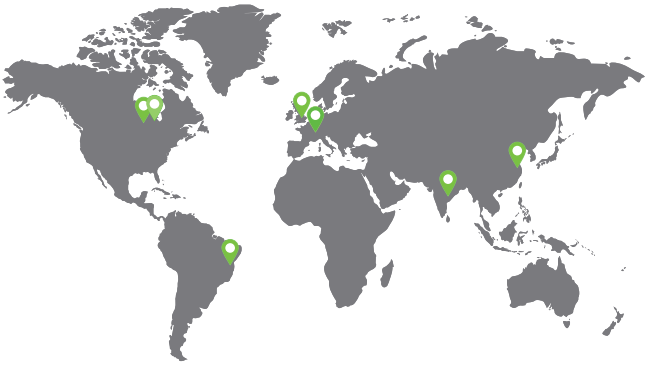

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MAGNAFLUX

# Operating Manual

## Quick Break Tester QB2-Plus

Part Numbers:
628989

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## GETTING STARTED

The QB2-Plus is a test meter used to verify shot time and quick-break function of magnetic particle equipment.  Quick-break function applies to 3-phase FWDC equipment only.

## PRECAUTIONS

Inspect QB2 PLUS meter and probe before each use.  If damaged, it is strongly recommended to replace the unit.

| | |
|---|---|
| | **WARNING**<br>Magnetic particle equipment produces a strong magnetic field. |
| | **WARNING**<br>Persons with pacemakers or medical implants must stay at a safe distance. Refer to magnetic particle equipment specifications. |
| | **CAUTION**<br>Do not use in wet locations. Liquids inside the housing may permanently damage the meter. |

## SPECIFICATIONS

| | |
|---|---|
| **Shot Time**<br>**1-Phase Mode**<br>**3-Phase Mode** | +/- 0.02 sec<br>0.40 – 5.00 sec<br>0.40 – 2.80 sec |
| **Quick Break (3-Phase Mode only)** | 0 – 30 V +/- 0.2 V |
| **Display** | Dot-matrix LCD |
| **Operating Environment** | 32-104°F (0-40°C) |
| **Sampling Time** | 1 second |
| **Power Supply** | DC 9V Battery |
| **Probe**<br>**Dimensions**<br>**Weight**<br>**Lead Length** | <br>1.5 in / 38 mm dia x 17 in / 43 cm<br>0.9 Lb / 0.4 kg<br>66 in / 168 cm |
| **Meter**<br>**Dimensions**<br>**Weight** | <br>6.25 x 3.75 x 2.25 in / 16 x 9.5 x 5.7 cm<br>1.1 Lb / 0.5 kg |

## OPERATION

1. Connect the probe to the port on the front of the meter.

2. Press the ON/OFF button on the right. After a startup sequence the display will read: PUSH RESET TO SELECT MODE
   a. Press the center RESET button once for SHOT TIME mode. This mode will measure the duration of the mag shot for all equipment and waveforms, including AC, HWDC, FWDC, and 3-phase FWDC
   b. Press the center RESET button twice for QUICK BREAK mode. This mode will measure the Quick Break voltage for 3-phase FWDC equipment
   c. Pressing the RESET button multiple times will toggle between SHOT TIME mode and QUICK BREAK mode

3. After 3 seconds, the display will change to indicate the meter is ready to use

   In SHOT TIME mode, the display will read: **ST_READY**

   In QUICK BREAK mode, the display will read: **QB_READY**

4. Place the probe longitudinally in the magnetizing coil with the central sensor inside the coil. For accurate results, the probe should be in the center of the coil.

5. Set magnetizing current to provide 15,000 amp-turns

   For a 5-turn bench coil, set for 3,000 A

   For a 3-turn cable wrap, set for 5,000 A

6. Initiate mag shot and observe results on the meter
   a. **SHOT TIME** mode: Display will read x.xx SEC
   b. **QUICK BREAK** mode: Display will read **VAL=x.x**

7. Press the center RESET button to clear the display for next reading.

8. Repeat test up to 5 times. Minimum acceptable Quick Break voltage depends on the inner diameter of the magnetizing coil.

| Coil Diameter (ID) | Min QB Voltage |
|---|---|
| **12 in / 30 cm** | 8.0 V |
| **16 in / 41 cm** | 6.0 V |
| **20 in / 51 cm** | 4.0 V |
| **25 in / 64 cm** | 3.0 V |
| **30 in / 76 cm** | 2.0 V |
| **36 in / 91 cm** | 1.0 V |

9. Press the ON/OFF button to turn the meter off

NOTE: To change between SHOT TIME and QUICK BREAK modes, turn the meter off and back on to select the new mode.

## MAINTENANCE

- Use mild soap and a damp cloth to clean the probe as needed
- Do not spray QB2-Plus or immerse any part in liquid

Battery Replacement

- Remove screws at the corners and lift meter out of housing
- Replace battery
- Slide meter back into housing and replace screws

## TROUBLESHOOTING

| Problem | Possible Cause | Possible Solution |
|---|---|---|
| **Meter does not power up** | Low Battery | Replace 9V battery |
| | Damaged or defective meter | Contact Authorized Magnaflux Service Center |
| **Erratic readings** | Wrong mode selected | Power unit off. Follow instructions in Operation |
| | Probe not positioned correctly in coil | Place the probe longitudinally in the magnetizing coil with central sensor within the coil |
| | Damaged or defective probe | Contact Authorized Magnaflux Service Center |
| | Low Battery | Replace 9V battery |

## WARRANTY

Refer to the Magnaflux Warranty Statement at www.magnaflux.com.

## SUPPORT

If you have a question please contact Magnaflux at:

1-847-657-5300

support@magnaflux.com

www.magnaflux.com

You can also contact your local Distributor or Magnaflux Authorized Service Center directly; contact information is available at www.magnaflux.com.