

◆ Protocol 3™ Controller

A Microprocessor Based Oven Controller



Protocol 3™ is a microprocessor based temperature and hi-limit controller designed to make oven operation simple and flexible. It provides a level of temperature control, versatility, and operational simplicity unmatched in the industry.

Easy To Operate

Protocol 3™ is easy to use for both simple and complex applications. Temperatures are displayed in either Fahrenheit or Celsius on a large, bright LCD display. Six indicator lights provide an at-a-glance review of the oven's operating status. The easy to read LCD display also provides detailed information on oven status with clear real-text messages and simplifies programming of temperature and time parameters with user-friendly menus.

Operating Modes

Protocol 3™ provides three operating modes in one versatile, easy-to-use package:

- ◆ Manual Mode: A single set point mode that enables the oven to operate continuously at a fixed temperature until turned off.
- ◆ Timer Mode: A single set point mode with timer control that enables the oven to operate at a fixed temperature for a user-selected time period, then automatically turns off.
- ◆ Profile Mode: A multiple set point mode that enables the temperatures to increase or decrease as desired into "ramp and soak" profiles. These profiles can be created using 255 segments that can be allocated in up to 64 programs. They can be linked to provide additional temperature combinations. These can be named for easy selection. A bar graph on the LCD display shows profile and current segment progress.

Datalogging Functionality

Datalogging function allows for logging important process data for reporting and analyzing. Data files can be exported via the USB port on the front of the controller.

FEATURES AT A GLANCE

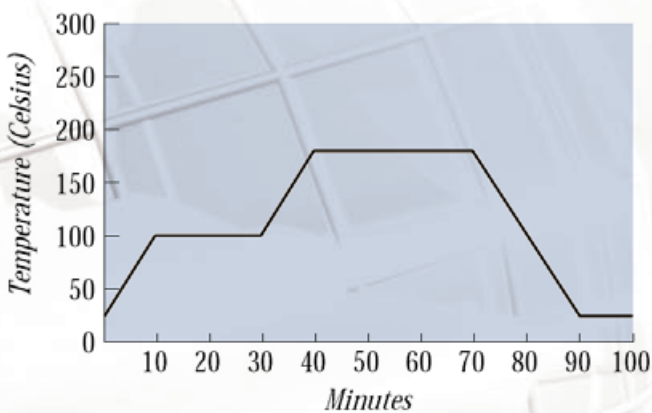
- ◆ Large, easy-to-read backlit LCD display
- ◆ Six status indicator lights
- ◆ Hi Limit control included in one package
- ◆ Simple profile creation for multiple set point applications
- ◆ Integrated datalogging for obtaining historic process data for analysis
- ◆ USB port for simple configuration set-up and export of data files
- ◆ Multilanguage capability



STANDARD FEATURES

- ◆ Hi-limit control turns off the heater if the temperature exceeds user-defined limits. Separate thermocouple and control from main operating controller.
- ◆ Modbus (RS485 Modbus RTU) or Ethernet (Modbus TCP) Communications allow remote start and programming capabilities via a link to a personal computer
- ◆ Large LCD dual color backlit display can change from green to red on alarm conditions
- ◆ USB port for easy export of data files and uploading and downloading of profile and configuration files.
- ◆ Integrated datalogging for obtaining process data for analysis and reporting
- ◆ Profile mode allows for 255 segments in up to 64 programs. Profile functions include ramp, soak, hold, loop or join profiles. Profile start up can be set for a specified delay or a specific day and time.
- ◆ An output signal can transmit temperature data to a recording device (chart recorder)
- ◆ A recovery system terminates, resumes, or suspends operations when power is restored after a power failure
- ◆ Real time clock is built in with auto-start capabilities that allows starting the heating cycle at a specified time of day
- ◆ Five output relays that signal user-specified events/alarm to external alarm devices
- ◆ Calibrating, tuning and self-diagnostic capabilities
- ◆ Password protection of configuration parameters allow for secured access

RAMP AND SOAK PROFILE SAMPLE



OPTIONAL FEATURES

- ◆ Remote start via digital input from an external device other than a PC
- ◆ Protocol Manager™ monitoring and data acquisition software enables communications between the oven controller and a personal computer.

PROTOCOL 3™

SPECIFICATIONS

Approvals	Controller: UL, cUL, CE, RoHS, WEEE High Limit: UL, cUL, CE
Input Capabilities	Universal input for thermocouples, RTDs, and linear DC process signals.
Accuracy	±0.1% of input range ±1 LSD
Method of control	Full PID. Two independent thermocouples provide control of temperature and high limit protection.
Communications	RS485 Modbus RTU or Ethernet Modbus TCP. USB Connection.
Languages	English/Spanish (Standard) or choose English/German, English/French, or English/Italian

PROTOCOL MANAGER™ MONITORING & DATA ACQUISITION SOFTWARE

Protocol Manager™ reduces costs through improved process and quality control. Protocol Manager™ software enables communications between a personal computer and up to 32 Despatch ovens equipped with Protocol Plus and

Protocol 3™ controllers. The user friendly software allows oven control, recipe download and data logging.



SERVICE AND TECHNICAL SUPPORT

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