

50 Series DIN Limit Controllers

Affordable, Easy-to-Use, Adaptable Fail-Safe Protection



- Universal Input
- Jumperless Configuration
- Auto-Detected Hardware
- Standard 5 A 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 10 V SSR Driver Output
- Optional 24 Vdc Transmitter Power Supply
- NEMA 4, IEC IP66
- UL, cUL, CE, CSA & FM Approved
- 3 Year Warranty

The Chromalox® 50 Series limit controllers provide a comprehensive list of features 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.

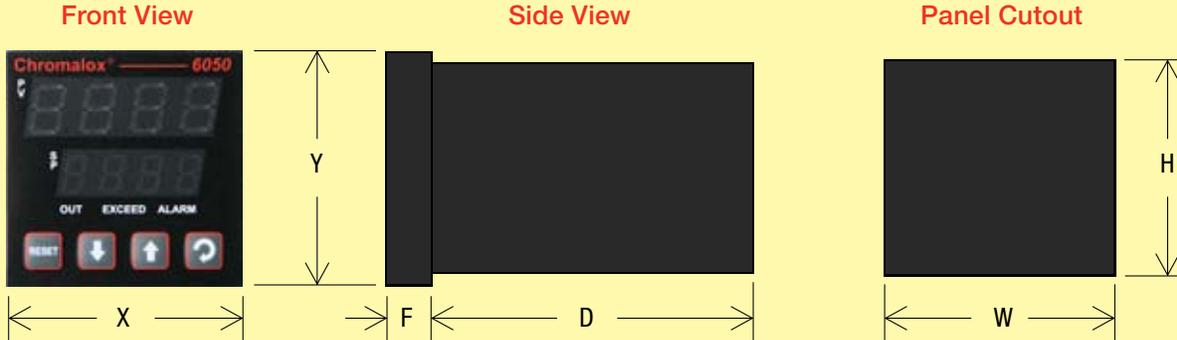
This fail-safe protection device may be used to prevent damage to equipment or products. It will shut down a process when the preset parameter threshold is reached. The controller cannot be reset until the process has returned to an acceptable parameter condition.

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.

Chromalox® 50 Series limit controllers are an ideal complement in both design and esthetics to its cousin, the Chromalox® 40 Series temperature and 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, PV retransmit, or limit trip setpoint
- Remote reset for digital input option



Model	X in. (mm)	Y in. (mm)	F in. (mm)	D in. (mm)	W in. (mm)	H in. (mm)
4050	3.78 (96)	3.78 (96)	0.43 (12)	3.93 (100)	3.62 (92)	3.62 (92)
6050	1.89 (48)	1.89 (48)	0.35 (9)	4.33 (110)	1.77 (45)	1.77 (45)

Specifications

Features

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

Input

Thermocouple	J, T, K, L, N, B, R, S, C; Pt RH 20% vs. Pt RH 40%
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. Scaleable, -1999 to 9999, with adjustable decimal point.
Impedance	>10 megohm for the thermocouple and mV ranges, 47 kilohm for V ranges, and 5 ohm for mA ranges
Accuracy	±0.1% of input range ±1 LSD (T/C CJC better than 1°C)
Sampling	4 per second, 14 bit resolution
Sensor Break	<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) user-selectable and customized based on desired application. Process Alarm: reverse or direct. Choose from the following output types:
Maximum Number	3 for alarm, 24 Vdc transmitter power of Outputs supply or retransmit of process value/limit trip setpoint

Limit Relay	Fixed, SPDT; 240 Vac 5 A resistive; lifetime >100,000 operations at rated voltage/current
Alarm Relays	Optional SPDT; 240 Vac 2 A resistive; Lifetime >500,000 operations at rated voltage/current. Modes (Alarm 1 and 2): High/Low, Band, Deviation, logical OR/AND.
Control SSR Driver	Optional drive capability: >10 Vdc nominal into 500 ohm minimum
TRIAC Outputs	Optional 0.01 to 1 amp ac, 20 to 280 Vrms, 47 to 63 Hz (Limit 2)
DC Linear Outputs	Optional 0 to 20 mA, 4 to 20 mA into 500 ohm max; 0 to 10 V, 1 to 5 V, 2 to 10 V, 0 to 5 V into 500 ohm min; outputs have 2% over/under drive applied; accuracy 0.25% (mA into 250 ohm load, V into 2 kilohm load); degrading linearity to ±0.5% for increasing burden to specified limits
Transmitter Power	Optional 24 Vdc (Limit 1) Supply
Communications	2-wire RS-485, 1200 to 19200 baud, Modbus protocol
Digital Input	Selects between 2 setpoints or Auto/Manual control; volt-free or TTL input
Remote Setpoint	0 to 20 mA, 4 to 20 mA, 0 to 5 V, 1 to 5 V, 0 to 10 V or 2 to 10 V. 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 240 V 50/60 Hz 7.5 VA (optional 20 to 48 Vac 7.5 VA, 22 to 65 Vdc 5 W)
Protection	Front panel: NEMA 4, IEC IP66; Behind panel: IP20
Standards	FM, CE, CSA, UL, and cUL recognized

*Windows is the registered trademark of Microsoft Corporation, Redmond, Washington.

Ordering Information

Model 50 Series DIN Limit Controller

6050 1/16 DIN

4050 1/4 DIN

Code	Output 1
1	SPDT, 5 A resistive at 120/240 Vac
Code	Output 2
0	None
R	Relay (2 A resistive at 240 Vac)
S	SSR (0/10 Vdc, 500 Ω Minimum Load)
A	Analog (0 to 10 V, 0 to 20 mA, 0 to 5 V, 2 to 10 V, 4 to 20 mA)
T	TRIAC (1 amp ac)
Code	Output 3
0	None
R	Relay (2 A resistive at 240 Vac)
S	SSR (0/10 Vdc, 500 Ω Minimum Load)
A	Analog (0 to 10 V, 0 to 20 mA, 0 to 5 V, 2 to 10 V, 4 to 20 mA)
P	Isolated Power Supply 24 Vdc (910 Ω min)
Code	Feature Option A
0	None
1	RS-485 Digital Communications
2	Digital Input (Voltage-Free or TTL Input)
Code	Power Supply
0	100 to 240 Vac
1	24 to 48 Vac/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

Item	Part Number
ChromaWare Configuration Software	0149-50060
Cable for Configuration Software	0149-50062
Snubber	0149-01305

Chromalox[®]
PRECISION HEAT AND CONTROL

103 Gamma Drive
Pittsburgh, PA 15238
USA

Phone: (412) 967-3800
Fax: (412) 967-5148
Toll-Free: 1-800-443-2640

email: sales@chromalox.com
www.chromalox.com