WiFi deployment specialist turns to Spelsberg for enclosure customisation

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Large-scale WiFi network installations across industrial and commercial sites require access points. Extending WiFi signal in outdoor or harsh locations, access point devices demand protection from the elements. However, the vital protection that an industrial enclosure provides must not inhibit the internet signal. WiFi deployment specialist, DW WiFi, turned to Spelsberg UK to engineer a casing that could resolve the challenge.

To create a WiFi network at scale, like those needed across a factory or hospital, access points are installed. Connected by cable to the site's central internet network hub, access points act like WiFi routers, but typically offer an improved signal.

WiFi connectivity might also be needed outside, for example at a goods in yard, with mobile readers receipting deliveries. This means that access point devices have to be protected from water ingress, as well as impact. They can also be mounted in harsh indoor environments, such as frozen food storage areas, so they also need to provide protection across a variety of temperature extremes.

WiFi deployment specialist, DW WiFi, provides site surveys in the UK and around the world, to determine hardware requirements to fit the needs of

each facility. In large sites, such as shopping centres, hotels, factories, or distribution depots, more than 50 access points might be required. Often, a number of these might need to be installed outdoors or in challenging locations, in order to fulfil signal coverage requirements.

A high IP rated enclosure with sufficient impact resistance is crucial, but the protection that the box provides can also inhibit the WiFi signal. Thanks to Spelsberg UK's in-house customisation capability, durable enclosures were adapted to enable unimpeded transmission, combined with fast, flexible installation.

"Spelsberg's strong, lightweight enclosures give the right protection, and CNC machine customisation has enabled us to locate the access points' antennae through the box, with a protective sealing. This gives strong WiFi transmission even in the most challenging settings," says David Woodall, Managing Director, DW WiFi.

Precision CNC machining means that a bulkhead connector with special seals can be inserted into the high IP-rated enclosure, while maintaining protection against water and dust ingress. The appropriate antenna, protected by its own high IP rating, could then be inserted into the connector, free to transmit the internet signal without obstruction. Machining is also required to provide custom access to the data cable that connects the access point to the site network. To retain IP67 sealing, Spelsberg's engineers protect the data cable entrance with a protective gland.

In food manufacturing, palleted goods need to be stored at temperatures as low as -30°C inside warehouses containing pallet racking. The

extremely low temperature is maintained inside using blast chillers. Enclosures protect against the freezing conditions, but pressure can rise inside the box, accelerated by the heat generated by the access point. This can cause condensation that can damage the unit, so Spelsberg engineers also fit a pressure compensation device that prevents condensate accumulation. In addition, food manufacturing sites often clean their environments by jet washing walls and ceilings where Wi-Fi access points need to be deployed. Enclosures have a sufficient IP rating to protect the Wi-Fi access point inside the enclosure from water damage.

DW WiFi typically uses Spelsberg's TG enclosures, made for outdoor and rugged use. With high strength polycarbonate design, the enclosures achieve IP67, and their aesthetic design also means they're suitable for locations such as shopping centres and hospitals. Protecting against impact, the TG is tested to the high IK07 level. Spelsberg UK's Telford facility carries extensive stock, meaning that new orders, including CNC customisation, can be fulfilled in days.

Depending on the needs of each installation, an access point might require two, four, or six antennae. For installation flexibility, each enclosure is delivered with up to six sealed blanking plugs that can be removed as required. This approach improves DW WiFi's stock holding efficiency as well as installation flexibility, as a single type of enclosure fits nearly all designs of access point.

As some site engineers want to be able to quickly see the access point's status light to show that it's transmitting, enclosures are also provided with transparent lids. This gives visibility without the need to remove the enclosure cover.

“Previously, we were using another enclosure manufacturer, but the quality was inconsistent,” explains David. “Looking for a new supplier, Spelsberg’s in-house machining service was a great advantage, as it would save cost and time, keeping accountability with a single supplier.”

For DW WiFi, the partnership has been a success.

David adds: “In-house customisation ensures a smooth process, with skilled machinist giving a quality job each time. Combined with long-life, durable enclosures, our customers are happy.”

Image captions:

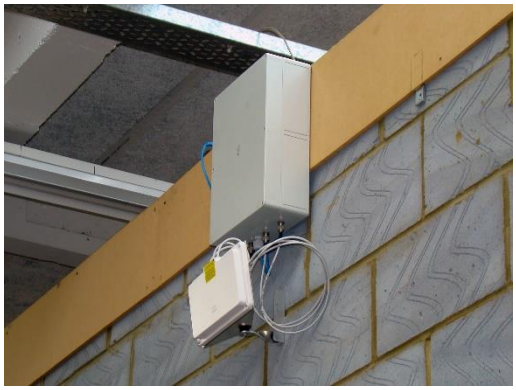

Image 1 – Enclosures IP rating to protect the Wi-Fi access point inside the enclosure from water damage.

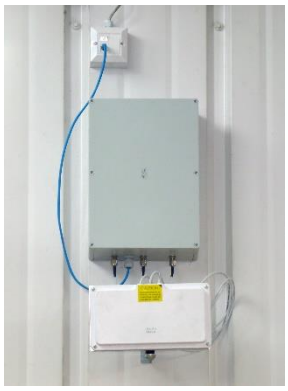

Image 2 – Extending WiFi signal in outdoor or harsh locations, access point devices demand protection from the elements.

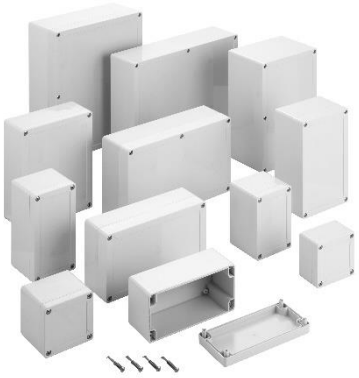

Image 3 – Spelsberg TG enclosures

About Spelsberg

Spelsberg is one of the largest manufacturers of electrical enclosures in the world. With over 4,000 enclosures available as standard and further customisation possible, it offers solutions for almost any application.
With the largest supply of non-metallic enclosures, ex-stock in the UK, its products are often available for delivery within 24 hours; customisation is possible on any product, including bespoke entries, engraved corporate logos or fitted terminals, within 48 hours. Products can be ordered direct from Spelsberg or from most leading supply specialists including RS, Rapid, Farnell and CPC.

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