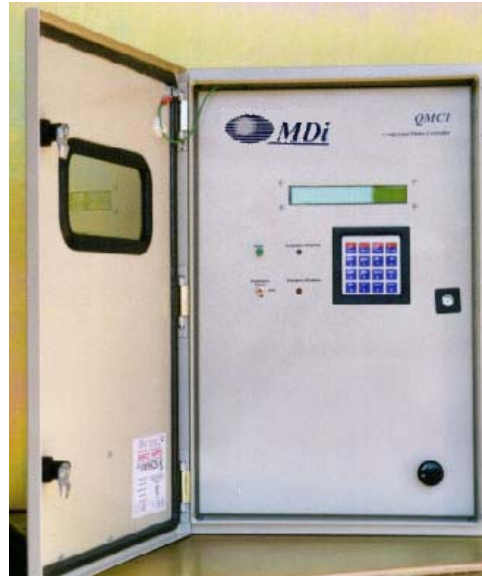


Quantum Series

Type QPC1M

Compressor Controller



The QPC1M is a stand-alone microprocessor based controller for a **Single Compressor with Motor Drive** and is designed for Compressed Natural Gas (CNG) applications in the Alternate Fuels market. It is programmed for compressor automatic start/stop control and fault monitoring. Twenty analog and sixteen user defined dry contact input channels monitor compressor/motor performance along with gas leak and fire detection. Additional 5 dry contact inputs are available for gas drier and control air compressor motor fault monitoring. Nine 120 VAC, 3amp outputs are provided for compressor start/stop operation and one independent control output to control air compressor start/stop operation. Separate relays for incoming and outgoing Emergency Shutdown (ESD) operation and compressor fault indication are also provided.

All set points for pressures, temperatures, gas leak levels, control sequences etc. are user programmable using the built-in keypad and LCD display. Live operation of all monitoring and control functions of the controller can viewed locally or remotely using a standard PC or laptop. The phone modem option gives users full remote access to the controller including notification of system faults and ESD's.

Additionally, the CellCon System can be added to allow users to view controller status and other information directly on a secure web site. Daily status reports and alarm notifications can be sent to user created lists for e-mails, faxes, alphanumeric pagers and voice mail.

The controller is shipped with standard software developed for the QPC1M. However, the unit is also available with user programmable software such as Basic, "C" and all IEC1131 programming languages. IEC 1131 programming tools include Sequential Function Chart, Ladder Logic, Structured Text, Function Block Diagram or Instruction List, and Flow Chart. Programs can be developed on a standard PC, compiled and downloaded into the controller for operation.

Standard Features

- 20 analog input channels
- 16 user defined dry contact shutdown inputs for compressor/motor monitoring
- 3 dry contact gas drier fault inputs
- 2 dry contact Control Air Comp motor fault inputs
- 9 control outputs for compressor/motor
- 1 control output for control air motor
- All set points/parameters stored in non-volatile memory
- First Fault out indication with time and date stamp
- Automatic or manual compressor start/stop
- Automatic start/stop control air compressor
- Built-in compressor pre-lube sequence
- Temp controlled on/off output for skid heater
- Temp controlled on/off output for skid fan
- Multiple screen LCD display
- On screen help for compressor start/stop sequences
- Password protection
- Multiple compressor Lead/Lag control interface
- Built-in Year 2000 compliant real time clock
- 1 built-in RS232 serial port for PC connection
- Built-in menu driven PC interface software
- Large 20 character x 2 line, back lit LCD display
- 16 button, tactile, membrane keypad
- Meets or exceeds NFPA 52 requirements
- Factory Mutual and CSA approved
- Designed for C1D2, groups C&D hazardous locations
- Optically isolated dry contact inputs
- Solid-state 120 VAC, 3amp, fused control outputs
- Built-in 120 VAC relays for ESD control circuitry
- Built-in 120 VAC relay compressor fault indication
- Built-in 120 VAC surge and lightening protection
- Rugged NEMA 4 steel enclosure
- Built-in temperature controlled cooling fan
- FCC part 68 approved 2400 BAUD modem option
- 4 number auto-dialer with modem option
- Optional MODBUS interface to SCADA systems
- Front panel LED's for compressor fault and ESD
- Front panel compressor on/off switch and reset PB

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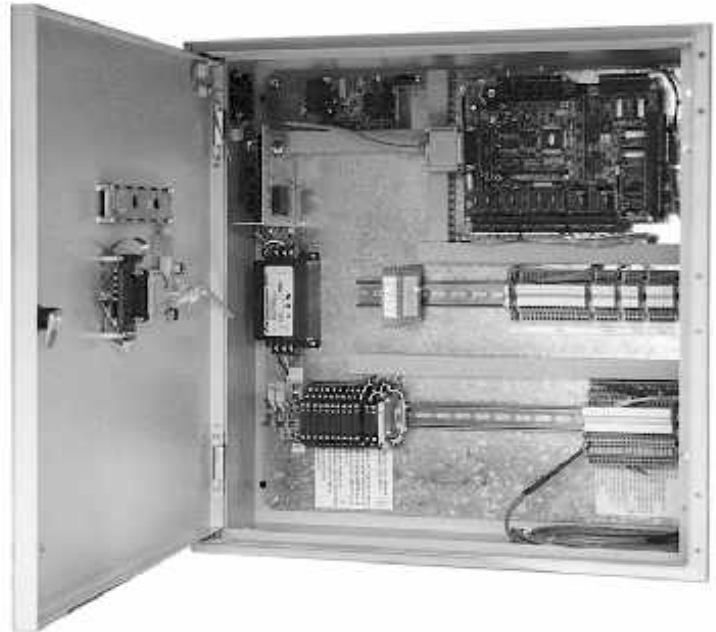
Ambient Temperature
Skid Temperature
Gas Leak Level
Suction (Inlet) Gas Temperature
1st Interstage Temperature
2nd Interstage Temperature
3rd Interstage Temperature
Discharge Gas Temperature
Compressor Oil Temperature
Suction Pressure
1st Interstage pressure
2nd Interstage pressure
3rd Interstage pressure
Discharge Pressure
Compressor Control Pressure
Compressor Oil Pressure
Control Air Pressure
3 Spare

Control Outputs

Skid Fan
Skid Heater
Compressor Cooler Fan
Pre-lube Pump Motor
Suction Valve
Motor Starter
Bypass/Blowdown #1
Bypass/Blowdown #2
Discharge Valve
Control Air Compressor Motor
Emergency Shutdown
Compressor Fault Shutdown

Specifications

Power supply – 120 VAC standard, 0.5 Amps
Pressure Transducer – Signal 0.1 to 5 VDC
Thermocouple – Signal 0 to 5 VDC
Digital shutdown inputs optically isolated -
NO or NC
Solid State Relay Output – 120 VAC, 3 AMP
Operating Temperature – 0 to 55 °C
Enclosure – Steel NEMA 4 24” H x 24” W x 12” D



Approved

Dry Contact Inputs

1 to 16 user defined
Gas dryer regenerate warning input
Gas dryer fault shutdown input
Auxiliary Input Warning
Air Compressor Motor Overload
Air Compressor Motor Overheat
Emergency Shutdown

Optional Features

Phone Modem - four-line auto-dialer
MOD-BUS RTU Protocol interface
Compressor Capacity Control
Additional Gas Detection for two locations
Temperature compensated discharge set-
point
Lead/Lag control of duplex compressors
Lubricator no flow module
Controller integral heater
Air Purge for Class 1 Div. 1



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