



MODEL 58 Holder with SJB-1 Barrier Junction Box

REVISION – June 12, 2026

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Intended Use

The Model 58 Holder is intended for use as a submerged sensor in water and wastewater open channel or basin applications utilizing purpose specific cartridges such as pH, ORP, or like Ion Selective Electrodes (ISE). This sensor, when used with the SJB-1 barrier junction box, is intended for use in applications where the area immediately surrounding the sensor location has been classified as a hazardous Class 1 Division 2 area. The Model 58 Holder is a functional replacement for the standard InsiteIG Model 50 Holder. This means that the sensor with barrier is compatible for use with any InsiteIG analyzer that supports the Model 50. This list includes, but is not limited to, the Models SCA, DCA, and MCA. In this system, only the Model 58 is to be located in the designated hazardous area, while the SJB-1 barrier and the associated analyzer must be located in a non-hazardous area. See drawing IIG02C300. While the standard cable length supplied on a Model 58 is 33 feet, the sensor may be optionally ordered from the factory with cable lengths up to 200 feet to cover scenarios where the non-hazardous area is more distant from the proposed sensor location.

Warning: The protection provided by this equipment may be impaired if used in a manner not intended.

Consult the operational manual of the analyzer for details about sensor readouts, calibration procedures, and control of optional automatic cleaning apparatus.

Overview

The Model 58 Holder is a microprocessor based preamp interface for use with the M51 pH, M52 ORP, or like ISE cartridges. The cartridges are flat glass electrodes designed for maximum durability in waste water environments. They are shipped separately and must be assembled prior to installing the sensor into the process. The electrodes must be properly seated in the holder to ensure reliable operation and proper cleaning. This is achieved by first ensuring that there is silicone lubricant on the O-rings and seat. Then by screwing the electrode into the holder, using the Cartridge Installation Tool provided, until the top of the electrode is even with the line etched onto the jet clean boss.

NOTE: Installing a Model 58 holder without a cartridge properly seated will void the warranty.



Model 58 Holder Specifications

The sensor is suitable for use at detecting pH, ORP, or Ions in aqueous solutions.

Specifications are as follows:

Ambient Temperature Range: $+5^{\circ}\text{C} \leq T_{\text{AMB}} \leq +50^{\circ}\text{C}$

Power requirements (as supplied by analyzer): 8.5Volts dc at 40mA typical (Red is positive; black is common.)

Signal levels: Green and white wire circuits are digital 0 to 5 Volt dc signals at less than 5 mA

pH Measuring Range: 2 to 12 pH

ORP Measuring Range: $\pm 2000\text{mV}$

Temperature Measurement Accuracy: $\pm 0.2^{\circ}\text{C}$

Suitable for outdoor use - submerged

Class 1 Division 2 Groups A, B, C, D, T6 per

UL 121201 and CAN/CSA C22.2 No. 213

Sensor Input Connections

The Model 58 Holder contains its own embedded microcontroller unit, so that the 4 wire interface consists of only dc power (red), signal common (black), and 2 wires for digital communication (green and white). The communication protocol is a proprietary format. The overall shield in the sensor cable is essential for noise immunity and must be connected as illustrated in the included drawings. See drawings IIG02C300 and

Sensor Mounting

Drawing IIG07N304 depicts the physical dimensions of the Model 58 Holder, while drawing IIG07N305 depicts the appropriate mounting arrangement for a typical handrail mounting application. Note that the sensor must be mounted using the 1-1/2 inch mounting threads on the body of the sensor; DO NOT simply hang the sensor by its electrical cable.



SJB-1 Specifications

The SJB-1 is classified as "Associated Nonincendive Field Wiring Apparatus". The barrier junction box consists of 3 identical passive protection circuits designated red, green, and white. The black wire connection is the circuit common for these 3 circuits. A fifth shield wire connection is also provided to insure continuity of the earth ground connection at the analyzer for the cable shield. Do not add an additional separate earth ground connection to the SJB-1; the shield must have a single connection to earth ground at the source analyzer unit.

The SJB-1 has the following specifications:

Ambient Temperature Range: $-20^{\circ}\text{C} \leq T_{\text{AMB}} \leq +50^{\circ}\text{C}$

Normal operating input: 8.5Vdc at 50 mA

Voltages in excess of 9.5Vdc may blow a non-replaceable fuse

Currents in excess of 100 mA may blow a non-replaceable fuse

SJB-1 is double insulated and no direct connection to earth ground should be made

Suitable for outdoor use. NEMA 4x (IP66) enclosure

Terminals for input and output are marked. See drawings IIG02C300 and IIG01R300.

SJB-1 Mounting

The SJB-1 enclosure must be firmly mounted using the four #6 mounting holes depicted on drawing IIG01N300. For handrail mounting, an optional mounting plate and hardware are available as depicted in drawing IIG01N301.

Electrical Connections

Drawing IIG02C300 is the Control drawing for the use and wiring of the Model 58 Holder in Class 1 Division 2 locations. The Model 58 Holder should not be connected directly to any analyzer unit, but must be wired directly to an SJB-1 barrier box located in a safe area. The analyzer unit shall supply the operating 8.5Vdc power to the Model 58 Holder through the red wire circuit. The green and white wire circuits are for digital communication between the analyzer and the sensor.

During electrical installation, all power must be switched off or disconnected at the source analyzer equipment. The analyzer must be powered by a circuit with a separate disconnect available.

Maintenance and Care

Model 51/52 pH/ORP Cartridges: The electrodes are shipped with a protective boot over the glass. This boot should be used to keep the electrode glass wet while the electrode is out of service. If the electrode system has been unused for a long period of time, immerse the flat glass end of the electrode(s) in tap water for at least 30 minutes.

This hydrates the pH flat glass and prepares the liquid junction of the reference electrode for contact with the test solution. To maintain response, the electrode system should always remain wet. The preferred storage solution is pH 4.0 buffer with saturated KCl added. Tap water will suffice for short term storage.

NOTE: Do not soak in distilled water. Utilize the pliable storage boot provided with the electrode(s) for storage.

Electrodes which are not broken or cracked can be restored, or rejuvenated, to full response by the following procedures:

- Inorganic Scale Deposits - Dissolve the deposit by immersing the electrode first in 0.1M HCl, then in 0.1M NaOH, and again in 0.1M HCl. Each immersion should be for a 5 minute period.
- Organic Oil or Grease Films - Wash electrode tip in a liquid detergent and water. If film is known to be soluble in a particular organic solvent, wash with this solvent. Rinse electrode tip in tap water.

If these procedures fail to rejuvenate the electrode, the problem is probably a clogged reference junction in the reference electrode portion of the electrode system. Cleaning the reference junction involves heating a diluted KCl solution to 60 - 80 degrees Celsius. Place the electrode tip in the heated KCl solution for approximately ten minutes. Allow the electrode to cool naturally before re-testing. If these steps fail to improve the electrode response, replace the electrode.

Successful long-term storage of an InsiteIG electrode depends entirely upon the care taken to assure that the glass and reference junction remain immersed in the recommended storage solution. Electrodes in storage with the protective rubber boot should be checked at least every 2 months to be sure that there is an adequate amount of storage liquid. Electrodes stored in this manner will normally last for 2 years. If a stored electrode is allowed to dry the reference junction may become clogged with dried electrolyte. Should this occur, attempt to rejuvenate the reference junction using the "Cleaning Electrodes" procedure for reference junctions discussed earlier.

Field Repair

The Model 58 Holder and SJB-1 Barrier box are NOT field repairable items:

**WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS
MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.**

**AVERTISSEMENT - RISQUE D'EXPLOSION - LA SUBSTITUTION DE
COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR
LES EMPLACEMENTS DE CLASSE 1, DIVISION 2.**

Before opening the SJB-1 enclosure, disconnecting any wiring, or changing the cartridge, be sure to disconnect power to the associated analyzer.

Guarantee and Repair Policy:

The InsiteIG Model 58 Holder is guaranteed for five years against manufacturing defects. It will be replaced or repaired free of charge during the guarantee period. Call the factory at 985-639-0006 for a return authorization number for traceability. Mark the package to the attention of the R/A number and address it to the factory at 80 Whisperwood Blvd., Suite 107, Slidell, LA 70458. Freight to the factory is to be paid by the customer and items should be insured in case of damage or loss of shipment.

All shipments are insured. If you receive a damaged unit, please notify InsiteIG immediately at 985-639-0006.

Repairs to the equipment not covered by the guarantee will be billed per standard service charges.

Symbol Definitions

Symbols found on this equipment have the following definitions:

	See important information in marked section of the User's Manual
	Equipment is double insulated. Does not require separate earth ground connection for safety.
	Functional earth ground. Indicates that the shield wire is connected to earth ground at the analyzer.
	Direct Current (DC)

IIG02C300

A

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	-	as approved by Intertek	12/16/15	MDD
	A1	Proposed Changes for: Model 58 Holder addition	6/11/26	MDD

Non-Hazardous Area

Associated Nonincendive Field Wiring Apparatus
 Conforms to UL Std. 61010-1
 Cert. to CAN/CSA Std. C22.2 No. 61010-1
 Suitable for Outdoor Use, NEMA 4X (IP66)
 Ambient Range: $-20^{\circ}\text{C} \leq T_{\text{AMB}} \leq +50^{\circ}\text{C}$
 3 Circuits 8.5VDC $\equiv$ 50mA

Model SCA
 Model DCA
 Model MCA
 or other InsitelG analyzer

Model SJB-1

Hazardous Area

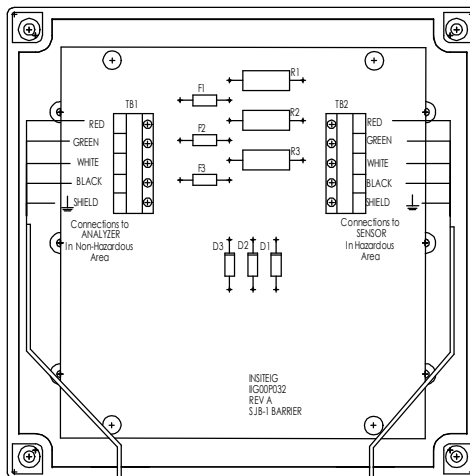
Nonincendive Equipment Rated
 Class 1 Division 2, Group A,B,C,D, T6
 Conforms to UL Std. 121201
 Cert. to CAN/CSA Std. C22.2 No. 213
 Model 12 & 14 Outdoor Use Ambient Range: $-20^{\circ}\text{C} \leq T_{\text{AMB}} \leq +50^{\circ}\text{C}$
 Model 58 Outdoor Use Ambient Range: $+5^{\circ}\text{C} \leq T_{\text{AMB}} \leq +50^{\circ}\text{C}$
 Model 12 8.5VDC $\equiv$ 20mA
 Model 14 8.5VDC $\equiv$ 25mA
 Model 58 8.5VDC $\equiv$ 40 mA

Model 12 DO Sensor,
 Model 14 SS Sensor, or
 Model 58 Holder

Sensor Nonincendive Field Wiring
 Maximum permissible cable length for sensor to SJB-1
 connections is 200ft. Only continuous length factory
 installed multiconductor cable can be used for sensor to
 SJB-1 connections.
 Sensor end of cable is factory potted into sensor.

Notes:

1. Wiring Methods must be in accordance with
 NEC ANSI/NFPA 70 or CEC C22.2, UL 121201, &
 ISA RP 12.06.01
2. Protection provided by equipment may be
 impaired if used in a manner not intended.
3. Associated nonincendive field wiring
 apparatus shall not be connected in parallel.



Model SJB-1 Cover Removed
 Customer Connections

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UNLESS OTHERWISE
 SPECIFIED, DIMENSIONS
 ARE IN INCHES
 TOLERANCES ON:
 FRACTIONS
 DECIMALS
 ANGLES
 MATERIAL
 SPEC
 FINISH

CONTRACT NO.

SIGNATURES

DATES

DRAFTSMAN

CHECKER

DESIGNER

PROJ. ENGR.

M. Dalferes

RELEASED

APPROVAL

SIZE

B

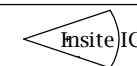
FSCM NO.

DRAWING NO.

IIG02C300

REV.

A1



80 Whisperwood Blvd.
 Suite 107
 Slidell, LA 70458

Model 12, 14, and 58
 Control Drawing Haz. Location

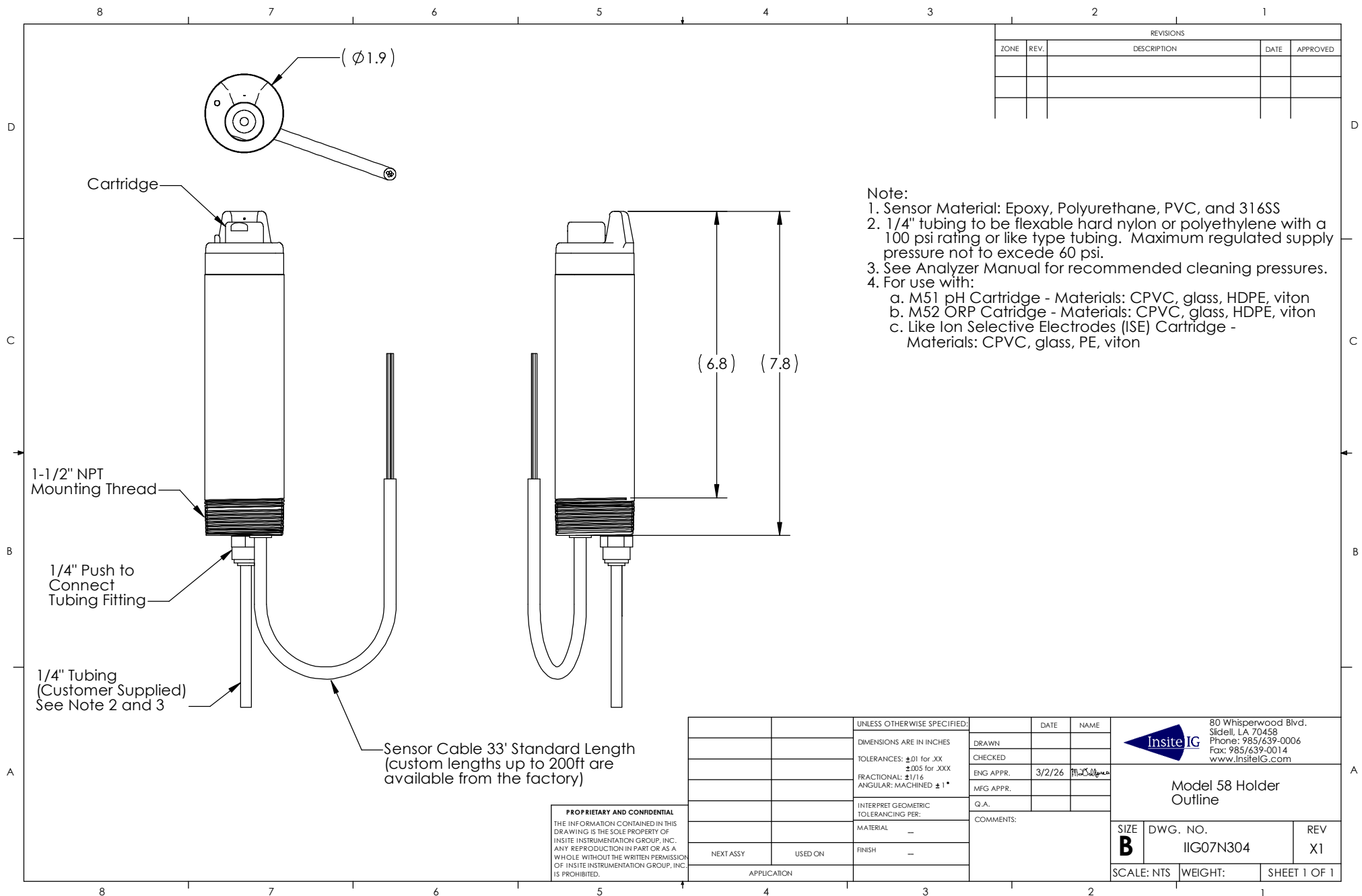
SCALE

NTS

SHEET

OF

1



Note:

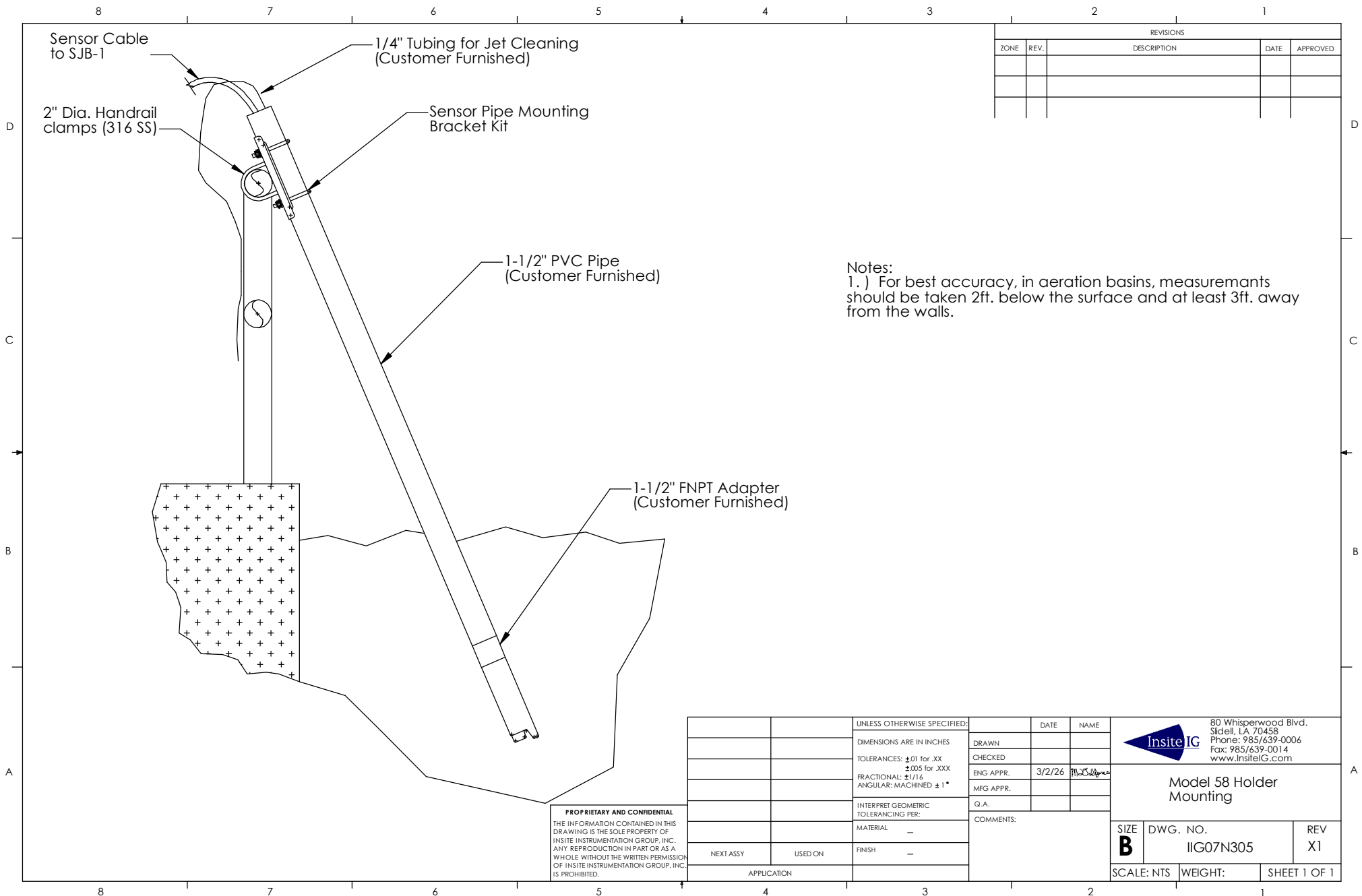
1. Sensor Material: Epoxy, Polyurethane, PVC, and 316SS
2. 1/4" tubing to be flexible hard nylon or polyethylene with a 100 psi rating or like type tubing. Maximum regulated supply pressure not to exceed 60 psi.
3. See Analyzer Manual for recommended cleaning pressures.
4. For use with:
 - a. M51 pH Cartridge - Materials: CPVC, glass, HDPE, viton
 - b. M52 ORP Cartridge - Materials: CPVC, glass, HDPE, viton
 - c. Like Ion Selective Electrodes (ISE) Cartridge - Materials: CPVC, glass, PE, viton

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

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UNLESS OTHERWISE SPECIFIED:		DATE	NAME
DIMENSIONS ARE IN INCHES			
TOLERANCES: ± 0.01 for .XX			
FRACTIONAL: ± 0.005 for .XXX			
ANGULAR: MACHINED $\pm 1^\circ$			
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			

		80 Whisperwood Blvd. Sidel, LA 70458 Phone: 985/639-0006 Fax: 985/639-0014 www.InsiteIG.com	
		Model 58 Holder Outline	
SIZE B	DWG. NO. IIG07N304	REV X1	
SCALE: NTS	WEIGHT:	SHEET 1 OF 1	



Sensor Cable
to SJB-1

1/4" Tubing for Jet Cleaning
(Customer Furnished)

2" Dia. Handrail
clamps (316 SS)

Sensor Pipe Mounting
Bracket Kit

1-1/2" PVC Pipe
(Customer Furnished)

1-1/2" FNPT Adapter
(Customer Furnished)

Notes:

1.) For best accuracy, in aeration basins, measurements
should be taken 2ft. below the surface and at least 3ft. away
from the walls.

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		UNLESS OTHERWISE SPECIFIED:		DATE	NAME
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES: ±.01 for .XX	CHECKED		
		±.005 for .XXX	ENG APPR.	3/2/26	M. J. [Signature]
		FRACTIONAL: ±1/16	MFG APPR.		
		ANGULAR: MACHINED ±1°	Q.A.		
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:		
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION					



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Model 58 Holder
Mounting

SIZE
B

DWG. NO.
IIG07N305

REV
X1

SCALE: NTS

WEIGHT:

SHEET 1 OF 1

