



Setup and Users Manual

4 wire RS-232 and PS/2

Standard Touch Screen Controller Board

48-B-4-01

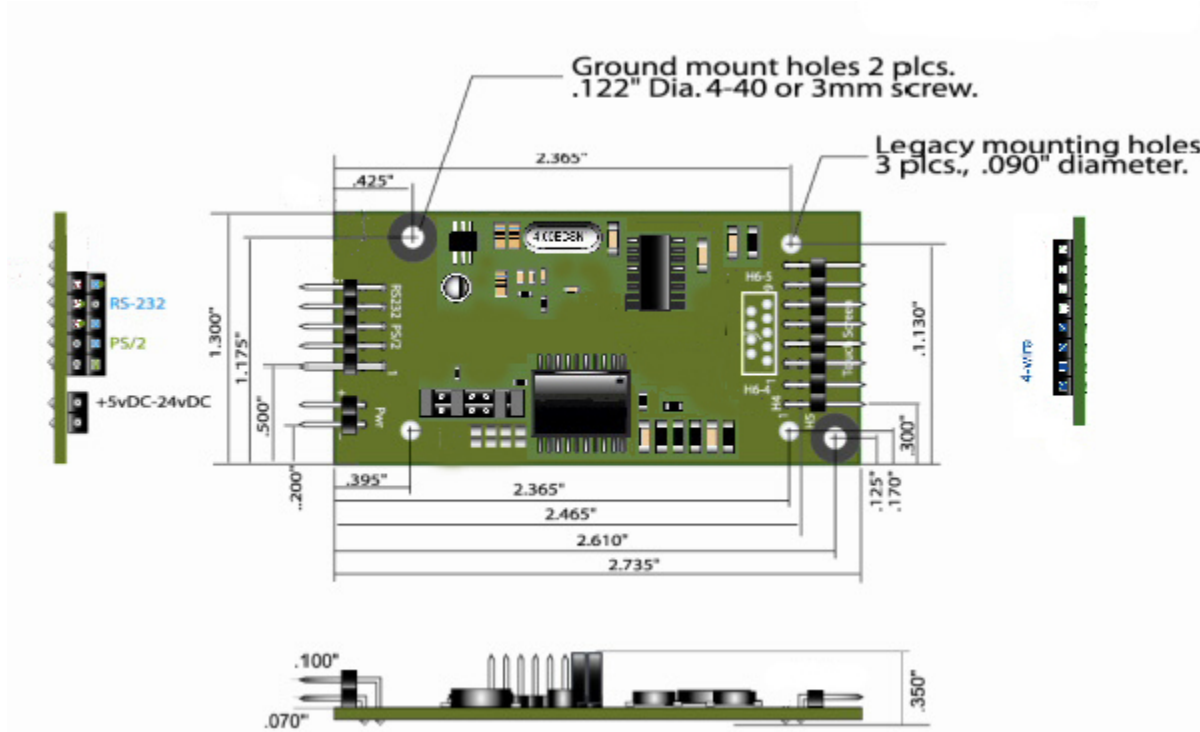
Telephone: 1.512.832.8292
Toll Free: 877.832.8292
Fax: 1.512.832.8291
sales@touchintl.com
support@touchintl.com
www.touchinternational.com

NOTE: The board revision and firmware release can be found directly on your touch screen controller board. Please contact Touch International if you have any questions regarding your hardware revision.

Warning:

Although, Touch International has taken steps to protect your touch screen controller from transient voltage, it is important to make sure that adequate static precautions are taken when connecting the controller to your application. **Failure to follow this procedure may result in damage to your controller and/or communication port.**

Mechanical Specification



General Information

User Information:

Those responsible for the application and use of Touch International products and documentation are assumed to have taken all necessary steps to ensure that the application of Touch International products meet safety and performance requirements including any laws, regulations, codes and standards associated with user application.

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Introduction:

This manual has been written for users of the Touch International standard 4-wire controller board to be used in combination with the Touch International resistive device drivers.

The touch screen controllers and software described within this document are assumed to be used with four wire analog resistive touch screen products manufactured by a variety of touch screen manufacturers. Touch screens between manufacturers vary with regards to light transmission, sensitivity and electrical characteristics. Because touch screen quality and resistance varies from touch screen technologies and manufacturers the actual, overall resolution may vary (slightly) between touch screen overlay manufacturers' products.

The Touch International controller allows for 12-bit (4,096 x 4,096) resolution of an analog resistive touch screen. Points in a field are: 12-bit: 16,556,761.

Software and Device Drivers:

All Touch International products are designed to be used with Touch International device drivers.

Typically, there is no additional charge for Touch International's device drivers. Drivers are available for Windows™: 9x, XP, 2000, ME, NT™, DOS™.

All user manuals and drivers are available at the Touch International web site. Touch International terms and conditions apply to all applications using Touch International hardware, firmware or software.

Features of Touch International controller

Communication Options (Jumper Selectable)

RS232 - 9600 baud rate (if needed, contact Touch International for other baud rates available)
PS/2, Personal System / 2

Touch Screen Interface:

Analog Resistive 4 wire

Resolution:

12 bit (4,096 x 4,096) 16,556,761 points in the field

Transmission Speed:

~40 – 100 dynamic points / second

Static Protection:

400 watts static protection

Calibration:

Software (driver) calibration for all PC and Mac configurations.
Touch International drivers include 4 and 20 point calibration to compensate for non-linear or non-square linearization patterns. Touch International's 3 and 7point calibration may be used for known linear touch screens.

Power Options (Jumper selectable):

External Regulated power: 5 Vdc +/- 10%
External Unregulated power: 7.5 Vdc <25 Vdc
Power options based on jumper configurations. See "jumper setting" diagrams later in this manual.

Note about software calibration:

If the touch screen connector is upside down, the calibration routine will identify the correct position of the touch screen overlay.

Communication Format

RS232 Protocol (Standard)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	1	P	X11	X10	X9	Y11	Y10	Y9
2	0	X8	X7	X6	X5	X4	X3	X2
3	0	Y8	Y7	Y6	Y5	Y4	Y3	Y2
4	0	0	0	0	X1	X0	Y1	Y0

RS232 Protocol (Ten Byte)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	0	1	0	1	0	1	0	1
2	0	1	0	1	0	1	0	0
3	0	0	0	0	0	PU	PD	0
4	X7	X6	X5	X4	X3	X2	X1	X0
5	0	0	0	0	X11	X10	X9	X8
6	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
7	0	0	0	0	Y11	Y10	Y9	Y8
8	1	1	1	1	1	1	1	1
9	0	0	0	0	0	0	0	0
10	CK7	CK6	CK5	CK4	CK3	CK2	CK1	CK0

Where:

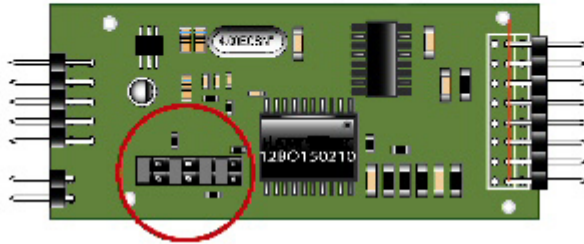
P - 0 Pen-Up, 1 Pen-Down
X11-X0 - 12 bit X position data
Y11-Y0 - 12 bit Y position data
PU - 0 no Pen-Up, 1 Pen-Up
PD - 0 no Pen-Down, 1 Pen-Down
CK7-CK0 - AAH + 55H + Sum of Bytes 2 through 9

Power / Communication Jumper Settings

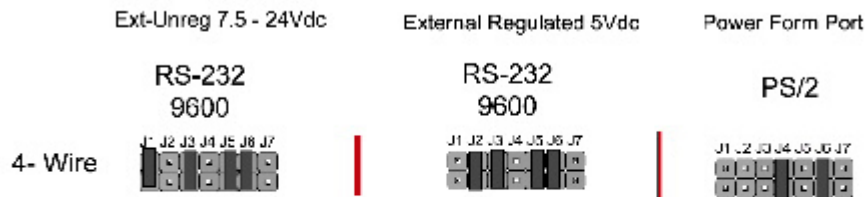
Jumper settings must be set for communication options as well as power. Use power from port settings for PS/2 only. Please contact Touch International for other possible options. INCORRECT JUMPER SETTINGS WILL DAMAGE YOUR BOARD.

Communication Jumper Settings

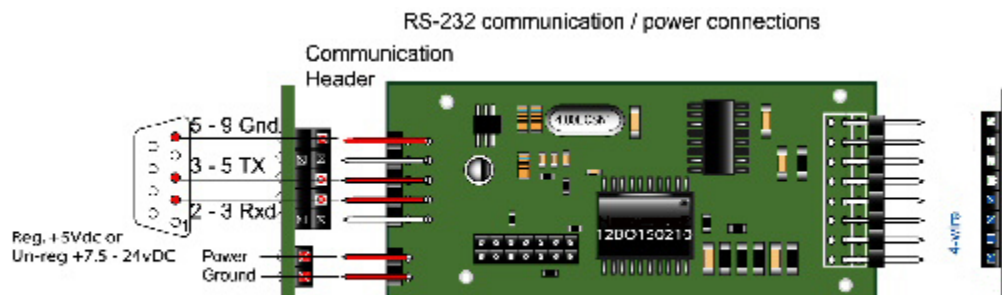
Headers shown as standard 'non-specified' configuration (4 wire, RS-232, 9600 ext. Un-reg power)



Touch Screen Type



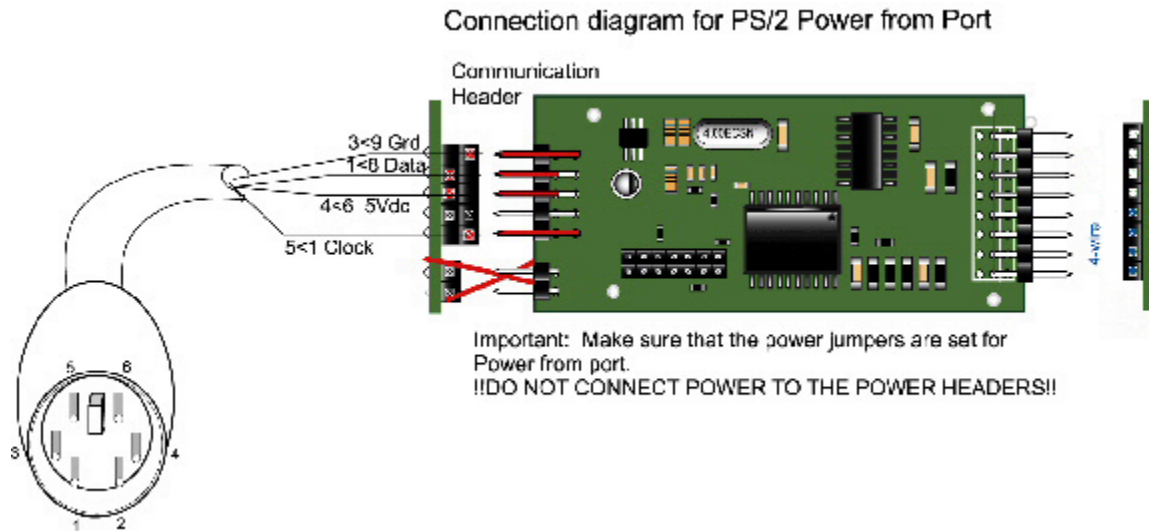
RS-232 Communication connection diagram



Important! Make sure power jumpers are set properly before connecting power.

Note: A standard flat ribbon RS-232 to 10-position jumper cable assembly may be used. Connector assembly is 1-1, 2-2, 3-3, and so on.

PS/2 Communication connection diagram



4-wire Touch Screen Connection Diagrams

