PERMA PURE

INSTRUCTION MANUAL

BALDWIN™ - Series

HEATED FILTER PROBES
GENERAL PURPOSE SERIES
Model 34C

Version 4.04

Perma Pure LLC
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A: SPECIFICATIONS

General Specifications

Probe	18" Stinger probe, 0.5" dia x .065" wall, 316L SS tubing
Calibration	Integral calibration on both sides of filter element
Heater Jacket Temp Control	External regulated (standard)
Connections	1¼" male pipe nipple mount; ½" male pipe thread adapter
Connectors	¼" cal gas, ¼" sample line
Thermocouple	Type K
Blowback	Single direct; 2-way solenoid blowback / calibration valve
Blowback Tank	16 ga. SS, 4" x 8", leak checked, pressure tested
Heat-shrink Boot	7" length, 2.75" min expanded I.D. nose
O-rings	Viton®
Gaskets	Graphoil
Dimensions	14" x 12" x 8" HWD (w/o Stinger probe)
Weight	34 lbs

Operating Specifications

Calibration Gas Requirement	20 psig, 6-10 LPM
Probe Operating Temperature	375ºF (190ºC)
Blowback Duration	5 sec standard (30 sec maximum)
Blowback Valve	110 standard (220 optional) VAC, 50/60 Hz
Blowback Flowrate	14 scfh
Instrument Air for Blowback	Min 50 psig, Max 90 psig

Material Specifications

Enclosure Material	NEMA 4 Steel
Probe Stinger	316L SS tubing (standard) Schedule 40 Schedule 80 Durinert® coated Hastelloy®
Heater Type	Heater bands, 350W (standard on external temp regulated) Silicone rubber blanket w/ metal snap closures, 100W (standard on self regulated)
Enclosure Insulation Material	⅛" thick silicone, medium density
Filter Chamber Material	316 stainless steel
Filter Element Types	10 micron sintered SS (standard) 5, 20 micron sintered SS 2 micron ceramic 2 micron SS screen mesh

B: LIMITED WARRANTY

Perma Pure LLC
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Perma Pure (Seller) warrants that product supplied hereunder shall, at the time of delivery to Buyer, conform to the published specifications of Seller and be free from defects in material and workmanship under normal use and service. Seller's sole obligation and liability under this warranty is limited to the repair or replacement at its factory, at Seller's option, of any such product which proves defective within one year after the date of original shipment from seller's factory (or for a normal usable lifetime if the product is a disposable or expendable item) and is found to be defective in material or workmanship by Seller's inspection.

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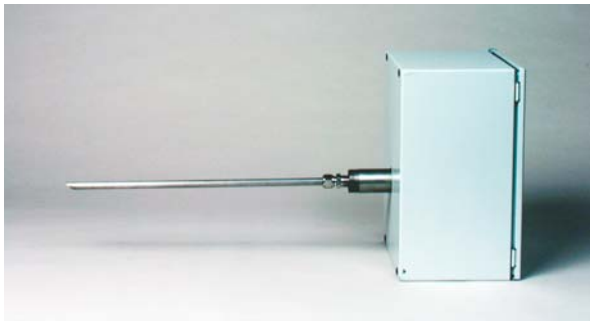
C: PRINCIPLE OF OPERATION

The Baldwin™-Series Model 34C Heated Filter Probe is designed to be mounted on a stack or duct for use in high particulate applications. Its primary function is to provide a heated environment to maintain sample gas temperatures above dew point and remove particulate material from the gas sample. Model 34C features a standard 10 micron sintered stainless steel filter element, a external regulated heater jacket, an integral calibration gas port on both sides of the filter element, a NEMA 4 enclosure, and a single direct blowback system to clean the filter element.

Mounting

The Model 34C is designed to be mounted directly on a stack or duct with a 1¼" Schedule 40 male pipe nipple. This pipe nipple can be screwed into a standard ASA flange, either flat or raised face. The probe boot can be heat shrunk to the sample line to eliminate cold spots.



Blowback

The Model 34C comes with a blowback air accumulator tank and 2-way solenoid. To operate blowback, connect a 50-90 psig instrument airline to the blowback air accumulator tank. The customer controls blowback via a PLC or other means determined by customer. The 2-way blowback solenoid is rated high temperature and 100 psig maximum pressure. The valve has a 1/8" orifice and the blowback instantaneous flowrate is 14scfh.

Calibration

To operate calibration gas to the probe, open the user supplied calibration gas control valve, adjust the cylinder pressure to >25 psig, and adjust the calibration gas flow rate to approximately 20% above the highest gas sample flow rate.

D: MAINTENANCE

The Model 34C does not require routine maintenance for the filter head or the temperature controller.

The filter element requires periodic replacement, depending upon application and dust loading. See the attached Spare Parts list for replacement elements.

If the Model 34C is used in conjunction with the Baldwin™-Series Flow Control Drawer, monitoring the sample vacuum will warn the operator when to change the filter element. The operator should log the beginning sample vacuum when the system is first started up.

Keeping a daily log of the sample vacuum will notify the operator what frequency of blowback is required and when increasing frequency of blowback is ineffective in reducing the sample vacuum. Once the sample vacuum will not reduce, the operator should replace the filter element with a new filter.

E: TROUBLESHOOTING

Symptom	*Check*	*Action*
115 VAC heater jacket is not heating	Check the resistance between the black and white wires (tied together) and the blue wire. A 200 watt heater @ 115 VAC will draw about 2 amps so the resistance is around 61 ohms.	If the measure is open for heater resistance the fusible link has blown and the jacket should be replaced.
230 VAC heater jacket is not heating	Check the resistance between the black and white power wires using an ohmmeter. A 200 watt heater @ 230 VAC will draw about 1 amp so the resistance is around 245 ohms.	If the measure is open for heater resistance, the fusible link has blown and the jacket should be replaced.
Filter plug cannot be removed from filter housing	Check "O" rings for damage High particulate loading	Replace "O" rings Clean the "O" ring sealing surfaces with a clean towel prior to reassembly.
Air from blowback tank keeps leaking onto sample when not activated	Voltage going to solenoid is 15VAC or less	Disassemble solenoid valve and clean flapper, if still leaking replace valve
Heater clamps not getting hot	Check for 110VAC going into the Clamps	Replace clamp

For further service assistance, contact:

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Email: info@permapure.com
or your local representative

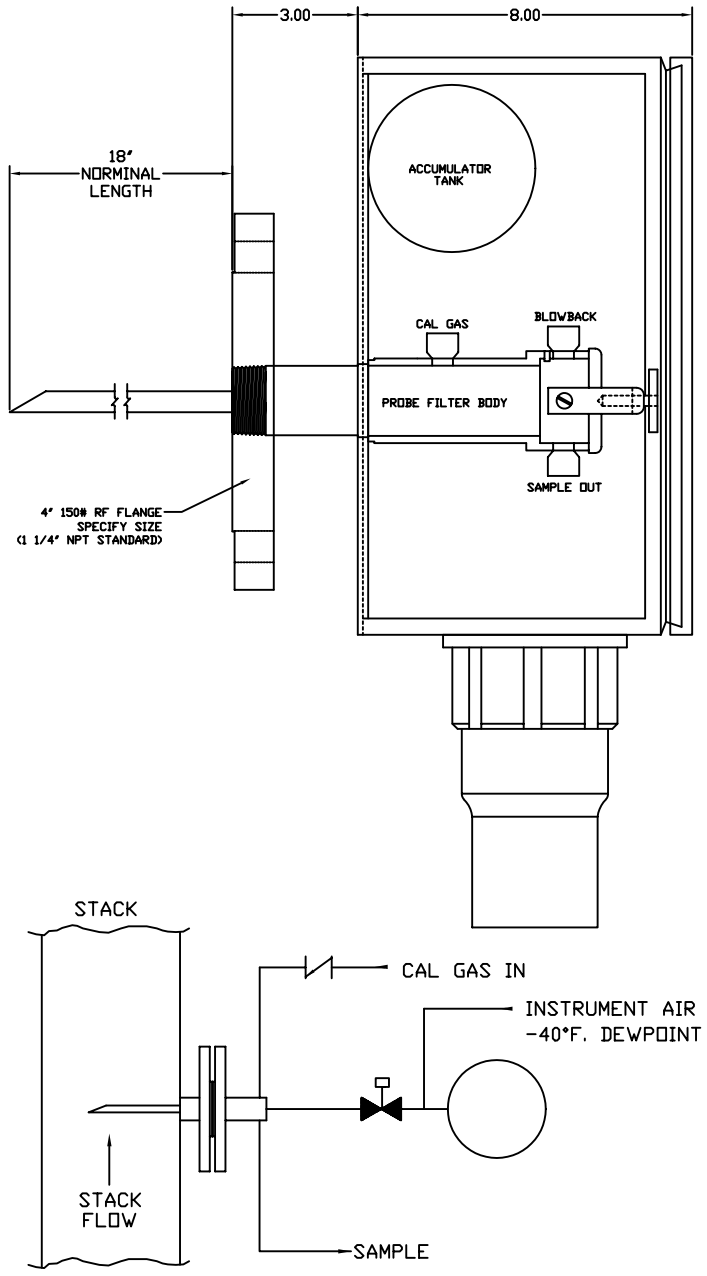
F: SPARE PARTS

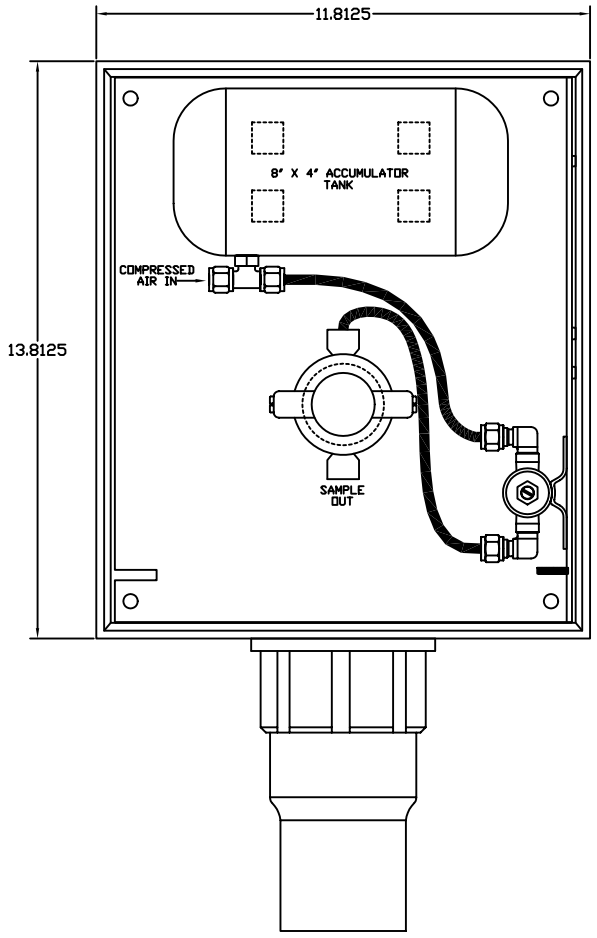
Model 34C (Part Number 4P-34C and 4P-34C-R)

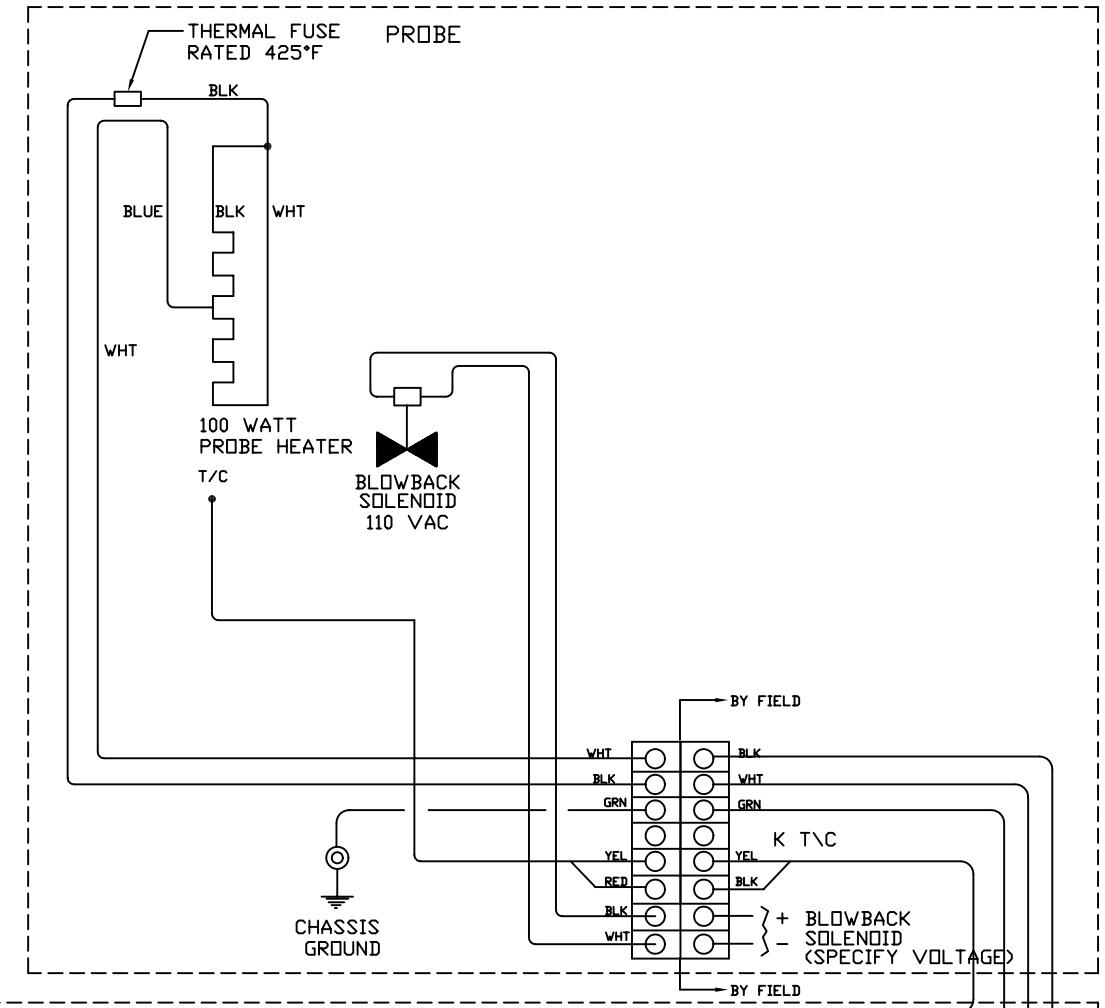
Part No.	Description
1PCG-002	Connector: Heated Line Entry Seal
3FES-015PK	Filter Element Seals: Silicone, Used w/ Screen Mesh 3FES-010 (10 pack)
3FES-010	Filter Element: 316L SS Screen Mesh, 2.0 Micron
3FES-004	Filter Element: 316L SS, 1.25” x 2.975”, 10 Micron
3FES-003	Filter Element: 316L SS, 1.25” x 2.975”, 20 Micron
3FES-005	Filter Element: 316L SS, 1.25” x 2.975”, 5 Micron
3FEC-002	Filter Element: Ceramic 2 Micron
3FEG-001	Filter Element: Glass, 0.1 Micron
3FEG-003	Filter Element: Glass/TFE Coated, 0.7 Micron
4P-FLANGE2	Flange: 2”, 150# with Gasket & Bolts
4P-FLANGE3	Flange: 3”, 150# with Gasket & Bolts
4P-FLANGE4	Flange: 4”, 150# with Gasket & Bolts
4P-FLANGE6	Flange: 6”, 150# with Gasket & Bolts
4P-GCS-212	Gas Cooling Spool Piece: w/ 2” Flanges & 12” Spool
4P-GCS-412	Gas Cooling Spool Piece: w/ 4” Flanges & 12” Spool
3PAM-006PK	Gasket: Graphoil 1.25” (10 pack)
3PHH-003	Heater Jacket, Wire-Wound w/ Thermostat & Thermal Fuse (“C” series only)
2HTR-007	Heater Band, 350W
3PAM-028PK	O- Ring: Silicone, 50 Durometer (10 pack)
3PAM-010PK	O- Ring: Viton, 50 Durometer (10 pack)
3PAM-031PK	O-Ring: Pack, Viton, “C” series probes only, 5 ea 1⅞” OD, 2 ¼” OD
4P-STNG-STD	Stinger, Replacement: 18”, 316L SS, ½" x 0.065”w
2VRS-005	Valve: Check, 10 psig, ¼” Viton “O” Ring
2VS2-007	Valve: Solenoid, 2 Way, 120VAC/60Hz, 100 psig, Hi Temp
2VS2-006	Valve: Solenoid, 2 Way, 220VAC/50Hz, 100 psig, Hi Temp

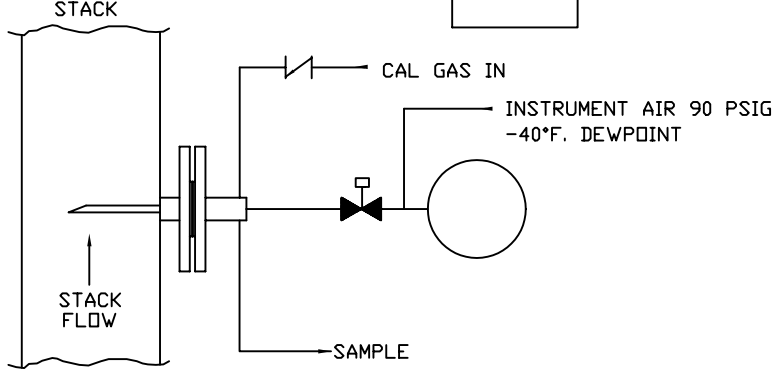
APPENDIX:

REVN	DATE	DESCRIPTION	DRAWN	APPROVED
0	00/00/00	INITIAL DRAWING	JD	JD
A	03/01/04	CREATED TO TRUE SCALE. NEW TTB	RAW	RAW

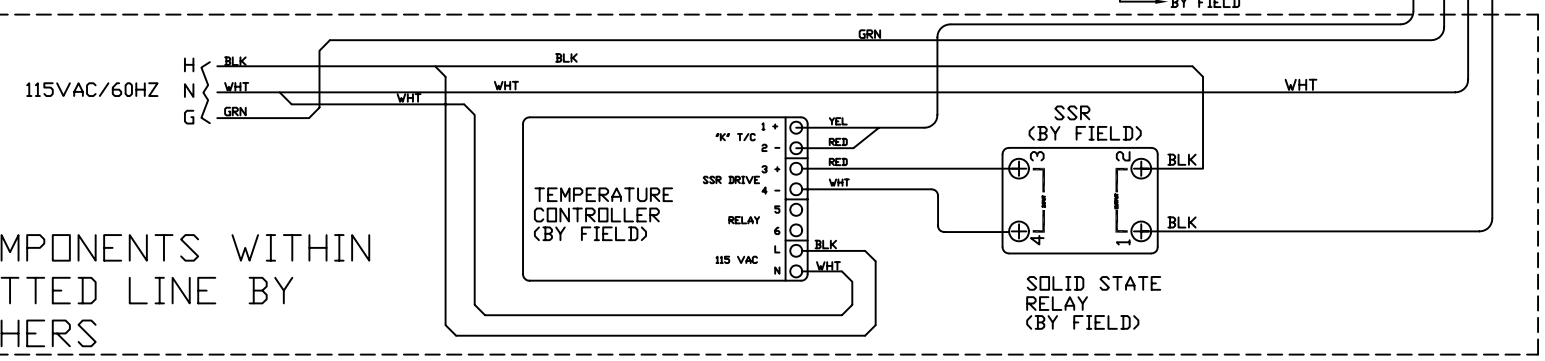


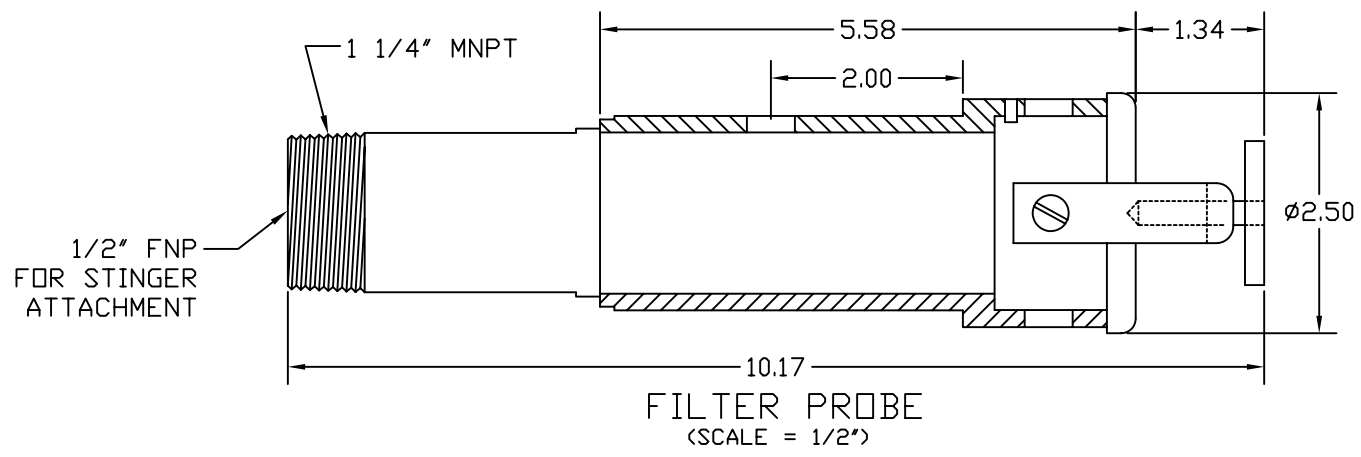






BLWBK/FLOOD CALIB.





FILTER PROBE
(SCALE = 1/2")

ITEM	QTY	DESCRIPTION	MANUF.
USED FOR:		MODEL NUMBER:	
		DESCRIPTION:	

UNLESS OTHERWISE SPECIFIED
TOLERANCE DECIMALS
1 PLACE = ±.02
2 PLACE = ±.02
3 PLACE = ±.010
SURFACE FINISHES 125
ANGLES = ±5°
HOLES = +.003/-.001

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BALDWIN, INC.

PART DESCRIPTION
MODEL 34C HEATED FILTER PROBE ARRANGEMENT DRAWING

SIZE	SCALE:	DRAWING/PART NO:
B	NTS	MODEL 34C

CAD DIR: S:\S&M\DWGS\HEATED FILTER PROBE
SHEET 1 OF 1

REVN	DATE	DESCRIPTION	DRAWN	APPROVED
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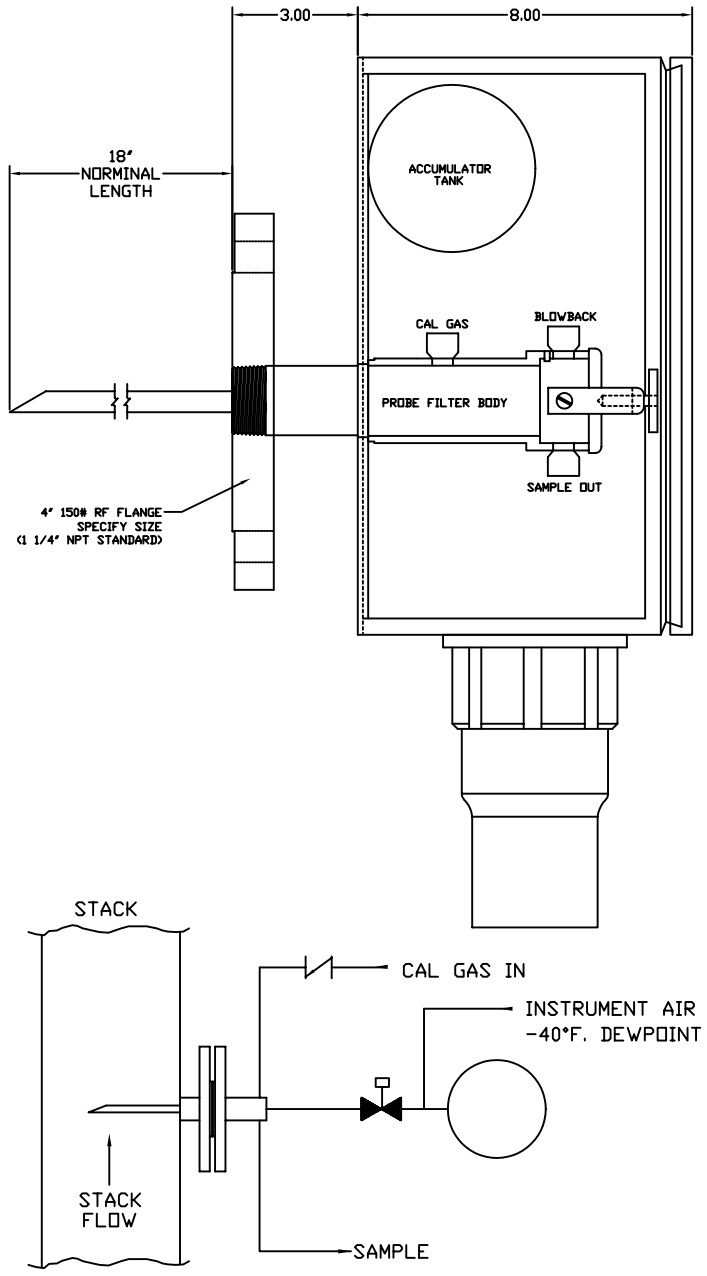
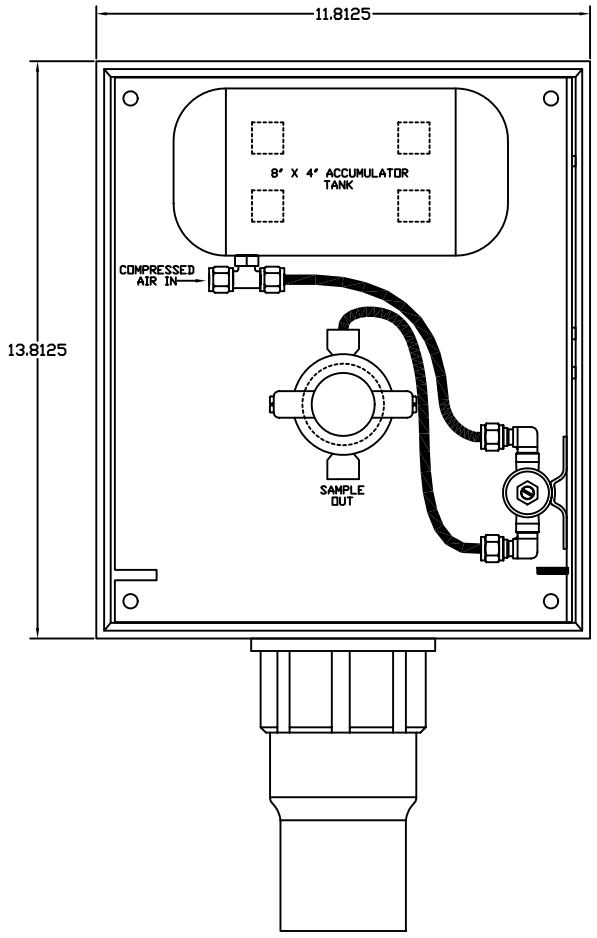
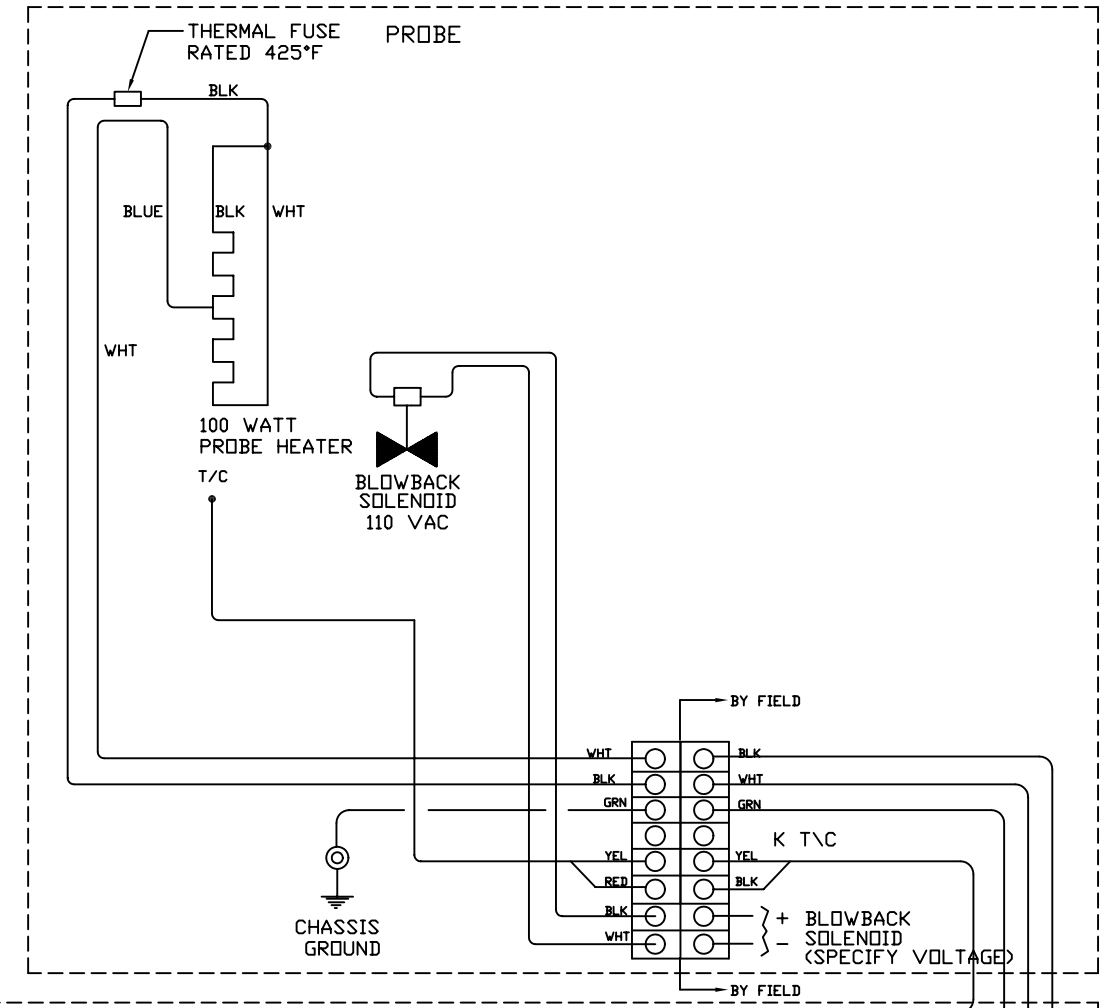
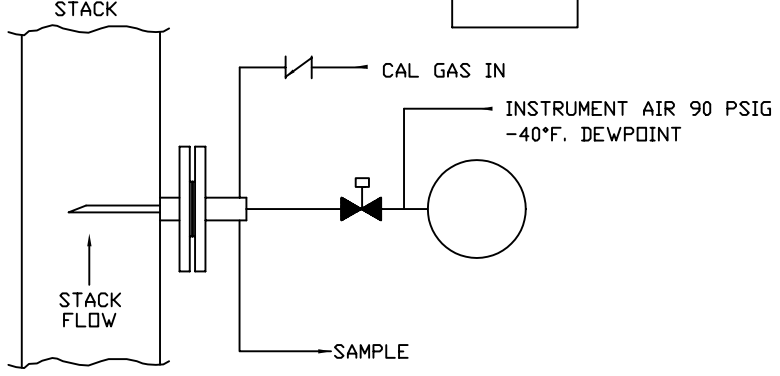
A	03/01/04	CREATED TO TRUE SCALE. NEW TTB	RAW	RAW









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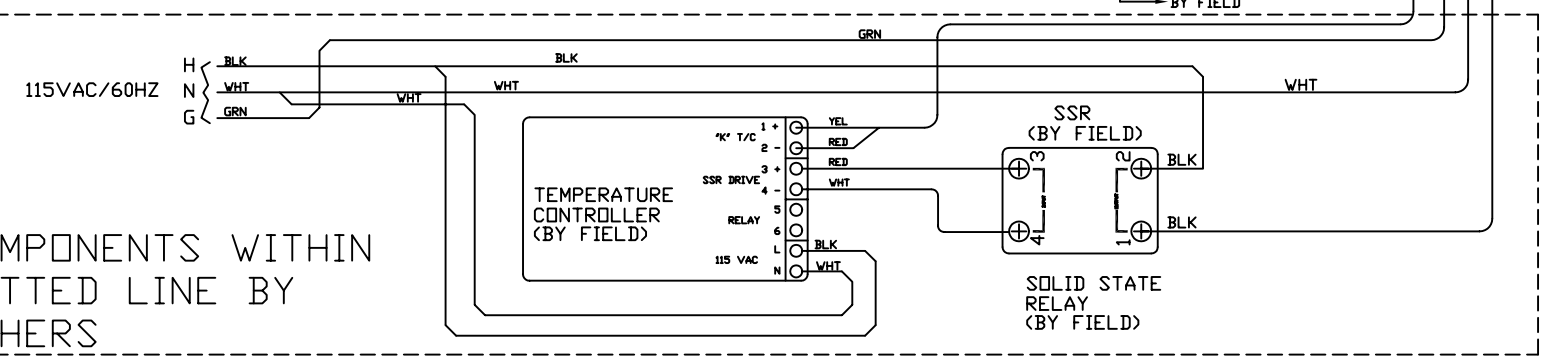

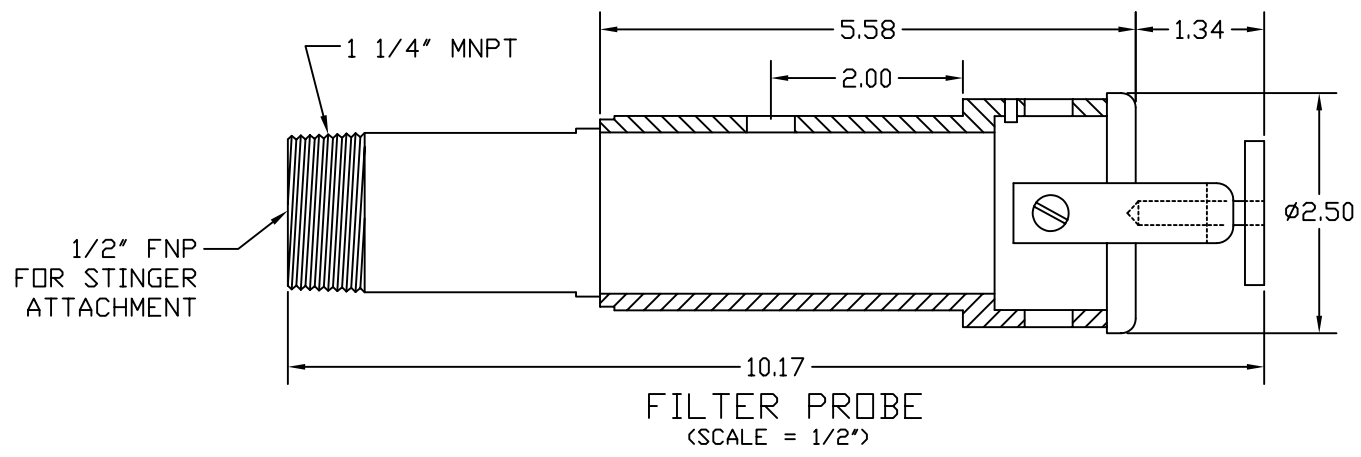

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