

Using the E102:

This kit is designed for the evaluation and development of applications using the QT102-ISG Integrated Circuit (IC).

Refer to the QT102-ISG datasheet for details (see www.qprox.com/downloads).

- Insert the battery provided into the battery holder on the E102 board. Ensure that the battery has the correct orientation (negative (-) side to board) or the E102 will not work.
- Touch KEY and the LED will light. After the Auto-off Delay is reached (actual time is dependent on Voltage level, Ct and Rt tolerances), the LED will switch off.

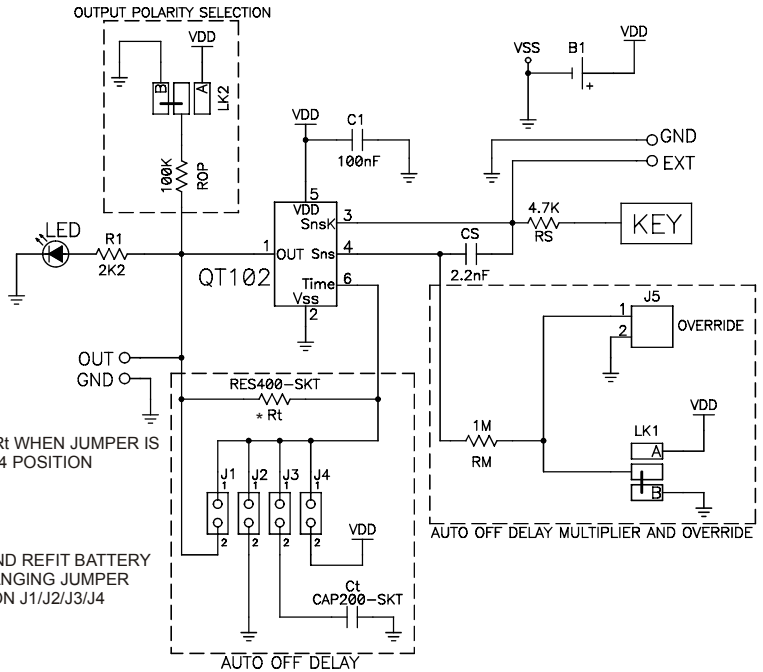
Default setting: User-set Auto-Off Delay (J3 Pins 1 & 2) of 87 seconds. (Ct = 22nF, Rt = 10 kΩ)

Note: *LED will light when KEY is touched if the QT102 is set to Active High Output. If QT102 is changed to give Active Low Output, then the LED will light until KEY touched.*

An external power supply can be used instead of a battery.

WARNING: if an external power supply is used then the battery **MUST** be removed.

Schematic:



Configuring the E102:

The Auto-Off Delay and Output Polarity can be set using the table below:
(Remove and refit the battery/power supply when changing Jumper position)

Jumper Position (Pins 1-2)	Auto-Off Delay			
J1 *	60 Minutes	60 Minutes	24 Hours	24 Hours
J2 *	Infinite	15 Minutes	Infinite	6 Hours
J3	User (Ct,Rt)	User (Ct,Rt)	User (Ct,Rt)	User (Ct,Rt)
J4 *	15 Minutes	Infinite	6 Hours	Infinite

Multiplier: (LK1)	x1: (VSS)	x1: (VSS)	x24: (VDD)	x24: (VDD)
Output: (LK2)	Active High: (VSS)	Active Low: (VDD)	Active High: (VSS)	Active Low: (VDD)

* Remove Rt when Jumper is in J1, J2 or J4 positions.

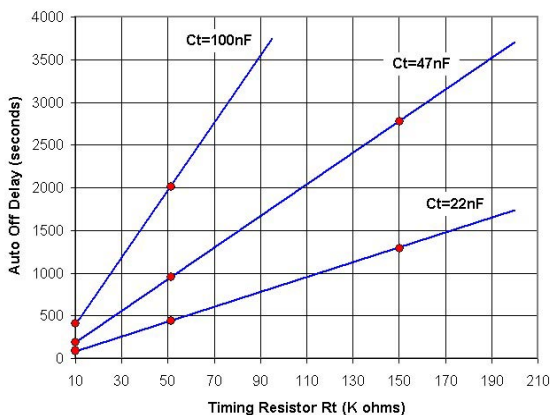
The E102 can be used to connect a User electrode to the QT102 (using EXT and GND pads: The value of Cs may require changing. Large pads either side of Cs are available for fitting leaded capacitors in parallel). The E102 can also connect to a User output (using OUT and GND pads).

The Auto-Off Delay can be extended or the QT102 output can be switched off immediately by pulsing the voltage on the delay multiplier resistor RM through J5.
(Refer to QT102 Datasheet for further details)

User-Programmed Auto-Off Delay:

By changing the values of C_t and R_t , the Auto-Off Delay can be changed. See chart for examples:

QT102 Active High output, VDD = 3V, (x1 Multiplier)



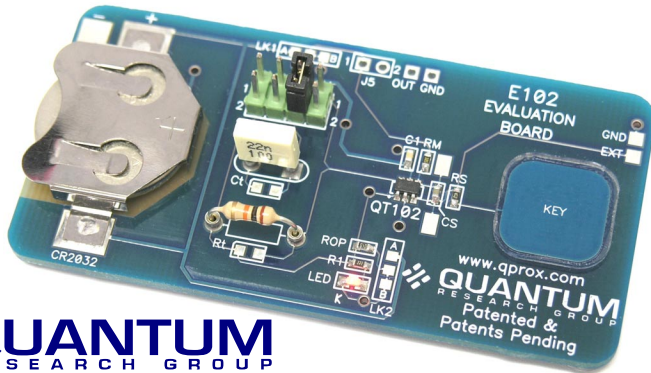
The values highlighted on the chart can be achieved using supplied kit components.

Troubleshooting:

Problem	Potential Solution
E102 does not work	If using a battery, check that the negative (-) side is facing the board. Check/replace battery, check connections. If using an external power supply, check that the correct connections have been made. <i>(Ensure the battery has been removed)</i>
Inaccurate User-Programmed timeout	Ct/Rt/voltage tolerance dependent. Measure the actual values
Unexpected timeout delay	Ensure that the Jumper setting on J1/J2/J3/J4 is set correctly. Remove and refit battery/power supply when changing J1/J2/J3/J4 setting
Timeout delay not x1 or x24, as expected	Check LK1 setting.
LED unexpectedly on	Check LK2 setting. Ensure Rt not fitted (Unless in J3 (User) Setting)

E102 Kit Contents:

1x E102 Evaluation Board			
1x CR2032 Battery, 3V, 235mAh			
2x sample QT102-ISG ICs			
1x E102 User Guide			
Example Ct (47nF, 100nF) & Rt (51kΩ, 150kΩ) Components			
<i>Packed by:</i>		<i>Dated:</i>	



Corporate Headquarters:
1 Mitchell Point
Ensign Way, Hamble
Southampton SO31 4RF
United Kingdom
Tel:+44 (0)23 8056 5600
Fax:+44 (0)23 8045 3939

North America:
651 Holiday Drive Bldg 5/300
Pittsburgh, PA 15220
USA
Tel:412-391-7367
Fax:412-291-1015

Developer: Kevin Snoad
Copyright © 2007 QRG Ltd.
All rights reserved
Patented and patents pending
www.qprox.com
REV 102.1107