
Special Specification 6138

RVSD Equipment Cabinet



1. DESCRIPTION

Furnish and install Equipment Cabinet and include all necessary associated electrical and mechanical devices as detail in this special specification. The cabinet will house the various types of surveillance and control equipment for the system as shown on the plans.

2. MATERIALS

Furnish new, corrosion resistant materials. Furnish, assemble, fabricate and install materials in strict accordance with the details shown on the plans and in the specification.

Construct the RVSD equipment cabinet using unpainted sheet aluminum with a minimum thickness of 0.125 in. Provide materials that meet NEMA Standards and the requirements of ASTM B209 for 5052-H32 aluminum sheet.

3. WORK METHODS

Submit all shop drawings of the cabinet and cabinet wiring diagrams to the Engineer for approval before installation.

Provide cabinet with the following external dimensions:

- Height 36 in.
- Width 24 in.
- Depth 18 in.

The height and depth dimensions may be ± 1 in.

Weatherproof cabinet to prevent the entry of water. Continuously weld all exterior seams for the cabinet and door. Smooth all exterior welds.

Provide vertical shelf support channels to permit adjustment of shelf location in the field.

Equip each cabinet with a keyhole panel on either side of the front section of the cabinet to permit the mounting of additional equipment as necessary.

Equip the cabinet with 3 adjustable, removable shelves. Provide shelves at least 10-1/2 in. deep and be located in the cabinet so as to provide a 1/2 in. clearance between the back of the shelf and the back of the cabinet.

Provide the cabinet with 1 door in front that will provide access to the cabinet. Provide the door with a full length stainless steel piano hinge, with stainless steel pins spot welded at the top. Mount the hinges so that it is not possible to remove them from the door or cabinet without first opening the door. Extend the bottom of the door opening at least to the bottom level of the back panel.

Brace the door and hinges to withstand a 100 lb. per vertical foot of door height load applied vertically to the outer edge of the door when standing open. Ensure there is no permanent deformation or impairment of any part of the door or cabinet body when the load is removed. Provide provisions to hold the door open at approximately the 90° and 180° positions.

Fit the cabinet door with a Number 2 Corbin lock and an aluminum or chrome plated handle with a 3/8 in. (minimal) drive pin and a 3 point latch. Design the lock and latch such that the handle cannot be released until the lock is released. Provide the handle with a locking ring so a padlock can be installed in addition to the Corbin lock. Provide two keys for each lock for each cabinet. Locate the Corbin lock to be clear of the arc of the handle.

Provide a gasket to act as a permanent dust and weather resistant seal at the cabinet door facing. Ensure the gasket material is of a non-absorbent material and will maintain its resiliency after exposure to the outdoor environment. Provide a minimum of 3/8 in. thick gasket, and locate it in a channel provided for this purpose either on the cabinet or on the door(s). A channel formed by an "L" bracket and the door lip is acceptable. In any case the gasket must show no sign of rolling or sagging and must insure a uniform dust and weather resistant seal around the entire door facing. Any other method is subject to engineering approval during inspection.

Vent and cool the cabinet by a thermostatically controlled fan. The thermostat shall be an adjustable type with an adjustment range of 70°F to 110°F. Provide a press-to-test switch to test the operation of the fan.

Provide a commercially available model fan with a capacity of at least 100 CFM. Provide the cabinet with filtered vent openings to allow adequate convection cooling of the electronic components to be installed in the cabinets. Mount the filter securely so that any air entering the cabinet must pass through the filter. Ensure the cabinet opening for intake of air is large enough to use the entire filter. Screen the exhaust vent to prevent entry of insects. Provide the screen openings no larger than 0.0125 sq. in. Ensure the total free air opening of the vent is large enough to prevent excessive back-pressure on the fan.

Provide the cabinet with a unique 5-digit serial number which shall be stamped directly on the cabinet or engraved on a metal or metalized Mylar plate epoxied or riveted with aluminum rivets to the cabinet. Ensure the digits are at least 0.5 in. in height and is located on the upper right sidewall near the front of the cabinet.

3.1.

Power Requirements.

Equip the cabinet with a HESCO model LF-50 line filter or TxDOT approved equal and an EDCO ACP-340 surge protector or TxDOT approved equal.

Mount and wire two circuit breakers in each cabinet. Use one 20 ampere breaker to protect the fluorescent light, GFCI-protected duplex receptacle and fan. Use the second 20 ampere breaker to protect the two duplex receptacles to be used for the equipment. Circuit breakers shall be Square D QOU series, GE THQC series, or TxDOT approved equal.

Equip the circuit breakers with solderless connectors and install them on the sidewall or lower right hand side of the back panel inside the cabinet in such a manner that their rating markings are visible and the breakers are easily accessible.

Mount and wire a GFCI-protected duplex receptacle of the 3-wire grounding type which will accept a standard 2-pronged non-grounding plug in the cabinet. Wire this receptacle on the "Load" side of the 20 ampere breaker.

Install a fluorescent light, with switch, in the cabinet. This light shall turn on when the cabinet door is opened, and turn off when the cabinet door is closed. Provide a switch also to turn off any incandescent display that may be used in a controller unit or other equipment.

Except where soldered, provide all wires with lugs or other approved terminal fittings for attachment to binding posts.

Insulation parts and wire insulation shall be capable of withstanding a minimum of 600V.

Provide copper ground buses for both the power supply neutral (common) and chassis ground. Provide each bus bar a minimum of 10 unused terminals with 8-32 X 5/16 in. or larger screws. Do not jump the AC neutral and chassis ground busses together. Isolate the logic ground from the AC neutral. Terminate the logic ground on a logic ground bus sufficient to accept 5 number 20 AWG stranded wires.

Place all wiring in a neat and orderly manner and grouped together with nylon tie-downs.

Provide a clear 1/8 in. thick removable cover made from Lexan material to cover the power panel. Ensure this cover is placed as not to interfere with the functional operation within the cabinet.

3.2. **Documentation, Testing, and Warranty Requirements.**

Provide documentation, testing and warranty in accordance with Special Specification 6005, "Testing, Training, Documentation, Final Acceptance, and Warranty."

4. MEASUREMENT

The cabinet will be measured as each unit furnished, installed and tested in accordance with this Special Specification.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement," will be paid for at the unit price bid for "RVSD Equipment Cabinet." This price will be full compensation for all equipment described under this Item with all cables and connectors; cabinet mounting brackets and hardware; documentation and testing; and for furnishing all labor, tools, materials, training, incidentals, and equipment necessary to complete the work.