ESSENTRA COMPONENTS

Quick guide

INDUSTRIAL COMPONENTS FOR
OUTDOOR CABINETS

MAKING IT EASIER

Outdoor cabinets have specific requirements to stand up to the elements and the threat of vandalism or theft. This goes for whatever cabinet you're designing, whether an industrial cabinet, outdoor electrical enclosure, telecom cabinet or cable junction box.

To help make your job easier, we've put together this guide to help you design your cabinet. We've made free CADs of our solutions available for download. You can also try before you buy on most products by requesting free samples.

Keep in mind that just as outdoor enclosures vary, so too can the location of components within the enclosure. This is a general guide for the electrical panel box parts that outdoor cabinets typically require. For example, an outdoor telecom cabinet will often have a rear door, so you might need to mount some solutions on the roof or side panels to allow the door to open with ease.

PROTECTING YOUR OUTDOOR CABINETS

Outdoor cabinets can be vulnerable to tampering and vandalism, so it's good to know that we offer solutions that meet DIN V 1630:1999-04. Some of our access hardware components are also certified to WK2 standard. This means they're tested for protection against physical force and the use of small tools, such as screwdrivers.

Environmental factors are another concern. We're addressed these issues with our own internal testing facilities, ensuring that components are robust and durable enough to resist the corrosive effects of salt spray.

NEMA AND IP RATINGS

The first issue you need to be aware of is NEMA or IP ratings. Both of these are standards that tell you the level of protection against dust, dirt, moisture, water and other foreign objects, such as tools or fingers. If you want an outdoor NEMA cabinet, or one that is IP rated, then some of your components need to carry this rating as well. This will maintain your cabinet's rating. You can learn more and how they compare here.

FIBRE-OPTIC CABINETS

If your application is a fibre street cabinet, the components shown here are suitable, from outdoor cabinet hinges to electrical enclosure locks and latches. However, you'll also need fibre-optic cable management, designed specifically for optimising network performance and enabling easy access for maintenance.

IDEAL COMPONENTS

Let's look at the different parts attached to the frame, and what components you need to consider.

FRONT OR REAR DOOR

If you want to access your electric cabinet design from both sides, then these components work for either front or rear doors.

HINGES

There are many different types of cabinet hinges. For an outdoor cabinet, your priority should be to prevent tampering. These outdoor cabinet hinges will help keep the equipment housed in your outdoor cabinet safe and sound.

CONCEALED HINGES

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Concealed hinges are installed inside telecom street cabinets and other enclosures, which provides extra security. Screw-on concealed hinges are ideal as electrical cabinet hinges, and come in three different materials: nylon, steel and stainless-steel hinges. The steel versions offer handed, pin, removable pin and spring-loaded options. If you need heavy-duty steel hinges, choose the pin version which has a 110° rotation angle and high mechanical strength. The handed versions with a 90° rotation angle are also great for heavy-duty applications as well as lightweight needs. Weld-on concealed hinges are also available.

POSITION-CONTROL HINGE

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A position-control hinge is a type of adjustable torque hinge and ideal for telecom roadside cabinets and other electrical panel enclosure designs. Made of nylon, it comes in a variety of different external mounting versions. These adjustable torque hinges have internal resistance and restrict movement of your panel or door. Adjustable torque position-control hinges are especially helpful for an outdoor electrical box enclosure, where frequent access is needed.

WELD-ON BULLET HINGES

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Weld-on bullet hinges are ideal industrial cabinet hinges. They offer a high degree of security and strength, which is why they're popular for outdoor applications, from industrial storage cabinets to specialty vehicles. Weld-on bullet hinges provide a fluid opening action, making this another option if frequent access to the cabinet is needed.

HVAC HINGES

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HVAC hinges are also suitable for electrical panels. Made of die-cast zinc alloy, these are heavy-duty free-swinging hinges ideal for large flush fitting doors for industrial enclosures. Available in different styles.

METAL CORNER HINGES

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Metal corner hinges, like concealed hinges, are mounted inside the cabinet and make perfect electrical enclosure hinges with a 180° rotational angle. A cabinet corner door hinge contains a pin, which you can remove when the doors are open. This enables you to take off the doors for easier access when maintenance is required.

LOCKS AND LATCHES

If you're designing a NEMA or IP cabinet, choose electrical enclosure locks and latches with the same rating. Your choice will also act as your handle, with either the key allowing you to open panel doors or a handle as part of your industrial cabinet lock or latch.

IP65 QUARTER-TURN SPRING LATCHES

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IP65 quarter-turn spring latches are dust tight and help protect the equipment within the cabinet from jets of water. With six different head styles and seven grip ranges to choose from, these quarter-turn latches provide a rubber gasket for better sealing. Ideal as an electric meter-box spring latch.

ADJUSTABLE COMPRESSION LATCHES

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Adjustable compression latches are also rated IP65, making them suitable for as an electric meter-box door latch. This compression latch is ideal not only for sealing against ingress, but also for noise isolation and vibration reduction. This adjustable compression latch is available with an offset cam lock, or you can choose flat or deep cam styles.

MINI ADJUSTABLE COMPRESSION LATCHES

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Mini adjustable compression latches, rated IP65, perfectly suit a small outdoor electrical cabinet, electric cable junction box or any application with limited space. With an adjustable grip range, these are supplied with a sealing gasket.

FLUSH CUP T-HANDLE LATCH

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Flush cup T-Handle latch is best suited for large-door cabinet panels. Rated IP65, this recessed stainless-steel handle is ideal for hazardous environments that outdoor cable enclosures are sometimes placed in.

LIFT-AND-TURN COMPRESSION LATCHES

View online ☑

These lift-and-turn compression latches include key-operated swing handles and compression cam latches and have a 90° rotation. The slam-action spring-loaded handle consists of a low profile that tucks away when not in use. While not IP or NEMA rated, they work extremely well outside or inside. It's ideal as a heavy-duty compression latch for outdoor telecom equipment cabinets.

DOOR GASKETS AND SEALS

SEALING GASKETS

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Sealing gaskets create a compression seal for your cabinet door. They clip onto the panel edges to provide additional sealing to fill the space where surfaces mate. Opt for EPDM or PVC material. Both are outstanding as outdoor electrical box gaskets, protecting against the effects of weather and the shock of vibrations.

FLIPPER GASKET SEALS

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Flipper gasket seals are an additional seal to enclosure boxes. Typically used on metal sheet, they clip on profiles, offering edge protection and sealing. Use a flipper gasket seal for protection from vibrations and ingress of humidity and dirt. Made of EPDM. You can also opt for a bubble gasket seal, which serves the same function but has a different shape. Also made of EPDM and available here.

WEATHERSTRIPPING TAPE

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Weatherstripping tape can also help seal gaps between irregular surfaces. The gasket tape made of EPDM and PVC creates superior barrier protection from moisture and air. These excellent electrical-enclosure gasket materials also resist weather and oxidation and offers conformability and flexibility at low temperatures.

TOP AND SIDE PANELS

If you're designing an outdoor wall-mounted data rack cabinet, you'll only have access through the front door. Instances like these give you the rear panel to work with. You can place the components below on either the top, side or rear panels.

FAN ACCESSORIES FOR SMALL CABINETS

FAN FILTERS
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You'll need an electrical cabinet fan. Fan filters ensure that clean, filtered air cools the electronics housed by your cabinet. They keep airflow unrestricted by removing harmful particles. Stainless steel is an ideal material for a fan filter mesh sheet in outdoor applications, as it contains corrosion-resistant properties. Metal fan filters are also available.

FAN GUARDS
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To prevent debris from falling into your electrical-enclosure fan and causing obstruction, consider this metal fan guard made of steel. Fan guards are essential for protecting the equipment that your cabinet will house. The fan guard shown here is simple to install with a screw mount application.

SWITCHES

IP65 LED ILLUMINATION BLOCK
View online ☑

Switch accessory IP65 LED illumination block emits the colour red. To be used with Essentra's IP-rated control units in network cable junction boxes and other outdoor enclosures. Circuit arrangement type: 100-230 V AC. Also available with green LED light, yellow, white and black, rated IP50 or IP65.

FLUSH PUSH BUTTON
View online ☑

Flush push button device includes operator, clip and contact block. NEMA 4, 4x, 12, 13 and IP65 when installed correctly. Oil and watertight, these switches are rated at 4amp @ 230VAC with finger-safe screw terminals. Momentary action "NO" (springs back) or maintained "NC" (stays down). Requires assembly. UL/CSA/CE approved.

PUSH BUTTON SWITCHES
View online ☑

Push button switches are spring loaded push-push start/stop switches rated at 10amp at 600VAC with finger-safe screw terminals. Ideal for outdoor industrial cabinets. NEMA 4, 4x, 12, 13 and IP65 when installed correctly. UL/CSA/CE approved.

FASTENERS

PUSH RIVETS

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Push rivets with a ribbed design, known as barbed rivets or fir tree rivets, enable fast and easy installation, securing different materials, including metal, foam, rubber and plastic. The flexible ribs deflect when placed in the hole, then springs back to lock securely in place. A suitable choice for outdoor sealed cabinets, these plastic push rivets are available in over 100 sizes and styles for different hole diameters and panel thicknesses. Made of nylon 6/6.

TORX HEAD FLANGED CAP SCREWS

View online 🗗

Torx Head Flanged Cap Screws are perfect for mechanically securing materials and are ideal as network cabinet screws and electrical box screws. Made of nylon 6/6, these are lightweight and resistant to corrosion, oil, abrasion and most chemicals. Installed with Torx tools.

STANDARD HEX NUTS

View online 🗗

Standard hex nuts are used with anchors, bolts, screws, studs, threaded rods and on any other fastener that has machine screw threads. These hex nuts are often purchased with single wave spring washers. Made of mild steel.

NYLON FLANGE NUTS

View online 🗗

Lock and flange nuts – sometimes flipped as flange and lock nuts – are a type of hex nut. The flange on the base acts as an integrated washer, spreading the load and preventing damage to the part, while also reducing the risk of the nut loosening in application. Ideal for electric cable enclosures. Made of zinc-plated mild steel.

CAGE NUTS

View online 🗗

Cage nuts are applied to square holes, commonly found on mounting rails of equipment racks. A square hole and cage nut, as a combination within rack systems allow for a choice of nut and bolt sizes. If threads are damaged the nut can be easily replaced because the sheet metal is too thin to tap or thread. Made of steel.

CABLE CLAMPS AND CLIPS

P-CLAMPS FOR CABLES

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Screw-mount cable clamp provides a secure application. Ideal for electrical panel box designs, this nylon loop clamp's bundle may not be removed without the screw being removed. UL94 V-2.

CABLE CLIPS FOR DIN RAIL PROFILES

View online ↗

Cable clips for DIN rail profiles are lightweight and don't require tools for installation. These cable clips are available in different styles and are made of nylon 6/6 to resist corrosion, oil, abrasions and most chemicals.

WIRE CLIPS

View online ↗

Wire clips should be part of your network-cabinet cable management. They come in two pieces to hold wires securely in place. The keeper bar can be adjusted to accommodate wires or removed to allow access for maintenance. Made of nylon 6/6, these wire clips are fastened to your panel using a Philips flat head machine screw.

SCREW-MOUNT CABLE CLAMPS

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Screw-mount cable clamp is ideal for heavy-duty applications, such as an outdoor utility cabinet. They include an eyelet in the mounting hole to help distribute the load. Available with a rib running around the inside of the cable clamp to grip the bundle, with a crimped eyelet to the leg. Also available without a rib with the eyelet protruding through the bottom hole. This screw-mount cable clamp is made of nylon and aluminium.

FIR-TREE CABLE CLAMPS

View online ↗

Fir-tree cable clamps with a hinged locking top have an internal rib spanning the diameter for a tight, secure grip. The releasable latch enables easy access for maintenance of console enclosures, while the fir-tree mount suits a range of panel thicknesses. Made of heat-stabilised nylon 6/6, this cable clamp performs in temperatures ranging from 40°C to 125°C (40°F to 257°F).

CABLE TIE MOUNTS

EDGE MOUNT CABLE TIE HOLDERS

View online ↗

Edge mount cable tie holders push on plastic or metal sheet edges as a permanent fixture to anchor cable ties. Available in top or side mounting options, with different bundle orientations. Also available as a clip with pre-installed cable ties.

GROMMETS

GROMMETS

View online ⧉

IP67 sealing grommets protect your application from dust and water. They're ideal for an electrical cable junction box or an outdoor power socket. Made of EPDM, these IP67 Sealing grommets stand up to weather and vibrations. As electrical junction box grommets, they also serve as blanking plugs until cable is installed.

CABLE GLANDS

CABLE GLANDS

View online ⧉

Cable glands, also known as strain-relief cord grips, are designed for superior sealing and strain relief to prolong the life of your cables. IP68 rating for excellent protection against the environment, making it ideal for your outdoor electrical enclosure box. Nylon. UV94 V-2.

CABLE TIES

HOOK AND LOOP CABLE TIES

View online ⧉

The hook and loop material easily mates together without crushing the cables being bundled. Ideal for fragile cables, such as fibre optics. Operating temperature range: -17.8˚C to 104.4˚C. Made of LDPE and nylon.

RELEASABLE STANDARD CABLE TIES

View online ⧉

Releasable standard cable ties contain a built-in locking system to prevent accidental release. Tough and durable, these black nylon cable ties include a release clip, which also enables them to be reused.

STAINLESS STEEL CABLE TIES

View online ⧉

Stainless steel cable ties resist corrosion and extreme temperatures. Installed by hand with ease, these self-locking cable ties offer strength and durability.

HEAT-STABILISED CABLE TIES

View online ⧉

Think about locking heat-stabilised cable ties if heat is generated within your cabinet or a threat from your cabinet's outside environment. Rated UL94 V-2, our heat-stabilised cable ties perform in harsh environments with a service temperature range of -40°C to 105°C (-40°F to 221°F).

DOCUMENT HOLDERS

DOCUMENT HOLDERS

View online ⧉

Give your electrical cabinet design a place to contain documentation that needs to be easily accessible. Document holders are supplied with self-adhesive strips for quick attachment. Available in ABS or polystyrene.

REAR PANEL

Typically, the components that can go on your side panels can also be placed on your rear panel, as long as that panel is inaccessible. You can also consider these components:

ARROWHEAD CABLE TIE MOUNTS
View online ⤢

Arrowhead cable tie mounts are ideal to use on rear panels when space is limited. No mounting hardware is needed. They snap into place and come in different styles. Made of nylon 6/6.
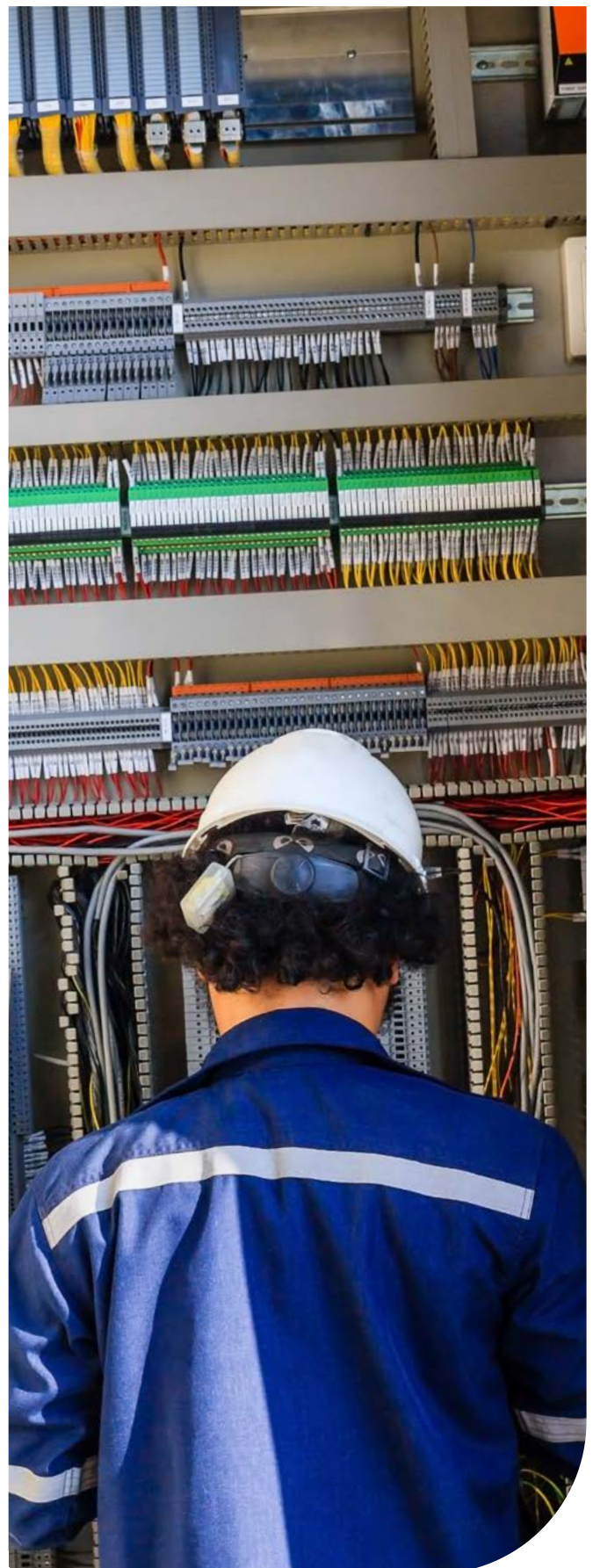
SPRING CLIPS
View online ⤢

Plastic cable clips are flexible enough to allow the cable to be removed without removing the clip. Rounded contact edges provide product protection. Made of nylon. UL94 V-2.

BODY PLUGS
View online ⤢

Available in silicone, TPE and TPR, body plugs close panel cavities while protecting against sharp edges. The silicone version is rated IP67 to give you a liquid-tight plug and will help your IP67 electrical enclosure maintain its standard.

BASE

SPIRAL CABLE WRAP

View online ☐

Spiral cable wrap organises cables and wires into one bundle. The spiral design enables cables to be routed into different directions at any point in the bundle. Available in heat-stabilised nylon and PE, this flexible cable wrap provides cost-effective protection for cables.

BRAIDED CABLE SLEEVES

View online ☐

These cable sleeves are typically used to bundle cables or wires and can be cut with scissors and still maintain a frayless end. Made of polyester. UL94 V-2.

PLASTIC CABLE CONDUIT

View online ☐

Cable conduit tested to the most demanding quality standards. The flexible plastic conduit for cables has a high fatigue life and high impact strength to aid in recovery if crushed. Ideal as your electrical-box sleeve. Available in nylon, PP, PE and HDPE, it is flame retardant and self-extinguishing, while resisting UV rays, solvents and oils.

CABLE TIE MOUNTS

View online ☐

Cable tie mounts accommodate multi cable bundles that need to be installed in rows. Also known as a screw mount wire harness. Made of nylon 6/6.

FIBRE-OPTIC CABINETS

A fibre-optic cabling installation provides better and faster data than installations that rely on standard copper cables. The only issue here is that fibre-optic cables are more fragile than copper cables. This is why, for example, reducing bend radius is critical. And it's why you need good fibre cable management in place. But it's not only about bend-radius protection or fibre-optic cable protection. Running fibre-optic cable also means you have to think about cable routing paths and ease of cable access.

Here are the components you'll need for effective fibre-optic cable management.

INTERNAL PANELS

FIBRE BEND LIMITING TUBING

View online ☒

Good fibre-optic cable management keeps costs under control. Use fibre bend limiting tubing to protect cable bend radius by eliminating problems such as crushing, kinking and micro-bending, while supplying an entire self-managing solution for fibre-routing management. Available in PP with excellent stability and PBT, which provides outstanding insulation. To mount, use easy-to-install snap-in clips.

FIBRE SPLICE TRAYS – SYSTEM, STORAGE

View online ☒

These lightweight fibre cable trays and protectors eliminate the potential hazard of macro and micro bends which can occur during the mishandling of optical fibres. The trays are stackable to any number and inter-tray fibre routing is possible. Use with splice holders, splice protectors and bend limiting tubing. The molded-in features of the trays maintain the fibre bend radius at 30mm. Nylon 6/6.

4- OR 12-FIBRE SPLICE TRAY HOLDERS

View online ☒

Holds twelve 2.7 mm splices or four 4.2 mm splices. Fastens with either an adhesive pad or #4 screw. Nylon 6/6. Flammability rating UL94 V-0.

FIBRE REELS

View online ☒

Our low-profile fibre reel enables you to spool excess fibre onto a printed circuit board design. Some reels can be broken apart to form a controlled bend around a 90° or 180° turn. Your choice of screw mount or for faster installation, adhesive backed. Nylon 6/6. Flammability rating UL94 V-0.

FIBRE CLIPS – 24-SLOT, SPLICE HOLDER

View online ↗

Holds up to 24 components/splice protectors. The flexible wings grip components up to 1.6 mm in diameter, while the low profile saves space. Nylon 6/6. Flammability rating UL94 V-0. Also available: fibre clips with 16 slots. Fibre clips with fewer slots are also available.

WIRE SADDLES

View online ↗

Protects fragile fibre wires from damage. Pushes into place for fast installation, making it ideal for routing fibre. The adhesive mount provides a strong, secure hold for your outdoor fibre cabinet. Nylon. UL94 V-0.

900-MICRON STRAIN RELIEF BOOTS

View online ↗

Provides added protection and reduces strain and tension for 900-micron fibre-optic cable while routing through a hole. Usually used in a connector or fibre terminator. If using a connector, prevent dust and other contaminants with connector dust caps. Made of TPE.

FIBRE GUIDES – CORNER

View online ↗

Fibre guides are used to assist with reeling, enabling faster fibre-cable installation. Corner guides maintain a cable bend radius through a 90° turn, helping to prevent costly errors and downtime. Nylon 6/6. Also available: guides for straight fibre applications.

FIBRE COILING CLIPS

View online ↗

Optical fibre coiling clips include two extruded clips which snap into each other to form a clip with a smooth, curved surface to accommodate fibre optic bundles. PVC. UL94 V-0.

SLOTTED MULTI BRACKETS

View online ↗

Designed using miniflex technology and used at distribution points where orderly fibre management, protection and strain relief are required. An additional security feature allows fitting of a cable tie around the part which prevents removal of any retained tubes. Nylon. UL94 V-0.

DON'T FORGET: MASKING SOLUTIONS

You'll also need to consider masking solutions to protect your cabinet during manufacturing. We can help with this, too, with a complete range of solutions. Check out our wire hooks, which support hanging loads during paint or powder finishing, surface treatments, and material handling. Also, masking caps for painting and other treatments, and high-temperature masking pull plugs. We also offer a popular range of masking tape.

DOWNLOAD **FREE CADS** AND **TRY BEFORE YOU BUY**

Free CADs are available for most solutions. You can also request free samples on selected ranges to ensure the solutions you've chosen are exactly what you need. If you're not quite sure which product will work best for your application, our experts are always happy to advise you.

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QUESTIONS?

Email us at **sales@essentracomponents.co.uk** or speak to one of our experts for further information on the ideal solution for your application **0845 758 5070**