

SBE 37-SI,SIP,SIP-ODO MicroCAT Configurations

Model	37-SI	37-SIP	37-SIP-ODO
Housing	1 – 350 m (plastic) 3 – 7000 m (titanium)	1 – 350 m (plastic) 3 – 7000 m (titanium)	1 – 350 m (plastic) 3 – 7000 m (titanium)
Pressure Sensor/Range	0 – none 1 – 20 m strain gauge 2 – 100 m strain gauge 3 – 350 m strain gauge 4 – 600 m strain gauge 5 – 1000 m strain gauge 6 – 2000 m strain gauge 7 – 3500 m strain gauge 8 – 7000 m strain gauge	0 – none 1 – 20 m strain gauge 2 – 100 m strain gauge 3 – 350 m strain gauge 4 – 600 m strain gauge 5 – 1000 m strain gauge 6 – 2000 m strain gauge 7 – 3500 m strain gauge 8 – 7000 m strain gauge	0 – none 1 – 20 m strain gauge 2 – 100 m strain gauge 3 – 350 m strain gauge 4 – 600 m strain gauge 5 – 1000 m strain gauge 6 – 2000 m strain gauge 7 – 3500 m strain gauge 8 – 7000 m strain gauge
Connector	1 – XSG 2 – MCBH	1 – XSG 2 – MCBH	1 – XSG 2 – MCBH


Communications	0 – RS-232 1 – RS-485	0 – RS-232 1 – RS-485	0 – RS-232
SBE 63 Optical Dissolved Oxygen	0 - none	0 – none	1 – IDO (based on SBE 43)

SBE 37-SI MicroCAT C-T (P) Recorder

Example: 37SI.13100 is an SBE 37-SI with 350 m housing, 350 m strain gauge pressure sensor, XSG connector, and RS-232 communications. See table below for description of each selection:

PART #	DESCRIPTION	NOTES
37SI	MicroCAT C and T (pressure optional) Sensor with Serial Interface - Includes 8 MB Flash memory, serial interface, data/power cable (cable may be deleted for credit), AF24173 Anti-Foulant Devices, Seasoft software, & complete documentation.	<p>37-SI MicroCAT includes:</p> <ul style="list-style-type: none"> • Serial Interface • Memory <p>Note: 37-SI does not include internal batteries.</p> <p>Compare features of the numerous SBE 37 MicroCAT models.</p>


SBE 37-SI Housing (depth) Selections — MUST SELECT ONE

37SI.1xxx 0	350 m plastic housing	
37SI.3xxx 0	7000 m titanium housing	
SBE 37-SI Pressure Sensor Range (depth) Selections — MUST SELECT ONE		
37SI.x0xx 0	No pressure sensor	 <p>Pressure sensor is installed in end cap, & is not field replaceable / swappable. While highest pressure rating gives you most flexibility in using MicroCAT, it is at expense of accuracy & resolution. It is advantageous to use lowest range pressure sensor compatible with your intended maximum operating depth, because accuracy & resolution are proportional to pressure sensor's full scale range. For example, comparing 2000 & 7000 m sensors:</p> <ul style="list-style-type: none"> • 2000 m sensor: initial accuracy = 2 m ($= 0.1\% * 2000$ m), resolution = 0.04 m ($= 0.002\% * 2000$ m) • 7000 m sensor: initial accuracy = 7 m ($= 0.1\% * 7000$ m),
37SI.x1xx 0	20 m strain gauge pressure sensor	
37SI.x2xx 0	100 m strain gauge pressure sensor	
37SI.x3xx 0	350 m strain gauge pressure sensor	
37SI.x4xx 0	600 m strain gauge pressure sensor	
37SI.x5xx 0	1000 m strain gauge pressure sensor	

37SI.x6xx 0	2000 m strain gauge pressure sensor	resolution = 0.14 m (= 0.002% * 7000 m)
37SI.x7xx 0	3500 m strain gauge pressure sensor	
37SI.x8xx 0	7000 m strain gauge pressure sensor	
SBE 37-SI Connector Selections — MUST SELECT ONE		
37SI.xx1x 0	XSG connector (includes data/power interface cable 801385)	Wet-pluggable connectors may be mated in wet conditions. Their pins do not need to be dried before mating. By design, water on connector pins is forced out as connector is mated. However, they must not be mated or un-mated while submerged. Wet-pluggable connectors have a non-conducting guide pin to assist pin alignment & require less force to mate, making them easier to mate reliably under dark or cold conditions, compared to XSG/AG connectors. Like XSG/AG connectors, wet-pluggables need proper lubrication & require care during use to avoid trapping water in sockets.


37SI.xx2x0	Wet-pluggable (MCBH) connector (includes data/power interface cable 801206)	  <p>XSG connector on left, Wet-pluggable (MCBH) connector on right</p>
SBE 37-SI Communications Selections— MUST SELECT ONE		
37SI.xxx00	RS-232 serial interface	Note: Each interface version of 37-SI has a separate manual.

37SI.xxx1 0	RS-485 (half duplex ONLY) serial interface	<p>Two-wire, RS-485 interface provides communication with individual 37-SI or with all 37-SIs attached to RS-485 interface. This allows for coordination of sampling among many instruments. However, note that half-duplex communication is one-direction at a time (i.e., you cannot send commands & receive data at same time).</p> <p>Note: Each interface version of 37-SI has a separate manual.</p>
SBE 37-SI Mooring Clamp Wire Size Options (Specify clamp to match O.D. of mooring wire jacket)		
50264.I	Plastic brackets to provide through-bolt mounting to a flat surface	See document 67096 . 'I' designation indicates that brackets are to be installed on instrument at factory.

50261.I	Wire guide & mounting clamp for 1/4 in. diameter mooring wire	
50263.I	Wire guide & mounting clamp for 5/16 in. or 8 mm diameter mooring wire	
50262.I	Wire guide & mounting clamp for 3/8 in. diameter mooring wire	 <p>Mounting Clamp. 37-SIP clamped to mooring cable here.</p> <p>Wire Guide. Cable goes through here but is not clamped, to avoid putting through tension on end cap (which could pull off end cap).</p> <p>Cable fits loosely through wire guide, & is clamped only at mounting clamp. See document 67094. (photo is of 37-SIP; 37-SI is similar). 'I' designation indicates that guide and clamp are to be installed on instrument at factory.</p> <p>Thread for clamping to mooring cable:</p> <ul style="list-style-type: none"> • 1/4 in. diameter: 1/4-28 UNF • 5/16 in./8 mm diameter: 5/16-24 UNF • 3/8 in. diameter: 3/8-24 UNF • 1/2 in. diameter: 9/16-12 UNC • 5/8 in./16 mm diameter: 5/8-18 UNF • 6 mm diameter: 1/4-20 UNF • 10 mm diameter: 7/16 -14 UNF

50269.I	Wire guide & mounting clamp for 1/2 in. diameter mooring wire	<ul style="list-style-type: none">12 mm diameter: 1/2-13 UNF <p>Clamp Size Note: Mooring wire is typically specified by wire size, not by outer diameter (O.D.) of the mooring wire jacket. Verify the wire jacket O.D. before selecting the clamp size. The clamp size must be less than or equal to the wire jacket O.D. but larger than the wire diameter. For example, Mooring System Inc.’s specifications for 3x19 wire rope (in 2016) are as follows:</p> <table><tr><th>Wire Diameter</th><th>Jacket Diameter</th><th>Recommended Sea-Bird Clamp</th></tr><tr><td>3/16 inch (5.0 mm)</td><td>0.255 inch (6.5 mm)</td><td>1/4 inch</td></tr><tr><td>1/4 inch (6.5 mm)</td><td>0.330 inch (8.4 mm)</td><td>5/16 inch</td></tr><tr><td>5/16 inch (8.0 mm)</td><td>0.392 inch (9.9 mm)</td><td>3/8 inch</td></tr></table>	Wire Diameter	Jacket Diameter	Recommended Sea-Bird Clamp	3/16 inch (5.0 mm)	0.255 inch (6.5 mm)	1/4 inch	1/4 inch (6.5 mm)	0.330 inch (8.4 mm)	5/16 inch	5/16 inch (8.0 mm)	0.392 inch (9.9 mm)	3/8 inch
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5/16 inch (8.0 mm)	0.392 inch (9.9 mm)	3/8 inch												
50267.I	Wire guide & mounting clamp for 6 mm diameter mooring wire													
50268.I	Wire guide & mounting clamp for 10 mm diameter mooring wire													

50270.I	Wire guide & mounting clamp for 12 mm diameter mooring wire	<table border="1"> <tr> <td data-bbox="769 222 943 506">3/8 inch (9.5 mm)</td><td data-bbox="943 222 1117 506">0.453 inch (11.5 mm)</td><td data-bbox="1117 222 1370 506">10 mm (0.394 inch)</td></tr> <tr> <td data-bbox="769 506 943 789">7/16 inch (11.1 mm)</td><td data-bbox="943 506 1117 789">0.5 inch (12.7 mm)</td><td data-bbox="1117 506 1370 789">1/2 inch</td></tr> </table>	3/8 inch (9.5 mm)	0.453 inch (11.5 mm)	10 mm (0.394 inch)	7/16 inch (11.1 mm)	0.5 inch (12.7 mm)	1/2 inch
3/8 inch (9.5 mm)	0.453 inch (11.5 mm)	10 mm (0.394 inch)						
7/16 inch (11.1 mm)	0.5 inch (12.7 mm)	1/2 inch						
50271.I	Wire guide & mounting clamp for 5/8 in. or 16 mm diameter mooring wire	<p>For mounting on a rope, verify the rope outer diameter, and select a clamp smaller than the rope O.D. to account for the rope compressibility (for example, for 5/16 inch rope, select a 1/4 inch clamp; a 5/16 inch clamp will be too large).</p>						
SBE 37-SI Spares & Accessories								

801542	AF24173 Anti-Foulant Device pair (spare, bagged, labeled for shipping)	 <p>Anti-foulant devices fit into anti-foulant device cups at each end of conductivity cell. Anti-foulant devices 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>
233540	Anti-foulant cap without hose barb, black (for use with SBE 37 [SM, SMP, IM, IMP, SI, SIP] with firmware version < 4.0)	<p>This cap, without a hose barb, is a spare, and is intended for use during deployment.</p> <p>Note: Do not deploy MicroCAT with barbed anti-foulant device cap(s)!</p>

50087.1	Cell filler/storage device with hose barbs (Application Note 34)	<p>This kit includes a syringe & tubing assembly, & 2 anti-foulant device caps with hose barbs. Remove installed anti-foulant device cap(s) & replace them with caps with hose barbs for cleaning & storage only.</p> <ul style="list-style-type: none"> • Cleaning instructions require use of syringe & tubing assembly at intake end of conductivity cell (requiring 1 barbed cap). • Storage instructions require looping Tygon tubing from end to end of conductivity cell (requiring 2 barbed caps). <p>Do not deploy MicroCAT with barbed anti-foulant device cap(s)!</p>
801376	Data/Power interface cable, RMG-4FS to DB-9S & 9V battery snap, 2.4 m (DN 32604)	Some users prefer battery snap connector instead of red/black twisted wire leads. Order 801376 in place of 801385 if desired.
801263	Data/Power interface cable, Wet-Pluggable, MCIL-4FS to DB-9S & 9V battery snap, 2.4 m (DN 32490)	Some users prefer battery snap connector instead of red/black twisted wire leads. Order 801263 in place of 801206 if desired.

801385	Data/Power interface cable, RMG-4FS to DB-9S & red/black twisted wire leads, 2.4 m(DN 32277)	Included with standard shipment if 37SI.xx1x0 (XSG connector) selected; this is spare.
801206	Data/Power interface cable, Wet-Pluggable, MCIL-4FS to DB-9S & red/black twisted wire leads, 2.4 m(DN 32366)	Included with standard shipment if 37SI.xx2x0 (MCBH connector) selected; this is spare.
801378	Data / Power interface cable, shielded, RMG-4FS to DB-9S & red/black twisted wire leads, 20 m(DN 32720)	Longer, shielded cable for use if if 37SI.xx1x0 (XSG connector) selected.
801850	Data / Power interface cable, shielded, MCIL-4FS to DB-9S & red/black twisted wire leads, 20 m (DN 33404)	Longer, shielded cable for use if if 37SI.xx2x0 (MCBH connector) selected.

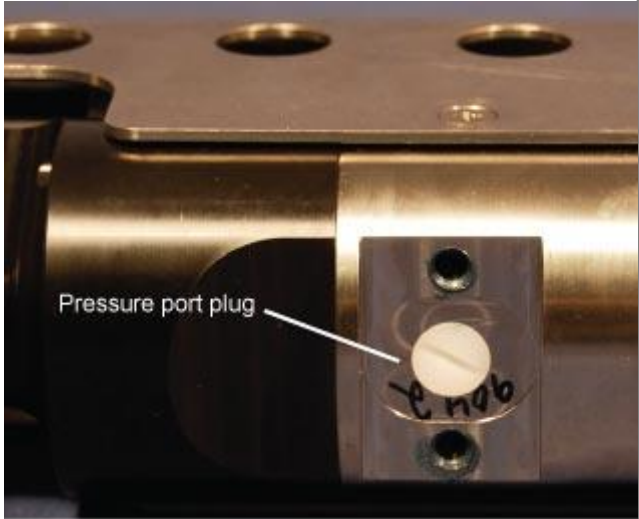
20200	USB to Serial Port Adapter, FTDI UC232R-10 (connects computers with USB ports to RS-232 instruments)	Many newer PCs & laptop computers have USB port(s) instead of RS-232 serial port(s). USB serial adapter plugs into USB port, & allows a serial device to be connected through adapter. Multi-port adapters are available from other companies; see Application Note 68 .
233186	High-head pressure port plug for muddy/biologically productive environments (Application Note 84), for use with SBE 37 [SM, SMP, IM, IMP, SI, SIP] with firmware version < 4.0	<div data-bbox="787 667 1079 982" data-label="Image"> </div> <p data-bbox="868 1008 1096 1092"> <i>High-Head Pressure Port Plug,</i> Part Number 233186 </p> <p data-bbox="768 1075 1360 1642"> This pressure port plug extends beyond surface of instrument end cap, and has 4 horizontal vent holes connecting internally to a vertical vent hole. If you are deploying 37-SI in an orientation close to horizontal, with pressure port up, horizontal orientation of vent holes prevents deposit of sediment inside pressure port. Each of the 4 vent holes is larger than single vent hole in standard pressure port plug, significantly reducing possibility that biological growth will cover all holes. See Application Note 84. </p>

31632	Storm Shipping Case (iM2950) - holds up to 4 SBE 37SIs	 <p>Storm shipping case with custom foam inserts holds up to 4 MicroCATs that do not include dissolved oxygen — IMP, IM, SMP, SM, SIP, SI.</p> <ul style="list-style-type: none"> • Injection molded case with HPX resin plastic body, recessed wheels, automatic pressure equalization valve, hinged push-button latches, fold-down padded handle, & O-ring seal. Meets airline luggage regulations. • Inner dimensions: 29 x 18 x 10.5 inches (74 x 46 x 27 cm). • Outer dimensions: 31.3 x 20.4 x 12.2 inches (80 x 52 x 31 cm).
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SBE 37-SIP MicroCAT C-T (P) Recorder

Example: 37SIP.13100 is an SBE 37-SIP with 350 m housing, 350 m strain gauge pressure sensor, XSG connector, and RS-232 communications. See table below for description of each selection:


PART #	DESCRIPTION	NOTES
37SIP	MicroCAT C and T (pressure optional) Sensor with Serial interface and Internal Pump - Includes 8 MB Flash memory, serial interface, data/power cable (cable may be deleted for credit), AF24173 Anti-Foulant Devices, Seasoftware, & complete documentation.	<p>37-SIP MicroCAT includes:</p> <ul style="list-style-type: none"> • Serial Interface • Memory • internal, integral Pump <p>Note: 37-SIP does not include internal batteries.</p> <p>Compare features of the numerous SBE 37 MicroCAT models.</p>
SBE 37-SIP Housing (depth) Selections — MUST SELECT ONE		
37SIP.1xxx0	350 m plastic housing	
37SIP.3xxx0	7000 m titanium housing	
SBE 37-SIP Pressure Sensor Range (depth) Selections — MUST SELECT ONE		

37SIP.x0xx 0	No pressure sensor	 <p>Pressure sensor is installed in end cap (behind mount clamp), & is not field replaceable / swappable. While highest pressure rating gives you most flexibility in using MicroCAT, it is at expense of accuracy & resolution. It is advantageous to use lowest range pressure sensor compatible with your intended maximum operating depth, because accuracy & resolution are proportional to pressure sensor's full scale range. For example, comparing 2000 & 7000 m sensors:</p> <ul style="list-style-type: none"> • 2000 m sensor: initial accuracy = 2 m (= 0.1% * 2000 m), resolution = 0.04 m (= 0.002% * 2000 m) • 7000 m sensor: initial accuracy = 7 m (= 0.1% * 7000 m), resolution = 0.14 m (= 0.002% * 7000 m)
37SIP.x1xx 0	20 m strain gauge pressure sensor	
37SIP.x2xx 0	100 m strain gauge pressure sensor	
37SIP.x3xx 0	350 m strain gauge pressure sensor	
37SIP.x4xx 0	600 m strain gauge pressure sensor	
37SIP.x5xx 0	1000 m strain gauge pressure sensor	
37SIP.x6xx 0	2000 m strain gauge pressure sensor	
37SIP.x7xx 0	3500 m strain gauge pressure sensor	

37SIP.x8xx 0	7000 m strain gauge pressure sensor	
SBE 37-SIP Connector Selections — MUST SELECT ONE		
37SIP.xx1x 0	XSG connector (includes data/power interface cable 801385)	Wet-pluggable connectors may be mated in wet conditions. Their pins do not need to be dried before mating. By design, water on connector pins is forced out as connector is mated. However, they must not be mated or un-mated while submerged. Wet-pluggable connectors have a non-conducting guide pin to assist pin alignment & require less force to mate, making them easier to mate reliably under dark or cold conditions, compared to XSG/AG connectors. Like XSG/AG connectors, wet-pluggables need proper lubrication & require care during use to avoid trapping water in sockets.


<p>37SIP.xx2x 0</p>	<p>Wet-pluggable (MCBH) connector (includes data/power interface cable 801206)</p>	<div data-bbox="787 224 1289 695" data-label="Image"> </div> <div data-bbox="787 718 1128 1190" data-label="Image"> </div> <p>XSG connector on left, Wet-pluggable (MCBH) connector on right</p>
<p>SBE 37-SIP Communications Selections— MUST SELECT ONE</p>		
<p>37SIP.xxx0 0</p>	<p>RS-232 serial interface</p>	<p>Note: Each interface version of 37-SIP has a separate manual.</p>

37SIP.xxx1 0	RS-485 (half duplex ONLY) serial interface	<p>Two-wire, RS-485 interface provides communication with individual 37-SIP or with all 37-SIPs attached to RS-485 interface. This allows for coordination of sampling among many instruments. However, note that half-duplex communication is one-direction at a time (i.e., you cannot send commands & receive data at same time).</p> <p>Note: Each interface version of 37-SIP has a separate manual.</p>
<div>SBE 37-SIP Mooring Clamp Wire Size Options (Specify clamp to match O.D. of mooring wire jacket)</div>		
50479.I	Plastic brackets to provide through-bolt mounting to a flat surface	See document 67218 . 'I' designation indicates that brackets are to be installed on instrument at factory.

50465.I	Wire guide & mounting clamp for 1/4 in. diameter mooring wire	
50469.I	Wire guide & mounting clamp for 5/16 in. or 8 mm diameter mooring wire	
50470.I	Wire guide & mounting clamp for 3/8 in. diameter mooring wire	 <p>Cable fits loosely through wire guide, & is clamped only at mounting clamp. See document 67219. 'I' designation indicates that guide and clamp are to be installed on instrument at factory.</p> <p>Thread for clamping to mooring cable:</p> <ul style="list-style-type: none"> • 1/4 in. diameter: 1/4-28 UNF • 5/16 in./8 mm diameter: 5/16-24 UNF • 3/8 in. diameter: 3/8-24 UNF • 1/2 in. diameter: 9/16-12 UNC • 5/8 in./16 mm diameter: 5/8-18 UNF • 6 mm diameter: 1/4-20 UNF • 10 mm diameter: 7/16 -14 UNF

50473.I	Wire guide & mounting clamp for 1/2 in. diameter mooring wire	<ul style="list-style-type: none">12 mm diameter: 1/2-13 UNF <p>Clamp Size Note: Mooring wire is typically specified by wire size, not by outer diameter (O.D.) of the mooring wire jacket. Verify the wire jacket O.D. before selecting the clamp size. The clamp size must be less than or equal to the wire jacket O.D. but larger than the wire diameter. For example, Mooring System Inc.'s specifications for 3x19 wire rope (in 2016) are as follows:</p> <table><tr><th>Wire Diameter</th><th>Jacket Diameter</th><th>Recommended Sea-Bird Clamp</th></tr><tr><td>3/16 inch (5.0 mm)</td><td>0.255 inch (6.5 mm)</td><td>1/4 inch</td></tr><tr><td>1/4 inch (6.5 mm)</td><td>0.330 inch (8.4 mm)</td><td>5/16 inch</td></tr><tr><td>5/16 inch (8.0 mm)</td><td>0.392 inch (9.9 mm)</td><td>3/8 inch</td></tr></table>	Wire Diameter	Jacket Diameter	Recommended Sea-Bird Clamp	3/16 inch (5.0 mm)	0.255 inch (6.5 mm)	1/4 inch	1/4 inch (6.5 mm)	0.330 inch (8.4 mm)	5/16 inch	5/16 inch (8.0 mm)	0.392 inch (9.9 mm)	3/8 inch
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1/4 inch (6.5 mm)	0.330 inch (8.4 mm)	5/16 inch												
5/16 inch (8.0 mm)	0.392 inch (9.9 mm)	3/8 inch												
50467.I	Wire guide & mounting clamp for 6 mm diameter mooring wire													
50471.I	Wire guide & mounting clamp for 10 mm diameter mooring wire													


50474.I	Wire guide & mounting clamp for 12 mm diameter mooring wire	<table border="1"> <tr> <td data-bbox="786 222 959 501">3/8 inch (9.5 mm)</td><td data-bbox="959 222 1135 501">0.453 inch (11.5 mm)</td><td data-bbox="1135 222 1386 501">10 mm (0.394 inch)</td></tr> <tr> <td data-bbox="786 501 959 787">7/16 inch (11.1 mm)</td><td data-bbox="959 501 1135 787">0.5 inch (12.7 mm)</td><td data-bbox="1135 501 1386 787">1/2 inch</td></tr> </table>	3/8 inch (9.5 mm)	0.453 inch (11.5 mm)	10 mm (0.394 inch)	7/16 inch (11.1 mm)	0.5 inch (12.7 mm)	1/2 inch
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7/16 inch (11.1 mm)	0.5 inch (12.7 mm)	1/2 inch						
50476.I	Wire guide & mounting clamp for 5/8 in. or 16 mm diameter mooring wire	<p>For mounting on a rope, verify the rope outer diameter, and select a clamp smaller than the rope O.D. to account for the rope compressibility (for example, for 5/16 inch rope, select a 1/4 inch clamp; a 5/16 inch clamp will be too large).</p>						
SBE 37-SIP Spares & Accessories								

801542	AF24173 Anti-Foulant Device pair (spare, bagged, labeled for shipping)	 <p>Anti-foulant devices fit into anti-foulant device cups at each end of conductivity cell. Anti-foulant devices 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>
233540	Anti-foulant cap without hose barb, black (for use with SBE 37 [SM, SMP, IM, IMP, SI, SIP] with firmware version < 4.0)	<p>Anti-foulant cap holds AF24173 Anti-Foulant Device in place.</p> <p>Note: Anti-Foulant Devices are held in place by conductivity cell guard in newer 37-SIPs (firmware version > 4.0).</p>

801376	Data/Power interface cable, RMG-4FS to DB-9S & 9V battery snap, 2.4 m (DN 32604)	Some users prefer battery snap connector instead of red/black twisted wire leads. Order 801376 in place of 801385 if desired.
801263	Data/Power interface cable, Wet-Pluggable, MCIL-4FS to DB-9S & 9V battery snap, 2.4 m (DN 32490)	Some users prefer battery snap connector instead of red/black twisted wire leads. Order 801263 in place of 801206 if desired.
801385	Data/Power interface cable, RMG-4FS to DB-9S & red/black twisted wire leads, 2.4 m (DN 32277)	Included with standard shipment if 37SIP.xx1x0 (XSG connector) selected; this is spare.
801206	Data/Power interface cable, Wet-Pluggable, MCIL-4FS to DB-9S & red/black twisted wire leads, 2.4 m (DN 32366)	Included with standard shipment if 37SIP.xx2x0 (MCBH connector) selected; this is spare.
801378	Data / Power interface cable, shielded, RMG-4FS to DB-9S & red/black	Longer, shielded cable for use if 37SIP.xx1x0 (XSG connector) selected.

	twisted wire leads, 20 m (DN 32720)	
801850	Data / Power interface cable, shielded, MCIL-4FS to DB-9S & red/black twisted wire leads, 20 m (DN 33404)	Longer, shielded cable for use if 37SIP.xx2x0 (MCBH connector) selected.
20200	USB to Serial Port Adapter, FTDI UC232R-10 (connects computers with USB ports to RS-232 instruments)	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 .

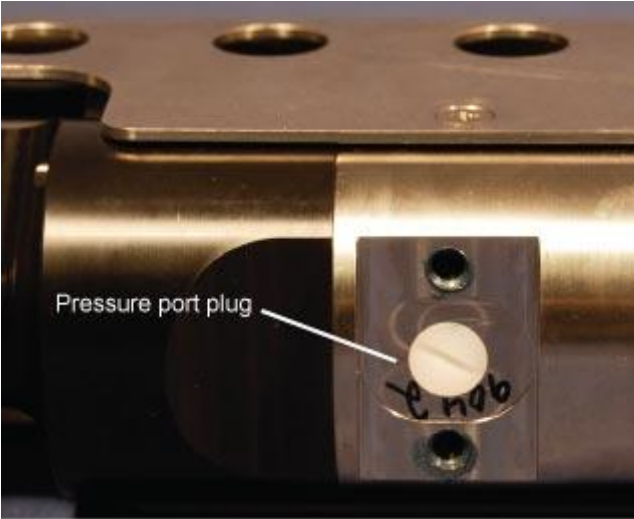
233186	<p>High-head pressure port plug for muddy/biologically productive environments (Application Note 84), for use with SBE 37 [SM, SMP, IM, IMP, SI, SIP] with firmware version < 4.0</p>	<div data-bbox="800 247 1096 567" data-label="Image"> </div> <p data-bbox="885 594 1112 678"><i>High-Head Pressure Port Plug,</i> Part Number 233186</p> <p data-bbox="784 657 1380 1224">This pressure port plug extends beyond surface of instrument end cap, and has 4 horizontal vent holes connecting internally to a vertical vent hole. If you are deploying 37-SIP in an orientation close to horizontal, with pressure port up, horizontal orientation of vent holes prevents deposit of sediment inside pressure port. Each of the 4 vent holes is larger than single vent hole in standard pressure port plug, significantly reducing possibility that biological growth will cover all holes. See Application Note 84.</p> <p data-bbox="784 1329 1380 1497">Note: High-head pressure port plug is not compatible with newer 37-SIPs (firmware version > 4.0), because pressure port plug is behind mount clamp.</p>
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31632	Storm Shipping Case (iM2950) - holds up to 4 SBE 37SIs	 <p>Storm shipping case with custom foam inserts holds up to 4 MicroCATs that do not include dissolved oxygen — IMP, IM, SMP, SM, SIP, SI.</p> <ul style="list-style-type: none"> • Injection molded case with HPX resin plastic body, recessed wheels, automatic pressure equalization valve, hinged push-button latches, fold-down padded handle, & O-ring seal. Meets airline luggage regulations. • Inner dimensions: 29 x 18 x 10.5 inches (74 x 46 x 27 cm). • Outer dimensions: 31.3 x 20.4 x 12.2 inches (80 x 52 x 31 cm).
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SBE 37-SIP-IDO MicroCAT C-T-DO (P) Recorder

Example: 37SIP.13101 is an SBE 37-SIP-IDO with 350 m housing, 350 m strain gauge pressure sensor, XSG connector, RS-232 communications, and integrated SBE 43 Dissolved Oxygen Sensor. See table below for description of each selection:

PART #	DESCRIPTION	NOTES
37SIP-IDO	MicroCAT C and T (pressure optional) Sensor with Integrated Dissolved Oxygen sensor (IDO), Serial interface, and Internal Pump - Includes 8 MB Flash memory, serial interface, data/power cable (cable may be deleted for credit), AF24173 Anti-Foulant Devices, Seasoftware, & complete documentation.	<p>37-SIP-IDO MicroCAT includes:</p> <ul style="list-style-type: none"> • Serial Interface • Memory • internal, integral Pump • Integrated Dissolved Oxygen sensor based on SBE 43 <p>Note: 37-SIP-IDO does not include internal batteries.</p> <p>Compare features of the numerous SBE 37 MicroCAT models.</p>
SBE 37-SIP-IDO Housing (depth) Selections — MUST SELECT ONE		
37SIP.1xx0 1	350 m plastic housing	
37SIP.3xx0 1	7000 m titanium housing	
SBE 37-SIP-IDO Pressure Sensor Range (depth) Selections — MUST SELECT ONE		

37SIP.x0x0 1	No pressure sensor	 <p>Pressure sensor is installed in end cap (behind mount clamp), & is not field replaceable / swappable. While highest pressure rating gives you most flexibility in using MicroCAT, it is at expense of accuracy & resolution. It is advantageous to use lowest range pressure sensor compatible with your intended maximum operating depth, because accuracy & resolution are proportional to pressure sensor's full scale range. For example, comparing 2000 & 7000 m sensors:</p> <ul style="list-style-type: none"> • 2000 m sensor: initial accuracy = 2 m ($= 0.1\% * 2000$ m), resolution = 0.04 m ($= 0.002\% * 2000$ m) • 7000 m sensor: initial accuracy = 7 m ($= 0.1\% * 7000$ m), resolution = 0.14 m ($= 0.002\% * 7000$ m)
37SIP.x1x0 1	20 m strain gauge pressure sensor	
37SIP.x2x0 1	100 m strain gauge pressure sensor	
37SIP.x3x0 1	350 m strain gauge pressure sensor	
37SIP.x4x0 1	600 m strain gauge pressure sensor	
37SIP.x5x0 1	1000 m strain gauge pressure sensor	
37SIP.x6x0 1	2000 m strain gauge pressure sensor	
37SIP.x7x0 1	3500 m strain gauge pressure sensor	

37SIP.x8x0 1	7000 m strain gauge pressure sensor	
SBE 37-SIP-IDO Connector Selections — MUST SELECT ONE		
37SIP.xx10 1	XSG connector (includes data/power interface cable 801385)	Wet-pluggable connectors may be mated in wet conditions. Their pins do not need to be dried before mating. By design, water on connector pins is forced out as connector is mated. However, they must not be mated or un-mated while submerged. Wet-pluggable connectors have a non-conducting guide pin to assist pin alignment & require less force to mate, making them easier to mate reliably under dark or cold conditions, compared to XSG/AG connectors. Like XSG/AG connectors, wet-pluggables need proper lubrication & require care during use to avoid trapping water in sockets.


<p>37SIP.xx20 1</p>	<p>Wet-pluggable (MCBH) connector (includes data/power interface cable 801206)</p>	<div data-bbox="792 226 1291 697">  </div> <div data-bbox="792 718 1131 1190">  </div> <p>XSG connector on left, Wet-pluggable (MCBH) connector on right</p>
<p>SBE 37-SIP-IDO Mooring Clamp Wire Size Options (Specify clamp to match O.D. of mooring wire jacket)</p>		
<p>50479.I</p>	<p>Plastic brackets to provide through-bolt mounting to a flat surface</p>	<p>See document 67218. 'I' designation indicates that brackets are to be installed on instrument at factory.</p>

50465.I	Wire guide & mounting clamp for 1/4 in. diameter mooring wire	
50469.I	Wire guide & mounting clamp for 5/16 in. or 8 mm diameter mooring wire	
50470.I	Wire guide & mounting clamp for 3/8 in. diameter mooring wire	<div data-bbox="787 306 1263 1480" data-label="Image"> <p>Mounting Clamp. 37-SMP-IDO clamped to mooring cable here.</p> <p>Wire Guide. Cable goes through here but is not clamped, to avoid putting through tension on end cap (which could pull off end cap).</p> <p>37-SMP-IDO shown; mooring clamp detail for 37-SIP-IDO identical</p> </div> <p>Cable fits loosely through wire guide, & is clamped only at mounting clamp. See document 67219. 'I' designation indicates that guide and clamp are to be installed on instrument at factory.</p> <p>Thread for clamping to mooring cable:</p> <ul style="list-style-type: none"> • 1/4 in. diameter: 1/4-28 UNF

50473.I	Wire guide & mounting clamp for 1/2 in. diameter mooring wire	<ul style="list-style-type: none"> • 5/16 in./8 mm diameter: 5/16-24 UNF • 3/8 in. diameter: 3/8-24 UNF • 1/2 in. diameter: 9/16-12 UNC • 5/8 in./16 mm diameter: 5/8-18 UNF • 6 mm diameter: 1/4-20 UNF • 10 mm diameter: 7/16 -14 UNF • 12 mm diameter: 1/2-13 UNF <p>Clamp Size Note: Mooring wire is typically specified by wire size, not by outer diameter (O.D.) of the mooring wire jacket. Verify the wire jacket O.D. before selecting the clamp size. The clamp size must be less than or equal to the wire jacket O.D. but larger than the wire diameter. For example, Mooring System Inc.'s specifications for 3x19 wire rope (in 2016) are as follows:</p>									
50467.I	Wire guide & mounting clamp for 6 mm diameter mooring wire										
50471.I	Wire guide & mounting clamp for 10 mm diameter mooring wire	<table> <tr> <th>Wire Diameter</th><th>Jacket Diameter</th><th>Recommended Sea-Bird Clamp</th></tr> <tr> <td>3/16 inch (5.0 mm)</td><td>0.255 inch (6.5 mm)</td><td>1/4 inch</td></tr> <tr> <td>1/4 inch (6.5 mm)</td><td>0.330 inch (8.4 mm)</td><td>5/16 inch</td></tr> </table>	Wire Diameter	Jacket Diameter	Recommended Sea-Bird Clamp	3/16 inch (5.0 mm)	0.255 inch (6.5 mm)	1/4 inch	1/4 inch (6.5 mm)	0.330 inch (8.4 mm)	5/16 inch
Wire Diameter	Jacket Diameter	Recommended Sea-Bird Clamp									
3/16 inch (5.0 mm)	0.255 inch (6.5 mm)	1/4 inch									
1/4 inch (6.5 mm)	0.330 inch (8.4 mm)	5/16 inch									

50474.I	Wire guide & mounting clamp for 12 mm diameter mooring wire	<table border="1"> <tr> <td data-bbox="789 222 964 457">5/16 inch (8.0 mm)</td><td data-bbox="964 222 1140 457">0.392 inch (9.9 mm)</td><td data-bbox="1140 222 1388 457">3/8 inch</td></tr> <tr> <td data-bbox="789 457 964 743">3/8 inch (9.5 mm)</td><td data-bbox="964 457 1140 743">0.453 inch (11.5 mm)</td><td data-bbox="1140 457 1388 743">10 mm (0.394 inch)</td></tr> </table>	5/16 inch (8.0 mm)	0.392 inch (9.9 mm)	3/8 inch	3/8 inch (9.5 mm)	0.453 inch (11.5 mm)	10 mm (0.394 inch)
5/16 inch (8.0 mm)	0.392 inch (9.9 mm)	3/8 inch						
3/8 inch (9.5 mm)	0.453 inch (11.5 mm)	10 mm (0.394 inch)						
50476.I	Wire guide & mounting clamp for 5/8 in. or 16 mm diameter mooring wire	<table border="1"> <tr> <td data-bbox="789 743 964 1026">7/16 inch (11.1 mm)</td><td data-bbox="964 743 1140 1026">0.5 inch (12.7 mm)</td><td data-bbox="1140 743 1388 1026">1/2 inch</td></tr> </table> <p>For mounting on a rope, verify the rope outer diameter, and select a clamp smaller than the rope O.D. to account for the rope compressibility (for example, for 5/16 inch rope, select a ¼ inch clamp; a 5/16 inch clamp will be too large).</p>	7/16 inch (11.1 mm)	0.5 inch (12.7 mm)	1/2 inch			
7/16 inch (11.1 mm)	0.5 inch (12.7 mm)	1/2 inch						

SBE 37-SIP-IDO Spares & Accessories

801542	AF24173 Anti-Foulant Device pair (spare, bagged, labeled for shipping)	 <p>AF24173 Anti-Foulant Device</p> <p>Anti-foulant devices fit into anti-foulant device cups at each end of conductivity cell. Anti-foulant devices 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>
801376	Data/Power interface cable, RMG-4FS to DB-9S & 9V battery snap, 2.4 m (DN 32604)	Some users prefer battery snap connector instead of red/black twisted wire leads. Order 801376 in place of 801385 if desired.

801263	Data/Power interface cable, Wet-Pluggable, MCIL-4FS to DB-9S & 9V battery snap, 2.4 m (DN 32490)	Some users prefer battery snap connector instead of red/black twisted wire leads. Order 801263 in place of 801206 if desired.
801385	Data/Power interface cable, RMG-4FS to DB-9S & red/black twisted wire leads, 2.4 m (DN 32277)	Included with standard shipment if 37SIP.xx101 (XSG connector) selected; this is spare.
801206	Data/Power interface cable, Wet-Pluggable, MCIL-4FS to DB-9S & red/black twisted wire leads, 2.4 m (DN 32366)	Included with standard shipment if 37SIP.xx201 (MCBH connector) selected; this is spare.
801378	Data / Power interface cable, shielded, RMG-4FS to DB-9S & red/black twisted wire leads, 20 m (DN 32720)	Longer, shielded cable for use if 37SIP.xx101 (XSG connector) selected.
801850	Data / Power interface cable, shielded, MCIL-4FS to DB-9S & red/black	Longer, shielded cable for use if 37SIP.xx201 (MCBH connector) selected.

	twisted wire leads, 20 m (DN 33404)	
20200	USB to Serial Port Adapter, FTDI UC232R-10 (connects computers with USB ports to RS-232 instruments)	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 .
31632	Storm Shipping Case (iM2950) - holds up to 3 SBE 37SIP-IDOs	 <p>Case holds only 3 IDO MicroCATs (photo shows 4 non-IDO MicroCATs)</p>

