MODEL PAXCDS - SETPOINT OUTPUT PLUG-IN OPTION CARDS

DESCRIPTION
This bulletin serves as a guide for the installation, configuration and operation of PAX Setpoint cards. The setpoint cards are available as dual relay, quad relay, quad sourcing transistor, or quad sinking transistor outputs. Only one setpoint card can be installed at a time.

INSTALLING AN OPTION CARD

Caution: The option and main circuit cards contain static sensitive components. Before handling the cards, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the cards at a static controlled clean workstation. Also, only handle the cards by the edges. Dirt, oil or other contaminants that may contact the cards can adversely affect circuit operation.

Warning: Exposed line voltage exists on the circuit boards. Remove all power to the meter AND load circuits before accessing the unit.

1. Remove the main assembly from the rear of the case. Squeeze the finger holds on the rear cover, or use a small screwdriver to depress the side latches to release it from the case. It is not necessary to separate the rear cover from the main circuit card.
2. Locate the option card connector for the type of option card to be installed. Hold the unit by the rear connector, not the display board, when installing an option card.
3. Install the option card by aligning the option card connector with the slot in the rear cover. The cards are keyed by position with different main board connector locations. Be sure the connector is fully engaged and the tab on the option card rests in the alignment slot on the display board.
4. Slide the assembly back into the case. Be sure the rear cover latches fully into the case.
5. Apply the option card label to the bottom side of the meter. Do not cover the vents on the top surface of the meter. The surface of the case must be clean for the label to adhere properly. Apply the label to the area designated by the large case label.

The PAX meter can be fitted with up to three option cards. The slot bays of the option cards are dedicated to a particular card function. The option card functions are: serial communications, analog output and setpoint output. Only one card from each function category can be installed.
**SETPOINT SELECT**

Enter the setpoint (alarm output) to be programmed. The n in the following parameters will reflect the chosen setpoint number. After the chosen setpoint is completely programmed, the display will return to SPSEL NO. Repeat step for each setpoint to be programmed. The NO chosen at SPSEL will return to PRO NO. The number of setpoints available is setpoint output card dependent.
Enter the action for the selected setpoint (alarm output). See Setpoint Alarm Figures for a visual detail of each action.

- **OFF** = Setpoint always off, (returns to SPSEL NO)
- **Rb-HI** = Absolute high, with balanced hysteresis
- **Rb-LO** = Absolute low, with balanced hysteresis
- **RU-HI** = Absolute high, with unbalanced hysteresis
- **RU-LO** = Absolute low, with unbalanced hysteresis
- **dE-HI** = Deviation high, with unbalanced hysteresis*
- **dE-LO** = Deviation low, with unbalanced hysteresis*
- **bANd** = Outside band, with unbalanced hysteresis*
- **tablo** = Lower Totalizer absolute high, unbalance hysteresis**
- **tabH1** = Upper Totalizer absolute high, unbalance hysteresis**

* Deviation and band action setpoints are relative to the value of setpoint 1. It is not possible to configure setpoint 1 as deviation or band actions. It is possible to use setpoint 1 for an absolute action, while its value is being used for deviation or band.

** The lower Totalizer action **tablo** allows setpoints to function off of the lower 5 digits of the Totalizer. The upper Totalizer action **tabH1** allows setpoints to function off of the upper 4 digits of the Totalizer. To obtain absolute low alarms for the Totalizer, program the **tablo** or **tabH1** output logic as reverse.

** Setpoint Alarm Figures**

With reverse output logic **rEu**, the below alarm states are opposite.

<table>
<thead>
<tr>
<th>Absolute High Acting (Balanced Hys)</th>
<th>Absolute Low Acting (Unbalanced Hys)</th>
<th>Band Outside Acting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SP + ½Hys</strong></td>
<td><strong>SP - ½Hys</strong></td>
<td><strong>SP + Hys</strong></td>
</tr>
<tr>
<td><strong>SP</strong></td>
<td><strong>SP</strong></td>
<td><strong>Hys</strong></td>
</tr>
<tr>
<td><strong>ON</strong></td>
<td><strong>ON</strong></td>
<td><strong>ON</strong></td>
</tr>
<tr>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>Hys</strong></td>
<td><strong>Hys</strong></td>
<td><strong>Hys</strong></td>
</tr>
<tr>
<td><strong>Trigger Points</strong></td>
<td><strong>Trigger Points</strong></td>
<td><strong>Trigger Points</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deviation High Acting (SP &gt; 0)</th>
<th>Deviation Low Acting (SP &lt; 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SP1 + SP1</strong></td>
<td><strong>SP1 - SP1</strong></td>
</tr>
<tr>
<td><strong>SP1</strong></td>
<td><strong>SP1</strong></td>
</tr>
<tr>
<td><strong>ON</strong></td>
<td><strong>ON</strong></td>
</tr>
<tr>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>Hys</strong></td>
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</tr>
</tbody>
</table>

Note: Hysteresis eliminates output chatter at the switch point, while time delay can be used to prevent false triggering during process transient events.
ON TIME DELAY

Enter the time value in seconds that the alarm is delayed from turning on after the trigger point is reached. A value of 0.0 allows the meter to update the alarm status per the response time listed in the Specifications. When the output logic is rEw, this becomes off time delay. Any time accumulated at power-off resets during power-up.

OFF TIME DELAY

Enter the time value in seconds that the alarm is delayed from turning off after the trigger point is reached. A value of 0.0 allows the meter to update the alarm status per the response time listed in the Specifications. When the output logic is rEw, this becomes on time delay. Any time accumulated at power-off resets during power-up.

OUTPUT LOGIC

Enter the output logic of the alarm output. The nor logic leaves the output operation as normal. The rEw logic reverses the output logic. In rEw, the alarm states in the Setpoint Alarm Figures are reversed.

RESET ACTION

Enter the reset action of the alarm output.

STANDBY OPERATION

When YES, the alarm is disabled (after a power up) until the trigger point is crossed. Once the alarm is on, the alarm operates normally per the Setpoint Action and Reset Mode.

Alternate Setpoints

An Alternate list of setpoint values can be stored and recalled as needed. The Alternate list allows an additional set of setpoint values. (The setpoint numbers nor rear terminal numbers will change in the Alternate list.) The Alternate list can only be activated through a function key or user input programmed for L 5 by in Module 2. When the Alternate list is selected, the Main list is stored and becomes inactive. When changing between Main and Alternate, the alarm state of Auto Reset Action alarms will always follow their new value. Latched “on” alarms will always stay latched during the transition and can only be reset with a user input or function key. Only during the function key or user input transition does the display indicate which list is being used.

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