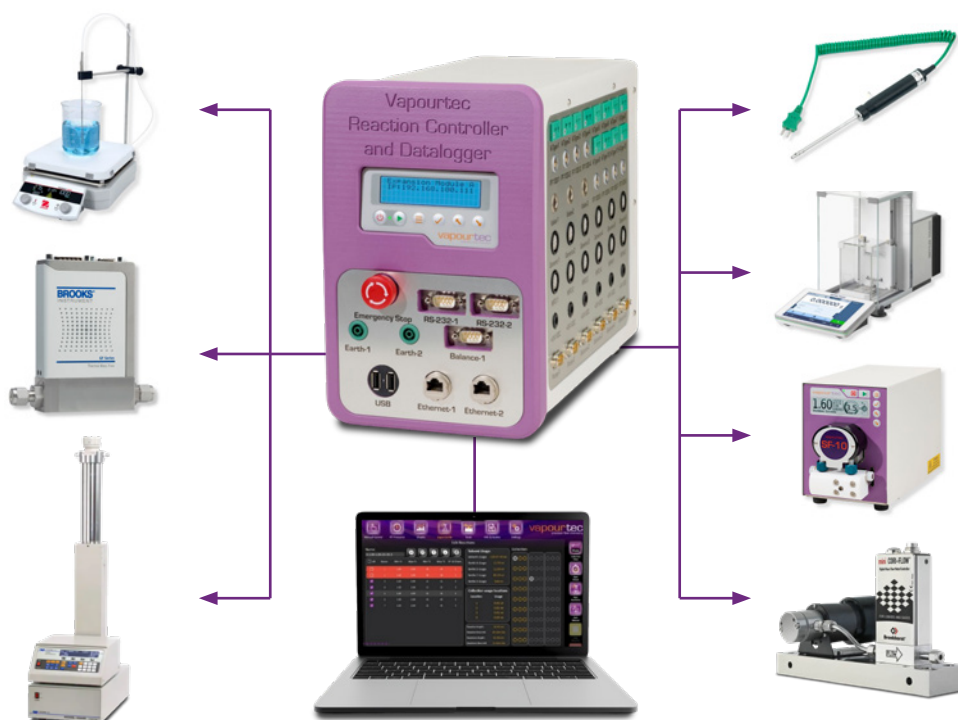


Reaction Controller and Datalogger

**AUTOMATE EXPERIMENTS. CONTROL EQUIPMENT.
LOG PROCESS DATA.**

Designed for chemistry and chemical engineering, the Vapourtec Reaction Controller and Datalogger integrates laboratory equipment from multiple manufacturers into a single automated platform. It enables scientists to control experiments, monitor process variables and capture high-quality experimental data, improving reproducibility, efficiency and process understanding.



Typical Uses

- Integrating laboratory equipment from multiple manufacturers into a single automated platform
- Automating reaction sequences and Design of Experiments (DoE) studies
- Logging and managing experimental data to improve reproducibility and process understanding
- Real-time process monitoring and automated control of laboratory equipment
- Supporting process optimisation, scale-up and quality assurance

Automate experiments. Increase laboratory productivity.

Modern laboratories often rely on equipment from multiple suppliers, each generating valuable process data. The Reaction Controller and Datalogger brings these instruments together within a single automated platform, improving reproducibility, simplifying experiment control and creating a complete digital record to support process optimisation, scale-up and quality assurance.



Connect and Control

- Third-party pumps
- Mass flow controllers
- Switching valves
- Mass flow meters
- Laboratory balances
- PT100 temperature sensors and thermocouples
- Analogue pressure transducers

Supports serial, analogue (0–10 V and 4–20 mA) and OPC UA communication for straightforward integration with laboratory equipment from multiple manufacturers.



CONTROL, MONITOR AND RECORD UP TO 120 PROCESS VARIABLES

Interface Description	Quantity Available	Signal Type	Connector Specification	Signal Description	Example Of Hardware Connection
K-type thermocouple	12	Analogue input	IEC Type K miniature thermocouple connector - female	millivolt-level DC voltage, $\sim 41 \mu\text{V}/^\circ\text{C}$ at room temperature	K-type thermocouple
PT-100 (2 or 3-wire)	8	Analogue input	Lemo 1S series 4-contact - female	Resistance 100Ω resistance at 0°C , $\sim 0.00385 \Omega/\Omega/^\circ\text{C}$ (IEC 60751)	PT-100 2 or 3 wire temperature
Valve driver	3	ON or OFF output	Binder 712, 2-pin - female	24V, 0.5 A max	Solvent / reagent switching valve
Generic I/O	6	Analogue input & output	Deltron 8-pin DIN 45326 lockable - female	Analogue 0-10V or 4-20mA input and output	Pressure sensor (analogue) or mass flow controller (analogue)
Mass flow controller (MFC)	4	Analogue input & output	Deltron 8-pin DIN 45326 lockable - female	Analogue 0-10V or 4-20mA input and output	Brooks quantum mass flow meter/controller
Mass flow meter (MFM)	2	Analogue input & output	Deltron 8-pin DIN 45326 lockable - female	Analogue 0-10V or 4-20mA input and output	Keyence FD-X Series MFS mass flow sensor
DC Power outlets (+24 VDC)	6	Power (24 VDC)	2.5 mm DC power socket	24V DC output, max 2A	Brooks Quantum MFM or Keyence FD-X series MFS
Pump-1 serial control (RS-422)	1	RS-422	D-Sub 9-pin connector socket, 2.77 mm pitch - female	RS-422 5-wire	Pump MilliGAT MG-H1 or MG-H2.
Pump-2 serial control (RS-485)	1	RS-485 Modbus	D-Sub 9-pin connector socket, 2.77 mm pitch - female	RS-485 3-wire	Teledyne Isco 1000D pilot scale syringe pump
Balance serial data	5	RS-232	D-Sub 9-pin connector socket, 2.77 mm pitch - female	RS-232 3-wire	Mettler Toledo XPR laboratory balance
RS-232 serial control	2	RS-232	D-Sub 9-pin connector socket, 2.77 mm pitch - female	RS-232 5-wire	External SF-10 pump or Hitech Zang syringe pump etc.
USB serial connection	2	USB 2.0	USB – Type A - female	USB 2.0 protocol	Used for software update only
Network connection in/out	2	Digital electrical signals	RJ45 panel mount (EMI shielded) - female	1000BASE-T ethernet	Connection to OPC server. Connection to secondary datalogger and controller
Earth Point	2	Earth connection	4 mm banana socket - female	Earth connection	Earth connection
INPUT power (rear of box)	1	24VDC power connection	Kycon, KPJX DC Socket - female	DC power connection	N/A