



Instruction Manual

040-00077 Sulfuryl Fluoride Battery Pack Charger

Service Department

(800) 458-6153 ext. 121

(818) 882-2331 ext. 121

FAX (818) 341-0642 E-mail: service@gasdetection.com

This page intentionally left blank

Proprietary and Confidential: This document is the sole property of Interscan Corp. The information contained in this document is confidential and is not to be used, reproduced, or discussed without prior written consent by Interscan Corp.

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	Introduction	4
1.0	Battery Charger Principles of Operation	4
2.0	Precautions and Proper Care	4
3.0	Operation	5
4.0	Troubleshooting	5
4.1	Determining Internal Impedance	6-7
5.0	Warranty	8
6.0	Return Authorization	9

Introduction

This manual covers the basic function, operation and precautions associated with the Interscan 040-00077 Sulfuryl Fluoride Battery Pack Charger. ***The manual should be read completely before using the charger!***

1.0 Battery Charger Principles of Operation

The battery charger has the universal input range of 100 to 240 VAC (50/60 HZ). Output is 28.8 VDC maximum and 1.5 ADC maximum. The input connector is a standard 3-Pin IEC60320 C14 mated with an AC cord usable in the country of destination. The charger is protected against short circuit, reverse polarity and over voltage.

The LED first lights green when plugged into AC and not connected to battery pack. Connection to a discharged battery pack results in the LED turning amber and the charging process initiating.

The process first stage starts with a pulsed mode for de-sulfation of the battery plates. The second stage starts with a constant current of approximately 1.5 ADC. The third stage occurs after approximately 2 hours in which the applied voltage becomes a constant voltage of about 28.8 VDC. In the 4th stage the LED lights green when fully charged (a current of approximately 0.5 ADC). The final stage is a constant voltage in which the current decreases approaching zero current. The current is slightly increased from time to time to maintain the battery. This allows the battery pack to be left on constant charge.

2.0 Precautions and proper care

- 1] Always monitor battery temperature. *A battery warm to the touch is OK, and hot to the touch may indicate a problem.*
- 2] Charge battery pack at least once a month. *Battery packs not used for long periods (over a month) will begin to have a chemical reaction occur which can decrease the battery pack life or cause improper charging.*
- 3] Never charge battery packs showing signs of corrosion. *A deposit around the battery terminals indicates a possible leak of electrolyte.*
- 4] Place resistor for internal impedance test on a brick or surface that will not be damaged by high heat.

3.0 Operation

Plug 040-00077 charger into AC outlet. The LED should come on and immediately have a green color. Connect the battery pack if there are no signs of corrosion. The LED should switch to an amber color. Consult troubleshooting if the LED turns back to green in less than 30 minutes. A fully discharged ("Lo Bat" on GF1900) battery pack should take 9 to 10 hours to charge in which time the LED will be amber. The LED will turn to green when the battery pack is fully charged. The batteries can feel warm to the touch when fully charged. The battery pack may be left connected for longer than 10 hours as long as temperature is periodically checked and the LED is green.

4.0 Troubleshooting

No Green LED when plugged into AC, no battery pack connected	<ul style="list-style-type: none">• Contact factory
LED turns back to green in less than 30 minutes when battery pack is connected	<ul style="list-style-type: none">• Measure voltage of battery pack . <i>A voltage greater than 26 VDC indicates the battery pack may not have been fully discharged to "Lo Bat"</i>• Consult Determining Internal Impedance (See Section 4.1) <i>High internal impedance can cause LED to turn back to green in less than 30 minutes</i><ul style="list-style-type: none">• Contact factory

4.1 Determining Internal Impedance

Items needed to determine Internal Impedance:

2 - DVM (Digital Voltmeter) use one with a range capable of precisely measuring 27.6 VDC more or less, and the second with a range capable of precisely measuring 10.0 ADC or less.

1 - Stopwatch or timer

1 - 12Ω 250 Watt resistor

Alligator Clip leads

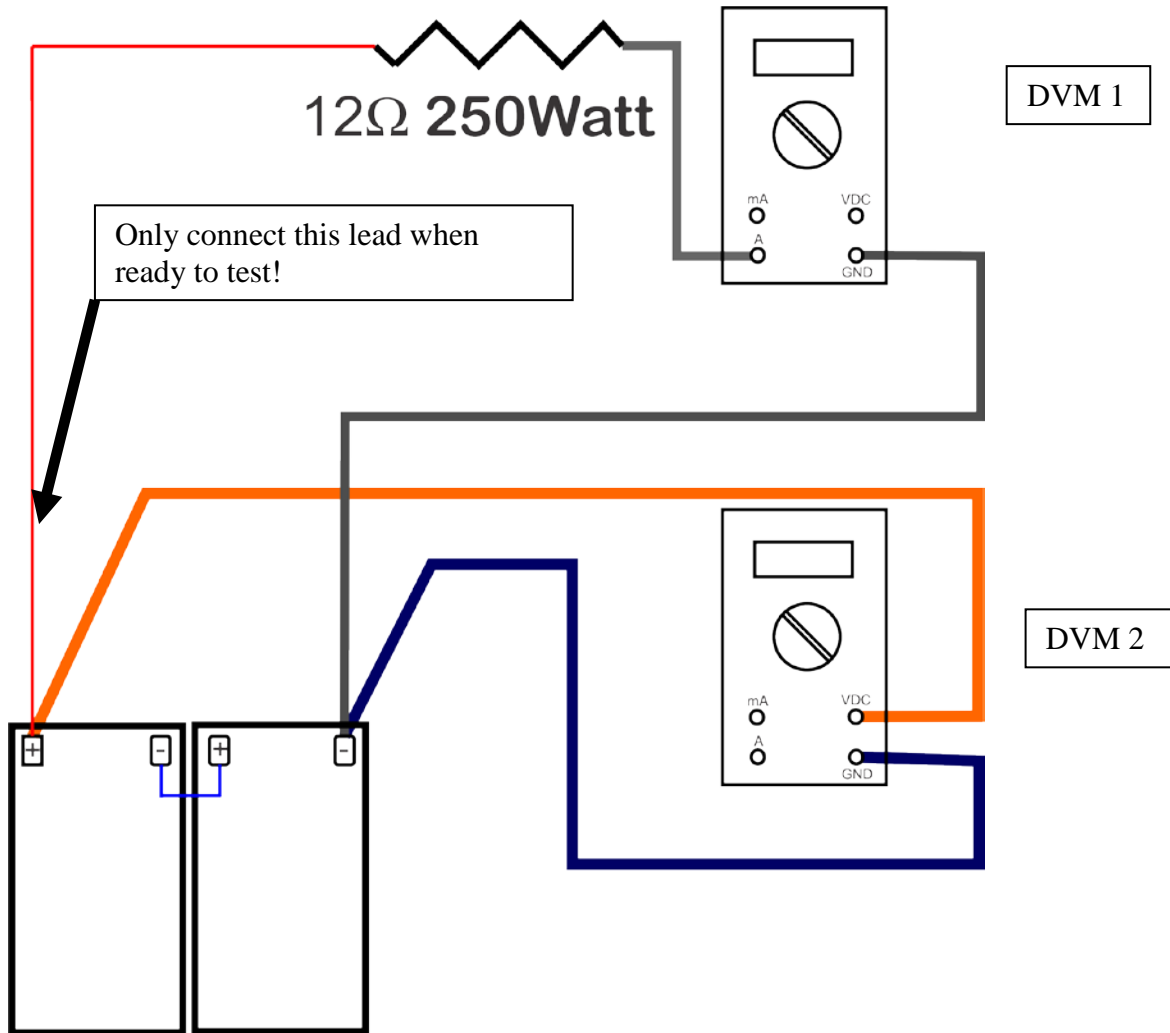


Figure 1

Lift the flap on the battery pack case. Note the wiring colors connected to the batteries. Disconnect the two wires connected at the outside of the batteries. This will leave the batteries connected by one wire at the center. Wire the battery pack, DVMs and resistor as shown in Figure 1. **Note: One lead from resistor is not connected until test is ready to perform. Place resistor on a brick or surface that will not be damaged by high heat!**

Set DVM 2 to a range to most precisely measure approximately 27.6 VDC. Set DVM 1 switch to Amps DC. Connect the test jig to the battery pack and start the stopwatch. Record the battery pack voltage (DVM2) and current (DVM1) after 5 minutes has elapsed.

1] _____ ADCL _____ VDCL After 5 minutes "L" denotes load
 DVM 1 DVM 2

Stop the stopwatch, disconnect the resistor lead from the Battery Pack, and start the stopwatch. Allow 5 minutes to elapse and record the Battery Pack voltage.

2] _____ VDCNL After 5 minutes "NL" denotes no load
 DVM 2

Disconnect the DVM from the battery pack.

You will now use the Recorded voltages and current to calculate the **internal resistance**. This is accomplished by subtracting the voltage (VDCL) from the voltage (VDCNL), then divides the result by the current (ADCL).

$$\text{Internal Resistance} = \frac{(\text{VDCNL} - \text{VDCL})}{\text{ADCL}}$$

Internal Resistance should never exceed 0.75, and will normally be about 0.35.

Warranty

5.0 INTERSCAN's Warranty Policy

INTERSCAN CORPORATION warrants portable analyzers of its manufacture (*sensors, batteries, fuses, lamps, tubing, fittings, filters, and scrubbers excepted*) to be free from defects in material and workmanship for a period of **one year** from date of shipment. INTERSCAN CORPORATION warrants sensors of its manufacture to be free from defects in material and workmanship for a period of **six months** from date of shipment.

INTERSCAN CORPORATION'S sole obligation under this warranty is limited to repairing or replacing, *at its option*, any item covered under this warranty, when such item is returned intact, prepaid to the factory (or designated service center).

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons, or which have been subject to misuse, negligence, or accident, incorrect wiring by others, installation or use not in accordance with instructions furnished by the manufacturer, or which have had the serial numbers altered, effaced or removed. The sensors are factory sealed and must not be opened or modified in the field for the warranty to remain in effect. This warranty is in lieu of all other warranties, whether expressed or implied.

Additionally, in a custom system, warranty on any component shall not exceed the manufacturer's warranty given to INTERSCAN CORPORATION.

Return Authorization

6.0 INTERSCAN's Return Authorization Policy

All returns for repairs require a "RETURN AUTHORIZATION NUMBER" issued by the INTERSCAN Service Department upon request. Below is the link to the RMA form:

<http://www.gasdetection.com/contact-interscan/rma-request/>

This is done primarily to cause the user to contact the factory directly. The reason for this is that a high percentage of service problems are resolved over the telephone, avoiding the need for returning the analyzer or part.

Should return of the analyzer or part be advised by the Service Department, the "RETURN AUTHORIZATION NUMBER" will expedite prompt return of the repaired unit.

For service information, please contact:

INTERSCAN CORPORATION

Service Department

(800) 458-6153 ext. 121

(818) 882-2331 ext. 121

FAX (818) 341-0642 E-mail: service@gasdetection.com

Link for the Online RMA request form:

<http://www.gasdetection.com/contact-interscan/rma-request/>