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ARM 8mm Cloud Radar Installation

(External Container)

I. Purpose:

This procedure describes the steps necessary to install the external components of the ARM 8mm Cloud Radar, which measures cloud geometric properties: cloud base height, top height, and depth.

II. Cautions and Hazards:

- The installer must make sure that all the power sources are disconnected during installation.

III. Requirements:

- A flat-tip screwdriver.
- A Phillips-tip screwdriver.
- A 1/8" Allen wrench.

IV. Procedure:

A. Emergency Switch

1. Fasten 1" x 7 1/2" x 1/4" plate to 2" x 2" x 1/4" aluminum L-angle with 4 1/4" - 20" x 1/2" flathead Phillips screws provided.
2. Fasten 1" x 16" x 1/4" plate to the same aluminum L-angle as smaller plate using 4 1/4" - 20" x 1/2" stainless steel flathead Phillips screws provided.
3. Mount Emergency Switch with four 1/4" - 20" x 3/4" stainless steel bolts on 1" x 16" x 1/4" aluminum plate.
4. Fasten the assembled plate to the top of seatainer, on the stainless steel unistrut raceway.
5. Connect black two-pin connector on cable labeled "Emergency Switch" to two-pin black plastic receptacle on switch.
6. Run cable through side entry port of seatainer, and feed through the wire raceway of seatainer.

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7. Connect green Amphenol two-pin connector to receptacle labeled "Interlock Switch" on back of Traveling Tube Wave Amplifier (TWTA).
8. Operate the switch by pushing and turning to release.

B. "Transmitter On" Warning Indicator

1. Place and fasten warning light on circular mounting plate.
2. Fasten square 2" x 2" aluminum receptacle to circular plate.
3. Place warning light post on the left side of seatainer.
4. Run cable labeled "Warning Light" from main 4" cable port on the left side of seatainer up through warning light post.
5. Connect cable to warning light and drop receptacle into the post.
6. Fasten receptacle to post.

C. Biaxial Clinometer (Tiltmeter)

1. Remove the bottom of Biaxial Clinometer (Tiltmeter).
2. Mount tiltmeter to tiltmeter plate on antenna, using the four # 8-32 stainless steel screws inside the tiltmeter enclosure.
3. Replace the bottom of tiltmeter.
4. Connect shielded eight-conductor cable to eight-pin receptacle on top of hatch plate next to the antenna feed through.

D. External Light (Installation)

WARNING: Ensure that the light cord is unplugged from the power receptacle.

1. Remove four screws (#8-32) and blank cover. Be sure to save the cover and gasket for shipping purposes.
2. Unpack fixture package and, with the four screws provided, fasten the lamp base mounting plate, with the gasket in place.
3. Pull out the lead wires, unwrap the tape, and clean the wire terminals.
4. Connect the wire leads to the lamp holder base, black wire to black or brass screw, and white wire to silver screw.
5. Push back the wires and install the lamp holder using the two white screws.
6. Install the lamp base holder gasket by simply pushing the gasket in until it rests at the base holder plate.

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7. Screw in the lamp.
8. Install the globe by turning it clockwise.
9. Install the fixture guard and secure it by tightening.
10. Plug the light into the power receptacle.

E. External Light (Removal)

WARNING: Ensure that the light cord is unplugged from the power receptacle.

1. Loosen set screw with 1/8" Allen wrench, and turn the fixture guard counterclockwise.
2. Remove the globe by turning counterclockwise.
3. Remove the lamp.
4. Remove the lamp base gasket by prying it out.
5. Remove the lamp holder by unscrewing the two screws and pulling out until the lead wires and screw terminals are exposed.
6. Disconnect the wire terminals and tape terminal ends.
7. Remove the lamp holder base mounting plate and gasket.
8. Push lead wires back in and install blank cover (with its gasket).

WARNING: Ensure that the light cord remains unplugged.

V. References:

1. United States Department of Commerce (NOAA/ERL, Environmental Technology Laboratory, System Demonstration and Integration Division). Operation and Maintenance Manual for ARM's 8mm Cloud Radar, pp. 4-8. January 1998. MAN(MMCR)-001.001.