

# DIGITAL REMOTE

## M5i

- FORCE & TORQUE
- INTERCHANGEABLE SENSORS
- ONE DISPLAY - MANY SENSORS
- COMPUTER INTERFACES
- SELECTABLE UNITS



**Model R01**  
Tension/  
Compression  
Sensors



**Model R02**  
Compact  
Compression  
Sensors



**Model R03**  
Inline Tension/  
Compression  
Sensors



**Model R04**  
Miniature Tension/  
Compression  
Sensors



**Model R50**  
Universal Torque  
Sensors



**Model R51**  
Universal Torque  
Sensors  
Interchangeable  
Attachments

**M5i - Remote Display**  
with R50 Universal  
Torque Sensor



The unique **M5i Digital Remote Force and Torque Gauge** features extreme versatility with several force and torque sensors available for quick attachment to the M5i display.

The various force and torque sensors offer a wide range of capacities extending from 1/4 lbf to 10,000 lbf of force and 10 ozf-in to 100 lbf-in of torque.

The M5i with its remote sensors uses the M5 Force Gauge display with a force or torque sensor attached by remote cable. Thus, the M5i provides the same operational features found on the M5 Force Gauge with the integral sensor now remotely located by cable.

### CONSTRUCTION

- M5i Display - Cast aluminum housing.
- Coiled or un-coiled cable connects gauge to sensor.
- Sensors - Refer to individual specifications on the following pages.

### OPERATION

- Selected sensor attaches to M5i display for immediate use.
- Selectable force units: lbf, kgf, gf or N.
- Selectable torque units: lbf-in, ozf-in, kgf-mm, kgf-m, N-cm or N-m.
- Peak sampling rate: 7,000 Hz.
- Display rate: 2.5/sec.
- Data outputs: USB, RS232, Mitutoyo, Analog  $\pm 1$  Vdc.

### POWER REQUIREMENTS

- Rechargeable NiMH 9V battery for 10 hours of use with 8 hour charge.
- "Lo Bat" warning then gauge turns off.
- Selectable auto shut-off, after 30 minutes of inactivity, conserves battery.

### ACCESSORIES

- Various output cables are available.
- Hi / Lo limits indicator to set limit conditions for a test.
- Set point cable for use with motorized test stands.

### ACCURACY

- Total System: M5i Display ( $\pm 0.1\%$ ) + Sensor ( $\pm 0.XX\%$ ). See individual sensors.

### WEIGHT & DIMENSIONS:

- Weight: 0.7 lb [0.3 kg].
- Dimensions: 6" H x 2½" W x 1½" D.

Prices and specifications are subject to change without notice.

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### TENSION / COMPRESSION

Model R01



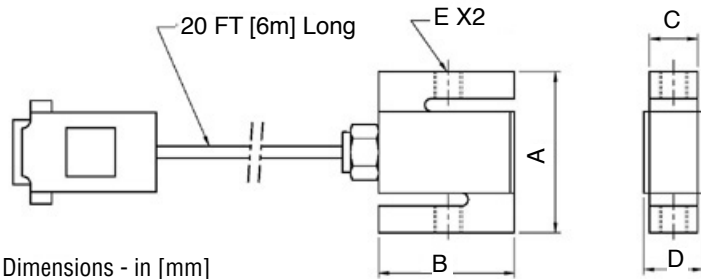
#### SPECIFICATIONS

Accuracy:  $\pm 0.15\%$  of full scale + M5i ( $\pm 0.1\%$ ).  
 Safe Overload: 150% of full scale.  
 Weight: 1.9 - 3.0 lb (0.4 - 1.4 kg).

MODEL	CAPACITY/GRADUATION				PRICE
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M5i	Advanced Force/Torque Indicator – 110 / 220 VAC				\$895*
MR01-50	50 lbf x 0.02 lbf	25 kgf x 0.01 kgf	250 N x	0.1 N	595
MR01-100	100 lbf x 0.05 lbf	50 kgf x 0.02 kgf	500 N x	0.5 N	595
MR01-200	200 lbf x 0.1 lbf	100 kgf x 0.05 kgf	1000 N x	0.5 N	595
MR01-500	500 lbf x 0.2 lbf	250 kgf x 0.1 kgf	2500 N x	1 N	595
MR01-1000	1000 lbf x 0.5 lbf	500 kgf x 0.2 kgf	5000 N x	2 N	595
MR01-2000	2000 lbf x 1 lbf	1000 kgf x 0.5 kgf	10000 N x	5 N	595
MR01-5000	5000 lbf x 2 lbf	2500 kgf x 1 kgf	25 kN x	0.01 kN	845
MR01-10000	10000 lbf x 5 lbf	5000 kgf x 2 kgf	50 kN x	0.02 kN	845

\*For total system add M5i price to sensor price.



Dimensions - in [mm]

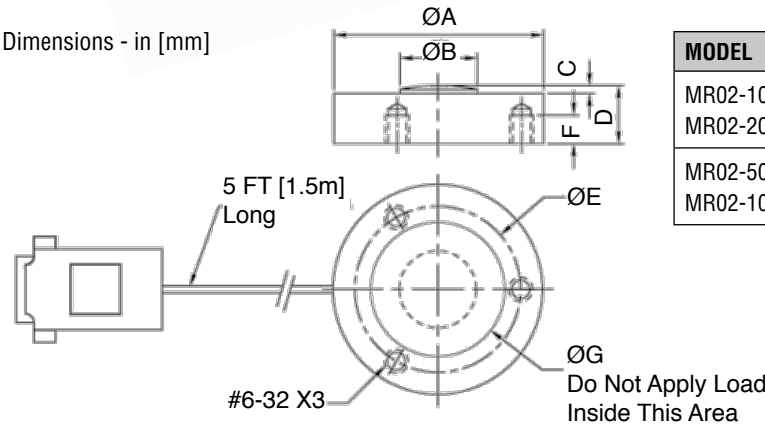
MODEL	A	B	C	D	E
MR01-50	2.40 [61.0]	2.00 [50.8]	0.46 [11.7]	0.65 [16.5]	1/4-28 UNF
MR01-100			0.71 [18.0]	0.90 [22.9]	1/2-20 UNF
MR01-200					
MR01-500					
MR01-1000	3.90 [99.1]	3.00 [76.2]	0.96 [24.4]	1.15 [29.2]	3/4-16 UNF
MR01-2000					
MR01-5000					
MR01-10000					

### COMPACT COMPRESSION

Model R02



Dimensions - in [mm]



MODEL	CAPACITY/GRADUATION				PRICE
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M5i	Advanced Force/Torque Indicator – 110 / 220 VAC				\$895*
MR02-100	100 lbf x 0.05 lbf	50 kgf x 0.02 kgf	500 N x	0.2 N	745
MR02-200	200 lbf x 0.1 lbf	100 kgf x 0.05 kgf	1000 N x	0.5 N	745
MR02-500	500 lbf x 0.2 lbf	250 kgf x 0.1 kgf	2500 N x	1 N	745
MR02-1000	1000 lbf x 0.5 lbf	500 kgf x 0.2 kgf	5000 N x	2 N	745
MR02-2000	2000 lbf x 1 lbf	1000 kgf x 0.5 kgf	10000 N x	5 N	745
MR02-5000	5000 lbf x 2 lbf	2500 kgf x 1 kgf	25 kN x	0.01 kN	745
MR02-10000	10000 lbf x 5 lbf	5000 kgf x 2 kgf	50 kN x	0.02 kN	745

\*For total system add M5i price to sensor price.

MODEL	ØA	ØB	C	D	ØE	F	ØG
MR02-100- MR02-2000	1.23 [31.3]	0.32 [8.1]	0.05 [1.3]	0.39 [9.9]	1.0 [25.4]	THRU	0.83 [21.1]
MR02-5000- MR02-10000	1.48 [37.6]	0.43 [10.9]	0.07 [1.8]	0.62 [15.8]	1.25 [31.8]	0.25 [6.4]	1.08 [27.4]

#### SPECIFICATIONS

Accuracy:  $\pm 0.5\%$  of full scale + M5i ( $\pm 0.15\%$ ).  
 Safe Overload: 150% of full scale.  
 Weight: From 0.4 lb (0.2 kg).

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**MINIATURE TENSION/COMPRESSION**
*Model R04*

**SPECIFICATIONS**

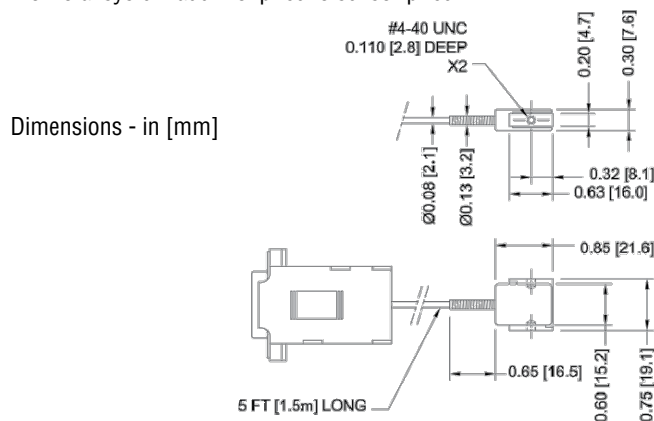
 Accuracy:  $\pm 0.2\%$  of full scale + M5i ( $\pm 0.1\%$ ).

Weight: 0.015 lb.

Dimensions: 0.30" H x 0.85" W x 0.75" D.

MODEL	CAPACITY/GRADUATION				PRICE
M5i	<b>Advanced Force/Torque Indicator – 110 / 220 VAC</b>				<b>\$895*</b>
MR04-025	0.25 lbf x 0.0001 lbf	100 gf x	0.05 gf	1 N x 0.0005 N	<b>995</b>
MR04-05	0.5 lbf x 0.0002 lbf	250 gf x	0.1 gf	2.5 N x 0.001 N	<b>995</b>
MR04-2	2 lbf x 0.001 lbf	1 kgf x 0.0005 kgf		10 N x 0.005 N	<b>995</b>
MR04-5	5 lbf x 0.002 lbf	2.5 kgf x 0.001 kgf		25 N x 0.01 N	<b>995</b>
MR04-10	10 lbf x .005 lbf	5 kgf x 0.002 kgf		50 N x 0.02 N	<b>995</b>
MR04-20	20 lbf x 0.01 lbf	10 kgf x 0.005 kgf		100 N x 0.05 N	<b>995</b>
MR04-50	50 lbf x 0.02 lbf	25 kgf x 0.01 kgf		250 N x 0.1 N	<b>995</b>
MR04-100	100 lbf x 0.05 lbf	50 kgf x 0.02 kgf		500 N x 0.2 N	<b>995</b>

\*For total system add M5i price to sensor price.


**INLINE TENSION/COMPRESSION**
*Model R03*

**SPECIFICATIONS**

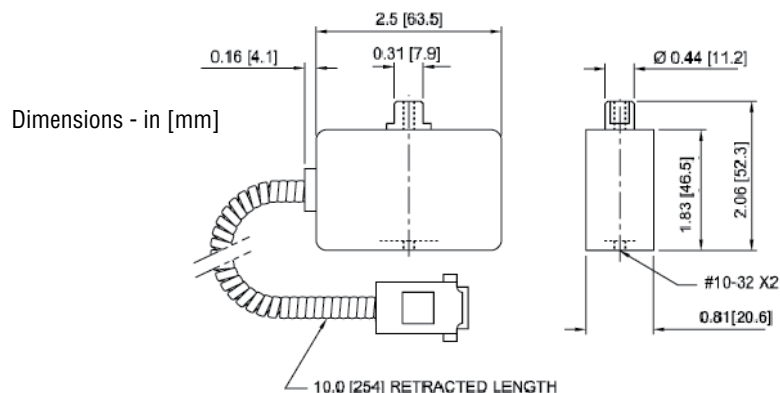
 Accuracy:  $\pm 0.15\%$  of full scale + M5i ( $\pm 0.1\%$ ).

Weight: 0.4 lb.

Dimensions: 0.396" H x 2.5" W x 2" D.

MODEL	CAPACITY/GRADUATION				PRICE
M5i	<b>Advanced Force/Torque Indicator – 110 / 220 VAC</b>				<b>\$895*</b>
MR03-025	0.25 lbf x 0.0001 lbf	100 gf x	0.05 gf	1 N x 0.0005 N	<b>775</b>
MR03-05	0.5 lbf x 0.0002 lbf	250 gf x	0.1 gf	2.5 N x 0.001 N	<b>775</b>
MR03-2	2 lbf x 0.001 lbf	1 kgf x 0.0005 kgf		10 N x 0.005 N	<b>650</b>
MR03-5	5 lbf x 0.002 lbf	2.5 kgf x 0.001 kgf		25 N x 0.01 N	<b>650</b>
MR03-10	10 lbf x .005 lbf	5 kgf x 0.002 kgf		50 N x 0.02 N	<b>650</b>
MR03-20	20 lbf x 0.01 lbf	10 kgf x 0.005 kgf		100 N x 0.05 N	<b>650</b>
MR03-50	50 lbf x 0.02 lbf	25 kgf x 0.01 kgf		250 N x 0.1 N	<b>650</b>
MR03-100	100 lbf x 0.05 lbf	50 kgf x 0.02 kgf		500 N x 0.2 N	<b>650</b>

\*For total system add M5i price to sensor price.



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### UNIVERSAL TORQUE

Model R50



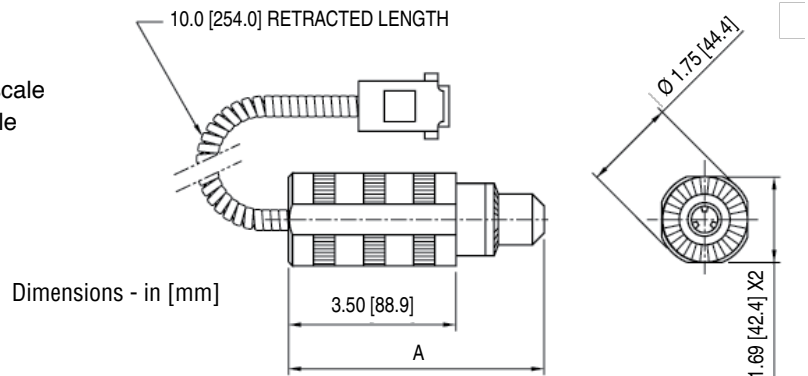
MODEL	CAPACITY/GRADUATION			PRICE
M5i	Advanced Force/Torque Indicator – 110 / 220 VAC			\$895*
MR50-10Z	10 x 0.005 ozf-in	7 x 0.005 kgf-mm	7 x 0.005 N-cm	845
MR50-20Z	20 x 0.01 ozf-in	14 x 0.01 kgf-mm	14 x 0.01 N-cm	845
MR50-50Z	50 x 0.02 ozf-in	36 x 0.02 kgf-mm	35 x 0.02 N-cm	845
MR50-12	12 x 0.005 lbf-in	–	135 x 0.1 N-cm	795
MR50-50	50 x 0.02 lbf-in	–	570 x 0.5 N-cm	795
MR50-100	100 x 0.05 lbf-in	–	1150 x 0.5 N-cm	795

\*For total system add M5i price to sensor price.

#### SPECIFICATIONS

Accuracy: ± 0.35% of full scale + M5i (± 0.1%).  
 Safe Overload: MR50-10Z - MR50-50Z: 300% of full scale  
 MR50-12 - MR50-50: 150% of full scale  
 Weight: 1.4 lb. [0.6 kg]

MODEL	A
MR50-10Z - MR50-50Z	4.82 [122.4]
MR50-12 - MR50-100	5.19 [131.8]



### UNIVERSAL TORQUE - INTERCHANGEABLE ATTACHMENTS

Model R51

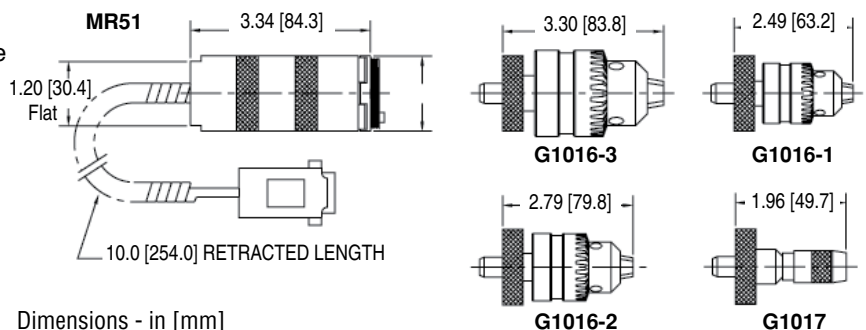


MODEL	CAPACITY/GRADUATION			PRICE
M5i	Advanced Force/Torque Indicator – 110 / 220 VAC			\$895*
MR51-10Z	10 x 0.005 ozf-in	7 x 0.005 kgf-mm	7 x 0.005 N-cm	795
MR51-20Z	20 x 0.01 ozf-in	14 x 0.01 kgf-mm	14 x 0.01 N-cm	795
MR51-50Z	50 x 0.02 ozf-in	36 x 0.02 kgf-mm	35 x 0.02 N-cm	795
MR51-12	12 x 0.005 lbf-in	–	135 x 0.1 N-cm	745
MR51-50	50 x 0.02 lbf-in	–	570 x 0.5 N-cm	745
MR51-100	100 x 0.05 lbf-in	–	1150 x 0.5 N-cm	745
G1016-1	Jacobs chuck for MR51, 0.028" - 0.25"			135
G1016-2	Jacobs chuck for MR51, 0.062" - 0.375"			140
G1016-3	Jacobs chuck for MR51, 0.078" - 0.5"			145
G1017	Bit holder for MR51, 1/4" hex			145

\*For total system add M5i price to sensor price.

#### SPECIFICATIONS

Accuracy: ± 0.2% of full scale + M5i (± 0.1%).  
 Safe Overload:  
 MR51-10Z - MR51-50Z: 300% of full scale  
 MR51-12 - MR51-50: 150% of full scale  
 MR51-100 - 150% of full scale  
 Weight: 1.4 lb.  
 Chuck and bit capacities:  
 G1016 - 1: 0.028 - 0.25 in [0.7 - 6.3 mm]  
 G1016 - 2: 0.062 - 0.375 in [1.6 - 9.5 mm]  
 G1016 - 3: 0.078 - 0.5 in [2.0 - 12.7 mm]  
 G1017 - 0.25 in [6.3 mm] hex



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