



armfield

INDUSTRIAL PID CONTROLLER

PCT20H

issue 5



The unit consists of a Honeywell UDC3300 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 allows serial communications with a user-provided PC.

KEY FEATURES

- *incorporates widely used Honeywell UDC3300 industrial PID controller.*
- *PID with alarm and relay outputs*
- *configuration 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 set-point ramp facility*
- *fuzzy and adaptive tuning*
- *alternative control algorithm*
- *dual set-points*

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 e.g. 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 set-point operation.

Adaptive tune i.e. 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 set points 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 pre-set configurations are included that can reset the controller to suit specific applications.

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

View/PID allows PC supervision of the PID controller. The user can read or write the following controller parameters: Set-point, Proportional Band, PID parameters, Alarm value, Direct/reverse action, manual/automatic output, polling interval (logging).

View/Messages allows the user to input formatted messages for extensive interrogation and setting of the UDC3300.

View/Configuration allows the user to read the current settings in the UDC3300 and write settings to the controller. The Recall menu can be used to load various pre-set configurations for Armfield products such as PCT23MkII, which can then be uploaded to the UDC3300.

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

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

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

ORDERING SPECIFICATION

- **An Industrial PID Controller (Honeywell UDC3300) with RS485 serial communications and incorporating adaptor to RS232.**
- **Includes software for serial communication training and introduction to SCADA.**
- **Front panel connections for 2 analogue inputs, 1 analogue output, 1 relay output and 1 alarm output.**

SERIAL COMMUNICATIONS

RS232 to serial port of PC (not supplied by Armfield)
RS485 to other controllers (Armfield software not supplied)

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)

SERVICES REQUIRED

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

OVERALL DIMENSIONS

Height:	210mm
Width:	520mm
Depth:	416mm

SHIPPING SPECIFICATION

Volume:	0.16m ³
Gross weight:	37kg

Specifications may change without notice.
iss5/5k/0904/B&S.

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