



SBS®X-75A Assembly Instructions

NOTE:

The Use of tooling not recommended by Anderson Power can affect performance and may void product warranty, invalidate safety agency approvals or certifications.

For easiest construction it is recommended to not strip or crimp wires onto cable until after step 1. Should customer choose to crimp contacts and insert contacts on wires thru grommet during installation, grommet should be inspected for any damage that may have occurred during installation to both external and internal ribs. Silicone debris left on wire and external tears or cracks on the grommet are clear indicators of damage. Damaged grommets should be discarded and replaced as a water-tight seal cannot be ensured if damage to grommet has occurred.

Step 1

Slide grommet over power wires and signal or ground cable (if present) (see figure 1). Slide down far enough for wires to be fully inserted into housing; approximately 3.0" [118 mm]. It is recommended to have the signal cable cut 0.200" to 0.300" [5.1 to 7.6 mm] longer than the power wire to eliminate strain on the signal positions should the wires go under tension. For panel mount assemblies place panel gasket over back of housing prior to assembly.



Figure 1

Step 2

Strip power wires as well as signal or ground wire/cable (if present). Ensure wires are stripped enough for completed insertion into contact crimp barrels (table A and figures 2 & 3).

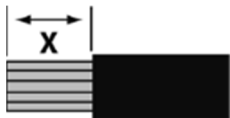


Table A: Cable Stripping Dimensions

| Connector Series | Contact Type | "X" | | NOTE |
|------------------|------------------|--------|------|--|
| | | Inches | mm | |
| SBS®X-75A | Power/Ground | 0.56 | 14.0 | < 0.380" (9.65 mm) Outer Diameter Wire (figure 2) |
| | Power/Ground | 1.10 | 27.9 | ≥ 0.380" (9.65 mm) Outer Diameter Wire (figure 3) |
| | Auxiliary Cable | 1.10 | 27.9 | All cable jackets |
| | Auxiliary Pin | 0.18 | 4.6 | For use when wire insulation OD is SMALLER than crimp barrel ID |
| | Auxiliary Socket | 0.21 | 5.3 | |
| | Auxiliary Pin | 0.24 | 6.1 | For use when wire insulation OD is LARGER than crimp barrel ID |
| | Auxiliary Socket | 0.28 | 7.1 | |



Figure 2

(0.56" [14.2 mm] Strip Length)



Figure 3

(1.10" [28.0 mm] Strip Length)

Step 3

Crimp power, signal or ground contacts onto wires using the appropriate crimping tooling (tables B and C).

- Make sure to crimp signal contacts in the same orientation that your signal housing will be. Signal Housing is intended for use with two pin contacts to be on top and two socket contacts on bottom.
- Refer to crimp document 1S6848 SBS®X-75A crimp specifications as reference to determine crimp quality.

Table B: Power/Ground Contacts Listed for Use with SBS®X-75A Series

| Contact Part Number | Wire Size AWG mm ² | | Crimp Tool |
|---------------------|---------------------------------------|----------|--|
| 1339G4 | 4 | 25 | 1387G1 pneumatic tool + 1388G6 die + 1389G9 locator |
| 1339G2 | 6 | 16 | 1309G4 hand tool or 1387G1 pneumatic tool + 1388G6 die + 1389G9 locator |
| 1339G5 | 8 | 10 | 1309G4 hand tool or 1387G1 pneumatic tool + 1388G6 die + 1389G9 locator |
| 1339G3 | 10 to 12 | 2.5 to 6 | 1309G4 hand tool or 1387G1 pneumatic tool + 1388G7 die + 1389G9 locator |

Ground Contacts Listed for Use with SBS®X-75A Series

| Contact Part Number | Wire Size AWG mm ² | | Crimp Tool (Number of Crimps = Single) |
|---------------------|---------------------------------------|----------|--|
| 1340G1 | 6 | 16 | 11309G4 hand tool or 1387G1 pneumatic tool + 1388G6 die + 1389G20 locator |
| 1340G2 | 8 | 10 | 1309G4 hand tool or 1387G1 pneumatic tool + 1388G6 die + 1389G20 locator |
| 1340G3 | 10 to 12 | 2.5 to 6 | 1309G4 hand tool or 1387G1 pneumatic tool + 1388G7 die + 1389G20 locator |

Table C: Auxiliary Contacts Listed for Use with SBS®X-75A Series

| Contact Part Number | Wire Size AWG mm² | | Crimp Tool | Insertion Tool | Extraction Tool | Inspection Tool |
|---------------------|---------------------------|-----------------------------|---|---|-----------------|-----------------|
| PM16P1416C30 | 16 to 14 | Post-Mate Pin, 6.6 mm | PM1000G1 (hand tool & locator) TM0001 + TL0001 Pin + TL0002 Sockets (Mil Standard hand tool & locators) TP0001 + TL0001 (pins) + TL0002 Sockets (pneumatic tool & locators) | PM1002G1 Wire size 24 to 16 AWG (0.50 to 1.0 mm²) | PM1003G1 | PM1003GX |
| PM16P1416A30 | 16 to 14 | Pre-Mate Pin, 9.3 mm | | | | |
| PM16P1416S30 | 16 to 14 | Standard Length Pin, 7.7 mm | | | | |
| PM16S1416S32 | 16 to 14 | Socket | | | | |
| PM16P1620C30 | 20 to 16 | Post-Mate Pin, 6.6 mm | | | | |
| PM16P1620A30 | 20 to 16 | Pre-Mate Pin, 9.3 mm | | | | |
| PM16P1620S30 | 20 to 16 | Standard Length Pin, 7.7 mm | | 11038G3 Wire size 14 AWG (1.5 mm²) | | |
| PM16S1620S32 | 20 to 16 | Socket | | | | |
| PM16P2024C30 | 24 to 20 | Post-Mate Pin, 6.6 mm | | | | |
| PM16P2024A30 | 24 to 20 | Pre-Mate Pin, 9.3 mm | | | | |
| PM16P2024S30 | 24 to 20 | Standard Length Pin, 7.7 mm | | | | |
| PM16S2024S32 | 24 to 20 | Socket | | | | |

Step 4a.

Orient signal cable so the two pin contacts are in line with the top of the signal housing (arrow symbol up) and the two socket contacts on the bottom. Load signal contacts into signal housing by inserting all contacts into rear of signal housing simultaneously. Press each contact forward using proper insertion tool based on wire size as shown above (see figure 4).. Use inspection tool #PM1003GX to ensure the auxiliary contacts are properly seated in the connector housing.

4b. For ground, simply press the contact into the center ground housing the same way as the power contacts (see figure 5).

Figure 4

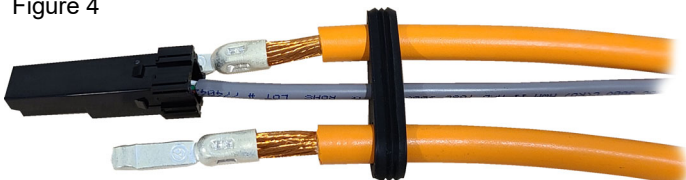
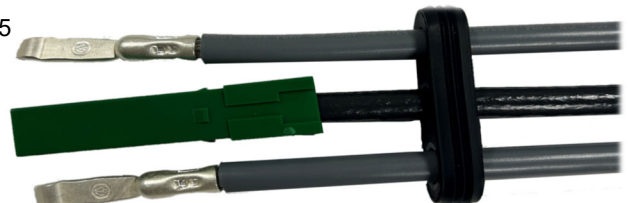


Figure 5



Step 5

Load both power contacts and signal/ground housing into the main connector body starting with the signal/ground housing and then the power contacts (see figure 6). Ensure both power contacts are fully seated on their respective springs and the signal/ground housing is completely latched into place. Signal/ground housing should be flush with front of the connector (see in figure 7).

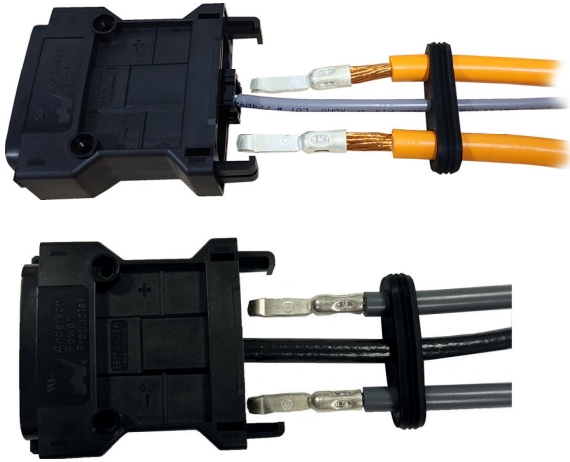


Figure 6



Figure 7

- There are four keying positions that the signal or ground housing can be placed in as noted by hood position and direction of arrow on rear of housing (up, down, left, and right). Each position will key the connector so it will only mate with other connectors with the same signal housing orientation.
- Note that signal/ground housings must be in the same orientation when placed vertically (either up or down), or placed opposite when placed horizontally (left & right) in order to mate properly.
- If the center signal or ground housings are inserted incorrectly, when trying to mate, you may use the Signal Housing Extraction Tool #116081P1 to remove the housing. To remove the signal or ground housings, start by training the cable down or up so it is out of the way. Using Signal Housing Extraction Tool, compress the tool and place prongs into the grooves on either side of the signal or ground housing. Push the tool forward until a positive stop is reached, the tool will have wedged beneath the internal latches (see figure 8). Release compression to allow the tool to lift the internal latches. Gently push on the front of the signal or ground housings to extract the housing (see figure 9).

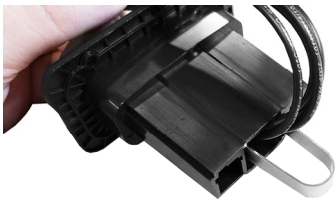


Figure 8

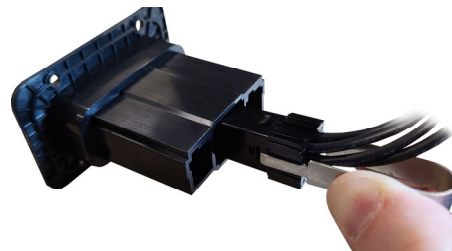


Figure 9

Step 6

For in-line assemblies slide the grommet up the wires to the rear of the connector housing (see figure 10). Apply even pressure to the grommet to push grommet until it is seated fully into the sealing cavity. Note that grommet will be a tight fit to ensure proper sealing, do not use sharp objects to insert grommet. Check to ensure the grommet is completely inserted evenly all around with the grommet being flush or sub-flush to the rear of the housing (see figure 11). If you feel the pressure required is too high, check to ensure proper grommet is being used. If correct grommet has been chosen, then you may apply additional silicone-safe lubrication to the grommet.

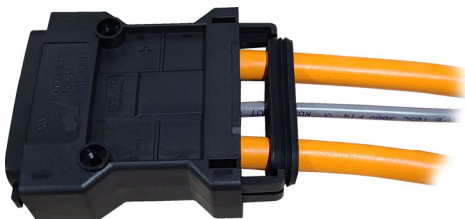


Figure 10



Figure 11

Step 7

Fasten cable clamps onto wires by alternating evenly to alleviate skewing. Screws are torqued to 6 in-lb [0.68 N-m]. Ensure cable clamps are snug to the power wire and ground wire if present (see figure 12).



Figure 12

Step 7b—Clamshell Cable Clamp (optional)

Place one half of the clamshell underneath the wire assembly (see figure 13). Ensure the power, signal and jacketed cable are set in their corresponding positions. Note that the inserts in the clamshell are specific to the select outer diameters of the wire. Place the other half on top of the wire assembly and fasten together using the (4) screws provided. (see figure 14). Ensure clamshell halves are flush and the four screws are torqued to 6 in-lb [0.68 N-m].



Figure 13



Figure 14

Step 8

For Panel Mount assemblies, Panel Mount Gasket should be flush with the back of the panel (see figure 15). When attaching Panel Mount assemblies, ensure mounting hardware has O-rings under bolt heads before assembling (see figure 15).



Figure 15



Figure 16

Step 9

Bolts to be torqued to 3 in-lb. [0.34 N-m] to ensure O-ring and panel mount gasket have compression. Minor gasket extrusion beyond panel flange is to be expected (see figure 17.) Note that mounting screw hardware is not included. To ensure proper installation, Bolt head is to be 0.270" [6.8 mm] MAX and should not be beveled or tapered so O-rings correctly seat in hardware. Bolt thread max diameter to be 0.140" [3.5 mm] and hex nuts to be 0.305" [7.7 mm] MAX flat-to-flat.



Figure 17

Step 10

Check the assembly to ensure signal housings are oriented correctly. Mate the connector up to 5 times to check all components are seated correctly and do not move around within the connectors.

IP68 Protection – Unmated

Anderson strongly recommends the usage of covers when connectors are not mated to maintain IP68 protection.

To tether connector covers to the housings, first pull through geometry on the housings. Then pull cover through loop on end of cord. Finally, pull tight to secure cord loop around connector (see figure series 18 & 19) for example process. For panel mount assemblies, simply replace a mounting O-ring with tethered grommet. (see figure series 20 for example process.

Figure Series 18 - Receptacle Cover

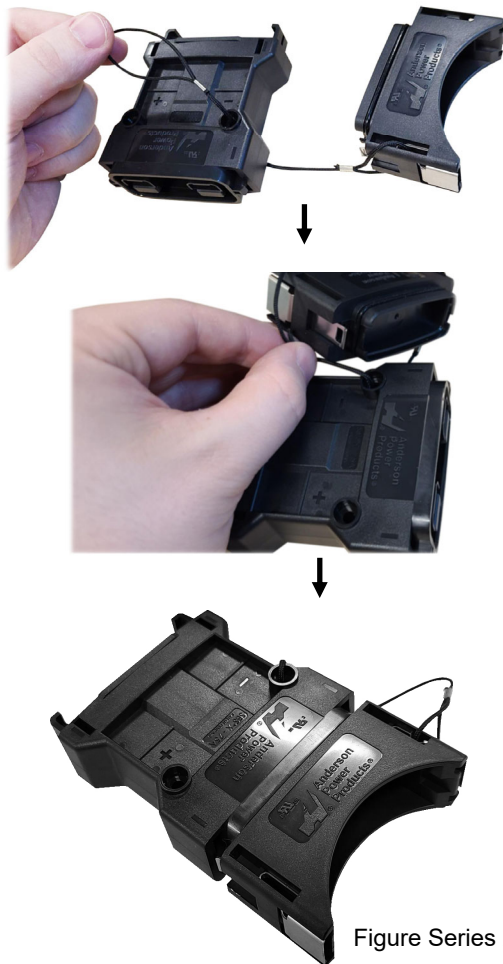


Figure Series 19 - Plug Cover

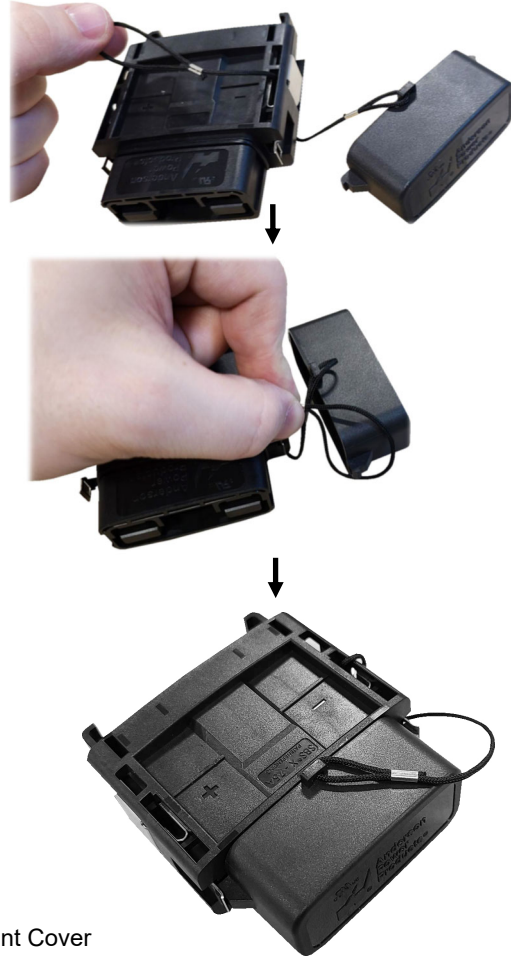
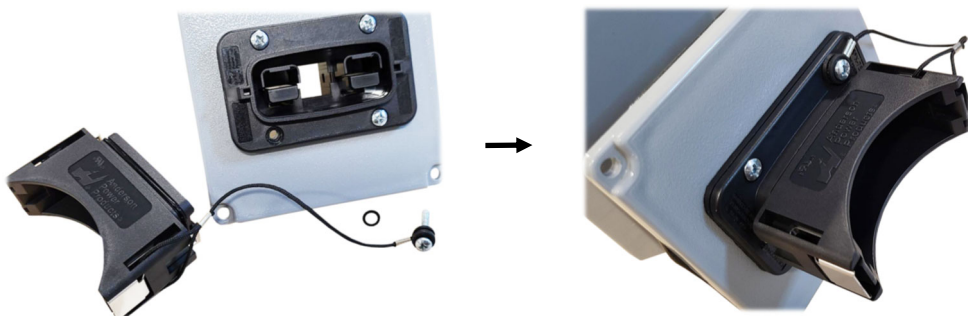


Figure Series 20 - Panel Mount Cover



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