

# SM662 Series

## Switch Monitor Operations Manual

THIS MANUAL CONTAINS TECHNICAL INFORMATION FOR THE SM662 SERIES SWITCH MONITOR. INCLUDED ARE GENERAL DESCRIPTION, OPERATIONAL DESCRIPTION, INSTALLATION, AND SPECIFICATIONS.

**THE SM662 SWITCH MONITORS ARE DESIGNED AND MANUFACTURED IN THE USA BY EBERLE DESIGN INC., PHOENIX, ARIZONA.**

INFORMATION CONTAINED HEREIN IS PROPRIETARY TECHNICAL INFORMATION OF EBERLE DESIGN INC. PUBLICATION, REPRODUCTION OR USE IN WHOLE OR PART IS NOT PERMITTED EXCEPT UNDER TERMS AGREED UPON IN WRITING. ©COPYRIGHT 2005-2010 EDI.

PCB 110-0622-001, Issue Ax, A

REVISION: MARCH 2010

pn 888-0662-001



EBERLE DESIGN INC.

3510 East Atlanta Avenue  
Phoenix, AZ 85040 USA  
www.EDITraffic.com

Tel (480) 968-6407  
Fax (602) 437-1996



<BLANK>

## 1.1 GENERAL DESCRIPTION

The model SM662 is a solid-state device intended to monitor a mechanical switch and report call and status to a controller unit. The SM662 is interchangeable with a standard inductive loop detector card and meets all appropriate requirements of the NEMA TS2-2003 Standard. The switch inputs of the SM662 are optically isolated from the DC Supply and are protected from transient over-voltage by a clamp circuit. The Call outputs are conducting when connected to a NEMA defined input providing fail-safe operation if the unit loses power.

## 1.2 OPERATION

### 1.2.1 FRONT PANEL TOGGLE SWITCHES

Each channel has a front panel mounted toggle switch. The NORMAL (center) position is set for normal operation and the Status Output will report state #1, Normal Operation. The DISABLE (up) position will inhibit the Call Output and change the Status Output to state #2, Detector Unit Failure. The TEST (down) position will set the Call Output to the active state as long as the switch is in the TEST position.

### 1.2.2 FRONT PANEL DET INDICATORS

The front panel LED labeled DET will illuminate when the active Call state is present on the Call Output. The LED will also illuminate for 500 milliseconds following power-up or Reset.

## 1.3 OPTION JUMPERS

Four programming options are available using SW3 (channel 1) and SW4 (channel 2). Option jumper #1 is located at the bottom of the jumper stack. Option jumpers #5 and #6 are not used.

### 1.3.1 INPUT MODE (JUMPER #1)

When jumper #1 (SW3-1, SW4-1) is in the open position the channel switch input is configured as normally open. When the channel switch input is sensed Closed (active) a call state is generated. When jumper #1 is in the shorted position the channel switch input is configured as normally closed. When the channel switch input is sensed Open (active) a call state is generated.

### 1.3.2 OUTPUT MODE (JUMPER #2)

When jumper #2 (SW3-2, SW4-2) is in the open position (Presence Mode) a call output is generated as long as the channel switch input is sensed active. A minimum pulse width will be supplied as determined by jumpers #3 and #4. When jumper #2 (SW3-2, SW4-2) is in the shorted position (Pulse on Entry Mode) a call output pulse is generated with a length determined by jumpers #3 and #4.

### 1.3.3 CALL OUTPUT PULSE LENGTH (JUMPER #3 & #4)

Jumpers #3 and #4 (SW3-3, SW3-4, and SW4-3, SW4-4) determine the width of the call output pulse when the Output Mode is set to Pulse on Entry.

Jumper #4	Jumper #3	Output Pulse Width
Open	Open	125 milliseconds
Open	Short	250 milliseconds
Short	Open	500 milliseconds
Short	Short	1000 milliseconds

**1.4 SPECIFICATIONS**

**1.4.1 MECHANICAL**

Height ..... 4.50 inches  
 Width ..... 1.2 inches  
 Depth (excluding handle)..... 6.875 inches

**1.4.2 ENVIRONMENTAL**

Storage Temperature Range ..... -45 to +85 °C  
 Operating Temperature Range ..... -34 to +74 °C  
 Humidity Range (non-condensing)..... 0 to 95% Relative

**1.4.3 ELECTRICAL**

DC Supply Voltage Maximum ..... 26.5 Vdc  
 DC Supply Voltage Minimum ..... 10.8 Vdc  
 DC Supply Current Maximum ..... 100 mAdc  
 Channel Input Pulse Minimum ..... 20 msec  
 Channel Switch Output Voltage Maximum ..... 15 Vdc  
 Channel Switch Output Current Maximum ..... 8 mAdc  
 Channel Switch Clamp Voltage ..... 33 Vdc  
 Channel Switch Clamp Dissipation (1 ms duration) ..... 1500 watts  
 Input to Output Isolation ..... 2000 Vdc minimum

**1.4.4 CONNECTOR PIN ASSIGNMENTS**

Pin #	Function	Pin #	Function
A	Logic Ground	1	No connect
B	Detector Unit DC Supply	2	No connect
C	Reset	3	No connect
D	Channel 1 Switch Input +	4	Channel 1 Switch Input +
E	Channel 1 Switch Input -	5	Channel 1 Switch Input -
F	Channel 1 Call Output +	6	No connect
H	Channel 1 Call Output -	7	Channel 1 Status Output
J	Channel 2 Switch Input +	8	Channel 2 Switch Input +
K	Channel 2 Switch Input -	9	Channel 2 Switch Input -
L	Chassis Ground	10	No connect
M	No connect	11	No connect
N	No connect	12	No connect
P	No connect	13	No connect
R	No connect	14	No connect
S	No connect	15	No connect
T	No connect	16	No connect
U	No connect	17	No connect
V	No connect	18	No connect
W	Channel 2 Call Output +	19	No connect
X	Channel 2 Call Output -	20	Channel 2 Status Output
Y	No connect	21	No connect
Z	No connect	22	No connect

**1.4.5 POLARIZATION KEYS**

Pin 1 through 22 is on the top (component) side and pin A through Z is on the bottom (solder) side. Polarization keys are located at three positions:

- Between B/2 and C/3
- Between M/11 and N/12
- Between E/5 and F/6