



# ADTECH

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## ANALOG DIVIDER MODULE MODEL NO. ADB 51

THE ADTECH MODEL ADB 51 ANALOG DIVIDER MODULE OFFERS AN ACCURATE AND ECONOMICAL MEANS OF ACCEPTING TWO PROCESS INPUTS AND DIVIDING ONE BY THE OTHER,  $K = D$ . IT PROVIDES AN OUTPUT SIGNAL SUCH AS 4-20 MA DC, 1-5 VDC, OR A ZERO-BASED OUTPUT REPRESENTING THE COMPUTATION.

AN EXCLUSIVE OUTPUT OPTION (O 44) PROVIDES A PULSE RATE OUTPUT ALONG WITH THE STANDARD ANALOG OUTPUT. THIS ELIMINATES THE NEED FOR A SEPARATE LINEAR INTEGRATOR, LIT 56, IF THE OUTPUT IS TO BE TOTALIZED.

THE ADB 51 PROVIDES STANDARD PROCESS CURRENT OR VOLTAGE SIGNALS ON THE OUTPUT WITH A MAXIMUM OF 10 mV P/P OUTPUT RIPPLE. IT OFFERS, AS STANDARD, A CONVENIENT WAY OF INTERFACING SIGNALS TO A COMPUTER SYSTEM OR OTHER PROCESS INSTRUMENTATION FOR IMPROVED RESOLUTION.

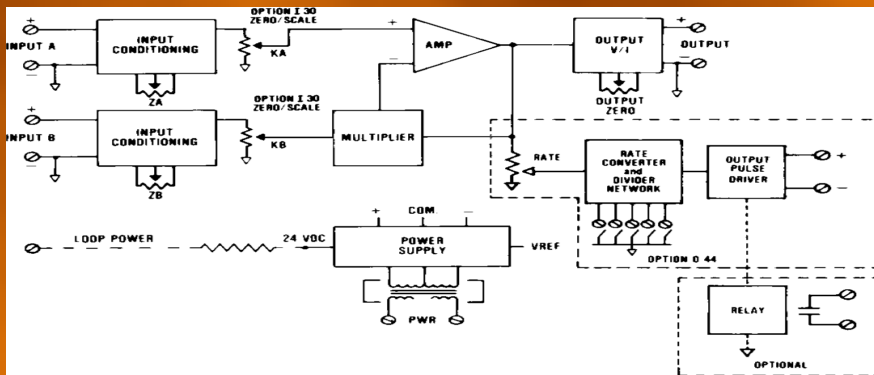
RECALIBRATION TO OTHER DESIRED RANGES IS EASY. IT OFFERS HIGH ADJUSTABILITY RANGE, AND ITS TEMPERATURE-STABLE, LOW-NOISE COMPONENTS DELIVER EXCELLENT STABILITY AND NOISE IMMUNITY.

AS COMPANION INSTRUMENTS, ADTECH ALSO OFFERS TWO MODELS WITH THREE ANALOG INPUTS AND ONE OUTPUT AS DESCRIBED IN THE FOLLOWING PARAGRAPH.

MDB 52 IS SUITABLE FOR COMPUTING EQUATIONS SUCH AS  $(A \times B)/C$ . THE MFM 32 IS SPECIFICALLY DESIGNED TO COMPUTE COMPENSATED MASS FLOW, FROM INPUTS OF  $\Delta P$  OR LINEAR FLOW TRANSMITTER, TEMPERATURE, AND PRESSURE TRANSMITTERS. ALL THESE PRODUCTS OFFER THE OPTIONAL PULSE RATE OUTPUT-OPTION O44.

### TYPICAL APPLICATIONS

- Fuel-air ratio control
- Temperature compensation of flow
- Ratio computation

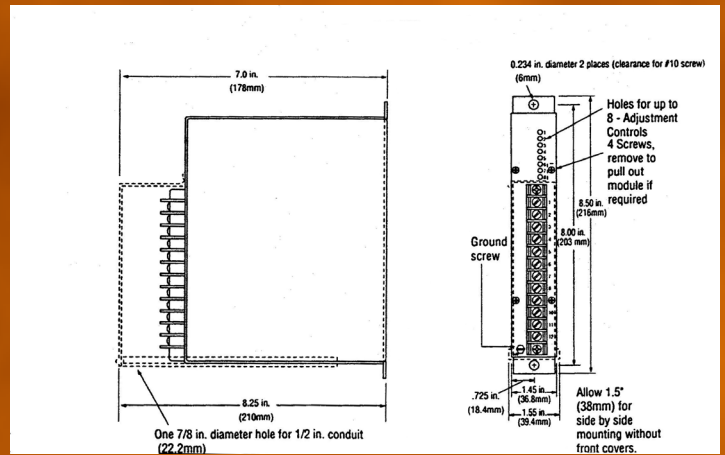
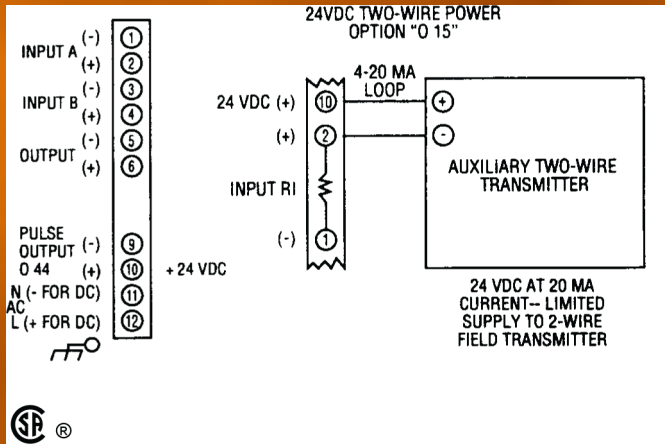


### FEATURES

- BASIC EQUATION:  $K \frac{a}{b} = D$
- 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
- LOW IMPEDANCE CURRENT INPUTS: 1/10 STANDARD-OPTIONAL
- DC PROCESS SIGNAL OUTPUTS: CURRENT AND VOLTAGE
- REPEATABILITY:  $\pm 0.02\%$  OF SPAN
- HIGH ACCURACY:  $\pm 0.1\%$  OF SPAN
- SPAN ADJUSTMENT: 0-100% BOTH INPUTS
- ZERO SUPPRESSION: 0-100% BOTH INPUTS--OPTIONAL



# 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.

NOTE: INPUT B RANGE LIMITED TO 10% TO 100%

### 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:  $\pm 0.1\%$  REFERRED TO INPUT

LINEARITY:  $\pm 0.1\%$  X RATIO 1/B

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

OUTPUT RIPPLE: 10 mV P/P MAXIMUM

RESPONSE TIME: 150 MILLISECONDS

NOTE: ALL ACCURACIES ARE GIVEN AS A PERCENTAGE OF SPAN

TEMPERATURE RANGE:  $0^{\circ}$  TO  $140^{\circ}\text{F}$  ( $-18^{\circ}$  TO  $60^{\circ}\text{C}$ )

OPERATING:  $-40^{\circ}$  TO  $185^{\circ}\text{F}$  ( $-40^{\circ}$  TO  $85^{\circ}\text{C}$ ) STORAGE

POWER SUPPLY EFFECT:  $\pm 0.05\%$  FOR A

$\pm 10\%$  POWER VARIATION

## POWER

115 VAC: 50/60 HZ, 0.7 PF (STANDARD)

12 VDC: ISOLATED (OPTION P8)

24 VDC: NON-ISOLATED (OPTION P1)

24 VDC: ISOLATED (OPTION P2)

48 VDC: ISOLATED

125 VDC: ISOLATED (105-140 VDC)

230 VAC: 50/60 HZ, 0.7 PF

(OPTION P3)

(OPTION P4)

(OPTION P5)

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, KA, KB, ZA, AND ZB CONTROLS AND OPTIONAL RATE CONTROL

MOUNTING: SURFACE MOUNTING STANDARD. SEE HOUSINGS SECTION FOR OPTIONS.

WEIGHT: NET UNIT: 2.6 POUNDS (1.18 KILOGRAMS); SHIPPING: 3.0 POUNDS (1.6 KILOGRAMS)

## OPTIONS

### OPTION NUMBER

OPTION NUMBER	DESCRIPTION
I 14	VOLTAGE INPUTS TO 200 VDC, 1 MEGOHM MIN IMPEDANCE; CURRENT INPUTS OF 100 mA MAX.
I 18	LOW IMPEDANCE DC CURRENT INPUTS (1/10 OF STANDARD Z)
I 30	ZERO SUPPRESSION
O 10	BIPOLAR CURRENT (LARGER THAN $\pm 1$ MA)
O 11	BIPOLAR VOLTAGE TO $\pm 10$ VDC; AT 1 MA, BIPOLAR CURRENT $\pm 1$ MA
O 15	TWO-WIRE TRANSMITTER EXCITATION
O 17	INTERNAL MERCURY-WETTED RELAY
O 21	VOLTAGE PULSE- SPECIFY VOLTAGE
O 44	PULSE OUTPUT
O 59	10-1,000 CPS OUTPUT (WITH OPTION O44)
H 10	THIN-LINE CONDUIT MOUNTING PLATE AND TERMINAL COVER
H 13B, H 14B, H 15B	NEMA 4.7, AND 12 ENCLOSURES

### Ordering Information

- Model number
- Input signal--bias
- 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.