Networking Design and Development

nVent
HOFFMAN

As the electronics miniaturization trend continues, equipment density is increasing exponentially. The result? Equipment that once filled a tall floor-mount cabinet can now fit in a significantlysmaller cabinet and be conveniently mounted on a wall or even on a machine. Along with providing an alternative to floor-mount options in networking applications where floor space is limited, wall-mount cabinets can enhance the aesthetic appeal of the design, keep electronics equipment cleanly mounted out of the way of personnel and other equipment, and facilitate easy access for maintenance.

WHY WALL-MOUNTS?

Since floor space is expensive, many companies measure productivity and efficiency by dividing floor space by the dollars generated. By freeing up floor space for equipment, wall-mount cabinets can improve a company's overall productivity, efficiency and bottom line.

Along with use in traditional data centers, wall-mount cabinets can be used in Intermediate Distribution Frame (IDF) and Access Point (AP) applications. These applications extend the network to locations to support various activities, such as industrial controls, access control, HVAC , monitoring, security/cameras, communications, building automation systems and more. Further, cabinets house and protect electronics for applications that require a convergence of many differing technologies that all require data transmission, access and processing.

SELECTING A WALL-MOUNT CABINET

The first step in selecting a wall-mount cabinet to best meet specific application requirements is determining the amount of space the equipment needs, measured in rack units. Cabinet families are available in numerous standard sizes and custom options to support networking and traditional industrial equipment—both 19-in. rack-mounted and traditional panel-mounted equipment.

By selecting an enclosure that houses versatile electronic equipment, managers can support the convergence of networking and industrial applications. For instance, network equipment designed for clean room or office environments may now be located in industrial, outside plant and other places that require enhanced protection.

Cabinet specifiers should also determine how the cabinets will be mounted to the wall—via direct through the cabinet, strut or accessory mounting foot—as well as how far the cabinet can extend from the wall. In public aisleways, the typical requirement is less than 12 inches; however, this requirement can vary and may be different for IDF and AP applications. Specifiers must also provide a power service to match application requirements.

Provisions for cables include cable entry and egress options as well as cable management within a cabinet; allowing cables to enter and exit a cabinet. Cable knock-outs provide a simple solution for cable egress and entry, while gland plates can maintain the enclosure's rating integrity and provide a removable cable egress. The latter options should be selected for demanding applications in which the ratings must be maintained to provide reliable protection and cables may be frequently added or changed. Within a cabinet, vertical and horizontal cable managers are available to accommodate traditional CAT 5e cables and/or higher-density CAT 6 and 6a cables. The ideal cable manager will minimize cable stress points while supporting frequent cable moves, adds and changes (MACs).

Wall-mount cabinets should provide easy access to mounted equipment. However, the frequency and ease of required access varies by application. Single-door cabinets offer a cost-effective solution for protecting, securing and cooling a host of equipment, while double-hinged door cabinets facilitate front and rear access, reducing time to install and connect system components.

The level of protection and thermal management provided by the cabinet is a crucial factor in determining the ideal solution for networking applications. Globally, iEc, nEma and uL are the three

most commonly recognized standards organizations. iEc deals primarily with ingress protection levels, while nEma and uL also address specifications such as minimum construction, performance and test criteria and corrosion. uL provides the most stringent build and testing requirements to ensure minimum standards of construction and performance by requiring testing (conducted by uL or authorized testing labs).

Sufficient thermal management is critical for protecting sensitive electronic equipment, and the most advanced wall-mount cabinets combine protection, support and access with integrated thermal management. Thermal management varies from simple, passive cooling to more complex solutions and should be selected according to the amount of heat generated by equipment and the ambient temperature. Pre-packaged cooling solutions include type 3R fan and air-conditioned models.

IN CONCLUSION

When evaluating wall-mount options, it is important to select an enclosure line that includes a wide selection of agency-rated, standard wall-mount enclosures, numerous accessory and modification options, and global support to handle all future requirements. The ideal wall-mount enclosure will meet the converging demands of industrial and networking applications, housing and protecting vital electronic equipment in a robust, space-saving package.

VoIP Tel 1 Tel 2
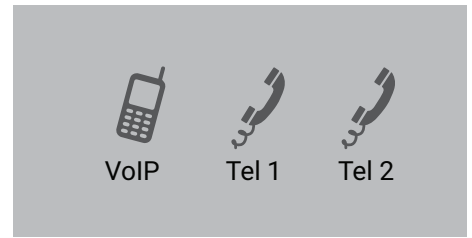
Enterprise Communications
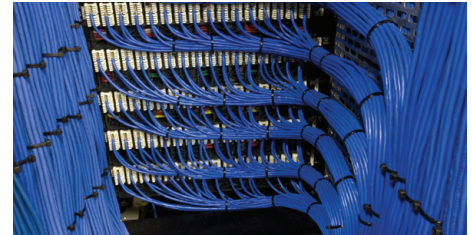
Distributed Control

19" Rack Mounted Instruments

Intermediate distribution Frames

nVent.com/HOFFMAN

North America

Minneapolis, MN
Tel: +1.763.421.2240

Mexico City, Mexico
Tel: +52.55.5280.1449

Toronto, Canada
Tel: +1.416.289.2770

South America

Sao Paulo, Brazil
Tel: +55.11.5184.2100

Boitura, Brazil
Tel: +55.15.3363.9148

Europe

Betschdorf, France
Tel: +33.3.88.90.64.90

Straubenhardt, Germany
Tel: +49.7082.794.0

Dzierzoniow, Poland
Tel: +48.74.64.63.900

Assago, Italy
Tel: +39.02.5776151.224

Middle East & India

Dubai, United Arab Emirates
Tel: +971.4.378.1700

Bangalore, India
Tel: +91.80.6715.2001

Asia

Shanghai, P.R. China
Tel: +86.21.2412.6943

Singapur
Tel: +65.6768.5800

Shin-Yokohama, Japan
Tel: +81.45.476.0271

Seoul, Korea
Tel: +82.2.2129.7755

Qingdao
Tel: +86.532.8771.6101

Our powerful portfolio of brands:

nVent.com   CADDY   ERICO   HOFFMAN   RAYCHEM   SCHROFF   TRACER