

## 6050 & 4050 DIN Limit Controllers

- Universal Input
- Jumperless Configuration
- Auto Detected Hardware
- Standard 5A Latching Limit Relay
- Up to 3 Outputs
- 1/16 & 1/4 DIN Sizes
- Windows PC Configuration Software
- Retransmit Process Value or Limit Setpoint
- Process Alarms
- Optional MODBUS (RS-485) Communications
- Optional digital input and remote reset
- Optional 10V SSR Driver Output
- Optional 24VDC Transmitter Power Supply
- UL, cUL, CE, CSA & FM Approved
- 3 Year Warranty



### Description

The Chromalox 50 Series Limit Controllers provide you with a comprehensive feature list and the flexibility to meet your most demanding process needs. This series is affordable, easy-to-use and adaptable to simplify all aspects of limit control.

This fail-safe protection device may be used to prevent damage to equipment or products. It will shut down a process when the preset parameter threshold is realized. The controller cannot be reset until the process has returned to an acceptable parameter condition.

The 50 Series Limit Controller maintains the maximum (High Limit Action) or minimum (Low Limit Action) process variable value since the last reset occurred. Additionally the controller records the accumulated time for which the limit has been exceeded since this parameter was last reset.

The 50 Series Limit Controllers are an ideal complement in both design and esthetics to its cousin, the Chromalox 40 Series Temperature/Process Controllers.

### Features

- User-friendly functionality
- High/Low Limit Alarm
- Universal Input
- Digital Inputs
- Intuitive ChromaWare™ Configuration Software
- Easy to use HMI
- Jumperless and auto-hardware detection configurations
- 24 VDC transmitter power supply
- Dual, red over green, 7 segment LED
- 10 VDC SSR Drive Output
- 4 digit upper and lower displays
- MODBUS communication
- Plug-in output modules
- Process Alarms
- Outputs 2 and 3 are user-selectable and customizable for each application
- Output Options:
  - Relay, SSR Driver, DC linear, Triac, 24 VDC transmitter power supply, Retransmit PV or Limit Trip Setpoint
- Remote reset for digital input option

## 6050 & 4050 DIN Limit Controllers (cont'd.)

### Specifications

#### FEATURES

- Human Interface ..... 4 button operation, dual 4 digit 10mm & 8mm high (6050) and 13mm & 10mm high (4050) LED displays, plus 4 LED indicators
- PC Configuration ..... Off-line configuration from PC serial port to dedicated config socket (comms option not required). ChromaWare Configuration Software for Windows 98 or higher.

#### INPUT

- Thermocouple ..... J, T, K, E, N, B, R, S, C; Pt Rh20% vs. Pt 40% Rh
- RTD ..... 3-wire, PT100
- DC Linear ..... 0 to 20mA, 4 to 20mA, 0 to 50mV, 10 to 50mV, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V. Scaleable -1999 to 9999, with adjustable decimal point
- Impedance ..... >10M ohm for the thermocouple and mV ranges, 47k ohm for V ranges and 5 ohm for mA ranges
- Accuracy .....  $\pm 0.1\%$  of input range  $\pm 1$  LSD (T/C CJC better than 1°C)
- Sampling ..... 4 per second, 14 bit resolution
- Sensor Break Detection ..... <2 seconds (except zero based DC ranges), limit output opens, low alarms activate for RTD, mA or V ranges

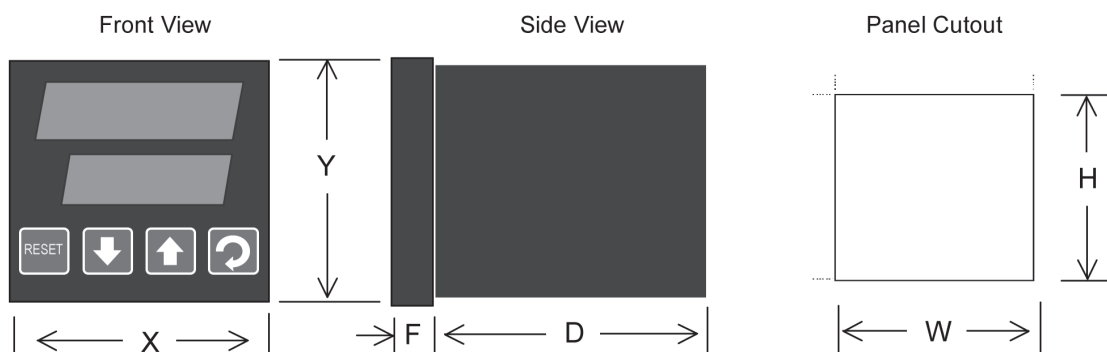
#### OUTPUTS & OPERATIONS

- Configuration ..... Output 1 (limit relay) fixed; outputs 2 and 3 (alarm relay) are user-selectable and customized based on desired application; Process Alarm: Reverse or direct. Choose from the following output types:
- Max # of Outputs ..... 3 for alarm, 24 VDC transmitter power supply or retransmit of process value/limit trip setpoint
- Limit Relay ..... Fixed, SPDT; 240VAC 5A resistive; Lifetime >100,000 operations at rated voltage/current
- Alarm Relays ..... Optional SPDT; 240VAC 2A resistive; Lifetime >500,000 operations at rated voltage/current. Modes (Alarm 1 and 2): High/Low, Band, Deviation, logical OR/AND
- Control SSR Driver Outputs ..... Optional drive capability: >10 VDC nominal into 500 ohm minimum
- Triac Outputs ..... Optional 0.01 to 1A AC, 20 to 280Vrms, 47-63 Hz (Limit 2)
- DC Linear Outputs ..... Optional 0-20mA, 4-20mA into 500 ohm max; 0-10V, 1-5V, 2-10V, 0-5V into 500 ohm min; Outputs have 2% over/under drive applied; Accuracy  $\pm 0.25\%$  (mA into 250 ohm load, V into 2k ohm load); degrading linearity to  $\pm 0.5\%$  for increasing burden to specified limits
- Transmitter Power Supply ..... Optional 24 VDC (Limit 1)
- Communications ..... 2 Wire RS485, 1200 to 19200 Baud, Modbus protocol
- Digital Input ..... Selects between 2 setpoints or Auto/Manual control. Volt free or TTL input
- Remote Setpoint Input ..... 0 to 20mA, 4 to 20mA, 0 to 5V, 1 to 5V, 0 to 10V or 2 to 10V. Scaleable -1999 to 9999. Local/Remote setpoint selected from front panel

#### OPERATING & ENVIRONMENTAL

- Temperature & RH ..... 0 to 55°C (-20 to 80°C storage), 20% to 95% RH non-condensing
- Power Supply ..... 100 to 240V 50/60Hz 7.5VA (optional 20 to 48V AC 7.5VA/22 to 65V DC 5 watts)
- Protection ..... Front Panel: NEMA 4, IEC IP66 Behind Panel: IP20
- Standards ..... FM, CE, CSA, UL & cUL recognized

Model	X	Y	F	D	W	H
4050	3.78" (96mm)	3.78" (96mm)	0.43" (11mm)	3.93" (100mm)	3.62" (92mm)	3.62" (92mm)
6050	1.89" (48mm)	1.89" (48mm)	0.35" (9mm)	4.33" (110mm)	1.77" (45mm)	1.77" (45mm)



## 6050 & 4050 DIN Limit Controllers (cont'd.)

Model	50 Series DIN Limit Controller					
6050	1/16 DIN					
4050	1/4 DIN					
	<b>Code</b>	<b>Output 1</b>				
	1	Relay - SPDT, 5A resistive at 120/240 VAC				
		<b>Code</b>	<b>Output 2</b>			
		0	None			
		R	Relay (2 Amp resistive at 240 VAC)			
		S	SSR (0/10 VDC, 500Ω Minimum load)			
		A	Analog (0-10V, 0-20mA, 0-5V, 2-10V, 4-20mA)			
		T	Triac (1 Amp AC)			
		<b>Code</b>	<b>Output 3</b>			
		0	None			
		R	Relay (2 Amp resistive at 240 VAC)			
		S	SSR (0/10 VDC, 500Ω Minimum load)			
		A	Analog (0-10V, 0-20mA, 0-5V, 2-10V, 4-20mA)			
		P	Isolated Power Supply 24 VDC (910Ω min )			
		<b>Code</b>	<b>Feature Option A</b>			
		0	None			
		1	RS485 Digital Communications			
		2	Digital Input (Voltage Free or TTL Input)			
		<b>Code</b>	<b>Power Supply</b>			
		0	100 - 240V AC			
		1	24 - 48V AC/DC			
4050-	1	S	A	0	0	Typical Model Number

### Stocked Items

DIN Size	Part Number	PCN
1/16	6050-10000	314683
1/16	6050-1R000	314691
1/4	4050-1R000	314667

### Accessories

Models	Description	Part Number
40 & 50 Series	ChromaWare Configuration Software	0149-50060
	Cable for Configuration Software	0149-50062
	Snubber	0149-01305