

3M™ Outdoor Building Entrance Terminals (OBET) 4990V-QCS

Underwriters Laboratories (UL) Listed

Instructions

1.0 General

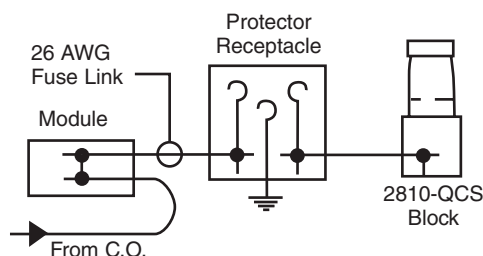
The 3M™ Outdoor Building Entrance Terminals (OBET) 4990V-QCS provide for electrical protection and termination of feeder and distribution cables. The terminals are available in 25, 50, 100, and 300 pair sizes and are Underwriter Laboratories (UL) Listed.

- 1.1 All OBET terminal sizes contain these parts and components:
- a) Feeder cable splice area with cable strain relief
 - b) Connectorized stub(s) with flame-retardant modules, 3M™ MS2™ Splicing Modules
 - c) 4000-DCO or 710 SD are available
 - d) Insulated #6 ground strap for the feeder cable
 - e) 5-point ground bar with ground lug
 - f) Termination field using 3M™ Quick Connect System (QCS) 2810 Blocks
 - g) Standard five-pin protector receptacle field(s)
 - h) Binder post log and instruction label
 - i) Mounting plate and hardware for mounting OBET



1.2 OBET Terminal Dimensions and Wiring Schematic

Model	Height	Width	Depth
4990V-25	15 1/2" (394 mm)	17 1/2" (445 mm)	8" (203 mm)
4990V-50	15 1/2" (394 mm)	17 1/2" (445 mm)	8" (203 mm)
4990V-100	25" (635 mm)	17 1/2" (445 mm)	8" (203 mm)



2.0 Accessories

- 2.1 3M™ Outdoor Building Entrance Terminal Skirt 4990-SK: protects bottom incoming cables or a splice below the OBET terminal
- a) 4990-SK terminal fits the 25, 50 and 100 pair OBETs
- 2.2 3M™ Outdoor Building Entrance Terminal Stacking Collar 4990-CLR: used to stack two OBET terminals together
- a) 4990-CLR terminal fits on top of the 25, 50 and 100 pair OBETs
- 2.3 3M™ Outdoor Building Entrance Terminal Wall Bracket 4990-WB: used for mounting OBET terminals when the surface area has pipes, conduits, etc. in the way
- a) 4990-WB bracket fits the 25, 50 and 100 pair OBET terminals

3.0 Protector Specifications

- 3.1 To keep UL Listing, only use five-pin arrestors that are UL Recognized or Listed in the OBET terminals.

4.0 Tools Used to Install OBET Terminals

- a) Standard hand tools
- b) 3M™ MS2™ Module or 3M™ 710 Splicing Rig
- c) 3M™ Scotchlok™ Crimping tool

5.0 Building Entrance Terminal Placement

- 5.1 Building Entrance Terminals should be installed according to Article 800, Section C of the National Electrical Code (ANSI/NFPA 70).

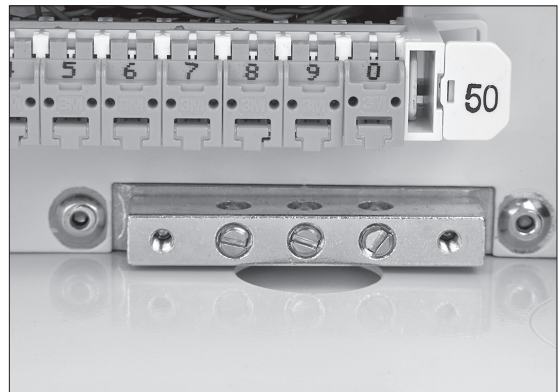
- 5.2 Locate the 3M™ Outdoor Building Entrance Terminals (OBET) according to your company practice. When the 3M Outdoor Building Entrance Terminal Wall Brackets 4990-WB or 4788-WBW are to be installed, these items should be installed first and then proceed to section 6.0.
- 5.3 Open the door and remove it by lifting upward.
- 5.4 Attach the hanger bracket level to the mounting surface with the #12 screws provided or other appropriate fasteners.
- 5.5 Position the 3M™ Outdoor Building Entrance Terminal's (OBET's) overhanging lip, on the top rear, over the hanger bracket and set it on the bracket.
- 5.6 Loosen the two screws on the hinged inner panel and secure in the open position. Install two #12 screws or other appropriate fasteners through the two lower slots on the rear wall of the OBET terminal and fasten it to the surface.



6.0 Grounding

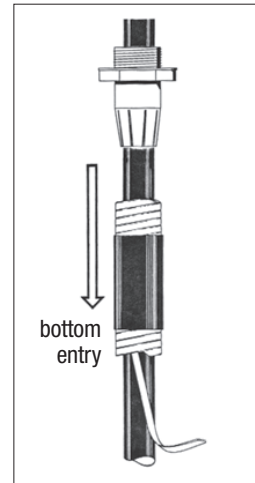
- 6.1 Route a #6 AWG ground wire inside through the grommet on the bottom of the OBET terminal. Fasten it to the ground lug. Attach the other end to a local ground per your company practice.
- 6.2 If stacking OBET terminals, common ground all using #6 AWG ground wires.

Note: *Failure to properly bond and ground per N.E.C. or equivalent local codes may render the protection arrestors useless.*

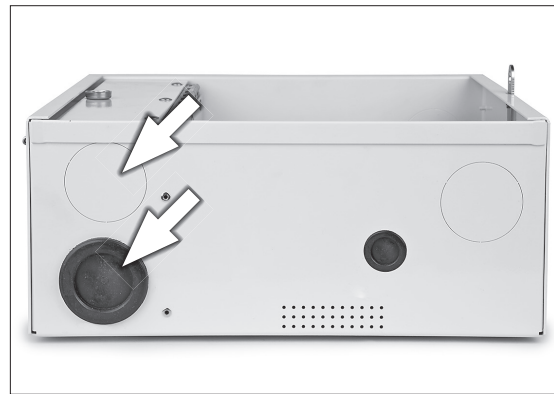


7.0 Outside Plant Cable (Feeder) Preparation

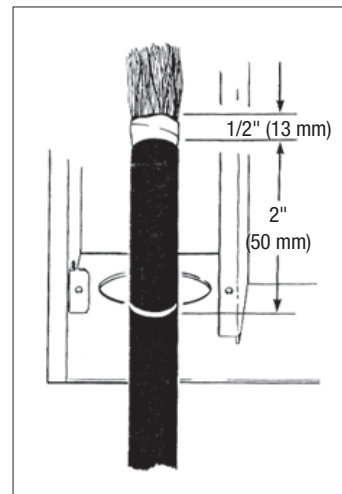
- 7.1 Cut the feeder cable 30" (760 mm) past the cable entry port.
- 7.2 Slide the 3M™ Pull n' Shrink Tubing (PST) over the cable sheath with the pull tab facing away from the 3M™ Outdoor Building Entrance Terminal (OBET). When installing a 25 or 50-pair cable, slide both PST tubes on the cable. Slide the plastic gland (without nut) over the cable sheath with the fingers facing away from the OBET terminal.



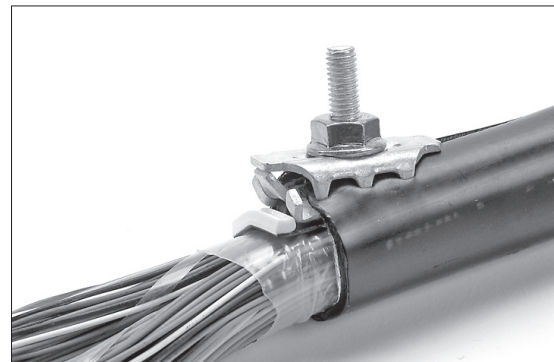
- 7.3 Remove knockout at the selected cable entry location.



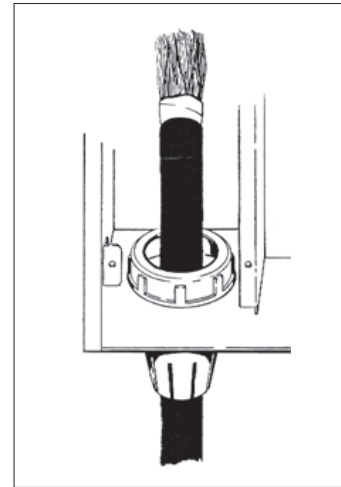
- 7.4 Remove the cable sheath leaving 2" (50 mm) (minimum) extended inside the cable entry port. Leave 1/2" (13 mm) of core wrap and tape the free conductor ends.
- 7.5 Insert the cable through the entry port of the housing.



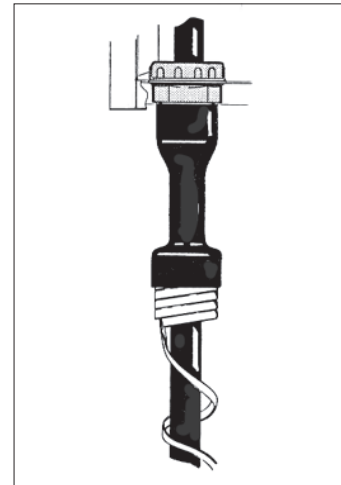
- 7.6 Install an approved shield bond connector per your company practice.



- 7.7 Slide the plastic gland up the cable and insert the threaded portion through the hole. Slide the nut over the free conductor end and install nut on the gland.
- 7.8 Attach provided ground wire to the shield bond connector.
- 7.9 When installing two 3M™ Pull n' Shrink Tubing (PSTs), wrap a layer of vinyl tape starting at the top of the gland fingers down to the sheath. Slide the smaller PST tubing over the gland as far as it will go and hold it against the 3M™ Outdoor Building Entrance Terminal (OBET).



- 7.10 Remove the pull tab by unwinding it counterclockwise, shrinking the PST tubing toward the OBET terminal as the core is removed.
- 7.11 The PST tubing must be positioned a maximum of 3/8" (10 mm) away from the entry port. If not, remove the collapsed PST tubing with a sharp knife. Remove the cable and gland. Repeat steps 7.2 and 7.6 through 7.10.
- 7.12 Continue removing the core until the PST tubing covers the gland. Core should be completely removed. Repeat process when two PST tubings are to be installed.

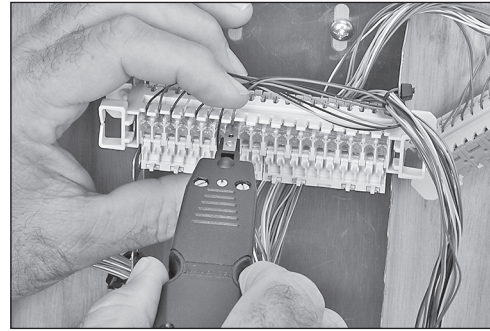


8.0 Entrance Cable (Feeder) Termination

- 8.1 When splicing with 3M™ MS2™ Modules or 3M™ 710 Connectors:
 - a) Attach the appropriate splice rig to the bottom panel near the left hand side of the OBET terminal. To prevent damage to the surfaces, use shipping carton material.
 - b) Secure the cable groups to the left hand side of the splice chamber with cable tie to maximize slack and maintain housekeeping.
 - c) Splice the cable groups to the corresponding pre-connectorized stubs in the OBET terminal per company practice. The base of the module and an adapter or the other connector components are included with the terminal.
- 8.2 Splicing with 3M™ Scotchlok™ Connectors:
 - a) Secure the cable groups to the left hand side of the OBET terminal to maximize slack and maintain housekeeping.
 - b) Match the cable groups to the corresponding pre-connectorized stubs in the terminal. Cut out one pair at a time, from the connectorized side and splice them according to your company practice.
- 8.3 Complete the splicing, bundle the connected groups together and tie wrap to the left hand side of the splice area.
- 8.4 Close and secure the inner panel.
- 8.5 Re-install the door by aligning the lift-off hinges.

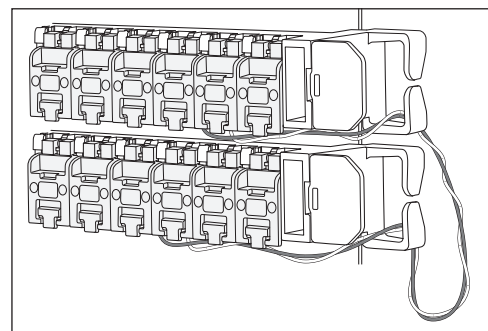
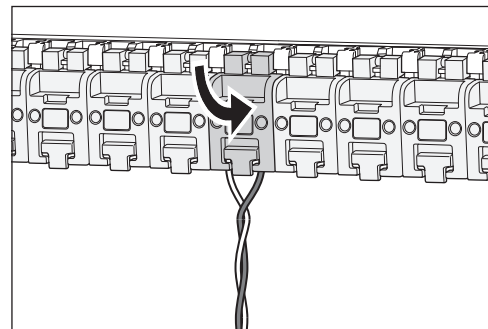
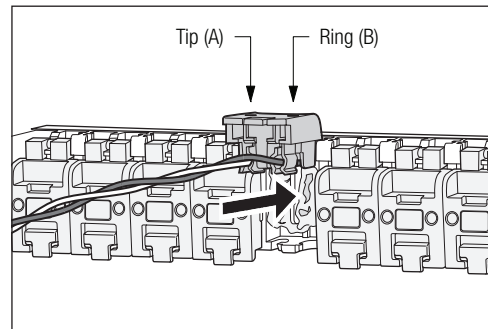
9.0 House Wire/Cable (Distribution) Termination

- 9.1 Remove the block from frame. Rotate the block 180° backward and remount in same frame position with 1-pair jumper caps facing out. Push the block firmly into place on the frame. Cable pairs should now enter the back side of the block from below. Repeat until all feeder and distribution blocks have been terminated and mounted to frame.

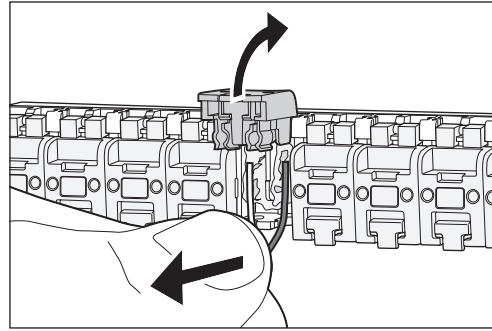


10.0 Running Jumpers 3M™ Quick Connect System (QCS) 2810 Block

- 10.1 Open the feeder pair jumper cap by pushing up on the latch and rotating up. Insert jumper wire ends A (tip) left and B (ring) right into wire openings in the cap, making sure they are inserted all the way to the back of the cap.
- 10.2 While holding the jumper wires in place, close the cap and press to snap the latch firmly into place.
- 10.3 Route the jumper wires to the distribution pair through wire loops on the block ends and through vertical and horizontal wireways. Cut jumper wires to appropriate length, leaving at least 2" (51 mm) of slack.
- 10.4 Terminate the jumper wires to the distribution pair by repeating the procedure described in steps 10.1 and 10.2.
- 10.5 Terminate additional jumper wires by repeating the above procedure.



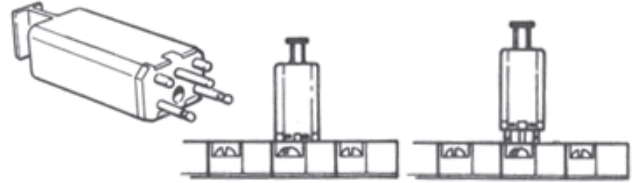
- 10.6 To remove jumper wires, open the cap and pull the wires straight out from block.
- 10.7 Route the wire below the connected cap.



11.0 Installing the Electrical Protectors

Note: Use *ONLY UL Recognized or Listed protectors in the 3M™ Outdoor Building Entrance Terminals (OBETs).*

- 11.1 The 3M™ Outdoor Building Entrance Terminals (OBET) 4990V-QCS use a standard five-pin protector receptacle field. The long pins of the protector connect Tip and Ring from the feeder cable through the protector to the short pins to the distribution/house wire.
- 11.2 Insert protectors into the protector receptacle field according to your company's practice.
- 11.3 To disconnect the distribution wire, pull the protector out to the detents on the long pins to hold it in place. This continues to protect from the feeder cable side.

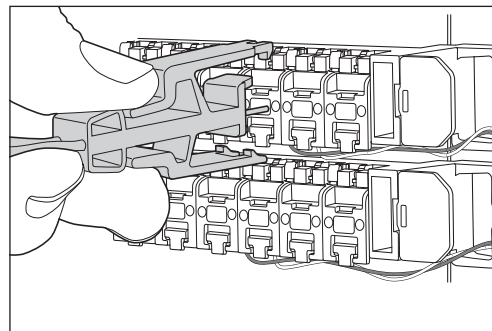


12.0 3M™ Single Pair Test Probe 2827

- 12.1 Testing using 3M™ Single Pair Test Probe 2827



- 12.2 Plug the test probe into the cap of the pair being tested, with the black lead to the left and the red lead to the right.



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