RMC Four-Input Analog
12- and 16-bit Analog Interface for RMC100 Motion Controllers

The four-input, 12- and 16-bit analog modules allow the RMC series of high-performance motion controllers to interface with analog transducers. The 16-bit resolution module includes drive outputs and is capable of controlling high-precision pressure, force, and position applications. The 12-bit resolution module is capable of accepting pressure, force, and analog reference (e.g. joystick) inputs.

Refer to other RMC data sheets or the RMCWin online help for more information. Download RMCWin from Delta's web page at **www.deltamotion.com**.

16-bit Module Features
- Four isolated 16-bit inputs
- 8 times oversampling
- +10V, ±10V, +5V, ±5V, and 4-20mA input ranges
- +10V exciter output
- Two isolated, ±10V, 12-bit drive outputs per module
- Current output up to ±200mA with VC2100 converter option

12-bit Module Features
- Four isolated 12-bit inputs
- 8 times oversampling
- +10V, ±10V, +5V, ±5V, and 4-20mA input ranges
- +10V exciter output

16-bit Applications
- Closed loop positioning with analog transducers
- Closed loop pressure or force control
- Position/pressure control with analog position and pressure transducers
- High-resolution pressure inputs for position/pressure control with any of the RMC's position transducer interfaces
- High-resolution differential force inputs for position/force control using any of the RMC's position transducer interfaces

12-bit Applications
- Position/pressure control with analog pressure transducers and any of the RMC's position transducer interfaces
- Differential force inputs for position/force control with any of the RMC's position transducer interfaces
- Joystick or potentiometer inputs

System Applications
- Presses
- Injection/RIM/blow molding
- Edgers/headrigs/veneer lathes
- Pinch rollers/winders/wrappers
- Casting/forging
- Pneumatic press rolls
- Tube bending/forming
- Cyclic testing
- Mechanical Animation

Pressure/Force Control Option
For applications where pressure or force must be controlled, the RMC can be purchased with the Pressure/Force Control option.

With this option, an axis can maintain a specified force or follow a force profile.

This option also provides the capability of transitioning smoothly between position and pressure while in motion. In many applications, position/pressure control with just one valve simplifies hydraulics and improves performance.

Ordering Information
To indicate a 16-bit analog module, insert **-H***n* into the part number, where *n* is the number of modules (4 max).

To indicate a 12-bit analog module, insert **-A***n* into the part number, where *n* is the number of modules (2 max).

To include the Pressure/Force Control option, use **RMC101** instead of **RMC100**.

For example:

- **RMC100-H1-DI/O:** 2 channels of analog position control, and 2 extra analog inputs
- **RMC101-M1-A1-MB+:** 2 channels of MDT input with 4 channels of analog input and pressure control.

RMC Four-Input Analog

Specifications

16-bit (-H) Module		
	Inputs	Four 16-bit differential
	Isolation	750VDC
	Overvoltage protection	40 Volts
	Input Ranges	+10V, ±10V, +5V, ±5V, and 4-20mA (each channel independently configured using RMCWin)
	Input impedance	1MΩ
	Input filter slew rate	25V/ms
	Oversampling	8 times per control loop
	Offset drift with temperature	0.2 LSB/°C typical (+10V range)
	Gain drift with temperature	20ppm/°C typical (+10V range)
	Non-linearity	12 LSB (counts) typical (+10V range)
	Exciter Output	10VDC ± 2%, 8mA

Drive Interface (-H only)		
	Outputs	Two ±10V, 5mA maximum, 12-bit DAC
	Isolation	750VDC
	Current Output Accessory	VC2100 voltage-to-current converter output range is adjustable from ±10mA to ±200mA in 10mA steps

12-bit (-A) Module		
All specifications are the same as 16-bit (-H), except the following:	Inputs	Four 12-bit differential
	Offset drift with temperature	0.01 LSB/°C typical
	Non-linearity	1 LSB (count) typical
	Drive Outputs	None

Environment		
	Operating temperature	+32 to +140 °F (0 to +60 °C)
	Storage temperature	-40 to +185 °F (-40 to +85 °C)
	Agency compliance	CE, UL, CUL

Power Requirements		
	All RMC modules are powered from the RMC controller.	The user must supply power to the transducers unless the 10V exciter output is used.

Analog Wiring

Inputs 0 and 1:

Pin	Function
+In 0	Differential analog input 0 +
Res 0	Connect to +In 0 for 4-20mA
−In 0	Differential analog input 0 −
+In 1	Differential analog input 1 +
Res 1	Connect to +In 1 for 4-20mA
−In 1	Differential analog input 1 −
Input Cmn	Analog common (Isolated)
+10VDC Exciter Out	+10VDC @ 8mA exciter output

Drive Outputs 0 and 1 (not available on 12-bit module):

Pin	Function
Drv 0	Axis 0 Drive
Drv Cmn	Drive common (Isolated)
Drv 1	Axis 1 Drive
Case	Controller chassis ground (shield)

Inputs 2 and 3:

Pin	Function
+In 2	Differential analog input 2 +
Res 2	Connect to +In 2 for 4-20mA
−In 2	Differential analog input 2 −
+In 3	Differential analog input 3 +
Res 3	Connect to +In 3 for 4-20mA
−In 3	Differential analog input 3 −
Input Cmn	Analog common (Isolated)
Case	Controller chassis ground (shield)

Company Profile

Delta Computer Systems, Inc. manufactures motion controllers, color sensors/sorters, and other industrial controls providing high-performance automation solutions to a wide range of industries.