



SEA-BIRD
SCIENTIFIC

Product Documentation

Table of Contents

16P-50669	1
16P-50670	6
16P-50671	11



SBE16plusV2 SeaCAT Moored

Instrument Configuration

Instrument Serial Number: 16-50669
Instrument Firmware Version: 3.2.1
Zero Conductivity Frequency: 2616.96
Communications Format: RS232
Communications Settings: 9600 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

<i>Data Format</i>	<i>Measurement</i>	<i>Sensor Type</i>	<i>Serial Number</i>	<i>Rating</i>
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure Sensor	Druck	12120860	600m(600 dBar)
NONE	N/A	SBE 5	12676	600m

Maximum Depth: 600m

CAUTION - The maximum deployment depth will be limited by the measurement range of the pressure sensor, if installed, an attached sensor, if installed, or the housing.



Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50669
CALIBRATION DATE: 03-Aug-25

SBE 16plus V2 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = 1.242199e-03
a1 = 2.738484e-04
a2 = -7.781302e-07
a3 = 1.654133e-07

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	563719.300	1.0000	0.0000
4.5000	498168.364	4.5000	-0.0000
15.0000	337757.300	15.0001	0.0001
18.5000	295228.200	18.4999	-0.0001
24.0000	237840.800	24.0001	0.0001
29.0000	194426.100	29.0000	-0.0000
32.5000	168310.600	32.5000	0.0000

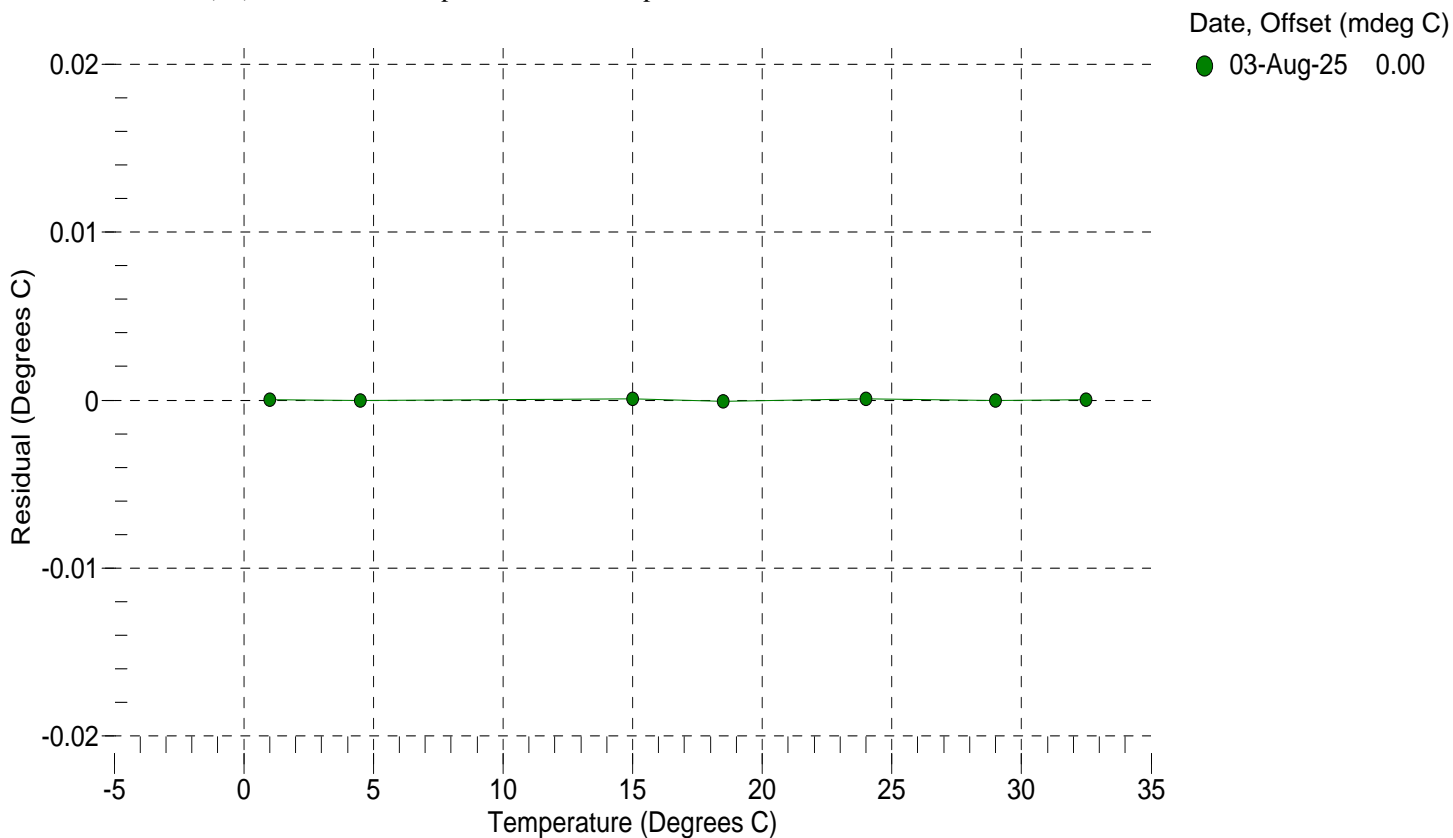
n = Instrument Output (counts)

MV = (n - 524288) / 1.6e+007

R = (MV * 2.900e+009 + 1.024e+008) / (2.048e+004 - MV * 2.0e+005)

Temperature ITS-90 (°C) = 1 / {a0 + a1[ln(R)] + a2[ln²(R)] + a3[ln³(R)]} - 273.15

Residual (°C) = instrument temperature - bath temperature





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50669
CALIBRATION DATE: 03-Aug-25

SBE 16plus V2 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.899086e-01
h = 1.446597e-01
i = -1.250154e-04
j = 3.085192e-05

CPcor = -9.5700e-008
CTcor = 3.2500e-006

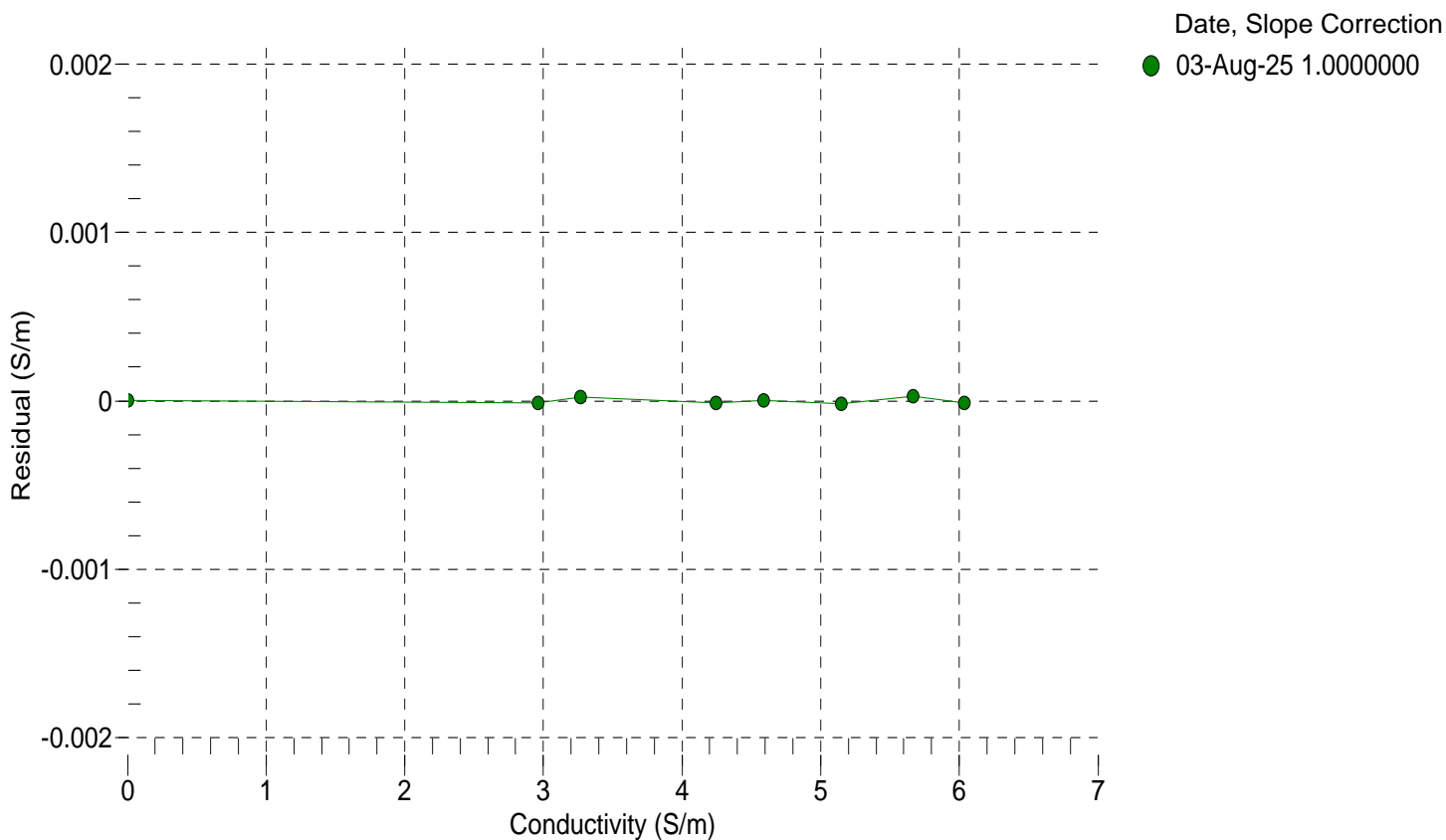
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2616.96	0.0000	0.00000
1.0000	34.6462	2.96281	5223.85	2.9628	-0.00001
4.5000	34.6273	3.26864	5421.47	3.2687	0.00002
15.0000	34.5868	4.24643	6009.03	4.2464	-0.00001
18.5000	34.5782	4.59018	6202.13	4.5902	0.00000
24.0000	34.5687	5.14585	6501.86	5.1458	-0.00002
29.0000	34.5628	5.66545	6769.86	5.6655	0.00003
32.5000	34.5582	6.03605	6954.49	6.0360	-0.00001

f = Instrument Output (Hz) / 1000.0

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = CPcor;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50669
CALIBRATION DATE: 29-Jul-25

SBE 16plus V2 PRESSURE CALIBRATION DATA
870 psia S/N 12120860

COEFFICIENTS:

PA0 =	1.210623e+00	PTCA0 =	5.247506e+05
PA1 =	2.629647e-03	PTCA1 =	3.420309e+01
PA2 =	2.506266e-11	PTCA2 =	-6.036359e-01
PTEMPA0 =	-6.060735e+01	PTCB0 =	2.522613e+01
PTEMPA1 =	5.408471e+01	PTCB1 =	2.250000e-04
PTEMPA2 =	-5.211645e-01	PTCB2 =	0.000000e+00

PRESSURE SPAN CALIBRATION

THERMAL CORRECTION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
14.59	530312.0	1.6	14.62	0.00	32.50	1.75	530474.30
179.58	592973.0	1.6	179.47	-0.01	29.00	1.68	530471.33
359.20	661171.0	1.6	359.12	-0.01	24.00	1.59	530454.75
538.91	729336.0	1.6	538.91	0.00	18.50	1.48	530418.17
718.60	797370.0	1.6	718.59	-0.00	15.00	1.42	530377.14
868.34	853983.0	1.6	868.29	-0.01	4.50	1.22	530141.23
718.74	797450.0	1.6	718.80	0.01	1.00	1.15	530018.45
539.04	729412.0	1.6	539.11	0.01	TEMPERATURE (°C)		SPAN
359.37	661275.0	1.6	359.39	0.00			
179.65	593051.0	1.6	179.67	0.00			
14.59	530318.0	1.6	14.63	0.00			
						-5.00	25.23
						35.00	25.23

y = thermistor output (counts)

t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y²

x = instrument output - PTCA0 - PTCA1 * t - PTCA2 * t²

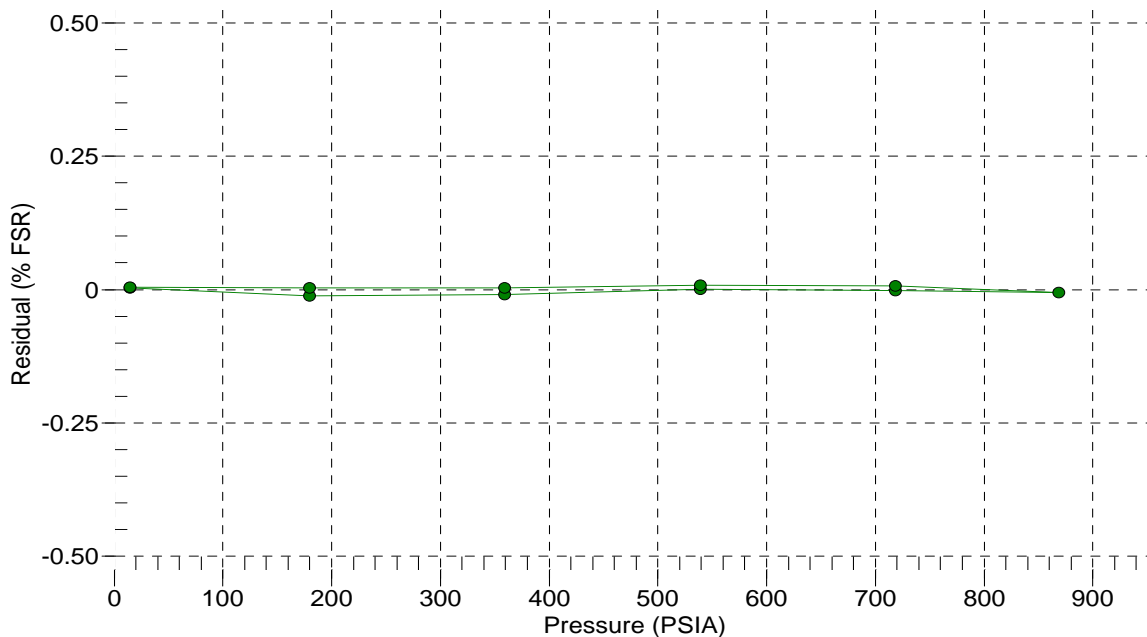
n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t²)

pressure (PSIA) = PA0 + PA1 * n + PA2 * n²

Residual (%FSR) = (computed pressure - true pressure) * 100 / Full Scale Range

Date, Offset (%FSR)

● 29-Jul-25 -0.00





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

Pressure Test Certificate

Test Date: **2025-07-22**

Description: **SBE-5M Submersible Pump**

Sensor Information:

Model Number: **SBE-5M**

Serial Number: **12676**

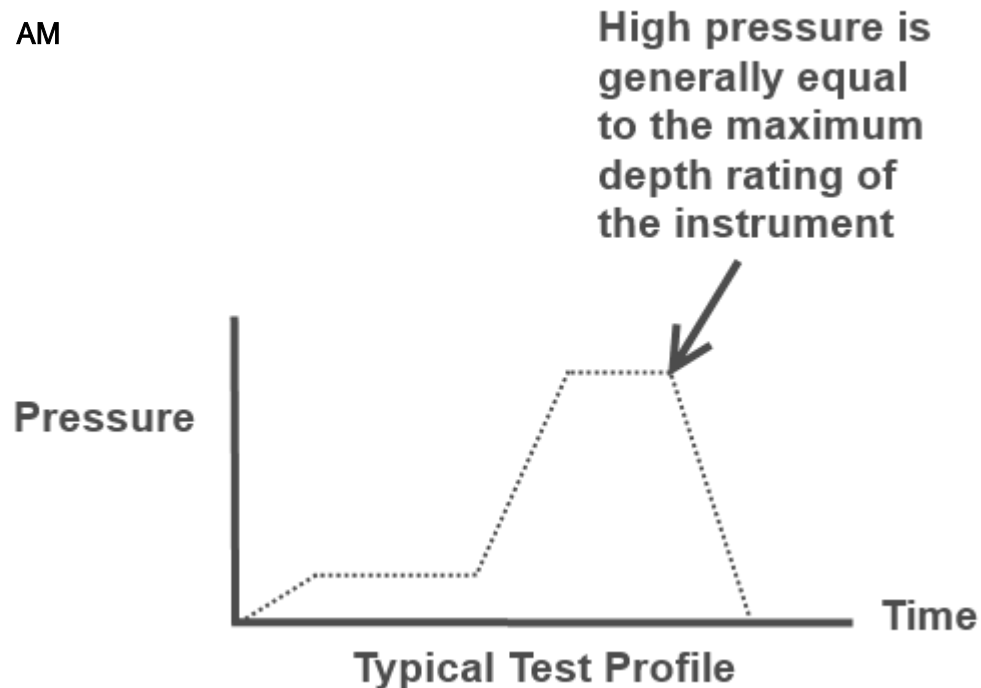
Pressure Test Protocol:

Low Pressure Test: **40** PSI Held For: **15** Minutes

High Pressure Test: **870** PSI Held For: **15** Minutes

Passed Test: **True**

Tested By: **AM**





SBE16plusV2 SeaCAT Moored

Instrument Configuration

Instrument Serial Number: 16-50670
Instrument Firmware Version: 3.2.1
Zero Conductivity Frequency: 2647.22
Communications Format: RS232
Communications Settings: 9600 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

<i>Data Format</i>	<i>Measurement</i>	<i>Sensor Type</i>	<i>Serial Number</i>	<i>Rating</i>
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure Sensor	Druck	12123927	600m(600 dBar)
NONE	N/A	SBE 5	12677	600m

Maximum Depth: 600m

CAUTION - The maximum deployment depth will be limited by the measurement range of the pressure sensor, if installed, an attached sensor, if installed, or the housing.



Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50670
CALIBRATION DATE: 03-Aug-25

SBE 16plus V2 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = 1.235193e-03
a1 = 2.737730e-04
a2 = -5.967893e-07
a3 = 1.604578e-07

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	559880.700	1.0001	0.0001
4.5000	495005.300	4.4999	-0.0001
15.0000	336192.600	15.0001	0.0001
18.5000	294057.500	18.5001	0.0001
24.0000	237172.200	23.9998	-0.0002
29.0000	194094.300	29.0001	0.0001
32.5000	168164.100	32.5000	0.0000

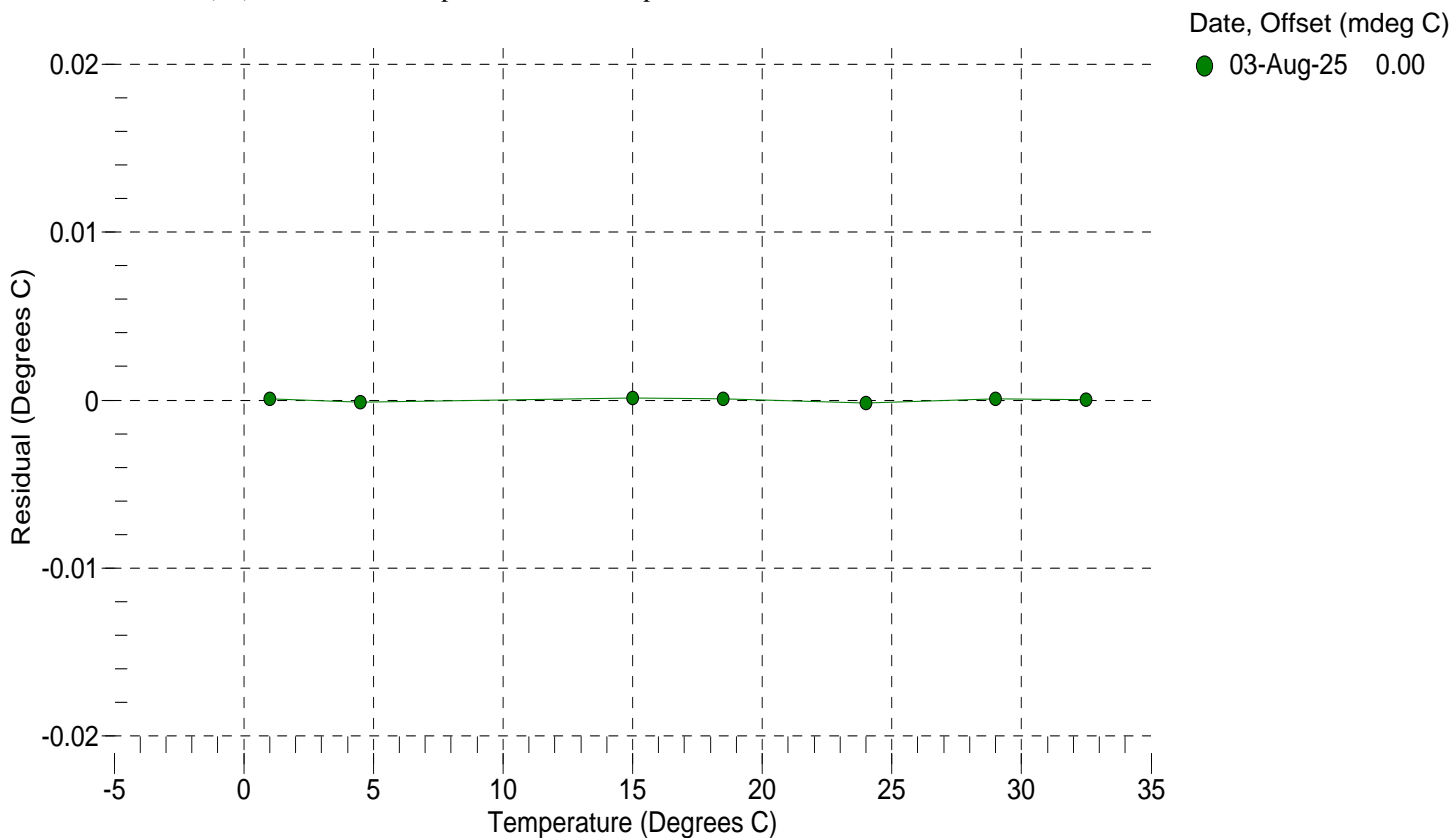
n = Instrument Output (counts)

MV = (n - 524288) / 1.6e+007

R = (MV * 2.900e+009 + 1.024e+008) / (2.048e+004 - MV * 2.0e+005)

Temperature ITS-90 (°C) = 1 / {a0 + a1[ln(R)] + a2[ln²(R)] + a3[ln³(R)]} - 273.15

Residual (°C) = instrument temperature - bath temperature





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50670
CALIBRATION DATE: 03-Aug-25

SBE 16plus V2 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.751962e-01
h = 1.391117e-01
i = -4.439637e-05
j = 2.353808e-05

CPcor = -9.5700e-008
CTcor = 3.2500e-006

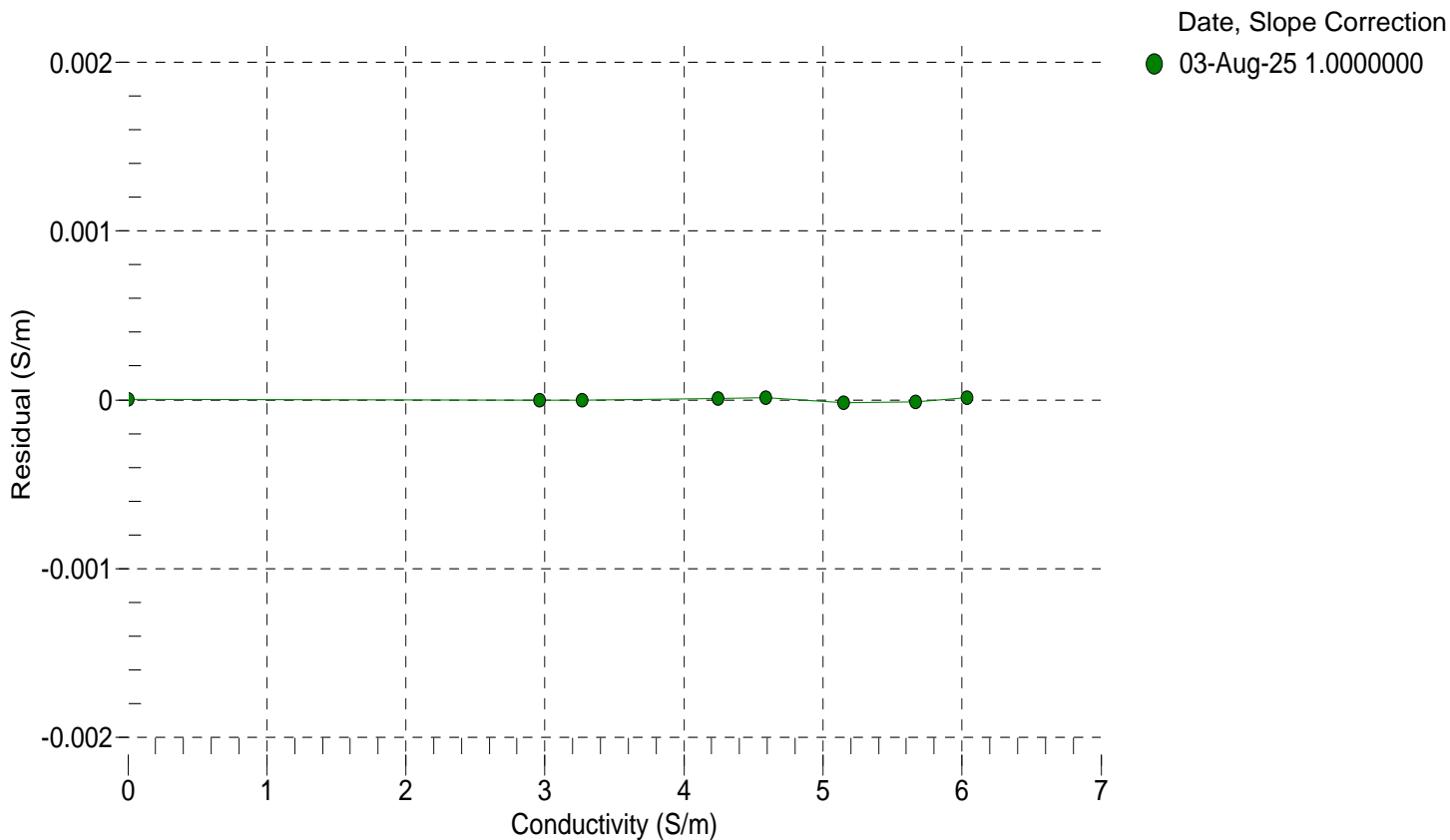
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2647.22	0.0000	0.00000
1.0000	34.6462	2.96281	5312.38	2.9628	-0.00000
4.5000	34.6273	3.26864	5513.99	3.2686	-0.00000
15.0000	34.5868	4.24643	6113.40	4.2464	0.00001
18.5000	34.5782	4.59018	6310.35	4.5902	0.00001
24.0000	34.5687	5.14585	6616.04	5.1458	-0.00002
29.0000	34.5628	5.66545	6889.34	5.6654	-0.00001
32.5000	34.5582	6.03605	7077.67	6.0361	0.00001

f = Instrument Output (Hz) / 1000.0

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = CPcor;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50670
CALIBRATION DATE: 01-Aug-25

SBE 16plus V2 PRESSURE CALIBRATION DATA
870 psia S/N 12123927

COEFFICIENTS:

PA0 =	-2.223582e+00	PTCA0 =	5.245157e+05
PA1 =	2.632558e-03	PTCA1 =	-5.337639e+01
PA2 =	5.315207e-11	PTCA2 =	7.366789e-01
PTEMPA0 =	-6.062110e+01	PTCB0 =	2.505037e+01
PTEMPA1 =	5.370287e+01	PTCB1 =	2.750000e-04
PTEMPA2 =	-3.015332e-01	PTCB2 =	0.000000e+00

PRESSURE SPAN CALIBRATION

THERMAL CORRECTION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
14.58	529968.6	1.6	14.35	-0.03	32.50	1.75	530008.20
183.91	594454.2	1.6	184.34	0.05	29.00	1.69	530039.17
355.08	659046.8	1.6	355.04	-0.00	24.00	1.59	530105.23
525.84	723419.6	1.6	525.61	-0.03	18.50	1.49	530230.16
697.13	787949.6	1.6	697.04	-0.01	15.00	1.42	530329.07
868.36	852361.8	1.6	868.60	0.03	4.50	1.22	530745.30
697.40	788039.0	1.6	697.28	-0.01	1.00	1.16	530908.54
526.12	723554.2	1.6	525.98	-0.02	TEMPERATURE (°C)		SPAN
354.87	658972.8	1.6	354.86	-0.00			
183.87	594422.2	1.6	184.26	0.05			
14.59	529974.8	1.6	14.38	-0.02			
					-5.00		25.05
					35.00		25.06

y = thermistor output (counts)

t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y²

x = instrument output - PTCA0 - PTCA1 * t - PTCA2 * t²

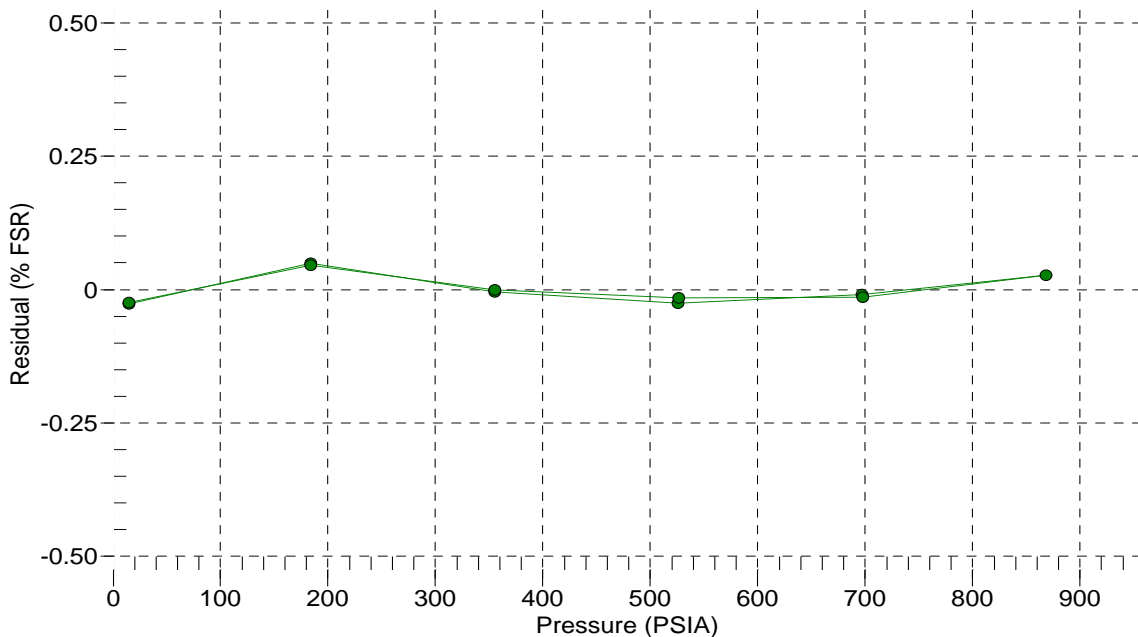
n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t²)

pressure (PSIA) = PA0 + PA1 * n + PA2 * n²

Residual (%FSR) = (computed pressure - true pressure) * 100 / Full Scale Range

Date, Offset (%FSR)

● 01-Aug-25 -0.00





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

Pressure Test Certificate

Test Date: **2025-07-22**

Description: **SBE-5M Submersible Pump**

Sensor Information:

Model Number: **SBE-5M**

Serial Number: **12677**

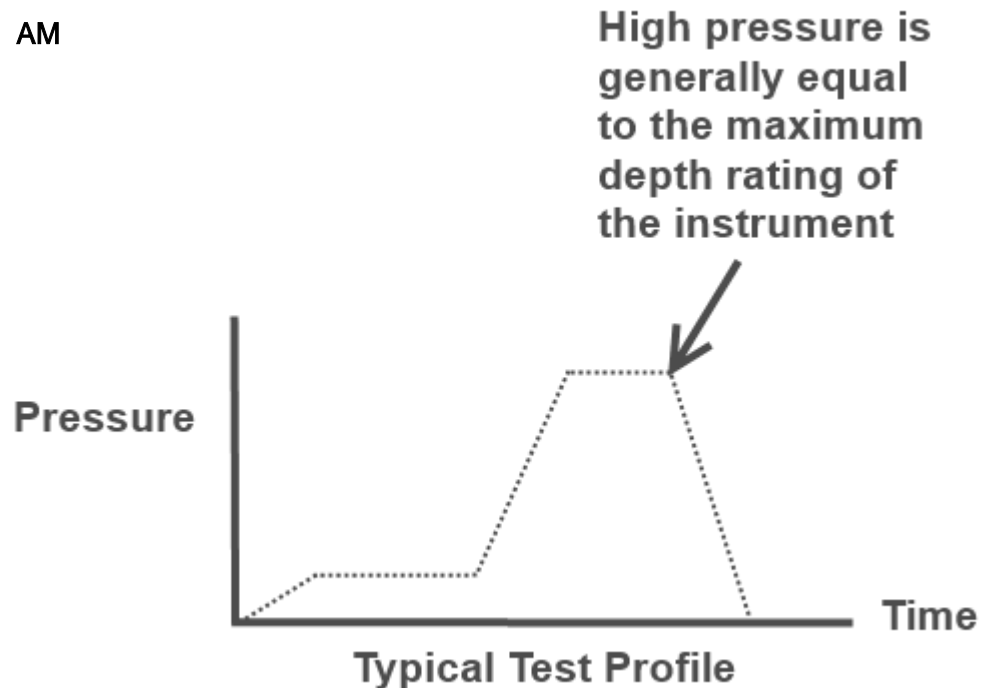
Pressure Test Protocol:

Low Pressure Test: **40** PSI Held For: **15** Minutes

High Pressure Test: **870** PSI Held For: **15** Minutes

Passed Test: **True**

Tested By: **AM**





SBE16plusV2 SeaCAT Moored

Instrument Configuration

Instrument Serial Number: 16-50671
Instrument Firmware Version: 3.2.1
Zero Conductivity Frequency: 2659.05
Communications Format: RS232
Communications Settings: 9600 baud, 8 Data Bits, No Parity

Installed Devices/Sensors

<i>Data Format</i>	<i>Measurement</i>	<i>Sensor Type</i>	<i>Serial Number</i>	<i>Rating</i>
Count	Temperature	Internal	N/A	N/A
Frequency	Conductivity	Internal	N/A	N/A
Count	Pressure Sensor	Druck	12595304	600m(600 dBar)
NONE	N/A	SBE 5	12678	600m

Maximum Depth: **600m**

CAUTION - The maximum deployment depth will be limited by the measurement range of the pressure sensor, if installed, an attached sensor, if installed, or the housing.



Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50671
CALIBRATION DATE: 03-Aug-25

SBE 16plus V2 TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

a0 = 1.263255e-03
a1 = 2.733802e-04
a2 = -1.205045e-06
a3 = 1.829820e-07

BATH TEMP (° C)	INSTRUMENT OUTPUT (counts)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	568824.100	1.0001	0.0001
4.5000	502078.727	4.4999	-0.0001
15.0000	338896.900	15.0001	0.0001
18.5000	295714.400	18.5000	-0.0000
24.0000	237536.900	23.9999	-0.0001
29.0000	193612.500	28.9999	-0.0001
32.5000	167237.900	32.5001	0.0001

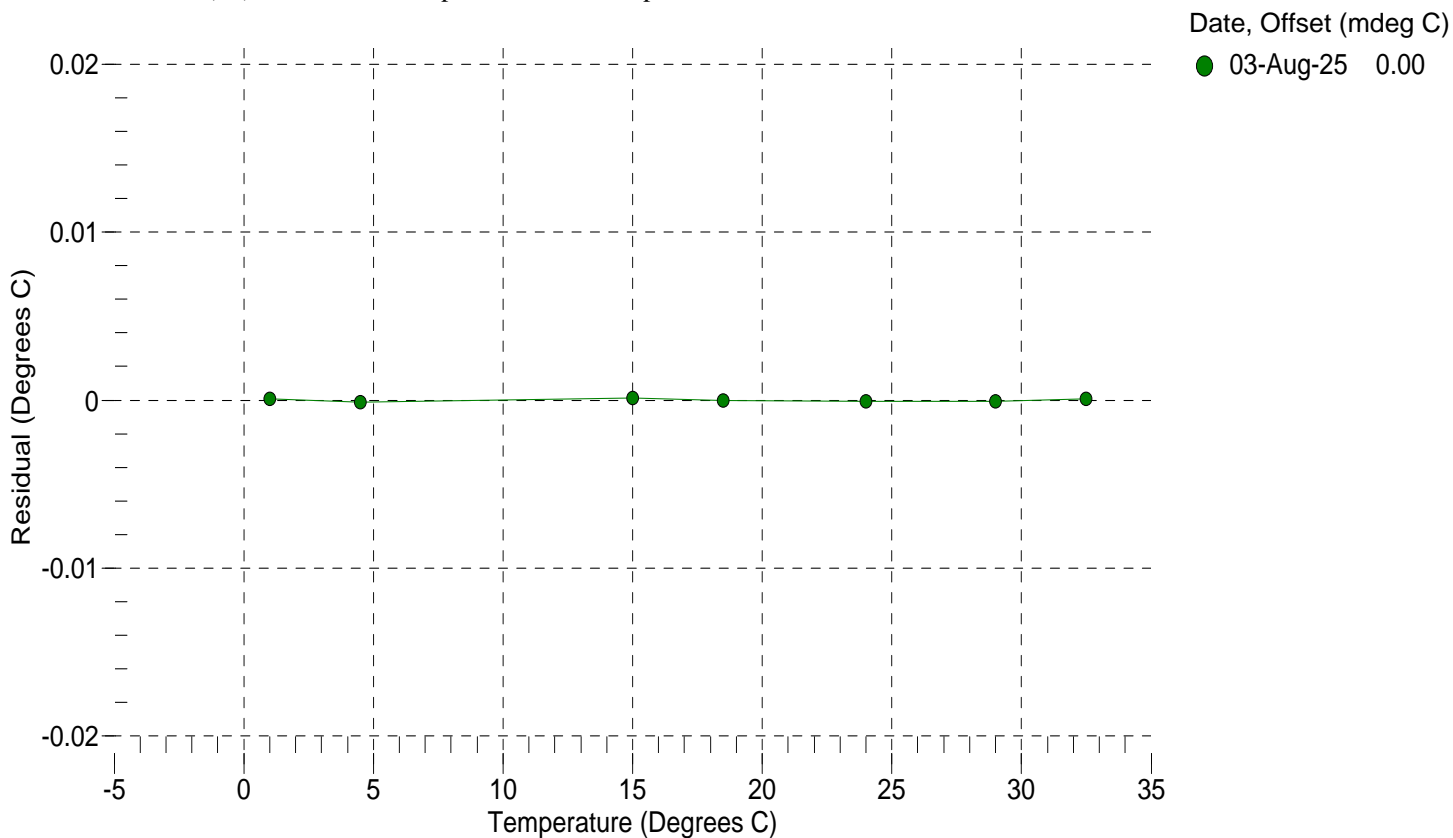
n = Instrument Output (counts)

$MV = (n - 524288) / 1.6e+007$

$R = (MV * 2.900e+009 + 1.024e+008) / (2.048e+004 - MV * 2.0e+005)$

Temperature ITS-90 (°C) = $1 / \{a0 + a1[\ln(R)] + a2[\ln^2(R)] + a3[\ln^3(R)]\} - 273.15$

Residual (°C) = instrument temperature - bath temperature





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50671
CALIBRATION DATE: 03-Aug-25

SBE 16plus V2 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -9.735903e-01
h = 1.376174e-01
i = -2.723203e-05
j = 2.151699e-05

CPcor = -9.5700e-008
CTcor = 3.2500e-006

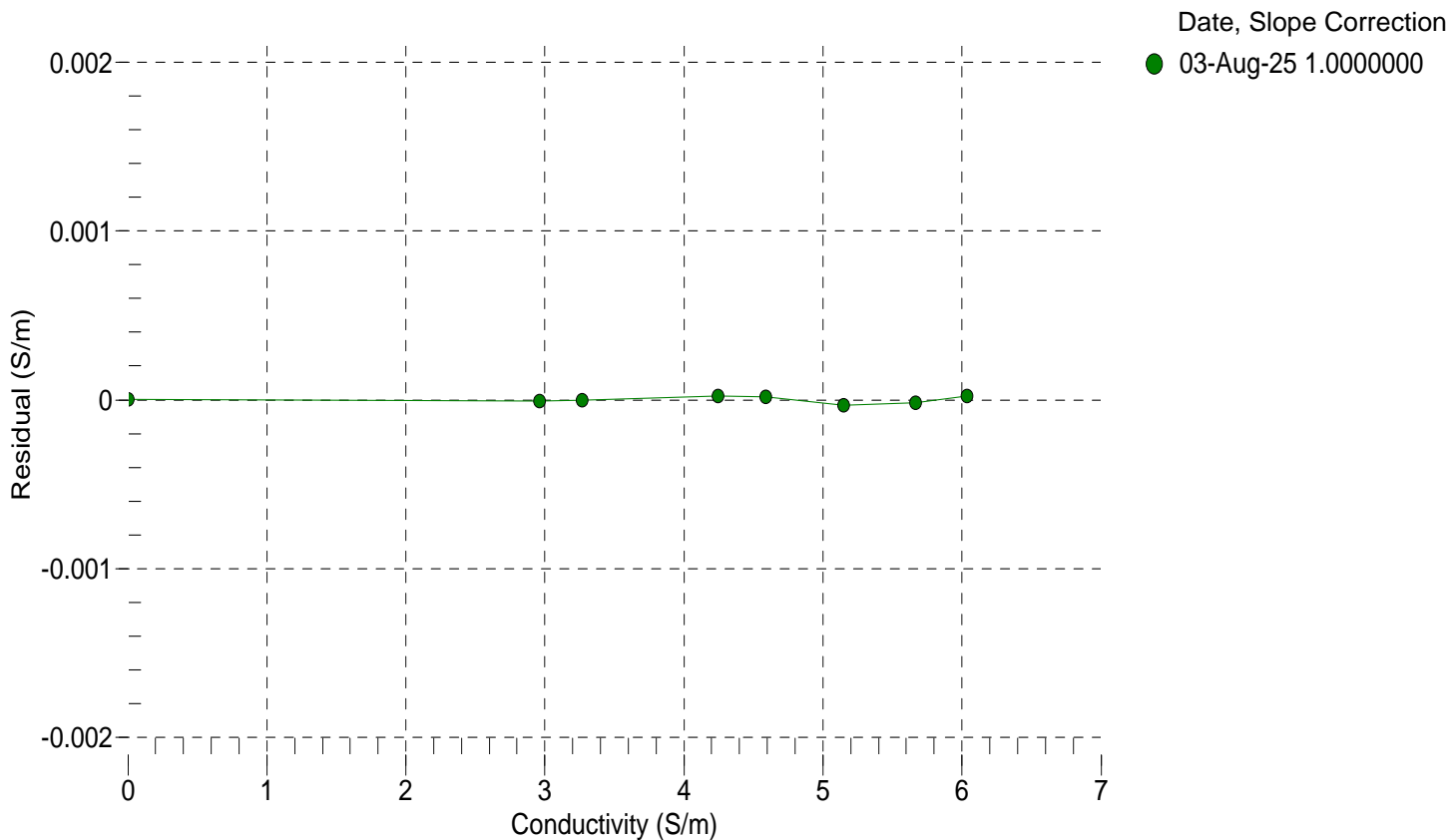
BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (Hz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2659.05	0.0000	0.00000
1.0000	34.6462	2.96281	5339.19	2.9628	-0.00001
4.5000	34.6273	3.26864	5541.91	3.2686	-0.00000
15.0000	34.5868	4.24643	6144.60	4.2465	0.00002
18.5000	34.5782	4.59018	6342.62	4.5902	0.00002
24.0000	34.5687	5.14585	6649.98	5.1458	-0.00003
29.0000	34.5628	5.66545	6924.79	5.6654	-0.00002
32.5000	34.5582	6.03605	7114.16	6.0361	0.00002

f = Instrument Output (Hz) / 1000.0

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = CPcor;

Conductivity (S/m) = $(g + h * f^2 + i * f^3 + j * f^4) / (1 + \delta * t + \epsilon * p)$

Residual (Siemens/meter) = instrument conductivity - bath conductivity





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

SENSOR SERIAL NUMBER: 50671
CALIBRATION DATE: 01-Aug-25

SBE 16plus V2 PRESSURE CALIBRATION DATA
870 psia S/N 12595304

COEFFICIENTS:

PA0 =	-1.767015e-01	PTCA0 =	5.240665e+05
PA1 =	2.625524e-03	PTCA1 =	-4.455251e+00
PA2 =	4.695029e-11	PTCA2 =	6.980792e-02
PTEMPA0 =	-6.148043e+01	PTCB0 =	2.508295e+01
PTEMPA1 =	5.371251e+01	PTCB1 =	6.015038e-04
PTEMPA2 =	-3.015332e-01	PTCB2 =	0.000000e+00

PRESSURE SPAN CALIBRATION

THERMAL CORRECTION

PRESSURE (PSIA)	INSTRUMENT OUTPUT (counts)	THERMISTOR OUTPUT (volts)	COMPUTED PRESSURE (PSIA)	RESIDUAL (%FSR)	TEMP (°C)	THERMISTOR OUTPUT (volts)	INSTRUMENT OUTPUT (counts)
14.58	529540.0	1.6	14.36	-0.03	32.50	1.77	529665.80
183.91	594238.0	1.6	184.36	0.05	29.00	1.70	529671.08
355.08	659029.2	1.6	355.00	-0.01	24.00	1.61	529673.34
525.84	723664.4	1.6	525.62	-0.02	18.50	1.50	529679.58
697.13	788436.4	1.6	697.00	-0.01	15.00	1.44	529687.11
868.36	853143.2	1.6	868.59	0.03	4.50	1.24	529719.91
697.40	788564.6	1.6	697.34	-0.01	1.00	1.17	529735.30
526.12	723800.4	1.6	525.98	-0.02	TEMPERATURE (°C)		SPAN
354.87	658986.6	1.6	354.89	0.00			
183.87	594189.6	1.6	184.23	0.04			
14.59	529546.0	1.6	14.38	-0.02	35.00		25.10

y = thermistor output (counts)

t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y²

x = instrument output - PTCA0 - PTCA1 * t - PTCA2 * t²

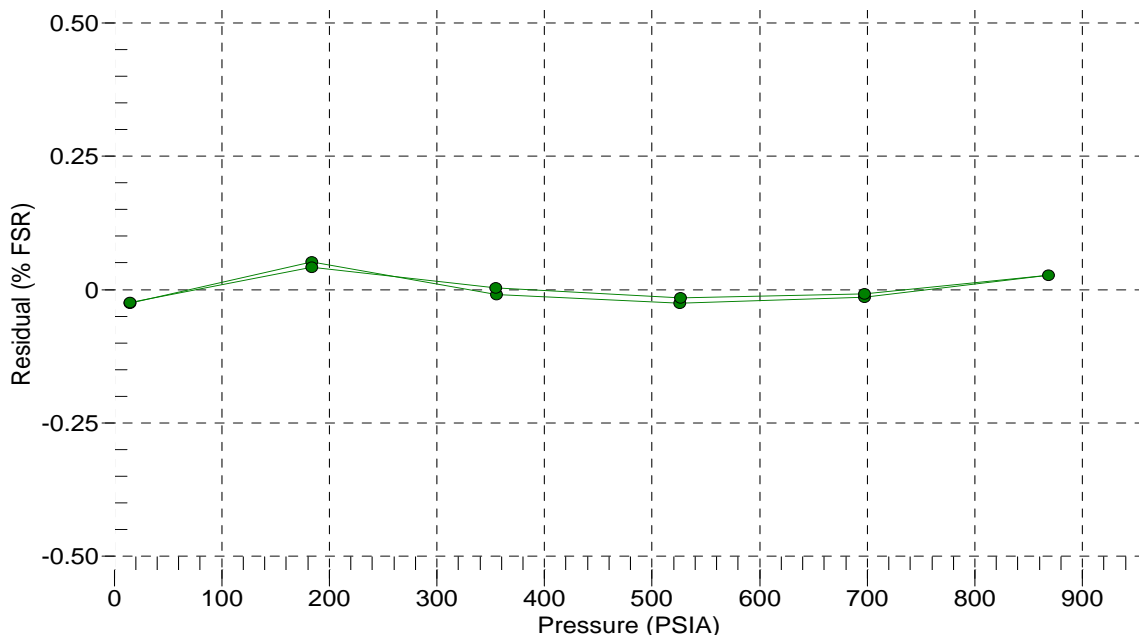
n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t²)

pressure (PSIA) = PA0 + PA1 * n + PA2 * n²

Residual (%FSR) = (computed pressure - true pressure) * 100 / Full Scale Range

Date, Offset (%FSR)

● 01-Aug-25 0.00





Sea-Bird Scientific
13431 NE 20th Street
Bellevue, WA 98005
USA

+1 425-643-9866
seabird@seabird.com
www.seabird.com

Pressure Test Certificate

Test Date: **2025-07-22**

Description: **SBE-5M Submersible Pump**

Sensor Information:

Model Number: **SBE-5M**

Serial Number: **12678**

Pressure Test Protocol:

Low Pressure Test: **40** PSI Held For: **15** Minutes

High Pressure Test: **870** PSI Held For: **15** Minutes

Passed Test: **True**

Tested By: **AM**

