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RC 4000 PERIPHERAL DEVICES

SPT 401 SET-POINT TERMINAL

Preliminary Specifications

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ABSTRACT: This report describes the logic structure of the Set-Point Terminal SPT 401 when used in connection with the RC 4000 Computer.

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## 1. MAIN CHARACTERISTICS

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The set-point terminal, SPT 401, is connected to the low-speed data channel, and is designed to control up to 8 stepping-motor driven set-point stations. By means of a write command all 8 set-point stations can be activated simultaneously; but with individual step commands: All the set-point stations may individually be ordered either to step one step up, one step down, or to stay unchanged. When the activation interval is finished, an interrupt signal is generated.

Each set-point station is supplied with two limits, upper and lower limit inside which the set-point station may be controlled. These limits are set by the control room-operator.

Each set-point station is also supplied with two push-buttons, COMPUTER CONTROLLED, and NOT COMPUTER CONTROLLED, by means of which the control room-operator can determine whether the set-point station should be controlled by the computer or manually.

The status of all set-point stations can be transferred to the computer. Status will indicate whether upper limit is exceeded, lower limit is exceeded, or the computer control is switched off.

## 2. COMMANDS

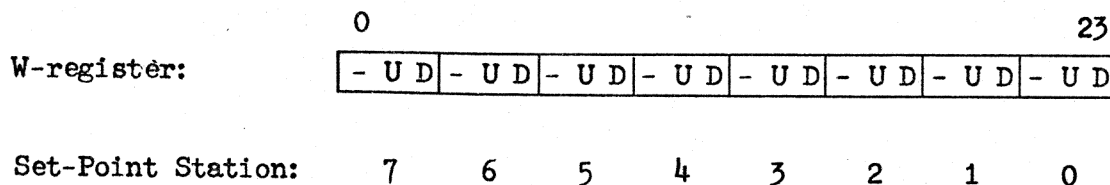
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SPT 401 accepts sense and write commands. In the input/output instructions specifying these commands, the value of the modifier field, i.e. bits 18:21 in the effective address, is irrelevant.

Use of read- or control commands will not affect SPT 401.

### 2.1. Write Command.

When SPT 401 is ready, it will accept a write command. The set-point stations connected can in this way be stepped individually one step up, one step down, or neither up nor down. The contents of the working register selected by the input/output instruction is interpreted as follows:



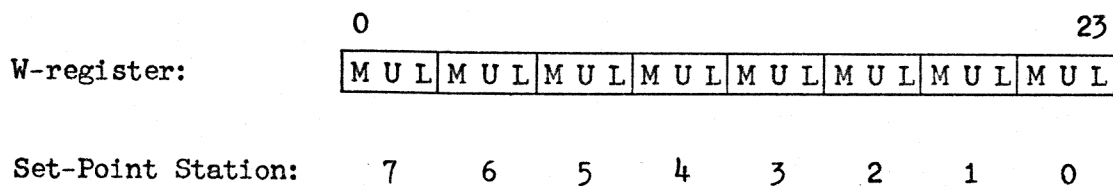
- U: UP command. Set-point station moves one step up.
- D: DOWN command. Set-point station moves one step down.
- : not used.

Simultaneous UP- and DOWN commands for a certain set-point station will not move the set-point station.

After the initiation of a write command the set-point terminal is busy for approximately 100 msec. The set-point terminal gives an interrupt signal when it becomes ready.

### 2.2. Sense Command.

When SPT 401 is ready, a status word can be transferred to a working register by means of a sense command:



#### M: Manual Control.

The status bit indicates that the operator has switched off the computer control of the set-point station concerned. UP- or DOWN commands have no influence on the set-point station.

#### U: Upper limit exceeded.

This status bit indicates that the set-point station concerned has passed the upper limit. UP- or DOWN commands have no influence on the set-point station.

L: Lower limit exceeded.

This status bit indicates that the set-point station concerned has passed the lower limit. UP- or DOWN commands have no influence on the set-point station.

When upper or lower limit has been exceeded, the control room-operator must manually move the set-point to be within limits in order to bring the station back under computer control again.