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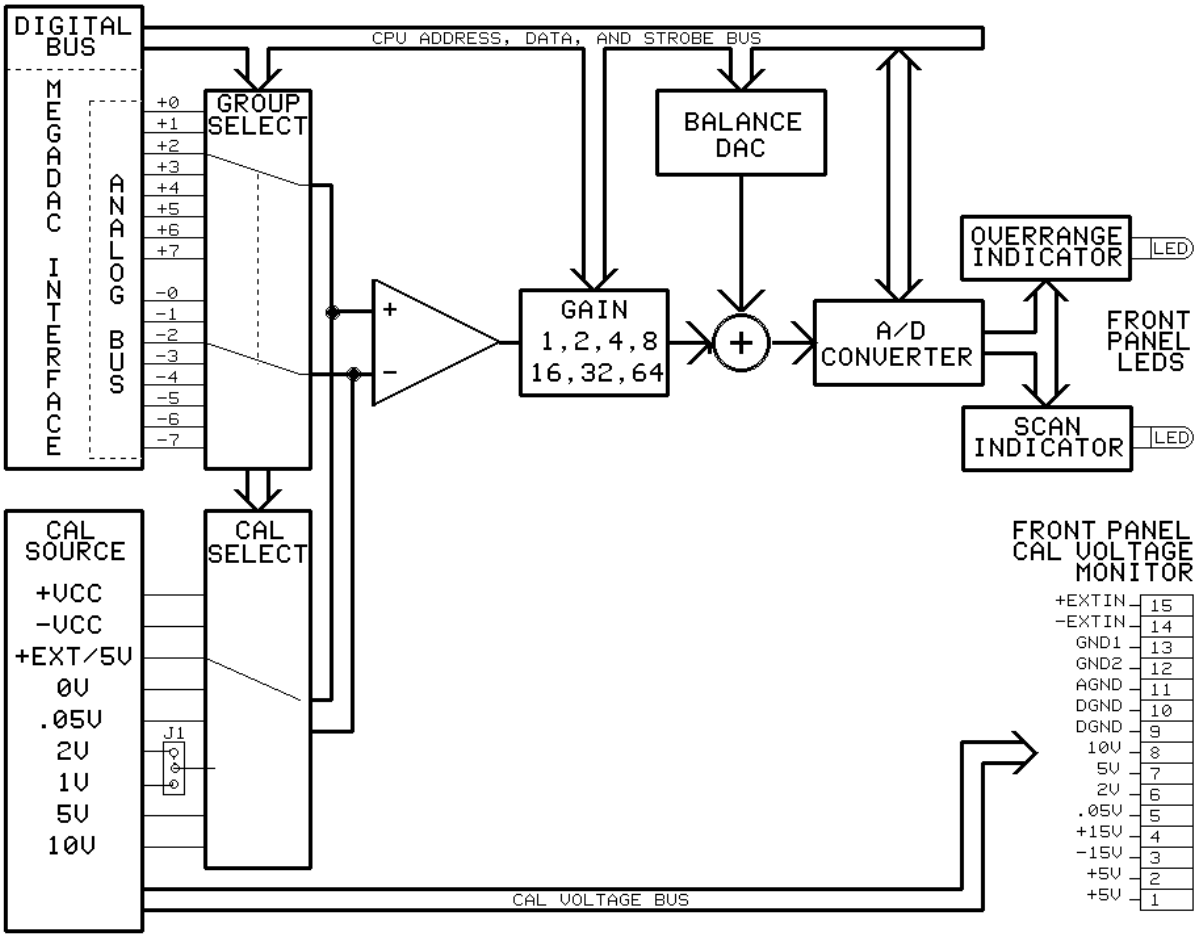
Find the *LDS / Optim Electronics Megadac 5406DC* at our website: *Click HERE*

ADC 3016

SPECIFICATIONS

The ADC (Analog-to-Digital Converter) module has second-tier multiplexing, post-gain of 1, 2, 4, 8, 16, 32, 64, and 128, sample-and-hold, a channel balance digital-to-analog converter, a high speed analog-to-digital converter, and calibration reference voltages. Figure 1 is a block diagram of the ADC module, and detailed specifications are in Table 1.

FIGURE 1 ADC 3016



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TABLE 1 ADC SPECIFICATIONS

Post gains	1, 2, 4, 8, 16, 32, 64, and 128
Gain error	300 ppm
Non linearity	0.01% of FS
Gain drift	0.0015% of FS per deg C
Offset drift	0.0005% of FS per deg C
Settling time	to 0.01% in 30 uS
Noise	312 uV rms
Balance range	50% of FS
Cal Voltage 1	10 Volts ± 200 ppm
Cal Voltage 2	5 Volts ± 200 ppm
Cal Voltage 3	2 Volts ± 200 ppm
Cal Voltage 4	.05 Volts ± 400 ppm

FS = Full Scale

INSTALLATION

No configuration jumpers are used. Put your ADC module in the leftmost slot. Press firmly to fully seat the module and turn the top and bottom 1/4 turn fasteners CCW.

OPERATION

Table 2 shows how the range and resolution of the ADC changes with Post Gain.

BALANCE During balance, the MEGADAC measures the voltage of the channels to be balanced and adjusts the BALANCE DAC in Figure 1 to bring each channel to zero. After balance, each channel is measured with its zero correction from the BALANCE DAC.

SCAN LED This green LED will flash once for each analog to digital conversion while scanning.

OVERANGE LED This red LED will flash when the input signal to ADC 3016 is greater than ± 10 volts.

CAL VOLTAGE CONNECTOR This connector allows access to the calibration voltage sources for monitoring and setting them. See pin-outs in Figure 1.

CALIBRATION VOLTAGE SOURCES The ADC 3016 has 4 precision voltage sources 10, 5, 2, and .05 volts. These voltages are distributed throughout the MEGADAC via the analog backplane and can be accessed by other modules for use as calibration or excitation references.

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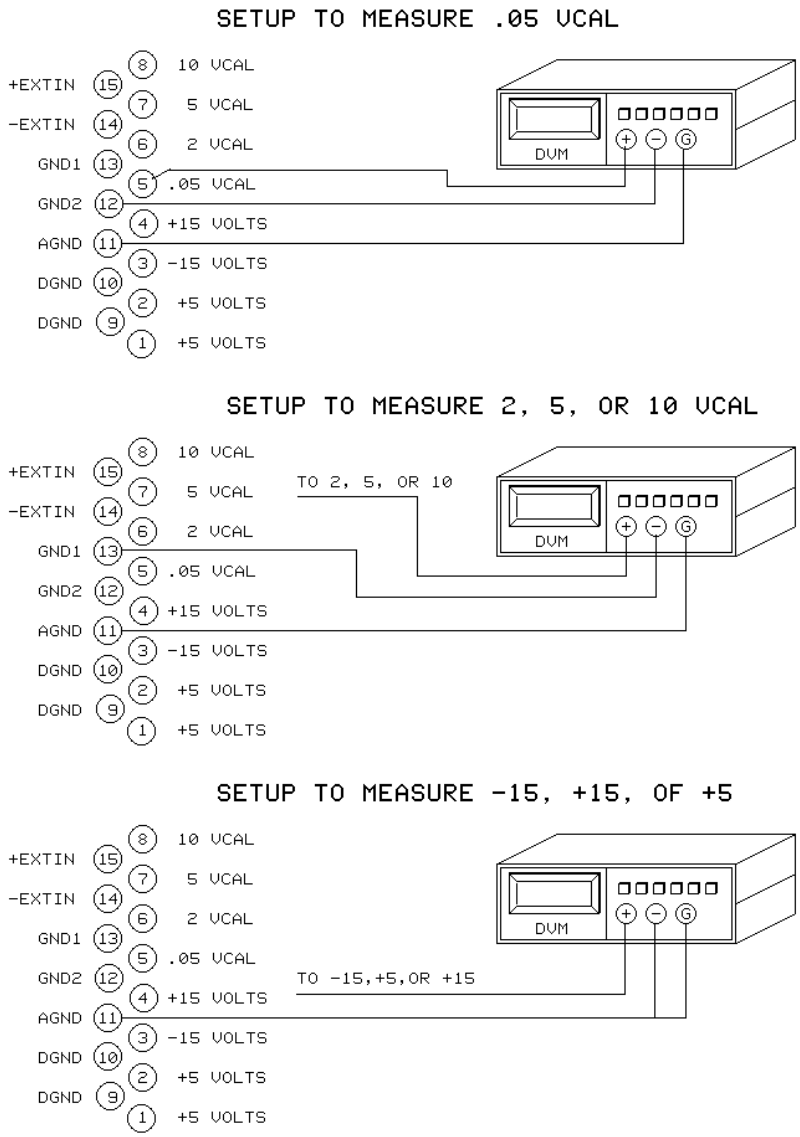
TABLE 2 GAIN, RANGE AND RESOLUTION

POST GAIN	Gain = 1		Gain = 100	
	RANGE	RESOLUTION	RANGE	RESOLUTION
1	10.0 V	312.5 uV	100.0 mV	3.125 uV
2	5.0	156.25	50.0	1.56
4	2.5	78.125	25.0	0.78125
8	1.250	39.0625	12.5	0.390625
16	0.625	19.53125	6.25	0.1953125
32	0.3125	9.765625	3.125	0.09765625
64	0.15625	4.8828125	1.5625	0.048828125
128	0.078125	2.44140625	0.78125	0.0244140625

CALIBRATION CHECK The front panel connector accesses the internal calibration voltage sources. Each voltage should be measured using the 3-wire connection shown in Figure 2. Wait at least 15 minutes after power-on at the normal ambient temperature for stability. Use a 8.5 digit meter for an accurate check however a rough check can be done with a 6 digit meter. If your MEGADAC is found to be out of specification, it must be recalibrated.

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FIGURE 2 CAL VOLTAGE MONITORING



VOLTAGE	TOLERANCE
10 VCAL	+/- 2 mV
5 VCAL	+/- 1 mV
2 VCAL	+/- 400 uV
.05 VCAL	+/- 20 uV
+5 VOLTS	+/-.25 V
+15 VOLTS	+.15V -.35V
-15 VOLTS	+.35V -.15V

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