

Airmaster Q1 – A20.1_EN

Identification:	Q1
Product Family:	Airmaster™
Definition:	PLC (pre-programmed logic controller)
Function:	Compressor / motor control, I/O monitoring and protection device
Part number:	Refer to Product guide / price list for specific part number or contact dealer
Software:	Pre-programmed application software, configurable via password protected OUI
Supported protocol:	Airbus485, Modbus RTU, Profibus DP (via gateway) and DeviceNet (via gateway)

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

By choosing Airmaster™, our customers benefit from time savings, cost savings and faster development cycles, the result of Airmaster™ application hardware and software attributes.

By choosing Airmaster™ our customers don't just get a machine PLC. Airmaster™ is complimented by Metacentre™, a complete range of application system solutions. Metacentre™ products include multiple compressor and vacuum 'system controllers', distributed I/O devices for ancillary control and monitoring and a range of software solutions for networking, monitoring and trending purposes. For more information on the Metacentre™ range of system solutions, visit the Metacentre™ micro site @ www.metacentre.eu.

Like all Airmaster™ products, Q1 is designed with a core application focus. This focus positions Airmaster™ Q1 as a 'mid-range' member of the Airmaster™ product family, ideally suited to positive displacement rotary screw, vane and piston compressor or vacuum applications. Using the powerful ARM CORTEX-M3 processor from NXP, product features are arranged to ensure a cost effective and feature rich PLC with options that enhance where required. This approach ensures that the incremental cost of lesser used or more exotic features is not levied across all controllers.



Airmaster™



Using Airmaster™ Q1's 3 Phase voltage and both single and three phase current monitoring analogue inputs our **Advanced Power Monitoring** software provide the ultimate in main drive and cooling fan motor protection.



Airmaster™ Q1 will connect with any **Metacentre™** system controller using the installed Airbus485™ field bus protocol and an accessible RS485 option card. For more information on the Metacentre™ range of system solutions, visit the Metacentre™ micro site @ www.metacentre.eu



Airmaster™ Q1 can be equipped with a **Micro SD card Option**. Supplied as part of the Ethernet Card option, the Micro SD card is used to store important data for acquisition and interrogation. The Micro SD card is accessible via a slot to the side of Airmaster™ Q1



Airbus485™ is a dedicated field bus protocol optimised for use with compressed air systems. All Airmaster™ and Metacentre™ equipment is 'Airbus485™ ready', allowing equipment to be harnessed under system control either via the Q1's **ISC** function or using a Metacentre™ system controller.



Airmaster™ Q1 is '**MODBUS** ready'. Using an accessible RS485 option card and Q1's field bus register table, serial communication can be established between a MODBUS Master and Airmaster™ Q1. Field bus gateways can be added to support serial communication with Profibus DP and DeviceNet networks.



Leaving nothing to chance, Airmaster™ Q1 has no fewer than **6 Advanced Control Algorithms**. From conventional load / no load control through to optimal variable regulation; you'll find a control algorithm for just about any requirement.



Optimal efficiency is of critical importance to any compressor user. This is especially true where more than one air compressor is used. **Internal System Control** enables up to 8 Airmaster™ equipped air compressors to be harnessed under system control.



Airmaster™ Q1's **Ethernet Card Option** puts you in control wherever you might be in the world, bringing the power of web browsers and the World Wide Web to your air compressor. Navigate from a browser environment to view and modify a significant number of Q1 parameters.

Airmaster™ Q1 features a backlit 240 x 160 text and graphic display complimented by an ergonomically engineered membrane switch keypad. Both are conveniently arranged for easy and intuitive access and interrogation of Airmaster™ Q1's software menus. A large number of language options are supported including both simplified and traditional Chinese.

A variety of input and output connections are conveniently arranged to the rear of the controller (see over).

Airmaster™ Q1 is assembled in a ruggedized housing with an IP65 rating once installed in the host air compressor or vacuum pump.

Like other Airmaster™ products, Q1 carries CE, UL and CSA regulatory approvals.

Identification: Q1
Product family: Airmaster™
Definition: PLC (pre-programmed logic controller) comprising an industrial computer with an NXP ARM CORTEX-M3 processor, an operator user interface with a background illuminated plan text and graphics display, keys, digital and analogue inputs and outputs
Rated voltage: 24vAC or DC, +/-15%, internal under voltage monitoring of 24v AC supply and reverse polarity protection
Power consumption: AC: 1amp, DC: 15watt (Note: basic Airmaster Q1 without options cards)
Ride through: 40ms
RAM: 1.5MB
SRAM: 64KB
Graphic display: 240 x 160, Monochrome graphic display, 62.6mm x 43.3mm active area
Backlight: Adjustable white LED LCD backlight
Keypad: 7 tactile key, Membrane switch panel construction
Digital inputs: 8 x digital inputs, 0 – 24vDC, 6mA maximum current
Analogue inputs & outputs: 2 x 4-20mA inputs, 1 x 4-20mA output, 1 x configurable PT100, KTY, PT1000, Phase current, 1 x 3 Phase current, 1 x 3 Phase high voltage phase monitor
Relay outputs: Output voltage: 48 ~ 240Vrms, resistive / inductive load: 8Amp @ 240v, coil current: 10ma, coil voltage: 24vDC, on resistance: <1 Ohm, off resistance >1M Ohm,
Serial interface: 3 x RS485 (2 optional)
Serial communication: Airbus485™, MODBUS RTU, Profibus DP (via gateway), DeviceNet (via gateway)
Ethernet & Micro SD: 1 x optional RJ45 – CAT 5e Ethernet 10/100 BaseT c/w removable Micro SD card
RTC: Buffered real time clock with battery backup
Terminal connections: X01: Analogue output (1)
X02: Digital input (8)
X03: Analogue inputs (3)
X04: RS485 & programming
X05: RS485 (option)
X06: RS485 (option)
X07: Relay outputs (3)
X08: Relay outputs (3)
X09: Relay outputs (2)
X10: 1 Phase Current sensor (1)
X11: 3 Phase Current sensor (1)
X12: 3 Phase monitoring inputs (3)
X13: Power input
X14: Ethernet / Micro SD (option)
RT1: Contrast adjustment
CO16: Keyboard tail
Terminal type: Screw or plug
LED: 1 x Rear, surface mount diagnostic LED
Software: Pre programmed application software configurable via OUI
Languages: English, Dutch, French, German, Italian, Spanish, Portuguese, Greek, Russian, Belarus, Ukrainian, Polish, Czech, Turkish, Simplified Chinese, Traditional Chinese, Korean, Thai and Vietnamese with abbreviations
Display symbols: ISO7000 and custom
Dimensions: 220mm (W) x 120mm (L) x 60mm (D)
Mounting: 4 x M4 studs
Regulatory approvals: CE, UL: UL508, CSA: CAN/CSA C22.2 No. 14-M91
Operating temperature: 0°C ~ 55°C
Storage temperature: -25°C ~ +70°C
Relative humidity: <95% condensation @ 40°C without condensation
Shock: IEC 60068-2-27 type Ea (shock), half-sine; 15g; 11mS, 3 positive and negative pulses in each of 3 axes
Vibration: IEC 60068-2-6 type Fc (vibration, sinusoidal), Sweep Cycle Defined: 5-57 Hz @ 0.15 mm; 57-1000 Hz @ 2g, 1 octave per minute sweep rate, 10 sweeps in each of 3 axes
Bump: IEC 60068-2-29 type Eb (bump), half-sine; 10g; 16mS, 2 bumps per second, 500 positive and negative pulses in each of 3 axes
EMC Immunity: EN 61000-6-2:2005: IEC 61000-4-2:95 + A1:98 + A2:01 Electrostatic Discharge, IEC 61000-4-3:06 + A1:98 RF Electromagnetic Field, IEC 61000-4-4: 04 + A1:01 + A2:01 Electrical Fast Transient / Burst, IEC 61000-4-5: 06 + A1:01 Surge, IEC 61000-4-6:07 + A1:01 RF Common Mode, IEC 61000-4-11:04 + A1:01 Voltage Dips, Short Interruptions and Variations, EN 61000-6-4:2001 Radiated Disturbance, EN 61000-6-4:07 Radiated and Conducted Disturbance
ROHS: ROHS compliant

