



DC MOTOR SPEED CONTROL



DL 2125

The system has been designed for the study of programmable logic control techniques in the control of the speed of a separately excited dc motor. The speed regulation includes two control loops: hardware current loop with overcurrent limiting and speed loop with external PLC control. Speed measuring with a tachogenerator or with an opto-encoder via frequency/voltage converter.

Speed reference set by means of potentiometer or selector switches and under PLC control. The PI controller modulates the PWM circuit that drives the power stage consisting of switching transistor. Possibility of acceleration and deceleration ramps programming. Pointer meters for motor speed, voltage and armature current; connection to PLC through terminals or connectors.

The system is supplied with a machine set consisting of a DC permanent magnet motor, a DC tachogenerator, an encoder and a manual shoe brake.

Power: 48 Vdc, 5 A.

Tachometric signal: 180 V at 3000 rpm.

Power supply: single-phase from mains.

Complete with connecting cables, teacher's manual and student's work forms.

NOTE: It can be connected to a PLC such as the DL 2210B.

With this system, the student will be able to study the following:

- Open loop speed control
- Closed loop speed control
- Use of the PLC for the speed measuring
- Acceleration and deceleration ramps programming
- Duty cycle monitoring