

# TORSPEC™



## INSTALLATION AND SETTING UP MANUAL S5702TCP CONTROLLED BRAKING SYSTEM

### WARNING

*Disconnect all incoming power before working on this equipment.  
Follow power lockout procedures.  
Use extreme caution around electrical equipment.  
Do not touch the circuit board while power is applied.*

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*Manufacturers & Suppliers of World Class Quality Variable Speed Drives & Controls*

# S5702TCP SPEED CONTROLLED BRAKING SYSTEM

## SETTING UP

1. Connect the system using the interconnection diagram.
2. The potentiometers on the board have been factory set to give a nominal performance as detailed below. Instructions for fine-tuning the system are described in items 6, onward.
  - a) P4 – **Internal Brake Limit** – This has been set at maximum to allow maximum brake to be available.
  - b) P8 – **Stability** – Set to 1/3 clockwise rotation
  - c) P9 – **Regulation** – This control sets the change of speed
  - d) P10 – **Stability** – Set to 1/3 clockwise rotation
  - e) P11 – Current feedback – factory set fully anti-clockwise. Range is from 1 to 5 amps. For 1 amp coil set fully clockwise, for 2 amp set midway, for 5 amps set fully anti-clockwise.

The controls P8 and P9 determine the dynamic performance of the system and have been adjusted for average conditions.

3. Isolate the drive motor and apply power to the controller S5702TCP only. Zero the speed indicator by means of the zero adjuster on the meter.

*Note: To avoid overheating the Torspec unit, do not leave power to the controller for an extended period.*

4. Apply power to the whole system.

The system is now ready for operation. Speed variation is obtained by means of the speed control potentiometer RV1.

5. Maximum brake may be limited by turning P4 anti-clockwise.
6. Acceleration time may be limited by turning P3 anti-clockwise.

Better control may be possible with further adjustment, which should be made with the driven machine working under normal operating conditions. Proceed as follows:

7. Adjustment of P3 and P4 is described in instruction 5 and 6 above.

8. P1 and P2 adjust the speed range available from the speed control potentiometer RV1. For adjustment proceed as follows:
9. Disconnect A3 & A4 wires from the S5702TCP controller.
10. Apply power to the whole system and run the drive motor.

### **5001TCP set up** (refer to 5001TCP installation and setting up manual)

11. Set **speed control** potentiometer to minimum.
  - a) Adjust the **minimum speed** P1 until the required minimum speed is set.
12. Turn the speed control potentiometer to maximum.
13. Adjust the **maximum speed** P2 until the required maximum speed is achieved. At this point the speed indicator may be calibrated by means of the meter calibration potentiometer.
14. Repeat instructions 11, 12, 13 and 14 until the maximum and minimum speeds are correctly set.

### **S5702TCP set up**

15. Set **speed control** potentiometer to maximum.
  - a) Adjust the **maximum speed** P2 until the output LED start to light.
16. Adjust P2 until the lights alternate from one controller to the other making sure both lights are not on at the same time. If both lights come on, adjust P2 accordingly.
17. Set the speed potentiometer to 30%.
18. Adjust P1 until the lights alternate from one controller to the other making sure both lights are not on at the same time. If both lights come on, adjust P1 accordingly.
19. Repeat instructions 15, 16, 17 and 18 until the maximum and minimum speeds are correctly set.
20. The functions of potentiometers P8, P9 and P10 are as follows:
  - a) P8 – **Differential Control** – This increases the response of the system to transient speed changes. Clockwise rotation improves stability and minimizes overshoot and undershoot when speed changes are made, but may cause an increase in regulation at low speeds.

- b) P9 – **Regulation** – This control adjusts the gain of the system. Clockwise rotation reduces regulation but may promote instability. Anti-clockwise rotation increases regulation and improves stability.
- c) P10 – **Integral Control** – this decreases the response of the system to transient speed changes. Clockwise rotation reduces the response but improves stability.

If P8, P9 and P10 are adjusted, it may be necessary to recalibrate the minimum and maximum speeds as indicated in the instruction numbers 10, 11, 12, 13 and 14.

**21. System ready to run, reconnect A3 & A4 to the brake.**

# INTERCONNECTION DRAWING OF 5001TCP & S5702TCP

