



# ADTECH

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## ANALOG INTEGRATION- MODULE MODEL NO. AIM 37

THE ADTECH MODEL AIM 37 ANALOG INTEGRATION MODULE COMPUTES THE ANALOG INTEGRAL OF THE INPUT VARIABLE OVER PERIODS OF UP TO 2 HOURS.

IN THE AIM 37, THE ANALOG INTEGRATOR PROVIDES A STANDARD PROCESS VOLTAGE OR CURRENT OUTPUT PROPORTIONAL TO THE INTEGRATED INPUT OVER A SELECTED TIME PERIOD.

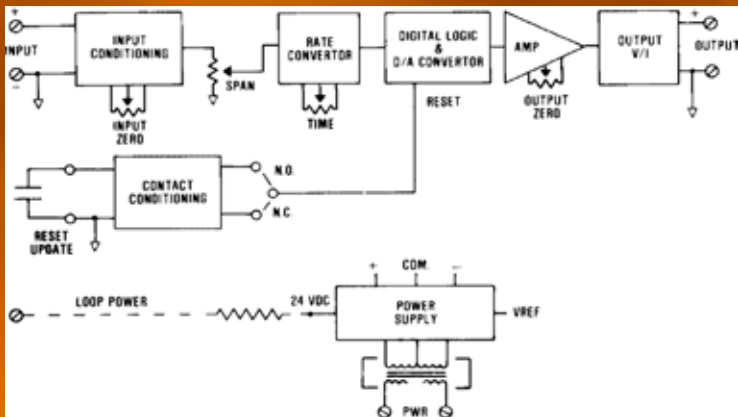
THIS IS IN CONTRAST TO INTEGRATING TOTALIZERS WHERE OUTPUT PULSES REPRESENTING A LINEAR INPUT QUANTITY ARE TOTALIZED ON AN INDICATING COUNTER. THESE PULSES ARE NOT PROPORTIONAL TO THE INTEGRAL, BUT ONLY TO THE INSTANTANEOUS MAGNITUDE.

THE INTEGRATION TIME MAY BE INTERNALLY PRESET OR CONTROLLED BY AN EXTERNAL RESET CONTACT.

THE AIM 37 IS USEFUL IN A NUMBER OF AREAS WHERE CONVENTIONAL INTEGRATORS WOULD REQUIRE ADDITIONAL HARDWARE TO PERFORM THE SAME FUNCTION AT A CONSIDERABLE COST PREMIUM. SOME CONVENTIONAL APPLICATIONS INCLUDE INTERMITTENT POWER INTEGRATION (I.E. ENERGY) FLOW AVERAGING, GAS CHROMATOGRAPH SIGNAL PROCESSING, HEAT LOSS OR TEMPERATURE RISE CALCULATIONS (I.E.,  $I^2$ ,  $V^2T$ ), AND AREA-UNDER-THE-CURVE COMPUTATION.

### TYPICAL APPLICATIONS

- FLOW SIGNAL AVERAGING OVER LONG PERIODS- UP TO 2 HOURS
- AREA COMPUTATION OF CHROMATOGRAPHY SIGNAL COMPONENT
- TEMPERATURE RISE OR FALL DUE TO ENERGY GAIN OR LOSS

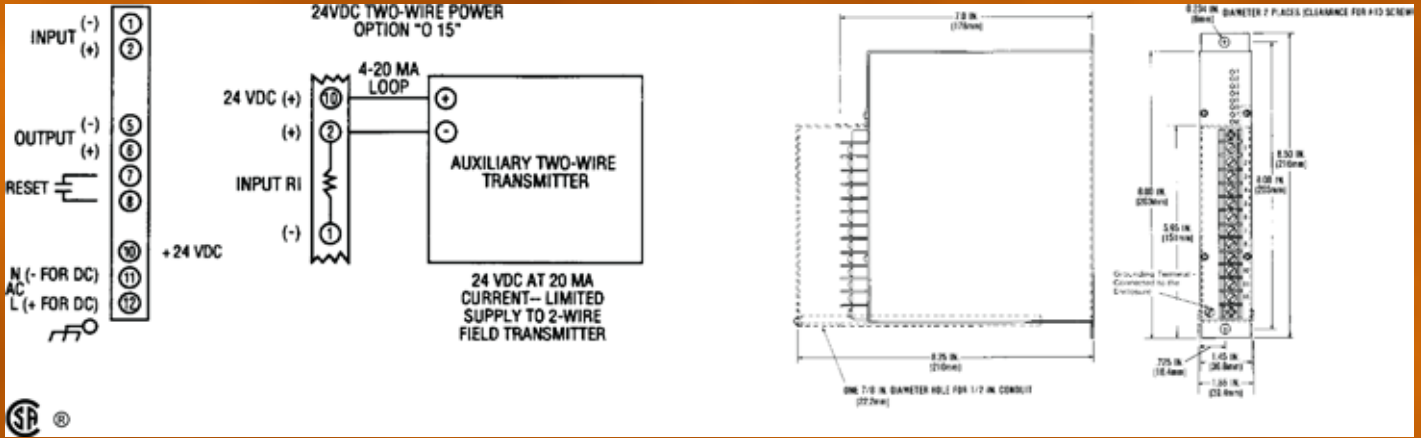


### FEATURES

- INTEGRATION TIME ADJUSTMENT: 1 SECOND TO 2 HOURS
- 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 OUTPUTS: CURRENT AND VOLTAGE
- REPEATABILITY:  $\pm 0.05\%$  OF SPAN
- HIGH ACCURACY:  $\pm 0.1\%$  OF SPAN



# 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)

**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.

OTHER ZERO-BASED CURRENT AND VOLTAGES ARE AVAILABLE.  
 OPTIONAL EXTERNAL RESET CONTACT:  
 24 VDC AT 2 MA DC-SPECIFY

## PERFORMANCE

CALIBRATED ACCURACY:  $\pm 0.1\%$   
 LINEARITY:  $\pm 0.1\%$  MAX.,  $\pm 0.04\%$  TYPICAL  
 REPEATABILITY:  $\pm 0.05\%$  MAXIMUM  
 TEMPERATURE STABILITY:  $\pm 0.01\%$  / °F MAX.  
 $\pm 0.004\%$  / °F TYPICAL  
 LOAD EFFECT:  $\pm 0.01\%$  ZERO TO FULL LOAD

OUTPUT RIPPLE: 10 mV P/P MAXIMUM  
 RESPONSE TIME: ONE INTEGRATION PERIOD  
 TEMPERATURE RANGE: 0° TO 130°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

NOTE: ALL ACCURACIES ARE GIVEN AS A PERCENTAGE OF SPAN.

## 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	
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, SPAN, OUTPUT ZERO, AND TIME CONTROLS, AND EXTERNAL UPDATE/RESET CONTACT  
 MOUNTING: SURFACE MOUNTING STANDARD. SEE HOUSINGS SECTION FOR OPTIONS.  
 WEIGHT: NET UNIT: 2.6 POUNDS (1.18 HILOGRAMS); SHIPPING: 3.0 POUNDS (1.36 KILOGRAMS)

## OPTIONS

OPTION NUMBER	DESCRIPTION
I 18	LOW IMPEDANCE DC CURRENT INPUTS (1/10 OF STANDARD Z)
O 11	BIPOLAR VOLTAGE TO $\pm 10$ VDC: AT 1 mA, BIPOLAR CURRENT $\pm 1$ 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, AND 12 ENCLOSURES
H 16	PFA 12 HIGH-DENSITY, PLUG-IN ENCLOSURE

### Ordering Information

- Model number
- Input signal
- Internal or external update
- Period: in seconds or minutes
- Output signal
- 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.