azbil Specification

SystempaK (Digital/File Type) Monitor Switch Module

Model J-SMS 90

Introduction

The Monitor Switch Module provides the PV monitor function which issues two points of alarm outputs responding to a single input.
The J-SMS90 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 alarms: 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:
  Setting of a-contact (N.O) or b-contact (N.C) (by setting jumper)
- PV alarm action:
  Hi/Lo limit, or Hi/HiHi 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.
  (Mutual between input - output - GND - power terminal)
- Withstand voltage: 1000V AC, 1 minute
  (Mutual between input - output - GND - power terminal)
- 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 $^{+10}_{-15}$ %
- Current consumption: 130 mA or less (at 24V DC)
- Ambient temperature:
  Normal operating condition; 5 to 45℃
  Operation limit; 0 to 50℃
- Ambient humidity: 0 to 90%RH (No condensation allowed)
- Mounting: File
- Color of front mask: Black
- Weight: 250 g
- Operating influence:
  Supply voltage effect; ±0.1%FS/24V DC $^{+10}_{-15}$ %
  Temperature effect; ±0.15%FS/10℃
- 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

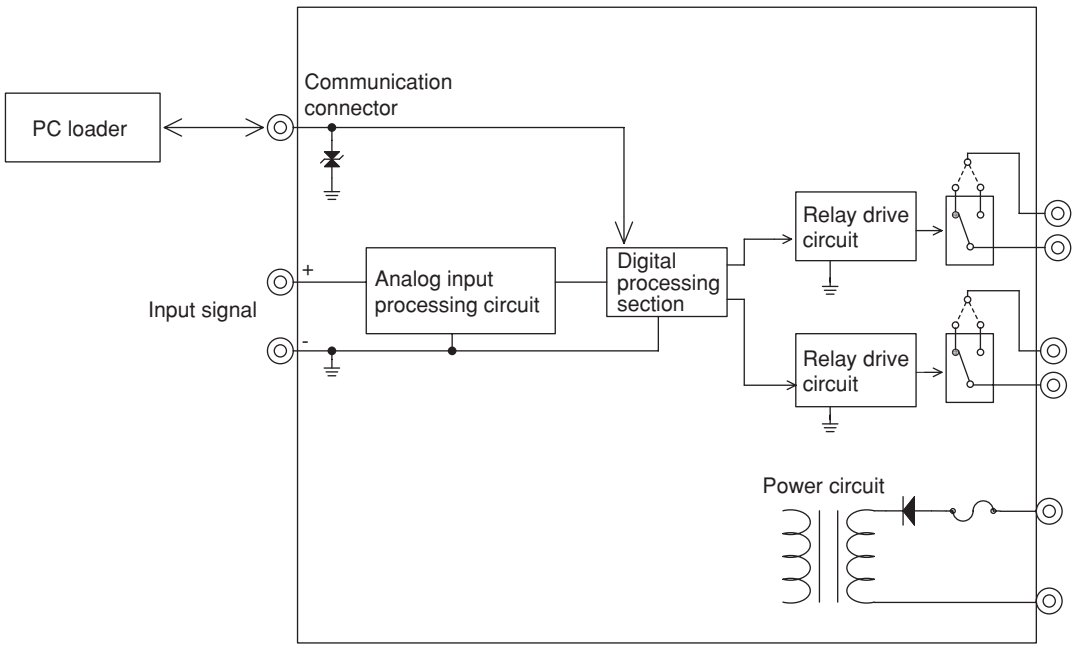
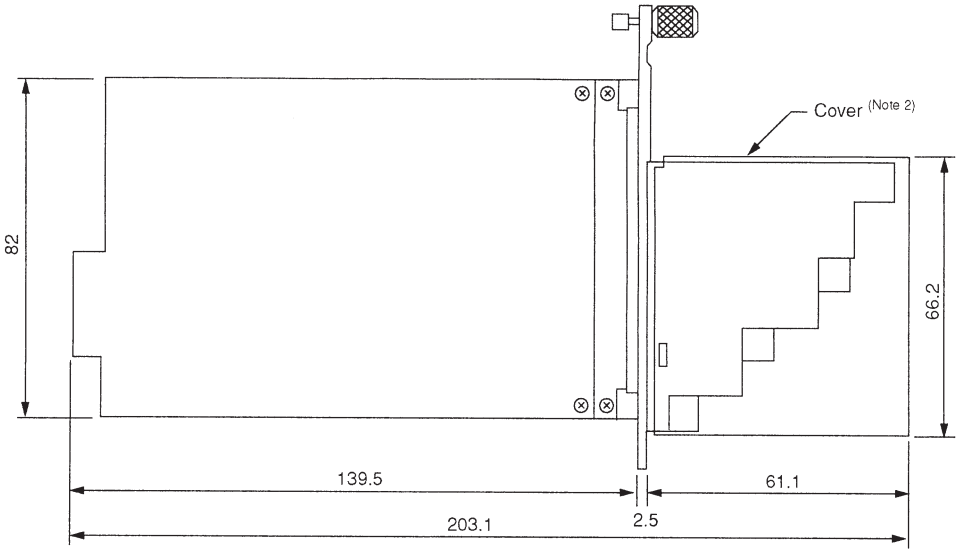


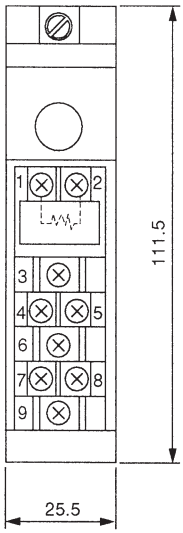
Figure 1. Functional block diagram of monitor switch module

Model Number Table

Basic model number		Selections		Additions	Description
		I	II	I	
J-SMS90					Monitor Switch Module (Digital type)
	X				No varnish coated
	C				Varnish coated
		-1			Input: 1 to 5V DC
		-2			Input: 4 to 20 mA DC
			X		W/o selection II
				-0	Without test report
				-1	With test report

Example: J-SMS90X-2X-0





No.	Description
1 (Note 1)	– – –
2 (Note 1)	Input (–)
3	Input (+)
4	Output 1
5	Output 1
6	Output 2
7	Output 2
8	– – –
9	GND

Note 1) 250 Ω resistor is added for current input.
2) Operate the module with a cover.
3) Terminal screws: M3.5
4) Use the pressured terminals with insulation sheath.

Figure 2. Dimensions and wiring diagram

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

Please read the "Terms and Conditions" from the following URL before ordering or use:

http://www.azbil.com/products/bi/order.html

Specifications are subject to change without notice.

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