

# ProTech903™ Tape Analyzer

H<sub>2</sub>S, Total Sulfur, Arsine, Phosphine, Phosgene, and Chlorine

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## The Only Tape Analyzer That Rivals Laboratory Sensitivity When Monitoring Sub-ppm H<sub>2</sub>S & Specialty Compounds



### Advanced Analysis

- 0.005 ppm Detection Limit
- H<sub>2</sub>S & Total Sulfur Multi-Parameter

### Hazardous Area Certified

- Class I Division 2 and Division 1
- ATEX / IECEx Zone 1

### Maintenance Friendly

- 30 Seconds to Alarm
- Quick & Easy Excursion Recovery

### Expanded Applications

- Arsine for Ethylene Cracking Plants
- Chlorine in Chlorine Absorption Units

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## ProTech903™ Tape Analyzer Introduction

ProTech903™ is a process analyzer that measures H<sub>2</sub>S, total sulfur, and other compounds in gas-phase samples. ProTech903™ helps natural gas, refinery, and other industrial operators meet gas quality requirements and optimize process control.

ProTech903™ uses a special tape method to measure gas compounds. Monitoring the rate of change of stain development on tape allows ProTech903™ to calculate the concentration.

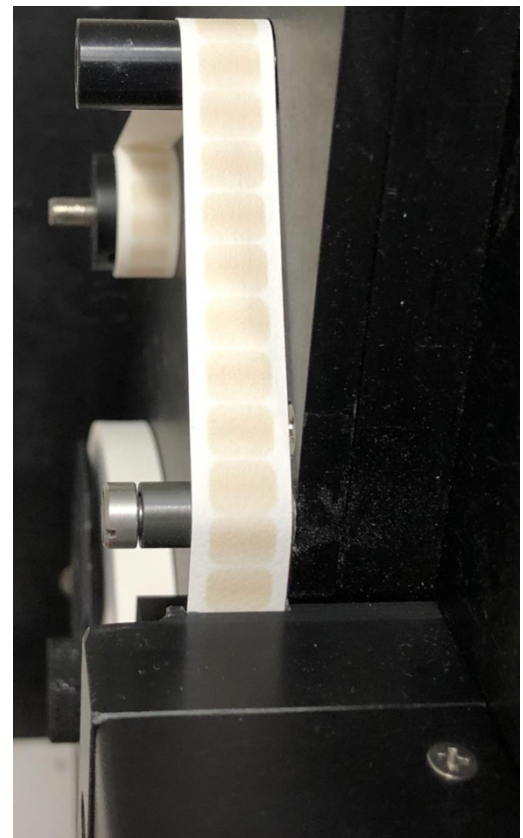
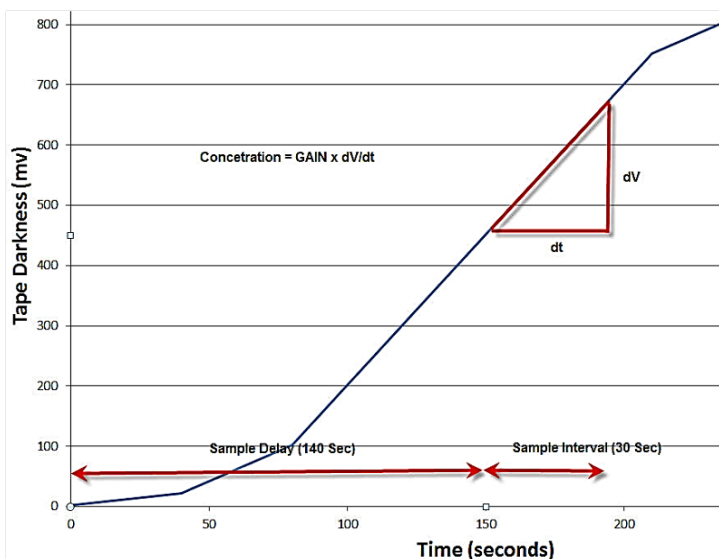
ProTech903™ is a 3<sup>rd</sup>-generation analyzer backed by Galvanic's 40 years of field-proven experience supporting gas processing industries.



## 0.005 ppm LDL for H<sub>2</sub>S and Specialty Compounds

### Lead-Acetate Tape Method

After sample is extracted, the gas is pressure regulated and filtered. Then the gas is humidified before coming in contact with the tape. A reaction occurs causing a stain on the tape. The darker the stain, the less light is reflected. The rate of change of the stain is proportional to the concentration.



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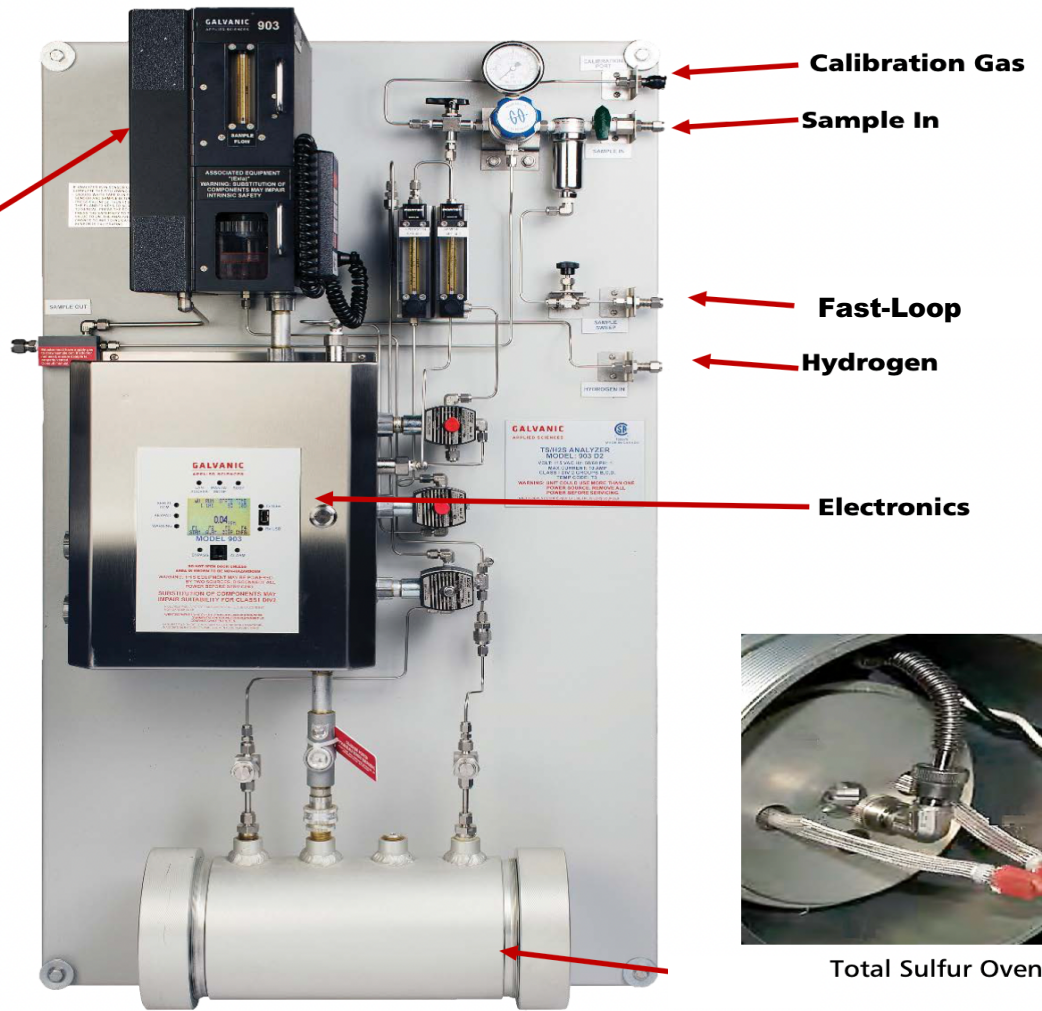
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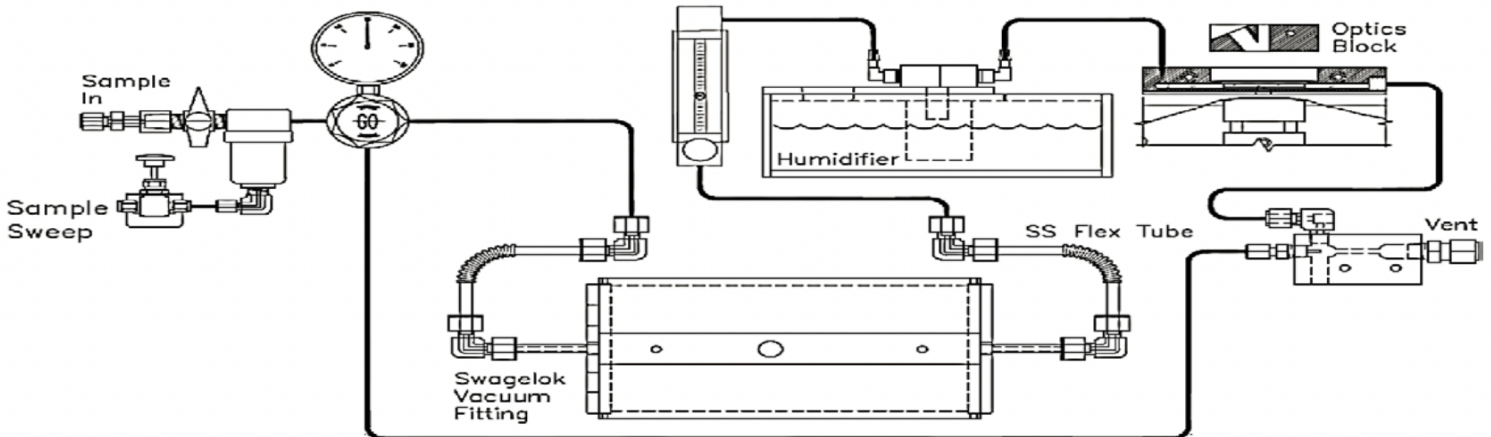
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Tape



H<sub>2</sub>S & Total Sulfur Tape System



## Key Components

# ProTech903™ Tape Analyzer

H<sub>2</sub>S, Total Sulfur, Arsine, Phosphine, Phosgene, and Chlorine

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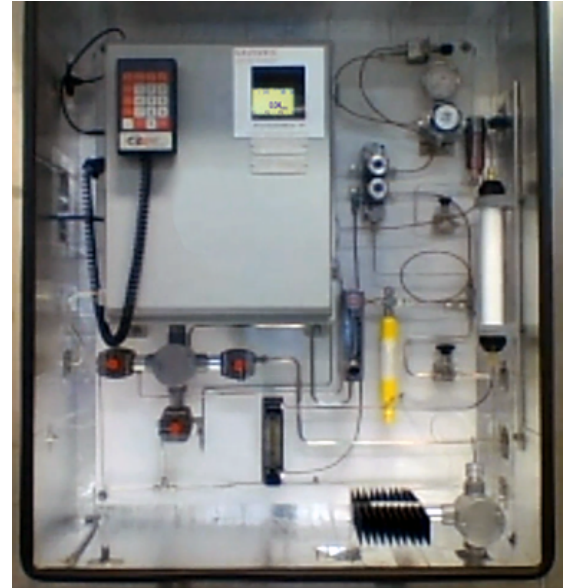
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## Specialty Gas Compounds

ProTech903™ is best known for accurately measuring H<sub>2</sub>S and Total Sulfur. However, the analyzer can also be used to monitor non-sulfur gas compounds. Configurations are available for arsine, phosphine, phosgene, and chlorine.

The analyzer configuration is customized for each application. The humidifier will use deionized water instead of acetic acid, or will not include a humidifier at all. An alternate sensor block is used in some instances. The lead-acetate tape will be substituted by other specially formulated tapes.

ProTech903™ offers a color card calibration procedure when measuring these compounds since calibration gas can be difficult to source.

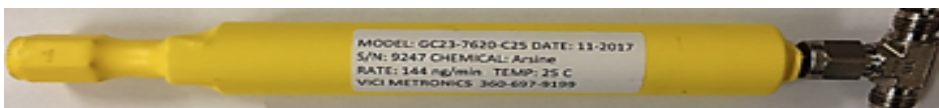
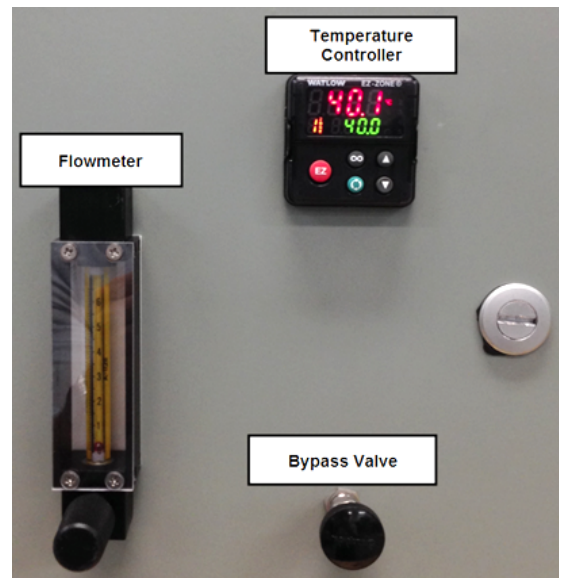


## On-Board-Calibration Simplifies Operation

### Hazardous Calibration Made Easy

ProTech903™ is the only tape analyzer that offers on-board-calibration (OBC) as a substitute for color card calibration. This system uses a calibration gas generator integrated with permeation tubes for accurate on-demand calibration.

In some cases, a carrier gas and temperature controller are used along with a flow meter in order to provide maximum accuracy.

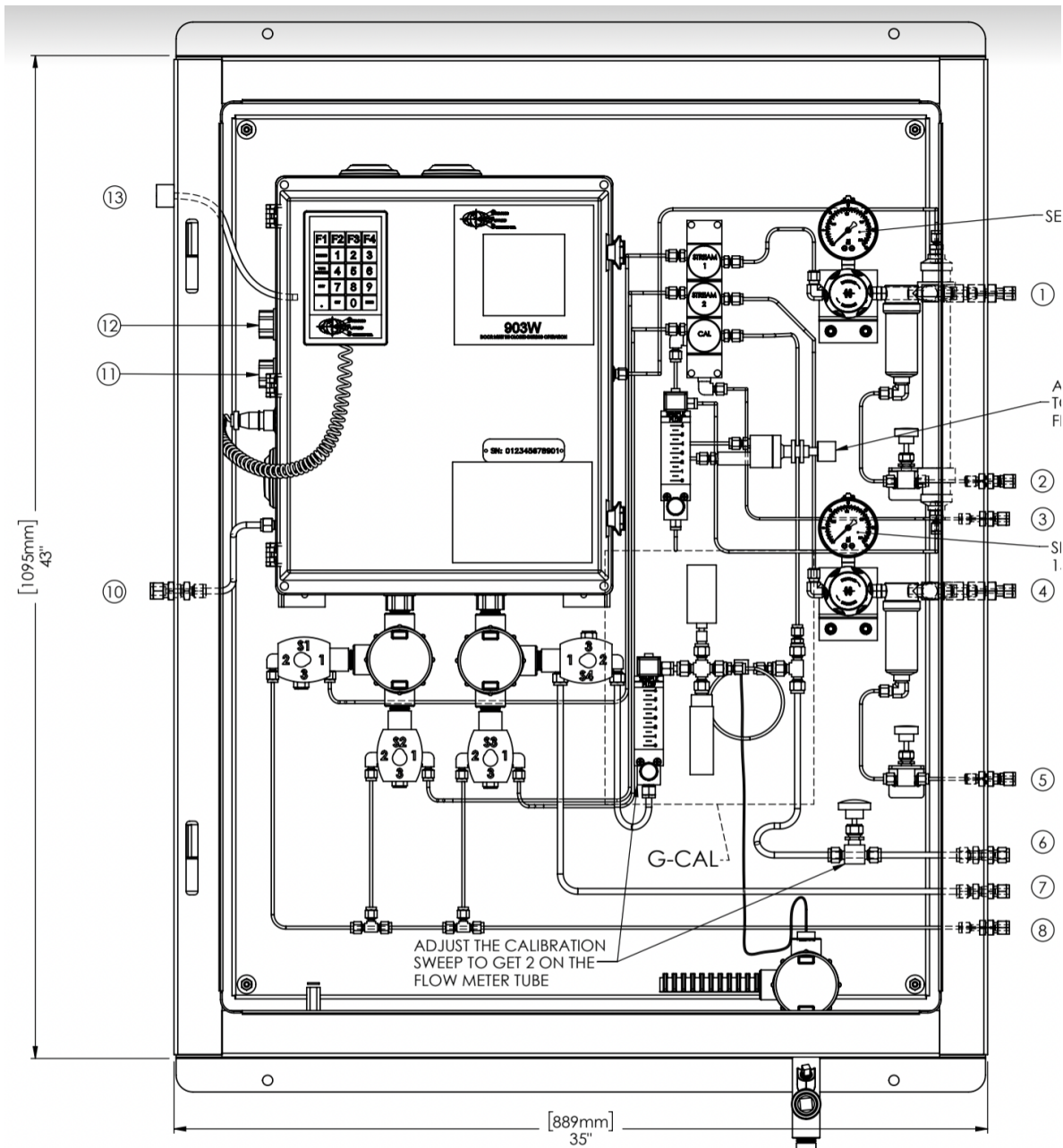


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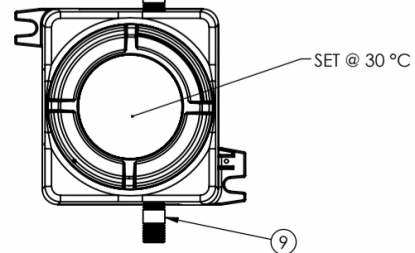
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- ① 1/4" SAMPLE #1 IN MAX. 3600 psig
- ② 1/4" SAMPLE #1 SWEEP
- ③ 1/4" BLEED VENT OUT
- ④ 1/4" SAMPLE #2 IN MAX 3600 psig
- ⑤ 1/4" SAMPLE #2 SWEEP
- ⑥ 1/4" CALIBRATION SWEEP
- ⑦ 1/4" NITROGEN OR METHANE IN SET @ 15 psig
- ⑧ 1/4" AIR IN SET @ MIN. 80 psig
- ⑨ POWER TO FUJI TEMPERATURE CONTROLLER
- ⑩ 3/8" SAMPLE OUT TO TRACE ERASE
- ⑪ POWER TO ANALYZER THROUGH 1-1/8" HOLE IN THE CABINET
- ⑫ ANALYZER SIGNAL THROUGH 1-1/8" HOLE IN THE CABINET
- ⑬ USB COMMUNICATIONS CONNECTION



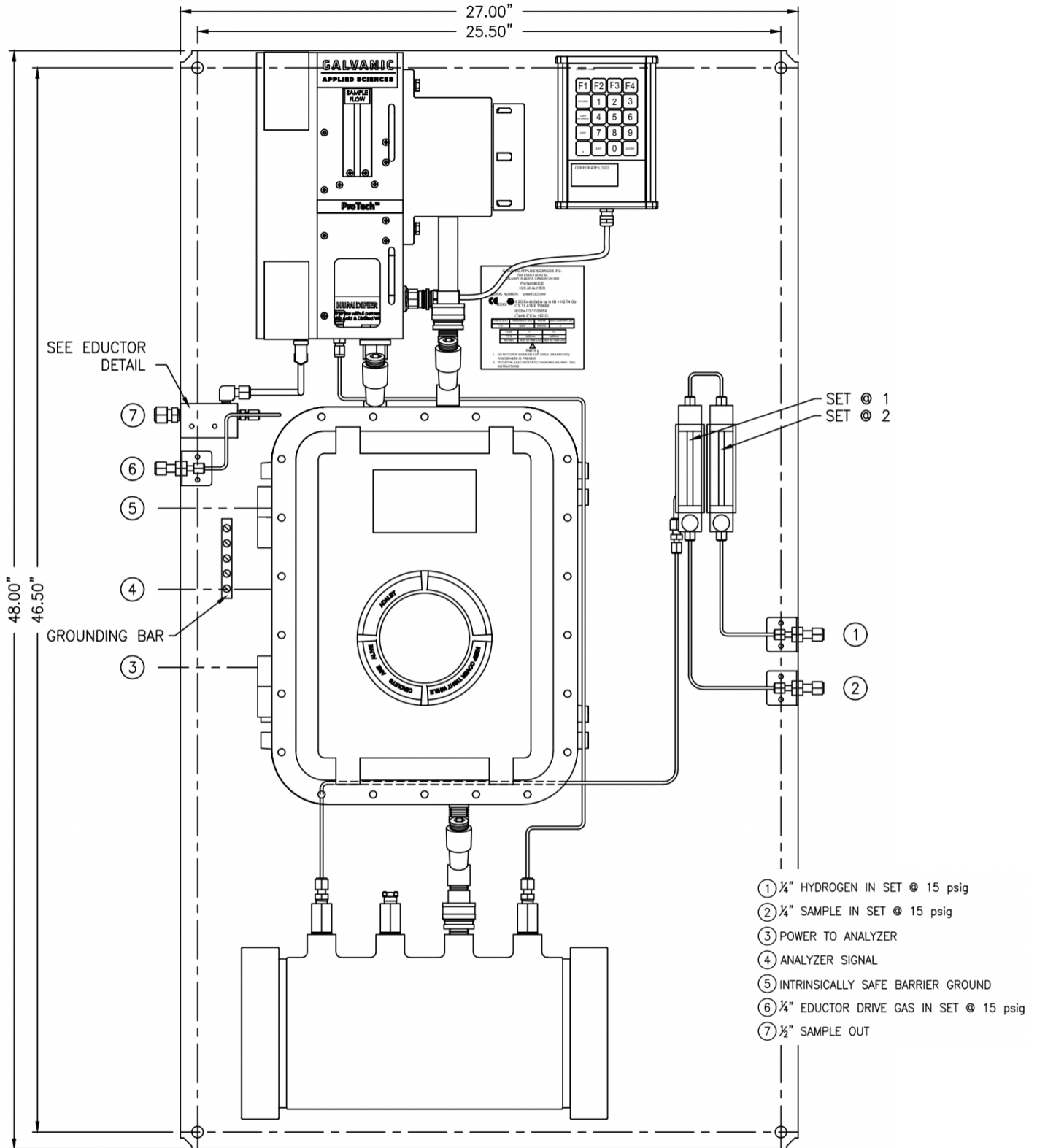
## Engineering Drawing for Arsine & Phosphine Configuration (903W)

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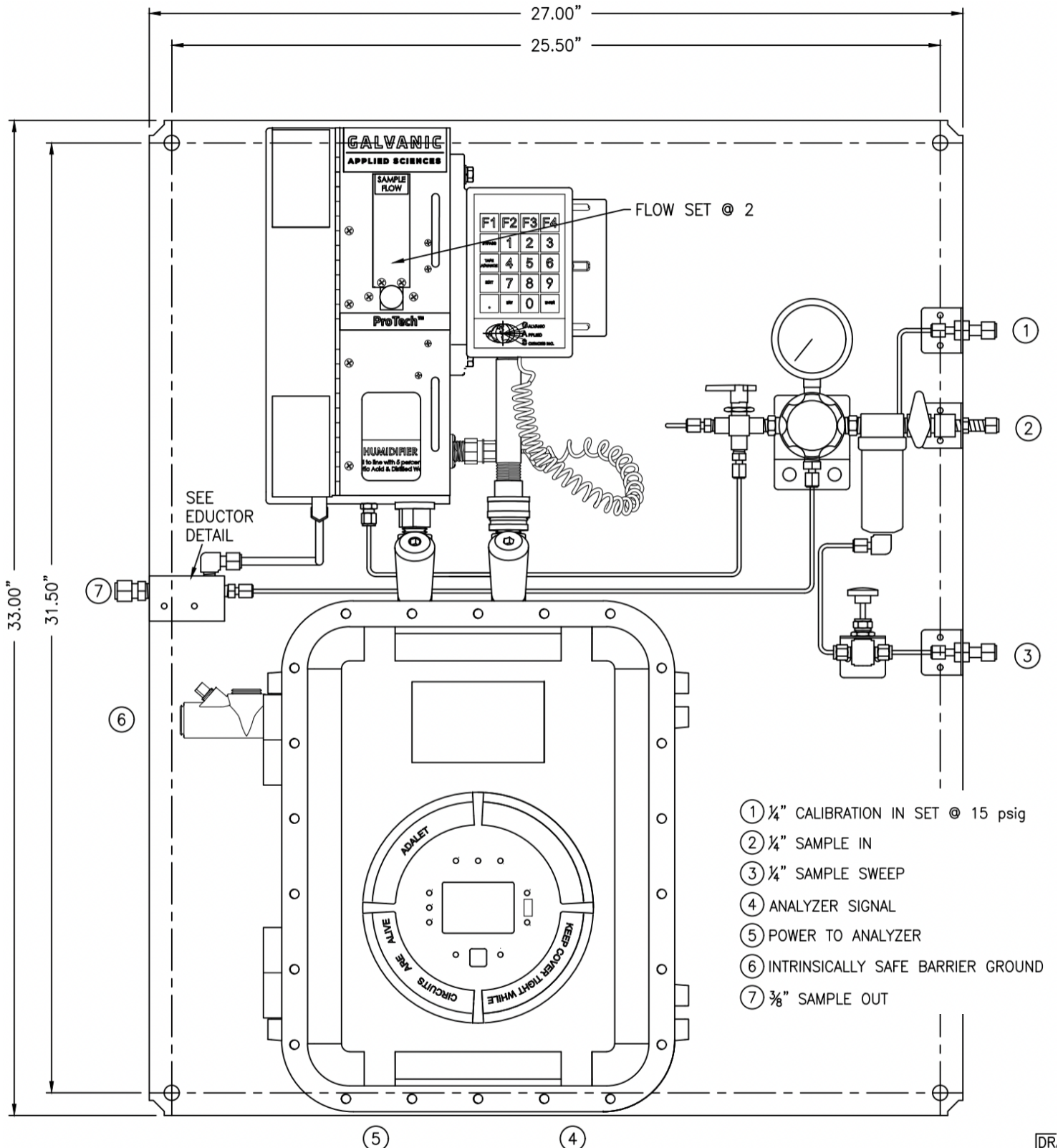
## Engineering Drawing for ATEX / IECEx Zone 1 Configuration (903CE Total Sulfur)

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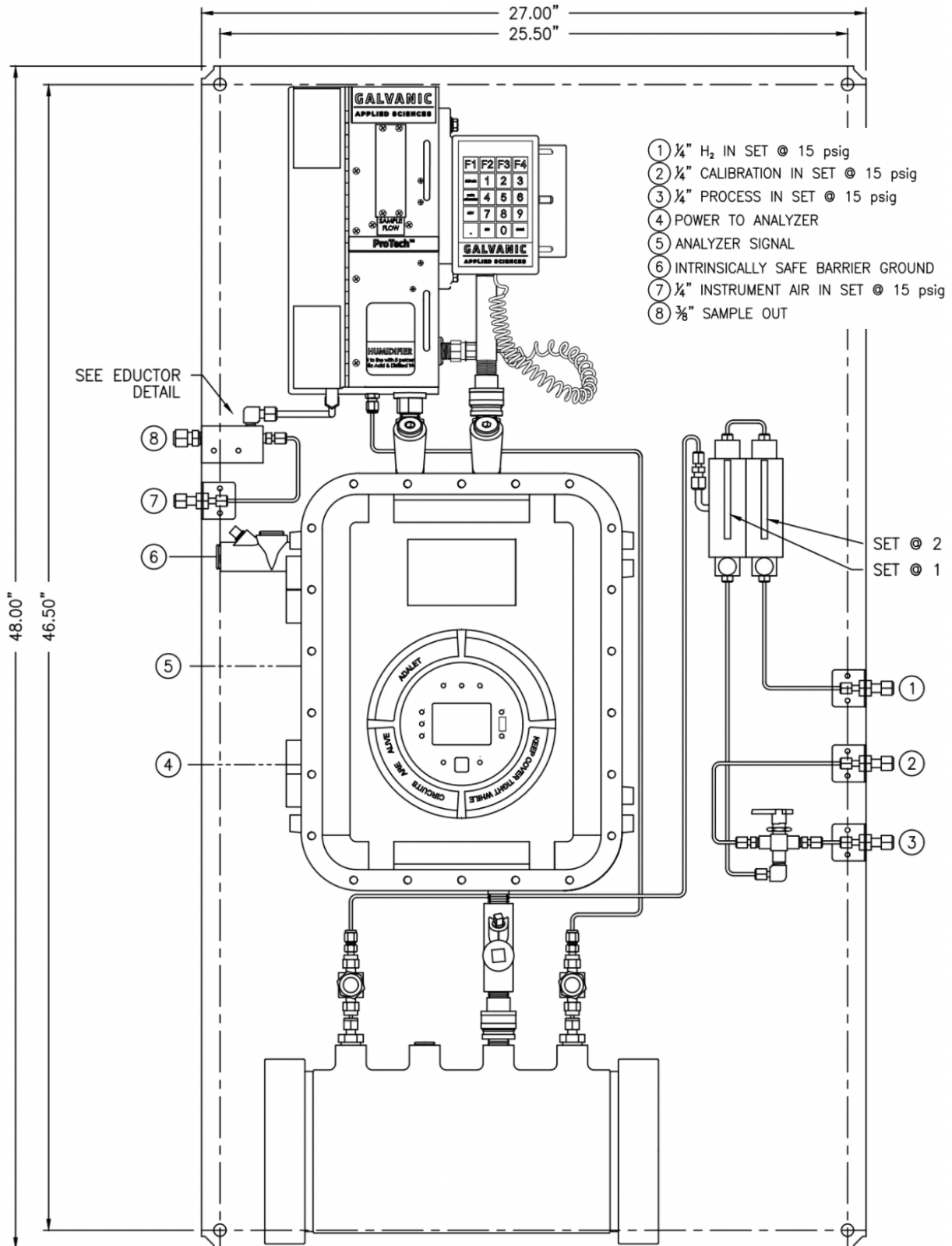
## Engineering Drawing for Class I Division 1 Configuration (903D1)

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H<sub>2</sub>S, Total Sulfur, Arsine, Phosphine, Phosgene, and Chlorine

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## Engineering Drawing for Class I Division 1 Configuration (903D1 Total Sulfur)

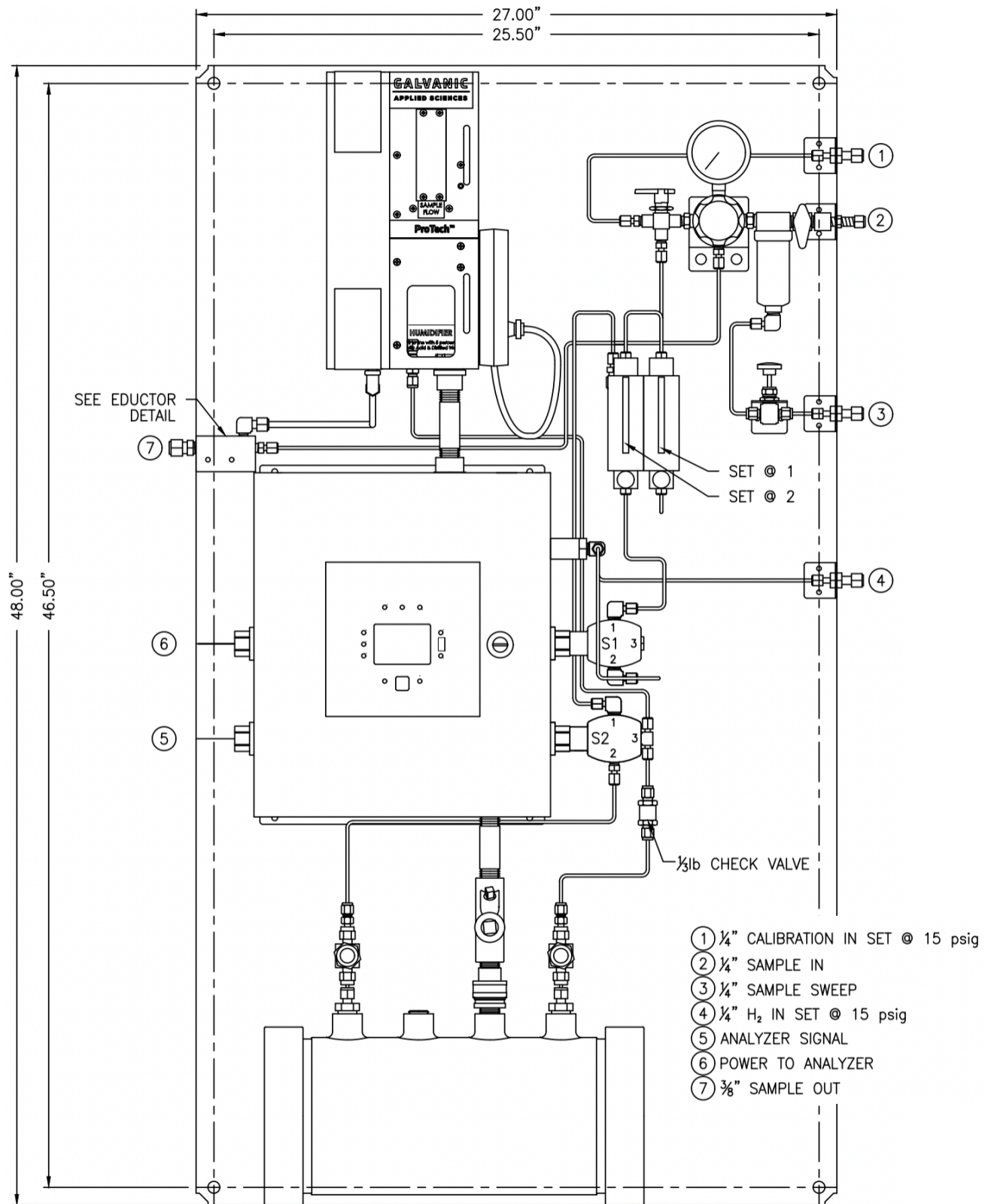


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H<sub>2</sub>S, Total Sulfur, Arsine, Phosphine, Phosgene, and Chlorine

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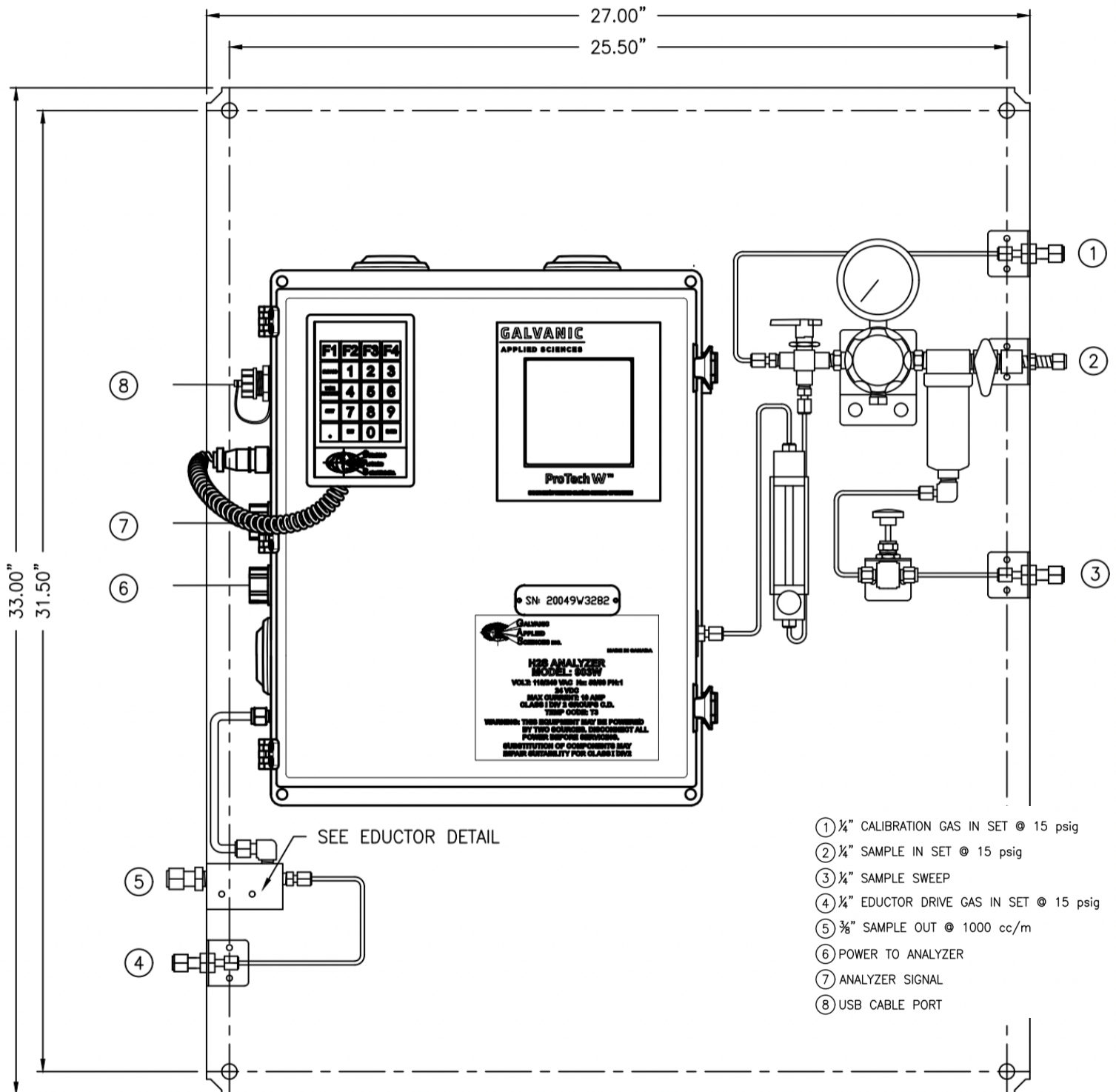
## Engineering Drawing for Class I Division 2 Configuration (903D2 Total Sulfur)

# ProTech903™ Tape Analyzer

H<sub>2</sub>S, Total Sulfur, Arsine, Phosphine, Phosgene, and Chlorine

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## Engineering Drawing for Class I Division 2 Configuration (903W)

# ProTech903™ Tape Analyzer

H<sub>2</sub>S, Total Sulfur, Arsine, Phosphine, Phosgene, and Chlorine

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<b>Compounds</b>	Hydrogen Sulfide, Total Sulfur, Arsine, Phosphine, Phosgene, Chlorine			
<b>Ranges</b>	100 ppb to 300 ppm Direct Feed / Above 300 ppm with Dilution Chamber			
<b>Accuracy</b>	<0.5 ppm: ± 5% F.S. / 0.5 ppm to 1 ppm: ± 3.0% F.S. / >1 ppm to 50 ppm: ± 2.0% F.S. / >50 ppm: ± 2.5% F.S.			
<b>Repeatability</b>	<0.5 ppm: ± 5% F.S. / 0.5 ppm to 1 ppm: ± 3.0% F.S. / >1 ppm to 50 ppm: ± 2.0% F.S. / >50 ppm: ± 2.5% F.S.			
<b>Sensitivity</b>	± 1% F.S.			
<b>Method(s)</b>	Lead-Acetate Tape and Other Specialty Tapes for Non-H <sub>2</sub> S Applications			
<b>Response Time</b>	30 Seconds to Alarm			
<b>Calibration</b>	Gas Cylinder, Color Card, On-Board-Calibration (OBC) Using Permeation Tubes			
<b>Analog Outputs</b>	6 x 4-20mA Outputs (Loop-Powered)			
<b>Analog Inputs</b>	3 x 4-20mA Inputs [RTD, 4-20mA, Transducer]			
<b>Modbus</b>	RS232 or RS485			
<b>Digital Outputs</b>	3 x SPDT Relays			
<b>Digital Inputs</b>	8 Discrete Inputs			
<b>Remote GUI</b>	Yes			
<b>Analyzer Display</b>	Monochrome LCD With Extendable Keypad			
<b>Ambient Conditions</b>	0 to 50°C [32° to 122°F] with 0 to 95% non-condensing relative humidity			
<b>Power</b>	90 – 230 VAC, 10 – 32 VDC, or Solar Power			
<b>Power Consumption</b>	10 Watts [250 Watts for Total Sulfur]			
<b>Total Sulfur Option</b>	Additional 9 kg [20 lbs.] and 381 mm [15"] Width			
<b>Model</b>	<b>903W</b>	<b>903D2</b>	<b>903D1</b>	<b>903CE</b>
<b>Dimension</b>	482 x 432 x 229 mm [19" x 17" x 9"]	86 x 838 x 318 mm [27" x 33" x 12.5"]	686 x 838 x 318 mm [27" x 33" x 12.5"]	686 x 838 x 318 mm [27" x 33" x 12.5"]
<b>Enclosure Material</b>	Fiberglass	Stainless Steel	Cast Aluminum	Cast Aluminum
<b>Enclosure Rating</b>	NEMA 4X	NEMA 1, IP10	NEMA 1, IP10	NEMA 1, IP10
<b>Enclosure Weight</b>	18.1 kg [40 lbs.]	20.4 kg [45 lbs.]	29.4 kg [60 lbs.]	29.4 kg [60 lbs.]
<b>Area Classification</b>	Class I Div. 2 Groups BCD T3	Class I Div. 2 Groups BCD T3	Class I Div. 1 Groups BCD T3	ATEX / IECEx Zone 1 II 2 G Ex db [ia] ia op is IIB+H <sub>2</sub> T4 Gb T <sub>amb</sub> 0 ≤ Ta ≤ 50C 
China Pattern Approval, India CCOE, Russia Pattern Approval, Russia TR-CU				

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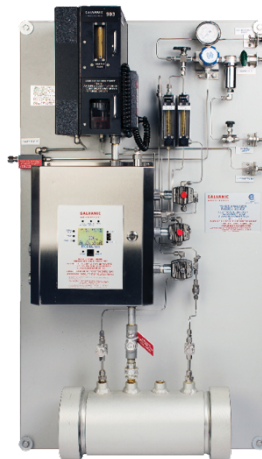
## Choose the Right Model for Your Application



**903W**



**903D2**



**903D2-TS**



**903D1**



**903CE**

Digital Copies Available

