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From The Inside: The Configurable Plastic Enclosures Revolution



Highly versatile “configurable” plastic enclosures have transformed the way that engineers can approach the design of electronics products.

Plastic enclosures that can be configured for wall mounting, desk mounting or handheld applications have created a wealth of opportunities for innovative designers, writes OKW Enclosures Ltd, Sales & Marketing Director, Robert Cox...

Plastic enclosures are undergoing a dramatic revolution that will completely transform the way in which electronics design engineers approach projects.

Long gone are the days when designers needed three different enclosures for wall mounting, desktop and handheld applications. Now one configurable plastic housing does it all.

Today's ranges of configurable plastic enclosures come with numerous base units, wall brackets and ergonomic carrying options – enabling engineers to create flexible products for an increasingly demanding world.

Today's highly mobile and design-conscious end users need data gathering and communications devices that can be handheld, then cab-mounted in vehicles and finally clipped into desk units for data download and mains charging.

Meeting their ever-changing needs requires versatile enclosures that be configured and re-configured quickly, easily and cost effectively as requirements evolve.

Engineers are turning to plastic enclosures that can be easily configured to house membrane keypads, touchscreen displays plus charging/data download sockets, merely by clipping in different sections.

They know that specifying configurable plastic enclosures early in the design process not only makes for a better end product – it can significantly cut manufacturing costs and shorten time to market.

In the past, design engineers often faced a dilemma – either they could compromise and use a standard plastic enclosure or bite the budget bullet and upgrade to a custom enclosure.

Now they can get the best of both worlds by choosing configurable standard plastic enclosures that can be tailored to their needs.

OKW's Interface-Terminal range exemplifies the modern face of configurable plastic enclosures with:

- front covers and plates – for use with membrane keypads and glass touchscreens (a world first)
- rear plates – including snap-in strips for versatile mounting and lowered mounting pillars for extra space
- handheld options – such as battery compartments and charging points
- desktop base unit and wall mounting options.

But the journey that led OKW designers to Interface-Terminal actually started 30 years ago. This has been quiet revolution that first started back in the 1980s.

Configurable plastic enclosures took their first steps with OKW's Vario-Box, a range of rugged enclosures still in production today.

Vario-Box was aimed initially at mounting machinery controls to factory walls. At that time, desk-mounting was not seen as a priority but the range has since acquired carry handle bars that make the housing desk-friendly as well as hand-portable.

Fast forward to the 1990s and the focus had shifted from heavy industry to the world of retail. Growing numbers of point of sale applications needed attractive and consumer-friendly enclosures that could be configured in any number of different ways.

Allied to the demand in retail was a growing market for facilities management and building access control equipment. It needed to be desk dockable, as well as portable and wall mountable.

So design styles softened as the emphasis switched from the factory wall to the office wall and the desktop – as exemplified by configurable plastic enclosures ranges such as OKW's Datec-Terminal range with its sloping fronts and wide range of lid options.

Datec-Terminal was the first plastic enclosure that could directly accept a bar code reader or a magnetic strip reader – putting it firmly in the point of sale world – but it was also used widely in light industry to house control equipment. Like Vario-Box, it is still in production.

Ten years on and configurable plastic enclosures entered the 21st century with OKW's Art-Case – a significant step forward in both functionality and aesthetics. As the name suggests, Art-Case is as modern and attractive as it is versatile.

Circles and gentle curves are the hallmark of Art-Case which – as well as wall, desk and handheld options – offers ceiling mounts to accommodate smoke or gas detectors and similar monitoring devices.

Art-Case offers four housing shapes – circular, lozenge-shaped, square and rectangular – which can then be configured with a choice of:

- domed and recessed tops
- three angles of inclined cases
- raised level and raised inclined cases
- Europlug connection and battery compartment.

Typical applications include transmitter and receiver units for building services, detectors, medical and wellness devices, security systems and peripherals.

Then in 2010 came the Interface-Terminal, the first ever configurable plastic enclosures to be compatible with touchscreens. Options include:

- four standard versions – fixed desktop, two part desktop/wall, mobile and mobile with station
- a variety of front panel styles – ABS cover and flat panel, aluminum front panel and glass panel
- battery compartment (5 x 1.5v AA cells) and charging points.

Units are mounted not with old-style fixed connections but plug-in connectors to create a fast, easy and rational solution that removes the need for fault-prone rewiring.

But it is not just the enclosures themselves that have changed radically – so has the design process that created them.

Previously OKW would unveil an initial launch range of standard plastic enclosures then add new variations and accessories as customers requested them.

Now the emphasis is on going to market with a wide range right from day one to encourage electronics engineers to bring enclosures into the design process from the very beginning.

This avoids the age-old problem of having to use too large an enclosure because the PCB size was specified at the start of the project without specifying the housing first.

But there are challenges associated with designing a major range of configurable plastic enclosures such as Art-Case or Interface-Terminal.

Enclosures must be contoured in such a way that – whether wall-mounted, desk-mounted or handheld – they always look completely at home in that role.

If a configurable enclosure looks like a desktop unit bolted to a wall or a wall-mounted unit placed on a desk, then it is not going to inspire confidence in the product that it houses.

Each enclosure must look as if it were designed specifically for that application and no other.

Designs must also be discrete – they must enhance the products they contain, not detract from them. Understated elegance is vital. Enclosures must be attractive but with a subtle anonymity.

There can be no overly imposing styling cues that shout any particular enclosures brand – nothing to suggest that 'Product A' has the same enclosure as 'Product B' created by another manufacturer.

A configurable plastic enclosure is like the frame of a beautiful painting – it must draw attention to the work of art, not away from it.

Various ranges of enclosures must also be subtle enough to work with each other, so electronics engineers have the freedom to mix and match.

Engineers can also take the process a stage further, by specifying custom options such as colours, cutouts, mouldings and branding.

So what is the future for configurable plastic enclosures? An exciting one – greater choice, even more modular options and potentially the blurring of the lines that divide configurability from customization.

For more information on configurable plastic enclosures, visit www.okw.co.uk or contact OKW Enclosures Ltd. Tel. +44 1489 583858 email: sales@okw.co.uk

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Notes for Editors

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Additional Picture if possible:



**Typical applications for configurable enclosures (top left, clockwise):
industrial control equipment, time recorder with magnetic card reader,
ultrasonic medical device, CCTV equipment programmer**