

AccuLase D2

Hydrogen Sulfide Analyzer

Installation and Safety Manual

Document #: RAD-MNL-E30-CGY-ACCULASE03-APR-000194

Revision 1

September 10, 2019

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NOTICES

All information in this manual is subject to change without notice and does not represent a commitment on the part of Galvanic Applied Sciences, Inc.

Note: Changes or modifications not expressly approved by Galvanic Applied Sciences, Inc. could void the user's authority to operate the equipment.

Purpose

This manual describes how to safely install the AccuLase D2 Analyzer.

Important

Read Section 1 before proceeding to use the AccuLase D2 Analyzer. Galvanic Applied Sciences is not responsible for any deviation from this manual.

Scope

If products and components from other manufacturers are used, these must be recommended or approved by Galvanic Applied Sciences.

Due to design changes and product improvements, information is subject to change without notice. The manufacturer reserves the right to change hardware and software design at any time, which may subsequently affect the contents of this manual.

The manufacturer assumes no responsibility for any errors that may appear in this manual. The manufacturer will make every reasonable effort to ensure that the manual is up to date and corresponds with your AccuLase D2 Analyzer.

Users

The AccuLase D2 Analyzer described in this manual is intended for use by trained personnel. Trained personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with the AccuLase D2 Analyzer. For startup or technical assistance contact

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1. AccuLase D2 Analyzer General Information

1.1 General Information

The Galvanic Applied Sciences AccuLase D2 analyzer uses Tunable Diode Laser Absorption Spectroscopy to determine the concentration of a target gas species in a variety of gaseous process streams.

1.2 Analyzer Specifications

1.2.1 Outputs / Interface

Outputs	<ul style="list-style-type: none"> • 4 x 4-20 mA output proportional to H₂S concentration, self-powered, isolated from the analyzer and from each other. • • 8 x solenoid drivers (4 streams, auto calibrate / validate span, auto calibrate / validate zero, 2 spare). For low powered 12 VDC solenoids. • Ethernet for modbus TCP/IP. • Ethernet for remote GUI log in. • Serial Ports for Modbus and communication to PSI module. <ul style="list-style-type: none"> ○ Default configuration will be 3 x RS232 and 1 x RS485 (2 x RS232 for lasers, 1 x RS232 for modbus, 1 x RS485 for modbus) • PID temperature control (Pulse Width Modulation) • 2 LEDs (Alarm and Keypad)
Inputs	<ul style="list-style-type: none"> • 4 x Discrete Inputs for on demand stream switching, or on demand validation or alarm devices, isolated and jumper selectable between wet and dry. • 4 x Analog Inputs (1 x RTD for gas temperature, 1 x pressure for cell pressure, 2 x loop or self-powered 4-20 mA devices, pressure transducer, RTD).
Operator Interface	<ul style="list-style-type: none"> • 5.7" VGA TFT Display

	<ul style="list-style-type: none"> • Handheld Keypad for status and data input • 2 LEDs for quick status • Remote PC application program
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1.2.2 Instrument Specifications

Size	635 mm (25") W x 1334 mm (52.5") H x 305 mm (12") D
Weight	45 kg (100 lbs)
Ambient Temp. 10-50°C (without enclosure)	-20 °C to +50°C
Ambient Humidity	0 – 95% Non-condensing
Ingress Protection	NEMA 4X

1.3 Safety Information

1.3.1 General Safety Information

Manufacturer:	Galvanic Applied Sciences Inc.
Manufacturer's Address:	7000 Fisher Road SE Calgary, Alberta Canada, T2H 0W3
Assessment Standards:	CAN/CSA 213 CAN/CSA 61010-1 UL 121201 ANSI/UL 61010-1

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-
-
- No modifications to the flamepaths are permitted without consultation with the controlled documentation or notified body.

The analog outputs and alarm relay contacts may be powered by a source separate from the one (s) used to power the analyzer system. Disconnecting the main power source may not remove power from the analog output signals

Any safety recommendations or comments contained herein are suggested guidelines only. Galvanic Applied Sciences Inc. bears no responsibility and assumes no liability for the use and/or implementation of these suggested procedures.

This system, when operating in its normal mode, and/or when it is being serviced, maintained, installed and commissioned contains items which may be hazardous to humans if handled or operated incorrectly or negligently. These items include, but are not limited to;

- a) High Voltage Electrical Energy
- b) Toxic and Explosive Gases
- c) Infrared Radiation

1.3.2 Messages and Symbols Used in Manual



The Danger symbol indicates a hazardous situation that, if not avoided will result in death or serious injury.



The Warning symbol indicates a hazardous situation that, if not avoided could result in death or serious injury.



The Caution symbol with the safety alert symbol indicates a hazardous situation that, if not avoided could result in minor or moderate injury.



The Notice symbol is used to highlight information that will optimize the use and reliability of the system.

Please read the following warnings and cautions carefully before using the AccuLase D2 Analyzer



This equipment must be used as specified by the manufacturer or overall safety will be impaired.



Access to this equipment should be limited to authorized, trained personnel ONLY.



Observe all warning labels on the analyzer enclosures.

1.3.3 Warning Symbols Marked on Analyzer





1.3.4 Lifting and Carrying

The analyzer weight is 45 kg. Adhere to local safety and regulatory procedures for lifting items of this size.

1.3.5 Operator Accessible Ports

1.3.6 External Protective Earthing



1.3.7 External Power Switch

1.3.8 Enclosure Entry Location and Size

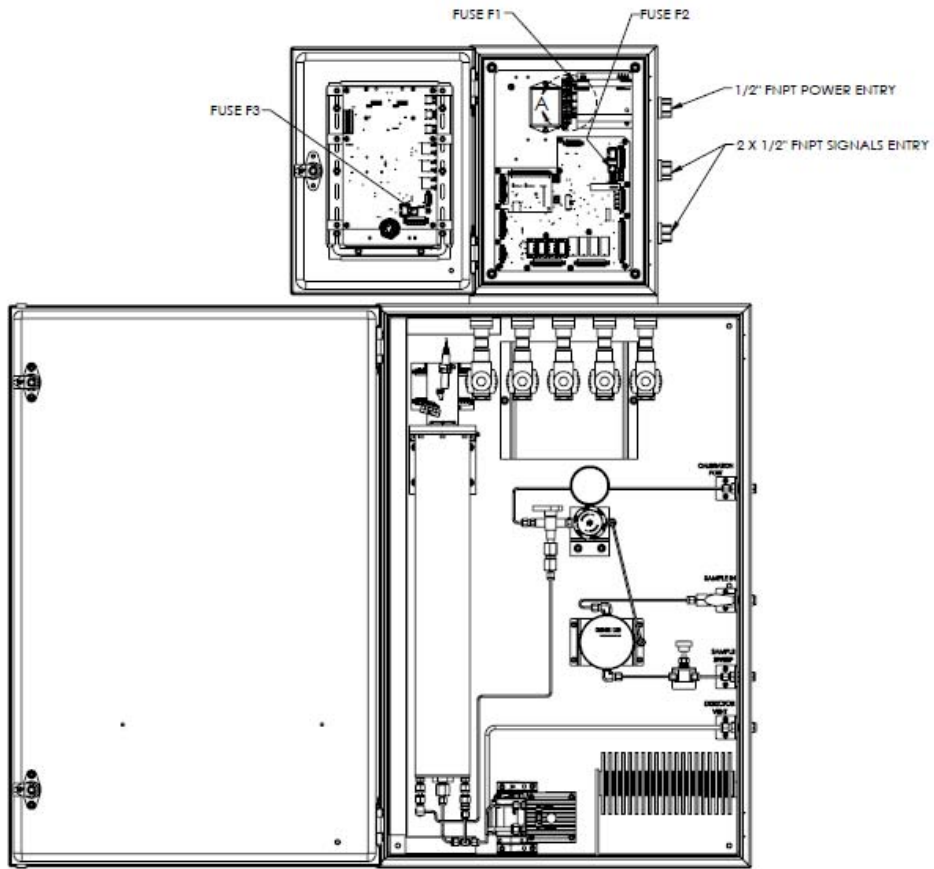


Figure 1: Enclosure Entry Locations

1.3.9 Ventilation Requirements

1.3.10 Analyzer Ratings

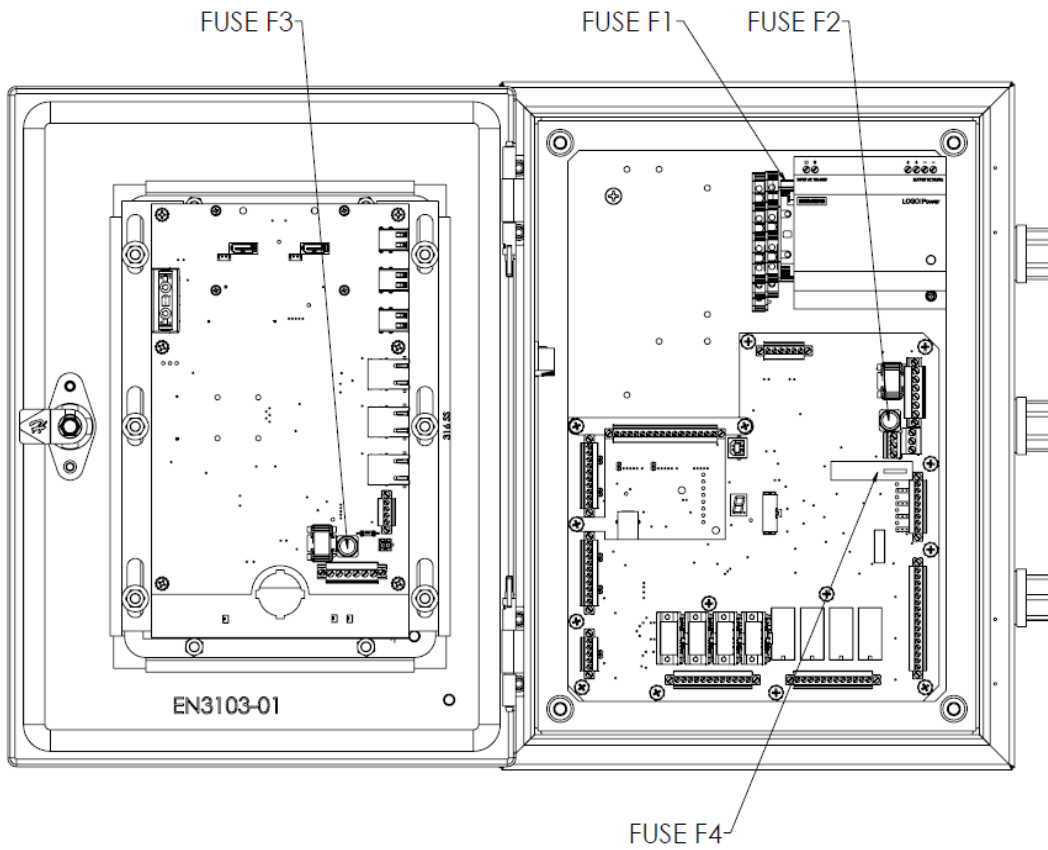


Figure 2: Fuse Locations

1.3.11 Invisible Laser Radiation

1.3.12 Operation and Maintenance

2. Installation

2.1 Receiving the System

When the system arrives, inspect the packaging for external signs of damage. If there is any obvious physical damage, contact the shipping agent and Galvanic Applied Sciences to report the damage and request that the carrier's agent be present when the unit is unpacked. It is recommended that you retain the shipping container so that it may be used for future shipment of the unit, if necessary.

2.2 Installation Requirements

2.2.1 Electrical Requirements

2.2.2 Location of the System

The system is designed to be operated at ambient temperatures from -20°C to 50°C. Galvanic offers complete analyzer shelters from sun shades to complete building, please contact Galvanic Applied Sciences, Inc. (or your local representative) for additional information.

The system should be mounted in a location where it is not exposed to excessive vibration.

2.2.3 Space Requirements

The analyzer's dimensions are shown in the Figure 3 below.

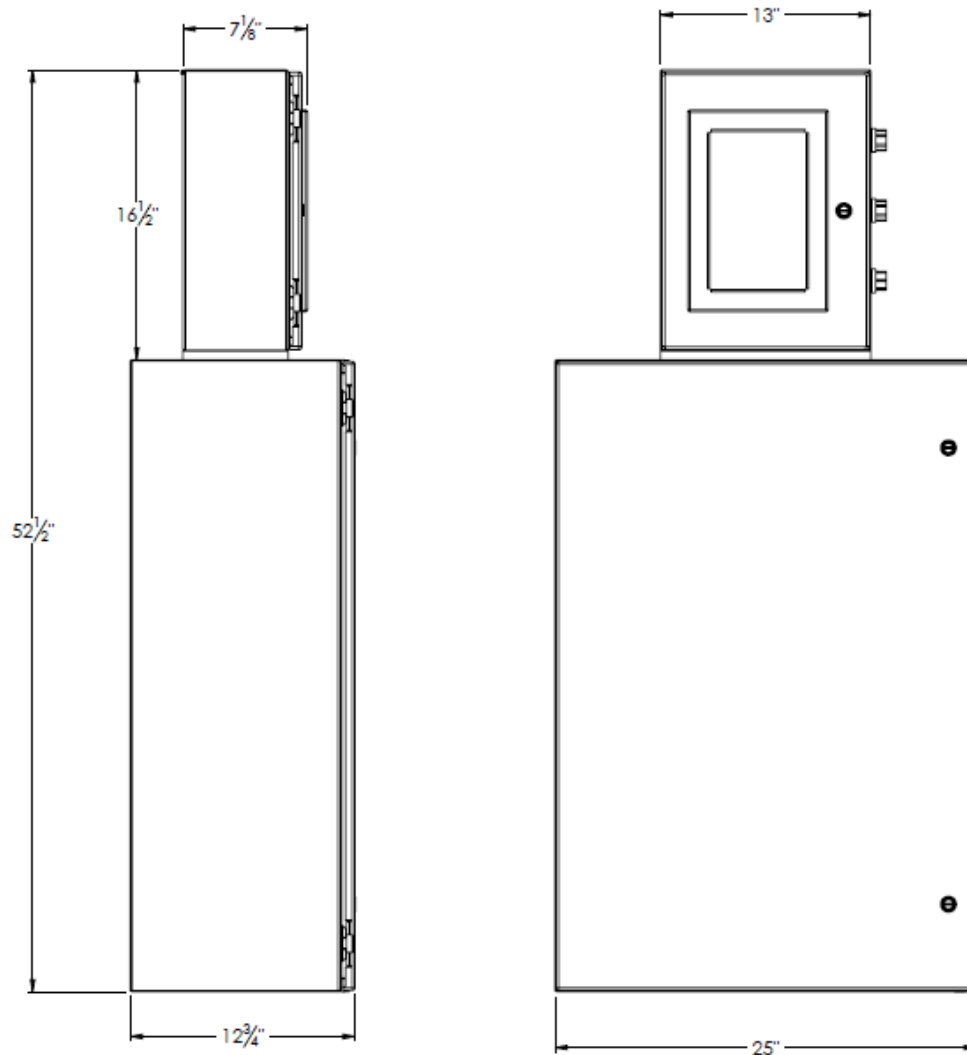


Figure 3: Analyzer Dimensions

2.2.4 Area Classification Information

The analyzer is rated Class 1 Division 2, Groups BCD for use in North America.

The analyzer is in compliance with the following standards:

CAN/CSA 213
CAN/CSA 61010-1
UL 121201
ANSI/UL 61010-1

2.3 Unpacking

To unpack the system:

Open the shipping container and remove all packing material and boxes. Visually inspect the system and accessories packages to ensure that no major damage has occurred. If damage has occurred, contact the shipping company and Galvanic Applied Sciences. Place the small packages aside in a safe, secure storage area as they are not needed at this stage of the system installation.

If any damage is visible do not proceed with the system installation. Do not attempt to facilitate repairs yourself as this will negate and/or invalidate any possible insurance claim or equipment warranty.

2.4 Mounting

2.5 Connecting the Power



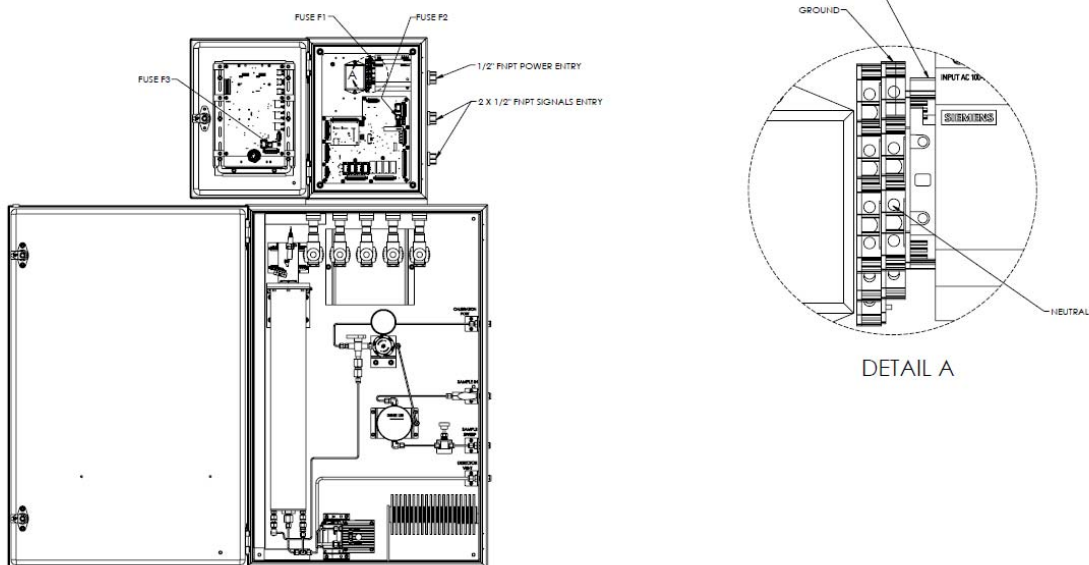


Figure 3: Power Connection and Replaceable Fuse Locations

2.6 Operation and Maintenance

2.7 Cleaning



To minimize the risk from electrostatic discharge, clean with dampened cloth – water only.