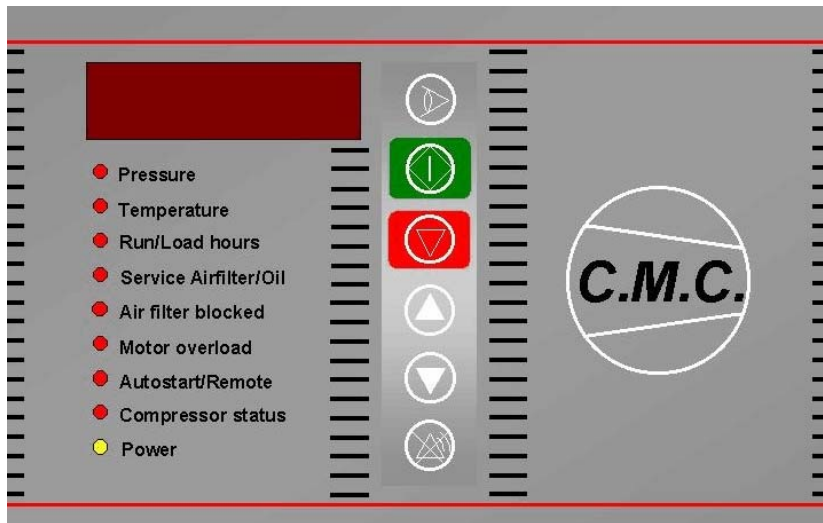




A02 - Airmaster M6



Note : The above overlay is representative and can be customised to client requirements

1. General overview

The objective of the M6 controller is to provide a replacement to electro-magnetic switching and timing devices found in traditional machinery, adding the advantages of a microprocessor based controller in terms of versatility, error management, and maintenance log.

For simple and cost effective integration, all switches and LED's have a fixed place on the PCB. The M6 uses the cubicle of your machine as it's housing. With this arrangement, there is ample room to assign functions to the LED's and switches that meet your requirements.

A five digit LED display shows all analogue values such as pressure and temperature. Hour counters such as - running hours, loaded hours, air filter timer and other service timers can also be displayed.

The layout of an externally mounted decal can be designed entirely to your specifications, completing M6 integration.

The mid-range M6 is one of four standard 'embedded' controllers in our range. These products are complimented with a range of system solutions, meeting the control and monitoring needs of the compressed air application.



2. Hardware

2.1 Analogue inputs

- 2 x Current: 4 - 20mA, 10 bit resolution for pressure reading
- 2 x Resistance: KTY for temperature control (+/- 2°C)

2.2 Direct digital inputs

- 7 x digital inputs for voltage free contacts
- 1 x digital input for voltage free contact or PTC motor thermistor

2.3 Digital outputs

- 5 Relays, contact 250v AC, 8A

2.4 Power supply

- 24v AC via transformer (+/- 20 %)

2.5 User interface

- 5 digit 7 segment LED display
- 8 fixed indication LED's
- 6 push buttons, mounted at pre - determined locations
- 1 LED showing main voltage supply

2.6 Housing

- No housing.
- The Airmaster M6 PCB should be mounted in the metal cubicle of the compressor with suitable external apertures for display LED's and push buttons.
- An overlay is then attached to the outside of the cubicle.

2.7 Connectors

- Plug and Screw PHOENIX CONTACT compatible connectors

2.8 Processor and memory

- 8 bit micro controller 80C552
- 64 Kbytes program memory
- EEPROM: 128 byte, 256 byte

2.9 Environmental Spec.

- Operational temperature: -10°C / +65 °C.
- Storage temperature: -40°C / +80°C.
- Vibrations: 2g operational, 10 g transport.
- Radiated Emission: CISPR 11 class A. (when mounted in a cubicle)
- Electromagnetic immunity:
 - IEC 801 - 2 level 4
 - IEC 801 - 3 level 3
 - IEC 801 - 4 level 4
 - IEC 801 - 5 level 4

2.10 Options

- Flash programming by means of 87C552 OTP processor.
- Airmaster M6 extension PCB with
 - 4 extra relays for 250v - 8A
 - 4 extra digital inputs for Voltage free contacts
 - 1 RS485 communication port



3. Basic functionality

3.1 Alarm Mgmt and / or control via digital inputs

- 8 functions to be defined with following options offered:
 - Motor rotation detection
 - Emergency stop detection
 - PTC motor overloads contact
 - Oil level switch
 - Motor current overload
 - Differential pressure switch:
 - Air filter
 - Oil separator
 - Oil filter
 - Remote start/stop control
 - Remote load/unload control
 - Other (custom specific)
- Alarm Mgmt and / or control via analogue inputs:
 - Delivery pressure
 - Internal pressure
 - Air temperature
 - Oil temperature

3.2 Display functions

- Indication, after pressing a push button on the keypad, of:
 - Running hours
 - Loaded hours
 - Hours to service:
 - Air filter
 - Oil filter
 - Oil separator
 - Maximum operating pressure
 - Minimum operating pressure
 - Output air temperature

- Optional temperature (oil temperature)
- Load pressure level
- Unload pressure level
- Run on time
- Auto restart delay

3.3 Relay outputs

- Line contactor
- Star contactor
- Delta contactor
- Load/unload solenoid
- Drain solenoid or general alarm.
- General fault / available

3.4 Motor Mgmt:

- On / off control
- Load/unload control
- Delayed start control
- PTC thermistor
- Number of starts per hour
- Timing star delta contactors
- Other (custom specific)

3.5 Using the extension PCB

- 4 extra relays:
 - Dryer control
 - Ready signal for external systems
 - Cooling fan
 - Other (custom specific)
- 4 extra inputs:
 - Dryer ready input
 - External control system input
 - Fan motor overload
 - Other (custom specific)