

# Instrument Enclosure Assemblies



# Instrument Enclosure Assemblies



Instrument enclosures offer a simple solution, for the customer, who might not have the time to install and wire transmitters into panels. Whether it's a standard 9900 / 9950 or something more custom, these panels make installation easy. Just mount the instrument enclosure, wire the sensor, and any outputs to the prewired - labeled DIN rail mounted terminals. With the DIN rail mounted 24VDC power supply (equipped with a 6 ft. 120 VAC power cord), the enclosure is a plug and play system.

Standard enclosure choices include a solid or clear hinged door. The GF instrument is mounted through the solid door, or behind the clear door. Both enclosure styles are equipped with stainless steel hinges.

Each pre-wired instrument enclosure is factory tested before shipping. No other industrial piping systems manufacturer offers the product breadth, or combined quality and simplicity, as GF Piping Systems.

## Features

- » Hundreds of configuration possibilities (Flow, pH/ORP, Conductivity/Resistivity, Temperature, Pressure Level, etc..)
- » NEMA 4X
- » Stainless hinges and latches
- » Simplified wiring diagram
- » Universal input 100-240 VAC to 24 VDC regulated, DIN rail mounted 1.3A power supply with AC power cord
- » DIN rail terminal block for easy termination of field wires
- » Pre-drilled conduit holes equipped with liquid-tight cord grips
- » Custom configurations available on request

# Specifications

## General

<b>Materials of Construction</b>	
Enclosure	Made of gray, hot molded fiberglass reinforced polyester UV stabilized
Hinges	304 SS
Lockable Latches	316 SS
Clear Window	Polycarbonate
Liquid Tight Cordgrips	All nylon construction with TPE and /or Buna N sealing gland

## Electrical

Terminal Block	DIN rail, AWG 26–16, Width: 0.17", Mounting type: NS 35/7,5, NS 35/15, NS 32
Power Supply (included)	DIN rail 110/220VAC, 50/60 Hz to 24VDC 1.0 A-1.7A

## Standards and Approvals

	NEMA 4X
--	---------

# Instrumentation

## 3-9900-1P

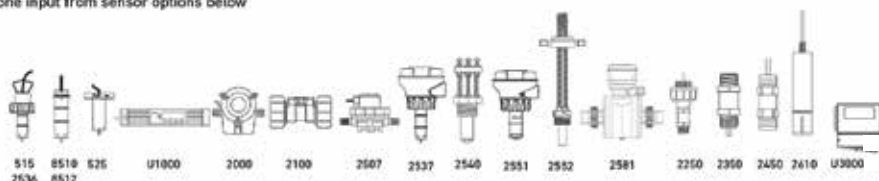
Inputs	One												
Outputs	One 4 to 20 mA, Up to two optional with 4 to 20 mA Module												
Optional Modules	<table border="0"> <tr> <td>3-9900.270-M2</td> <td>Modbus Module with Terminal Block Assembly</td> </tr> <tr> <td>3-9900.270-M4</td> <td>Modbus Module with 5 Wire Cable Assembly</td> </tr> <tr> <td>3-9900.393</td> <td>Relay Module -2 DCR (Dry Contact Relays)</td> </tr> <tr> <td>3-9900.394</td> <td>Direct Conductivity/Resistivity Module</td> </tr> <tr> <td>3-9900.395</td> <td>HART COMM Module</td> </tr> <tr> <td>3-9900.398-1</td> <td>4 to 20 mA Output Module (Add a 2nd output)</td> </tr> </table>	3-9900.270-M2	Modbus Module with Terminal Block Assembly	3-9900.270-M4	Modbus Module with 5 Wire Cable Assembly	3-9900.393	Relay Module -2 DCR (Dry Contact Relays)	3-9900.394	Direct Conductivity/Resistivity Module	3-9900.395	HART COMM Module	3-9900.398-1	4 to 20 mA Output Module (Add a 2nd output)
3-9900.270-M2	Modbus Module with Terminal Block Assembly												
3-9900.270-M4	Modbus Module with 5 Wire Cable Assembly												
3-9900.393	Relay Module -2 DCR (Dry Contact Relays)												
3-9900.394	Direct Conductivity/Resistivity Module												
3-9900.395	HART COMM Module												
3-9900.398-1	4 to 20 mA Output Module (Add a 2nd output)												

## 3-9950

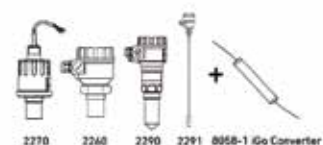
Inputs	Up to Six																		
Outputs	-2 Passive 4 to 20 mA Outputs in Base Unit or 2 or 4 passive current loops by optional module(s)																		
Optional Modules	<table border="0"> <tr> <td>3-9950.393-1</td> <td>Relay Module with 4 Mechanical Relays</td> </tr> <tr> <td>3-9950.393-2</td> <td>Relay module with 2 Mechanical and 2 Solid State Relays</td> </tr> <tr> <td>3-9950.393-3</td> <td>Relay module with 2 Mechanical Relays and 4 Binary Inputs</td> </tr> <tr> <td>3-9950.394-1</td> <td>Single Channel Direct Conductivity/Resistivity Module</td> </tr> <tr> <td>3-9950.394-2</td> <td>Dual Channel Direct Conductivity/Resistivity Module</td> </tr> <tr> <td>3-9950.395-M</td> <td>Modbus Module</td> </tr> <tr> <td>3-9950.398-2</td> <td>Dual Channel 4 to 20 mA Current Loop Output Module</td> </tr> <tr> <td>3-8059-4</td> <td>12 to 24 VDC External DIN Mount, 4 Relay Module</td> </tr> <tr> <td>3-8059-4AC</td> <td>100 to 240 VAC External DIN Mount, 4 Relay Module with 24 VDC Output (Six Channel only)</td> </tr> </table>	3-9950.393-1	Relay Module with 4 Mechanical Relays	3-9950.393-2	Relay module with 2 Mechanical and 2 Solid State Relays	3-9950.393-3	Relay module with 2 Mechanical Relays and 4 Binary Inputs	3-9950.394-1	Single Channel Direct Conductivity/Resistivity Module	3-9950.394-2	Dual Channel Direct Conductivity/Resistivity Module	3-9950.395-M	Modbus Module	3-9950.398-2	Dual Channel 4 to 20 mA Current Loop Output Module	3-8059-4	12 to 24 VDC External DIN Mount, 4 Relay Module	3-8059-4AC	100 to 240 VAC External DIN Mount, 4 Relay Module with 24 VDC Output (Six Channel only)
3-9950.393-1	Relay Module with 4 Mechanical Relays																		
3-9950.393-2	Relay module with 2 Mechanical and 2 Solid State Relays																		
3-9950.393-3	Relay module with 2 Mechanical Relays and 4 Binary Inputs																		
3-9950.394-1	Single Channel Direct Conductivity/Resistivity Module																		
3-9950.394-2	Dual Channel Direct Conductivity/Resistivity Module																		
3-9950.395-M	Modbus Module																		
3-9950.398-2	Dual Channel 4 to 20 mA Current Loop Output Module																		
3-8059-4	12 to 24 VDC External DIN Mount, 4 Relay Module																		
3-8059-4AC	100 to 240 VAC External DIN Mount, 4 Relay Module with 24 VDC Output (Six Channel only)																		

**NOTE:** See 9950 data-sheet for module location capacity

GF Sensors - Flow, Level, Temperature, Pressure, DO  
Use one input from sensor options below



Other Level with 8058 iGo Converter  
plus other 4 to 20 mA



GF Sensors - pH/ORP  
Use one input from sensor options below  
with 2751 pH/ORP Smart Sensor Electronics



GF Wet-Tap Electrode Model 2756, 2757 and 3719 Wet-Tap with 2751 pH/ORP Smart Sensor Electronics

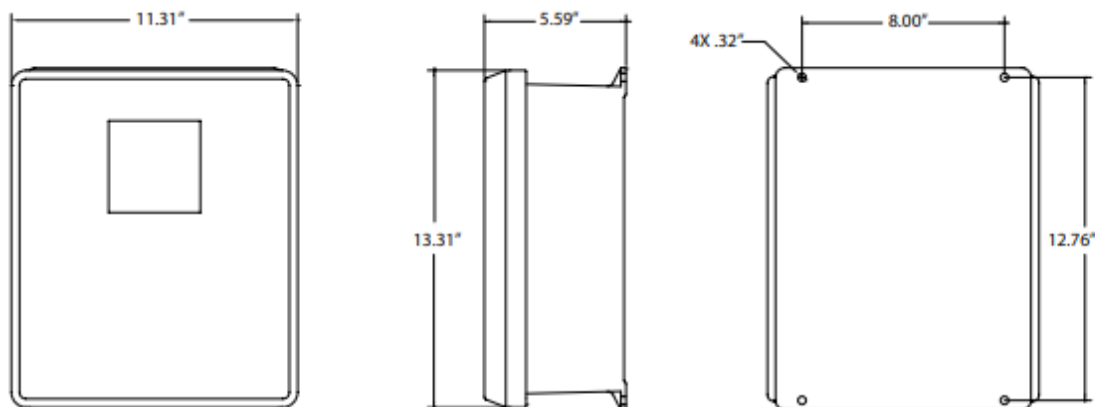


GF Sensors - Conductivity/Resistivity and Salinity Electrodes  
Use one input from electrode options below with Conductivity Module or 2850 Sensor Electronics



## Dimensions

### Standard 9900 / 9950 Instrument Enclosure



### Standard Enclosure Part Numbers

Mfr Part Number	Code	Description
3-9900-1P-S-1-1-4	150 399 001	Panel Mount Transmitter, (1) input, (1) 4-20 mA and (1) OC outputs
3-9900-1P-393-S-1-1-4	150 399 002	Panel Mount Transmitter, (1) input, (1) 4-20 mA, (1) OC outputs, (2) Dry Contact Relay
3-9900-1P-393-394-S-1-1-4	150 399 003	Panel Mount Transmitter, (1) input, (1) 4-20 mA and (1) OC outputs, (2) Dry Contact Relays, Cond / Resist Module
3-9900-1P-394-S-1-1-4	150 399 004	Panel Mount Transmitter, (1) input, (1) 4-20 mA and (1) OC outputs, Cond / Resist Module
3-9900-1P-398-S-1-1-4	150 399 005	Panel Mount Transmitter, (1) input, (2) 4-20 mA and (1) OC outputs
3-9900-1P-393-398-S-1-1-4	150 399 006	Panel Mount Transmitter, (1) input, (2) 4-20 mA and (1) OC outputs, (2) Dry Contact Relays
3-9900-1BC-S-1-1-4	150 399 014	Panel Mount Batch Controller, (1) input, (1) 4-20 mA and (1) OC outputs, (2) Dry Contact Relays, remote start/stop
3-9950-2-S-2-1-1-4	150 399 010	9950 Transmitter, (2) inputs, (2) 4-20 mA, AC/DC power
3-9950-393-1-2-S-2-2-1-4	150 399 011	9950 Transmitter, (2) inputs, (2) 4-20 mA, AC/DC power, (4) Mechanical
3-9950-393-2-2-S-2-3-1-4	150 399 012	9950 Transmitter, (2) inputs, (2) 4-20 mA, AC/DC power, (2) Mechanical, (2) Solid State Relays
3-9950-393-3-2-S-2-4-1-4	150 399 013	9950 Transmitter, (2) inputs, (2) 4-20 mA, AC/DC power, (2) Mechanical, (4) Binary inputs

**NOTE:** 9950 Six channel enclosures are ordered as custom. See Custom Enclosures section for details.



## Custom Enclosures

Instrument enclosures can be built to fit your needs. Custom enclosures are designed for easy installation and setup.

Use the table below and the attached worksheet to configure your custom instrument enclosure. See a list of common options, and consult with a technical support rep to discuss your specific needs.

Each pre-wired instrument enclosure is factory tested before shipping. No other industrial piping systems manufacturer offers the product breadth, or combined quality and simplicity, as GF Piping Systems.

## Custom Options:

- » HOA Selector switch, SP or DP multi selector switch
- » Audible alarm w/ silence button
- » LED light stack beacon
- » LED Pilot Lights (Red/Green)
- » Chart Recorder
- » Modems
- » Time delay relays
- » Heaters with thermostats
- » Swing panels
- » Enclosure material: Stainless Steel, Clear Polycarbonate, solid door
- » Modbus

# Custom Enclosure Configuration

## 9900 Custom Ordering Information

---

### 3-9900-1P

---

-S 12"x10" Standard fiberglass reinforced polyester UV stabilized enclosure

-C Custom Material Enclosure

---

-0 Relay Module- None

-1 Relay Module- 2 Dry Contact Relays

---

-0 No optional Internal Module

-1 HART COMM Module

-2 Modbus M2 Terminal Block Connections

---

-0 No Optional Module

-1 Direct Conductivity/Resistivity

-2 4 to 20 mA Output Module

---

Example PN: **3-9900-1P-S-1-1-2**

Example: Enclosure Description: 9900, 2 dry contact relays, HART COMM module, and 4 to 20 mA module

### Custom Options

Visual Alarms: Pilot LED lights, LED Beacon, LED Light Stack

Switches: HOA Selector Switch, On/Off Switch

External Relays: Timer, Motor Starter, Switching, contactor

8058 i-Go Signal Converter

Custom enclosure material or configuration: Stainless Steel, Clear Door with swing panel

## Two Channel 9950 Custom Ordering Information

---

### 3-9950-2

---

-S 12"x10"x4.74" NEMA 4 with solid color

-C 12"x10" NEMA 4 with Clear Polycarbonate Window

---

-0 Internal Relays- None

-1 4 dry Contact Relays

-2 2 Dry Contact and 2 Solid State Relays

-3 2 Dry Contact and 4 Binary Inputs

---

-0 Module 1- Optional Modules- None

-1 Dual Channel 4 to 20 mA Current Loop Output Module

-2 Single Channel Direct Conductivity/Resistivity Module

-3 Dual Channel Direct Conductivity/Resistivity Module

-4 \*Modbus Module

---

-0 Module 2- Optional Modules- None

-1 Dual Channel 4 to 20 mA Current Loop Output Module

-2 Single Channel Direct Conductivity/Resistivity Module

-3 Dual Channel Direct Conductivity/Resistivity Module

-4 \*Modbus Module

---

## Two Channel 9950 Custom Ordering Information (cont.)

Example PN: **3-9950-2-S-2-2-4**

Example: Enclosure Description: Two channel 9950, solid door with 2 dry contact, solid state relays, single channel conductivity/resistivity module and Modbus module

### Custom Options

Visual Alarms: Pilot LED lights, LED Beacon, LED Light Stack

Switches: HOA Selector Switch, On/Off Switch

External Relays: Timer, Motor Starter, Switching, contactor Audible Alarm w/ silence button  
8058 i-Go Signal Converter

Custom enclosure material or configuration: Stainless Steel, Clear Door with swing panel

\*Only one Modbus module is required for all parameters per enclosure

## Six Channel 9950 Custom Ordering Information

### 3-9950-11

-S	17"x15" Standard fiberglass reinforced polyester UV stabilized enclosure
-C	Custom Material Enclosure
-0	Internal Relays- None
-1	4 dry Contact Relays
-2	2 Dry Contact and 2 Solid State Relays
-3	2 Dry Contact and 4 Binary Inputs
-0	Module 1- Optional Modules- None
-1	Dual Channel 4 to 20 mA Current Loop Output Module
-2	Single Channel Direct Conductivity/Resistivity Module
-3	Dual Channel Direct Conductivity/Resistivity Module
-4	*Modbus Module
-0	Module 2- Optional Modules- None
-1	Dual Channel 4 to 20 mA Current Loop Output Module
-2	Single Channel Direct Conductivity/Resistivity Module
-3	Dual Channel Direct Conductivity/Resistivity Module
-4	*Modbus Module
-0	External Relays - None
-1	8059 DIN rail mounted 4 dry contact relay module

Example PN: **3-9950-11-S-1-3-1-0**

Example Enclosure Description: Six channel 9950, solid door with 4 dry contact relays, Dual Channel Direct Conductivity/Resistivity Module, Dual Channel 4 to 20 mA Current Loop Output Module, and no external relay module

### Custom Options

Visual Alarms: Pilot LED lights, LED Beacon, LED Light Stack

Switches: HOA Selector Switch, On/Off Switch

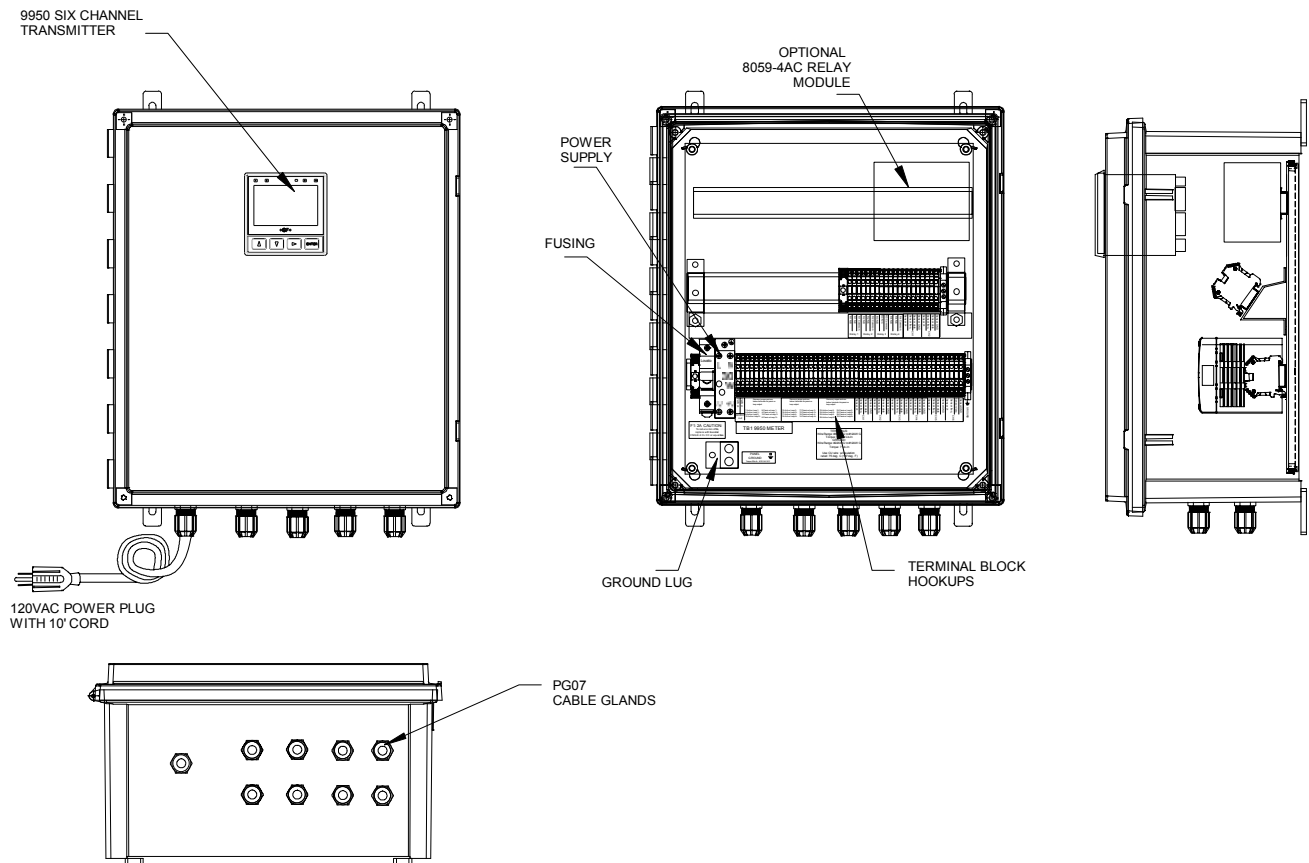
External Relays: Timer, Motor Starter, Switching, Audible Alarm w/ silence button  
8058 i-Go Signal Converter

Custom enclosure material or configuration: Stainless Steel, Clear Door with swing panel

\*Only one Modbus module is required for all parameters per enclosure



## Custom Enclosure Configuration



- Custom enclosure dimensions may vary depending on options



# Custom Enclosure Quote Worksheet

Distributor: \_\_\_\_\_

Contact Name & Number: \_\_\_\_\_

Distributor Address: \_\_\_\_\_

Email: \_\_\_\_\_

Requested Delivery Date: \_\_\_\_\_

Project / Job: \_\_\_\_\_

Description of the custom enclosure (customer's vision): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Transmitter Type

3-9900

3-9950

## Measurement Type

Flow

pH

ORP

Conductivity/Res

QTY

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Pressure

Level

Temperature

4 to 20 mA

QTY

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Outputs

4 to 20 mA

Relay DCR

Relay SSR (9950 only)

8059 External Relay (9950 6 channel only)

Modbus

QTY

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Cord Grips / Holes

2

4

6

8

Other

## Options

Details

Visual Alarm: \_\_\_\_\_

Audible Alarm: \_\_\_\_\_

Selector Switch: \_\_\_\_\_

HOA: \_\_\_\_\_

Relays: \_\_\_\_\_

Other: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_