

A 6 Analog Input Module for the MOSCAD-L RTU

The 6 AI analog Input module is an accessory to the MOSCAD-L RTU. It allows 6 dc analog currents, from other on-site equipment, to be connected to the RTU. Examples include tank level sensors, flow-rate sensors, and RPM sensors.

Data Input

The analog currents applied to the module are multiplexed to an on-module analog-to-digital converter (ADC), all under the control of the MOSCAD-L CPU module.

As controlled by the defined application program, the 6AI module will read the instantaneous value of one or more of the inputs and move that data from the 6AI module into the CPU via the motherboard. This data may be used by the application program to perform the desired functions.

Self-Calibrating

The 6AI module also multiplexes two additional on-module inputs to the ADC, namely logic ground and a calibration voltage.

These digitized signals are used to:

- Eliminate any ADC offset (drift), thereby stabilizing the DC output.
- Check the ADC and other common circuit components for proper operation.

Isolated Inputs

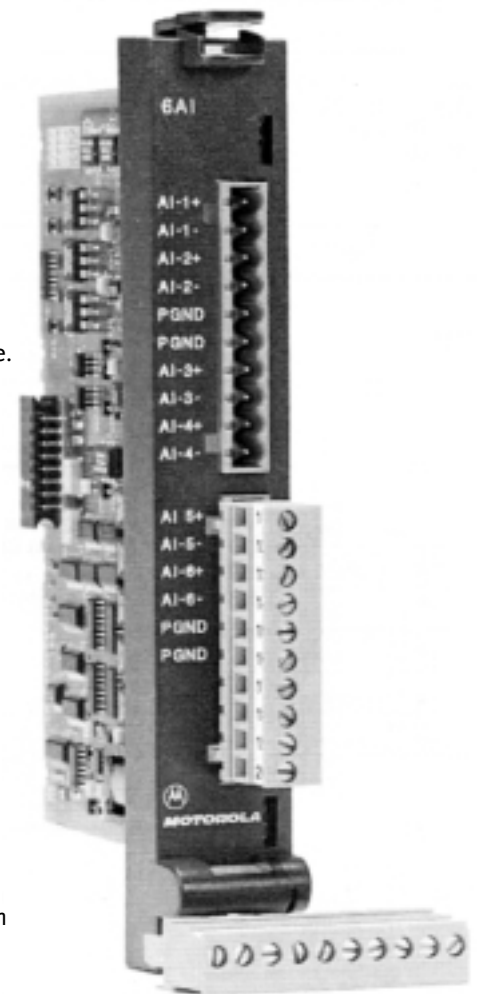
All inputs are protected by optical isolators that also function as the multiplex switches. An on-module power supply further isolates the field-side circuits from the RTU.

Surge Withstand Capability (SWC) conformance is assured for the safety of the equipment and technicians.

Packaging

The module plugs and locks into the module rack. Wire connections (up to 14 ga. wire) are made to removable connectors on the front of the module. No jumpers, calibration pots, etc. are located on the module – any calibration is done electronically with software contained in the Programming Toolbox.

Modularity allows the MOSCAD-L RTU to be easily expanded as system wants and needs change, and makes field module replacement quick and easy.

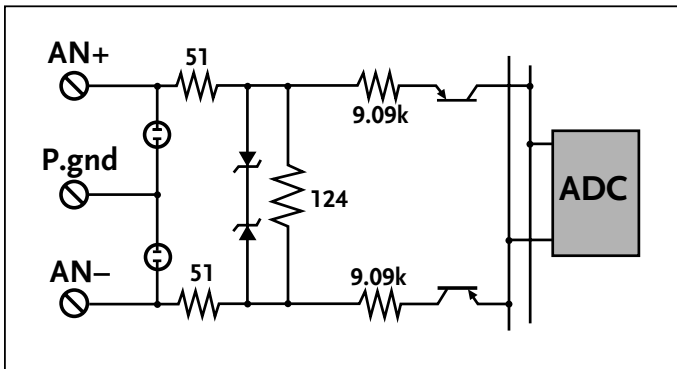


6AI Module for the MOSCAD-L RTU

General Specifications

Analog Inputs	
Type:	Six, 4-20 ma
Input Resistance:	226 ohm
Resolution:	12 bit (11 bit + sign)
Accuracy and Stability:	±0.1% of full scale @+25°C; ±50 ppm/°C
Conversion Time:	120 millisecond (per channel)
Common Mode Rejection:	60 dB minimum @ 60 Hz
Input Isolation:	Per IEC 255-5: between logic and analog input = 2.5 kV; insulation resistance = 300 Mohm @ 500V
Input Protection:	Per ANSI/IEEE C37.90.1-1989: oscillatory wave = 2.5 kV; fast transient = 4 kV Per IEC 801-2, air discharge: 8 kV; contacts: 4 kV Per IEC 801-3, radiation immunity: 3 V/m Per IEC 801-4, fast transient: 0.5 kV
Radiated Emission:	Per IEC EN55022 and FCC Part 15
Diagnostics:	LEDs on CPU module: 6 AI underflow, 6 AI overflow
Power Consumption:	5 Vdc: 10 ma; 12 Vdc: 35 ma
Humidity:	0 to 90% @+50°C without condensation
Temperature:	-30 to +60°C

Analog Input Equivalent Circuit



Connections Chart

Term	Function	Term	Function	Term	Function	Term	Function
1	AN1 (+)	6	Pgnd	11	AN5 (+)	16	Pgnd
2	AN1 (-)	7	AN3 (+)	12	AN5 (-)	17	Not used
3	AN2 (+)	8	AN3 (-)	13	AN6 (+)	18	Not used
4	AN2 (-)	9	AN4 (+)	14	AN6 (-)	19	Not used
5	Pgnd	10	AN4 (-)	15	Pgnd	20	Not used

MOTOROLA

Motorola U.S.A.
1301 E. Algonquin Road
Schaumburg, Illinois 60196
Phone: 1-800-567-7347

Motorola Canada Ltd.
3900 Victoria Park Avenue
North York, Ontario M2H 3H7
Phone: 1-800-268-5758

Motorola Latin America Division
8000 W. Sunrise Blvd.
Plantation, FL 33322
Phone: 1-954-723-8563



Motorola Asia Pacific Ltd.
39/FL NatWest Tower
Times Square, Causeway Bay
Hong Kong, PRC-SAR
Phone: 852-2966-4366

Motorola UK Ltd.
Jays Close, Viable Industrial Estate
Basingstoke, Hampshire
RG22 4PD
Phone: +44-1256-484341

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