

## Smart Control of Your Pump Operations

Q-Control is an integrated pump controller for Quattroflow multiple-use and single-use pumps. It interfaces with a variety of flow and pressure sensors to provide user with automated control over their pump operations. With built-in smart control functions that no longer requires an external PLC, Q-Control leads to a new generation of Quattroflow biopharma pumps.

### Q-Control:

- Integrated pump controller that interfaces with different flow and pressure sensors
- Smart control functions that usually require an external PLC
- PID control mode for pressure- or flow-controlled pump operations
- Autotune function to automatically find optimal PID parameters
- Configurable alarms to stop the pump
- Dispensing feature to automatically fill defined volumes of liquid
- RS485 Modbus communication port
- Trend data and alarm logging
- Remote operation
- Available for Quattroflow quaternary diaphragm pump models QF30, QF150, QF1200, QF2500 and QF4400

**NOW AVAILABLE**  
with direct  
**em-tec and PendoTECH®**  
Sensor Connection



### Features

Functions	Description
Manual Mode	Manual motor speed selection
Manual Flow	Manual motor speed selection with flow calculation
External Mode	External pump control
Dispense Mode	Automated dispensing of preconfigured volumes
Pressure control Mode	Automated pressure control e.g. for filtration; requires a connected pressure sensor
Flow control Mode	Automated flow control, e.g. for cross-flow control; requires a connected flow sensor
Alarms	Free configurable alarms
PIN Codes	PIN code protection of configuration settings
USB Port	Backup of system configuration setting Data logging Installation of firmware updates

## External Connections

I/O Signals	Potential use
Up to 3 x analog input 4-20mA* 1 x analog input 0-10 VDC incl. 24 VDC supply voltage for sensors	<ul style="list-style-type: none"> <li>External sensor (e.g. pressure and/or flow)</li> <li>External pump control</li> </ul>
3 x digital inputs	<ul style="list-style-type: none"> <li>Diaphragm monitoring</li> <li>External start/stop</li> <li>High pressure switch</li> </ul>
1 x RS485 (Modbus RTU)	<ul style="list-style-type: none"> <li>Signal monitoring</li> <li>Pump remote control</li> </ul>

\* number of freely configurable analog inputs depends on selected option

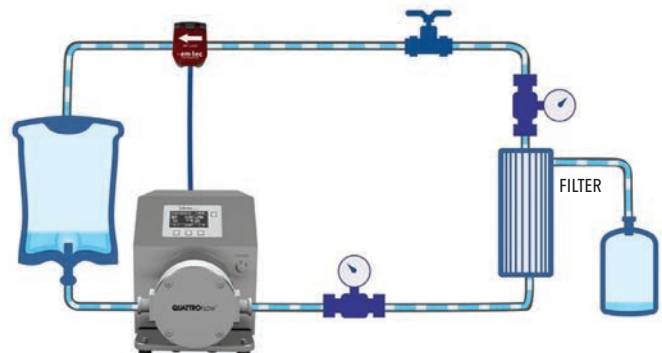
## Option: Direct connection for Single-Use Sensors

Sensor	Description
Pressure	Integrated PendoTECH® PressureMAT® Transmitter (PT60; up to 60 psi / 4,14 bar) for direct connection of PendoTECH® SU pressure sensors; use of pressure signal for alarms or pressure control (PID)
Flow	Integrated em-tec transmitter FlowMCP-a for direct connection of em-tec's BioProTT™ Ultrasonic Clamp-On Sensors; use of flow signal for flow control (PID)

PID Pressure Control



Cross-Flow Control in Tangential Flow Filtration



(For illustration purposes only)