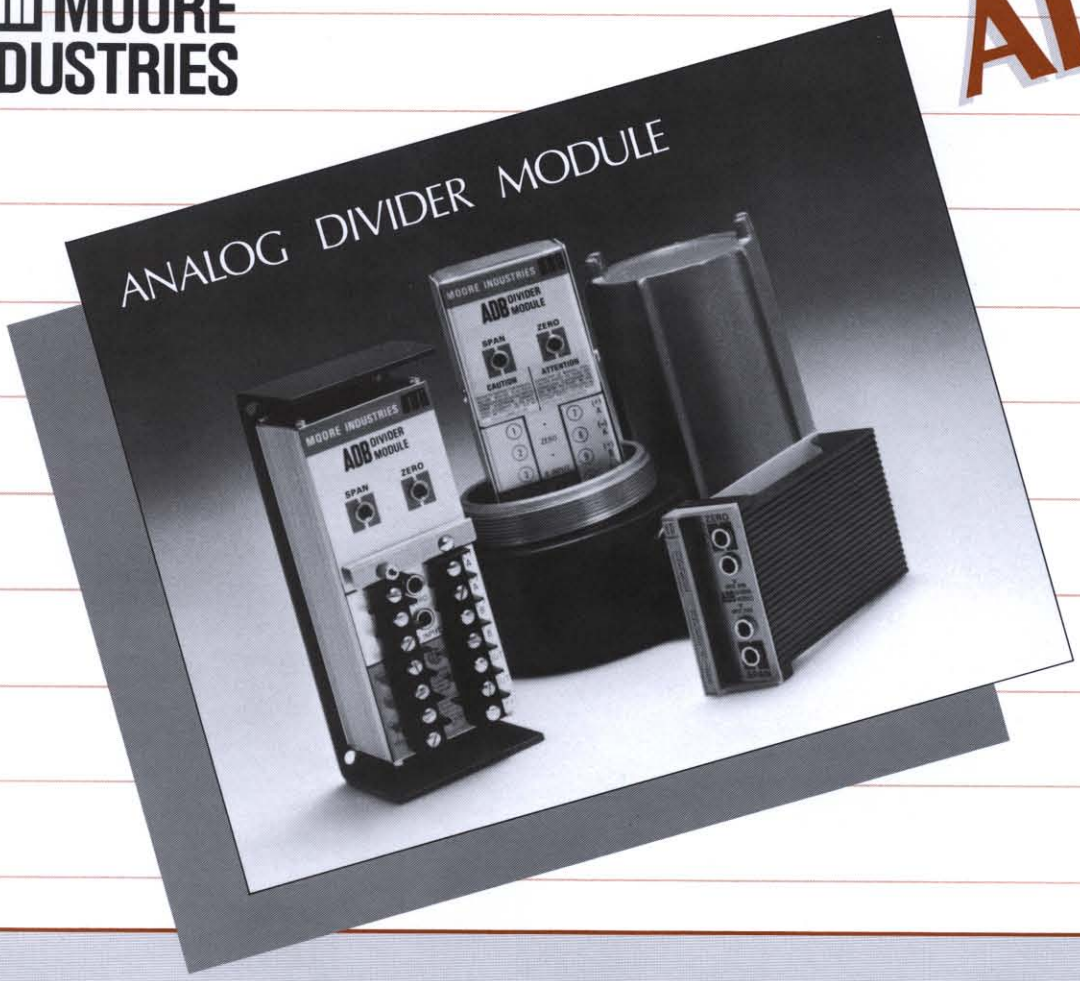
MOORE INDUSTRIES

ADB



SOLVES PROCESS EQUATIONS
Volumetric Flow, Ratios, Density Compensation

HIGH ACCURACY
+0.25% of Span

LOW OUTPUT RIPPLE
10MV P/P Maximum

VERSATILE MOUNTING
Standard Surface Mount or Compact Plug-In

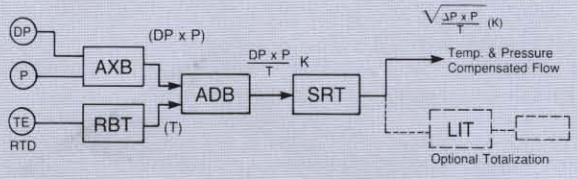
The Moore Industries Model ADB Analog Divider Module divides one process input percentage by another with optional scaling (-KO option) to provide an output, either current or voltage, representing the quotient as a percentage. The computation performed by the ADB may be expressed as follows:

$$\%\ \text{output} = \frac{\%\ \text{A input}}{\%\ \text{B input}}\ (K)$$

The ADB is especially useful in computations required to obtain volumetric flow. The following block diagram illustrates a typical application of the ADB represented by the equation:

$$\text{Flow} = \sqrt{\frac{DP \times P}{T}}\ (K) \quad \text{where}$$

DP is a differential pressure flow measurement
P is absolute static pressure
T is absolute temperature



The ADB is used above with several other Moore Industries' Modules: the AXB Multiplier Module and the SRT Square Root Extracting Module in a volumetric flow computing system where the flowing medium is compensated for temperature and static pressure variations. The normalized flow may then be optionally totalized using the Moore Industries Module LIT Linear Integrating Totalizer at the output of the system.

ADB–Analog Divider Module

INPUT:

Current:
1-5mA into 200 ohms nominal
4-20mA into 50 ohms nominal
10-50mA into 20 ohms nominal

Voltage:
0-5V, 1-5V standard
0.5 megohms input impedance
Other voltages optional

FRONT PANEL ADJUSTMENTS: Adjustable with multiturn potentiometers.

Span: With full scale input, adjusts output to 100% ±20% of selected output span

Zero: With minimum input, adjusts output to 0% ±10% of selected output span

A & B Input Zero: Compensates for input live zero offset for specified zero percent input ±20% of span

OUTPUT: Operational amplifier feedback current source; output limited to 150% of maximum output range value

Current:
1-5mA into 0-4800 ohms load
4-20mA into 0-1200 ohms load
10-50mA into 0-480 ohms load

Voltage: 1-5Vdc standard into 20K ohms minimum

Ripple: Less than 0.25% of maximum signal (10mV maximum p/p for 5V signal)

Load Effect: ±0.01% of span from 0 to maximum load resistance current output

PERFORMANCE:

Calibration Capability: ±0.25% of span

Ambient Temperature:

Range: −29°C to +82°C (−20°F to +180°F)

Effect: ±0.01%/°F over above range

Frequency Response: 50Hz (3dB point)

Isolation: Voltage output units have input negative side common to output negative side. Current output models have output negative side elevated above input negative side. Power input isolation is maintained on both ac and dc powered units.

POWER INPUT:

24Vdc, 45Vdc, +10%
117Vac, 220Vac, 240Vac, 50/60Hz, ±10%
5 watts nominal

Line Voltage Effect: ac or dc: ±0.005% line voltage change

OPTIONS:

-TX	Two-wire transmitter excitation 30Vdc @ 25mA to power one 4-20mA two-wire field transmitter
-KO	Output internal "K" factor (define value/set at factory)
-KA	Output internal "K" factor (define value/set at factory)
-KB	"B" input internal "K" factor (define value/set at factory)
-RF	RFI/EMI protection 50V/m – abc = ±0.1% F.S. as defined by SAMA Standard 33.1

For other options, see Housings, Options, Accessories brochure.

HOUSINGS:

STD	Standard (illustrated)
AB	Angle bracket mounting
CP	Conduit plate for standard units
D2	Conduit plate, includes aluminum saftey cover to meet Div. II Clasification
EX	Explosion-proof enclosure
WT	Water-tight enclosure (NEMA 4)
OT	Oil-tight enclosure (NEMA 12)
PC	Plug-in card
PM	Panel mount enclosure
GP	General purpose enclosure (NEMA 1)

CERTIFICATION: CSA

ISA COMPLIANCE: ISA S50.1, Section 5

WEIGHT: Approximately 2 lbs. (908 grams)

ORDERING INFORMATION:

Specify the following:
1. Input
2. Output
3. Power input
4. Options
5. Housing

SAMPLE MODEL NUMBER:

ADB/A4-20MA/B10-50MA/1-5V/117AC/-KO-TX [STD]