19"-SYSTEMS

Custom-specific enclosures

BOPLA
A Phoenix Mecano Company

BOPLA
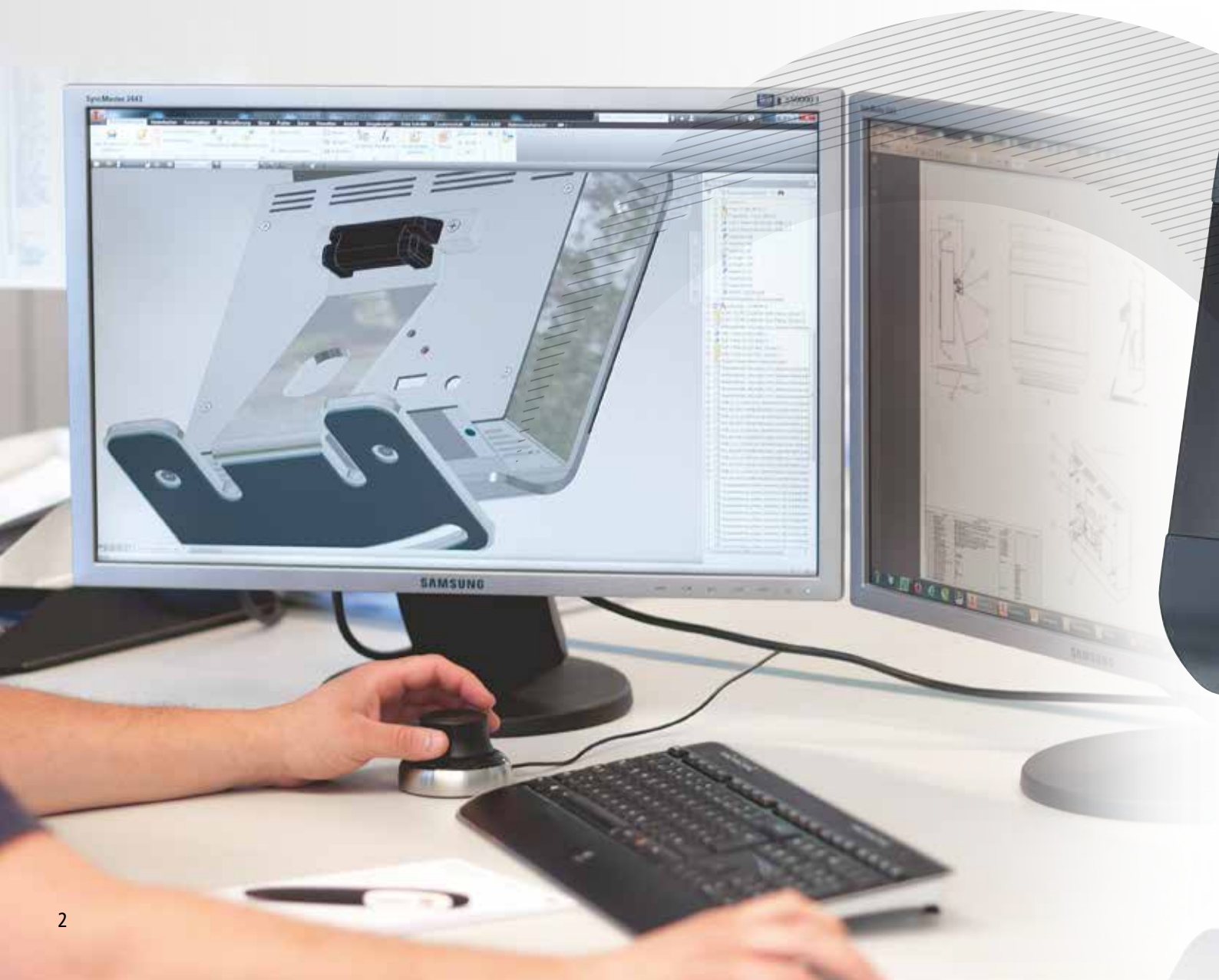**enclosures** ■ content matters

Interzoll Case

Metal enclosures – cost-effective and tailor-made.

You need only a few steps to implement your own processing requirements with the help of our 3D CAD data. Download the required model from our website, change the individual data in the CAD program, and your enclosure is ready for us to manufacture.

Our manufacturing principle.

❯ Open CAD data   ❯ Carry out processing   ❯ Release for production

Possible fields of application:

- Railway technology
- Shipping industry
- IT technology
- Audio, video and lighting technology
- Medical technology
- Measurement, control and regulation technology

Variants:

- Monitor enclosures
- Console enclosures
- Desktop enclosures
- Cavity wall installation enclosures
- DIN rail enclosures
- Subrack enclosures for 19" racks

Advantages:

- Stability
- Good EMC protection
- Good heat dissipation
- Low tool costs
- Ecological materials
- Small manufacturing batches (50+ pieces)

Materials:

- Aluminium
- Steel
- Stainless steel
- Other materials and surface coatings are
  always possible on request

Individual sheet metal enclosures

We can supply individual enclosures using sheet metal bending and metal panel bending processes according to your specifications – in aluminium, steel and stainless steel. We offer you countless design options by fusing a wide range of manufacturing technologies and surface refinement processes. Mechanical processing and our insertion and mounting service complete our range.

We offer the following services:

Manufacturing technologies

Punching

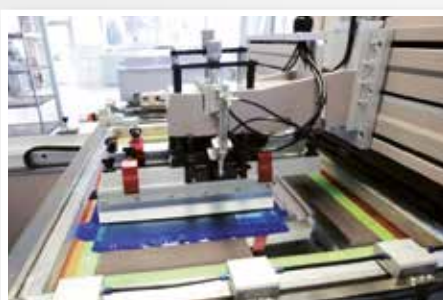Laser cutting

Chamfering

Spot-welding

Welding

Self-clinching fasteners

Surface improvement

Galvanising, chromating, anodising, lacquering, powder-coating, printing, engraving

Examples of processing

Heat conduction plate, aluminium

Later blue-galvanised

Multi-colour printing
(colours on top of each other)

Free design options, e.g. individual flanges

Extra-fine printing on a smooth surface

Low-cost connection options with riveting

19"applications
Modifications for you!

In data centres and the fields of laboratory and control technology, it is 19" enclosures which are mainly used for electronic parts. In contrast to standard enclosures, 19" enclosures are measured in rack units (RU) or horizontal pitch (HP).

There are many different 19" enclosures: for example, BOPLA supplies 19" desktop enclosures, 19" subrack enclosures, or enclosures to hold 19" subracks, made of metal and plastic.

In addition, different shapes and sizes offer maximum flexibility, with numerous useful accessories available for our 19" enclosure series.

Detailed advice is most important for complex 19" enclosure systems, and our highly-skilled 19" project team is always here to help you. Of course, our offer also includes the creation of membrane keypads, and processing.

The project sequence.

STANDARD ENCLOSURE FROM STOCK

The standard BOPLA enclosure is the starting point for every application.

MECHANICAL PROCESSING

Our modern machinery allows various mechanical processes such as milling, drilling, countersinking and thread cutting. Finishing processes such as laser engraving or laser marking are also possible.

PRINTING

We use screen and pad printing according to your instructions – the method of printing is coordinated with the product. We print in RAL, Pantone or HKS colours.

MOUNTING

We carry out for you the mounting of connectors, circuit boards, card guides, subracks and other 19" components. On request we can wire and mount your subrack, so we supply you with the complete unit. In addition, many of our 19" enclosures also allow the integration of touch screens and a display, which we will also be happy to mount for you.

ESD-SAFE CUSTOMISED PACKAGING

Sensitive equipment needs shipping- and ESD-safe packaging. We use a tailor-made solution to ensure that your equipment can be safely stored and shipped.
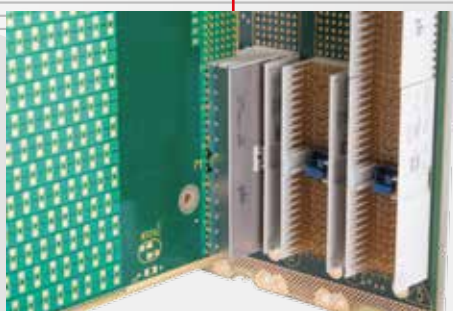

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HMI

We create HMI devices for every application. From simple membrane mounting to the complex integration of touch screens. All in impressive quality and with an appealing design.

BACKPLANE / ELECTRONICS

The integration of highly-sensitive components / modules and the final check of the device by means of a function and end test is carried out by our qualified and expert personnel.

Internorm

- 5 sizes
- More sizes on request
- Heights can be adjusted using extension sets
- Collapsible screw cover
- Integrated collapsible tip-up feet
- Front door IP 54 as an accessory
- Wall mounting is possible

Colour:
Light grey, similar to RAL 7035 and silver grey, similar to RAL 7001;
special colours on request

Protection class:
IP 40/DIN EN 60529; IP 54/DIN EN 60529 as an option

Enclosure material:
PS (polystyrene)

The continuous handle offers easy carrying and can also be used to tip-up the enclosure (available as an accessory).
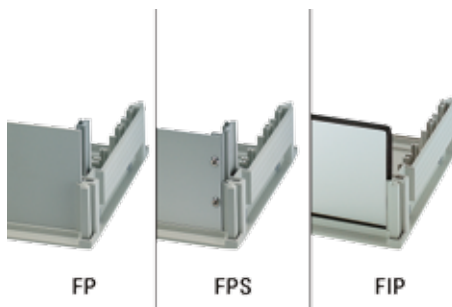

The height of both half-shells (basic height: 3 U) can be extended in 1 U steps with extension sets.

The enclosure can be upgraded to protection class IP 54 by the use of seals and IP front panels or lockable doors.

Enclosures with air vents are available on request.

FP   FPS   FIP

Different front and rear panels allow adaptation of the enclosure to a very wide range of applications.

Optional wall mounting is by means of special profile sets.

Intertego

- 3 heights (2 U, 3 U, 4 U)
- Length and width are individually adjustable
- 27 standard dimensions ex warehouse
- Aluminium baseplates and top covers
- Good EMC characteristics as standard
- Higher shielding values possible with accessories
- Installation of 19" components possible
- For use as 19" chassis

Colour:
Graphite grey, similar to RAL 7024; special colours on request

Protection class:
IP 40/DIN EN 60529; with ventilation (ADL) IP 20/DIN EN 60529

Enclosure material:
Profiles: Al Mg Si 0.5; diecast corners: zinc alloy Z410; seal: TPE

Intertego is suitable for use as 19" enclosures. For EMC accessories, see the end of the chapter.

The lateral system groove is used, for example, to hold decor strips for a colourful design.

Wall angles or fittings make possible wall mounting in two positions.

A tower foot is available as an accessory for vertical use of the enclosure.

Tip-up feet are available as accessories and ensure that the enclosure stands securely on a desktop.

Optional handle shells can be fitted in the side profiles to make transporting the enclosure easy. The optional handle – matched to the relevant

Interzoll

- 2 heights (3 U, 6 U)
- Length and width are individually adjustable
- Wide range of standard products
- Standard subracks for Euro and double Euro cards
- Railway-tested versions for use in buses and rail vehicles
- Special subracks can be produced quickly and flexibly
- Part and plug-in front panels
- Frame-type plug-in units
- Comprehensive range of accessories

Colour:
Profiles, natural-coloured anodised aluminium

Protection class:
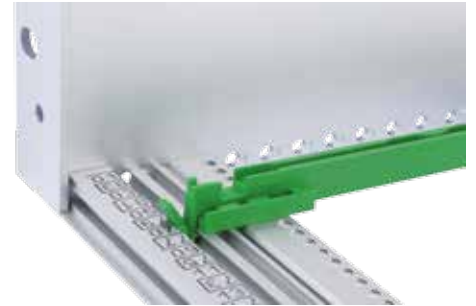Up to IP 40/DIN EN 60529 to the installation area

Enclosure material:
Profile Al Mg: Si 0.5

Allen screws with securing washers ensure secure screwing of the side panels / profile rails for a railway-tested version.

Optional profile side walls with integrated flange and rear cover provide high levels of mechanical stability (railway-tested version) and cost-effectiveness.

Locking of the card guides is by means of snap bolts which can easily be released by finger activation. Easy operation even when the slots are close together.

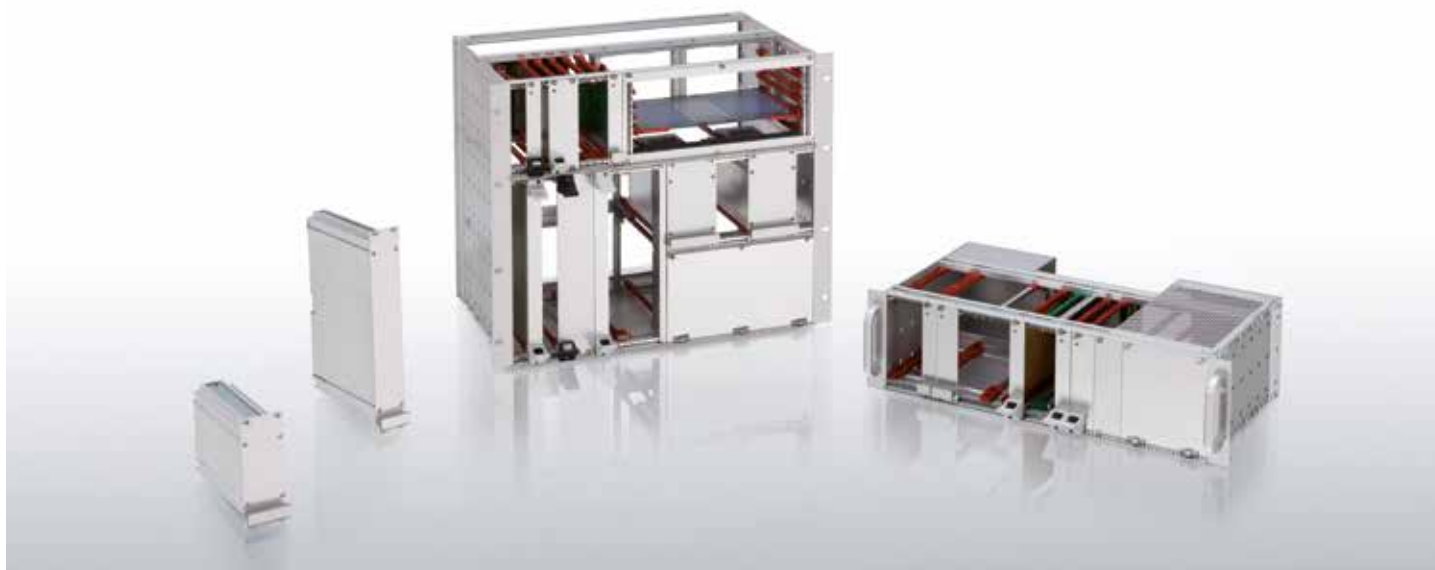On request we can supply special dimensions, modifications and complete mounting.

Double profiles ensure fast, efficient mounting.

Additional mounting option above the profiles by means of a tapped strip (GS-II).

Detailed product information can be found on **www.bopla.de**

Interzoll Modul

- 2 heights (3 U, 6 U)
- Length and width are individually adjustable
- Wide range of standard products
- Standard subracks for Euro and double Euro cards
- EMC protection upgradable at any time
- Railway-tested versions for use in buses and rail vehicles
- Special subracks can be produced quickly and flexibly
- Part and plug-in front panels; Frame-type plug-in units
- Comprehensive range of accessories

Colour:
Profiles, natural-coloured anodised aluminium

Protection class:
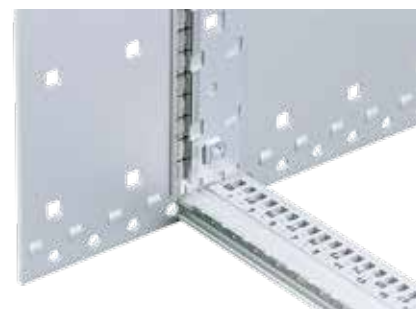Up to IP 40/DIN EN 60529 to the installation area

Enclosure material:
Profile Al Mg: Si 0.5

Profile rails with BN marking: Possible use for a railway-tested subrack and in bus and rail vehicles.

The Interzoll Modul frame-type plug-in units comply with DIN IEC 60297-3-101 / IEEE 1101.1.

A support profile fixed to the side panel guarantees contact with a fitted recessed front panel or plug-in unit.

During screwing, the profiles are automatically pressed against the protruding bosses, secured against turning and positioned exactly.

EMC springs are clipped onto a conductive area of the profiles. The subracks provide the necessary contact to the screened front panel.

A stainless steel spring ensures secure contacting to the cover plate.

Interzoll Plus

- Height 3 U
- Length and width are individually adjustable
- Interzoll Plus is based on the Interzoll subrack programme – this also applies to the range of Interzoll accessories
- Part and plug-in front panels
- Frame-type plug-in units
- Comprehensive range of accessories

Colour:
Light grey, similar to RAL 7035, natural- coloured anodised aluminium, special colours on request
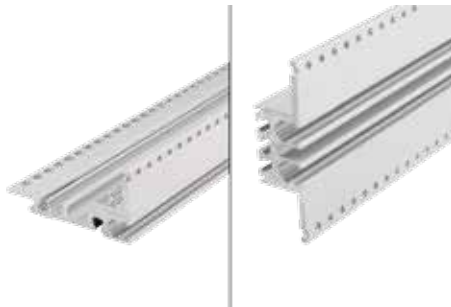
Protection class:
IP 40/DIN EN 60529; with ventilation (ADG...-L) IP 20/DIN EN 60529

Enclosure material:
Profiles: Al Mg Si 0.5, anodised; cover plates: steel sheet; plastic covers: ABS-M/MIA / PVC UL 94 V1

Standardised internal and external dimensions. The standard sizes are 3 U; 42, 63 and 84 HP; 180, 240, 300 and 360 mm depths.

Can be expanded by means of additional profiles for backplane technology (.Pi version), for directly screw-on connectors (.12 version) and with plug-in units.

All profiles for bus or connector technology can be displaced in depth by 10 mm in each case.

Feet are integrated in the enclosure as standard, so rear connections are protected.

On request we can supply special dimensions, modifications and complete mounting.

Used together with the design covers, the aluminium profile side parts have a high-quality appearance.

Detailed product information can be found on **www.bopla.de**

Internorm Stil

- 2 heights (3 U, 6 U)
- Length and width are individually adjustable
- With or without integrated ventilation
- Tower enclosure in 2 sizes
- Internorm Stil is based on the Interzoll-Modul subrack programme – this also applies to the range of Interzoll Modul accessories
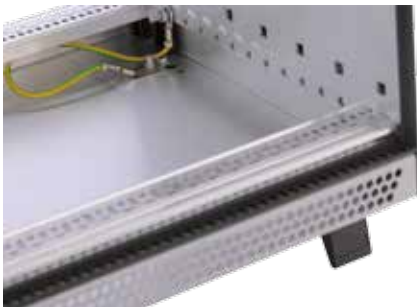
Colour:
White aluminium, similar to RAL 9006 and anthracite grey, similar to RAL 7016

Protection class:
IP 20/DIN EN 60529

Enclosure material:
Profiles: Al Mg Si 0.5, anodised; covers: diecast aluminium; front handles/flanges: diecast aluminium; side panels, cover and side plates: passivated aluminium

Use of the earthing set can improve electronic through-plating.

The standard enclosure design offers good EMC characteristics, which can be upgraded by the use of optional EMC components.

The ventilation process can additionally be optimised by the use of accessories such as air filters and partitions.

FBGR/INS   AGR/INS

The side-mounted strap handle, tip-up or carrying handles (available as accessories) make it easy to transport the enclosure.

AF1/INS   STA1/INS

The enclosure can be fitted with tip-up and stacking feet, depending on the application.

As an option, front handles or 19″ flanges can be fitted to the enclosure instead of covers.

Examples of use

Customer-specific solutions

You are looking for ways of implementing a new design, or you want to develop your own individual 19" application? Here are some examples which may inspire you. We will be happy to give you personal advice.

Internorm

Crystal-clear front door incl. lock, IP54

White enclosure lacquering and blue-lacquered corner profile sets

Screw-on front panel with integrated display

Intertego

With ventilation plate and various break-throughs in the front panel

4 U version, divided front panels, integrated 10" touch screen

Desktop enclosure with multiple 19" plug-in units

Interzoll

Subrack with divided cover plates

Subrack with rear hood and backplane

Subrack with terminal area

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Interzoll Modul

Subrack with wall fitting
and integrated touch screen
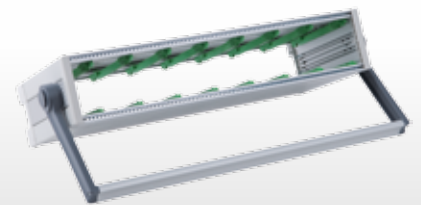
Subrack with side earthing on the flange

Processed and mounted frame-type plug-in unit

Membrane keypad and display

Subrack with fitted frame-type plug-in unit

Model with carrying handle / tip-up bow

Internorm Stil

Front membrane model and carrying handle

With special drawer and
various mechanical processes

Display integrated in the front panel

Interzoll Case

Monitor enclosure with integrated touch scree

Console enclosure with membrane keypad
and break-throughs for operating elements

1 U enclosure as EMC model

BOPLA

A Phoenix Mecano Company

HP U

cm

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