Signal descriptions for setup of AT-MIO-16X

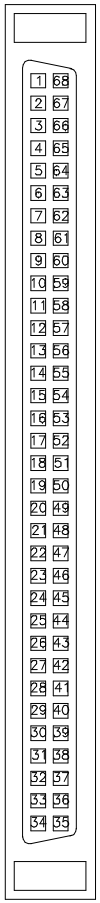
Function	AT-MIO-16X	Measured Signal	Represents
Magnet Voltage	ACH0 (+) ACH8 (-)	Differential Input -10 V to +10 V	Same
Magnet Current	ACH1 (+) ACH9 (-)	Differential Input 0 to 5 V	0 to 100 A
Ramp Rate	DAC0	Single-Ended Output 0 to 5 V	0 to 0.1 A[a] 0 to 1 A 0 to 10 A
Current Limit	DAC1	Single-Ended Output 0 to 5 V	0 to 100 A
Model 610 Polarity[b] Switch	ADIO1	Digital Output	OFF = Reverse Current ON = Forward Current
Persistent Switch[c]	ADIO2	Digital Output	OFF = Heater ON ON = Heater OFF
Computer/Manual Mode Switch	BDIO0	Digital Input	OFF = Computer ON = Manual

a. Range is selected by the front panel switch.
b. This output has no effect if a Model 610 is not present in the system.
c. The computer control is an OR function with the front panel keyswitch.

Use the Current Limit and Ramp Rate to control the ramping mode and speed. If the Current Limit is set above the magnet current, the Model 412 will ramp UP to the limit at the Ramp Rate. If the Current Limit is set below the magnet current, the Model 412 will ramp DOWN to the limit. The Voltage Limit cannot be controlled remotely, however the front panel setting is enforced during computer control.

The provided drawing on the following page indicates the interconnections required between the AT-MIO-16X and the Model 412. The digital I/O on the Model 412 requires the I/O card to be able to sink or source at least 12 mA (the AT-MIO-16X is connected so as to sink the current since it is not capable of sourcing 12 mA).

DATE	REV	DESCRIPTION	DR.	CK.	AUTH.



CABLE
END VIEW

NATIONAL INSTRUMENTS AT-MIO-16X, 68-PIN I/O CONNECTOR

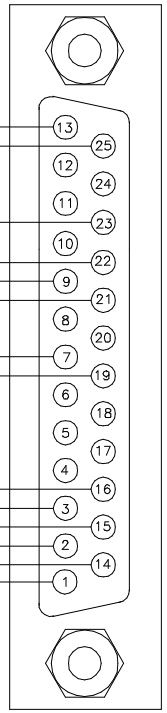
PIN#	SIGNAL	FUNCTION
49	ADIO2	DIGITAL I/O PORT A SIGNAL 2
8	+5V	+5 V SOURCE
17	ADIO1	DIGITAL I/O PORT A SIGNAL 1
8	+5V	+5 V SOURCE
34	ACH8	ANALOG INPUT CHANNEL 8
68	ACH0	ANALOG INPUT CHANNEL 0
54, 56	AO_GND, AI_GND	ANALOG GROUNDS
33	ACH1	ANALOG INPUT CHANNEL 1
66	ACH9	ANALOG INPUT CHANNEL 9
35	DGND	DIGITAL GROUND
19	BDIO0	DIGITAL I/O PORT B SIGNAL 0
21	DAC1	ANALOG OUTPUT CHANNEL 1
22	DAC0	ANALOG OUTPUT CHANNEL 0

AMI MODEL 412 J5 25-PIN D-SUB CONNECTOR

PIN#	SIGNAL
13	PERSISTENT SW. HTR. COMMON
25	PERSISTENT SW. HTR. OUTPUT
23	MODEL 610 CONTROL COMMON
22	MODEL 610 CONTROL OUTPUT
9	MAGNET VOLTAGE COMMON
21	MAGNET VOLTAGE (+)
7	ANALOG COMMON
19	5V ANALOG OUTPUT
16	COMPUTER/MANUAL MODE
3	MODE SWITCH
2	CURRENT LIMIT INPUT
1	RAMP RATE INPUT

1 MEG OHM

470 OHM



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END VIEW

ALL DIMENSIONS IN INCHES
UNLESS OTHERWISE SPECIFIED

AMERICAN MAGNETICS, INC.			
AMI	DESCRIPTION: MODEL 41X I/O CONNECTOR DIAGRAM		
DATE: 1/16/97	DRAWN BY: GJB	REVIEWED BY: GJB	APPROVED: MM
SCALE: FULL	SIZE: B	DRAWING NO.: 97-412-2257	