

Electric Garden Probe Cable Specification

Overview

- 4-core flexible cable, shield not essential.
- Outdoor quality cable preferred, but not essential
- Outer diameter must be slightly less than 4 mm to fit through an existing 4.0 mm hole.
- Overall length: 1 m nominal.
- One end has jacket removed and bare ends to solder to a PCB.
- One end has a 4-way Molex Milligrid 51110-0452 with contacts Molex 50394-8100 crimped on.
- Molex end has heat-shrink over

Details

- 4-core flexible cable, shield not essential.
- Outdoor quality cable preferred, but not essential.
- Outside diameter must be slightly less than 4 mm to make a snug fit in an existing 4.0 mm hole in a box without a cable gland. My prototype is 3.7 mm diameter. The inside of the box is filled with a 2-part polyurethane potting compound. This is quite runny, and we do not want it to leak out while it is setting (about 2 hours before it skins enough to stop flowing).
- The conductor and insulation size is not critical as voltage and current are low (less than 5 V, less than 25 mA). For prototypes, I used CNC products 2725-2828-BL-01000-A (I bought this from Digikey <https://www.digikey.co.nz/products/en?keywords=CN230B-25-ND>). This is a shielded cable usually used for USB cables, but I am open to other suggestions.
- Preferred core colours: black, red are essential, green, white suggested, but I am open to suggestions.
- Length of cable is 1 m before stripping.
- One end has the jacket (and shield if necessary) stripped back 11 mm. Each inner wire is stripped 2 mm, leaving 9 mm of insulation on each inner wire. Bare ends are tinned.
- One end has cover and shield stripped back 20 mm. Each inner wire is stripped a few millimetres and Molex contact 50394-8100 (loose) or 50394-8051 (chain) crimped on.
- Molex contacts are inserted into housing Molex Milligrid 51110-0452.
 - 1 - black
 - 2 - green/blue/other
 - 3 - white/yellow/other
 - 4 - red
- Molex connector end has approximately 20 mm of heat-shrink, half on the jacket, half on the individual inner wires.
- Molex connector mates with an existing part, so I cannot change that part.