The SFA-4 General purpose Alarm system

CE

ISSUE 1

INTRODUCTION

The SFA-4 general purpose alarm panel is designed to display up to 4 alarm conditions using a green normal and a red flashing fault lamp, together with a mutable audible alarm. The alarm signal can originate from any equipment which can provide volt-free contacts which open under fault conditions. Additional SFA-4 alarm panels can be connected as slave alarms using a 2 core screened cable. Multiple SFA-4 alarms can be connected to an SDX-15 alarm panel, enabling up to 60 alarm conditions to be displayed on a system interconnected with a 2 core screened cable.

About this manual.

When you see this symbol, the associated text in **bold type** refers to something which may cause danger or damage.

Section 2
SYSTEM DESCRIPTION

The SFA-4 Alarm system is a multiplexed system using the MEDCON A data transmission standard, a pulse width modulated signal, on 2 core inter-panel wiring, capable of displaying up to 60 alarm conditions. Each SFA-4 alarm displays four alarm conditions, with a normal lamp for each, using long-life 5 x 20 mm block LEDs..

Signals from plant or other monitored equipment are connected into the SFA-4.

As an alarm condition occurs, the appropriate alarm condition will flash and the audible alarm will sound. Operating the Mute switch will silence the audible on that panel and convert the flashing lights to steady (the audible on any other panels is not affected). If the condition remains, the audible can be selected to re-trigger, requiring re-muting. In this case,if a condition is to be in an alarm condition for a prolonged period, e.g. for maintenance, the re-trigger can be prevented by silencing the audible with the Lockout button within the panel. The audible will not then sound for that condition of that service until it has returned to normal and then back to alarm condition. A volume control is fitted within the panel.

A loud speaker is used for the audible rather than a buzzer, to give a mellow sound which, whilst drawing attention to the alarm condition, can be tolerated by staff otherwise occupied.

Operation of the test button on the front of the panel will cause the normal lamps to illuminate, the alarm conditions to flash and the audible to sound.

The alarm is housed in a steel enclosure with a plastic bezel. Within the enclosure are mounted the power supply with battery reserve, control board with lamps, selector switches etc. .

The battery reserve enables the system to remain in operation for up to 4 hours .

Section 3
CABLING.

When the alarm panel is used with other SFA-4 or SDX-15 alarms, two core cable as specified in appendix A, must be run between all alarm panels. Cabling as specified in appendix A must be run between alarm condition source (plant, manifold etc.) and the SFA-4 alarm panel One core per condition plus common are required.

A minimum of 20mm clearance must be maintained between the alarm system cabling and any other cables (including the mains supply to the alarm system)

A 240 volt 50/60 Hertz supply, fused at 3 amps, is required for the alarm panel.

Section 4
INSTALLATION & COMMISSIONING.

WARNING. This equipment is not suitable for connection to an IT power system. A readily accessible means of disconnecting the supply must be provided. The maximum prospective fault current must not exceed 1500 amps.

Mount the box as required, using 4 holes in the corners of the box. Install cable, observing cable entry areas.

ALL CABLE SCREENS MUST BE CONNECTED TO EARTH. FAILURE TO CARRY OUT THESE INSTRUCTIONS WILL RESULT INTERMITTENT FAULTS & WILL INVALIDATE THE DECLARATION OF CONFORMITY RELATING TO THIS EQUIPMENT

Before connecting cabling on any panels, check continuity of cores and earth or screen, and insulation between cores and to earth.

Do not use high voltage testers such as meggers for these tests. Connect Live, Neutral

& Earth to terminals under the cover marked ``ISOLATE MAINS BEFORE REMOVING COVER'', making a cutout in the cover to suit the cable being used. **IMPORTANT. Ensure that the M4 screw below and to the left of these terminals is secure, as this is the earth connection to the box.**

Replace the cover after connection. If using more than one alarm panel, connect the inter-panel signal wiring to terminals 1 & 2 on the power supply board, observing polarity. Ensure that the screen, armouring or conduit is connected by a sound connection to earth.

Connect alarm condition cabling between alarm panel & plant.

SETTING UP.

Set jumper J1 to the ON position if you want muted alarm conditions to re-sound .

If you are using more than one alarm panel as a system:-

Set ONE alarm panel as the central alarm using jumper J4. Set all other alarm panels on the system (including SDX-15 alarms) as repeaters. Set all alarms on the system to the same group using jumper J2.

Set the rotary channel selector switch on each SFA-4 alarm which has connections to alarm conditions, to a unique setting. For SFA-4 alarms used to repeat signals from other SFA-4 alarms, set the channel selector to the same channel as the alarm connected to the alarm conditions you want to display. Switch on the power to all alarm panels etc. and connect the red battery wire to the upper battery terminal. The system should now be operational. Note that no panels will operate if the central panel is not functioning.

Section 5 OPERATION & TESTING.

All that is required for routine operation is for staff to mute the audible alarm on alarm panels in their areas as required, taking any action required by the nature of the service fault.

If retrigger is enabled, the audible will resound periodically as long as the service fault remains, requiring re muting. When a condition is to be at alarm condition for a long time, the audible can be continuously muted as follows. Open the panel and, while the alarm condition is present, press the white push button on the rear of the control board. Note that any other conditions present at the time will also be locked out.NOTE. This operation should only be carried out by service personnel.

TESTING

Periodically operate the test button and ensure that all lamps illuminate and the audible sounds. Periodically disconnect the mains supply to each panel and ensure that the system continues to operate. Provided that the battery in the panel under test is sound and fully charged, no other panel will be affected by this test.

Appendix A

Cable types

Use only the following types of cable for wiring the alarm system:-

SWA

Overall screened cable

Single core cable in steel conduit. Must not contain any other cables.

A minimum cable size of 0.5 sq.mm is recommended. Solid cable such as telephone cable should NOT be used.

Continuity of screen, armouring or conduit must be maintained at all times. Particular attention should be given to plastic junction boxes. Multicore cables must not be shared with other systems.

DECLARATION OF CONFORMITY

89/336 The EMC Directive

73/23 The Low Voltage Directive

Manufacturer

Shire Controls Ltd
Studio 3, Channocks Farm
Gilston Harlow
Essex
CM20 2RL
United Kingdom

Product Type

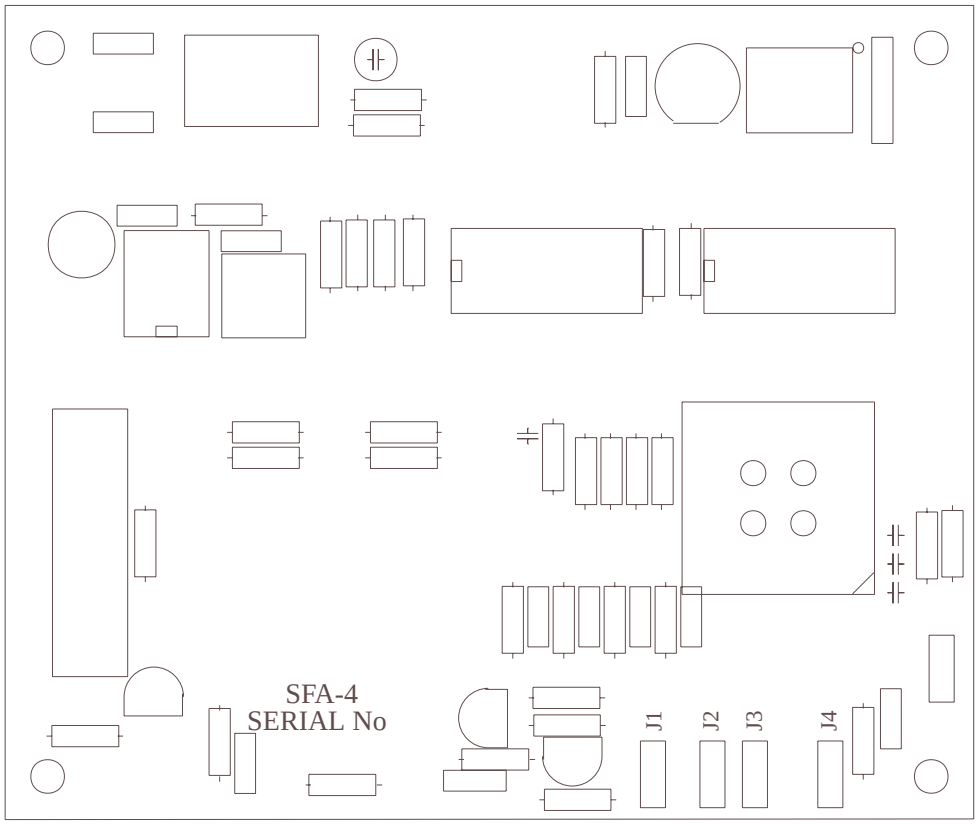
SFA-4 Gereral purpose alarm

Year of manufacture

Standards used

BS EN 50081-1
BS EN 50082-1
BS EN 61000-3-2
BS EN 60950

Authorised representative
I.R.Couchman Technical Director
Signature



J1
Retrigger

J2
Group

J3

J4
Central/repeater

OFF

B

REPEATER

ON

A

CENTRAL