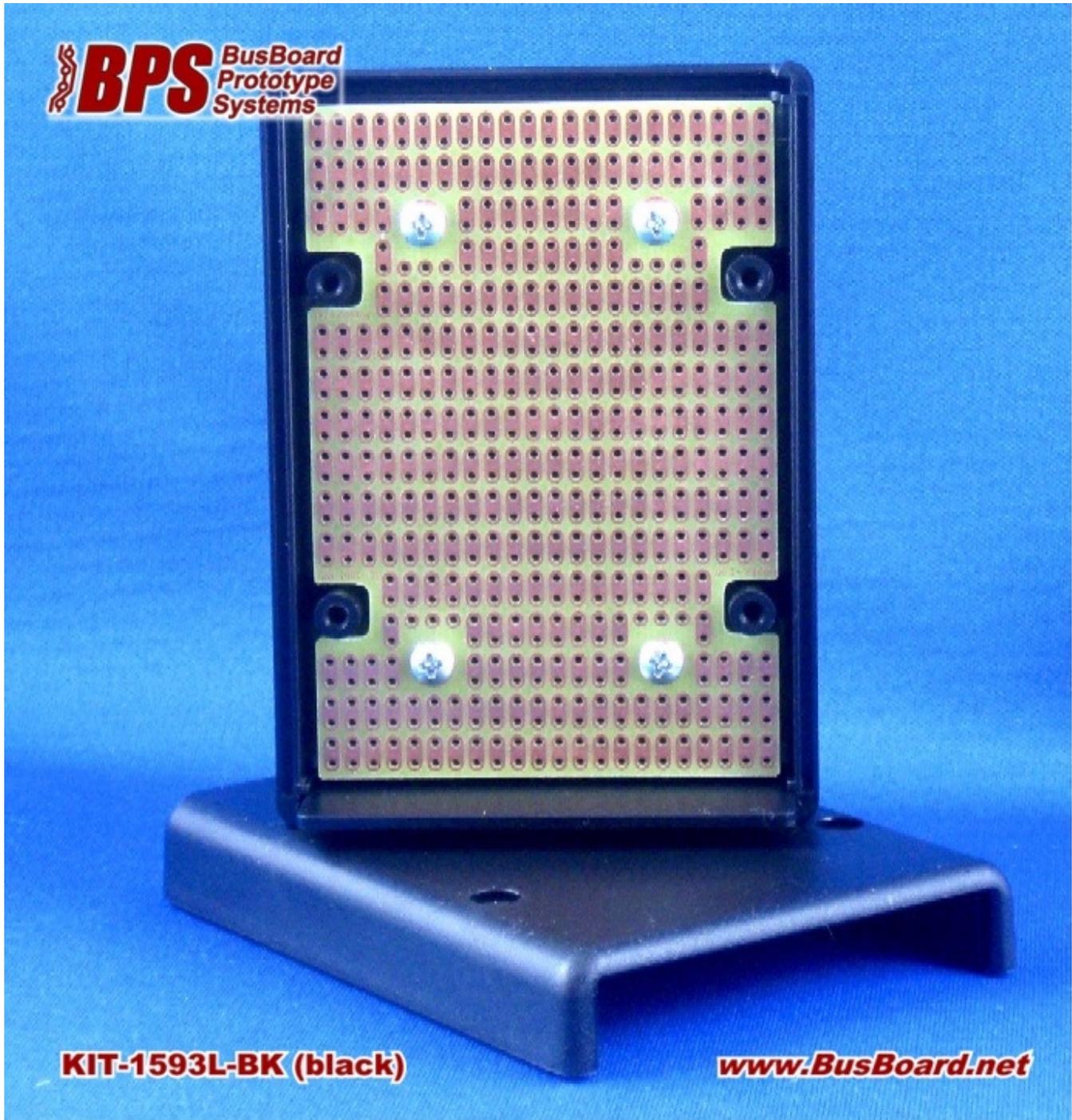# *ProtoBox–1593L Kit (PCB+Box)*

A Hammond 1593L handheld plastic enclosure packaged with a matching BPS ProtoBoard 2-hole per strip PCB.

ProtoBoard-1593L – *for Hammond 1593L Boxes*

BPS

A prototyping board designed for the Hammond 1593L handheld enclosure.

Features

ProtoBoard saves time! The PCB is designed specifically for the Hammond 1593L box.
No cutting is required. The mounting holes are present in the right spots.

The convenient 2-hole ProtoBoard pattern provides an easy way to connect parts while maximizing usable board area.
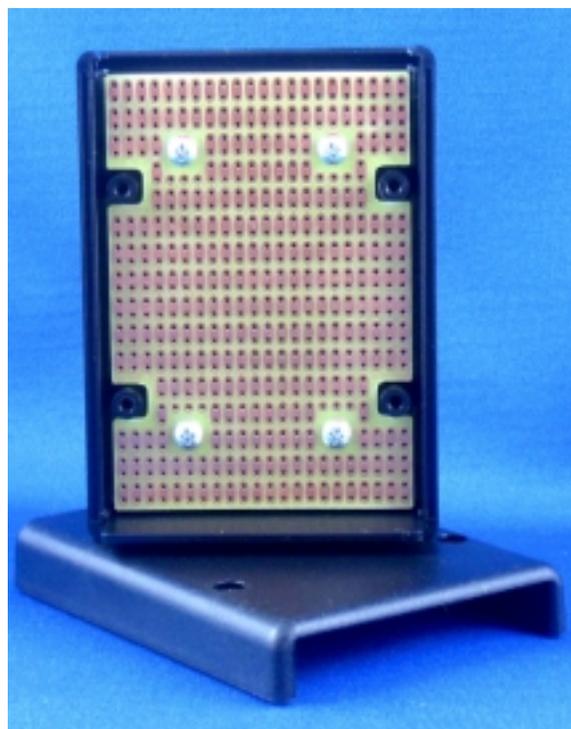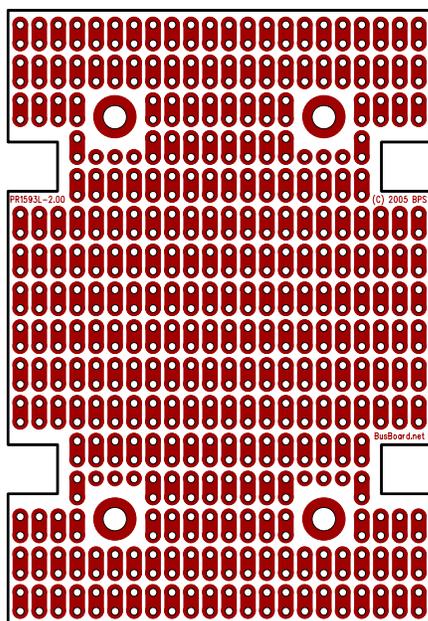
Lead free etched copper PCB with an anti-tarnish coating for easy soldering.

PCB Specifications

- High-quality FR4 glass epoxy board.

- Four 0.125" (1/8") mounting holes.

- Four 4-40 PCB mounting screws provided.

- Single sided, 1oz/ft^2 copper PCB

- 0.042" holes drilled on 0.1" centers

- PCB Size 3.3 x 2.3 in. (83 x 58mm)

Order Part# PR1593L (for PCB only)

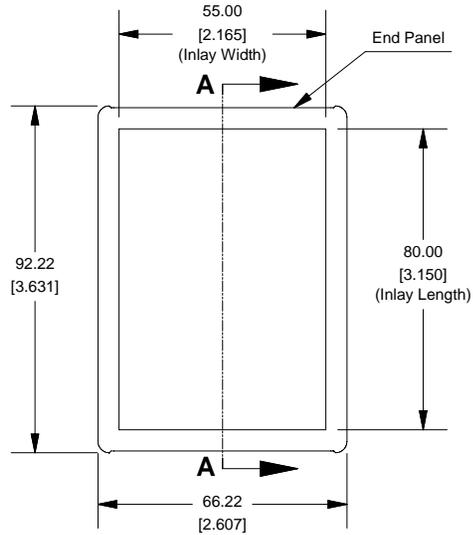## Board Layout (actual size)

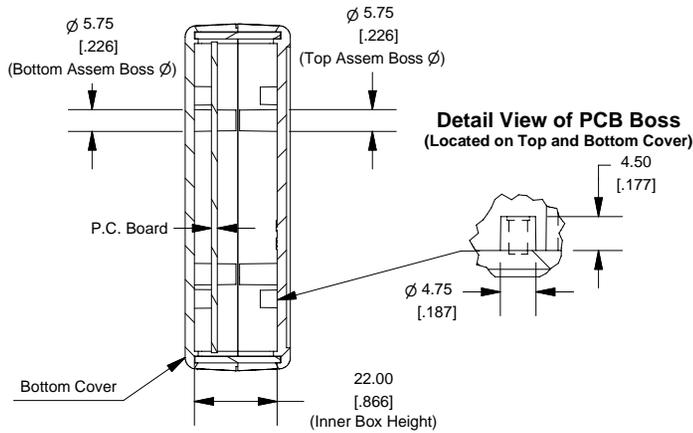**PR1593L Prototyping Board shown with the Hammond 1593LBK box (box not included).**

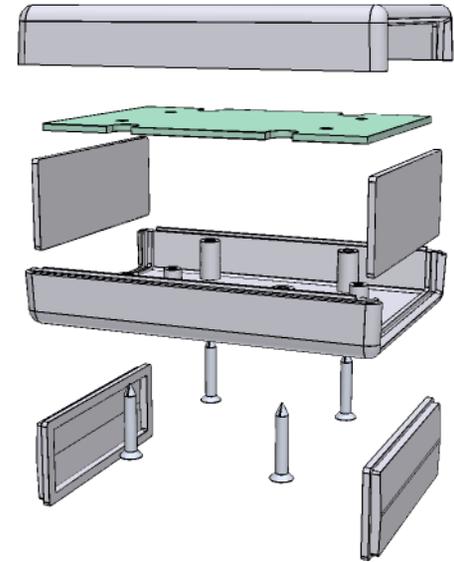**To purchase the PCB + Box together, order BPS part# KIT-1593L-BK**

BusBoard Prototype Systems - **Built for designers**

PCB Mechanical Dimensions

1. PCB is symmetrical in the X and Y directions.
2. All solder pads are located on a 0.100" grid.
3. The mounting holes are NOT located on the 0.100" grid.

PCB Design Copyright 2005 BusBoard Prototype Systems Ltd.

Hammond 1593L Hand Held Case Features

Note: The box is **NOT** included with BPS part# PR1593L.
The box is included with part# KIT-1593L-BK.

Hand-held electronic instrument enclosure.

Built-in PCB standoffs.

2 removable end panels. 2 different styles included, flat and rounded.

Recessed top for membrane overlay or keypad.

Lap joint construction provides protection against dust accumulation and splashing water.

Black, gray, or blue general purpose ABS plastic.

Secured with self tapping screws (included).

Box Size 2.6 x 2.6 x 1.1 in. (66 x 66 x 28 mm)

To order the box by itself order Hammond part# 1593LBK (black), 1593LGY (gray) or 1593LTBU (translucent blue)

See http://www.hammondmfg.com/dwg8.htm
http://www.hammondmfg.com/dwg8TBU.htm

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Hand Held Instrument (1593L)

Top View of Assembly

End Panel

55.00
[2.165]
(Inlay Width)

92.22
[3.631]

80.00
[3.150]
(Inlay Length)

66.22
[2.607]

SECTION A-A
(Side View Inside Assembly)

Ø 5.75
[.226]
(Bottom Assem Boss Ø)

Ø 5.75
[.226]
(Top Assem Boss Ø)

Detail View of PCB Boss
(Located on Top and Bottom Cover)

4.50
[.177]

P.C. Board

Bottom Cover

Ø 4.75
[.187]

22.00
[.866]
(Inner Box Height)

End View of Assembly

Bottom Cover

End Panel

1.00
[.039]
(Inlay Depth)

P.C. Board Aligned on Bosses

28.00
[1.102]
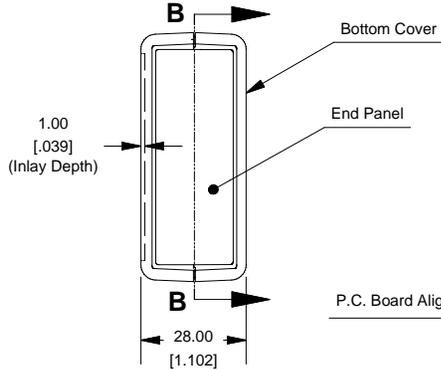
SECTION B-B
(Inside of Bottom Cover)

.86
[.034]
(PCB dist from
end panel)

1.79
[.071]
(PCB dist from inner wall)

50.00
[1.969]

60.20
[2.370]
(Inner Box Width)

84.37
[3.322]
(Inner Box Length)
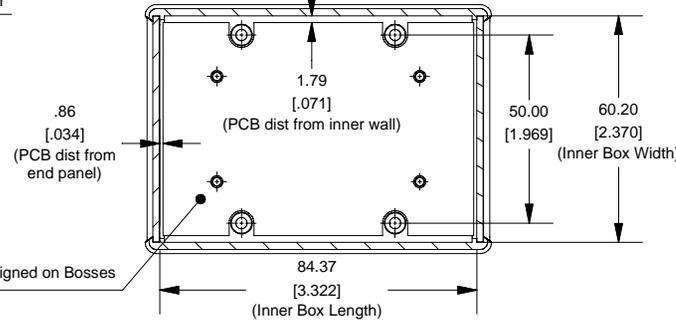
Front/Rear Panel
(Dashed Line Indicates Viewing Area)

57.22
[2.253]
(Viewing Area)

20.63
[.812]
(Viewing Area)

22.70
[.894]

60.00
[2.362]

1.70
[.067]

Maximum P.C. Board Size

17.58
[.692]

6.63
[.261]

17.58
[.692]

56.61
[2.229]

28.00
[1.102]

P.C. Board
(Not Supplied)

6.62
[.261]

14.31
[.563]

14.33
[.564]

54.00
[2.126]

82.66
[3.254]

Ø3.20 x 4
[.126]
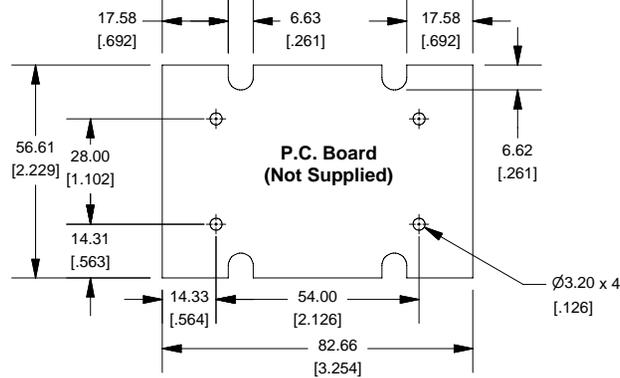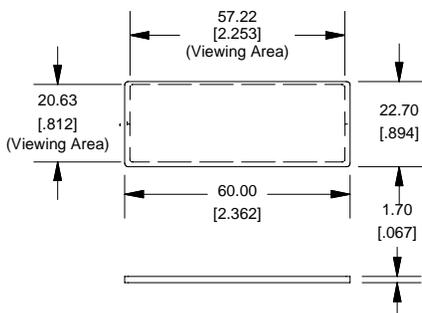
Enclosures can be Factory Modified (Milling, Drilling, Printing etc.)
Solid models of this enclosure available in STEP or IGES.
Contact Factory   mjm@hammondmfg.com

NOTE
Enclosure molded from GP ABS (UL94-HB) plastic.
Purchased assembly includes top and bottom cover, front and rear plastic panels (2 types - flat and contoured) and 4 cover screws.

PART NUMBERS	
1593L Enclosure	
Black Enclosure	1593LBK
Grey Enclosure	1593LGY
ACCESSORIES	
Cover Screws (Pkg 100) [#4 x 3/4" self-tapping oval head (19.1mm)]	1593QS100 (Silver) 1593QS100BK (Black)
P.C. Board Screws [#4 x 1/4" self-tapping (6.4mm)]	1593ATS50 (Pkg 50) 1593ATS100 (Pkg 100)
Belt or Pocket Clip	1599CLIP (Black) 1599CLIPGY (Grey)
Infared Panels (Pkg 10)	1593DIR10

HAMMOND MANUFACTURING™

1593L

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