

# Operators Manual

## WM10K Torque Tester

### Manual Issue 1

### Crane Electronics Ltd



### Notice

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## ADDRESS

**Manufacturer:** Crane Electronics Ltd  
**Address:** 3 Watling Drive  
Sketchley Meadows  
Hinckley  
Leicestershire  
LE10 3EY  
**Tel:** +44 (0)1455 25 14 88

## UKCA MARKING

Crane Electronics Limited declares that the WM10K has been assessed and complies with the UK regulatory requirements.



## CE MARKING

Crane Electronics Limited declares that the WM10K has been assessed and complies with the requirements of the relevant CE Directives.



## COMPLIANCE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installations. If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## PRODUCT DISPOSAL

### Applicable in the EU and other European Countries with separate collection systems



The symbol shown here and, on the product, means that the product is classed as Electrical or Electronics Equipment and should not be disposed with normal commercial waste at the end of its working life.

The Waste of Electrical and Electronics Equipment (WEEE) Directive (2012/19/EU) has been put in place to recycle products using best available recovery and recycling techniques to minimise the impact on the environment, treat any hazardous substances and avoid the increasing landfill.

To enable this product to be disposed of properly i.e. cradle to grave, Crane Electronics is willing to accept the return of your product (at your cost) for recycling or alternatively, for more detailed information about recycling of this product please contact your local authority or the Distributor / Company where you have purchased the product.

Battery disposal to take place in line with the AMENDED BATTERIES DIRECTIVE 2013/56/EU. Batteries must **not** go to landfill. Check with local legislation.

Crane Electronics declares that this product does not contain any of the 191 Substances of Very High Concern (SVHC's) identified in the REACH Regulation in used articles make-up.

### In Countries outside the EU:

If you wish to discard this product, please contact your local authorities and ask for the correct way of disposal.

Signed for & on behalf of **Crane Electronics Ltd.**

Name: **B. M. Etter**  
Title: **Safety & Environmental Advisor**

Signature of Issuer:



## ABOUT THIS MANUAL

This manual covers the WM10K torque testers.

Actual screen shots represented in this manual may differ slightly from those on the actual torque tester unit, depending on the version.

## PACKING LIST

The following Items are supplied with the WM10K dependent on model specification purchased.

1 x WM10K torque tester, includes:

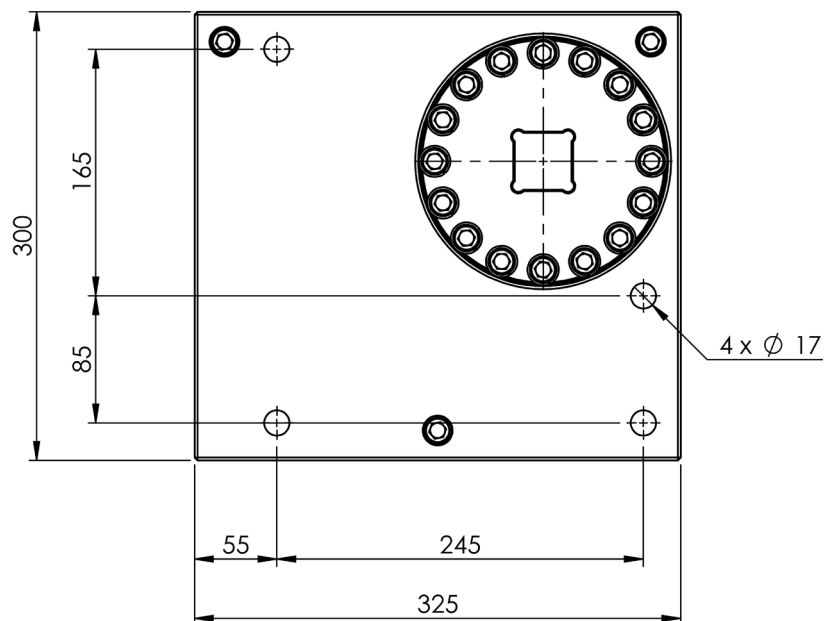
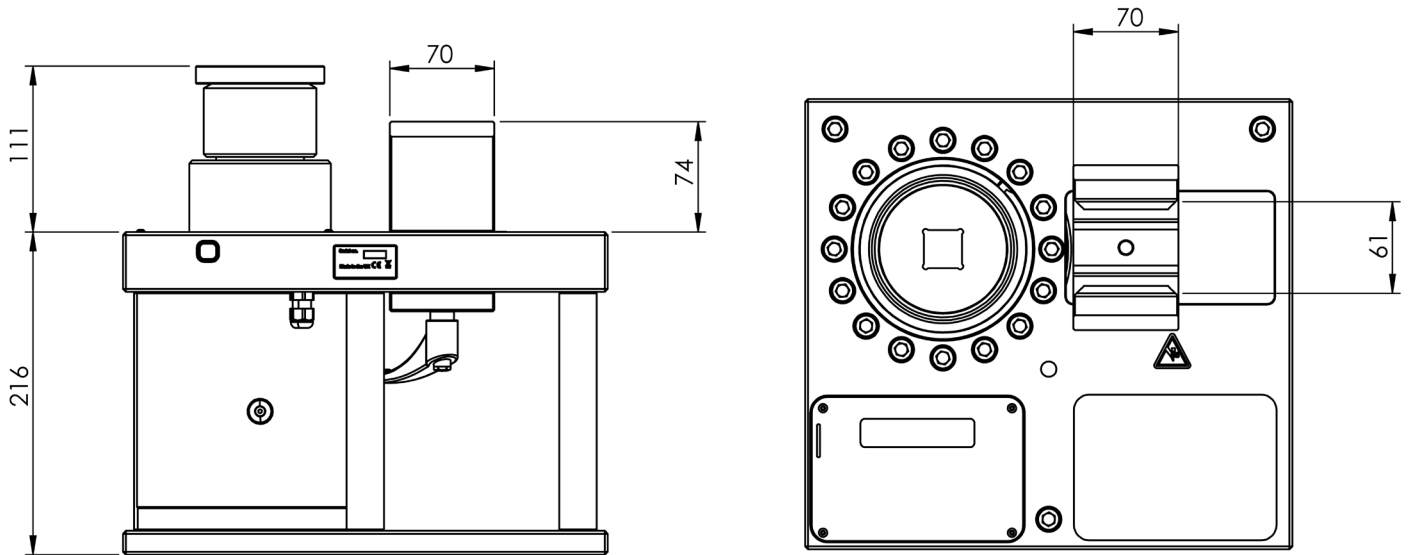
- 1 x dynamic run down fixture with 1.5" female square drive
- 1 x standard reaction stop
- 1 x secondary reaction post
- Can be supplied with or without a protective carry case

Please ensure all items are present and notify Crane Electronics Ltd immediately of any shortages.



## FEATURES AND DIMENSIONS – WM10K

**Weight:** 50 Lbs [23 kg].



## SPECIFICATIONS

### System Overview:

The WM10K Calibration System allows users to check torque accuracy, run calibration tests, and create calibration certificates for bolting tools. The WM10K is designed for electric and pneumatic systems.



**Not Suitable for use with hydraulic or impact tools**

The accuracy of the WM10K is calibrated to meet or exceed: 1% of Full Scale Deflection (FSD) from 2% to 8% of torque range and 1% of reading from 8% to 100% of torque range.

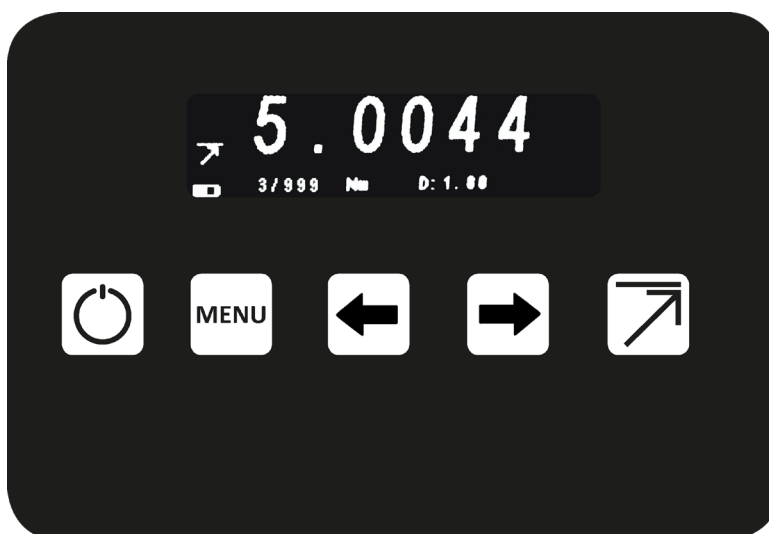
### Main Components:

**Run down fixture and transducer** – The run down fixture and transducer are designed specifically for the testing of constant rotation controlled bolting tools. The WM10K features a 1.5" female square drive that can accommodate other size square drive tools with the use of adaptors. The dynamic fixture provides a fastening solution that is similar to real life applications. An integrated transducer measures the torque and communicates the results to the digital display module. The run down fixture can be adjusted vertically to accommodate various tool designs.

**Base plate** - The base plate houses the run down fixture, reaction stop, and digital display module. It features three sturdy legs, end slot to transport the unit, and can be fastened down to a flat surface.

**Reaction stop** – The reaction stop functions as a counterpoint to the reaction arms of the wrench. The torque wrench being calibrated is positioned with the reaction arm in between the wings of the reaction stop. The WM10K features a standard reaction stop that will accommodate most pneumatic and electric tools, including the PTW-, ETW-Series and many competitive tools. It also features a special reaction post for tools with configurations that won't work with the standard reaction stop.

**Digital display module** –The digital display module facilitates the display, collection, archiving, and processing of torque readings. The module can run off battery power or plugged into an outlet. Each WM10K is equipped with a global outlet adaptor that allows the tool to be used with many electrical systems.



## Electrical Connections

The digital display module includes a USB/battery charger port as shown below:



**DC Interface** - The interface for the 5V DC USB AC adapter is supplied with the WM10K. Use the adapter if you plan on using the main power source.

Use only the AC adapter provided with the WM10K. If another power source is used it will void the warranty and may cause severe damage to the digital display module.

**USB Connections** - The USB interface cable shown below is used when downloading to a computer, or other device. The values are sent every time a reading in Peak mode is taken on the WM10K.

**Charging the Battery** - Follow the standard operating procedures in your workplace and be sure to observe all communicated safety precautions.

- The battery for the WM10K should last approximately 12 hours when fully charged.
- The battery is charged any time the WM10K is plugged-in. The charge time is between 2 and 4 hours depending on the battery charge level. It is recommended that the user unplug the unit when it is not in use. This will not harm the unit and will increase battery life.

**NOTE:** If the WM10K is stored for several months, ensure the battery is completely charged prior to storage.



## TECHNICAL FEATURES

<b>Power Requirements:</b>	The unit will have an internal rechargeable Li-Ion battery pack. External power for charging will be supplied via a 5V DC USB power supply. The unit will meet IP51. (Limited protection against dust ingress. Protected against vertically falling drops of water or condensation.) USB Data output is a requirement via USB type B connector.
<b>Operating Temperature:</b>	32°F [0°C] to 122°F [50°C].
<b>Accuracy:</b>	The accuracy of the WM10K is calibrated to meet or exceed: 1% of FSD from 2% to 8% of torque range and 1% of reading from 8% to 100% of torque range.
<b>Range:</b>	2% to 100% [148 Ft.lbs to 7375 Ft.lbs (200Nm to 10,000NM)].
<b>Filter:</b>	Selectable Hz filter: 125, 250, 500, 1000, 1500, and 2000.
<b>Torque Measurement:</b>	Display up to 5 significant figures. Sample every 20 micro seconds
<b>Warranty:</b>	12 months parts and labour against faulty workmanship or materials.

## ICONS – WM10K

### Fixed soft-key Icons:



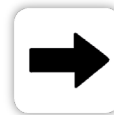
Power



Menu



Left Key



Right Key



Measurement Modes

### On-screen Icons - Measurement Modes:



Peak



Track

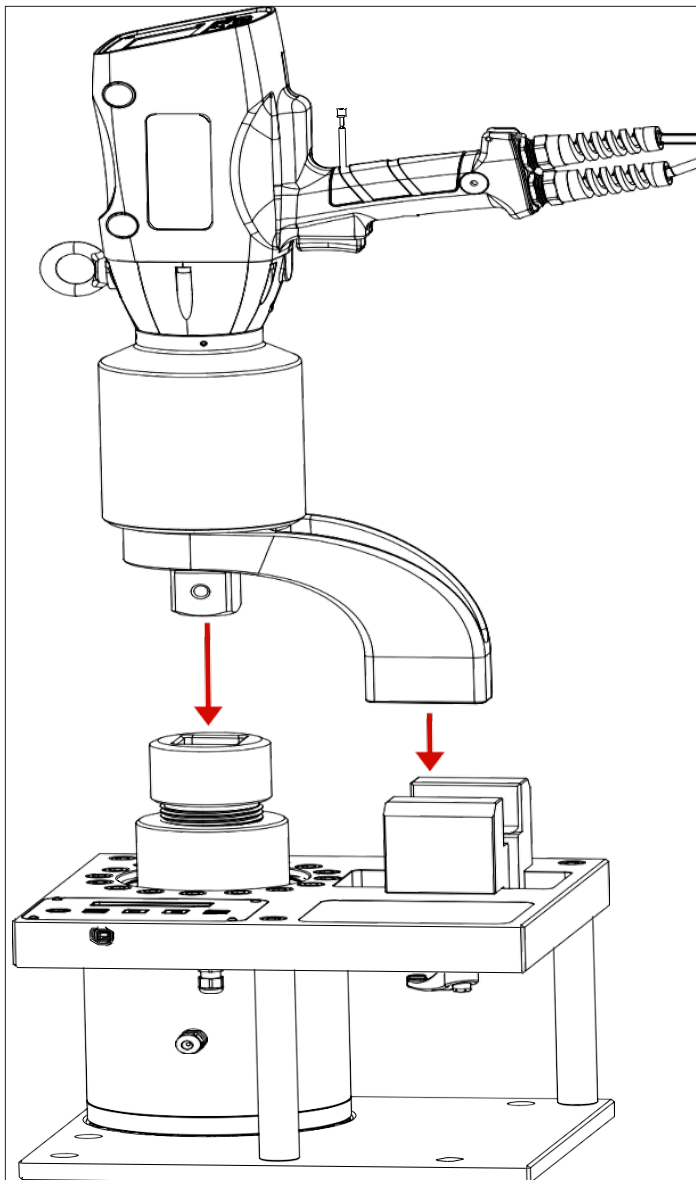
## START UP

### Mount the tool:

Remove the WM10K components from the packaging and place on a flat surface. Ensure that the digital display module is plugged in or sufficiently charged to operate.

Select and position an appropriate adaptor onto the run down fixture to allow the proper mounting of the tool.

Mount the tool vertically onto the run down fixture, positioning the reaction arm between the reaction stop wings, and lower the tool into position. For safe operation, the square drive of the tool must fit into the run down fixture, with the reaction arm positioned to fully engage the reaction stop as shown in the image below:



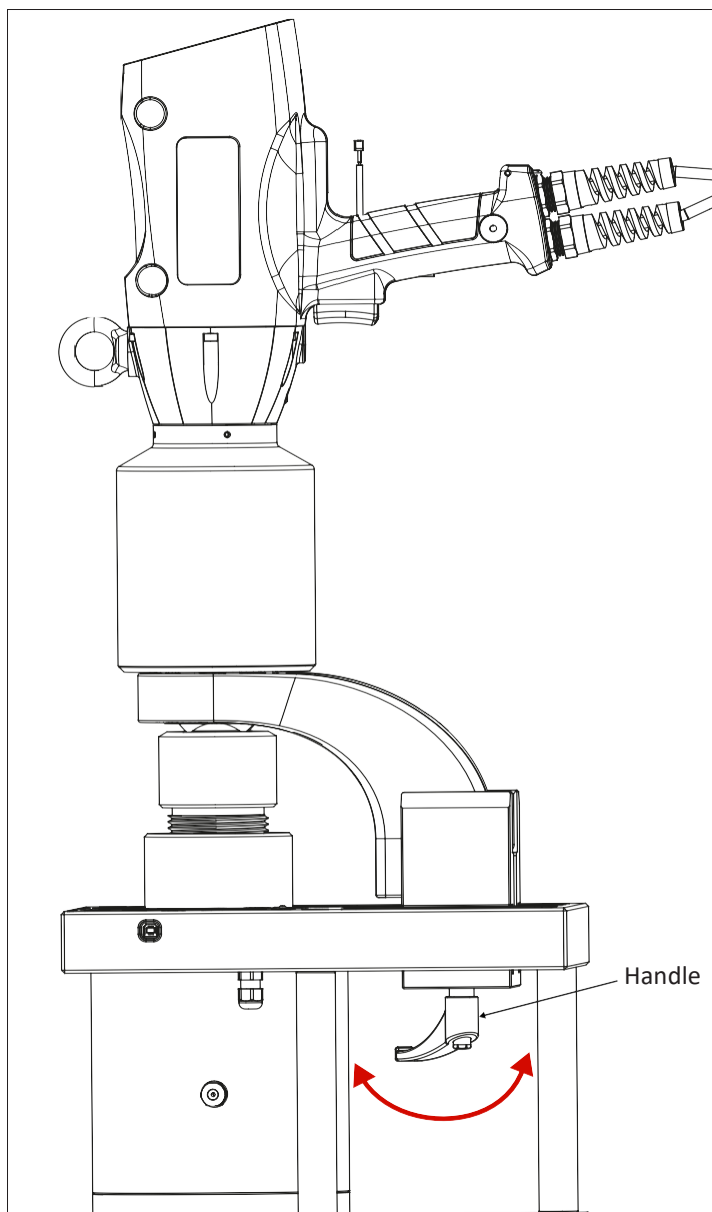
### Adjust the rundown fixture and reaction stop:

If the tool will not fit as indicated, the run down fixture can be adjusted vertically, and the reaction stop can be adjusted in a straight line perpendicular to the run down fixture (see image below).

**Run Down Fixture** - To vertically adjust the run down fixture, use the appropriate adapter that provides the required positioning to achieve full reaction arm engagement. It is important to reverse (loosen) the run down fixture for testing.

**Reaction Stop** - To adjust the reaction stop, loosen the handle as shown in the image below. Slide the reaction stop to properly position the reaction arm and fully engage the reaction stop per manufacturer's recommendation. Slide the reaction stop to the desired position. Lock into place by rotating the lock handle located directly under the reaction stop.

Once the WM10K unit has been appropriately adjusted, complete the mounting of the tool.



## OPERATION

### Check torque with digital display:

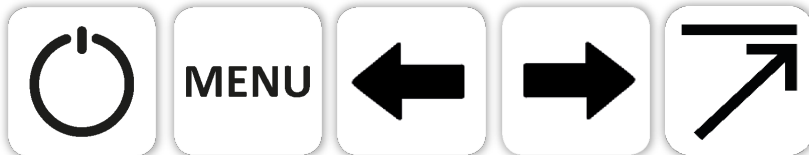
Activate the tool, ensure that all safety precautions are being followed. Take note of potential pinch points when handling the tool during calibration testing.

After the tool stalls, the peak reading will momentarily appear on the display module, and then is saved. For the next cycle it is important to reverse the tool and loosen the run down fixture.

NOTE: The default setting for the torque reading is peak. To take a peak reading, ensure that the "Peak" icon appears under the torque reading on the display module (see image below).



## FIXED ICONS



**Power** – Turns the display unit Off and On and also zeros the transducer.



**Menu** – Accesses torque units and filter settings.



**Left & Right Keys** – Navigate through the menu and allows access to stored readings.





**Peak / Track Measurement Mode** – Switch between Peak and Track measurement modes.

#### Peak Mode

The peak mode displays and retains the maximum torque experienced by the wrench, as occurs when operating the wrench in the tightening direction. The peak mode is recommended for rotary tools and wrenches.

#### Track Mode

The track mode displays the torque as it is being applied to the transducer. This mode is used primarily for verifying the calibration of the WM10K unit.

## MEASUREMENT UNITS



Press the Menu button and then press the left and right arrow keys to scroll through the measurement units, selecting either Nm or Ft.lbs.

## FILTERS



Use this option to select the filter value.

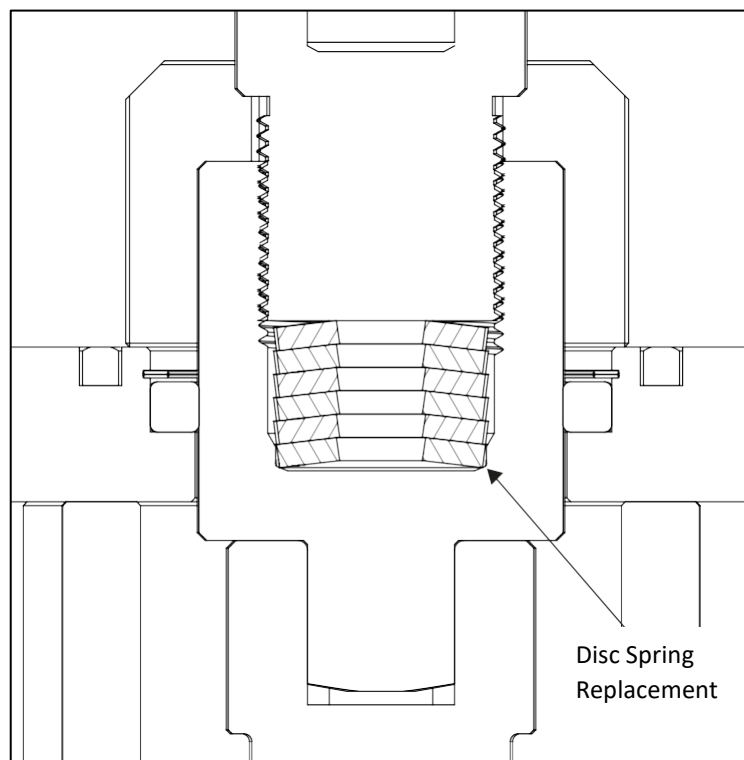
Press the Menu button twice and using the arrow keys, select the required Filter. Selectable filter values in Hz (125, 250, 500, 1000, 2000, 4000 and 5000).

The filter is used to reduce mechanical noise when used with impulse type tools. Current ISO standards recommend 500Hz for general use.

## MAINTENANCE

The WM10K Calibration System requires very little maintenance, but periodic lubrication of the run down fixture is critical to the longevity of the tool. The run down bolt and disc spring should be periodically removed and inspected, and if necessary, coated with a high pressure anti-seize lubricant.

Crane recommends Molybdenum Disulfide, or a lubricant with similar properties. After proper lubrication, replace the run down disc spring. Some units have additional disc springs installed.



## TROUBLESHOOTING

### Digital Display

Symptom	Remedy
Digital module will not turn on.	<p>Plug unit into charger/power supply.</p> <p>Let unit charge for 30 minutes before attempting to turn on.</p> <p>Digital display should be connected to power source for 4 hours to fully charge the battery.</p>
No readings on digital display.	<p>Check direction of tool is set to RH (Clockwise).</p> <p>Ensure the target torque setting on the tool is above 100Nm (73.8Ft. lbs)</p>
Torque readings are dramatically lower or higher than expected.	<p>Verify that the display is operating in the desired engineering units.</p> <p>Check that the filter setting is suitable for the application and the tool.</p> <p>Inspect transducer for overload/yield by selecting track mode on the display. If there is a large value displayed with no strain on the transducer the transducer has been overloaded and requires service.</p>

### Joint Run Down

Symptom	Remedy
Threaded components do not rotate freely.	Disassemble, clean, and inspect threaded components. If threads are not damaged lubricate and reassemble.

### Service, Repair and Calibration

All service, repair or calibration requirements for the WM10K can be handled by Crane Authorized Service Centers. For more information, contact Crane Electronics on +44(0)1455251488, email [service@crane-electronics.com](mailto:service@crane-electronics.com) or visit [www.crane-electronics.com](http://www.crane-electronics.com) for more information.