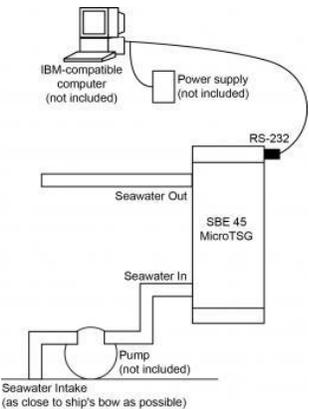


SBE 43 Configurations

PART #	DESCRIPTION	NOTES
45	<p>MicroTSG (Thermosalinograph) - In PVC flow-through housing. Requires 8-30 VDC input power. Includes RS-232 interface, 2.4 m data I/O & power input cable (801392), AF24173 Anti-Foulant Devices, spare o-ring & hardware kit, Seasoft software, & complete documentation.</p>	<p>See 90402 below for optional Interface Box, which provides power, RS-232 interface for remote temperature sensor, & NMEA interface for navigation data.</p>  <p>The diagram illustrates the installation of the SBE 45 MicroTSG. It shows an IBM-compatible computer (not included) connected to the SBE 45 via an RS-232 interface. A power supply (not included) provides power to the device. Seawater is drawn from an intake (as close to the ship's bow as possible) through a pump (not included) into the SBE 45 housing. The housing has a 'Seawater In' port at the bottom and a 'Seawater Out' port at the top.</p> <p>Notes:</p> <ul style="list-style-type: none"> • SBE 45 does not include memory or A/D auxiliary sensor channels. See SBE 21 for thermosalinograph with memory & A/D auxiliary sensor channels. • Some installations require a de-bubbler. See PN 70410 under Spares & Accessories.

SBE 45 Remote Sea Surface Temperature Sensor and NMEA (GPS) Data Interface Options

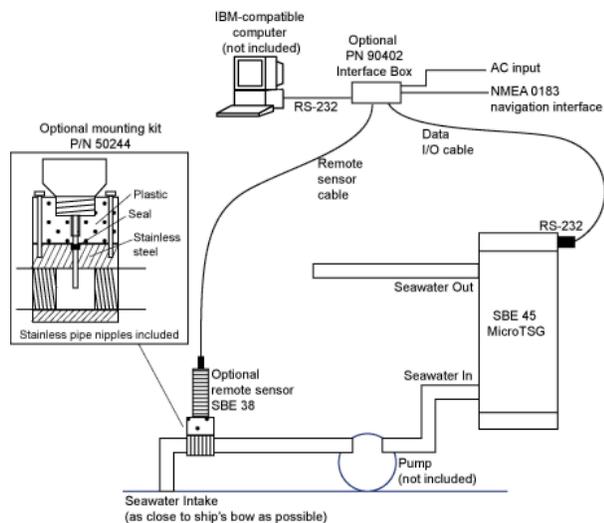
38.110x	SBE 38 Digital Oceanographic Remote Seawater Intake Thermometer (titanium housing, XSG connector)	Optional 90402.1 Interface Box supports input from remote SBE 38 thermometer through 4-pin SBE 38 connector, providing sea surface temperature. Ideal location for SBE 38 is on pipe near seawater intake, as close to ship's bow as possible, to minimize water temperature changes due to ship's thermal mass. User can add SBE 38 to system at any time. 38.110x includes only SBE 38; order interface box, mount kit (50244), & interface cable (80438, 80456, or 80458) separately.
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90402.1

SBE 45 Power, Navigation & Remote Temperature Interface box with AC power cord, DC input connector, 3 m computer serial cable (RS-232), 2.4 m SBE 45 interface cable, & NMEA test cable



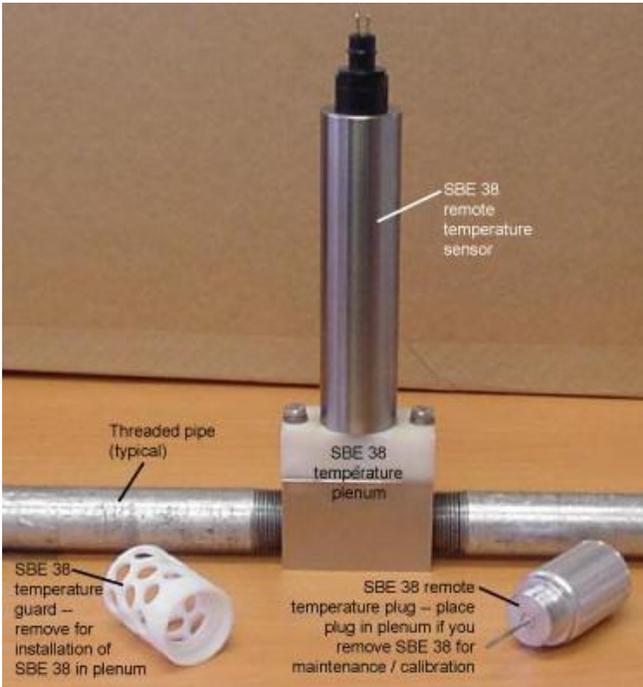
Provides power & optically isolated RS-232 interface for SBE 45, NMEA 0183 interface for NMEA navigation device (navigation device not provided by Sea-Bird), & power & RS-232 interface for SBE 38 remote temperature sensor. Order SBE 38 (see 38.110x above), SBE 38 cable (see 80438, 80456, or 80458 below), & SBE 38 mount kit (see 50244 below) separately.



Interface Box comes with:

- PN 17015 — AC power cable
- PN 171209 — DC power connector
- PN 801216 (DN 32397) — 2.4 m cable for connection to SBE 45
- PN 801422 (DN 32786) — 1.8 m NMEA test cable for connection to computer simulating NMEA input for testing NMEA interface. NMEA simulation program,

		<p>NMEAtest, is part of Seasoft software, & is installed when you install SBE Data Processing.</p> <ul style="list-style-type: none"> • PN 171887 (DN 32431) — 3 m cable for connection to computer • (2) PN 171888 — cable adapter, DB-25S to DB-9P (for use with computer with DB-25 connector) • PN 50368 — connector assembly for 4-pin SBE 45 or SBE 38 (for connection to SBE 45 or 38) • PN 50173— connector assembly for 2-pin NMEA (for connection to NMEA navigation device)
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<p>50244</p>	<p>Stainless steel/plastic pipe coupling mounting kit for SBE 38 remote sensor (1 inch female NPT thread) with dummy sensor plug</p>	<p>Ideal location for SBE 38 is on pipe near seawater intake, as close to ship's bow as possible, to minimize water temperature changes due to ship's thermal mass. User can add SBE 38 to the system at any time. Shown below is SBE 38 installed in 50244 mounting kit; see document 67071.</p> 
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80438	SBE 38 remote temperature cable for 90402 Interface Box, RMG-4FS to 4-pin MS3106A connector, 10 m (DN 31063)	Connects SBE 38 remote temperature sensor to 90402 Interface Box.
80456	SBE 38 remote temperature cable for 90402 Interface Box, RMG-4FS to 4-pin MS3106A connector, 30 m (DN 31063)	
80458	SBE 38 remote temperature cable for 90402 Interface Box, RMG-4FS to 4-pin MS3106A connector, 50 m (DN 31063)	

SBE 45 Spares & Accessories

801392	Data I/O cable, SBE 45 (MCIL-4MP) to computer (DB-9S), 2.4 m (DN 32756)	Connects SBE 45 to computer. Included with standard shipment; this is spare.
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<p>801216</p>	<p>Data I/O cable, SBE 45 (MCIL-4MP) to 90402 interface box, 2.4 m (DN 32397)</p>	<p>Connects SBE 45 to 90402 Interface Box. 801216 (2.4 m) included with Interface Box; these are spares.</p>
<p>801416</p>	<p>Data I/O cable, SBE 45 (MCIL-4MP) to 90402 interface box, 10 m (DN 32397)</p>	
<p>801417</p>	<p>Data I/O cable, SBE 45 (MCIL-4MP) to 90402 interface box, 30 m (DN 32397)</p>	
<p>801418</p>	<p>Data I/O cable, SBE 45 (MCIL-4MP) to 90402 interface box, 50 m (DN 32397)</p>	
<p>20200</p>	<p>USB to Serial Port Adapter, FTDI UC232R-10 (connects computers with USB ports to RS-232 instruments)</p>	<p>Many newer PCs & laptop computers have USB port(s) instead of RS-232 serial port(s). USB serial adapter plugs into USB port, & allows a serial device to be connected through adapter. Multi-port adapters are available from other companies; see Application Note 68.</p>
<p>801422</p>	<p>NMEA test cable, DB-9S to MS3106A, SBE 11p/33/36/45, 1.8 m (DN 32786)</p>	<p>Connects NMEA on 90402 Interface Box to computer simulating NMEA input for testing NMEA interface. Included with 90402 Interface Box; this is spare. NMEA simulation program, NMEATest, is part of Seasoft software, & is installed when you install SBE Data Processing.</p>

<p>801542</p>	<p>AF24173 Anti-Foulant Device pair (spare, bagged, labeled for shipping)</p>	 <p>Anti-foulant device fits into anti-foulant device cup at end of conductivity cell. 1 anti-foulant device included with standard shipment; these are spares.</p> <p>Useful life varies, depending on several factors. We recommend that customers consider more frequent replacement when high biological activity & strong current flow (greater dilution of anti-foulant concentration) are present. Moored instruments in high growth & strong dilution environments have been known to obtain a few months of quality data, while drifters that operate in non-photoc, less turbid deep ocean environments may achieve years of quality data. Experience may be strongest determining factor in specific deployment environments.</p>
<p>60036</p>	<p>SBE 45 Spare O-ring/hardware kit</p>	<p>See document 67095.</p>
<p>70410</p>	<p>Debubbler, Vortex, MSRC VDB-1, 2"</p>	<p>Some installations require a de-bubbler. Click here for information on this de-bubbler, which is produced by the State University of New York, Ocean Instrument Laboratory.</p>