

Quantum Series

Type QB4

Buffer Storage/Vehicle Fill Controller

MDi Controls Quantum Series QB4 is a state-of-the-art Buffer and Vehicle Fill Controller. It controls up to four independent vehicle fast fill hose drops from buffer storage with by-pass to direct fill the vehicles when the buffer pressure is depleted. In addition, two independent slow fill outputs are also available

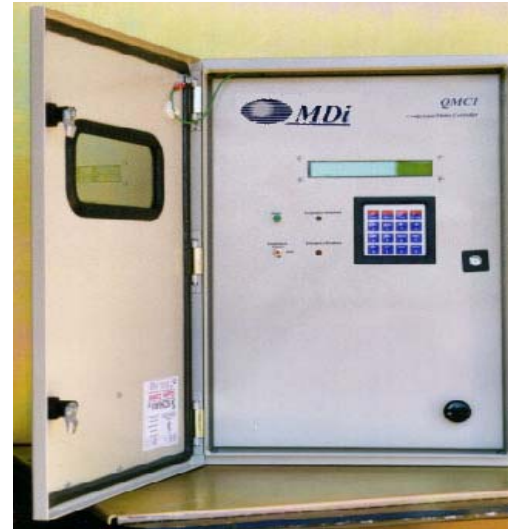
The controller optimizes vehicle fill rate by drawing down the buffer pressure to a customer designated set point and then switching to direct fill from the compressor.

The QB4 utilizes a temperature compensation algorithm which considers vehicles storage mass capacity, ambient temperature, and heat of compression to achieve high vehicle fill rates and more accurate fill levels than previous technology allowed. With this algorithm, temperature compensation in the fuel dispenser is not required. There are twenty six analog and thirteen dry contact input channels to monitor the priority fill and sequential system, gas leak level, compressor discharge pressure, and other user selected inputs. Twenty one 120 VAC, 3amp outputs are provided for the priority/sequential valve panel controls and control of the instrument air compressor, compressor on/off and ESD.

All set points for pressures, temperatures, 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 GE 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 QB4. 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.

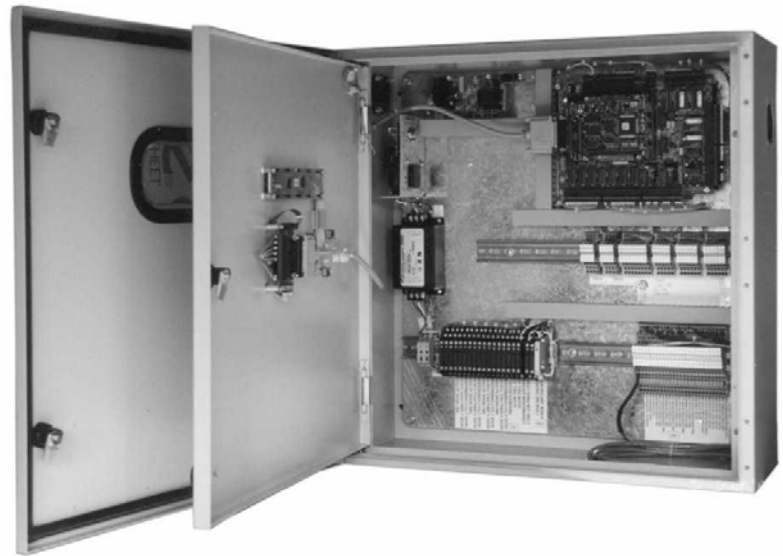


Standard Features

- Meets or exceeds FPA 52 requirements
- Factory Mutual and CSA approved
- Designed for C1D2, Groups, C&D locations
- Handles up to 2 independent fastfill hoses
- Mass based Fast Fill algorithm
- Pass-word protection
- 26 Analog channels...0-5 VDC, 4-20 mA, etc
- Air Compressor Control Sequence
- 8 User defined dry contact shutdown Inputs...optically isolated
- 2 Gas Dryer inputs...re-gen warning and re-gen shutdown
- 21 120 VAC, 3amp outputs
- 2 Air Compressor motor shutdown inputs
- 1 RS232 Serial interface
- Compressor Alarm Shutdown output relay
- Emergency Shutdown Input and Output relays
- High quality WAGO wire termination system
- Rugged NEMA 4 metal enclosure
- Built-in Real Time Clock (Year 2000 compatible)
- 1 RS422 MODBUS connection for SCADA interface, optional
- Built-in Autodialer capable of dialing 4 numbers
- 20 second user recorded voice annunciation option

26 Analog Inputs

Internal Enclosure Temperature
Ambient Temperature
Skid Temperature
Gas Leak Level
DR1, 2, 3, & 4 Vehicle Pressure
DR1, 2, 3, & 4 Vehicle Gas Temperature
DR1, 2, 3, & 4 Dispenser Gas Flow Rate
Buffer Pressure
Buffer Gas Temperature
Compressor Discharge Gas Pressure
Compressor Discharge Gas Temperature
Slow Fill #1 & 2 Pressure
Slow Fill #1 & 2 Gas Temperature
Air Compressor Control Pressure
Gas Dryer Dew Point



Dry Contact Inputs

1 to 8 User defined compressor shutdown inputs
Gas dryer regenerate warning input
Gas dryer fault shutdown input
Auxiliary Input Warning
Air Compressor Motor Overload
Air Compressor Motor Overheat
DR1 – DR4 Authorize(handle switch) Inputs
Slow Fill 1 & 2 Authorize Input
Emergency Shutdown

Pulse Inputs

DR1 & 2 Mass pulses

Control Outputs

Emergency Shutdown
Compressor Shutdown
Enclosure Internal Fan
Hose 1, 2, 3, & 4 Active
Hose 1(DR1), 2, 3, & 4 Fill
Valve
Hose 1, 2, 3, & 4 to
Compressor
Buffer
Slow Fill #1, & 2
Compressor On/Off
Control Air



Approved

Optional Features

Phone Modem – FCC part 68 approved 2400 Baud for remote access, four line auto-dialer for remote paging and reporting. Voice communication option to modem
Mod Bus RTU Protocol interface to site controller or SCADA
Additional Gas Detection for 2 independent sensors
Temperature compensated compressor disch. set point

Specifications

Power supply – 120 VAC standard, 0.5 Amp
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 output
Operating Temperature – 0 to 55 °C
Enclosure – Steel NEMA 4, 24” H x 24” W x 8” D



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