

# CheckStar Multi - User Instructions

## Getting started with your in-line rotary torque transducer.



Manufacturer:  
Address:

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Declares that this product has been assessed and complies with the requirements of the relevant CE Directives when used with Crane Electronics Ltd readout devices.

### SUMMARY

The CheckStar Multi transducer is designed to measure the torque output of any non-impact assembly tool. The unique construction (patented) gives long brush life with minimal maintenance requirements. The transducer is compatible with the TorqueStar and IQVu Crane readout devices. The CheckStar Multi provides data, of nominal rating, transducer serial number and recommended re-calibration date (automatic recognition), when used with a compatible readout.

An alternative version is available with an angle measurement encoder which allows the measurement of the angle rotation in addition to torque, with a compatible readout unit.

The CheckStar Multi has a light ring that can be used to indicate fastening status with colours Amber, Green and Red.


### OPERATION

Select a suitable size of CheckStar Multi appropriate to the maximum torque rating of the tool to be used. The female square of the CheckStar Multi should be secured onto the tool output drive using the supplied pin and retaining ring. A socket should be fitted to the male square drive and secured via the spring loaded pin.

Connect to the readout, select an appropriate operating mode and then operate the tool in the normal way. In the interests of accuracy it is essential to maintain the correct alignment between the fastener, CheckStar and power tool. When using CheckStar rotary transducers with a tool and reaction bar the effective radial position of the reaction point should not be less than the figures given in Table 1 (see reverse). Failure to observe this requirement and also the maximum torque rating, may cause irreversible damage to the CheckStar.

The CheckStar rotary transducer with angle encoder may also be used with any tool except impact types. Angle measurements may be made with impulse tools but restriction on the maximum acceptance speed of the readout may limit accuracy. Since the angle encoder measures the angular position of the torsion shaft relative to the transducer body, it is important that the body is held still and does not rotate as the tool is operated.

If the male square spring pin is not required, this may be removed with a stepped (for location purposes) punch of  $\varnothing 2.3\text{mm}$  for the 1/4" ,  $\varnothing 3.95\text{mm}$  for the 3/8" or 1/2" squares and  $\varnothing 6.3\text{mm}$  for 3/4" or 1" square drives.

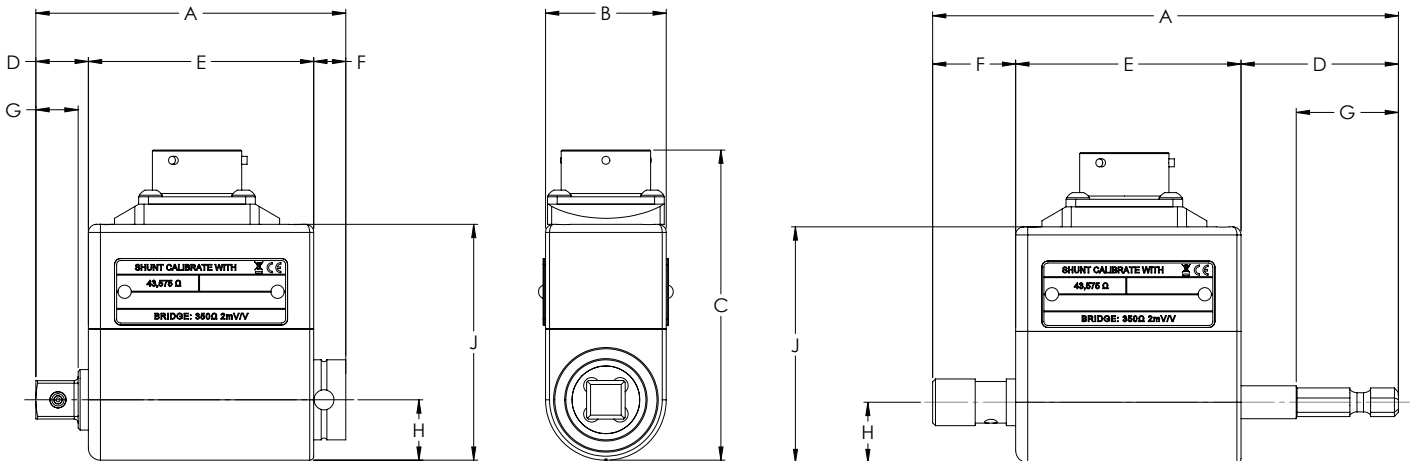
|              |   |       |         |
|--------------|---|-------|---------|
| Approved By: |  | Date: | 1/08/14 |
|--------------|---|-------|---------|

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## CheckStar Multi - Dimensions and Weights



Dimensions in millimeters

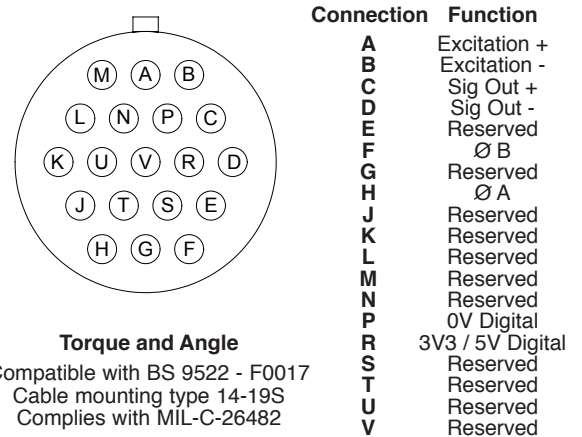
| Drive  | A     | B     | C     | D    | E    | F    | G    | H    | J     | Weight (Grams) |
|--------|-------|-------|-------|------|------|------|------|------|-------|----------------|
| ¼" Hex | 115.8 | 30.0  | 73.0  | 39.2 | 56.0 | 20.6 | 25.5 | 13.2 | 54.5  | 210            |
| ¼" Sq  | 71.5  | 30.0  | 73.0  | 10.3 | 56.0 | 5.2  | 7.3  | 13.2 | 54.5  | 200            |
| ⅜" Sq  | 77.0  | 30.0  | 77.1  | 12.9 | 56.0 | 8.1  | 10.5 | 15.0 | 58.6  | 240            |
| ½" Sq  | 87.0  | 42.0  | 88.0  | 17.0 | 58.0 | 12.0 | 14.7 | 21.0 | 69.5  | 430            |
| ¾" Sq  | 106.0 | 52.0  | 98.6  | 25.3 | 60.0 | 20.7 | 21.4 | 26.0 | 80.1  | 760            |
| 1" Sq  | 125.0 | 63.0  | 110.1 | 31.8 | 64.5 | 28.7 | 26.0 | 32.0 | 91.6  | 1500           |
| 1½" Sq | 181.0 | 102.0 | 153.7 | 43.8 | 86.5 | 50.7 | 39.3 | 51.0 | 136.0 | 5700           |

Table 1

| Drive Size/Type | Rating (Nm) | Maximum RPM |              | Angle version Only |         | Min. radial position of reaction bar at Max torque (mm) |
|-----------------|-------------|-------------|--------------|--------------------|---------|---|
|                 |             | Continuous  | Intermittent | Resolution Degrees | Max RPM |   |
| ¼" Hex          | 2           | 5000        | 11,000       | 0.125              | 2500    | 50  |
| ¼" Hex          | 5           | 5000        | 11,000       | 0.125              | 2500    | 50  |
| ¼" Sq           | 5           | 5000        | 11,000       | 0.125              | 2500    | 50  |
| ¼" Hex          | 10          | 5000        | 11,000       | 0.125              | 2500    | 50  |
| ¼" Sq           | 10          | 5000        | 11,000       | 0.125              | 2500    | 50  |
| ¼" Hex          | 20          | 5000        | 11,000       | 0.125              | 2500    | 100   |
| ¼" Sq           | 20          | 5000        | 11,000       | 0.125              | 2500    | 100   |
| ⅜" Sq           | 25          | 2500        | 10,000       | 0.125              | 2500    | 50  |
| ⅜" Sq           | 50          | 2500        | 10,000       | 0.125              | 2500    | 100   |
| ⅜" Sq           | 75          | 2500        | 10,000       | 0.125              | 2500    | 150   |
| ½" Sq           | 180         | 2500        | 7,600        | 0.125              | 2500    | 180   |
| ¾" Sq           | 250         | 2000        | 5,000        | 0.125              | 2000    | 120   |
| ¾" Sq           | 500         | 2000        | 5,000        | 0.125              | 2000    | 240   |
| 1" Sq           | 750         | 1000        | 4,400        | 0.125              | 1000    | 190   |
| 1" Sq           | 1400        | 1000        | 4,400        | 0.125              | 1000    | 350   |
| 1½" Sq          | 3000        | 1000        | 4,400        | 0.125              | 500     | 310   |
| 1½" Sq          | 5000        | 1000        | 4,400        | 0.125              | 500     | 520   |

Continuous duty is defined as 100% duty in either direction and intermittent duty as 10% of that working time. All torque equipment should be re-calibrated every 12 months.

For more information about the CheckStar Multi torque transducer, please call +44 (0) 1455 25 14 88 or email us at [sales@crane-electronics.com](mailto:sales@crane-electronics.com).



### Specifications

|  |                      |
|--|----------------------|
| Bridge resistance  | - 350 ohm            |
| Output sensitivity   | - 2mV/V              |
| Static accuracy  | - ± 0.25% fsd        |
| Stability of zero offset with temperature                      | - ± 0.01% of fsd./°C |
| Overload Capacity  | - 125% f.s.d         |
| Operation to specification over a temperature range of         | - +5 to +40°C        |
| Operation to reduced specification over a temperature range of | - -10 to +60°C       |
| Humidity 10 to 75% non-condensing                              |                      |
| Ingress Protection of the transducer (except connector)        | - IP40               |

The male and female square drives are designed to be compatible with drives meeting the specifications of:-  
**ANSI B107-4 - 1982; BS4006 - 1992; DIN 3121 - 1987**

### Locations

UK - Watling Drive, Hinckley, Leicestershire LE10 3EY  
 USA - 1260 11th Street West, Milan, Illinois 61264, USA  
 Germany - Im Rank 5, 73655 Plüderhausen, Germany