



ADTECH
Analog-Digital Technology, Inc.

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, $K \frac{A}{B} = D$. It provides an output signal such as 4-20 mA DC, 1-5 VDC, or a zero-based output representing the computation.

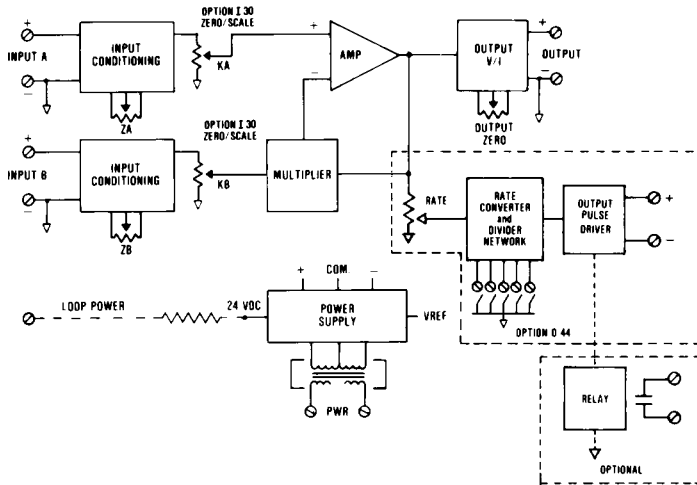
An exclusive output option (O 44) provides a pulse rate output along with the standard analog output. This eliminates the need for a separate linear integrator, LIT 56, if the output is to be totalized.

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 ΔP or linear flow transmitter, temperature, and pressure transmitters. All these products offer the optional pulse rate output--option O 44.



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

Analog Divider Module

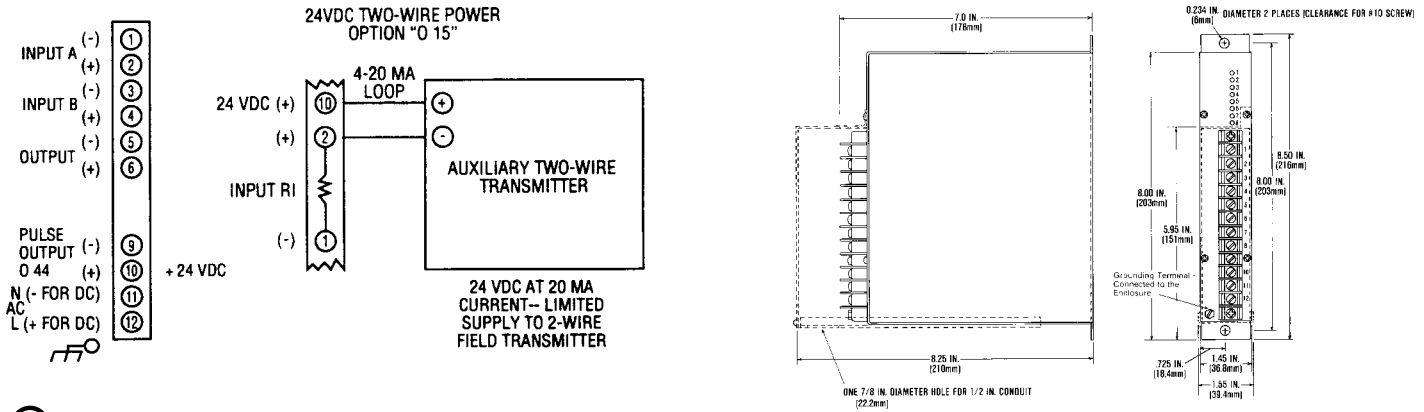
Model No. ADB 51

Typical Applications

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



Connections/Dimensions



Input/Output

Input Signals (any mix, 2 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)

Note: Input B range limited to 10% to 100%.

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: $\pm 0.1\%$ 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

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)
12 VDC: Isolated (Option P8)
24 VDC: Non-isolated (Option P1)
24 VDC: Isolated (Option P2)

48 VDC: Isolated (Option P3)
125 VDC: Isolated (105-140 VDC) (Option P4)
230 VAC: 50/60 Hz, 0.7 PF (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 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 (1.36 kilograms)

Options

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/elevation
O 10	Bipolar current (larger than ± 1 mA)
O 11	Bipolar voltage output to ± 10 VDC: at 1 mA, bipolar current ± 1 mA
O 15	Two-wire transmitter excitation
O 17	Internal mercury wetted relay (with option O 44)
O 21	Voltage pulse--specify voltage (with option O 44)
O 44	Pulse output
O 59	10-1,000 CPS output (with option O 44)
H 10	Thin-line conduit mounting plate and terminal cover
H 13B, H 14B, H 15B	NEMA 4, 7, and 12 enclosures

Represented by:



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Ordering Information

- Model number
- Input signal
- Equation and scaling factors
- Output signals
- 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.

Information subject to change without notice.

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