

## 1020 Temperature & Process Controller



- DIN Rail Mount
- Universal Input
- 2 or 3 Outputs—SSR Drive, Relay or Analog / DC Linear
- PID or ON/OFF Control
- Bright Text / Icon OLED Matrix Display
- 3 Button Operation
- 3 Status LEDs
- Digital input
- Sensor Break Function
- High/low, Deviation or Band Alarms
- Fast Front Panel Setup
- Intuitive Configuration Software
- Optional Low Voltage Supply
- Optional Modbus RTU/RS485 Communications
- Narrow Footprint
- UL, cUL, CE



### Description

The 1020 DIN rail temperature & process controller is the latest addition to the Chromalox 20 Series controller line. This new controller is cost effective, easy to install, extremely fast to configure and comes equipped with the most desirable standard or optional advanced control features. The 1020 offers a bright OLED text / icon matrix display, 3 LED output/event indicators, 3 tactile input buttons and it occupies only 0.9" (22.5mm) of width on the DIN rail. Controller design choices include 2 or 3 outputs, Modbus RTU/RS485 digital communications and standard or low supply voltage choices.

### Ready, Set, Control...

The controller setup has been greatly simplified to the point where you will be up and running in less than 60 seconds. The Chromalox 20 Series units are factory programmed with the most common parameter value settings found in process heating applications. Separate default setting profiles exist for both SSR Drive output and Relay output units. For either of these output types, simply enter the process temperature setpoint and you are controlling your process. Of course, should you wish to change any settings, the 1020 controller provides efficient, user-friendly navigation throughout all programming menus.

### Complete Process Control Package

In many thermal control applications, it is recommended, and often required, to employ an over temperature or Limit Controller to shut down the heater, or load, in the event that the system is in a runaway condition. In both design and aesthetics, Chromalox offers the

perfectly matching 1030 model Over Temperature Controller that provides the necessary system safety that your process requires. Please see the 1030 pages in the Over Temperature Controller section in this catalog.

### Additional Features

Although competitively priced, the 1020 is not short on thermal process control capability. The advanced features that the 1020 offers, such as a universal input, DC linear (analog) output, sensor break detection, Modbus communications, digital input, and latching/nonlatching process, band, deviation and loop alarms, are typically not available in control units of this size or cost point.

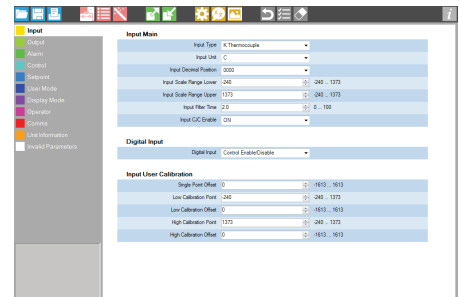
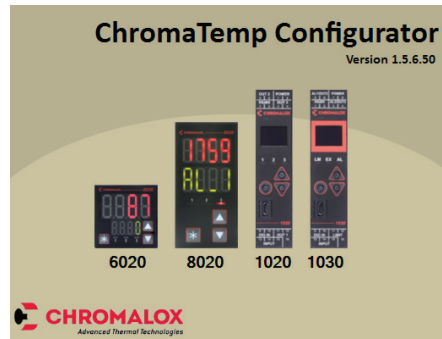
### Traditional Applications

- Packaging
  - Testing
  - Food and Beverage
  - Kilns & Ovens
  - Fluid Baths
  - Autoclaves
  - Chillers, Cooling Towers
  - Thermal Bonding & Sealing
  - Micro-brewing
  - Incubators
  - Warming / Chilled Cabinets
  - Heat Presses
  - Tempering
  - Plastic & Rubber Extrusion
  - General Thermal Processes
- And many more...

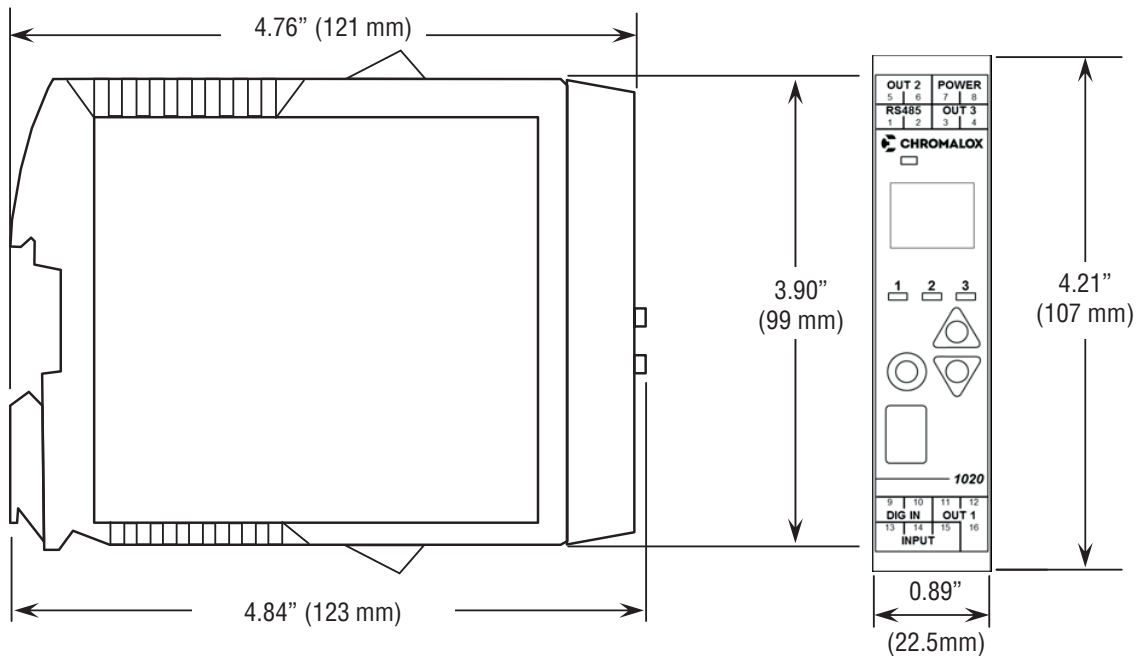
## 1020 Temperature & Process Controller *(cont'd.)*

### Configuration Software

The ChromaTemp Configurator is an extremely intuitive programming tool for fast commissioning. It also facilitates the cloning of multiple controllers and fast parameter file uploads and downloads to and from the controller or PC. This configurator program includes a Setup Wizard that is designed for the most novice users. This wizard removes the guesswork by methodically walking you through the most basic wiring, input considerations and programming requirements.



### Dimensions



## 1020 Temperature & Process Controller *(cont'd.)*

### Specifications

#### INPUTS

Thermocouple .....	J, K, C, R, S, T, B, L, N.
RTD .....	3 Wire PT100
DC Linear .....	0 to 20 mA, 4 to 20 mA, 0 to 50 mV, 10 to 50 mV, 0 to 5 V, 1 to 5 V, 0 to 10 V, 2 to 10 V. Scalable -1999 to 9999, w/adjustable decimal point.
Accuracy .....	Thermocouple $\pm 0.25\%$ of full range $\pm 1$ LSD ( $\pm 1^\circ\text{C}$ for thermocouple CJC). PT100 $\pm 0.25\%$ of full range, $\pm 1$ LSD, Linear $\pm 0.25\%$ of full range, $\pm 1$ LSD.
Sampling .....	4 per second
Impedance .....	$>10\text{M}\Omega$ resistive, except DC mA ( $5\Omega$ ) and V ( $47\text{K}\Omega$ )
Sensor Break Detection .....	$<2$ seconds (except zero based DC ranges), high alarms activate for T/C, RTD and mV ranges, low alarms activate for mA or V ranges
Digital Input Reset .....	Alarm, Control enable/disable, Auto/Manual control. Volt Free or TTL compatible, 24 VDC

#### OUTPUTS

Relay .....	OUT1: SPDT Form C, OUT2 / 3: SPST Form A relay; current capacity 2A at 250VA. $>150,000$ operations at rated voltage/current (resistive load).
SSR .....	OUT2 / 3: Drive capability $>10$ V DC @ 20 mA
Linear DC .....	OUT3: 0 to 20 mA, 4 to 20 mA, 0 to 5 V, 0 to 10 V or 2 to 10 V ..... Current output $500\Omega$ max, Voltage output $500\Omega$ min
Serial Communications .....	2 Wire RS485, 1,200 to 38,400 bps, Modbus RTU

#### OPERATING CONDITIONS & ENVIRONMENTAL

Temperature & RH .....	0 to $55^\circ\text{C}$ ( $-20$ to $80^\circ\text{C}$ storage), 20% to 95% RH non-condensing
Altitude .....	$< 2,000\text{m}$
Power Supply .....	100 to 240V 50/60Hz (standard version) 24V DC/AC $+10\%/-15\%$ , AC 50/60Hz (low voltage option)
Enclosure Protection .....	IP20
Standards .....	CE, UL, cUL
EMI .....	Complies with EN61326-1 (Susceptibility & Emissions)
Safety Considerations .....	Complies with EN61010-1 & UL61010-1 Pollution Degree 2, Installation Category II
Weight .....	0.20kg excluding packaging
Communications .....	Modbus RTU/RS485 communication option

## 1020

### Temperature & Process Controller (*cont'd.*)

#### Ordering Information

**To Order** — Complete the Model Number using the Matrix provided.

Model	
<b>1020</b>	DIN Rail Mountable Temperature Controller. Standard Features: Universal Input, PID or On/Off Control with Auto or Manual Tuning, Up to 3 Outputs (SSR Drive, Relay or Analog/DC Linear), Bright OLED text/Icon Display, Heat/Cool Operation, Digital Input, Latching/Non-Latching Alarms and Configuration via Front Panel or Software. Options: ModBus RTU/RS485 Digital Communications, Low Voltage Supply. Operating Temperature: 32°-131°F (0°-55°C), IEC IP20 Enclosure Protection. CE, UL, CUL & 2-Year Warranty
Code Output 1	
<b>S</b>	SSR Drive (>10VDC @ 20mA)
<b>R</b>	Relay (SPST, Form A, 2A at 250VAC)
Code Output 2	
<b>S</b>	SSR Drive (>10VDC @ 20mA)
<b>R</b>	Relay (SPST, Form A, 2A at 250VAC) <sup>1</sup>
Code Output 3	
<b>0</b>	None
<b>R</b>	Relay (SPST, Form A, 2A at 250VAC)
<b>A</b>	Analog (Linear DC: 0/4-20mA, 0-5V, 0/2-10V)
Code Digital Communications	
<b>0</b>	None
<b>1</b>	Modbus RTU/RS485 Digital Communications
Code Power Supply	
<b>0</b>	100 to 240VAC 50/60Hz
<b>1</b>	24VDC/VAC +10%/-15%, AC 50/60Hz
<b>1020-</b>	<b>S R A 0 0 Typical Model Number</b>

<sup>1</sup>Only available when Output 1 is Relay

#### Accessories

Description	PCN
Universal Converter & PC Cable -Configuration Software	309112
Cable From Universal Converter to Controller - 20/30 Series Only	309120
Snubber	314448
ChromaTemp Configuration Software: Go to Chromalox website for free download: <a href="http://www.chromalox.com">www.chromalox.com</a>	