

# OPT•TROL™ Melt Control System

Extrusion Temperature and Pressure Control in a Modular Package for Optimal Control



Operator Station



Control Module

## Features

- Adaptive auto-tuning for precision pressure and temperature control
- Preconfigured screens and sequences saves time and expenses
- Differential Pressure display and alarming
- Alarm logging and historic trending for sophisticated data capture
- Ethernet communications simplify installations
- Recipe management for quick set-up and true plug-and-play operation
- Security password protection

## Description

OPT•TROL™ (optimal control) is a true plug-and-play system specifically designed for small extruders, but includes features found in larger extrusion control systems. Auto tuning temperature control with two low current 24Vdc outputs will allow all zones to be heat only or heat/cool. The operator station includes a rugged LCD touchscreen with CE.NET operating system, Modbus TCP/IP Ethernet communication, and a 1GB flash back up memory stick as standard. The building block architecture of the Control Module allows a compact, lower cost-of-entry control solution for small to large extruders. Standard control system definitions save valuable engineering time and expense.

The system is preprogrammed to meet the users requirements. The program is loaded, tested and a memory stick back up is supplied for true out-of-the-box performance. The temperature card is designed specifically for single-screw, twin-screw, co-extrusion or blown film applications. Fully automatic adaptive temperature tuning (as well as conventional tuning) is provided. Predefined screens and sequence logic greatly simplify installation and setup. Recipes, screen captures and logging functions can be stored and loaded from various memory devices. Applications that match the predefined screens and logic will not require additional programming. Includes real time clock and battery backup.



## Specifications

### OPERATOR STATION

<b>Type:</b>	12.1" (inch) color screen
<b>Interaction:</b>	Touch screen TFT (thin film transistor) LCD
<b>Resolution:</b>	800 x 600
<b>Processor:</b>	ARM 200MHz, 64MB internal memory
<b>Screen Application:</b>	Optigrafix™
<b>Updates:</b>	≤0.1mS, pressure loop control
<b>Operating System:</b>	Microsoft® CE.NET
<b>Communications:</b>	Modbus TCP/IP Ethernet 2 USB ports (1 front bezel located) 1GB compact flash for recipe and file storage

### CONTROL MODULE

<b>Hardware:</b>	4-slot closed chassis; 6-slot open chassis optional
<b>Temperature:</b>	8 zones, up to 40 optional (in 8 loop blocks) Control Type: Adaptive auto-tune Input Type: J, K thermocouple Output Type: 2 low current 24Vdc, 30mA (heat only or heat/cool)
<b>Pressure:</b>	2 independent loops Control Type: Adaptive auto-tune, bumpless Input Type: Strain gauge, 0-10Vdc or 4-20mA Output Type: 0-10Vdc or 4-20mA
<b>Other:</b>	4 analog inputs for monitoring and alarm Input Type: 0-10Vdc or 4-20mA

### ALARMS & OTHER

<b>Temperature Alarms:</b>	Process & Deviation Hi/Lo, T/C Break, Heater Burnout
<b>Temperature Set Points:</b>	Run and idle, selective as group or individually
<b>Pressure Alarms:</b>	Hi, Lo, Hi/Hi
<b>T / C Break:</b>	Upscale readout, Auto-comp optional

### DISPLAY MECHANICAL & PACKAGING CHARACTERISTICS

<b>Operating Temperatures:</b>	32 to 122°F (0 to 50°C)
<b>Storage Temperatures:</b>	-13 to 158°F (-25 to 70°C)
<b>Humidity:</b>	30 to 85% non-condensing @113°F (45°C)
<b>Weight:</b>	11lbs (5Kg)

### CONTROLLER MECHANICAL & PACKAGING CHARACTERISTICS

<b>Operating Temperatures:</b>	32 to 140°F (0 to 60°C)
<b>Storage Temperatures:</b>	-40 to 185°F (-40 to 80°C)
<b>Humidity:</b>	0 to 95% non-condensing @140°F (60°C)
<b>Weight:</b>	11lbs (5Kg)

### APPROVALS & CERTIFICATIONS

<b>CE Mark:</b>	Directive EN61010-1:2001
<b>Agency approval cUL (UL):</b>	C22.2 No. 61010.1-04 (61010-1 2 <sup>nd</sup> Ed)

### POWER SUPPLY (MAINS)

<b>Input Power, display:</b>	24Vdc, 2A max
<b>Input Power, controller:</b>	24Vdc, 3A max

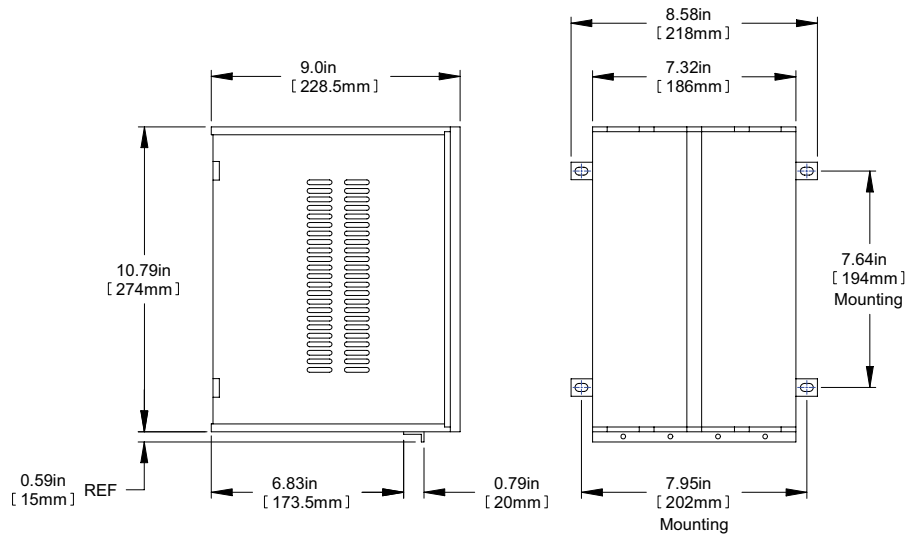
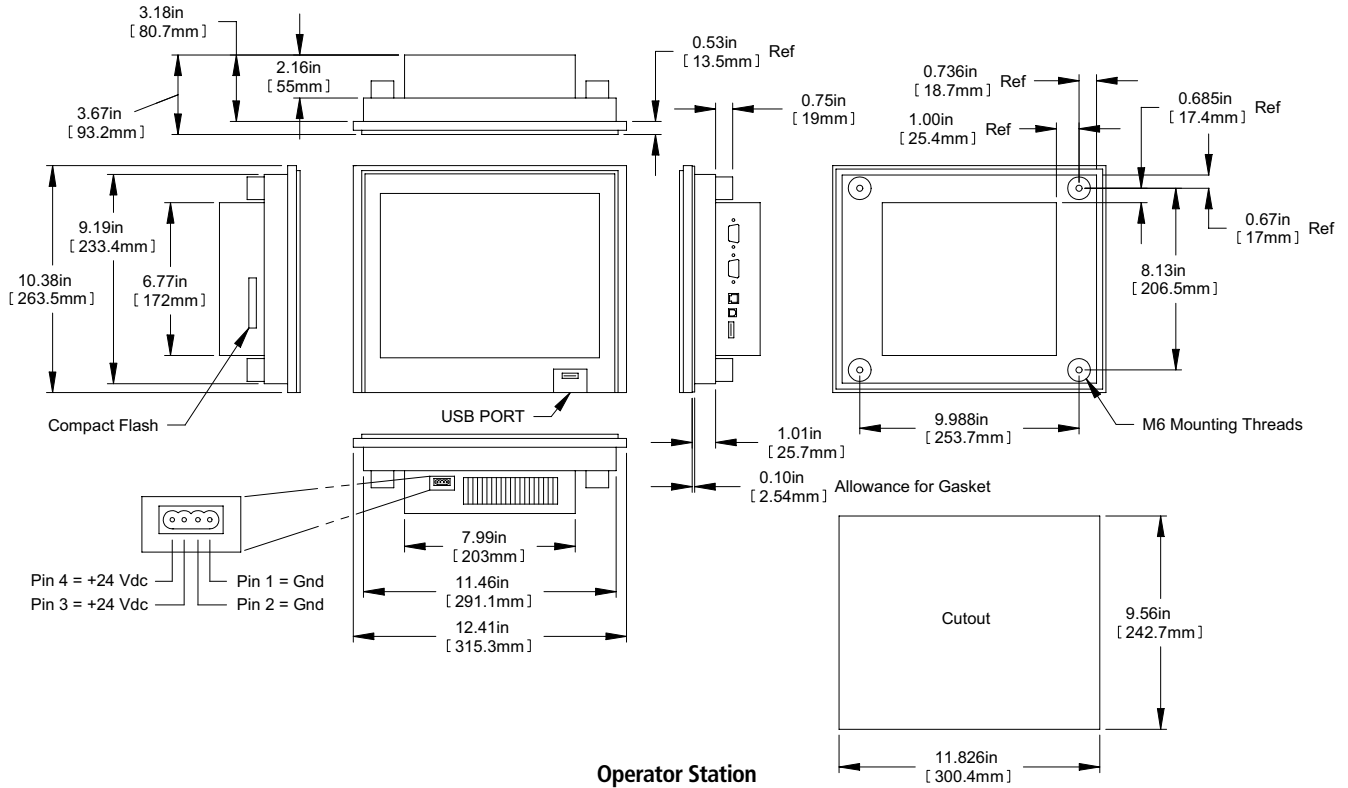
## Ordering Guide

### OPT•TROL™ SYSTEM INCLUDES:

Operator Station with 12.1" 800 x 600 color TFT LCD touch screen, 64MB memory, CE.NET operating system, Optigrafix generated screen set, Modbus TCP/IP Ethernet communications and 1GB compact flash memory back up; Control Module order specific zones (see model configurations for number) of auto-tuning temperature control with two low current 24Vdc outputs per zone to allow all zones to be heat/cool, two analog (0-10Vdc or 4-20mA) or strain gauge inputs (with excitation and cal relay) for two channels of independent pressure control plus differential pressure monitor and alarming, 4 analog inputs for general monitor and alarming, four 24Vdc inputs, four 24Vdc 30mA outputs, eight 24Vdc 2A outputs, and Modbus TCP/IP Ethernet communications; Power supply, 24Vdc 5A; Ethernet crossover cable, 20 feet; Instruction manual on CD; Standard programming modified to meet order requirements, loaded, tested and supplied memory stick.

### ZONE CONFIGURATIONS INCLUDE:

8 Zone Temperature/2 channel pressure	Model 71-1230-100
16 Zone Temperature/2 channel pressure	Model 71-1230-200
24 Zone Temperature/2 channel pressure	Model 71-1230-300
32 Zone Temperature/2 channel pressure	Model 71-1230-400
40 Zone Temperature/2 channel pressure	Model 71-1230-500



**Control Module**

All dimensions are in inches (millimeters).  
 CE.NET is a trademark of Microsoft® Windows®  
 ©2009. Dynisco reserves the right to make changes without notice.  
 Refer to [www.dynisco.com](http://www.dynisco.com) for access to Operator Manual and other support documentation.  
 DDS276073 09.08