NOTES

Fig. 5. Schematic diagram of goniometer wiring modifications required for automatic operation of sample changer.

Norelco type 42266/0 goniometer. The cathode follower circuit provided for geiger tube operation also has been removed in this diagram in favor of an external preamplifier for the proportional counter.

As shown by lines of double weight to emphasize the changer circuit, activation of the solenoid is made through microswitches provided in the goniometer. These internal switches have a screw adjustment to permit phasing of the time relationship between goniometer scan reversal and sample change. By using the cabling modifications indicated to the external preamplifier, the signal and power are all transmitted on the composite cable between the instrument cabinet and the goniometer head. This avoids the confusion of multiple external cables. An additional plug can be fitted to the goniometer housing to facilitate easy connection of the sample changer.

An alternative switching mechanism can be built by attaching a lever and microswitches to the external end of the scan direction control shaft. This avoids the necessity of internal modification of the goniometer circuitry but requires external wiring.

The power supply circuitry for the solenoid is shown in Figure 6. Line voltage of 115 volts AC is reduced and rectified to 20 volts DC and is delivered to the changer through the standard 10-contact plug in the goniometer housing (fig. 5). During a switching operation, the solenoid receives current for about 30 seconds. In order to prevent overheating of the solenoid during this period, a 20,000μF capacitor delivers a current surge to rotate the sample wheel; then the current drops to a lower level during the remainder of the cycle.

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REFERENCES


AN IMPROVED CO-ORDINATE SYSTEM FOR PARTICLE SHAPE REPRESENTATION1

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Variation of particle form is visualised as occurring between the three end members 'spheres,' 'rods,' and 'plates.' Particle form is therefore conveniently plotted onto a triangle as suggested by Sneed and Folk (1958) rather than onto orthogonal co-ordinates (e.g. of Zingg, 1955).

However the traditional method of plotting