P08.198	E:4827	ACT carbon FTR. Active Carbon Filter. Service due
	P08.199	E:5000	System error
	P08.200	l:2856	Motor jog
	P08.201	1:2857	Safety valve test
	P08.202	L:0149	EIT load INH LL. Equipment Internal Temperature load Inhibit Low Low
	P08.203	R:1000	Wait run enable
	P08.204	R:1006	Ambient T° RIL. Ambient air temperature run inhibit Iow level
	P08.205	R:3123	PD TEMP low. Compressor outlet temperature low
	P08.206	R:3137	INT PRESS high. Internal pressure high
	P08.207	S:0133	Air TEMP low INH. Air temperature low start inhibit
	P08.208	S:3500	Start inhibit (operator inhibit)
	P08.209	S:3501	Start inhibit (enclosure doors)
	P08.210	S:3601	Main MTR VSD COM
	Access Manage and admi Default ADMIN Ac	inister user access rights and ccess Code: "2308"	d determine which menu pages can be viewed by each user (requires ADMIN access rights to modify).
	P09	Active: ########	The current user
Daa	P09.01	Start-up User	Press 'ENTER' to clear current user access and return to the default user access level
P09	P09.02	ADMIN User	Use to enter the 'ADMIN' user account. Press 'ENTER' to access the 'ADMIN' User PIN code sub menu
Access	P09.02.01	ADMIN User	No edit
	P09.02.02	User PIN Code	The 'ADMIN' User PIN code is a four digit numeric number
	P09.02.03	Language	Menu list selection
	P09.02.04	Time Format	24:00 (24 hour) or 12:00 a/p (12 hour AM / PM)
	P09.02.05	Date Format	DD/MM/YYYY', 'MM/DD/YYYY' or YYYY/MM/DD' DD = Day, MM = Month, YYYY = Year
	P09.02.06	Pressure Unit	'BAR', 'PSI', 'kPA' or 'MPA'
	P09.02.07	Temperature Unit	°C or °F

P09	P09.02.08	Initial User	Select Initial User at startup from the list of users
Access	P09.03 ←	User 1	Enter User 1 account settings
	P09.03.01	Edit User Name	Eight alphanumeric characters
	P09.03.02	User PIN Code	Four digit numeric number
	P09.03.03	Language	Menu list selection
	P09.03.04	Time Format	24:00 (24 hour) or 12:00 a/p (12 hour AM / PM)
	P09.03.05	Date Format	'DD/MM/YYYY', 'MM/DD/YYYY' or YYYY/MM/DD'
	D00 02 06	Brosouro Lipit	DD = Day, wivi = wonth, i i i i = real
	P09.03.00	Temperature Unit	
	P09.03.07		Lockod No odit 'Poad access'
	P09.03.00	P01 Service Timers	Locked, No edit 'Read access'
	P09.03.09	P01 Service Timers	Locked, No edit (Pead access)
	P00.03.10	P03 Error Log	Locked, No edit 'Read access'
	P00.03.12	P04 Event Log	Locked, No edit 'Read access'
	P09.03.12	P04 Event Log	Locked, No edit (Pead access)
	P09.03.13	P05 Service Provider	Locked, No edit (Pead access)
	P09.03.14	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	'Not Available' 'Read Access' or 'Edit Access'
	P09 03 19	P11 FQUIP Settings 2	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.20	P12 FQUIP Settings 3	'Not Available', 'Read Access' or 'Edit Access'
	P09 03 21	P13 VSD Settings	'Not Available' 'Read Access' or 'Edit Access'
	P09.03.22	P14 Motor Protection	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.23	P15 Inhibits	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.24	P16 Warning Alarm	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.25	P17 IMM Stop Alarm	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.26	P18 I/O CONFIG	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.27	P19 Sensor CONFIG	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.28	P20 Diagnostics	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.29	P21 Run Schedule	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.30	P80 ISC Main Menu	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.31	P81 ISC Settings	'Not Available', 'Read Access' or 'Edit Access'
	P09.03.32	P82 ISC Priority	'Not Available', 'Read Access' or 'Edit Access'
	P09.04 ←	User 2	User 2 sub menu (sub-menu items as described for User 1)
	P09.05 ←	User 3	User 3 sub menu (sub-menu items as described for User 1)
	P09.06 ←	User 4	User 4 sub menu (sub-menu items as described for User 1)
	P09.07 ←	User 5	User 5 sub menu (sub-menu items as described for User 1)
	P09.08 ←	User 6	User 6 sub menu (sub-menu items as described for User 1)
	P09.09 ←	User 7	User 7 sub menu (sub-menu items as described for User 1)

	P09.10 ←	User 8	User 8 sub menu (sub-menu items as described for User 1)		
	P09.11 ←	User 9	User 9 sub menu (sub-menu items as described for User 1)		
	P09.12 ←	User 10	User 10 sub menu (sub-menu items as described for User 1)		
	Equipment Settings Equipment settings are grouped in a number of 'Equipment Settings' menus providing the option to administer menu access rights for each group separately. Equipment Settings Menu 1: Routine Operating Parameters				
			See 5.0 'Control Modes and Device State Diagram.		
	P10.01	Control Mode	'Load / Off Load', 'Continuous Run', 'Pressure Decay / No Load', 'Dynamic / No Load', 'Variable Speed', 'Modulation' or 'ACS Modulation'		
			Note: for 'Variable Speed' the parameters in menu P13 must be set accordingly!		
P10	P10.02	Force Offload	When active (ON) this feature allows any operator to manually force the equipment from the load state to the offload state and remain in the offload state until manually returned to normal operation. To force off load, press and hold the 'START' key and then press the 'DOWN' key. The equipment will unload and remain in the offload state until the force offload condition is removed. If the offload run period expires during the force offload condition repeat the key stroke sequence. Stopping the equipment will cancel the force offload condition.		
Settings 1			ON or OFF		
Settings	P10.03	Start Pressure	When activated the start pressure only applies when the equipment is in a Standby state; the normal load pressure value (P10.04) applies at all other times. When in Standby the equipment will start and load 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 thereafter.		
	P10.04	Load Pressure	OFF of value between 5.0 Bar and the (Load Pressure (P10.04) minus 0.2 Bar)		
	P10.05	Off Load Pressure	The minimum differential between Load Pressure and Off Load Pressure is 0.2 Bar.		
	P10.06	Run Period	See 5.0 'Control Modes and Device State Diagram (Pressure Decay / No Load) 60 to 3600 seconds		
	P10.07	Off Load Period	See 5.0 'Control Modes and Device State Diagram (Pressure Decay / No Load) 60 to 3600 seconds		
	P10.08	Cooling DP	Only visible if the equipment internal pressure is used		
	P10.09 ←	RS485: X04 CONFIG	Press 'ENTER' to enter the RS485: X04 configuration sub menu		
	P10.09.01	RS485: X04 CONFIG	Airbus485™, MODBUS Master or MODBUS Slave		
	P10.09.02	Airbus485™ Address	1 to 200 (01 to C8 Hex)		
	P10.09.03	MODBUS Address	1 to 200 (01 to C8 Hex)		

	P10.09.04	MODBUS Baud Rate	300, 600, 1200, 1800, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400, 460800 or 931600
	P10.09.05	MODBUS Parity	'no parity', 'odd parity', 'even parity', 'zero parity' or 'one parity'
-	P10.09.06	MODBUS Data Bits	5 to 8
	P10.09.07	MODBUS End bits	1 to 3
	P10.10 ←	RS485: X05 CONFIG	RS485: X05 configuration sub menu
	P10.10.01	RS485: X05 CONFIG	Airbus485™, MODBUS Master or MODBUS Slave
	P10.10.02	Airbus485™ Address	1 to 200 (01 to C8 Hex)
	P10.10.03	MODBUS Address	1 to 200 (01 to C8 Hex)
	P10.10.04	MODBUS Baud Rate	300, 600, 1200, 1800, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400, 460800 or 931600
	P10.10.05	MODBUS Parity	'no parity', 'odd parity', 'even parity', 'zero parity' or 'one parity'
	P10.10.06	MODBUS Data Bits	5 to 8
	P10.10.07	MODBUS End Bits	1 to 3
	P10.11 ←	RS485: X06 CONFIG	RS485: X06 configuration sub menu
	P10.11.01	RS485: X06 CONFIG	Airbus485™, MODBUS Master or MODBUS Slave
	P10.11.02	Airbus485™ Address	1 to 200 (01 to C8 Hex)
	P10.11.03	MODBUS Address	1 to 200 (01 to C8 Hex)
P10 Equipment	P10.11.04	MODBUS Baud Rate	300, 600, 1200, 1800, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400, 460800 or 931600
Settings 1	P10.11.05	MODBUS Parity	'no parity', 'odd parity', 'even parity', 'zero parity' or 'one parity'
•	P10.11.06	MODBUS Data Bits	5 to 8
	P10.11.07	MODBUS End Bits	1 to 3
			The place/location the equipment can be started from; only one start place is allowed at any one time: 'Keypad', 'Equipment DI' or 'Communications'
	P10.12	Start Source	Keypad: local keypad 'START' button Equipment DI: digital input (a digital input must be configured for Start/Stop function) Communications: if AirMaster™ is not equipped with RS485 an optional RS485 card is required
			Note ¹ : if set for 'communications', the start source will not revert to keypad if communications is lost/disrupted Note ² : all available Stop functions remain active at all times regardless of selected Start Source.
			'EQUIP OUT PRESS', 'Equipment DI' or 'Communications'
			Equipment DI: digital input (a digital input must be configured for Remote Load Enable function and another configured for Remote Load/Unload function)
	P10.13	Load Source	Remote Load Enable: Active (ON): equipment will load/unload in accordance with Remote Load/Unload digital input state Not Active (OFF): equipment will load/unload in accordance to set local Load and Unload pressures
			Remote Load/Unload: Active (ON): if Remote Load Enable = ON, equipment will Load regardless of pressure Not Active (OFF): if Remote Load Enable = ON, equipment will Unload regardless of pressure.

	P10.14	Language	Menu list selection
	P10.15	Time	Internal 'Real Time Clock' Time
P10	P10.16	Time Format	24:00 (24 hour) or 12:00 a/p (12 hour AM / PM)
Equipment	P10.17	Daylight Saving	'+0h' or '+1h'
Settings 1	P10.18 ←	Date	Internal 'Real Time Clock' Date sub-menu
	P10.18.01	Edit Year	Year
	P10.18.02	Edit Month	Month
	P10.18.03	Edit Day	Day
	P10.18.04	Save Changes	Press 'ENTER' to store the configured values in P10.18.01 to P10.18.03 to permanent memory. Note: To save changes, this action must be taken before exiting the sub-menu
	P10.19	Date Format	'DD/MM/YYYY', 'MM/DD/YYYY' or YYYY/MM/DD' DD = Day, MM = Month, YYYY = Year
	P10.20	LCD Light Level	0% to 100% and 0%
	P10.21	Pressure Unit	'BAR', 'PSI', 'kPA' or 'MPA'
	P10.22	Temperature Unit	°C or °F
	P10.27	LCD Contrast	0 and 100 %
	Q2: P10.32	Logout Time	1min to 60min
	Equipment Settir	ngs Menu 2: Important Ope	rating Parameters
P11 Equipment Settings 2	P11.01	Star Delta TRANS	Time the star/delta starter will remain in the STAR state during a motor start sequence. 1 to 30 seconds Main contactor MC (R1) Star contactor SC (R2) Delta contactor DC (R3) Note: Q1: The functions for outputs R1, R2, R3 and R4 are fixed and can not be changed. The functions for outputs (Q1: R5 to R8)(Q2: R1 to R14) can be modified (see P18)

			Minimum main motor run time once started.
	D44.00		The Off Load Run Time will be dynamically extended if the minimum main motor run time has not been
	F11.02		
			OFF or 1 to 1800 seconds.
			The equipment will remain offload for the' Load IHN Time' after a motor start sequence regardless of pressure
	P11.03	Load INH Time	or remote load command. This delay time only applies after a motor start sequence.
			OFF or 1 to 30 seconds
			The equipment will remain off load for at least the 'Reload INH Time' after unloading from the loaded state
	P11 04	Reload INH Time	regardless of pressure or remote load command.
	1 11.01		OFF or 1 to 10 seconds
			The time the equipment will continue to run continuously offload before stopping to the Standby state
	P11.05	Off Load Run Time	The time the equipment will continue to run continuously onload before stopping to the Standby state.
	1 11.00		3 to 3600 seconds
			Time minimum time the equipment will remain in the stopped 'Standby' state, regardless of pressure or remote
D11	544.00	Stop MIN Time	load command, after an automated main motor stop to Standby has occurred. This delay time does not apply
Fuipment	P11.06		for manual local Equipment Stop/Start button commands or remote Equipment Stop/Start commands.
Settings 2			OFF or 1 to 60 seconds
	P11.07	Vent Time	Vent time (blow down time): The minimum period of time required to vent internal pressure after a main motor
			stop (to the Stopped or Standby state) before the main motor is allowed to re-start.
			OFF or 1 to 600 seconds
			If an AUTO Restart INH time is set the automatic restart after power failure function will operate. If the
			equipment was in a started state prior to the power failure (Standby, Running Offload, Loaded) the equipment
			will automatically restart when power returns. When power returns the restart will be delayed by the set time.
	P11.08	AUTO Restart INH	
			nower returns
			OFF or 1 to 120 Seconds
			A relay output must be configured for the 'DRAIN' function.
			The 'Drain' output will energise and de-energise in a continuous cycle in accordance with the set condensate
	P11.09	CNDS Drain Open	arain times:
			CNDS Drain Open - Condensate Drain Open Time:
			OFF or 1 to 30 seconds
			CNDS Drain Open - Condensate Drain Open Time: OFF or 1 to 30 seconds

			The time the 'Drain' output will energise each cycle when the equipment is loaded.
	P11.10	CNDS Drain INT	CNDS Drain INT - Condensate Drain Interval Time: 60 to 3600 seconds The time the 'Drain' output will remain de-energised each cycle when the equipment is loaded. When not loaded the interval time is extended by a factor of 10 (CNDS Drain INT x 10).
			CNDS Off Load Condensate Drain Off Load Time:
	D11 11		Off or 1 to 30 seconds The time the 'Drain' output will energise each cycle when the equipment is not loaded.
	F11.11	CNDS OII LUdu	Equipment State Transitions: Off Load to On Load: the remaining interval time, if any, from the previous loaded state is remembered and the remaining time applied. On Load to Off Load: the cycle is restarted beginning with the set interval time.
	-		The maximum permissible number of main motor starts within one rolling chronological hour
P11 Equipment Settings 2	P11.12	HI MTR STR HR	The number of main motor starts, and the clock time of each start, within the last hour is logged. If the number of permissible starts per hour is reached the 'Off Load Run Time' is dynamically extended to avoid another automated start from occurring until the number of starts within the last rolling hour reduces by one. Off or 1 to 20
			Note: this feature will not prevent a motor from being started, only the 'Off Load Run Time' is temporarily modified.
	P11.13	DP Inhibit Time	If the differential pressure between the 'Equipment Outlet Pressure' and 'Equipment Internal Pressure' reaches or exceeds the set 'Differential Pressure Limit' an alarm, or immediate stop event will be delayed until the differential pressure remains at, or above, the limit continuously for the set 'DP Inhibit Time' delay.
	P11.14 ←	Service Hours 1	Service Hours 1 sub menu
	P11.14.01	Function	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. Note: set the Service Hours time in menu P16.01
	P11.14.02	Pre Condition	Indicates the service hours will become due the set number of hours before the service hours due time is reached (Pre-Warning) if the immediate stop enable (IMM Stop Enable) is set to ON. This function will not provide a pre-warning if the immediate stop enable is OFF.
			OFF or 0 to 200 hours
	P11.14.03	IMM Stop Enable	OFF: Alarm
	P11.14.04	Time Limit	ANNUAL or BI ANNUAL

P11.15 + Service Hours 2 Service Hours 1 + Service Hours 1 + Service Hours 1 + Service Hours 2 + Service Hours 1 + Note: set the Service Hours 1 + Note: set the Service Hours 1 + Note: set the Service Hours 1 + Service Hours 2 + Service Hours 1 + Service Hours 2 + Service Hours 1 +				Annual: if the time since the last service due event will exceed one calendar year the service hours is
P11.15 + Bi-Annual: if the time since the last service due event will exceed six calendar months the service hours is " automatically reduced so that the service due will occur at six calendar months since the last service due event. P11.15 + Service Hours 2 Service Hours 1' P11.15.01 Function Note: set the Service Hours 1' P11.15.02 Pec Condition as 'Service Hours 1' P11.15.03 IMM Stop Enable as 'Service Hours 3' P11.15.04 Time Limit as 'Service Hours 1' P11.15.04 Time Limit as 'Service Hours 1' P11.15.04 Time Limit as 'Service Hours 1' P11.15.02 Pre Condition as 'Service Hours 1' P11.15.03 MM Stop Enable as 'Service Hours 1' P11.15.04 Function As 'Service Hours 1' P11.15.03 MM Stop Enable as 'Service Hours 1' P11.15.04 Time Limit as 'Service Hours 1' P11.15.05 Pre Condition as 'Service Hours 1' P11.17.01 Function as 'Service Hours 5' P11.17.01 Function as 'Service Hours 5' P11.17.01 Funct				automatically reduced so that the service due will occur at one calendar year since the last service due event.
P11 Service Hours 2 Service Hours 2 sub menu 9 Service Hours 2 Service Hours 2 sub menu 9 Service Hours 1 Note: set the Service Hours 1 911.15.01 Function Note: set the Service Hours 1 911.15.02 Pre Condition as "Service Hours 3 911.15.03 MM Stop Enable as "Service Hours 3 911.15.04 Tune Limit Service Hours 1 911.15.02 Pre Condition as "Service Hours 3 911.15.04 Tune Limit Service Hours 1 911.15.04 Tune Limit service Hours 1 911.15.04 Function Note: set the Service Hours 1 911.15.04 Tune Limit service Hours 1 911.15.04 Tune Limit service Hours 1 911.15.04 Function as Service Hours 1 911.15.04				Bi-Annual: if the time since the last service due event will exceed six calendar months the service hours is
P11.16 J Service Hours 2 service Hours 2 sub menu 911.15.01 Function Res Service Hours 1' Note: set the Service Hours 1' 911.15.01 Function Res Service Hours 1' Res Service Hours 1' 911.15.01 Time Limit as 'Service Hours 3 ub menu as 'Service Hours 1' 911.16.02 Pre Condition as 'Service Hours 3 ub menu as 'Service Hours 1' 911.16.01 Function Note: set the Service Hours 1' Note: set the Service Hours 1' 911.16.02 Pre Condition as 'Service Hours 1' Note: set the Service Hours 1' 911.16.02 Pre Condition as 'Service Hours 1' Note: set the Service Hours 1' 911.16.03 IMM Stop Enable as 'Service Hours 1' Note: set the Service Hours 1' 911.17.01 Function as 'Service Hours 1' Note: set the Service Hours 1' 911.17.02 Pre Condition as 'Service Hours 1' Note: set the Service Hours 1' 911.18.02 Pre Condition as 'Service Hours 1' Note: set the Service Hours 1' 911.18.02 Pre Condition as 'Service Hours 1' Note: set the Service Ho				automatically reduced so that the service due will occur at six calendar months since the last service due
P11.6 + Service Hours 2 Service Hours 2 sub menu P11.15.01 Function Note: set the Service Hours 1' P11.15.02 Pre Condition as 'Service Hours 3 ub menu P11.15.04 Time Limit as 'Service Hours 3 ub menu P11.16.02 Pre Condition as 'Service Hours 3 ub menu P11.16.04 Time Limit Service Hours 3 ub menu P11.16.01 Function Service Hours 1' P11.16.02 Pre Condition as 'Service Hours 1' P11.16.03 IMM Stop Enable as 'Service Hours 1' P11.16.04 Time Limit P11.16.04 Time Limit P11.17.02 Pre Condition as 'Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.03 IMM Stop Enable as 'Service Hours 1' P11.17.04 Time Limit Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.01 Function Note: set the Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.02 Pre Con				event.
P11.501 Function as "Service Hours 1" Note: set the Service Hours 1" P11.15.02 P11.15.02 Pre Condition P11.15.04 as "Service Hours 1" P11.16.04 as "Service Hours 1" P11.16.04 P11.15.03 IMM Stop Enable P11.16.02 Service Hours 3 sub menu P11.16.02 Service Hours 1" Note: set the Service Hours 1" Note: set the Service Hours 1" P11.16.02 Pre Condition P11.16.03 as "Service Hours 1" Note: set the Service Hours 1" P11.16.04 Time Limit P11.17.04 Service Hours 1 sub menu P11.17.04 P11.17.04 Function P11.17.03 Service Hours 1 sub menu P11.17.04 P11.17.04 Function P11.17.04 Service Hours 1" Note: set the Service Hours 1" P11.18.01 Function P11.18.02 Service Hours 5 sub menu P11.18.04 P11.18.01 Function P11.18.02 Service Hours 1 Sub menu P11.18.04 P11.18.02 Pre Condition P11.18.02 Service Hours 1 Note: set the Service Hours 1" Note: set the Service Hours 1" Note: set the Service Hours 1" P11.18.04 Time Limit P11.18.04 Service Hours 1" Note: set the Service Hours 1" Note: set the Service Hours 1" Note: set the Service Hours 1" P11.19.04 P11.19.02 Pre Condition P11.20.03 Service Hours 1" Note: set the Service Hours 1" Note: set the Service Hours 1" Note: set the Service Hours 1" N		P11.15 ←	Service Hours 2	Service Hours 2 sub menu
P11.15.00 Punction Note: set the Service Hours time in menu P16.02 P11.15.03 IMM Stop Enable as 'Service Hours 1' P11.15.04 Time Limit as 'Service Hours 1' P11.15.01 Function as 'Service Hours 1' P11.15.02 Pre Condition as 'Service Hours 1' P11.16.01 Function As 'Service Hours 1' P11.16.02 Pre Condition as 'Service Hours 1' P11.16.03 IMM Stop Enable as 'Service Hours 1' P11.16.04 Time Limit Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.04 Time Limit as 'Service Hours 1' P11.17.04 Time Limit as 'Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.04 Time Limit Service Hours 1' P11.18.04 Time Limit Service Hours 1' <td></td> <td></td> <td>Function</td> <td>as 'Service Hours 1'</td>			Function	as 'Service Hours 1'
P11 Pre Condition as 'Service Hours 1' P11.15.02 Fire Limit Service Hours 3 sub menu P11.15.04 Time Limit Service Hours 3 sub menu P11.15.04 Function As 'Service Hours 1' P11.15.02 Pre Condition As 'Service Hours 1' P11.15.02 Pre Condition As 'Service Hours 1' P11.15.03 IMM Stop Enable As 'Service Hours 1' P11.15.04 Time Limit As 'Service Hours 1' P11.15.02 Pre Condition As 'Service Hours 1' P11.17.04 Time Limit As 'Service Hours 1' P11.17.05 IMM Stop Enable As 'Service Hours 1' P11.17.01 Function As 'Service Hours 1' P11.17.03 IMM Stop Enable As 'Service Hours 1' P11.17.04 Time Limit As 'Service Hours 1' P11.18.01 Function As 'Service Hours 1' P11.18.02 Pre Condition As 'Service Hours 1' P11.18.02 Pre Condition As 'Service Hours 1' P11.18.04 Time Limit As 'Service Hours 1'		P11.15.01	Function	Note: set the Service Hours time in menu P16.02
P11 IMM Stop Enable as "Service Hours 1" P11.15.04 Time Limit Service Hours 3 Service Hours 3 sub menu P11.16.01 Function Bs "Service Hours 3 sub menu Bs "Service Hours 1" P11.16.01 Function Bs "Service Hours 1" Bs "Service Hours 4" P11.16.02 Pre Condition Bs "Service Hours 4" Bs "Service Hours 1" P11.16.03 IMM Stop Enable Bs "Service Hours 4" Bs "Service Hours 1" P11.16.02 Pre Condition Bs "Service Hours 1" Bs "Service Hours 1" P11.17.01 Function Bs "Service Hours 1" Bs "Service Hours 1" P11.17.02 Pre Condition Bs "Service Hours 1" Bs "Service Hours 1" P11.17.04 Time Limit Bs "Service Hours 1" Bs "Service Hours 1" P11.18.02 Pre Condition Bs "Service Hours 1" Note: set the Service Hours 1" P11.18.02 Pre Condition Bs "Service Hours 1" Service Hours 1" P11.18.04 Time Limit Bs "Service Hours 1" Service Hours 1" P11.18.04 Time Limit Bs "Service Hours 1"		P11.15.02	Pre Condition	
P11 Describe Service Hours 3 Service Hours 1' P11.16.01 Function as 'Service Hours 1' Note: set the Service Hours 1' P11.16.02 Pre Condition as 'Service Hours 1' P11.16.03 IMM Stop Enable as 'Service Hours 1' P11.16.04 Time Limit P11.16.03 IMM Stop Enable P11.17.04 Function As 'Service Hours 1' P11.17.04 Function Service Hours 1' P11.17.03 Function Service Hours 1' P11.17.04 Function Service Hours 1' P11.17.03 IMM Stop Enable as 'Service Hours 1' P11.18.04 Time Limit as 'Service Hours 1' P11.18.01 Function As 'Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.04 Time Limit Note: set the Service Hours 1' P11.18.04 Time Limit Service Hours 1' P11.19.03 <		P11.15.03	IMM Stop Enable	as 'Service Hours 1'
P11.16 -/- Service Hours 3 Service Hours 1' Note: set the Service Hours 1' Note: set the Service Hours 1' P11.16.01 Function as 'Service Hours 1' Note: set the Service Hours 1' P11.16.03 IMM Stop Enable as 'Service Hours 1' P11.16.04 Time Limit as 'Service Hours 1' P11.17.01 Function As 'Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.03 IMM Stop Enable as 'Service Hours 1' P11.17.04 Time Limit as 'Service Hours 1' P11.17.04 Time Limit as 'Service Hours 1' P11.17.04 Time Limit as 'Service Hours 1' P11.18.01 Function as 'Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.03 IMM Stop Enable as 'Service Hours 1' P11.18.04 Time Limit as 'Service Hours 1' P11.18.04 Time Limit as 'Service Hours 1' P11.19.01 Function As 'Service Hours 1' P11.19.0		P11.15.04	Time Limit	
P11.16.01 Function as "Service Hours 1" Note: set the Service Hours time in menu P16.03 P11.16.02 Pre Condition P11.16.03 IMM Stop Enable P11.16.04 as "Service Hours 1" P11.16.04 Time Limit P11.17.04 Service Hours 4 Service Hours 1" P11.17.01 Function As "Service Hours 1" Note: set the Service Hours 1" P11.17.01 Function As "Service Hours 1" Note: set the Service Hours 1" P11.17.02 Pre Condition P11.17.04 Time Limit As "Service Hours 1" P11.17.04 Time Limit As "Service Hours 1" As "Service Hours 1" P11.18.01 Function As "Service Hours 1" As "Service Hours 1" P11.18.01 Function As "Service Hours 1" As "Service Hours 1" P11.18.01 Function As "Service Hours 1" Note: set the Service Hours 1" P11.18.02 Pre Condition As "Service Hours 1" Note: set the Service Hours 1" P11.18.03 IMM Stop Enable As "Service Hours 1" Note: set the Service Hours 1" P11.18.04 Time Limit As "Service Hours 1" Service Hours 1" <td< td=""><td></td><td>P11.16 ←</td><td>Service Hours 3</td><td>Service Hours 3 sub menu</td></td<>		P11.16 ←	Service Hours 3	Service Hours 3 sub menu
P11 Punction Note: set the Service Hours time in menu P16.03 P11.16.02 Pre Condition as 'Service Hours 1' P11.16.04 Time Limit as 'Service Hours 4 sub menu P11.17.01 Function As Service Hours 4 sub menu P11.17.01 Function as 'Service Hours 1' P11.17.02 Pre Condition as 'Service Hours 1' P11.17.03 IMM Stop Enable as 'Service Hours 1' P11.17.04 Time Limit as 'Service Hours 5 sub menu P11.18.02 Pre Condition as 'Service Hours 5' P11.18.01 Function Note: set the Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.01 Function Note: set the Service Hours 1' P11.18.02 Pre Condition as 'Service Hours 1' P11.18.03 IMM Stop Enable as 'Service Hours 1' P11.19.01 Function Note: set the Service Hours 1' P11.19.04 Time Limit Note: set the Service Hours 1' P11.19.04 Function as 'Service Hours 1' P11.19.04 <		D11 16 01	Function	as 'Service Hours 1'
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P11.20.04 Time Limit P11.21 ← Service Hours 8 Service Hours 8 sub menu		P11.20.03	IMM Stop Enable	as 'Service Hours 1'
P11.21 Service Hours 8 Service Hours 8 sub menu		P11.20.04	Time Limit	
		P11.21 ←	Service Hours 8	Service Hours 8 sub menu

P11 Equipment	P11.21.0	Function	as 'Service Hours 1'	
Settings 2	P11 21 02	Pre Condition		
oottingo 2	P11 21 03	IMM Stop Enable	as 'Service Hours 1'	
	P11 21 04	Time Limit		
	P11.22	Weekly Service	ON or OFF Note: set the Weekly Service time in menu P16.09	
	P11.23	Annual Service	ON or OFF Note: set the Annual Service time in menu P16.09	
	P11.24	Bi-Annual Service	ON or OFF Note: set the Bi-Annual Service time in menu P16.09	
L	Q2: P11.25	Oil P Delay Time	1 to 30 secs	
	Equipment Settings Menu 3: Critical Operating Parameters			
P12 Equipment Settings 3	P12.01	Parameter Reset	 Parameter default values are defined by the installed application software configuration file. Soft Reset: resets all operator parameters to default; does not reset controller type specific data, equipment specific data, sensor calibration or commissioning date. Hard Reset: resets everything including commissioning date. The Airmaster™ will power cycle following a parameter reset. 	
	P12.02 P12.03 P12.04	Save as CONFIG N/A	Yes: creates a new 'Configuration File' from the current parameter settings. When parameter adjustment(s) are made the new modified values are stored separately. If a 'Reset to Defaults' is initiated the original values from the 'Configuration File' replace any modified values. If a new 'Configuration File' is made any modified parameter values are incorporated within the new configuration file. After a new configuration file is created, a 'Reset to Defaults' will replace all parameter values with values existing at the time the new 'Configuration File' was saved. Note: when a new 'Configuration File' is created all previous parameter values stored within the original configuration file are lost. No function in standard software No function in standard software	
	P12.04		No function in standard software	
	P12.05	IN/A	INO TURCION IN STANDARD SORWARE	

	P12.06	Error Log Reset	YES: delete the Error Log file, clear the error log
	P12.07	Event log reset	YES: delete the Event Log file, clear the event log
	D12.09		The start date for all total hour's logs.
	F 12.00	TUTAL HKS STK	Set to the commissioning date to synchronise total hours logs with commissioning of equipment
	P12.08.01	Year	Year
	P12.08.02	Month	Month
	P12.08.03	Day	Day
	P12.08.04	Date	Press 'ENTER' to store the configured values in P12.08.01 to P12.08.03 to permanent memory. Note: To save changes, this action must be taken before exiting the sub-menu.
	P12.09	Set Load Hours	Modify 'Load' hour counter
	P12.10	Set Off Load HRS	Modify 'Off Load' hours counter
	P12.11	Set Stopped Hours	Modify 'Stopped' hours counter
	P12.12	N/A	No function in standard software
	P12.13	N/A	No function in standard software
	P12.14	N/A	No function in standard software
			Internal System Management Control
	D40.45		ON or OFF
	P12.15	ISC Available	When enabled, the Airmaster™ internal system management control menu's P80, P81 and P82 become
			available.
P12	P12.16	ISC P SENS Range	Internal System Management Control pressure sensor range
Equipment		Fan TEMP High	Fan High Temperature set point
Settings 3	P12.17		A relay output must be assigned for the 'Fan' function.
			When COMP OUT TEMP ≥ Fan TEMP High the relay output assigned to 'Fan' function is activated.
		Fan TEMP Low	Fan Low Temperature set point
	P12.18		A relay output must be assigned for the 'Fan' function.
			When COMP OUT TEMP < Fan TEMP Low the relay output assigned to 'Fan' function is activated.
	P12.19	Fan Run Period	The minimum run time of the Fan once started regardless of fan temperature settings.
	P12.20	Boot Screen BMP	ON: Boot Screen Bitmap, if present in memory, displayed during power up sequence.
			OFF: Boot Screen Bitmap not displayed during power up sequence.
	P12.21	P00.03 CONFIG	PUU.U4 User defined menu display configuration.
			DFF, P##.## OF Other accessible menu page ID.
	P12.22	P00.04 CONFIG	P00.04 User defined menu display configuration.
			DFF, F##.## OF Other accessible menu page ID
	P12.23	P00.05 CONFIG	OFF P## ## or other accessible menu page ID
			When nower is restored after a nower down:
			OFE: any Alarmor Immediate Stop present when the power down occurred is discarded
	P12.24	Restart Reminder	Warning Alarm: shows any Alarm or Immediate Ston that was nesent when the nower down occurred
			IMM Stop Alarm: If an Immediate Stop condition existed at the time of the power down the Immediate Stop is
			reinstated at power up: the alarm must be reset before a start can be initiated.
	P12 25	N/A	No function in standard software
	1 12.20	1907 A	

	P12.26	N/A	No function in standard software
P12 Equipment	P12.27	Dryer Type	Continuous Dryer: runs continuously when the equipment is running Refrigerant Dryer: uses the dryer on/off settings in P12.28 & P12.29
Settings 3	P12.28	Dryer Off Temperature	Dryer off temperature set point
-	P12.29	Dryer on temperature	Dryer on temperature set point
	P12.30	Max Dryer Starts	The maximum permissible number of dryer starts within one rolling chronological hour The number of dryer starts, and the clock time of each start, within the last hour is logged. If the number of permissible starts per hour is reached the dryer will continue to run, regardless of any temperature set point settings, to avoid another dryer start from occurring until the number of starts within the last rolling hour reduces by one. Off or 1 to 20
			note: this reature will not prevent a dryer from being started; only the run time once started is temporarily modified regardless of any temperature set point settings
	P12.31	LCO COM SEVERITY	Selection for LCO (Led Card Option) communication loss response. Selection between ALARM_SEVERITY_OFF: no action, equipment will continue to operate ALARM_SEVERITY_WARNING: warning, equipment will continue to operate ALARM_SEVERITY_TRIP: equipment immediate stop alarm
	P12.32	Resume DI Start	When power is returned after a power failure, and the digital input Remote Start is still active: OFF: do not start, wait for the remote start to de-activate and re-activate again before starting ON: start
	P12.33	Run Check Delay	If a digital input is selected for 'Motor Relay Feedback' function; delay time for motor relay feedback to occur after the motor relay output is energised. 0 to 30 seconds
	P12.34	Limit Schedule Functions	Press 'ENTER'. Use 'Up' and 'DOWN' keys to configure between 'ON' and 'OFF'. Pressing 'ENTER' saves the configured value and returns the operator to P12.33. OFF: all run schedule selection actions available ON: limits the selection of actions available for the run schedule to 'Default PH/PL, 'Schedule PH/PL and 'Standby' – function that can automatically start the equipment from the stopped state are not available.
	P12.35	P Switch Low	When COMP OUT PRESS ≤ 'P Switch Low' setting the relay output assigned to 'P Switch' function is de- activated
	P12.36	P Switch High	When COMP OUT PRESS ≥ 'P Switch High' the relay output assigned to 'P Switch' function is activated
	Q2: P12.46	2 nd Fan Function	2 nd Fan OFF, Inclusive, Exclusive
	Q2: P12.51	Heater Off Delta	3°C to 50°C

	Variable Speed/Frequency Drive (VSD) Settings			
			VSD control modes selection. Press 'ENTER'. Use the 'UP' and 'DOWN' keys to configure between '	
	P13.01	VSD Control Mode	VAR Speed CTRL: variable speed control when loaded, OFFLOAD SPEED when off load. Fixed Speed Control: OPTIMUM SPEED when loaded, OFFLOAD SPEED when off load.	
	P13.02	VSD Target PRESS	VSD target pressure. Maximum permissible value = Equipment outlet pressure alarm value minus 0.2 bar (or other unit of measure)	
	P13.03	VSD MAX Speed	VSD maximum speed. 100 to 10,000 RPM	
	P13.04	VSD MIN Speed	VSD minimum speed. 0 to 9900 RPM	
	P13.05	VSD OPT Speed	VSD optimum speed. 100 to 10,000 RPM. Step = 100 RPM	
	P13.06	VSD Off Load Speed	VSD off load speed. 0 to 9900 RPM	
	P13.07	VSD Speed RPM	VSD speed in RPM; no edit, view only	
P13	P13.08	VSD Output CURR	VSD output current; no edit, view only	
VSD Settings	P13.09	VSD P Factor	VSD PID control - Proportional Factor 0 to 100	
	P13.10	VSD I factor	VSD PID control - Integration Factor 0 to 100	
	P13.11	VSD D factor	VSD PID control - Derivative Factor 0 and 100	
	P13.12	VSD Speed %	Variable speed drive percent maximum speed; no edit, vview only	
	P13.13	VSD MAX RMP Rate	Variable speed drive maximum ramp rate. 5% to 100%	
	P13.14	N/A	No function in standard software	
	P13.15	N/A	No function in standard software	
	P13.16	N/A	No function in standard software	
	P13.17	N/A	No function in standard software	
	P13.18	N/A	No function in standard software	
	P13.19	N/A	No function in standard software	
	P13.20	N/A	No function in standard software	
	P13.21	N/A	No function in standard software	
	P13.22	N/A	No function in standard software	
	P13.23	N/A	No function in standard software	
	P13.24	IN/A		
	P13.25	Skip Hz 1 Low	VSD skip frequency 1 low set point. OFF or 1 to 100 Hz	

			Note: 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 menu 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 menu are revealed.	
	P13.26	Skip Hz 1 High	VSD skip frequency 1 high set point. skip Hz 1 low +1 and 100 Hz	
P13	P13.27	Skip Hz 2 Low	VSD skip frequency 2 low set point. OFF or skip Hz 1 high +2 and 100 Hz	
VSD Settings	P13.28	Skip Hz 2 High	VSD skip frequency 2 high set point. skip Hz 2 low +1 and 100 Hz	
	P13.29	Skip Hz 3 Low	VSD skip frequency 3 low set point. OFF or skip Hz 2 high +2 and 100 Hz	
	P13.30	Skip Hz 3 High	VSD skip frequency 3 high set point. skip Hz 3 low +1 and 100 Hz	
	Motor Protection Motor protection is 1) Frequency and Advanced Power	s part of Airmaster™ Advance Phase protection, 2) Phase Monitoring offers protection	ced Power Monitoring feature: Angle, Under Current, Rotor Lock Overload and Phase Imbalance protection equivalent to 'Trip Class 10A' for the main and fan motor.	
	P14.01	Main MTR Protect		
	P14.02	Fan MIR Protect	UN OF UFF	
	P14.03	Main MTR NOM CUR	5.0 to 1000Amps	
	P14.04	Main MTR SDTTF	Main motor star delta transition time factor. 1.1 to 3.0	
P14 Motor	P14.05	Main MTR ROT LOC	Main motor rotor lock protection. OFF or 1.0 to 5.0	
Protection	P14.06	Main MTR PH IMB	Main motor phase imbalance protection. 5% to 40%	
	P14.07	Fan MTR NOM CURR	Fan motor nominal current. 0.50 to 100Amps	
	P14.08	Fan MTR OVLD INH	Fan motor overload inhibit time. The time starts following a fan motor start event. 1 to 10 seconds	
	Establishing Motor Nominal Current:			
	For the motor protection feature to function effectively it is important to correctly set the main motor nominal current (P14.03) and fan motor nominal current (P14.07).			
	Calculating Motor Nominal Current: From the motor rating plate, or data sheet, establish the 'nominal motor kW', 'service factor' (if applicable), 'power factor (cos phi)' and ' 3-Phase Voltage'			

P14 Motor Protection	Nominal Current = (Nominal Motor Rating in Watts' x' Service Factor') / (3-Phase Voltage' x' Power Factor' x 1.732) example – Main Motor: 37kW, 1.05 Service Factor, 400 Volts, 0.85 Power Factor: ((37kW 1000) * 1.05) / (400V * 0.85 * 1.732) = 2 Amps Current Transformer (CT) Selection: A comprehensive range of CT's, from 5 to 650 Amps, are available from CMC. Select a CT where the 'Motor Nominal Current' exceeds 40% of the CT maximum rating but no greater than 80% of the maximum CT rating. For the main motor example above (Motor Nominal Current' exceeds 40% of the CT maximum rating greater than 80% of the maximum CT rating. For the main motor example above (Motor Nominal Current = 66A) a CT with a maximum rating greater than 80% of the maximum CT rating. For the fam motor example above (Motor Nominal Current = 2 Amps) if the motor phase cable is passed through the CT two limes, the CT will detect 4 Amps when the actual phase current is 2 Amps. The Airmaster ^{1M} will automatically correct for this if the Fan Motor 'CT Winding' parameter (P19.05.02) is set to 2'. Note: Consult the Airmaster ^{1M} installation guide for a comprehensive guide to main and fan motor C.T. physical location Rotor Lock and Overload Protection : During a motor start sequence, rotor look protection is active for a period of time determined by the 'Star Delta Transition' time factor (P14.04). After the 'Star Delta Transition' time rotor look protection is deativated and overload protection is activated for the remainder of the motor running period. Rotor Lock Protection Rotor Lock Protection for the current peak that will occur when the motor is initially started (typically 6 x FLC) and another 2 second delay to allow for the transition current peak that will occur during the starter star to delta' configuration transition (typically 4 x FLC). After the 'star to delta' transition lock rotor protection remains active for a short period to ensure the motor accelerates to full speed successituly.
	$\begin{array}{c} \mathbf{x} \\ \mathbf{y} \\ $



	Under Current De	Under Current Detection:				
	The Airmaster™ monitors the presence of current in any running state. If the detected current is less than 20% of the 'Nominal Motor Current' the Airmaster™ will assume this to be an abnormal under current condition and an immediate stop event will occur.					
	Main Motor Phas	e Imbalance Protection:				
P14	Main motor phase imbalance protection measures any deviation in the phase currents. If any phase deviates by more than the configured percentage (P14.06) an immediate stop event will occur.					
Protection	Main Motor Phas	e Angle Protection:				
	The Airmaster™ n	nonitors the sequential of Ph	nase L1, L2 and L3 and the corresponding angle of each phase.			
	L1 = 0°, L2 phase	L1 = 0°, L2 phase angle = 100° and 140°, L3 phase angle = 220° and 260°				
	If a phase angle e	If a phase angle error occurs an immediate stop event will occur.				
	Current Sensor or Wiring Error Protection:					
	f the measured current is less than 20% of the 'Nominal Motor Current' when the motor is running, the Airmaster™ will assume a current sensor fault, phase oss or wiring fault.					
	Inhibits Inhibits do not generate an error condition, an inhibit prevents an action or progression to another operational state.					
	P15.01	Operator	The operator inhibit is intended for operators to intentionally inhibit the equipment from operation. Requires a digital input to be assigned for the 'Operator' function. ON or OFF			
P15	P15.02	Door Open	Prevents operation if an equipment door(s) is open. Requires a digital input to be assigned for the 'Door Open' function. ON or OFF			
Innibits	P15.03	Low Temperature	Prevents an equipment start if the COMP OUT TEMP is less than the set temperature. -20°C to +10°C			
	P15.04	INT PRESS High	Prevents an equipment start if the 'Internal (Sump) Pressure' is above the set pressure. 0.1 BAR to 2.0 BAR			

	Airmaster™ WARNING ALARM Conditions. Warning Alarm: will generate and log an Alarm indication but will not stop the equipment from operating.				
	P16.01	Service Hours 1			
	P16.02	Service Hours 2	1		
	P16.03	Service Hours 3			
	P16.04	Service Hours 4	U to 10,000 nours The default value can be get immediately by measing the (Depet) by the whilet edition the value		
	P16.05	Service Hours 5	I ne default value can be set immediately by pressing the Reset button whilst editing the value.		
	P16.06	Service Hours 6			
	P16.07	Service Hours 7			
	P16.08	Service Hours 8			
	P16.09	Weekly Service	Weekly service warning alarm sub menu. Note: to function the weekly service hours timer must be enabled in menu P11		
P16 Warning	P16.09.01	AUTO SCH Service	Automatically schedules the next service due event. YES: the next weekly service is set; 7 calendar days are added to the currently configured values in P16.09.02 ~ P16.09.05		
	P16.09.02	Year	Manually configure the Year of the next service. YEAR		
	P16.09.03	Month	Manually configure the Month of the next service. MONTH		
Aums	P16.09.04	Day	Manually configure the Day of the next service. DAY		
	P16.09.05	Time	Manually configure the Time of the next service. TIME		
	P16.09.06	Save Changes	ENTER: save the set values to permanent memory		
	P16.10	Annual Service	Annual service warning alarm sub menu Sub menu items are the same as P16.09 Weekly Service, see Weekly Service Sub Menu Note: to function the weekly service hours timer must be enabled in menu P11		
	P16.11	Bi-Annual Service	Bi-Annual service warning alarm sub menu Sub menu items are the same as P16.09 Weekly Service, see Weekly Service Sub Menu Note: to function the weekly service hours timer must be enabled in menu P11		
	P16.12	COMP OUT TEMP	Analogue Type (see menu P12.12): OFF or 70°C to 240°C Digital Type (see menu P12.12): OFF or ON		
	P16.13	EQUIP OUT PRESS	OFF or 0.1 Bar above Off Load Pressure to 0.1 Bar below Equipment Outlet Pressure immediate stop value.		
	P16.14	EQUIP INT PRESS	OFF or 0.1 Bar above Equip. Outlet Pressure Warning to 0.1 Bar below Equip. Internal Pressure Immediate Stop		
	P16.15	DIFF Pressure	Differential Pressure Warning: EQUIP INT PRESS minus EQUIP OUT PRESS		
			OFF, 0.2 Bar to (Immediate Stop Differential Pressure – 0.2Bar)		

			Note1: Differential Pressure Warning is disabled when delivery temperature is below 50°C
			Note2: Differential Pressure must continuously exceed the limit for more than 10 seconds
	P16.16	Oil Air SEP DP HI	Oil / Air Separator Differential Pressure High Warning: Oil Air SEP DP HI minus EQUIP OUT PRESS OFF or 0.01 Bar to 2.00 Bar Note1: Differential Pressure Warning is disabled when delivery temperature is below 50°C Note2: Differential Pressure must continuously exceed the limit for more than 10 seconds
	P16.17	Phase Detection	OFF: disable warning alarm ON: warning if a loss of phase occurs or frequency below 40Hz or greater than 70Hz for more than 0.5secs
	P16.18	HI MTR STR HR	High Main Motor Starts per Hour Warning Alarm 1 to 20
	P16.19	Door Open	Door Open Warning Alarm ON or OFF Note: requires appropriate digital input assignment, see Menu P18
	P16.20	CAB Filter DP	Equipment Cabinet Filter Differential Pressure High Warning Alarm ON or OFF Note: requires appropriate digital input assignment, see Menu P18
P16 Warning Alarms	P16.21	Air Filter DP	Air Filter Differential Pressure High Warning Alarm ON or OFF Note: requires appropriate digital input assignment, see Menu P18
	P16.22	Oil Filter DP	Oil Filter Differential Pressure High Warning Alarm ON or OFF Note: requires appropriate digital input assignment, see Menu P18
	P16.23	SEP Filter DP HI	Separator Filter Differential Pressure High Warning Alarm ON or OFF Note: requires appropriate digital input assignment, see Menu P18
	P16.24	Fan Motor Alarm	Fan Motor Warning Alarm ON or OFF Note: requires appropriate digital input assignment. See Menu P18
	P16.25	CNDS Drain Alarm	Condensate Drain Warning Alarm ON or OFF Note: requires appropriate digital input assignment. See Menu P18
	P16.26	COOL Water Alarm	Cooling Water Warning Alarm ON or OFF Note: requires appropriate digital input assignment. See Menu P18
	P16.27	Oil Level Alarm	Oil Level Warning Alarm ON or OFF Note: requires appropriate digital input assignment. See Menu P18
	P16.28	Dryer Alarm	Dryer Warning Alarm ON or OFF Note: requires appropriate digital input assignment. See Menu P18
	P16.29	Line FTR DP ALM	Line Filter Differential High Warning Alarm ON or OFF

			Note the first state of the first state of the Market D40
			Note: requires appropriate digital input assignment. See Menu P18
			Filter Drain Warning Alarm
	P16.30	FTR Drain ALM	ON or OFF
			Note: requires appropriate digital input assignment. See Menu P18
			Oil/Water Separator Warning Alarm
	P16.31	OII/WTR SEP ALM	ON or OFF
			Note: requires appropriate digital input assignment. See Menu P18
			Ambient Temperature High Warning Alarm
	P16.32	Ambient TEMP HI	ON or OFF
	1 10.02		Note: requires appropriate digital input assignment. See Menu P18
			Configurable Warning Alarm #1
	D16 33	Conf Alarm 1	
	1 10.55		Note: requires appropriate digital input assignment. See Manu B19
			Configurable Marriage Alore #2
	D16 24	Conf Alarm 2	
	P10.34	Coni Alarm 2	
			Note: requires appropriate digital input assignment. See Menu P18
	540.05		Configurable Warning Alarm #3
D16	P16.35	Conf Alarm 3	ON or OFF
Warning			Note: requires appropriate digital input assignment. See Menu P18
Varining	P16.36	N/A	not used in standard software
Alainis	P16.37	VSD Fan MOT OVLD	VSD Fan Motor Overload Warning Alarm
			ON or OFF
			Note: requires appropriate digital input assignment. See Menu P18
		Fan Motor OVLD	Fan Motor Overload Warning Alarm
	P16.38		ON or OFF
			Note: requires appropriate digital input assignment. See Menu P18
	P16.39	Oil TEMP HI	Oil Temperature High Warning Alarm
			Note: requires appropriate digital input assignment. See Menu P18
			Internal Temperature High Warning Alarm
	P16 40	FOUIP INT TEMP	ON or OFF
	1 10.10		Note: requires appropriate digital input assignment. See Menu P18
	P16 41	N/A	note red in standard software
	1 10.41		Airend Outlet Temperature High Warning Alarm
	D16 / 2		ON or OEE
	F 10.42	COMPOUTITA	Note: requires appropriate digital input assignment. See Monu P18
			Note, requires appropriate orginal input assignment. See Menu P to
	D16 42		Allend Oullet Pressure Low Low Warning Alarm
	P16.43	COMP OUT P LL A	UN UI UFF
			i Note: requires appropriate digital input assignment. See Menu P18
-	Q2: P16.54	Oil remperature	
	Q2: P16.55	Dewpoint High	-2010 to 510
	Q2: P16.56	FLAT Motor PROT	Main motor, less than: OFF or 0.21A to 249.98A

	Q2: P16.57	FLAT Motor PROT	Main motor, greater than: OFF or 0.22A to 249.99A
P16	Q2: P16.58	FLAT Motor PROT	Fan motor, less than: OFF or 0.03A to 4.98A
Warning Alarms	Q2: P16.59	FLAT Motor PROT	Fan motor, greater than: OFF or 0.04A to 4.99A
	Airmaster™ IMI Immediate Stop	MEDIATE STOP ALARM C (Shutdown, Trip): will imme	onditions. diately shutdown the equipment and generate and log an Immediate Stop indication
	P17.01	COMP OUT TEMP	Airend Outlet Temperature Immediate Stop ON or OFF Note: Comp Out Temperature must be enabled in P18.22-P18.25
	P17.02 ←	HI TEMP Rise	High Temperature Rate of Rise Immediate Stop sub menu
	P17.02.01	Delta TEMP	Temperature Delta Rise (over Delta Time) Immediate Stop 1 to 60°C
	P17.02.02	Delta Time	5 to 30 seconds
P17	P17.02.03	Active Time	Time the 'High Temperature Rate of Rise' monitoring remains active after a main motor start 0 to 60 seconds
IMM Stop Alarms	P17.03	EQUIP OUT PRESS	Equipment Outlet Pressure Immediate Stop Minimum: 0.1 Bar above Outlet Pressure Warning
	P17.04	EQUIP INT PRESS	Equipment Internal Pressure Immediate Stop Minimum: 0.1 Bar above Internal Pressure Warning
	P17.05 🕂	Low PRESS Rise	Low Pressure Rise Immediate Stop sub menu Note: only active when an internal pressure sensor is installed and enabled
	P17.05.01	Min INT PRESS	Minimum Internal Pressure 0 to 2 Bar
	P17.05.02	Active Time	Time the 'Minimum Internal Pressure' monitoring remains active after a main motor start OFF or 0 to 60 seconds
	P17.06	DIFF Pressure	Differential Pressure Immediate Stop: EQUIP INT PRESS minus EQUIP OUT PRESS OFF or 0.4 Bar to maximum permissible value Note1: Differential Pressure Warning is disabled when delivery temperature is below 50°C Note2: Differential Pressure must continuously exceed the limit for more than 10 seconds
	P17.07	Main Motor Lock	Main Motor 'Rotor Lock' Detection Immediate Stop ON or OFF
	P17.08	Main Motor OVLD	Main Motor Overload Immediate Stop OFF: disabled ON: motor overload condition determined by P14 menu values OR main motor overload digital input
	P17.09	Motor Phase IMB	Motor Phase Imbalance Immediate Stop ON or OFF
	P17.10	Fan MTR Overload	Fan Motor Overload Immediate Stop

			OFF: disabled
-			ON: motor overload determined by P14 menu values OR fan motor overload digital input
			Phase Detection Immediate Stop
	P17.11	Phase Detection	OFF: disabled
			ON: phase order (L1>L2>L3) is incorrect OR loss of phase
	D17 10	DeerOren	ON or OFF
	P17.12	Door Open	Note: requires appropriate digital input assignment, see Menu P18
			Fan Motor Immediate Stop
	P17.13	Fan Motor Alarm	ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
			Cooling Water Immediate Stop
	P17.14	COOL water alarm	ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
	D47.45		Oil Level Immediate Stop
	P17.15	Oli Level Alarm	UN OF OFF
_			Note: requires appropriate digital input assignment, see Menu P18
	D17 16		
P17	P17.10	Beil Drive SERV	UN 01 UFF
IMM Stop			Note. requires appropriate digital input assignment, see Menu Pito
Alarms	D17 17		No OE
	F 17.17	RD Alalili	Note: requires appropriate digital input assignment, see Menu P18
		Water Flow	Water Flow Immediate Stop
	P17.18		ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
		Inverter Fault	VSD Inverter Fault Immediate Stop
	P17.19		ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
			Main Motor Temperature High Immediate Stop
	P17.20	Main MTR Temp HI	ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
			Equipment Outlet Temperature High Immediate Stop
	P17.21	EQUIP Out TEMP HI	ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
			Cooling System Fault Immediate Stop
	P17.22	Cooling SYS FLT	ON or OFF
			Note: requires appropriate digital input assignment, see Menu P18
	D47.00		Main Motor Fault Immediate Stop
	P17.23	Main Motor Fault	UN OF UFF
	D47.04	Or of IMMA store 1	On a firm while have a dista Otary #4
	P17.24	Cont IMIM stop 1	Contigurable immediate Stop #1

			Note: requires appropriate digital input assignment, see Menu P18	
		Conf IMM stop 2	Configurable Immediate Stop #2	
	P17.25		ON or OFF	
			Note: requires appropriate digital input assignment, see Menu P18	
			Configurable Immediate Stop #3	
	P17.26	Conf IMM stop 3	ON or OFF	
			Note: requires appropriate digital input assignment, see Menu P18	
	P17.27	N/A	not used in standard software	
	P17.28	N/A	not used in standard software	
	P17.29	N/A	not used in standard software	
	P17.30	Q2: Oil P LD Limit	OFF or 0.2bar to 1.4bar	
	P17.31	Q2: Oil P High Limit	OFF or 1.6bar to 10.0bar	
			VSD Fan Motor Immediate Stop	
	P17.32	VSD Fan MOT OVLD	ON or OFF	
D17			Note: requires appropriate digital input assignment, see Menu P18	
IMM Stop			Fan Motor Immediate Stop	
Alarms	P17.33	Fan Motor OVLD	ON or OFF	
			Note: requires appropriate digital input assignment, see Menu P18	
	P17.34 O		Oil Temperature High Immediate Stop	
		OII TEMP HI	ON or OFF	
			Note: requires appropriate digital input assignment, see Menu P18	
	P17.35	N/A	not used in standard software	
	545.00	EQUIP INT TEMP	Internal (Sump) Temperature High Immediate Stop	
	P17.36		ON or OFF	
	00.047.00		Note: requires appropriate digital input assignment, see Menu P18	
	Q2: P17.63		(4) not adjustable	
	Q2: P17.64		6°C to >100°C	
	Q2: P17.65	FLAT Motor PROT	Main motor, less than: OFF or 0.21A to 249.98A	
	Q2: P17.66	FLAT Motor PROT	Main motor, greater than: OFF or 0.22A to 249.99A	
	Q2: P17.67	FLAT Motor PROT	Fan motor, less than: OFF or 0.03A to 4.98A	
	Q2: P17.68	FLAT Motor PROT	Fan motor, greater than: OFF or 0.04A to 4.99A	
	Q2: P17.74	Blower Start	OFF or 0sec to 50sec	
		μ		
	Airmaster™ Inpu	It / Output Configuration O	ptions	
P18	_		-	
I/O	Note: When confi	guring I/O assignments in me	enu P18 the associated functions in the respective menus must also be enabled.	
(Input / Output)	For example: if dig	gital input 2 (P18.02) is config	gured for 'Oil Filter DP Alarm' the 'Oil Filter DP Alarm' function in menu (P16.19) must also be enabled.	
CONFIG				
	P18.01 Analogue	Output, Relay Drive Function	ns:	
	De-enegise = no o	output, OFF; Energise = outp	out to energise relay coil, ON	
	The coil of a relay (external to the controller), with a coil energise current no greater than 20mA, can be connected to the analogue output terminals.			

	P18.01 - AO 1 Function		Analogue Output 1 Function sub-menu	
	Q2: P18.02 - AO 2 Function		Analogue Output 2 Function sub-menu	
		OFF	Disable, No function	
		Q2: Blower Speed	Repeat: blower speed, 4-20mA	
		Q2: Inlet Pressure	Repeat: inlet pressure, 4-20mA	
		Alarm	Energise: Warning Alarm (not including Start/Run Inhibit OR Immediate Stop)	
		Alarm NO	De-energised: Warning Alarm (not including Start/Run Inhibit OR Immediate Stop)	
		Alarm & Service	Energised: Warning Alarm OR Service Due(not including Start/Run Inhibit OR Immediate Stop)	
		Alarm & Service NO	De-energised: Warning Alarm OR Service Due(not including Start/Run Inhibit OR Immediate Stop)	
		Drain	see P11.08 & P11.09	
		Dryer Control	Energise: all RUNNING state conditions	
		EQUIP OUT PRESS	Repeat: 'Equipment Output Pressure' value; 4-20mA	
		EQUIP INT PRESS	Repeat: 'Equipment Internal Pressure' value; 4-20mA	
		COMP OUT TEMP	Repeat: 'Compressor Output Temperature' value; 4-20mA	
		Fan	Energise: all RUNNING states except 'Motor Starting' AND 'Load Delay'	
			Will only operate (energise) in all RUNNING states except 'Motor Starting' and 'Load Delay'.	
	P18.01 🖊		Energise: when 'Delivery Temperature' exceeds the set 'Fan High Temperature' setting.	
P18	Q2: P18.02 ←	Fan Control	De-energise: when 'Delivery Temperature' falls below the set 'Fan Low Temperature' setting.	
I/O			Once energised the output will remain energised for a minimum of the set 'Fan Minimum Run Time' regardless	
(Input / Output)			of delivery temperature.	
CONFIG		Fan MTR Current	Repeat: 'Fan Motor Current' value; 4-20mA	
		Group Fault	Energised: any active Alarm, Start/Run Inhibit or Immediate Stop Shutdown	
		Group Fault NO	De-energised: any active Alarm, Start/Run Inhibit or Immediate Stop Shutdown	
		Heater	Energise: Temperature falls below set low temperature run inhibit + 2°C.	
			De-energise: Temperature increases above set low temp run inhibit + 3°C.	
		Immediate Stop	Energise: any active Immediate Stop (not including Start/Run Inhibit OR Warning)	
		IMM Stop NO	De-energise: any active Immediate Stop (not including Start/Run Inhibit OR Warning)	
		Loaded	Energise: all LOADED state conditions	
		Main MTR Current	Repeat: Main Motor Current value; 4-20mA	
		Running	Energise: all RUNNING state conditions	
		Service	Energise: Service Due only	
		Standby	Energise: 'Standby' and 'Venting' states	
		Started	Energise: Equipment Active - 'Started', 'Running', 'Stop to Standby' and 'Standby' state conditions	
	Airmaster™ Digi	Airmaster™ Digital Inputs 2 to (Q1: 8)(Q2: 16) are configurable.		
	(Standard Software: Digital Input 1 = Emergency Stop)			
	Each menu config	jurable digital input paramet	ter (e.g. P18.02) is followed by a configurable digital input state selection parameter (e.g. P18.03).	
			uses lault codes and text to display condition information on the Airmaster'm graphical user interface.	
	∕!∖ = Alarm	🙂 = Trip		

		OFF	Disable, No function
		Q2: (!) Enclosure T HL	Select
		Q2: (!) Vibration HL	Select
		$ m m m \Delta$ Doors Open alarm	Select
		(!) Doors Open Trip	Select
		\land CAB Filter DP	Select
		🗥 Air Filter DP	Select
		⚠ Oil Filter DP	Select
		⚠ SEP Filter DP HI	Select
		🛆 Fan Motor Alarm	Select
		. Ⅰ Fan Motor IMM Stop	Select
		m m m m m m m m m m m m m	Select
		\land COOL Water Alarm	Select
		(!) COOL Water IMM Stop	Select
P18	D40	⚠ Oil Level Alarm	Select
(Input / Output)	02(03)~15(32) ←	(!) Oil LVL IMM Stop	Select
CONFIG	Q1(Q2)	U Belt IMM Stop	Select
		🛆 Dryer Alarm	Select
		Uryer IMM Stop	Select
		⚠ Line FTR DP ALM	Select
		Line FTR DP Stop	Select
		🕼 FTR Drain Alarm	Select
		▲ Oil/WTR SEP ALM	Select
		Run SCH On/Off	Select
		Remote Start	Select
		REM Load Enable	Select
		REM Load/Offload	Select
		U Main Motor OVLD	Select
	-	A CONF Alarm 1	Select
		CONF Alarm 2	Select
		CONF Alarm 3	Select

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	P18. 02(03)~15(32)	(!) Group Fault	Select		
		() Dew Point	Select		
		A Dew Point	Select		
			Select		
			Select		
			Select		
		Eorce Spiral VI V	Select		
			Configure input for 'Normally OPEN' or 'Normally CLOSED'		
	P18.0#.01	Open / Closed	Note: if set for (Open) feature will activate when input is CLOSED circuit, if set for (Closed) feature will activate when input is OPEN circuit		
	P18.0#.02	Time Delay	OFF or 0.1 to 10.0 seconds		
		,			
	Airmaster™ Relay Outputs (Q1: 5 to 8)(Q2: 1 to 12) are configurable.				
P18	(Q1 Fixed Outputs	:: R1 = Main Contactor, R2 =	Star Contactor, R3 = Delta Contactor, R4 = Load Solenoid)		
I/O		OFF	Disabled No function		
(Input / Output)		Q2: Motor Permissive NC	De-energise: when motor permissive active		
CONFIG		Q2: Motor Permissive NO	Energise: when motor permissive active		
		Q2: Motor Protection NC	De-energise: when motor protection active		
		Q2: Motor Protection NO	Energise: when motor protection active		
		Q2: S/D DELTA NC	Star/Delta Starter – DELTA Contactor		
		Q2: S/D STAR NC	Star/Delta Starter – STAR Contactor		
		Q2: S/D MAIN NC	Star/Delta Starter – MAIN Contactor		
		Q2: Device Power up NC	De-energise: at power up initialisation		
	D 40	Q2: Device Power up NO	Energise: at power up initialisation		
	P18.	Alarm NC	De-energise: any active Warning Alarm (not including Run Inhibit)		
	16(53)~19(66) ←	Alarm NO	Energise: for any active Warning Alarm (not including Run Inhibit)		
	$Q_1(Q_2)$	Immediate Stop NC	De-energise: any active Immediate Stop Shutdown (not including Start/Run Inhibit)		
		Immediate Stop NO	Energise: any active Immediate Stop Shutdown (not including Start/Run Inhibit)		
		Group Fault NC	De-energise: any active Warning Alarm, Star/Run Inhibit or Immediate Stop Shutdown		
		Group Fault NO	Energise: any active Warning Alarm, Star/Run Inhibit or Immediate Stop Shutdown		
		Alarm & Service NC	De-energise: any Warning Alarm or Service Due (not including Start/Run Inhibit)		
		Alarm & Service NO	Energise: any Warning Alarm or Service Due (not including Start/Run Inhibit)		
		Service NC	De-energise: Service Warning Alarm or Service Immediate Stop only		
		Service NO	Energise: Service Warning Alarm or Service Immediate Stop only		
		Heater NC	De-energise: detected Temperature falls below set low temperature run inhibit + 2°C.		
			Energise: detected temperature increases above set low temp run inhibit + 3°C.		

		Heater NO	Energise: detected Temperature falls below set low temperature run inhibit + 2°C.
		Theater NO	De-energise: detected temperature increases above set low temp run inhibit + 3°C
		Drain NC	De-energise: when Drain function in active 'ON' state.
		Drain NO	Energise: when Drain function in active 'ON' state.
		Fan NC	De-energise: all RUNNING states except 'Motor Starting' and 'Load Delay'
		Fan NO	Energise: all RUNNING states except 'Motor Starting' and 'Load Delay'
		Standby NC	De-energise: in 'Standby' and 'Venting' states
		Standby NO	Energise: in 'Standby' and 'Venting' states
		Running NC	De-energis: in all RUNNING states
		Running NO	Energise: in all RUNNING states
		Loaded NC	De-energise: in all LOADED states
		Loaded NO	Energise: in all LOADED states
		Started NC	De-energise: in all 'Started' states
		Started NO	Energise: in all 'Started' states
			If function enabled will operate in all RUNNING states except 'Motor Starting' and 'Load Delay'.
			De-energise: if delivery temperature exceeds the set 'Fan High' temperature setting.
		Fan Control NC	Energise: If delivery temperature falls below the set 'Fan Low' temperature setting.
			Once de-energised the output will remain de-energised for a minimum of the set 'Fan Minimum Run Time'
P18			regardless of delivery temperature.
I/O	P18.		If function enabled will operate in all RUNNING states except 'Motor Starting' and 'Load Delay'.
(Input / Output)	16(53)~19(66) ↔ Q1(Q2)		Energise: if delivery temperature exceeds the set 'Fan High' temperature setting.
CONFIG		Fan Control NO	De-energise: If delivery temperature fails below the set 'Fan Low' temperature setting.
			Once de-energised the output will remain de-energised for a minimum of the set. Fan Minimum Run Time
		Driver Centrel NC	De energiae: in all RUNNUNC states
		Dryer Control NO	De-energises: in all RUNNING states
		Dryer Control NO	Energise: In all RUNNING states
		RC Start/Stop NC	De-energise: Remote Start/Stop is enabled.
		RC Star/Stop NO	Energise: Remote Load/Offload' is enabled
		RC Load/Off Load NO	De-energise: Remote Load/Offload' is enabled
		Nodulation NC	De energiae: in Medulation states
		Modulation NO	De-energise: in Medulation states.
	-		De energiae: if digital input assigned for 'Inverter Fault' function is NOT OK
		Inverter ELT RST NC	Energine: if digital input assigned for 'Inverter Fault' function is NOT OK.
	-		De energise: in all 'l and Request' states
		Load Request NO	De-energises: in all 'Load Request' states
		Load Request NO	De energiae: when an inhibit is enabled and active
			Energine: when an inhibit is enabled and active.
			Energise: when an initial is enabled and active.
			Energine: Service Due, Aldrin coulds A.4004 to A.4024
		STD or DUN IN NO	Do operaiso: 'Start' or 'Dun' inhibit condition only
			De-energise: Start or Kurl Innibit condition only
		STR OF RUN IN NU	Energise. Start of Kun Infibit condition only

	P18. 16(53)~19(66) ← Q1(Q2)	Auto Restart NC	De-energise: when 'Auto Restart' is enabled
		Auto Restart NO	Energise: when 'Auto Restart' is enabled.
		Star Delta TRANS NC	De-energise: during the main motor starter 'Star Time' (P11.01)
		Star Delta TRANS NO	Energise: during the main motor starter 'Star Time' (P11.01)
		Drage Cwitch NC	De-energise: 'Pressure Switch High' is reached
		Press Switching	Energise: when 'Pressure Switch Low' is reached
		Press Switch NO	Energise: 'Pressure Switch High' is reached
			De-energise: when 'Pressure Switch Low' is reached
		Any Alarm NCP	De-energise: any 'Warning Alarm' or 'Immediate Stop Shutdown' is enabled.
			If another Warning or Immediate Stop occurs output will pulse ON (energise) for 3sec then de-energise
			Note: COMP OUT P LL A, COMP OUT T° H A and TEST VERSION are not include.
			Energise: any 'Warning Alarm' or 'Immediate Stop Shutdown' is enabled.
		Any Alarm NOP	If another Warning or Immediate Stop occurs output will pulse OFF (de-energise) for 3sec then energise
			Note: COMP OUT P LL A, COMP OUT T° H A and TEST VERSION are not include.
			De-energise: any 'Advisory Alarm' is enabled.
		Advisory Alarm NCP	If another Advisory Alarm occurs output will pulse ON (energise) for 3sec then de-energise
			Note: COMP OUT P LL A, COMP OUT T° H A and TEST VERSION are not include
			Energise: any 'Advisory Alarm' is enabled.
P18		Advisory Alarm NOP	If another Advisory Alarm occurs output will pulse OFF (de-energise) for 3sec then energise
1/0			Note: COMP OUT P LL A, COMP OUT T ^o H A and TEST VERSION are not include
(Input / Output)		Maintenance ALRM NCP	De-energise: any Service Alarm' is enabled.
CONFIG			If another Service Alarm occurs output will pulse ON (energise) for 3sec then de-energise
		Maintenance ALRM NOP	Energise: any 'Service Alarm' is enabled.
		Shutdown Fault NCP	If another Service Alarm occurs output will pulse OFF (de-energise) for 3sec then energise
			De-energise: any immediate Stop Shutdown is enabled.
		Shutdown Fault NOP	Energine: any immediate Stop occurs output will pulse ON (energise) for SSEC then de-energise
			If another Immediate Stop occurs output will pulse OEE (de anergise) for 3sec then energise
			Energise: when COMP OUT PLL A is reached
			De-energise: when COMP OUT T ^o H A is reached
			Energise: when COMP OUT T° H A is reached
		Ready to Start NC	De-energise: in 'Ready to Start' state
		Ready to Start NO	Energise: in 'Ready to Start' state
		Run Request NC	De energise: in all 'Pun Request' states
		Run Request NO	Energise: in all 'Run Request' states
			De-energise: for a pulse time (P12 38) when E:1904 is active AND the 'RESET' button is pressed
			Energise: for a pulse time (P12.38) when E:1904 is active AND the 'RESET' button is pressed
		Backup COMPR NC	De-energise: when 'Backup COMPR' is enabled
		Backup COMPR NO	Energise: when 'Backup COMPR' is enabled
		Fan Control 2 NC	see 'Fan Control NC'
		Fan Control 2 NO	see 'Fan Control NO'

		Force Spiral VLV NC	De-energise: when digital input assigned to 'Force Spiral VLV ' is NOT OK			
		Force Spiral VLV NO	Energise: when digital input assigned to 'Force Spiral VLV ' is NOT OK			
P18	P18.20(33)	ANA IN 1 FUNCT	Q1: No edit, fixed: EQUIP OUT PRESS (4-20mA), Q2: Editable (see ANA IN 3 FUNCT)			
I/O	Q2: P18.34	Q2: ANA IN 1 Type	Fixed: 4-20mA			
(Input / Output)	P18.21(35)	ANA IN 2 FUNCT	Q1: 'OFF' or 'EQUIP INT PRESS'. (4-20mA), Q2 Editable (see ANA IN 3 FUNCT)			
CONFIG	Q2: P18.36	Q2: ANA IN 2 Type	4-20mA, 4-20mA Earth Referenced			
			'OFF', 'Motor PTC', 'COMP OUT TEMP', 'DRYER TEMP', 'EQUIP OUT PRESS', 'EQUIP INT TEMP', 'Inlet			
	P18.22(37)	ANA IN 3 FUNCT	Pressure', Ambient T°, Inlet Suction Pressure			
			Note: When configured for 'COMP OUT TEMP' the associated logic is activated (P17.02 TEMP Rise CONFIG)			
	P18 23(38)		'PT1000', 'PT100', 'KTY', 'NTC' or '4-20mA', '4-20mA Earth Referenced', '0-10V*' if pressure function selected			
	Q1(Q2)	ANA IN 3 Type	Note': When using KTY sensor types always specify 2000 Ohm @ 25°C rated sensors			
			Note ² : NTC requires custom pre-order definition			
	Q1	Q1: ANA IN 4	Not Visible, No Edit: Internal 24VDC Power Supply Monitoring			
	Q2: P18.39	ANA IN 4 FUNCT				
	Q2: P18.40	ANA IN 4 Type				
	P18.24(41)	ANA IN 5 FUNCT	Function			
	P18.25(42)	ANA IN 5 Type	- (OEF' (Motor PTC' (COMP OUT TEMP' (DRYER TEMP' (FOUIP OUT PRESS' (FOUIP INT TEMP' (Inlet			
	Q2: P18.43	ANA IN 6 FUNCT	Pressure'. Ambient T°. Inlet Suction Pressure			
	Q2: P18.44	ANA IN 6 Type	- Note: When configured for 'COMP OUT TEMP' the associated logic is activated (P17.02 TEMP Rise CONFIG)			
	Q2: P18.45	ANA IN 7 FUNCT				
	Q2: P18.46	ANA IN 7 Type	- Type:			
	Q2: P18.47	ANA IN 8 FUNCT	- (PT1000', 'PT100', 'KTY', 'NTC' or '4-20mA', '4-20mA Earth Referenced', '0-10V*' if pressure function selected			
	Q2: P18.48	ANA IN 8 Type	Note ¹ : When using KTY sensor types always specify 2000 Ohm @ 25°C rated sensors			
	Q2: P18.49	ANA IN 9 FUNCT	Note ² : NTC requires custom pre-order definition			
	Q2: P18.50	ANA IN 9 Type				
	Q2: P18.51	ANA IN 10 FUNCT				
	Q2: P18.52	ANA IN 10 Type				
		ear Configuration and Cal	ikvetien			
	Anniaster ···· Sensor Connyuration and Calibration					
	Contions because the section and/an activities will deprede a sufference and discust related activity factors and from the					
		rect sensor configuration a	and/or campration will degrade performance and disrupt related safety features and functions.			
	P19.01 +	FQUIP OUT PRESS	FOUIP OUT PRESS sub menu			
P19			Sensor Offset Calibration			
Sensor	D 40.04.04		To calibrate 'Offset': expose the sensor to atmosphere and adjust the offset value until P19.01.03 displays			
CONFIG	P19.01.01	Value Offset	0.0bar.			
			For example, the sensor has a –1.0 (minus one) to 15.0bar range; set to –1.0bar.			
			Sensor Range Calibration.			
	P10 01 02	SENS Papao HI	To calibrate 'Range': apply an accurately known pressure to the sensor and adjust the range value until the			
	1 19.01.02		value displayed in P19.01.03 matches the applied pressure. The range value can be calibrated with static or			
			changing applied pressure.			
	P19.01.03	EQUIP OUT PRESS	Equipment Outlet Pressure Value - no edit, view only			

	P19.02 🕂	EQUIP INT PRESS	EQUIP INT PRESS sub menu.		
			Sensor Offset Calibration.		
	D40 00 04		To calibrate 'Offset': expose the sensor to atmosphere and adjust the offset value until P19.02.03 displays		
	P19.02.01	Value Offset	0.0bar.		
-			For example, the sensor has a –1.0 (minus one) to 15.0bar range; set to –1.0bar		
			Sensor Range Calibration.		
	D10 02 02		To calibrate 'Range': apply an accurately known pressure to the sensor and adjust the range value until the		
	P 19.02.02	SENS Range HI	value displayed in P19.02.03 matches the applied pressure. The range value can be calibrated with static or		
			changing applied pressure		
	P19.02.03	EQUIP INT PRESS	No edit, view only		
	P19.03 ←	COMP OUT TEMP	COMP OUT TEMP sub menu.		
	P19.03.01	Value Offset	Sensor Offset Calibration		
	P19.03.02	COMP OUT TEMP	Compressor Outlet Temperature Value - no edit, view only		
	P19.04 ←	Main MTR Current	Main MTR Current sub menu		
	P10 04 01	Main MTP CT PTC	Main Motor Current Transformer Rating.		
	F 19.04.01	Main WIRCIRIG	Set to current transformer rating		
	P10 04 02	CT Windings	Current Transformer Windings.		
	1 13.04.02	CT windings	Number of times the phase cable is passed through (looped through) the current transformer.		
	P10 04 03	Sensor Range	Current Transformer Maximum Current Range.		
P10	1 13.04.00		Set to match the current transformer maximum current rating.		
Sensor	P19.04.04	Main MTR Current	Main Motor Current Value - no edit, view only		
CONFIG	P19.05 ←	Fan MTR Current	Fan MTR current sub menu.		
	P19.05.01	Fan MTR CT RTG	Fan Motor Current Transformer Rating.		
			Set to current transformer rating		
	P19.05.02	CT Windings	Current Transformer Windings.		
			Number of times the phase cable is passed through (looped through) the current transformer.		
	P19.05.03	Sensor Range	Current Transformer Maximum Current Range.		
	1 10.00.00		Set to match the current transformer maximum current rating		
	P19.05.04	Fan MTR Current	Fan Motor Current Value - no edit, view only		
	P19.06 ←	Analog Input 1	Analogue Input 1 sub menu		
	P19.06.01	N/A	not used in standard software		
	P19.06.02	N/A	not used in standard software		
	P19.06.03	N/A	not used in standard software		
	P19.06.04	N/A	not used in standard software		
	P19.06.05	MEASURE Offset	Analogue Input 1 Offset Calibration		
	P19.06.06	MEASURE Range	Analogue Input 1 Range Calibration		
	P19.06.07	Analog Input 1	Analogue Input 1 Value – no edit, view only		
	P19.07 🕂	Analog Input 2	Analogue Input 2 sub menu		
	P19.07.01	N/A	not used in standard software		
	P19.07.02	N/A	not used in standard software		
	P19.07.03	N/A	not used in standard software		
	P19.07.04	N/A	not used in standard software		

	P19.07.05	MEASURE Offset	Analogue Input 2 Offset Calibration
	P19.07.06	MEASURE Range	Analogue Input 2 Range Calibration
P19	P19.07.07	Analog Input 2	Analogue Input 2 Value – no edit, view only
Sensor	P19.08 ←	Analog input 3	Analogue Input 3 sub menu
CONFIG	P19.08.01	MEASURE Offset	Analogue Input 3 Offest Calibration
	P19.08.02	N/A	not used in standard software
	P19.08.03	Analog Input 3	Analogue Input 3 Value – no edit, view only
	Q1: P19.09 +	Analog Input 5	Analogue Input 5 sub menu
	Q1: P19.09.01	MEASURE Offset	Analogue Input 5 Offset Calibration
	Q1: P19.09.02	N/A	not used in standard software
	Q1: P19.09.03	Analog Input 5	Analogue Input 5 Value – no edit, view only
	Q2: P19.09 ←	Analog Input 4	Analogue Input 4 sub menu
	Q2: P19.09.01	MEASURE Offset	Analogue Input 4 Offset Calibration
	Q2: P19.09.02	MEASURE Range	Analogue Input 4 Range Calibration
	Q2: P19.09.03	Analog Input 4	Analogue Input 4 Value – no edit, view only
	Q2: P19.10 ←	Analog Input 5	Analogue Input 5 sub menu
	Q2: P19.10.01	MEASURE Offset	Analogue Input 5 Offset Calibration
	Q2: P19.10.02	MEASURE Range	Analogue Input 5 Range Calibration
	Q2: P19.10.03	Analog Input 5	Analogue Input 5 Value – no edit, view only
	Q2: P19.11 ←	Analog Input 6	Analogue Input 6 sub menu
	Q2: P19.11.01	MEASURE Offset	Analogue Input 6 Offset Calibration
	Q2: P19.11.02	MEASURE Range	Analogue Input 6 Range Calibration
	Q2: P19.11.03	Analog Input 6	Analogue Input 6 Value – no edit, view only
	Q2: P19.12 ←	Analog Input 7	Analogue Input 7 sub menu
	Q2: P19.12.01	MEASURE Offset	Analogue Input 7 Offset Calibration
	Q2: P19.12.02	MEASURE Range	Analogue Input 7 Range Calibration
	Q2: P19.12.03	Analog Input 7	Analogue Input 7 Value – no edit, view only
	Q2: P19.13 ←	Analog Input 8	Analogue Input 8 sub menu
	Q2: P19.13.01	MEASURE Offset	Analogue Input 8 Offset Calibration
	Q2: P19.13.02	MEASURE Range	Analogue Input 8 Range Calibration
	Q2: P19.13.03	Analog Input 8	Analogue Input 8 Value – no edit, view only
	Q2: P19.14 ←	Analog Input 9	Analogue Input 9 sub menu (Option)
	Q2: P19.14.01	MEASURE Offset	Analogue Input 9 Offset Calibration
	Q2: P19.14.02	MEASURE Range	Analogue Input 9 Range Calibration
	Q2: P19.14.03	Analog Input 9	Analogue Input 9 Value – no edit, view only
	Q2: P19.15 ←	Analog Input 10	Analogue Input 10 sub menu (Option)
	Q2: P19.15.01	MEASURE Offset	Analogue Input 10 Offset Calibration
	Q2: P19.15.02	MEASURE Range	Analogue Input 10 Range Calibration
	Q2: P19.15.03	Analog Input 10	Analogue Input 10 Value – no edit, view only

	Airmaster™ Diagnostics				
	P20.01	Digital Input 1			
	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 Diagnostics	P20.08	Digital Input 8	View Digital Input State: OPEN / CLOSED		
	Q2: P20.09	Digital Input 9			
	Q2: P20.10	Digital Input 10			
	Q2: P20.11	Digital Input 11			
	Q2: P20.12	Digital Input 12			
	Q2: P20.13	Digital Input 13			
	Q2: P20.14	Digital Input 14			
	Q2: P20.15	Digital Input 15			
	Q2: P20.16	Digital Input 16			
	P20.09 (17)	Analogue Input 1 (mA)	Anglegue Innut Dour Value		
	P20.10 (18)	Analogue Input 2 (mA)	Analogue Input Raw Value		
	P20.11 (19)	Analogue Input 3 (resistive)	All and Al2: 4-20mA only		
	P20.12	Analogue Input 3 (current)	All's 'resistance (Ohms)' 'current (mA)' or 'voltage (0.10V)*' dependent on analogue input configuration		
	P20.13	Analogue Input 3 (voltage)			
	Q1: P20.14	Analogue Input 4 (voltage)	Q1: Airmaster™ Internal 24VDC monitoring		
		Analogue Input 4 (resistive)	Q2: Analogue Input Raw Value		
	Q2: P20.20	Analogue Input 4 (current)	Press 'Enter' to view 'Assignment' and 'Value'		
		Analogue Input 4 (voltage)	'resistance (Ohms)', 'current (mA)' or 'voltage (0-10V)*' dependant on analogue input configuration		
	P20.15 (21)	Analogue Input 5 (resistive)	Q1: only available if LED Card option fitted, Q2: available as standard		
	P20.16 (21)	Analogue Input 5 (current)	Analogue Input Raw Value; Press 'Enter' to view 'Assignment' and 'Value'		
	P20.17 (21)	Analogue Input 5 (voltage)	'resistance (Ohms)', 'current (mA)' or 'voltage (0-10V)*' dependant on analogue input configuration		
		Analogue Input 6 (resistive)	Q2: Analogue Input Raw Value		
	Q2: P20.22	Analogue Input 6 (current)	Press 'Enter' to view 'Assignment' and 'Value'		
		Analogue Input 6 (voltage)	resistance (Onms), current (mA) or voltage (0-10v) [*] dependent on analogue input configuration		
	00 000	Analogue Input 7 (resistive)	Q2: Analogue Input Raw Value		
	Q2: P20.23	Analogue Input 7 (current)	Press 'Enter' to view 'Assignment' and 'Value'		
		Analogue Input 7 (voltage	resistance (Onms), current (mA) or voltage (0-10v) [*] dependent on analogue input configuration		
	Q2: P20.24	Analogue Input 8 (resistive)	Q2: Analogue Input Raw Value		
		Analogue Input 8 (current)	Press Enter to view Assignment and Value (conjetence (Ohme)) (current (mA)) or (veltage (0.10)()*) dependent on analogue input configuration		
	00. 000 05	Analogue Input 8 (voltage	resistance (Onins), current (mA) or voltage (U-10V) [*] dependent on analogue input configuration		
	Q2: P20.25	Analogue Input 9 (resistive)	Q2: Analogue Input Raw Value (LED Card #1 Option)		

		Analogue Input 9 (current)	Press 'Enter' to view 'Assignment' and 'Value'	
		Analogue Input 9 (voltage	'resistance (Ohms)', 'current (mA)' or 'voltage (0-10V)*' dependant on analogue input configuration	
		Analog. Input 10 (resistive)	Q2: Analogue Input Raw Value (LED Card #2 Option)	
	Q2: P20.26	Analog. Input 10 (current)	Press 'Enter' to view 'Assignment' and 'Value'	
		Analog. Input 10 (voltage)	'resistance (Ohms)', 'current (mA)' or 'voltage (0-10V)*' dependant on analogue input configuration	
	Q2: P20.27	Analogue Voltage	Q2: Airmaster™ Internal 24VDC monitoring	
			* 0-10VDC only available on some models and/or some software variants	
	P20.18 (28)	Relay Output 1		
	P20.19 (29)	Relay Output 2		
	P20.20 (30)	Relay Output 3		
	P20.21 (31)	Relay Output 4		
	P20.22 (32)	Relay Output 5		
	P20.23 (33)	Relay Output 6		
	P20.24 (34)	Relay Output 7	OPEN = de energised, CLOSED = energised	
	P20.25 (35)	Relay Output 8	OF EN - de-chergised, GEOGED - chergised	
	Q2: P20.36	Relay Output 9		
P20	Q2: P20.37	Relay Output 10		
Diagnostics	Q2: P20.38	Relay Output 11		
U	Q2: P20.39	Relay Output 12		
	Q2: P20.40	Relay Output 13		
	Q2: P20.41	Relay Output 14		
	P20.26 (42)	Analogue Output 1	mA Value	
	Q2: P20.43	Analogue Output 2	Q2: mA Value	
	P20.27 (44)	ANAL Input CT1A	mA value from main motor CT1A, L1	
	P20.28 (45)	ANAL Input CT1B	mA value from main motor CT1B, L2	
	P20.29 (46)	ANAL Input CT1C	mA value from main motor CT1C, L3	
	P20.30 (47)	ANAL Input CT2A	mA value from fan motor CT2	
	P20.31 (48)	L1 Frequency	Hz	
	P20.32 (49)	L2 Frequency	Hz	
	P20.33 (50)	L3 Frequency	Hz	
	P20.34 (51)	L1 Phase Angle	° (0° nominal)	
	P20.35 (52)	L2 Phase Angle	° (120° nominal)	
	P20.36 (53)	L3 Phase Angle	° (240° nominal)	
	P20.37 (54)	Key Switch Test	Press 'ENTER' to perform key switch test	
	P20.38 (55)	LED Test	Only available if LED PCB option fitted ON: LED's are sequentially illuminated in a continuous cycle until 'OFF' is selected.	
	P20.39 (56)	MIN Loop Time	Minimum program loop time (milliseconds)	
	P20.40 (57)	AVG Loop Time	Average program loop time (milliseconds)	
	P20.41 (58)	MAX Loop Time	Maximum program loop time (milliseconds)	

	Airmaster™ Run Real Time Clock S	Schedule Schedule Automation Functio	ns			
	P21.01	Run Schedule	ON or OFF			
	P21.02 ←	Workday Edit	Press 'ENTER' to access sub menu P21.02.## Set each day, Monday to Sunday, individually as appropriate for region			
	P21.02.01	Monday	Workday or Weekend			
	P21.02.02	Tuesday	Workday or Weekend			
	P21.02.03	Wednesday	Workday or Weekend			
	P21.02.04	Thursday	Workday or Weekend			
	P21.02.05	Friday	Workday or Weekend			
	P21.02.06	Saturday	Workday or Weekend			
	P21.02.07	Sunday	Workday or Weekend			
	P21.03	Parameter Reset	YES: clear all schedule entries			
	P21.04 🕶	Schedule Entry	Schedule Entry sub menu Schedule entries are arranged chronologically. When a schedule entry is implemented it is removed, if it is a set date/time, or re-scheduled, if it is a cycling repeat entry (for example: every Working Day); the schedule is then chronologically re-arranged.			
Run Schedule	P21.04.01	Frequency	OFF, Every Monday, Every Tuesday, Every Wednesday, Every Thursday, Every Friday, Every Saturday, Every Sunday, Every Day, Every Workday, Weekend or user 'Configured Date'			
	P21.04.02	Function	Press 'ENTER' Use 'UP' or 'DOWN' keys to select between SCHD PH / PL: implements 'Schedule PL / PH' (enables P21.04.03 & 04, ignores device PL / PH P10.4 & .05). Note: this function does not start the machine when stopped DFLT PH / PL: implements normal 'PL / PH' (disables P21.04.03 & 04, uses device PL / PH P10.4 & .05). Note: this function does not start the machine when stopped Device Standby: forces the machine to stop to the 'Standby' state Run DFLT PH / PL. starts the machine from Standby and implements normal 'PL / PH' (disables P21.04.03 & 04. Device Stop: Stops the machine to the 'Stopped' state (the machine must be manually re-started)			
	P21 04.03	Load Pressure	Schedule Load Pressure SCHD PL			
	P21.04.04	Off Load Pressure	Schedule Unload Pressure SCHD PH			
	P21.04.05	Year	Year Only visible if Frequency = 'Configured Date'			
	P21.04.06	Month	Month Only visible if Frequency = 'Configured Date'			
	P21.04.07	Day	Day Only visible if Frequency = 'Configured Date'			

P21 Run Schedule	P21.04.08	Time	Time Only visible if Frequency = 'Configured Date'		
	P21.04.09	Save Changes	Press 'ENTER' to store the configured values in P21.04.01 to P21.04.08 to permanent memory. Note: To save changes, this action must be taken before exiting the sub-menu		
	P21.05 🖊	P21.05 ←	Schedule Entry 2 to 28 Sub Menus		
	 P21.31 ↩	 P21.31 ←	see P21.04.01 P21.04.09 for each schedule entry sub menu		
P30	Airmaster™ Compressor Table				
Compressor Tables	P30.01 ←	User Pre-Defined Menu	User Pre-Defined Menu. Used to repeat any menu items, from any other menus, in to one menu that can be configured for view to an access user that may otherwise not have the access rights to view the menus that contain the items. Note: contains no items unless pre-configured on request.		
P40/44	Airmaster™ User DEF Page 1 to 5				
User DEF Menu Pages	P40.01 ← P44.01 ←	User Pre-Defined Menus	User Pre-Defined Menu. Used to repeat any menu items, from any other menus, in to one menu that can be configured for view to an access user that may otherwise not have the access rights to view the menus that contain the items. Note: contains no items unless pre-configured on request.		
	Airmaster™ ISC (Integrated System Management 'Sequence' Control) Compatible with Airmaster™ controllers equipped with Airbus485™				
	Airmaster [™] ISC Option Kit: contains 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 the host air compressor and connected to each compressor Airmaster [™] controller using Airbus485 [™] .				
P80			ON or OFF		
ISC (Integrated System Control)	P80.01 ISC Enabled		Note 1: If the ISC host compressor becomes unavailable all compressors revert to local control. Note 2: If the ISC host compressor is 'stopped' all compressors in the system will unload, run-on, and stop to Standby without manual intervention. All compressors will remain in this state while the ISC host compressor is stopped. If the ISC host compressor is started, all compressors in the system (that are in a Standby state) will start and lead again as required, without manual intervention.		
	P80.02	Offload Pressure	ISC Control Unload Pressure PH		
	P80.03	Load Pressure	ISC Control Load Pressure PL		
	P80.04	ISC Rotate INT	ISC Rotation Interval 1 – 720 hours (Default = 24 hours)		

	P81.01	ISC # Compressors	Total Number of Compressors in the ISC System 2 to 8 (Default = 4)		
	P81.02	ISC Start Delay	Staggered Start Delay Time 0 to 60 seconds (Default = 3 seconds Delay between starting compressors where more than one compressor needs to be started at the same time.		
	P81.03	ISC Damping	Damping (Response Timing) 0.1 to 10 (Default = 1.0) 0.1 = 10 times faster than default 10 = 10 times slower than default.		
	P81.04	N/A	not used in standard software		
P81 ISC (Integrated System Control	P81.05 ~ 07 ↔	ISC DI1 – DI3 FCN	Digital Input # Function: No ISC DI FUNCT: no function ISC DI Start Stop: Start/Stop ISC ISC DI alarm NO: Alarm when input closed circuit ISC DI alarm NC: Alarm when input open circuit DI delay alarm: Delayed Alarm when input closed circuit DI delay alarm NC: Delayed Alarm when input open circuit ISC DI STOP NO: ISC Stop when input closed circuit ISC DI STOP NC: ISC Stop when input open circuit DI delay STOP NO: ISC Delayed Stop when input closed circuit DI delay STOP NC: ISC Delayed Stop when input open circuit ISC DI STOP NC: ISC Delayed Stop when input open circuit ISC DI STOP NC: ISC Delayed Stop when input open circuit		
	P81.08 🖊	ISC XPM Pressure	ISC XPM Pressure sub menu		
	P81.08.01	MEASURE Offset	Pressure Sensor Offset Calibration		
	P81.08.02	MEASURE Range	Pressure Sensor Range Calibration		
	P81.08.03	EQUIP INT PRESSS	Equipment Internal Pressure		
	P81.09	ISC PRESS SENS	OFF: use equipment delivery/outlet pressure sensor ON: use ISC External Pressure Sensor		
	P81.10	ISC Load Tolerance	Operational Pressure Band PL to PL+TO Tolerance (TO): width of the operational pressure band		
	101.11				

P82	P82.01 ←	COMP1 Priority	Compressor 1 Priority
ISC (Integrated	P82.02 ←	COMP2 Priority	Compressor 2 Priority
System	P82.03 ←	COMP3 Priority	Compressor 3 Priority
Control)	P82.04 ←	COMP4 Priority	Compressor 4 Priority
	P82.05 ←	COMP5 Priority	Compressor 5 Priority
	P82.06 ←	COMP6 Priority	Compressor 6 Priority
	P82.07 ←	COMP7 Priority	Compressor 7 Priority
	P82.08 ←	COMP8 Priority	Compressor 8 Priority

5.0 General Operation

The equipment outlet pressure regulates control once the 'START' button has been pressed. The Airmaster[™] will perform condition checks and start if no 'Start' inhibit exists. If a 'Start' inhibit exists, a start will be prevented and an inhibit message will be displayed. If a 'Run' inhibit exists a start will be accepted but the Airmaster[™] will immediately enter the 'Standby' state and an inhibit message will be displayed. The Airmaster[™] will remain in the 'Standby' state until 'Stopped' or the inhibit is removed.

If a load request exists, the main motor is started in a star/delta sequence. When running in delta configuration, after the star time (configurable) has expired, the 'Load Inhibit Time' (configurable) prevents loading for a period of time to allow motor speed to stabilise. When the load inhibit time has expired the 'Load Relay Output' is energised and the equipment will load. When the 'Unload Pressure Setting' is reached, or a remote offload command is received, the 'Load Relay Output' is de-energised and the equipment will unload. The equipment will load again if outlet pressure falls to the 'Load Pressure Setting' or a remote load request is received. If the equipment runs in the offload condition for the 'Offload Run Time' (configurable) the main motor will stop and the Airmaster[™] will enter the 'Standby' state.



When in standby, the equipment will automatically start and load again when pressure falls below the 'Load Pressure Setting' or a remote load request is received. In the event of a motor stop, initiated by a stop command or when entering the 'Standby' state, a vent time (configurable) is started. If a start request is made during the vent time the Airmaster[™] will enter the Standby state until the vent time expires. If already in the Standby state and a load request is received, the Airmaster[™] will remain in the Standby state until the vent time has expired. If 'Internal Pressure Detection' is enabled, a minimum internal pressure can be defined (configurable) to prevent a motor start before internal pressure is vented. If internal pressure does not fall below the set minimum before the set vent time an alarm is generated and the Airmaster[™] will immediately stop. After an offload event a 'Re-load Inhibit Time' (configurable) will prevent re-loading before the time expires.

Normal automated operation is ended by pressing the 'STOP' button, a remote stop command or in the event of an immediate stop alarm. When stopped manually, or by a remote stop command, the load relay is de-energised first, to unload the equipment, and the main motor will continue to run for the 'Stop Run Time (configurable) before stopping.

5.1 Airmaster™ State Diagram

STOPPED

- 1: Fault Condition
- 2: Power-Up Initialisation
- 3: Start Inhibit
- 4: Ready to Start

STARTED

5: Run Inhibit / Vent Time 6: STANDBY

RUNNING

7: Motor Start 8: Load Inhibit

RUNNING LOADED

9: ON LOAD

RUNNING

10: Reload Inhibit 11: Off Load Run Time 12: Stop Run Time



5.2 Control Modes

Load / Off Load:

Airmaster[™] loads and unloads in accordance with the set load and unload pressure set points. If running off load for longer than the "Off Load Run Time" the Airmaster[™] will stop in the 'Standby' state. When in 'Standby' the Airmaster[™] will automatically restart and load again if outlet pressure falls to the 'Load' pressure set point.

Continuous Run

As 'Load / Off Load' description except the 'Off Load Run Time' is ignored, the equipment will continue to run in the off load state indefinitely.

Pressure Decay / No Load

As 'Load / Off Load' description except the 'Off Load Run Time' is dynamically extended if the 'On Load' time is short and the number of main motor starts per hour could exceed the set permissible 'Motor Start per Hour' limit.

Two timers are used, 'Run Time' and 'Run-On Time'.

- Run Time: the minimum time period the equipment should run in a loaded state.
- Run-On Time: the set time period the equipment will run in the off load state before stopping to Standby.

The 'Run Time' is determined by the main motor 'Starts Per Hour' limit (configurable).

If the set 'Starts Per Hour' limit is 4 then the 'Run Time' = 15 minutes (60 minutes / 4) minus the set 'Run On Time' such that the main motor can not start more than 4 times in any given hour period.

If the equipment runs on load for more than the 'Run Time':

The equipment will run off load, after unloading at the set upper pressure set point, for the set 'Run-On Time' before stopping to Standby.

If the equipment runs on load for less than the 'Run Time':

The pressure decay time (period between unloading at the upper 'Unload' pressure set point and the pressure decaying to the lower 'Load' pressure set point) of the previous load/unload cycle is taken into account:

If the 'pressure decay' time was longer than the 'Run-On Time' period: The equipment will run off load for the 'Run-On Time' period before stopping to Standby.

If the 'pressure decay' time was less than the 'Run-On Time' period:

The equipment will run off load until the 'Run Time' has expired and will then continue to run off load for the 'Run-On Time' before stopping to Standby.

Dynamic No Load Control

As 'Load / Off Load' description except the 'Off Load Run Time' is dynamically determined in accordance with the number of permissible 'Starts Per Hour' (configurable).

The 'Run-On Time' period is dynamically determined to ensure the set permissible main motor 'Starts Per Hour' limit can not be exceeded during any given hour period.

During periods where the equipment stops to Standby infrequently, less than the set 'Starts Per Hour' limit (configurable), the 'Run-On Time' will be short. During periods where the equipment stops to Standby frequently, and the 'Starts Per Hour' limit is approached, the 'Run-On Time' is dynamically extended so that the 'Starts Per Hour' limit cannot be exceeded during any given hour period.

Variable Speed

As 'Load / Off Load' description except the main motor speed is dynamically controlled to maintain the set 'Load' pressure (configurable).

When loaded main motor speed is varied, using a PID control algorithm, to maintain outlet pressure at the 'Load' pressure set point. When off load main motor speed is reduced to the set 'Off Load Speed' (configurable).

Force Offload:

If P10.02 Force Offload = ON, press [Down]+[Start], while displaying the P00 menu page, to manually force the equipment offload. The equipment will remain offload until manual released by pressing [Down]+[Start] again.

Indication:

If, for example, the controller is configured in P10.13 to use "EQUIP OUT PRESS" as load/unload source, the 'Manual' and 'Set Point' systems will alternate continuously:

for one second, for three seconds

The 'Set Point' symbol will be different if an alternative primary load source has been configured:



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
СТ	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
Н	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		

7.0 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)
ТН	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)

8.0 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

9.0 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)

10.0 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)

11.0 Use of Menu Pages and Page Items

Airmaster™ menu page items are arranged sequentially from P00 to P99, menu items 01 to 99. Some menu pages or menu page items are intentionally omitted or not displayed dependant on software variant and/or configuration/setup.

Default menu page (P##) numbers and titles:

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	Compressor Table
P03	Error Log	P13	VSD Settings	P40	
P04	Event Log	P14	Motor Protection		User DEF Menu Pages
P05	Service Provider	P15	Inhibits	P44	
P06	Controller Data	P16	Warning Alarm	P60	LED Configuration
P07	Equipment Data	P17	IMM Stop Alarm	P80	ISC – Main Menu
P08	Message Codes	P18	I/O CONFIG	P81	ISC – Settings
P09	Access	P19	Sensor CONFIG	P82	ISC – Priority

12.0 Symbols

Airmaster™ Display Symbols

Symbol	Description	Symbol	Description	Symbol	Description
(ABC)	Management or Sequence Control	\checkmark	Phase Angle	0	Immediate Stop (Shutdown)
\square	Remote Control	\square	Upper or Lower Range	Λ	Warning (Alarm)
۲	Start Inhibit	*	Fan	С	Status (animated)
¢	Running On Load	Q	Running Off Load	Ģ	Stopped
\otimes	Run Inhibit	\otimes	Load Inhibit	Ţ.	Condensate Drain
ľ	Time	≫	Edit	ł	Sensor
I	Temperature	S.	User Configurable or Manual	··	Compressor, Package, Equipment, Machine
- -0	Кеу		Schedule	Ţ.	Timer

Ē	Motor	4	Range or Detected	,t,	Total Hours
.*	Set Point	7	Set Point, Upper Limit	£	Set Point, Lower Limit
ب	Oil	0	Read Only	•	Unlocked or Accessible
•	Locked or Not Accessible		Date	$\frac{1}{2}$	Start Delta
∆P	Delta pressure		Up	1	Auto Restart
\Leftrightarrow	Filter	►	Down	d)»	Audible Alarm
۲,	Service or Maintenance	۲	Stop	0	Time
₽	Set Point	Ţ]	Enter or Inlet	G	Exit of Outlet
÷	Emergency Stop		Next, Forward		Previous, Backward
?	Status	Ð	Compressor 'Airend'	\sim s	Frequency
Ŏ.	Daylight	\odot	Water		Controller, Airmaster™
™ ↑	4 – 20mA Output	#	Number or Frequency	%	Percent
$\overline{\mathbf{X}}$	Average		Cabinet Door Open	\odot	Analogue
▲	Up	►	Down	Θ	Enter
0	Stop	\odot	Start	*	Edit
<	Less Than	/	Greater Than	/auh	Last 24 Hours
¶∕₂ ₄ h	Starts, Last 24 Hours	℠	Starts Last Hour	/h	Last Hour
\]	Normally Open / Normally Closed	DI∜	Digital Input	¢\(Relay Output
	Phase, L1		Phase, L2		Phase, L3
×	Phase	ø	Current Sensor	Ø	Running (animated)
\odot	Analogue Value		Network or System	Ń	Inlet

•	Separator Filter	\boxtimes	Valve	¢	Drive Belt
4	Power	¢o¢	Pressure Set Point	\checkmark	Yes

13.0 Help and Support

Contact your original equipment manufacturer or your original equipment manufacturer's nominated representative.

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. If you are not the original equipment manufacturer of the equipment please <u>do not</u> contact CMC NV directly for Airmaster[™] product support.

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.