

## TECHNICAL NOTE # 474

### Re: Estimated Installation Time Summary for Intrepid™ Digital Volumetric Microwave Sensors

Date: February 14, 2023

This technical note shows the steps and estimated times to accomplish the initial installation, configuration and testing of one INTREPID Digital Volumetric Microwave Link or Microwave Transceiver. Note, this estimate is for a standard 100m zone consisting of a single microwave link (Transmitter and Receiver) or single microwave Transceiver. Longer zone lengths or zones consisting of stacked microwave links (two or more Transmitters/Receivers or Transceivers) will impact the time estimates. This information is valid contingent on the tasks below being performed by a factory trained technician with the assistance of a second team member supporting the installation.

The estimated times assume basic site work for the microwave zone has already been accomplished. Basic site work includes:

- Level grade of the detection zone to remove hills/dips. Terrain flatness should be no more than plus three (3) inches (76mm) or minus three (3) inches (76mm) deviation from a plane drawn between the transmitter and receiver or from the transceiver to the end of the detection area.
- Installation of buried conduit between microwave sensor head locations and DC power/alarm monitoring location. Conduit should be properly sized to support conductor quantities and sizes for each sensor head. Pull DC power & alarm/tamper return wiring prior to physically installing microwave sensor heads.
- Installation of 4" O. D. posts in concrete footer. Concrete depth and composition based on local building code and frost line requirements. Posts should be capped to prevent water ingress.
- Installation of earth ground rods, sized and installed per local/national electric code, at each microwave mounting post.
- If required in the project design, installation of junction boxes on the microwave mounting posts. Junction boxes should always be positioned behind the microwave head on the post so they do not impede the microwave sensor head or mounting bracket.

#### Typical Installation Time – Digital Microwave Link (approx. 4 hours per zone)

Step	Step Description	Estimated Time to Accomplish
1	Installation of microwave heads on poles using provided mounting brackets.	.5 hours - .25 hours for Receiver, .25 hours for Transmitter.
2	Connect flexible conduit to microwave and land DC Power, Alarm and Tamper wiring.	.5 hours - .25 hours for Receiver, .25 hours for Transmitter.
3	Align link – using IST software complete initial boresight & fine tune alignment processes.	1 hour.
4	Initial setup – using IST review/adjust initial Receiver parameters and sensor information.	.25 hours.
5	Zone detection test – using IST software with second person performing walk tests at specific distances per site requirements.	.75 to 1.25 hours – project specified quantities/crossing distances affect overall test times.
6	Final sensitivity adjustment.	.5 hours.
7	Retrieve sensor configuration report for future reference.	.25 hours.
8	Confirm alarm & tamper output at alarm input panel.	.5 hours.

**Typical Installation Time – Digital Microwave Transceiver (approx. 3 hrs per zone)**

<b>Step</b>	<b>Step Description</b>	<b>Estimated Time to Accomplish</b>
<b>1</b>	Installation of microwave head on pole using provided mounting bracket.	.25 hours.
<b>2</b>	Connect flexible conduit to microwave and land DC Power, Alarm and Tamper wiring.	.25 hours.
<b>3</b>	Align sensor – using IST software.	.5 hour.
<b>4</b>	Initial setup – using IST review/adjust initial Transceiver parameters, sensor information and RCO.	.5 hours.
<b>5</b>	Zone detection test – using IST software with second person performing walk tests at specific distances per site requirements.	.75 to 1.25 hours – project specified quantities/crossing distances affect overall test times.
<b>6</b>	Retrieve sensor configuration report for future reference.	.25 hours.
<b>7</b>	Confirm alarm & tamper output at alarm input panel.	.5 hours.

**NOTE:**

These time estimates reflect Form-C alarm & tamper relay contact outputs from microwave sensor to alarm panel / PLC. Time estimates do not include the time required to install, program, and test the alarm reporting system being used to monitor the microwave sensors. Contact the alarm reporting system manufacturer for installation and testing time estimates for their devices.

**Reference Sources: Microwave Installation**

- **Onsite / Online Technical Training Classes**
- **Microwave Technical Manuals** (may be requested as applicable)
- **Microwave Installation Inspection Checklist**
- **Technical Videos: Microwave Sensors**