



ADTECH
Analog-Digital Technology, Inc.

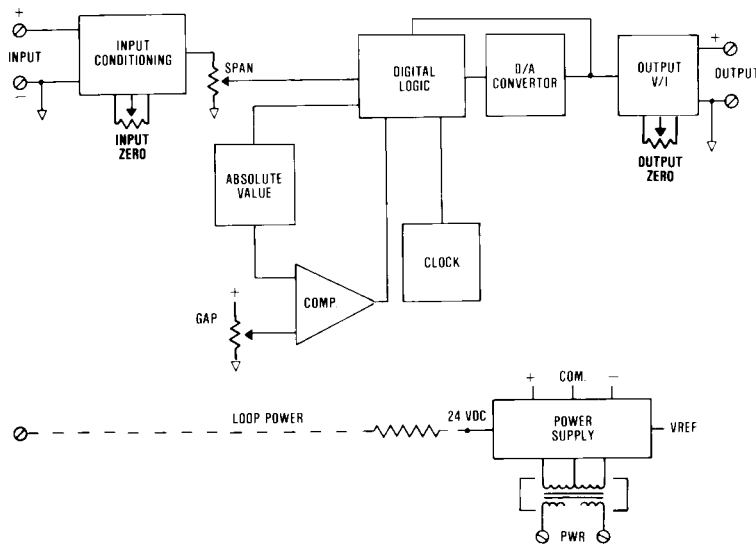
The Adtech Model GCM 36 Gap Controller Module is used to stop oscillation in feedback control loops to reduce mechanical wearout of actuators.

Use of the GCM 36 can prevent actuator "hunting" in such applications as damper controls, combustion processes, and extrusion pressure control. Actuators will last longer, and premature mechanical wearout can be eliminated.

The Gap Controller works by essentially disconnecting the input from the output during the time that the input remains "within the gap." When the input deviates beyond the preset gap limits, the output centers the gap around the new input. The GCM 36 can effectively stop oscillating because the control loop is "opened" when it is used just prior to the control actuator. The gap controller allows control loops to respond quickly without the fear of instability due to feedback or transport delay.

The gap width is continuously adjustable via a multiturn potentiometer to provide precise control in any application.

The GCM 36 is designed to accept all standard process voltages and currents as input.



Features

- **Gap Control:** Single potentiometer
- **Gap Range:** 0.5% to 100%
- **DC Current Inputs:** 4-20 mA, etc.
- **DC Voltage Inputs:** 1-5 VDC, etc.
- **High Input Impedance:** 10 megohms minimum
- **Zero-based inputs:** Current and voltage
- **DC Process Signal Output:** Current and voltage
- **Repeatability:** $\pm 0.02\%$ of span
- **High Accuracy:** $\pm 0.1\%$ of span

Gap Controller Module

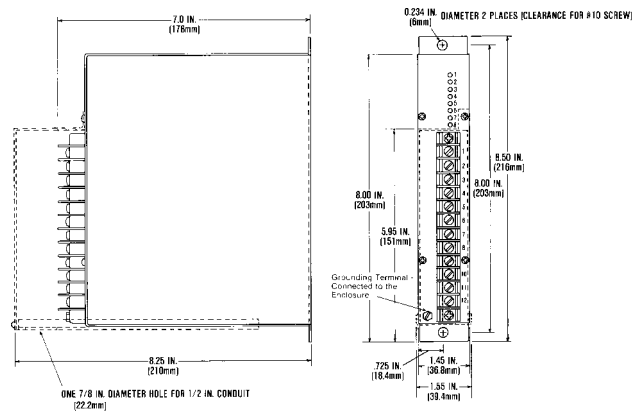
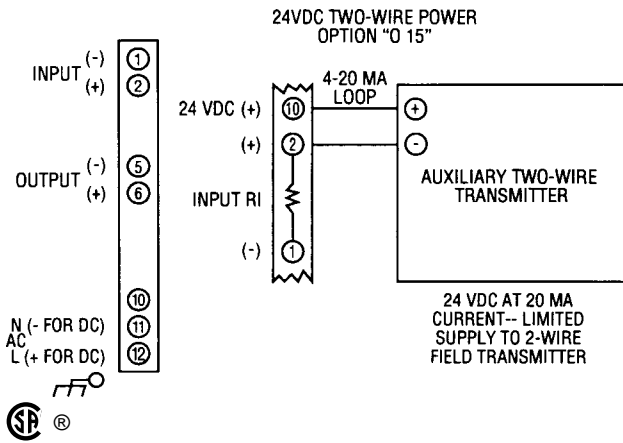
Model No. GCM 36

Typical Applications

- **Incremental loop control**
- **Elimination of control loop oscillations**
- **High-speed control of loops with transport delays**
- **Reduced maintenance and increased actuator life**



Connections/Dimensions



Input/Output

Input Signals

4-20 mA DC (Z in 250 ohms)
10-50 mA DC (Z in 100 ohms)
0-1 mA DC (Z in 5k ohms)
0-10 mA DC (Z in 500 ohms)
1-5 VDC (Z in 10 megohms)
0-5 VDC (Z in 10 megohms)
0-10 VDC (Z in 1 megohm)
Other zero-based current and voltages are available.

Output Signals/Output Drive (RL)

Signal	AC Power (RL)	DC Power (RL)
4-20 mA DC	0-1,000 ohms max.	0-900 ohms max.
10-50 mA DC	0-400 ohms max.	0-350 ohms max.
0-1 mA DC	0-20,000 ohms max.	0-18,000 ohms max.
1-5 VDC	100k ohms min.	100k ohms min.
0-10 VDC	200k ohms min.	200k ohms min.

Performance

Calibrated Accuracy: $\pm 0.1\%$
Linearity: $\pm 0.1\%$ max., $\pm 0.04\%$ typical
Repeatability: $\pm 0.05\%$ maximum
Temperature Stability: $\pm 0.01\%/^{\circ}\text{F}$ max.,
 $\pm 0.004\%/^{\circ}\text{F}$ typical
Load Effect: $\pm 0.01\%$ zero to full load
Note: All accuracies are given as a percentage of span.

Output Ripple: 10 mV P/P maximum
Response Time: 150 milliseconds
Temperature Range: 0° to 140°F (-18° to 60°C)
operating; -40° to 185°F (-40° to 85°C) storage
Power Supply Effect: $\pm 0.05\%$ for a $\pm 10\%$ power variation

Power

115 VAC: 50/60 Hz, 0.7 PF (Standard)	48 VDC: Isolated (Option P3)
12 VDC: Isolated (Option P8)	125 VDC: Isolated (105-140 VDC) (Option P4)
24 VDC: Non-isolated (Option P1)	230 VAC: 50/60 Hz, 0.7 PF (Option P5)
24 VDC: Isolated (Option P2)	

Note: All units 3 watts maximum, and a $\pm 10\%$ power variation unless noted.

Mechanical

Electrical Classification: General purpose
Connection: Barrier terminal strip (3/8" spacing, No. 6 screws)
Controls: Multiturn input zero, output zero, span and gap controls
Mounting: Surface mounting standard. See Housings Section for options.
Weight: Net Unit: 2.6 pounds (1.18 kilograms); Shipping: 3.0 pounds (1.36 kilograms)

Options

Options Number	Description
I 18	Low impedance DC current input (1/10 of standard Z)
O 11	Bipolar voltage to ± 10 VDC: at 1 mA, bipolar current ± 1 mA
O 15	Two-wire transmitter excitation
H 10	Thin-line conduit mounting plate and terminal cover
H 13B, H 14B, H 15B	NEMA 4, 7, & 12 enclosures
H 16	PFA 12 high-density, plug-in enclosure

Ordering Information

- Model number
- Input signal
- Output signal
- Percent gap setting
- Prime power with option no.
- Input/output options
- Housing and miscellaneous options

Please refer to the Housing and/or Option Section for more specific and detailed information.

Represented by:



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