

**PCT
SERIES**

Industrial PID Controller - PCT54



Essentials of Process Control - Industrial PID Controller - PCT54

PCT 54 is an industrial PID controller incorporated in a console with input and output connections and controls on the front panel, designed primarily for use with the Armfield EPC series of process control products but suitable for use as a general purpose PID controller.

It is supplied preconfigured for proportional analogue PID control but can be reconfigured to give time proportioned control using a digital output.

The user has full access to the configuration of the controller menus via the buttons on the front or using a USB connection to a PC.

An additional analogue output and digital switch allow an uncontrolled device on the process, such as a water pump or solenoid valve, to be operated remotely allowing disturbances to be applied to the process.

PCT54 Industrial PID Controller

An industrial PID controller in an electrical enclosure

- ▶ Includes manual controls to apply step changes to the process loops
- ▶ Can be set up by computer, using a USB interface.
- ▶ Autotune capability
- ▶ Analogue or time proportioning digital outputs
- ▶ Connects to the process under evaluation using simple plug connections:
 - ▶ 1 Analogue input, 0-5V (from sensor)
 - ▶ 2 Analogue outputs, 0-5V, (one from controller, one from manual control)
 - ▶ 2 Digital outputs (one from controller, one from manual switch)

Overall dimensions

	PCT54	PCT55
Length	0.258m	0.305m
Width	0.280m	0.280m
Height	0.145m	0.120m

Packed and crated shipping specifications

Volume	0.1m ³	0.1m ³
Gross weight	10kg	10kg

Ordering codes	PCT54	PCT55
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Programmable Logic Controller - PCT55



Essentials of Process Control - Programmable Logic Controller - PCT55 (with PID algorithm)

PCT 55 is a programmable logic controller (PLC) with graphical touch screen control panel designed primarily for use with the Armfield EPC series of process control products, but can also be used to control other items.

It is supplied with PID control algorithms implemented in ladder logic and configured to suit each of the EPC processes. The user has full access to all the software and algorithms with the following features:

- ▶ Calibration of the sensors associated with each product, calibration values can be stored in the PLC
- ▶ Specific control exercises written for the four Armfield process units
- ▶ Both proportional analogue and time proportioning discrete outputs
- ▶ Individual Control of P, I & D parameters, re-verting to default parameters for each product on start up
- ▶ User selection of sample time, cycle time, filter weighting
- ▶ The control algorithms are written as separate sub-routines, making it straightforward for advanced users to write and use their own ladder logic control algorithms
- ▶ Control facilities exist for a user defined process as well as the four Armfield process rigs without having to change the programming
- ▶ Freely available programming software for the PLC and touch screen downloadable from the manufacturer's website.

PCT55 Programmable Logic Controller (PLC) With touch screen control panel

- ▶ Supplied pre-programmed with specific control exercises for the four Armfield EPC processes
- ▶ Proportional analogue and time proportioning discrete PID outputs
- ▶ Freely accessible programming software from plc manufacturer for both plc and touch screen
- ▶ USB interface to PC for monitoring and programming
- ▶ Users can access and modify the ladder logic control algorithms
- ▶ Connects to the process under evaluation using simple plug connections:
 - ▶ 2 analogue inputs, 0-5V (from sensors), one analogue output and one digital output
 - ▶ Additional terminals implemented on the front panel for user programming:
 - 1 analogue output,
 - 1 digital output
 - 2 digital inputs.

Requirements

Scale

PCT50	PCT51	PCT52	PCT53	PC	USB
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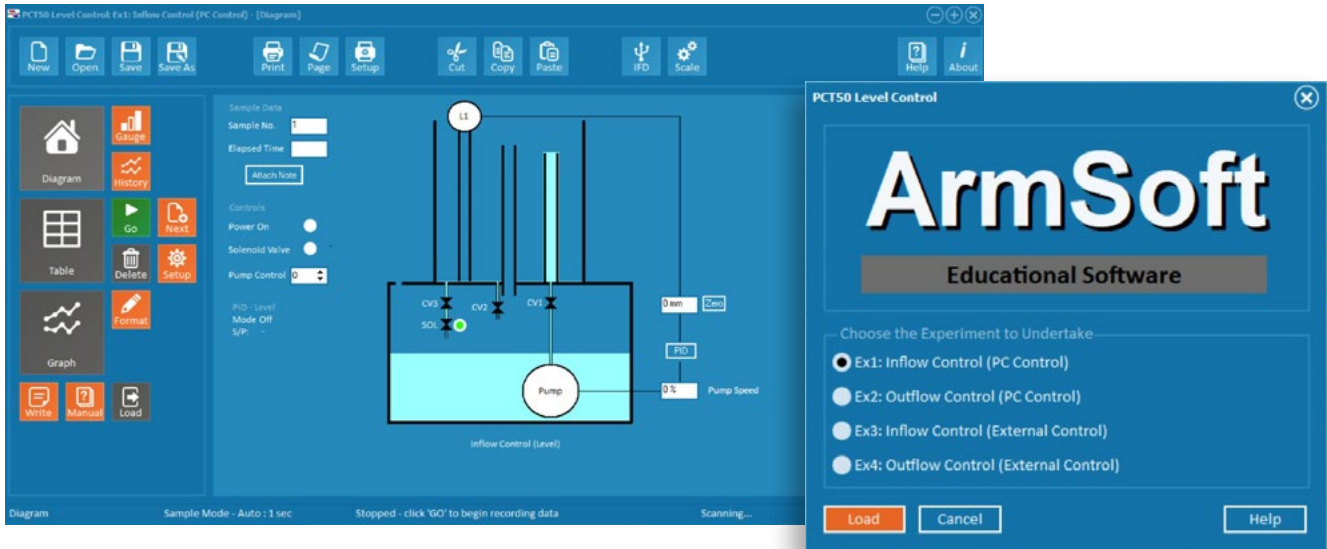


Electrical supply:

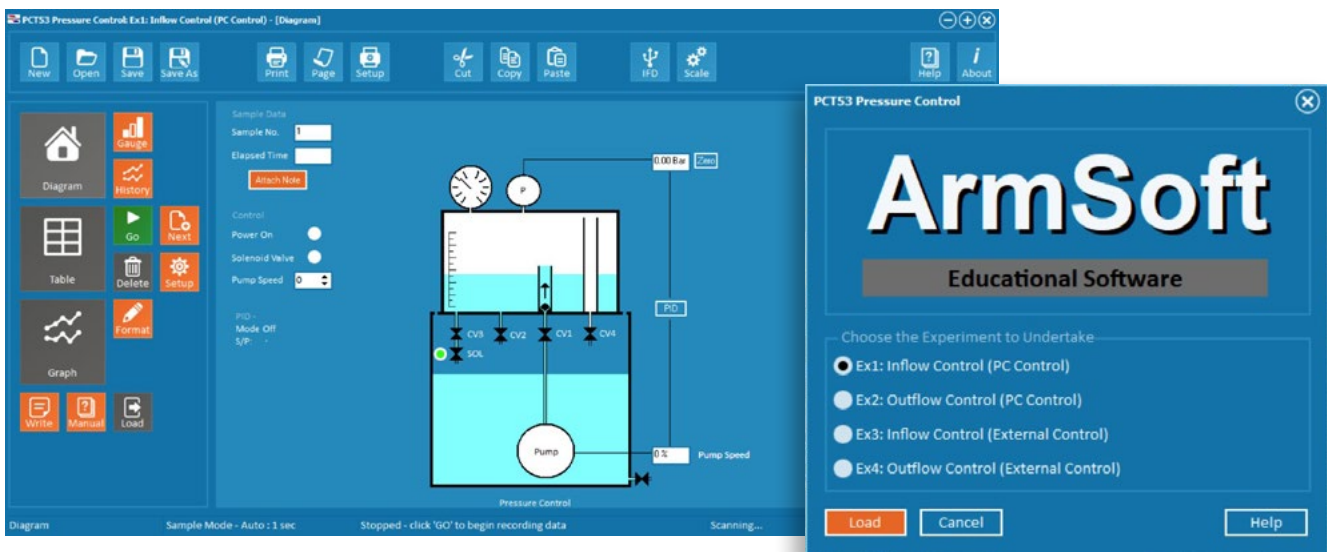
PCT 54 and 55 derive power from the EPC units, but if used independently require a 24V dc adaptor.

SOFTWARE AND INTERFACING FOR THE ESSENTIALS OF PROCESS CONTROL UNITS

Each process is supplied complete with software that allows it to be controlled using a Windows PC via a USB connection. The effect of making changes to the system or to the controller configuration can be quickly investigated by applying repeatable disturbances or step changes to the process. Comparison of the responses obtained with different control settings clearly demonstrates the need for correct matching of the controller to the system characteristics. Another fundamental aspect of process control is an understanding of sensors and how they are calibrated. This is demonstrated by a sensor calibration apparatus designed specifically to demonstrate this subject.



Armfield proprietary software including diagrammatic real-time display. Pressing the load button allows the operator to select alternative experimental options.

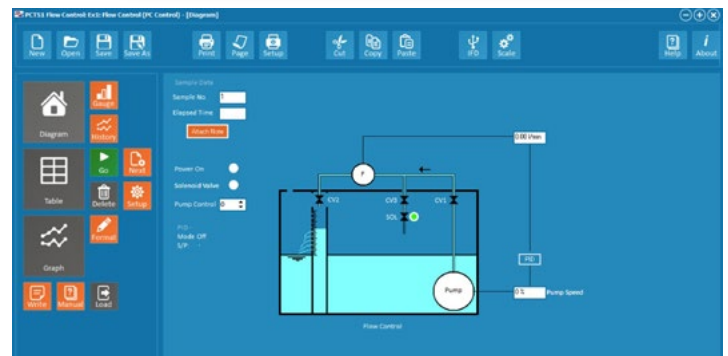


Software

Primarily computer controlled the ArmSOFT software demonstrates a real time diagrammatic display with readings of the relevant sensor outputs and controls the system inputs. The manual on/off time proportional and PID loops can be configured.

The ArmSOFT software enables the operator to control the pump speed and temperature 0 to 100%. Feedback from the sensors is then displayed in real time for the end user with simultaneous data-logging.

The data trend is also displayed graphically in real time and can be exported to another platform such as Excel for further analysis.



Knowledge base

- > 28 years' expertise in research & development technology
- > 50 years' providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



Products CE certified

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