

## Model 1103

### Low Capacity Torque Sensor



#### DESCRIPTION

A line of low capacity rotary slip ring torque sensors primarily designed for fractional horsepower motor test applications. Instrumental in monitoring start up, running, and stall torque levels during development and qualification of these motors. Capacity range from 10 in-oz to 20 in-oz for small shaft mounting configurations.

#### FEATURES

- 10 in-oz and 20 in-oz capacities
- 0.05 % non-linearity and hysteresis
- Lower cost for general “in-line” applications
- Can be used with almost all existing dc and ac signal conditioning equipment
- Manual brush lifter (standard)

# Model 1103

## PERFORMANCE SPECIFICATIONS

| Characteristic          | Measure                 |
|-------------------------|-------------------------|
| Torque range            | 10, 20 oz-in            |
| Non-linearity           | ±0.05 % of rated output |
| Hysteresis              | ±0.05 % of rated output |
| Repeatability           | ±0.05 % of rated output |
| Output @ rated capacity | ±0.95 mV/V (nominal)    |

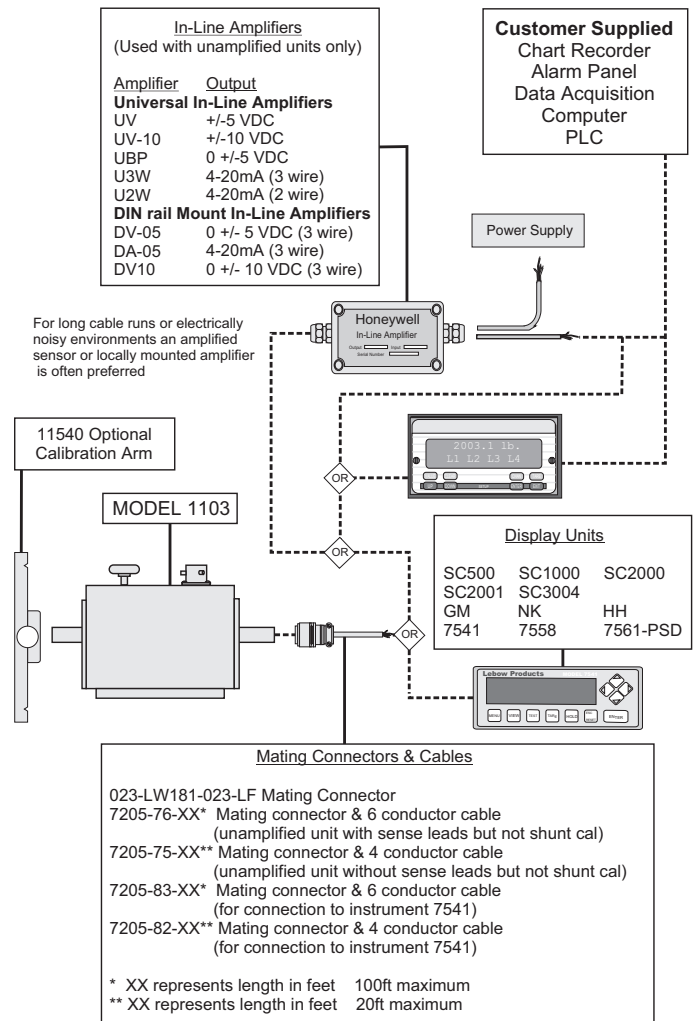
## ENVIRONMENTAL SPECIFICATIONS

| Characteristic             | Measure                            |
|----------------------------|------------------------------------|
| Temperature, operating     | -29 °C to 93 °C [-20 °F to 200 °F] |
| Temperature, compensated   | 21 °C to 77 °C [70 °F to 170 °F]   |
| Temperature effect, zero   | ±0.002 % of rated output/°F        |
| Temperature effect, output | ±0.002 % of reading/°F             |

## ELECTRICAL SPECIFICATIONS

| Characteristic         | Measure                |
|------------------------|------------------------|
| Excitation (maximum)   | 20 Vdc or Vac RMS      |
| Insulation resistance  | > 5000 mOhm @ 50 Vdc   |
| Bridge resistance      | 240 ohm (nominal)      |
| Number of bridges      | 1                      |
| Zero balance           | ±1.0 % of rated output |
| Electrical termination | PT02E-10-6P            |

## TYPICAL SYSTEM DIAGRAM



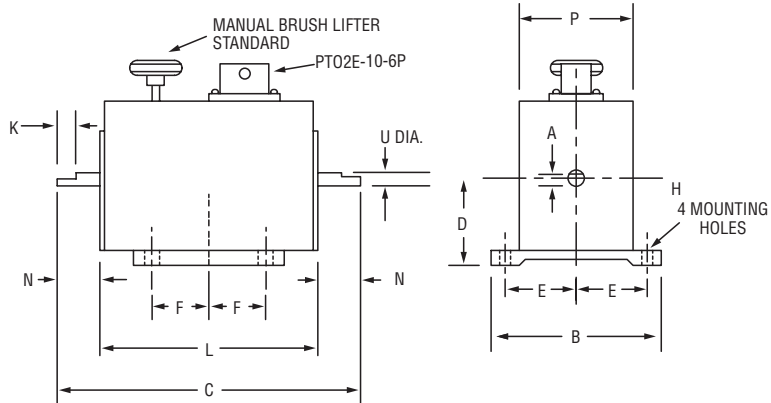
# Low Capacity Torque Sensor

## MECHANICAL SPECIFICATIONS

| oz-in | N-m  | Max speed RPM | Overload capacity (% of nominal capacity) | Torsional stiffness lb-in/rad | Rotating inertia lb-in/sec <sup>2</sup> | Weight (lb) |
|-------|------|---------------|---|-------------------------------|---|-------------|
| 10    | 0.07 | 20000         | 150                                       | 112                           | $2.59 \times 10^{-3}$                   | 0.75        |
| 20    | 0.15 | 20000         | 150                                       | 113                           | $2.59 \times 10^{-3}$                   | 0.75        |

## MOUNTING DIMENSIONS

| C<br>cm [in]    | L<br>cm [in]   | N<br>cm [in]   | P<br>cm [in]   | U<br>cm [in]   | K<br>cm [in]             | A<br>cm [in]   | B<br>cm [in]   | D<br>cm [in]   | E<br>cm [in]   | F<br>cm [in]   | H<br>cm [in]   |
|-----------------|----------------|----------------|----------------|----------------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 10,16<br>[4.00] | 7,30<br>[2.88] | 1,43<br>[0.56] | 3,81<br>[1.50] | 0,32<br>[0.12] | 0,64 flat<br>[0.25 flat] | 0,24<br>[0.09] | 5,70<br>[2.25] | 2,50<br>[1.00] | 2,38<br>[0.94] | 1,90<br>[0.75] | 0,37<br>[0.14] |



For reference only

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**PERSONAL INJURY**

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**Failure to comply with these instructions could result in death or serious injury.**

**⚠ WARNING**  
**MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**