Introduction
The Monitor Switch Module, a signal conversion module contained in a single case, provides a PV monitor function that provides two points of alarm outputs responding to a single input. The J-SSP90 issues an alarm contact output when an input signal exceeds the internal pre-set value by comparing the input with the pre-set value.

The Monitor Switch Module provides the square root extraction function for the input processing of a differential pressure flowmeter as well as the linearization function that employs 101 linearization points for other linearization processing. To output more stable alarms, the alarm on-delay timer can be set. Setting of these functions is easily performed using the dedicated Loader Software, which operates on a general-purpose PC.

Specification
- Input signal: 1 to 5V DC or 4 to 20 mA DC
- Input impedance: 1 MΩ (voltage input), 250 Ω (current)
- Output signal: Dry contact SPST
- Number of alarm: 2 points
- Output contact capacity: 30V DC, 1 A (resistive load), 100V AC, 0.3 A (resistive load)
- Minimum load applied to contact: 5V, 1 mA
- Electrical life of relay: 0.1 million times or more
- Mechanical life of relay: 20 million times or more
- Alarm output state: Setting of energized or de-energized status during alarm-off (reversing by Loader Software)
- Relay contact: a-contact (N.O) or b-contact (N.C) (by setting jumper)
- PV alarm action: Hi/Lo limit, or Hi/Hi or Lo/LoLo limit (Two-point alarm)
- First-order lag filtering: 0 to 20.0 sec (63% response)
- Alarm setting range: 0.0 to ±120.0% (0.1% resolution)
- Dead band (hysteresis width): 0.0 to 120%FS (0.1% resolution)
- Alarm setting accuracy: ±0.15%FS
- Insulation resistance: 500V DC, 100 MΩ min.
- Withstand voltage: 1000V AC, 1 minute
- Startup delay: 0 to 10 sec (Setting of the delay time required before starting comparison since power on)
- Alarm on-delay: 0 to 999 sec (Setting for when an alarm state needs to be maintained until the timing of relay action)
- Arithmetic period: 5 msec
- Response speed: Approx. 120 msec (Time taken before an alarm is output at 0 to 100% input change and at the 50% alarm setting point, when set with no first-order lag filter, no alarm delay, and at 0% hysteresis)
- Power supply: 24V DC ±15%
- Current consumption: 130 mA or less (at 24V DC)
- Ambient temperature: Normal operating condition; 5 to 45°C Operation limit; 0 to 50°C
- Ambient humidity: 0 to 90%RH (No condensation allowed)
- Mounting: Panel, wall, DIN rail attachment
- Color of front mask: Black
- Weight: 400 g
- Operating influence: Supply voltage effect; ±0.1%FS/24V DC ±15%
- Temperature effect; ±0.15%FS/10°C
- Loader settings: Module ID; 16 one-byte characters, 8 two-byte kanji characters
  Alarm setting value SP1, SP2; Range between 0 to ±120.0% (Setting resolution 0.1%)
  Hysteresis width HYS1, HYS2; 0 to 120%, Set to 0.2% by default
  Alarm direction setting; Hi alarm (H operation) and Lo alarm (L operation). Set at each output
  Operation reversal; Not reversed (relay de-energized during alarm-off) or reversed (relay energized during alarm-off)
  Setting of square root extraction (including dropout); Setting of linearization (Linearization: 101 points)
  Input filtering; Unavailable/available (Moving average)
  First-order lag filtering; Without/with (0 to 20.0 sec, 63% response time)
  Startup delay; 0 to 10 sec
  Alarm-on delay; 0 to 999 sec
Figure 1. Functional block diagram of monitor switch module

Model Number Table

<table>
<thead>
<tr>
<th>Basic Model Number</th>
<th>Selections</th>
<th>Additions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J-SSP90</td>
<td>I</td>
<td>II</td>
<td>I</td>
</tr>
<tr>
<td>X</td>
<td>No varnish coated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Varnish coated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>Input: 1 to 5V DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>Input: 4 to 20 mA DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>W/o selection II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0</td>
<td>Without test report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>With test report</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example: J-SSP90X-1X-0
When ordering, please specify:

1) Tag number
2) Alarm setting value (0 to ±120%)
   - SP1 (Set to 80 by default)
   - SP2 (Set to 20 by default)
3) Hysteresis width (0 to ±120%)
   - HYS1 (Set to 0.2 by default)
   - HYS2 (Set to 0.2 by default)
4) Output contact specification type of SP1 and SP2
   - SP1 (Monitor #1): a-contact/b-contact [Set to a-contact by default]
   - SP2 (Monitor #2): a-contact/b-contact [Set to a-contact by default]
5) Alarm direction of SP1 and SP2
   - SP1 (Monitor #1): Hi/Lo [Set to Hi by default]
   - SP2 (Monitor #2): Hi/Lo [Set to Lo by default]
6) State of SP1 and SP2 during alarm (Reversal)
   - SP1: Not-reversed/reversed (Set to not-reversed by default)
   - SP2: Not-reversed/reversed (Set to not-reversed by default)
   - When "not reversed," the relay is de-energized during alarm-off, and when "reversed," the relay is energized during alarm-off.

The following are also set by default:

a) Input filtering: Moving average available
b) First-order lag filtering: Available 0.1 sec
c) Startup delay time: 0 sec
d) Alarm-on delay time (Set individually on each of SP1 and SP2): 0 sec

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Figure 2. Dimensions and wiring diagram
Panel-mounting

Panel-cutout

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DIN rail mounting

Wall-mounting

Figure 3. Mounting method

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