



RMC MDT

Magnetostrictive Transducer Interface for RMC100 Motion Controllers

The magnetostrictive displacement transducer (MDT) interface module allows the use of MDTs as high-resolution linear position feedback devices with the RMC series of high-performance motion controllers.

These absolute-position transducers are especially well suited for hydraulic applications because of their non-contact design, robustness, modularity, and resistance to contaminants.

The RMC MDT modules support Start/Stop and Pulse Width Modulated (PWM) transducers. The RMC can be configured to trigger from the rising or falling edges on Start/Stop transducers. MDTs with SSI output are supported by the RMC SSI module. See the *RMC SSI* data sheet for details.

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.

Applications

- Presses
- Injection/RIM/blow molding
- Packaging equipment
- Indexing/transfer lines
- Edgers/headrigs/veneer lathes
- Pinch rollers/winders/wrappers
- Casting/forging
- Palletizers/stackers
- Flying cutoff/curve sawing
- Cyclic testing
- Robotics/animatronics

MDT Module Features

- Two axes of MDT feedback per module
- Up to 0.001" resolution using Start/Stop transducers with one circulation
- Up to 0.0001" resolution using PWM transducers with multiple recirculations
- Transducer length up to 220 inches (0.004" resolution)
- Differential (recommended) or single-ended interface
- Support for multi-magnet transducers in development
- Two isolated, $\pm 10V$, 12-bit drive outputs per module
- Current output up to $\pm 200mA$ with VC2100 converter option

MDT Manufacturers

The following is a partial list of MDT manufacturers. Specify an external interrogation transducer for motion control.

- **Balluff**
Phone: 800-543-8390
(www.balluff.com)
- **MTS Systems Corp Sensors Division (Temposonics)**
Phone: 800-633-7609
(www.mtssensors.com)
- **Patriot Sensors & Controls Corp**
Phone: 800-635-0289
(www.patriotsensors.com)
- **TR Electronic**
Phone: 800-709-3300
(www.trelectronic.com)



Specifications

MDT Interface	Axes	Two per module
	Return Inputs	Two RS-422 differential
	Interrogation Outputs	Two RS-422 differential (External interrogation transducers are required for motion control)
	Electrostatic Discharge (ESD) protection	15kV
	Resolution	0.001" Start/Stop, 0.0001" PWM
	Circulations	1 Start/Stop; up to 16 PWM
	Count rate	120MHz
Drive Interface	Outputs	Two $\pm 10V$, 5mA maximum, 12-bit DAC
	Isolation	750VDC
	Current Output Accessory	VC2100 voltage-to-current converter output range is adjustable from $\pm 10mA$ to $\pm 200mA$ in 10mA steps
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. Refer to the MDT manufacturer's specifications for the individual transducer power requirements.

MDT Wiring

MDT 0:

Pin	Function
+Int 0	Axis 0 + Interrogation
-Int 0	Axis 0 - Interrogation
MDT Cmn	Transducer Common
+Ret 0	Axis 0 + Return
-Ret 0	Axis 0 - Return
Case	Controller Chassis Ground (shield)

MDT 1:

Pin	Function
+Int 1	Axis 1 + Interrogation
-Int 1	Axis 1 - Interrogation
MDT Cmn	Transducer Common
+Ret 1	Axis 1 + Return
-Ret 1	Axis 1 - Return
Case	Controller Chassis Ground (shield)

Drive Outputs:

Pin	Function
Drv 0	Axis 0 Drive
Drv Cmn	Drive Common
Drv 1	Axis 1 Drive
Case	Controller Chassis Ground (shield)

Ordering Information

Up to four MDT modules can be ordered in a single RMC unit. To specify an MDT interface module, insert **-M_n** into the part number. *n* indicates the number of modules (4 max). Refer to the *RMC SSI* data sheet for Synchronous Serial Interface MDTs.

For example:

- **RMC100-M1-PROFI:** 2 channels of MDT position control
- **RMC100-M2-MB+:** 4 channels of MDT position control

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.

