## **Quick Reference Card**

## **Magnetic Rotary Encoder Reference Design Kit**

Self-calibrating magnetic angle sensor board using FXOS8700CQ magnetometer and Cortex®-M0+-based KL46Z MCU, a FRDM-KL46Z development board, and a BRKT-STBC-AGM01 breakout board





- 1 Verify package contents:
  - RD-KL46Z-MRE
  - BRKT-STBC-AGM01
  - FRDM-KL46Z
  - USB cable
- Download and install the latest Magnetic Rotary Encoder software from nxp.com/RD-KL46Z-MRE.
- Plug one end of a USB cable into the OpenSDA port on the FRDM-KL46Z board. Plug the other end of the cable into the USB port on the computer.
- Calibrate the sensor as follows:
  Rotate the knob beyond one full turn.
  When the green LED is blinking,
  set the knob position to 0 and
  push the zero button.
- Start the Magnetic Rotary Encoder software on the computer.

For the User Guide and more information, go to:

nxp.com/RD-KL46Z-MRE

Calibrated (green LED)
New calibration in progress (blue LED)
Uncalibrated/Obsolete (red LED)

Zero button - Sets the zero angle reference

TFT LCD screen - Display information, such as angle value and calibration state.

External power supply - Receptacle for a 3.7 V Li-ion battery

Protractor - Indicates magnet position

Knob - Rotates the magnet

RD-KL46Z-MRE

On/Off switch - Turns the board on or off if powered by an external battery

Magnet

NXP FXOS8700 magnetometer

BRKT-STBC-AGM01

OpenSDA port

FRDM-KL46Z



