Dapol Servo operated signals user guide (Single arm and Bracket type, all gauges)

This guide is written for Dapol's servo-controlled range of signals and is applicable to all types (single arm and bracket types) in all gauges. A servo operated signal can be distinguished by the separate 'power base' and either one or two cam followers extending from the base of the signal. The power base contains either one or two servos (Single arm have 1, double arm has 2),circuitry and also houses the sockets for power and the operating switch cables.
Each signal is supplied with its appropriate power base.
Movement: The signal arm emulates prototypical operation and will move faster returning from the 'Proceed' to the 'Stop' position than from 'Stop' to Proceed. It is designed to bounce prototypically when returning to the 'Stop' position.

Wiring and Electrical requirements: (Wiring diagrams are provided overleaf)

1) The signal can be operated using DC or DCC (DCC operation requires a suitable DCC accessory decoder (ref: Paragraph 6 below).
2) Power supply is between 9V and 12V DC or 14VAC, it can also be powered by DCC track voltage up to 18V.
3) The power wires are identified as Red and Black. For DC power Red = '+', Black = '- ', For AC power, polarity does not matter. (Incorrect DC polarity will NOT damage your power base).
4) The control plug houses 3 wires. (Single arm signals have 1 socket; double arm has 2). Centre pin (Yellow) is 'common', the left pin (Brown) and right pin (Orange) drive the signal between 'Stop' and 'Proceed'.
5) We recommend using the toggle switch supplied, but momentary action switches or passing contact switches can also be used. (See reverse for example wiring diagrams).
6) For DCC operation, if you choose not to use the DAPOL DCC Servo Signal controller4A-001-002, (available separately), please ensure that you use a volt free DCC accessory controller such as the Digikeijs DR4018 which can provide an SPDT (Single Pole, Double throw) 3 wire output. **DO NOT** use a 3-wire point motor operating unit as this type outputs a voltage which may damage your signal power base. Alternatively, you may choose to use a relay, chosen to be suitable for your DCC system.

Fitting your signal to the baseboard:

The signal is designed to be mounted into a 15mm hole, it can be fitted to baseboards as thin as 1mm (permitting fitting to thinner removable 'drop-in' panels) or as thick as 22mm.

1) Mark out the baseboard for drilling. (Measurements and templatesare supplied at the bottom of the page).
2) Remove the nut from the signal base, insert the signal and align it with the track. Re-fit the nut under the baseboard and tighten sufficiently to hold in position. Do not use any tools, overtightening will damage your signal.
3) Fit the electrical connections to the power base:
   The power wires are pre-fitted needing only connection to a nearby power source. The wires can be lengthened.
   a. Bracket signals have two switch connections. (Marked SW1 & SW2)
   b. Single arm types have one switch connector. (Marked SW1)
   c. The switch is pre-wired with 300mm cable and plug, additional switch extension cables Dapol part # 4A-000-014 are available in multiples of 2m and can be combined for longer distances.
4) Clip the power base to the end of the signal mounting:
   a. Line-up the yellow bands, ensuring the electrical and mechanical connections engage correctly. If the base does not attach easily, then it is not lined up correctly. Turn the base a little as you gently push towards the signal.
   b. When the signal is lined up correctly, it will slide onto the base approximately 5mm before 'click' fitting in place (an audible 'click' will be heard)
   c. A little movement after fitting is normal.
5) Connect power supply and switch connections as described below.
6) If the switch plug needs to be dis-connected, carefully pull it from the power base, avoiding direct stress on the wire connection to the plug.