



Instruction Manual

Model # CS40

2 Electrode Conductivity Sensor



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FEATURES

- Direct Measurement in Process Temperatures up to 205°C - with High-Temp Option.
- Double O-Ring Sealed for High Reliability.
- Valve Insertion, Direct Insertion, or Submersible Formats Available.
- The CS40 Sensor is available with valve for isolation, without for direct insertion or mount with rear thread as a submersible. Designed for a broad range of difficult process conditions including high purity water to high chemical concentrations.

APPLICATION NOTES

- Wetted materials of construction are 316 Stainless Steel and PEEK or Teflon Insulator depending on the temperature requirement.
- Sensors are double sealed with O-Rings for maximum reliability compared to those with single seal or Epoxy Encapsulation.
- Cell constants from 0.01 to 20.0 are available providing a broad range of application.
- Process connections are made via pipe threads, valve insertion 1" NPT, direct insertion or submersible ¾" NPT. To facilitate submersible from direct insertion, simply reverse the compression fitting and connect to standpipe.
- Temperature Compensation Elements are available to interface with most available brands. The sensor can be ordered with a Junction Box or with Cable. Cable length is customer specified and tinned leads or #6 Spade Lug Terminations are available.

STANDARD SPECIFICATIONS

<p>Max Pressure/Temperature Ratings:</p> <p>“Direct Insertion , No Valve”</p> <p style="padding-left: 40px;">Absolute Max Pressure, Standard or High Temp</p> <p style="padding-left: 40px;">Standard Sensor (Teflon Insulator)</p> <p style="padding-left: 40px;">High-Temp Sensor(PEEK Insulator)</p> <p>“With (SSV) Valve/Lanyards”</p>	<p>500 PSIG @ 100°C</p> <p>100 PSIG @ 150°C</p> <p>250 PSIG @ 205°C</p> <p>50 PSIG Insertion/Retraction @ Related Max Temperature</p>
<p>Wetted Materials:</p> <p style="padding-left: 40px;">Electrodes:</p> <p style="padding-left: 40px;">Insulator:</p> <p style="padding-left: 40px;">O-Rings:</p>	<p>316 SS</p> <p>Teflon Standard, PEEK High Temperature</p> <p>EPDM Standard, Viton, Buna-N</p>
<p>Constants:</p>	<p>20.00, 10.00, 5.00, 1.00, 0.2, 0.1, 0.05, 0.02, 0.01</p>
<p>Connections:</p> <p style="padding-left: 40px;">Process:</p> <p style="padding-left: 40px;">Electrical</p>	<p>Valve Insertion 1” MNPT</p> <p>Direct insertion or Submersible ¾” MNPT</p> <p>Spade lug terminations on cable; optional J-Box has ¾” hub and terminal strip to accept stripped wire ends, 14-24 ga.</p>
<p>Temperature Compensation:</p>	<p>PT100, PT1000 and 8550Ω</p> <p>Others available upon request.</p>

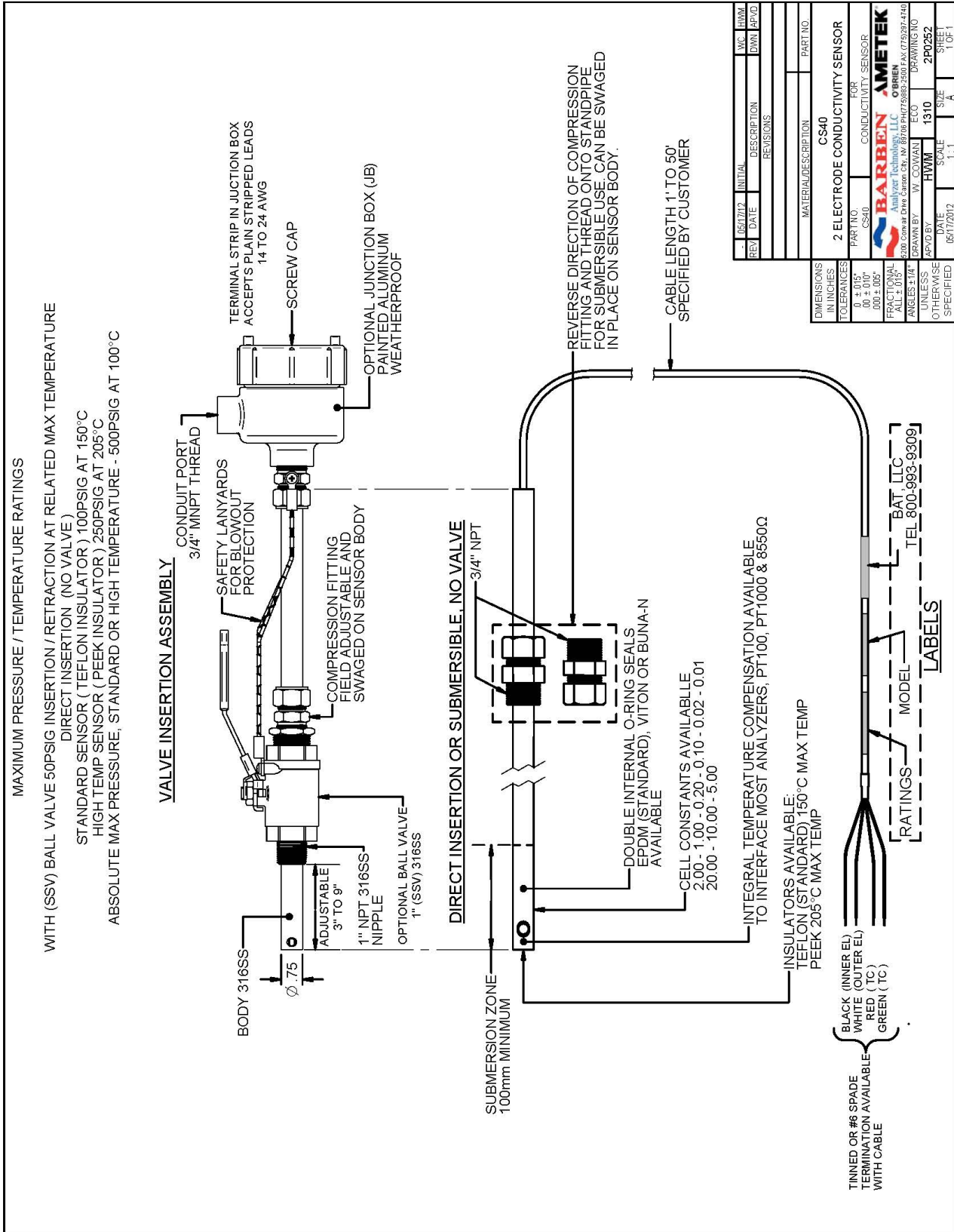
ORDERING MATRIX

16" SS316 Valve insertion 2 Electrode Conductivity Sensor
Standard Sensor Max 100PSIG @ 150°C - High Temperature Sensor Max 250PSIG @ 205°C
Max 50 PSIG Insertion/Retraction

CS40	3/4" Diameter sensor for 1" valve							
Orings								
S		Standard - EPDM						
V		Viton						
B		Buna-N						
Cell Constant (True range is analyzer/electrode size dependant)								
2.00		2.00 (0-30,000 MicroSiemens)						
1.00		1.00 (0-20,000 MicroSiemens)						
0.20		0.20 (0-2000 MicroSiemens)						
0.10		0.10 (0-1000 MicroSiemens)						
0.02		0.02 (0-250 MicroSiemens)						
0.01		0.01 (0-100 MicroSiemens)						
High Range Cell Constants								
20.00		20.0 (0-200 MilliSiemens)						
10.00		10.0 (0-100 MilliSiemens)						
5.00		5.0 (0-50 MilliSiemens)						
Operational Temperature Range								
(Blank)		Standard up to 150°C, Teflon Insulator						
HT		High-Temp. 205°C Max, PEEK Insulator (Not Avail for High Range Constants)						
Integral Temperature Compensation								
HW		8550 Ohm @25°C, (Honeywell)						
Pt100		100 Ohm @0°C, PTC (BAT and Others)						
Pt1000		1000 Ohm @0°C, PTC (BAT and Others)						
(Blank)		Other (Call Factory)						
Cable								
JB		Junc Box, Exp Proof, Inc 8" Leads & Term						
PT		8" Pig Tail, Inc Term Strip						
10		Footage 1-10Ft (Whole Numbers Only)						
20		Footage 11-20Ft						
30		Footage 21-30Ft						
40		Footage 31-40Ft						
50		Footage 41-50Ft						
(Blank)		Other (Call Factory)						
Lead Terminations								
TL		All Tinned Leads						
SL		All Spade Lugs						
(Blank)		Other (Call Factory)						
Hardware								
SSV		1" SS Ball Vlv, Cmp						
N		Ftg, Nip & Lanyard						
(Blank)		None						
		Other (Call Factory)						
CS40	S	1.0	HT	PT100	10	TL	SSV	Typical



STANDARD DRAWINGS



REV	DATE	INITIAL	DESCRIPTION	DWN	APP'D	W/C	H/M

MATERIAL/DESCRIPTION		PART NO.

DIMENSIONS IN INCHES		CS40
TOLERANCES		
0.0000		
0.0001		
0.0005		
0.0010		
0.0050		
0.0100		
0.0150		
0.0200		
0.0500		
0.1000		
0.5000		
1.0000		
OTHERWISE		
SPECIFIED		

2 ELECTRODE CONDUCTIVITY SENSOR	FOR	

CONDUCTIVITY SENSOR		

FRAC TIONAL ALL ± 0.015"		

UNLESS OTHERWISE		

DESIGNED BY		

LIMITED WARRANTY

1. Limited Warranty. Barben Analyzer Technology, LLC (BAT) offers a limited warranty on each of its products against failure due to defects in material and workmanship for a period ending the earlier of (i) fifteen (15) months from the date of the invoice relating to the sale of the product and (ii) twelve (12) months from the date of installation of the product (collectively, the "Initial Warranty"). During the Initial Warranty, BAT offers a limited warranty against failure due to defects in material and workmanship on each part of a product repaired or replaced by an authorized service person for a period ending the later of (a) the remaining term of the Initial Warranty of the product and (b) ninety (90) days from the date of such repair or replacement. After expiration of the Initial Warranty, BAT offers a limited warranty against failure due to defects in material and workmanship on each part of a product repaired or replaced by an authorized service person for a period ending ninety (90) days from the date of such repair or replacement. BAT further offers a limited warranty that the products and parts it sells will conform to BAT's written specifications therefore. The foregoing limited warranties cover parts and labor only and BAT does not warrant and will not reimburse the buyer of its products ("Buyer") for any costs relating to the access by service persons of BAT to the product at issue. The foregoing limited warranties cover only the repair or replacement of defective parts and such determination will be in the sole discretion of BAT. In its sole discretion, BAT may make repairs or replacements under these limited warranties with either new or refurbished parts. To the extent Buyer's product cannot be remedied under these limited warranties through repair or replacement of parts, Buyer may return the product for a refund of the purchase price, less a reasonable reduction in such purchase price equal to the depreciation expense incurred by Buyer relating to such product. The limited warranties of this Section I.1. are further subject to those warranty exclusions set forth below in Section I.2.

2. Limited Warranty Exclusions. Excluding the warranties provided for in Section I.1., BAT provides all products to Buyer "as-is," without any other warranty of any kind. BAT disclaims any and all express or implied warranties of merchantability, fitness for a particular purpose and non-infringement of the intellectual property of others. BAT makes no warranty, express or implied, as to the design, sale, installation or use of its products. BAT's warranties will not be enlarged by, nor will any obligation or liability of BAT arise due to BAT providing technical advice, facilities or service in connection with any product. There is no warranty by BAT with respect to any product's: (i) uninterrupted or error-free operation; (ii) actual performance, other than the product's capability to meet BAT's specifications therefore; (iii) removal or installation from a worksite or process; (iv) electronic components or associated accessories (including without limitation circuit boards and integrated circuits); (v) maintenance (including without limitation gasket and seal replacements, adjustments, minor repairs and other inspection requirements, preventative or otherwise); (vi) use under inappropriate conditions or not in accordance with operating instructions; or (vii) use in connection with the operation of a nuclear facility. There is no warranty for labor expenses associated with field repairs or the repair or replacement of defective parts in the engine or power unit of any product if such product has been in the possession of the owner or operator for greater than twelve (12) months. There is no warranty for products determined to be, in BAT's sole discretion, damaged as a result of (a) misuse, neglect or accident; (b) improper application, installation, storage or use; (c) improper or inadequate maintenance or calibration; (d) operation outside of the published environmental specification; (e) improper site preparation or maintenance; (f) unauthorized repairs or replacements; (g) modifications negligently or otherwise improperly made or performed by persons other than BAT; (h) Buyer-supplied software or supplies; (i) use in conjunction with or interfacing with unapproved accessory equipment; (j) use of ABC-style or dry powder fire suppression agents; or (k) leaked sample materials. To the extent a BAT product is used in connection with the operation of a nuclear power facility, Buyer agrees to indemnify and hold BAT harmless from any and all actions, claims, suits, damages and expenses arising from such use. BAT provides no warranty on the oral representations made by its personnel while they are attempting to assist Buyer in the operation of a product. This Standard Limited Warranty does not apply to items consumed by the products during their ordinary use, including but not limited to fuses, batteries, paper, septa, fittings, screws, fuses, pyrolysis, dryer or scrubber tubes, sample boats, furnaces or UV lamps.

3. Non-BAT Products. BAT does not in any way warrant products it does not manufacture except to the extent the warranty of the manufacturer of the product at issue passes through or is otherwise assigned to BAT. If a manufacturer warranty is so assigned to BAT, BAT will only be bound to comply with the length of time associated with such warranty. All other terms of such warranty will be governed

by this Standard Limited Warranty and BAT's General Terms and Conditions incorporated herein by reference.

4. Expenses on Non-Warranty Work. All repairs or replacements by BAT after the expiration of any applicable limited warranty period will be performed in accordance with BAT's standard rate for parts and labor. Further, if upon BAT's inspection and review, BAT determines the condition of the products is not caused by a defect in BAT's material and workmanship, but is the result of some other condition, including but not limited to damage caused by any of the events or conditions set forth in Section 1.2., Buyer shall be liable for all direct expenses incurred by BAT to conduct the inspection and review of the product.

5. Exclusive Remedy. The foregoing limited warranty constitutes Buyer's exclusive remedy with respect to products sold by BAT and BAT's liability shall be exclusively limited to the written limited warranty specified herein. No employee, Representative or agent of BAT is authorized to either expressly or impliedly modify, extend, alter or change any of the limited warranties expressed herein to Buyer.

6. Procedure and Costs. All limited warranty claims must be made in writing promptly following discovery of any defect. Buyer must hold defective products for inspection by BAT. If requested by BAT, Buyer must send the product to BAT for inspection. Any such returns by Buyer will be at Buyer's expense and Buyer will remain liable for any loss of or damage to the product during such product's transportation to BAT. No products will be sent to BAT for inspection unless BAT has authorized Buyer to do so.

7. Terms and Conditions. BAT's General Terms and Conditions are incorporated herein by reference and Buyer accordingly agrees to be bound by the terms thereof.

II. Limitations on BAT Liability

1. In General. Buyer agrees BAT shall not be liable for any direct, indirect, incidental, punitive or consequential damages, including lost profits, lost savings or loss of use, whether Buyer's claim is based in contract, tort, warranty, strict liability or otherwise, which Buyer may suffer for any reason, including reasons attributable to BAT. Buyer agrees these limitations on BAT's liability are reasonable and reflected in the amounts charged by BAT for its products.

2. Force Majeure. This Standard Limited Warranty does not cover and BAT shall not be liable for either direct or consequential damage caused, either directly or indirectly, as a result of: (i) any act of God, including but not limited to natural disaster, such as floods, earthquakes, or tornadoes; (ii) damages resulting from or under the conditions of strikes or riots, war, damages or improper operation due to intermittent power line voltage, frequency, electrical spikes or surges, unusual shock or electrical damage; or (iii) accident, fire or water damage, neglect, corrosive atmosphere or causes other than ordinary use.

3. Limitation on Warranty Claims. Prior to any obligation of BAT to perform any limited warranty service as set forth herein, Buyer must have: (i) paid all invoices to BAT in full, whether or not they are specifically related to the product at issue; and (ii) notified BAT of the limited warranty claim within sixty (60) days from the date Buyer knew or had reason to know of the defect.