

TWO TO FOUR INPUTS

Similar or Mixed Signals

ADDS AND/OR SUBTRACTS

Any Combination

OPTIONAL WEIGHTING CONSTANTS

For Uniform Scaling

CASCADE CAPABILITY

For Over Four Inputs

The Moore Industries Model ASM Adder-Subtractor Module accepts from two to four standard process input signals and provides an output signal proportional to any of four combinations of the sum or difference of the inputs. The inputs may be specified to include a combination of currents and voltages minimizing the need for pre-conditioning.

Applications include summing like measurements such as flow or mass in batch mixing. Options include means for individual weighting of inputs for purposes of normalizing transducer factors if required.

The Model ASM is compatible with other comput-

ing modules such as the AXB Multiplier, the SRT Square Root Transmitter, and the ADB Analog Divider Module, enabling the system designer to set up complex process functions from standard building blocks.

Power supply isolation is standard in the ASM. If input or output isolation is required the user should apply the Model SCT Signal Converter, which includes complete isolation.

The Model ASM may be ordered in either the standard module as illustrated or the optional plug-in card version which mounts directly in a card rack.

ASM-Adder-Subtractor Module

INPUT:

Input signals may be any combination of standard inputs.

Current:

1-5mA into 1000 ohms
4-20mA into 250 ohms
10-50mA into 100 ohms

Voltage: *

0-5V, 1-5V
250,000 ohms minimum input impedance
Other voltages optional

Inputs Available: 2, 3, 4

FRONT PANEL ADJUSTMENTS: Adjustable with multi-turn potentiometer

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

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

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

Current:

1-5mA into 0-4800 ohm load
4-20mA into 0-1200 ohm load
10-50mA into 0-480 ohm load

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

Function:

Output W = A + B + C + D

Output X = A + B + C - D

Output Y = A + B - C - D

Output Z = A - B - C - D

NOTE: In subtractive configurations, net must always be positive.

Ripple: 10mV P/P at maximum span and maximum load resistance

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

PERFORMANCE:

Calibration Capability: ± 0.5% of span (linearity and repeatability)

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:

117Vac, 240Vac, 50/60Hz ± 10%

24Vdc, 45Vdc ± 10%

5 watts nominal

Line Voltage Effect: ac or dc: ± 0.005%/1% line change

OUTPUT FORMULA:

$$\text{Output} = \frac{A \pm B \pm C \pm D}{\text{NO. OF ADD INPUTS}}$$

HOUSING:

STD Standard enclosure as illustrated

AB Angle bracket mounting

CP Conduit plate for use with standard units

EX Explosion-proof enclosure, Single Unit-Div. 1

GP General purpose enclosure, Single Unit-NEMA 1

OT Oil-tight enclosure, Single unit-NEMA 12

PC Plug-in card

PM Panel mount enclosure

WT Water-tight enclosure, Single Unit-NEMA 4

OPTIONS:

-TX Two-wire transmitter excitation 35Vdc @ 25mA output to two-wire field transmitter, 4-20mA only

-RF RFI/EMI

-KO Internal "K" factor (factory set)

CERTIFICATION: CSA

WEIGHT: Approximately 2 lbs. (908 grams)

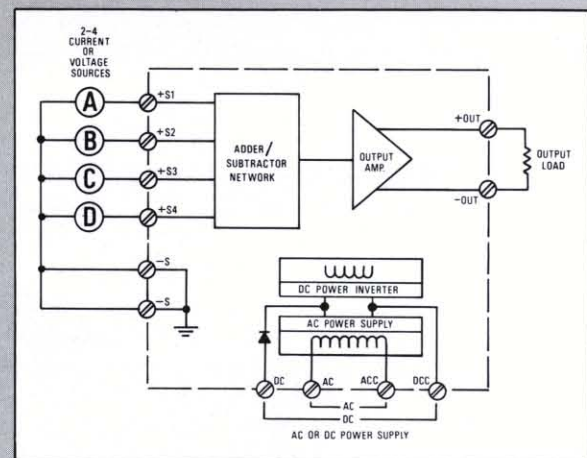
ORDERING INFORMATION:

Specify the following:

1. Input-range of voltage or current and number of inputs including scaling if required.
2. Output-span of voltage or current and function letter
3. Power input
4. Options
5. Housing

EXAMPLE MODEL NUMBER:

ASM/4X4-20MA/W1-5V/117AC/-TX [STD]



***NOTE:** Use 1-5V signal range for interconnection of two or more modules



United States
Tel: (818) 894-7111
FAX: (818) 891-2816

Australia
Tel: (02) 525-9177
FAX: (02) 525-7296

Belgium
Tel: 03/235.35.44
FAX: 03/271.00.17

Netherlands
Tel: (0)344-617971
FAX: (0)344-615920

United Kingdom
Tel: 01293 514488
FAX: 01293 536852