

**Re: MicroPoint Cable Installation on Ameristar Impasse II Fencing**  
**Date: February 21, 2017**

There are three parts to the installation: Checking the Cable, Unreeling the Cable and Attaching the Cable.

**!!WARNING!!**

MicroPoint is a special transducer cable. It is not a piece of regular coaxial cable. **IT CAN BE EASILY DAMAGED!**

**MECHANICAL DAMAGE** can occur from over-bending, twisting, or stretching the cable. Be sure to follow the installation instructions carefully. If pulling the sense wires, do not exert more than 3 pounds of pressure on the wires or breakage may occur.

**WATER DAMAGE** is also a concern. Water entering the keyways (the grooves in the center core of the cable that contain the sense wires) will cause unpredictable results and will require replacing the cable. Keep the rubber end caps on at all times until ready to install. **Once the cable is terminated at the modules and units, the supplied dielectric grease must be applied.**

## Checking the Cable

Check the MicroPoint Cable before unreeling it. The MicroPoint Cable comprises four conductors: the outer braid, the center conductor and two Sense Wires. It is normal to have the sense wires either sticking out or sucked in at the end of the cable. Using a MicroPoint stripping tool (the top part of a strain relief block) remove about two inches (51 mm) of jacket from both ends of the cable. Trim back the braid and foil as shown in Figure 1. Carefully remove the Mylar tape and expose the Sense Wires. Strip the core from the end of the center conductor. Separate the conductors so they are not shorted together.

With an ohmmeter, check the resistance between the shield and each of the three remaining conductors. The resistance should be greater than six megohms. A measurement of less than 100 ohms indicates a short between the conductors - check the other end of the Sensor Cable and insure the wires are not shorted. A measurement between 100 ohms and six megohms indicates that water has entered the cable. This **MUST** be replaced with new cable. When the cable has been checked, leave the cable as is and begin to unreel.



Figure 1: Preparing the MicroPoint Cable Ends

## Unreeling the Cable

### **!!WARNING!!**

The cable **MUST** be unreeled as described below.

Remember **the cable should be placed on the protected side of the fence, inside the rail**. If the requirement is to keep people out, then the cable should go on the inside of the perimeter fence. If the requirement is to keep people in, then the cable should be installed on the outside.

Place a four foot section of pipe through the center of the MicroPoint Cable reel. Be sure the ends of the cable, are not in a position where they will be damaged by the pipe.

Locate a position on the fence, where the cable must start. This is where the cable roll should be located on either a reeling mount or held steady by two people.

Gently pull the sensor cable off of the reel while feeding it into the fence rail. (The reel will spin on the pipe.) **DO NOT** allow the cable to dispense off the side of the reel! This will put a spiral twist into the sensor cable resulting in damage.

**DO NOT** put excessive strain on the sensor cable by pulling quickly or in jerking motions. Use extreme caution and take your time.

**DO NOT** allow the ends of the cable to get wet.

**THE CABLE MUST** be completely unreeled into the fence rail prior to mounting it with the clips!

## Shaking the Cable while Pulling the Sense Wires

In order to relieve any binding that may have occurred during the reeling of the cable, the following steps must be performed on each end of the cable.

This part of the procedure requires two people.

**CAUTION** - When pulling the Sense Wires **DO NOT** exceed 3 pounds of pressure or the sense wires may break.

Once the cable is completely unreeled in a straight line into the rail, remove the end caps temporarily. Have one person hold the jacketed portion of the cable. Slowly pull one of the Sense Wires from the cable until you feel a slight resistance, then release the pressure to allow the Sense Wire to “spring back” into the cable. Repeat for the second Sense Wire. Do not be alarmed if all of the wire you have pulled does not return into the cable, it will be trimmed later. If more than 24 inches of Sense Wire is exposed, and you still haven’t felt resistance, stop pulling on that wire and immediately check the other end of the cable. If either of the sense wires has disappeared back into the cable do not continue pulling on that sense wire.

While still being held in the same manner as above gently reapply pressure to both Sense Wires until you feel a slight resistance on both. Maintain this pressure on the Sense Wires and have the second person begin to gently shake the cable from side to side while walking away from the first person. Be sure the hand holding the jacket, not the Sense Wires, is supporting the weight of the cable while the second person is shaking the cable. Stop shaking the cable when you have reached the mid-point along the length of the cable. Release the pressure on the Sense Wires to allow them to “spring back” into the cable. Do not be alarmed if all of the excess wire you have pulled does not return into the cable.

Repeat the above procedure on the opposite end of the cable. Once these steps have been completed, trim off the stripped ends (including any excess Sense Wire), replace the protective rubber end caps, and attach the MicroPoint cable to the rail.

## Attaching the Cable

Leave at least six feet (1.8m) of slack on each end of the MicroPoint Cable. This extra cable will be used to make terminations and provide a drip loop. Keep the end caps on the cable ends throughout the cable installation process.

The clips (Ameristar Part #SWC100) must be placed **perpendicular to the MicroPoint Cable**. The clips should be placed every nine (9) inches and the sensor cable should be placed at the upper back part of the clip. **Check the rails and post-hole intersections for protrusions that may damage the cable.**



Figure 2 - Cable Clipped into Rail



Figure 3 – Cable through Post

## Calibrating the Cable

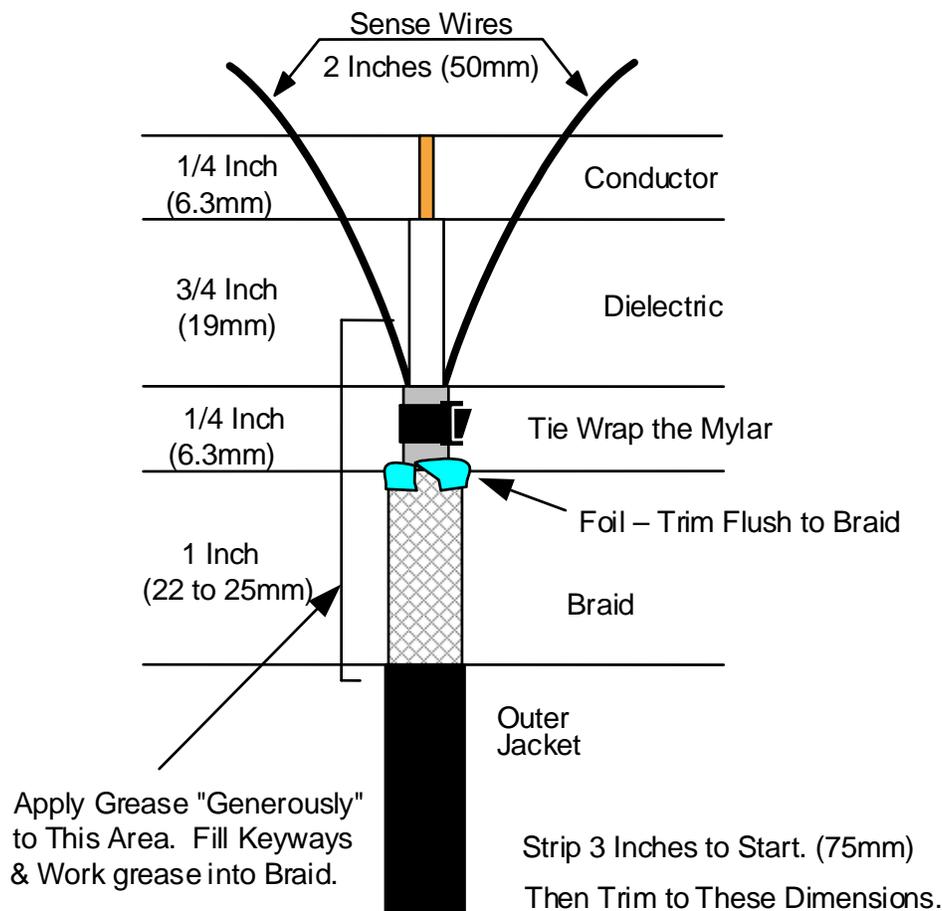
The unique rigid structure of the Impasse II fence requires an alternate method of calibration. The tools necessary to accomplish this task include: a computer with the Universal Installation service Tool II (UIST II), a serial connection to the intended Processor Module II (PM II) or connection through the CM II-N, GCM II-HD or RPM II, and a rubber mallet or dead blow hammer.

Refer to the Installation Manual for instructions on setting-up the PM II and preparing for calibration. *Note: The "Analog Channel Gain" must be set to 1 (High Gain) before beginning calibration.*

Once the software is prepared and calibration is activated, **hold the mallet at about shoulder height and impact each pale.** Don't hit the pales very hard but don't be very gentle either. Instead, aim for somewhere in-between the two. Impact the pales from the PM II down the length of the fence until you reach the LU II or TU II. Repeat the procedure in the opposite direction while returning to the PM II.

At this point, **pause and review** the calibration data and determine if it is necessary to recalibrate any areas or re-pull the sense wires.

## MicroPoint Cable Stripping Diagram



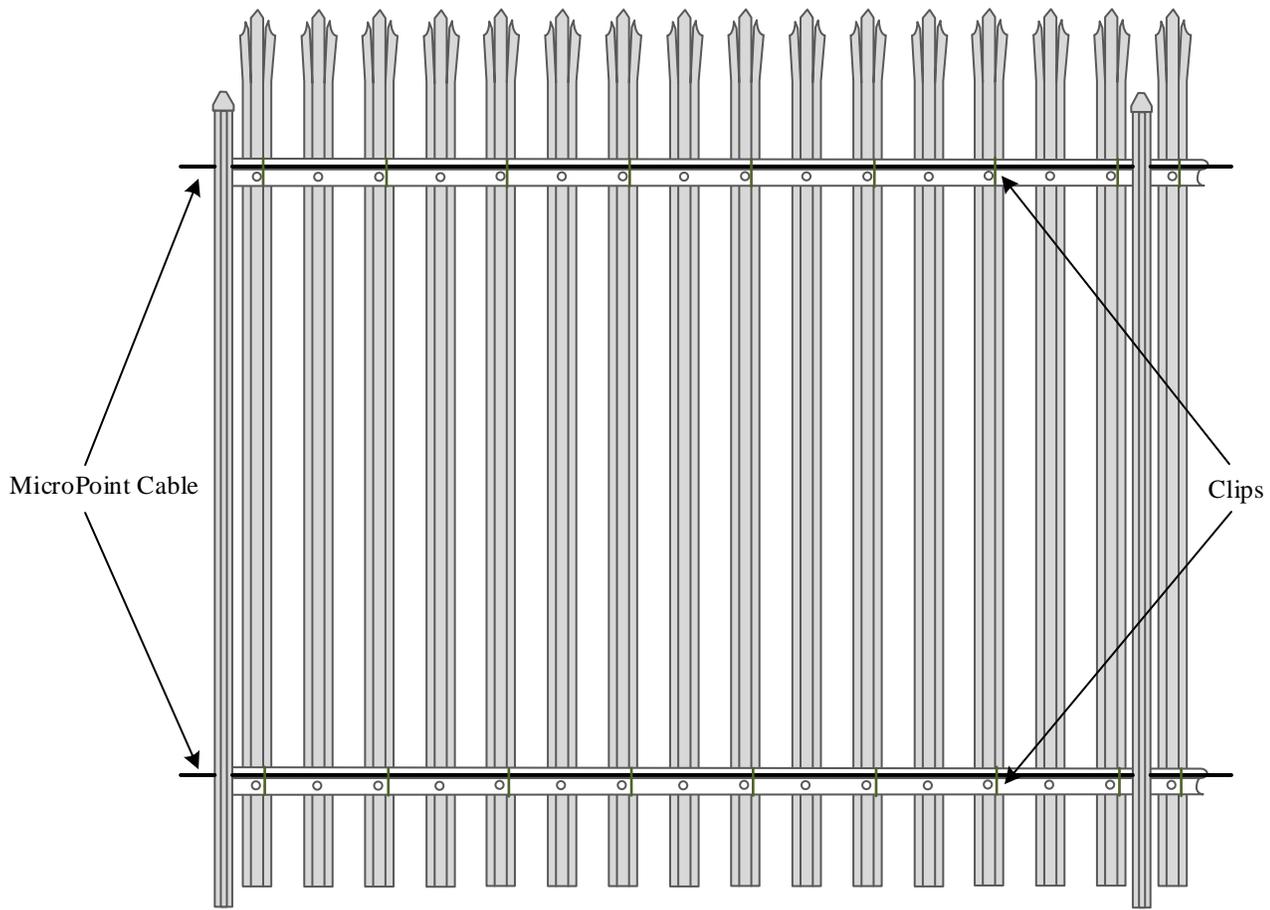


Figure 4 – Example

*Note: If the Impasse II fencing includes additional rails between the top and bottom rails, Southwest Microwave recommends mounting the cables in the highest and/or lowest rails that are bolted to the fence pales to ensure maximum detection while minimizing nuisance alarms.*