

PERTRONIC INDUSTRIES LTD

INSTALLATION NOTE

SGD8MD



1.0 Overview:

The SGD8MD (Signal Generating Device) is a digital transmitter designed to provide the transmission interface between Pertronic Fire Alarm (PFA) systems including Direct Brigade Alarms (DBA), and the alarm transmitters provided by ADT, Automatic Fire Alarm Monitoring (AFAM) and Alarm NZ. The SGD8MD differs from other SGD units in that it includes an isolated on-board power supply. This enables the SGD to be powered by the local PFA (or DBA) power supply or by the Alarm Transmitter and operate with DC supplies that have grounded +ve or -ve terminals.

2.0 SGD8MD Layout

The layout of the SGD8MD board, identifying connectors and LEDs, is shown in figure 1. Connectors K1, K3 to K5 and K7 interface to the panel, K2 to the Alarm Transmitter.

3.0 SGD8MD to Fire Panel Connection

Connect SGD8MDs K4 and K5 to the following Pertronic fire panels.

SGD8 Connectors	Fire Panel	Fire Panel Connector
K4/K5	F4	K4
K4/K5	F16e	K12
K4/K5	F100AVR	K14
K4/K5	F120A	K2
K4/K5	F220	K2

Table 1: SGD8MD to Fire Panel Connection

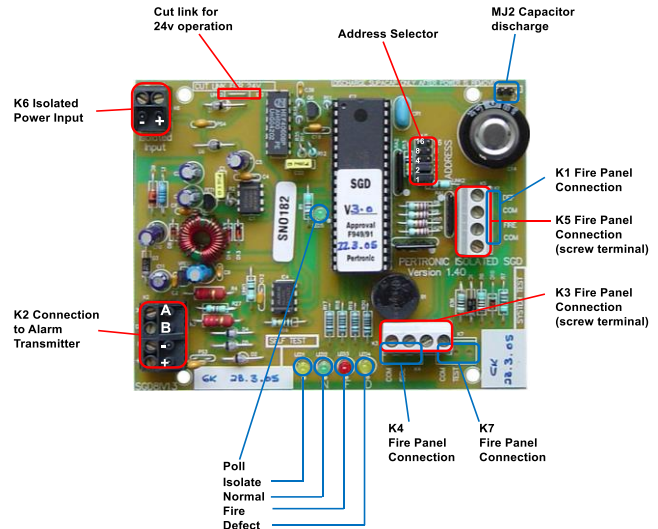


Figure 1: SGD8MD PCB Layout

4.0 SGD8MD to Alarm Transmitter Connection

Four wires connect the SGD8MD to the Alarm Transmitter; two data lines (A, B) and two power supply lines (+12v, 0v).

Twisted pair cable is recommended for the data lines (eg. 4 wire Pertronic SGD cable)

Recommendations for the power line cables are:

Distance SGD to Alarm Transmitter	Conductor area
Up to 100m	0.2mm sq
100 to 500m	0.5mm sq
500m to 1km	1.0mm sq

Table 2: Power Line Cable Selection

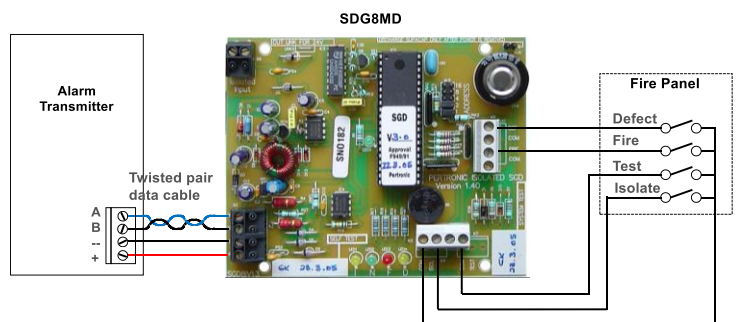


Figure 2: 4-wire connection to Alarm Transmitter

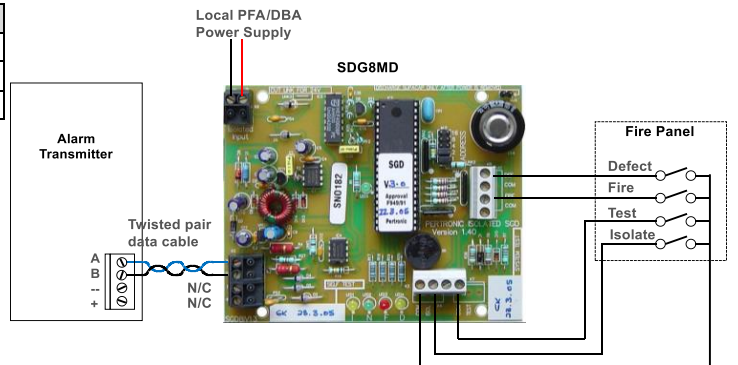


Figure 3: 2-wire connection to Alarm Transmitter

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5.0 SETTING UP THE SGD

5.1 Address Selection for Non Multi-Drop Operation

The valid SGD address range is 1 - 16, selected by inserting links as shown below in Table 3.

SGD Address	Link 1	Link 2	Link 4	Link 8	Link 16
1	1	0	0	0	0
2	0	1	0	0	0
3	1	1	0	0	0
4	0	0	1	0	0
5	1	0	1	0	0
6	0	1	1	0	0
7	1	1	1	0	0
8	0	0	0	1	0
9	1	0	0	1	0
10	0	1	0	1	0
11	1	1	0	1	0
12	0	0	1	1	0
13	1	0	1	1	0
14	0	1	1	1	0
15	1	1	1	1	0
16	0	0	0	0	1
17	1	0	0	0	1

Table 3: Address selection ('1' indicates link inserted)

Note:

Address 17 is reserved for SGD Test mode. In Test mode the SGD reports the status of the PFA without the need for a connection to the Alarm Transmitter. Normally if there is no communication between the SGD and the Alarm Transmitter, the SGD will reset every 2.7 seconds.

5.2 Address Selection for Multi-Drop Operation

SGD Multi-Drop Address	Link 1	Link 2	Link 4	Link 8	Link 16
1 (21)	1	0	1	0	1
2 (22)	0	1	1	0	1
3 (23)	1	1	1	0	1
4 (24)	0	0	0	1	1
5 (25)	1	0	0	1	1
6 (26)	0	1	0	1	1
7 (27)	1	1	0	1	1
8 (28)	0	0	1	1	1

6.0 Status Indicators.

Four LEDs – Isolate, Normal, Fire and Defect - show the state of the connected Fire Panel. When the Test switch is activated, the LED's showing the state of the PFA will flash slowly. If a test signal is generated (by activating a fire, defect or isolate when in test) the 'Normal' LED will flash rapidly, after a delay of approx 1.2s, indicating that a defect has been sent to the Alarm Transmitter. When a valid test acknowledgment has been received by the SGD the LED associated with the test will flash rapidly for 3 seconds and then revert to a slow flash. (Note: The buzzer will also sound if the test was a fire test). To repeat the test the Test switch must be opened and closed again.

The Test mode will timeout after 45 minutes, and the SGD enabled.

6.1 Poll LED

The Poll LED will flash each time the SGD is polled by the Alarm Transmitter. Under normal conditions this LED will flash every 0.5 seconds in single-drop mode, and every second in multi-drop mode.

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7.0 Connector Pin Designations

K1		K3		K4		K5		K7	
1	Common	1	Common	1	Common	1	Common	1	Common
2	Fire	2	Isolate	2	Isolate	2	Fire	2	Test
3	Common	3	Common	3	N/C	3	Common	3	N/C
4	Defect	4	Test			4	Defect		

Table 4: SGD8MD Connectors

Issue Number	Reason for Update	Change Note	Author
Issue 3.0 March 2001	Release issue 3.0		
Issue 4.0 July 2022	Removed LTX references. Reformatted, new diagrams	CN3215	RJK
Issue 4.1 Oct 2024	Multidrop address selection correction	CN3581	RJK