

PACKAGE ID - 001277IBMPC00 CCP

KWIC TITLE - Calorimeter Control Program

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LIMITATION CODE -COPY **AUDIENCE CODE** - LIM

COMPLETION DATE - 06/30/1997 **PUBLICATION DATE** - 10/01/1998

DESCRIPTION - The Calorimeter Control Software provides PID (Proportional, Integral, and Derivative) Control for up to twelve Mound Calorimeters and five Calorimeter Waterbaths. The software accepts a Voltage input, compares it to a user defined setpoint, calculates a new voltage output designed to bring the input closer to the setpoint using a PID control algorithm, then sets the analog voltage output to the calculated value. The software is designed to interface with HP 3852A Data Acquisition Unit via an HP-1B PC board. All field inputs are wired into Digital Input cards and field outputs are wired from Analog Output cards.

PACKAGE CONTENTS - Media Directory; Software Abstract; Software Supporting Documentation; Media Includes User's Guide, Executable Module;

SOURCE CODE INCLUDED? - No

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION - The software accepts a Voltage input, compares it to a user defined setpoint, calculates a new voltage output designed to bring the input closer to the setpoint using a PID control algorithm, then sets the analog voltage output to the calculated value.

COMPUTER - IBM PC

OPERATING SYSTEMS - Win 95, Win NT

PROGRAMMING LANGUAGES - Visual basic 4.0 (95%) with olectra chart OCX (5%)

SOFTWARE LIMITATIONS - Controls up to 12 Calorimeters. Monitors up to 5 Water Baths (or other desired Digital Input)

SOURCE CODE AVAILABLE (Y/N) - N

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UNIQUE FEATURES - Main screen shows summary of all Calorimetric data. Provides Graphs depicting Voltage Input versus Setpoint and Output Voltage. Software allows user to force a user defined analog out Voltage. User definable scan time, calorimeter name, gain, proportional and deivative constants, setpoints and hardware configuration. Software also accepts inputs to collect and graph room temperature and humidity.

RELATED SOFTWARE - HP-IBI/O libraries fro instrument control

HARDWARE REQS - IBM PC, Windows 95 or NT, 17 inch monitor and minimum of 16 MB RAM. This software is designed to operate with an HP 3852A Data Acquisition Unit.

TIME REQUIREMENTS - Minimum scan time for polling and controlling of 12 Calorimeters and 5 waterbaths is approximately 2 seconds using a Pentium 100 machine with 16MB of RAM. Scan time is user configurable.

REFERENCES - J. Plummer, The Calorimeter Control Software, Version 1.2, Software Manual, October 1, 1998.

ABSTRACT STATUS - Released AS-IS 2/9/1999.

SUBJECT CLASS CODE - KM

KEYWORDS -
COMPUTER PROGRAM DOCUMENTATION
C CODES
CALORIMETRY
HEAT TRANSFER
DATA

EDB SUBJECT CATEGORIES -
990200 420400

SPONSOR - DOE/DP

PACKAGE TYPE - AS - IS