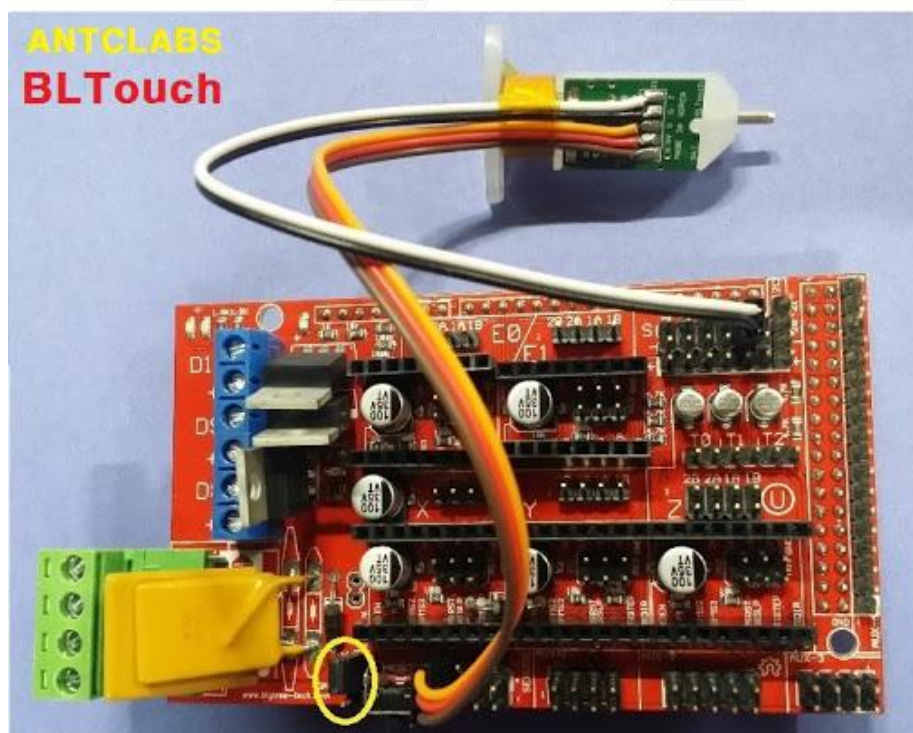
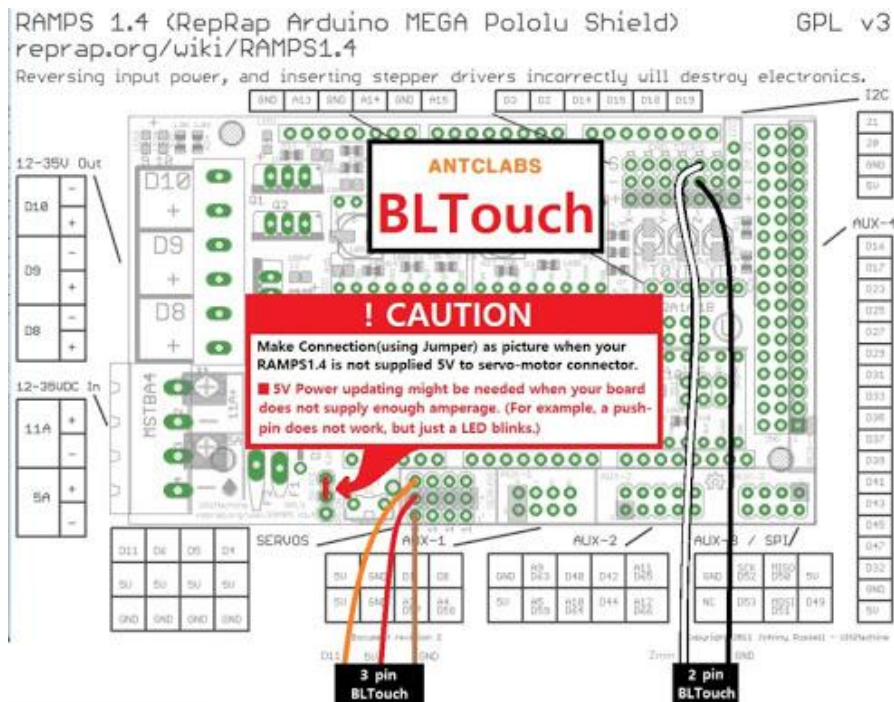


TL-touch using same wiring method as original BL-touch.

TL-touch Zmin signal is direct connect to the Hall sensor in the body so it will always on LOW when the probe rod at up position(standby).when the prob rod has being push down the Zmin signal will on HIGH. So the probe endstop signal in the firmware should be TRIGGERED on LOW. So the logic is inversed with the original BL-touch. Also you dont need the "M119 mode" for testing the Zmin signal,you can test it manually in anytime.



## This is the settings of the TL-touch in marlin1.1RC8:

If the settings are correct when you send the “M401” or “M280POS10”command the probe rod should be push down and the “M402” or “M280POS90”will retract the probe rod up

When is probe rod is up (standby mode) the “M119” command will report the Zmin or Zprobe endstop status “TRIGGERED”.

After probe rod has being pushing down(deployed) the “M119” command will report the Zmin or Zprobe endstop status “open”

```
#define USE_ZMIN_PLUG // a Z probe
#define USE_XMAX_PLUG
#define USE_YMAX_PLUG
#define USE_ZMAX_PLUG

// coarse Endstop Settings
//#define ENDSTOPPULLUPS // Comment this out (using // at the start of the line) to disable the endstop pullup resistors

#if DISABLED(ENDSTOPPULLUPS)
  // fine endstop settings: Individual pullups. will be ignored if ENDSTOPPULLUPS is defined
  #define ENDSTOPPULLUP_XMAX
  #define ENDSTOPPULLUP_YMAX
  #define ENDSTOPPULLUP_ZMAX
  #define ENDSTOPPULLUP_XMIN
  #define ENDSTOPPULLUP_YMIN
  #define ENDSTOPPULLUP_ZMIN
  #define ENDSTOPPULLUP_ZMIN_PROBE
#endif

// Mechanical endstop with COM to ground and NC to Signal uses "false" here (most common setup).
#define X_MIN_ENDSTOP_INVERTING false // set to true to invert the logic of the endstop.
#define Y_MIN_ENDSTOP_INVERTING false // set to true to invert the logic of the endstop.
#define Z_MIN_ENDSTOP_INVERTING true // set to true to invert the logic of the endstop.
#define X_MAX_ENDSTOP_INVERTING false // set to true to invert the logic of the endstop.
#define Y_MAX_ENDSTOP_INVERTING false // set to true to invert the logic of the endstop.
#define Z_MAX_ENDSTOP_INVERTING false // set to true to invert the logic of the endstop.
#define Z_MIN_PROBE_ENDSTOP_INVERTING false // set to true to invert the logic of the endstop.

// Enable this feature if all enabled endstop pins are interrupt-capable.
// This will remove the need to poll the interrupt pins, saving many CPU cycles.
#define ENDSTOP_INTERRUPTS_FEATURE

//=====
//===== Movement Settings =====
//=====
// @section motion

// delta speeds must be the same on xyz
/**
 * Default Settings
 */
```

```

// Use M551 to set the Z probe vertical offset from the nozzle. Store with M500.
//

// A Fix-Mounted Probe either doesn't deploy or needs manual deployment.
// For example an inductive probe, or a setup that uses the nozzle to probe.
// An inductive probe must be deactivated to go below
// its trigger-point if hardware endstops are active.
//#define FIX_MOUNTED_PROBE

// The BLTouch probe emulates a servo probe.
// The default connector is SERVO 0. Set Z_ENDSTOP_SERVO_NR below to override.
//#define BLTOUCH

// Z Servo Probe, such as an endstop switch on a rotating arm.
#define Z_ENDSTOP_SERVO_NR 0
#define Z_SERVO_ANGLES {10,90} // Z Servo Deploy and Stow angles

// Enable if you have a Z probe mounted on a sled like those designed by Charles Bell.
//#define Z_PROBE_SLED
//#define SLED_DOCKING_OFFSET 5 // The extra distance the X axis must travel to pickup the sled. 0 should be fine but you can push it further if you'd like.

// Z Probe to nozzle (X,Y) offset, relative to (0, 0).
// X and Y offsets must be integers.
//
// In the following example the X and Y offsets are both positive:
// #define X_PROBE_OFFSET_FROM_EXTRUDER 10
// #define Y_PROBE_OFFSET_FROM_EXTRUDER 10
//
//      ← BACK →
//      |         |
// L | (+) P | R ← probe (20,20)
// E |         | I
// F | (-) H (+) | G ← nozzle (10,10)
// T |         | H
//      | (-) | T
//      |         |
//      0← FRONT →
//      (0,0)
#define X_PROBE_OFFSET_FROM_EXTRUDER 0 // X offset: -left +right [of the nozzle]
#define Y_PROBE_OFFSET_FROM_EXTRUDER 0 // Y offset: -front +behind [the nozzle]
#define Z_PROBE_OFFSET_FROM_EXTRUDER -0.7 // Z offset: -below +above [the nozzle]
<

```

```

// - normally-closed switches to GND and D32.
// - normally-open switches to 5V and D32.
//
// Normally-closed switches are advised and are the default.
//

//
// The Z_MIN_PROBE_PIN sets the Arduino pin to use. (See your board's pins file.)
// Since the RAMPS Aux4->D32 pin maps directly to the Arduino D32 pin, D32 is the
// default pin for all RAMPS-based boards. Most boards use the X_MAX_PIN by default.
// To use a different pin you can override it here.
//
// WARNING:
// Setting the wrong pin may have unexpected and potentially disastrous consequences.
// Use with caution and do your homework.
//
// #define Z_MIN_PROBE_PIN X_MAX_PIN

//
// Enable Z_MIN_PROBE_ENDSTOP to use _both_ a Z Probe and a Z-min-endstop on the same machine.
// With this option the Z_MIN_PROBE_PIN will only be used for probing, never for homing.
//
// #define Z_MIN_PROBE_ENDSTOP

// Enable Z_MIN_PROBE_USES_Z_MIN_ENDSTOP_PIN to use the Z_MIN_PIN for your Z_MIN_PROBE.
// The Z_MIN_PIN will then be used for both Z-homing and probing.
#define Z_MIN_PROBE_USES_Z_MIN_ENDSTOP_PIN

// To use a probe you must enable one of the two options above!

// Enable Z Probe Repeatability test to see how accurate your probe is
#define Z_MIN_PROBE_REPEATABLITY_TEST

/**
 * Z probes require clearance when deploying, stowing, and moving between
 * probe points to avoid hitting the bed and other hardware.
 * Servo-mounted probes require extra space for the arm to rotate.
 * Inductive probes need space to keep from triggering early.
 *
 * Use these settings to specify the distance (mm) to raise the probe (or
 * to lower it, depending on the configured endstop) before the next move.
 *
 * *****\
 * R/C SERVO support
 * Sponsored by TrinityLabs, Reworked by codexmas
 * *****/

// Number of servos
//
// If you select a configuration below, this will receive a default value and does not need to be set manually
// set it manually if you have more servos than extruders and wish to manually control some
// leaving it undefined or defining as 0 will disable the servo subsystem
// If unsure, leave commented / disabled
//
#define NUM_SERVOS 1 // Servo index starts with 0 for M280 command

// Delay (in microseconds) before the next move will start, to give the servo time to reach its target angle.
// 300ms is a good value but you can try less delay.
// If the servo can't reach the requested position, increase it.
#define SERVO_DELAY 100

// Servo deactivation
//
// With this option servos are powered only during movement, then turned off to prevent jitter.
// #define DEACTIVATE_SERVOS_AFTER_MOVE

*****\
 * Support for a filament diameter sensor
 * Also allows adjustment of diameter at print time (vs at slicing)
 * Single extruder only at this point (extruder 0)
 *
 * Motherboards
 * 34 - RAMPS1.4 - uses Analog input 5 on the AUX2 connector
 * 81 - Printboard - Uses Analog input 2 on the Exp1 connector (version B,C,D,E)

```



## This is the settings of the TL-touch in marlin1.0.2-2 stable:

If the settings are correct when you send the “M401” or “M280POS10”command the probe rod should be push down and the “M402” or “M280POS90”will retract the probe rod up

When is probe rod is up (standby mode) the “M119” command will report the Zmin or Zprobe endstop status “TRIGGERED”.

After probe rod has being pushing down(deployed) the “M119” command will report the Zmin or Zprobe endstop status “open”

```
#ifndef ENDSTOPPULLUPS
  #define ENDSTOPPULLUP_XMAX
  #define ENDSTOPPULLUP_YMAX
  #define ENDSTOPPULLUP_ZMAX
  #define ENDSTOPPULLUP_XMIN
  #define ENDSTOPPULLUP_YMIN
  #define ENDSTOPPULLUP_ZMIN
#endif

// The pullups are needed if you directly connect a mechanical endswitch between the signal and ground pins.
const bool X_MIN_ENDSTOP_INVERTING = true; // set to true to invert the logic of the endstop.
const bool Y_MIN_ENDSTOP_INVERTING = true; // set to true to invert the logic of the endstop.
const bool Z_MIN_ENDSTOP_INVERTING = true; // set to true to invert the logic of the endstop.
const bool X_MAX_ENDSTOP_INVERTING = true; // set to true to invert the logic of the endstop.
const bool Y_MAX_ENDSTOP_INVERTING = true; // set to true to invert the logic of the endstop.
const bool Z_MAX_ENDSTOP_INVERTING = true; // set to true to invert the logic of the endstop.
//#define DISABLE_MAX_ENDSTOPS
//#define DISABLE_MIN_ENDSTOPS

// Disable max endstops for compatibility with endstop checking routine
#if defined(COREXY) && !defined(DISABLE_MAX_ENDSTOPS)
  #define DISABLE_MAX_ENDSTOPS
#endif

// For Inverting Stepper Enable Pins (Active Low) use 0, Non Inverting (Active High) use 1
#define X_ENABLE_ON 0
// ***** WARNING *****
// ***** WARNING *****
// ***** WARNING *****
//*****\
* R/C SERVO support
* Sponsored by TrinityLabs, Reworked by codexmas
//*****/

// Number of servos
//
// If you select a configuration below, this will receive a default value and does not need to be set manually
// set it manually if you have more servos than extruders and wish to manually control some
// leaving it undefined or defining as 0 will disable the servo subsystem
// If unsure, leave commented / disabled
//
#define NUM_SERVOS 1 // Servo index starts with 0 for M280 command

// Servo Endstops
//
// This allows for servo actuated endstops, primary usage is for the Z Axis to eliminate calibration or bed height changes.
// Use M206 command to correct for switch height offset to actual nozzle height. Store that setting with M500.
//
#define SERVO_ENDSTOPS {-1, -1, 0} // Servo index for X, Y, Z. Disable with -1
#define SERVO_ENDSTOP_ANGLES {0, 0, 0, 0, 10, 90} // X,Y,Z Axis Extend and Retract angles

//*****\
* Support for a filament diameter sensor
* Also allows adjustment of diameter at print time (vs at slicing)
* Single extruder only at this point (extruder 0)
..
```

## This is the settings of the TL-touch in Repetier0.92.9:

If the settings are correct when you send the “M340 P0 S700”

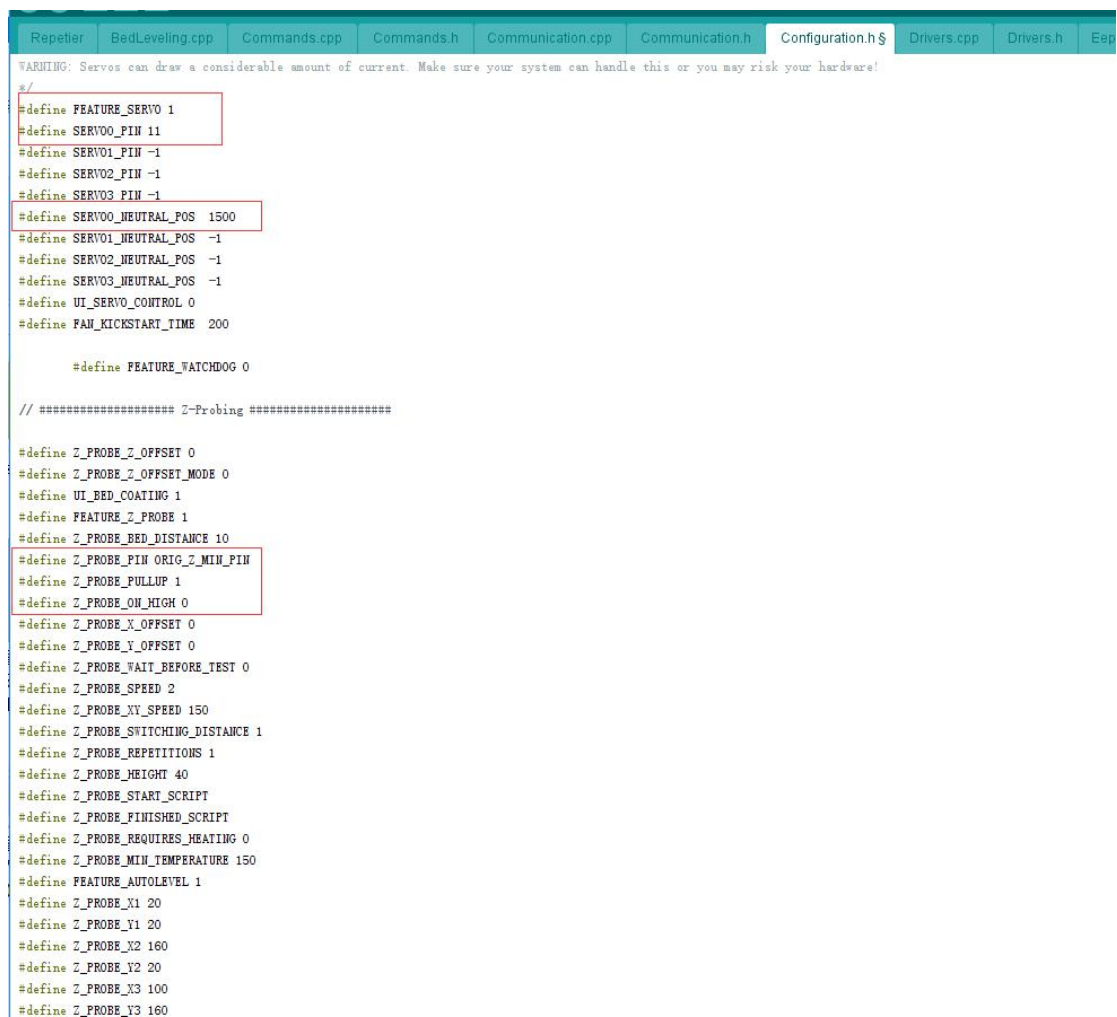
the probe rod should be push down and the “M340 P0 S1500” will retract the probe rod up

When is probe rod is up (standby mode) the M119 always shows the “z-probe state: H”

When is probe rod is push down(deployed) the M119 shows the “z-probe state: L”

Because of the TL-Touch probe signal is always “H” in the firmware when stand by please do not set the “Z\_PROBE\_START\_SCRIPT” and “Z\_PROBE\_FINISHED\_SCRIPT” for deploy and retract the probe rod automatically,it may not working.

You can edit the starting script of the slicer by add “M380 P0 S700” for deploy and “M380 P0 S1500” for retract the probe rod before and after auto bed leveling.



```
WARNING: Servos can draw a considerable amount of current. Make sure your system can handle this or you may risk your hardware!
*/
#define FEATURE_SERVO 1
#define SERVO0_PIN 11
#define SERVO1_PIN -1
#define SERVO2_PIN -1
#define SERVO3_PIN -1
#define SERVO0_NEUTRAL_POS 1500
#define SERVO1_NEUTRAL_POS -1
#define SERVO2_NEUTRAL_POS -1
#define SERVO3_NEUTRAL_POS -1
#define UI_SERVO_CONTROL 0
#define FAH_KICKSTART_TIME 200

#define FEATURE_WATCHDOG 0

// ***** Z-Probing *****

#define Z_PROBE_Z_OFFSET 0
#define Z_PROBE_Z_OFFSET_MODE 0
#define UI_BED_COATING 1
#define FEATURE_Z_PROBE 1
#define Z_PROBE_BED_DISTANCE 10
#define Z_PROBE_PIN ORIG_Z_MIN_PIN
#define Z_PROBE_PULLUP 1
#define Z_PROBE_ON_HIGH 0
#define Z_PROBE_X_OFFSET 0
#define Z_PROBE_Y_OFFSET 0
#define Z_PROBE_WAIT_BEFORE_TEST 0
#define Z_PROBE_SPEED 2
#define Z_PROBE_XY_SPEED 150
#define Z_PROBE_SWITCHING_DISTANCE 1
#define Z_PROBE_REPETITIONS 1
#define Z_PROBE_HEIGHT 40
#define Z_PROBE_START_SCRIPT
#define Z_PROBE_FINISHED_SCRIPT
#define Z_PROBE_REQUIRES_HEATING 0
#define Z_PROBE_MIN_TEMPERATURE 150
#define FEATURE_AUTOLEVEL 1
#define Z_PROBE_X1 20
#define Z_PROBE_Y1 20
#define Z_PROBE_X2 160
#define Z_PROBE_Y2 20
#define Z_PROBE_X3 100
#define Z_PROBE_Y3 160
```