



The unit consists of a Honeywell UDC3200 PID controller mounted in a standard console along with connectors for inputs and outputs to selected instructional equipment from the Armfield range. In addition to the analogue input/output, relay and alarm sockets are provided for a digital output control action. An RS232 port enables serial communications with a user provided PC.

#### KEY FEATURES

- > Incorporates widely used Honeywell UDC3200 industrial PID controller
- > PID with alarm and relay outputs
- > Can be configured to display in engineering units
- > Serial communications RS232 and RS485
- > Introduction to SCADA, (supervision of the controller by a PC) using Windows based serial communication software
- > Temperature/time profile setpoint ramp facility
- > Fuzzy and adaptive tuning
- > Alternative control algorithm
- > Dual setpoints

#### ORDERING SPECIFICATION

- An Industrial PID Controller (Honeywell UDC3200) with RS485 serial communications and incorporating adaptor to RS232
- Includes software for serial communication training and introduction to SCADA
- Front panel connections for two analogue inputs, one analogue output, one relay output and one alarm output



## DEMONSTRATION CAPABILITIES

### PCT20H HARDWARE

Proportional output for PID control (proportional, integral and derivative actions) of a measured process variable.

Volt free relay output for time proportioned or on/off control.

#### Universal inputs:

- 4 to 20mA
- 0 to 5V
- 1 to 5V
- K-type thermocouple

**Engineering units** can be configured to suit each application eg degrees C or F, ml/min or gal/min.

**Alarm output** (N/O and N/C volt free contacts) for limit control demonstrations from analogue input.

**Remote setpoint operation.**

**Adaptive tune** ie optimisation of PID settings.

**RS485 serial communications**, for connection to industry standard networks. (RS485 not required for Armfield demonstrations).

**RS232 to RS485 converter** for connection to standard PC serial port (RS485 interface card not required in PC).

**Dual setpoints** for customer applications where two sets of PID parameters may be required.

**Alternative control algorithm** to minimise overshoot.

### PCT20H SOFTWARE

Software is supplied to demonstrate serial communications with the controller and introduce SCADA. A number of preset configurations are included that can reset the controller to suit specific applications.

The software supplied with PCT20H uses the familiar Windows style toolbars that include the following functions:

**View/PID** enables remote supervision of the PID controller using a PC. The user can read or write the following controller parameters: Setpoint, proportional band, PID parameters, alarm value, direct/reverse action, manual/automatic output, polling interval (logging).

**View/Messages** enables the user to input formatted messages for extensive interrogation and setting of the UDC3200.

**View/Configuration** enables the user to read the current settings in the UDC3200 and write settings to the controller. The recall menu can be used to load various preset configurations for Armfield products such as PCT23MkII, which can then be uploaded to the UDC3200.

**View/Table** presents a table of parameters that have been logged when the autopolling feature has been turned on and logging enabled.

**Comms/Read** enables the existing configuration of the controller to be read into the configuration screen for analysis.

**Comms/Write** enables all settings on the configuration screen to be uploaded to the controller.

## SERIAL COMMUNICATIONS

RS232 to serial port of PC (not supplied by Armfield)

RS485 to other controllers (not supplied by Armfield)

## TECHNICAL SPECIFICATIONS

### Analogue inputs/outputs:

Input 1:	Input 2:	Outputs:
0-5V dc/1-5V dc	1-5V dc	0-5V dc
4-20mA	4-20mA	4-20mA
K-type thermocouple		

### Digital outputs:

Relay outputs:	Alarm outputs:
N/O contact	N/O contact
N/C contact	N/C contact

## ESSENTIAL ACCESSORIES

PC with one RS232 serial port

The PID controller requires an appropriate item of Armfield process equipment in order to supply power to the unit.

### The relevant Armfield items are:

- Process Plant Trainer, PCT23MkII
- Distillation Columns, UOP3BM or UOP3CC
- Basic Process Control System PCT40 with Electronic Console PCT43  
(see relevant literature for above items)

## REQUIREMENTS

Electrical supply:

PCT20H - A:	220-240V/1ph/50Hz
PCT20H - B:	120V/1ph/60Hz
PCT20H - G:	220-240V/1ph/60Hz

## OVERALL DIMENSIONS

Height:	0.210m
Width:	0.520m
Depth:	0.416m

## SHIPPING DIMENSIONS

Volume:	0.16m <sup>3</sup>
Gross weight:	37kg



\* Excluding DUM range



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