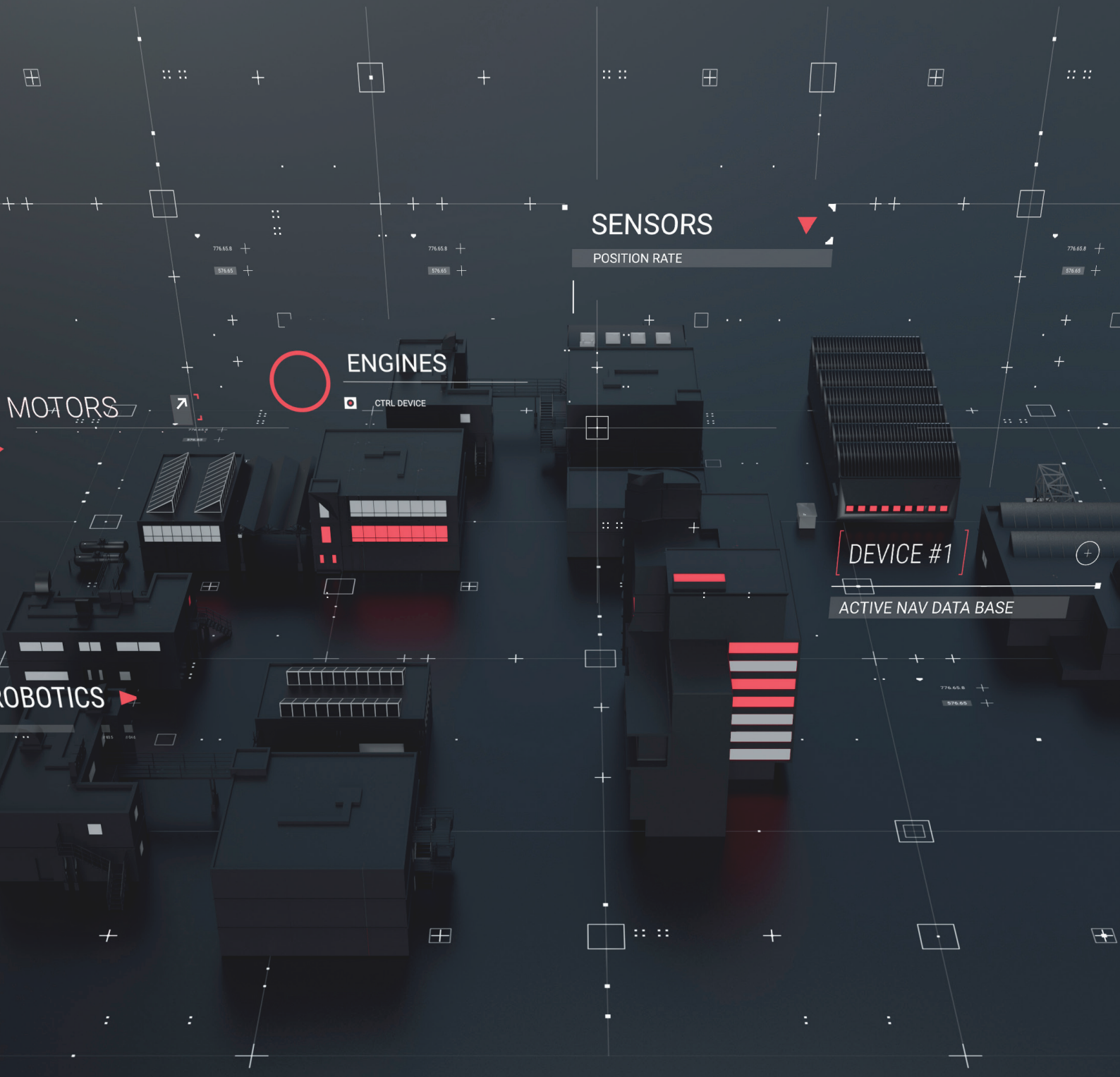
# HMI SOLUTIONS

ROSE

A Phoenix Mecano Company




Our product is your solution

In this brochure we want to show you a small selection from our product portfolio with solutions for the automotive industry. All of the applications shown are suitable for a wide range of applications - far beyond the automotive industry. Here we show you our absolute best practice examples.

The ROSE Systemtechnik HMI portfolio does not only offer individual enclosure solutions, but also robust and reliable panel PCs, industrial PCs and industrial monitors, also comprehensive solutions for drive, control and safety technology up to visualization and process control. With the acquisition of CRE Rösler Electronic GmbH in Hohenlockstedt, ROSE Systemtechnik has consistently advanced the step towards becoming a system supplier. The experts from Hohenlockstedt have more than 40 years of experience and continue to be your contact in Northern Germany.

Customer specific solutions are our daily business. We at ROSE know about your challenges and demands in the automation industry and also know that they are never the same. This is the reason why we guide you from the very beginning of a project and offer the solution that is right for you. Trust in our specialists and enjoy peace of mind on our shared journey towards Industry 4.0!

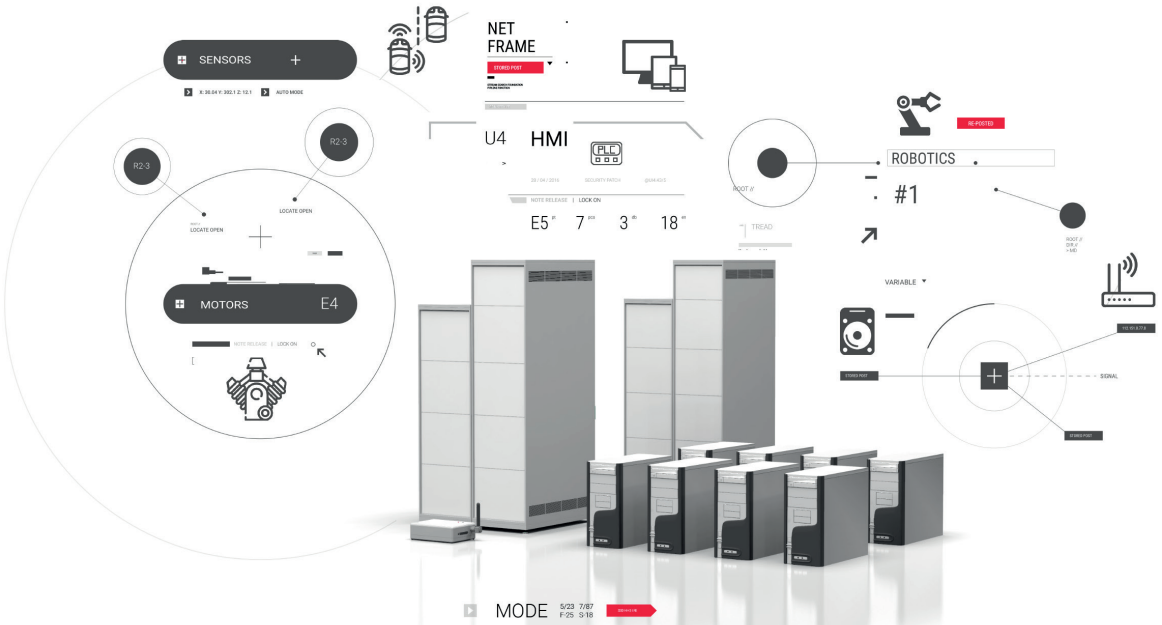
We equip our industrial PC systems with high-quality components with guaranteed long-term availability. Our stringent quality control includes burn-in endurance testing with full record-keeping and quality management with end-to-end documentation as standard – for each and every panel PC or industrial monitor.

- Perfectly coordinated, integrated solution models
- Software integration
- Hardware upgrade as needed
- 24-hour burn-in endurance testing
- Completion of or help with your device certification
- Everything from a single source, ‘Made in Germany’

- Direct contact to a service technician
- Fast and friendly assistance for technical problems
- Professional hardware support
- Straightforward, no-quibble repair policy
- Personalised customer after-sales service

In the standardization departments of the automobile operators, not only the testing and maintenance of the factories and production processes take place, but also the selection of suitable devices for smart, efficient production.

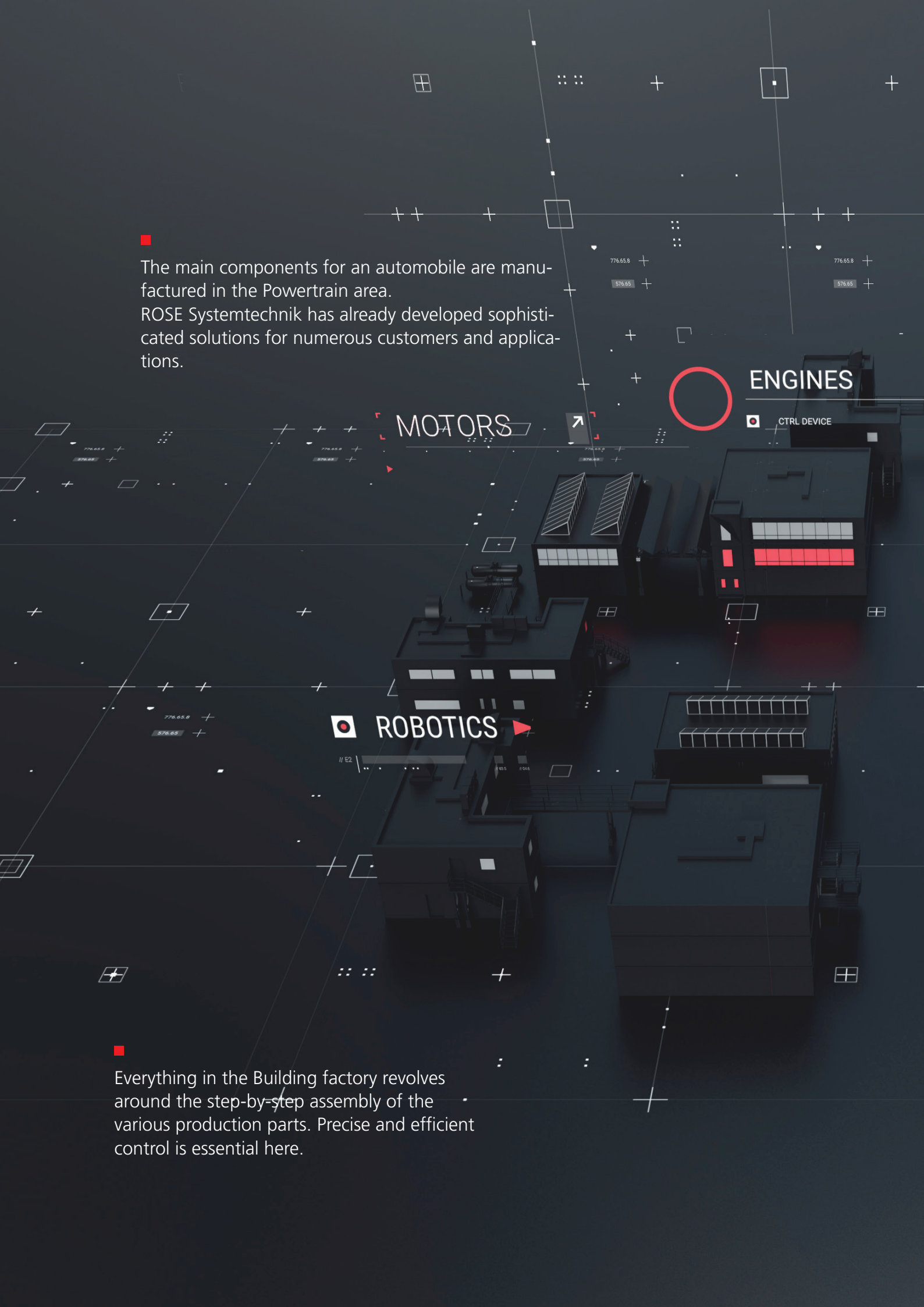
The architecture of the factory IT in automobile production is a complex topic and absolutely different everywhere, since the needs of the individual factories are unique.




The products from the **HMI** SOLUTIONS portfolio perfectly support you in fulfilling these requirements. Be it „Predictive Maintenance“ - the predictive maintenance of machines and systems, high system availability thanks to our sophisticated Quick-Lock-System, or SCCM compatibility - here various results of the system and the machine are saved in a database, so that the administrator constantly receives detailed feedback on the system status of the clients - our products will not let you down.

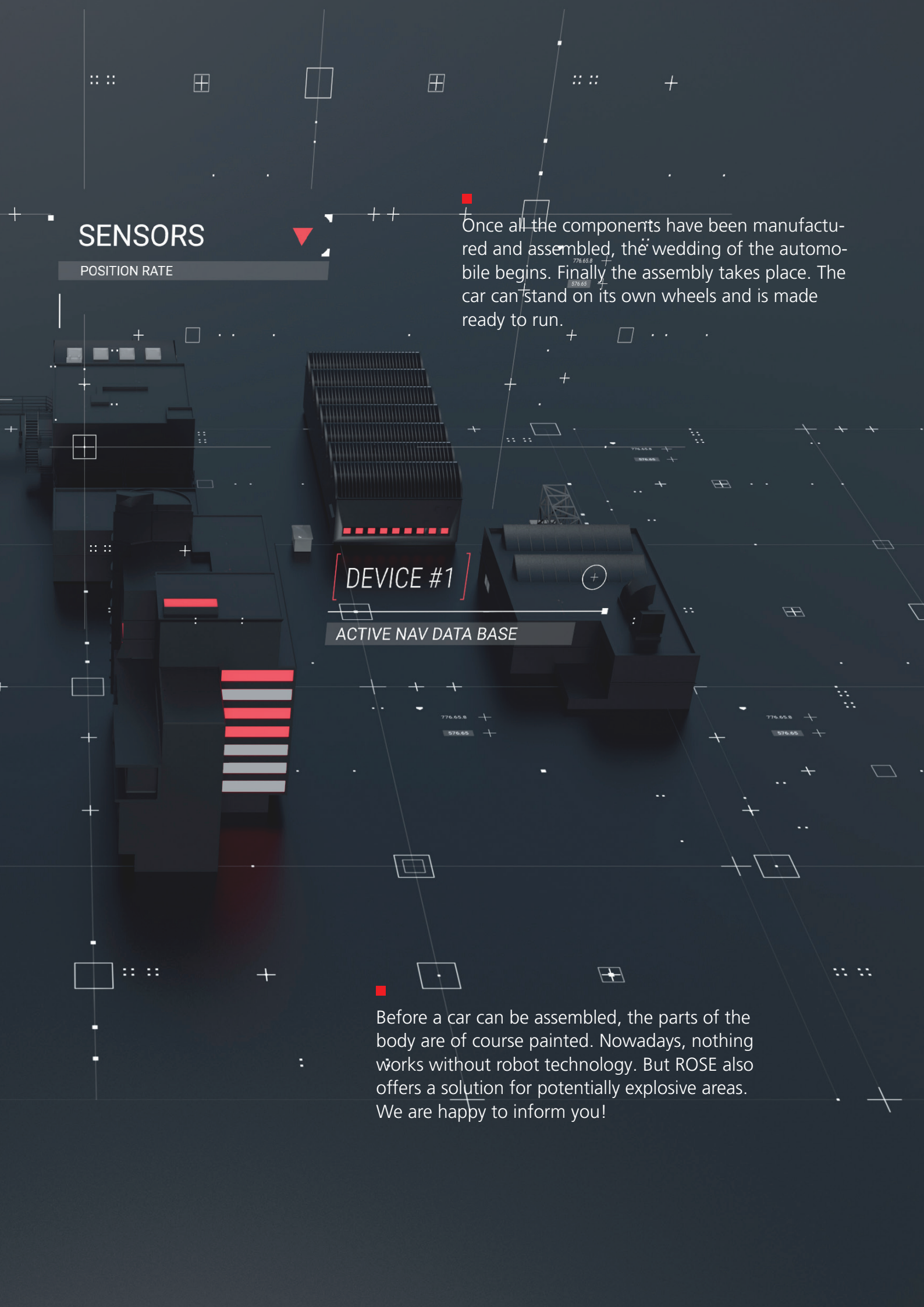
The Desktop Management Interface (DMI) can also be integrated into our systems. DMI reads tables provided in the BIOS and manages the production facility.

The possibilities of **HMI** SOLUTIONS are diverse: You get a range of customer-specific configurable systems from us. Customize your system with Euchner readers, RFID card readers, Bluetooth, acoustic touch feedback, capacitive function keys, PCI / PCIe slots, and much more.
Of course, ROSE acts in the sense of Green IT. For this purpose, our entire information and communication technology is designed to be environmentally and resource-friendly over the entire life cycle.




The main components for an automobile are manufactured in the Powertrain area.
ROSE Systemtechnik has already developed sophisticated solutions for numerous customers and applications.

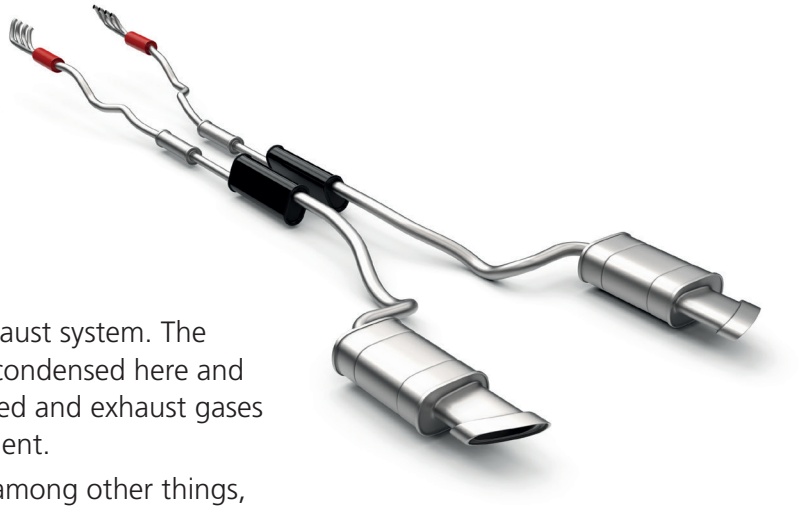
Everything in the Building factory revolves around the step-by-step assembly of the various production parts. Precise and efficient control is essential here.




Once all the components have been manufactured and assembled, the wedding of the automobile begins. Finally the assembly takes place. The car can stand on its own wheels and is made ready to run.

Before a car can be assembled, the parts of the body are of course painted. Nowadays, nothing works without robot technology. But ROSE also offers a solution for potentially explosive areas. We are happy to inform you!

If we take a look at a plant that deals with the "Powertrain" topic, we speak in automotive engineering terms of the main components that deal with the generation of energy and performance on the road. ROSE Systemtechnik has already developed a large number of solutions for the various stations in such a plant.



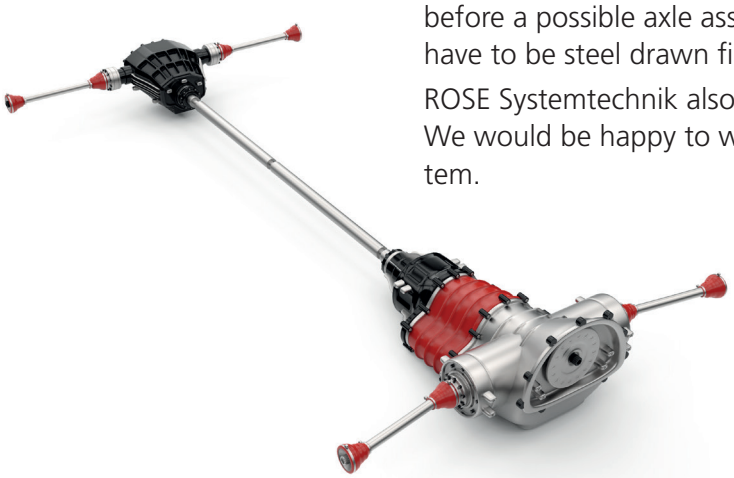
Every internal combustion engine needs an exhaust system. The exhaust gases flowing out of the cylinders are condensed here and cleaned of pollutants. Exhaust noise is dampened and exhaust gases are conducted outside of the engine compartment.

To manufacture an exhaust system, you need, among other things, pipe bending machines, welding machines and the production of soot particle filters.

Here is a solution example of how an efficient machine and system control can look like in this particular case.

- Control enclosure SL2000
- Key integration and membrane keyboard
- Scalable display sizes
- Scalable CPU-performance
- PROFINET-interface

- Control enclosure SL4000
- EKS Euchner and RFID Card Reader
- Scalable display sizes
- Ergonomic tandem height adjustment
- Electrically adjustable



Various castings are required for the production of axles. There is a production process in the foundry of the necessary steel construction before a possible axle assembly, because the supports for the axle have to be steel drawn first.

ROSE Systemtechnik also provides an individual solution in this case. We would be happy to work with you to develop your perfect system.

Whether front, rear or all-wheel drive, only with the right drive train can the power of the engine find its way onto the road. For the production of e.g. gearboxes and drive shafts in the casting or milling process, they require robust and reliable control technology.

The experts from ROSE Systemtechnik also have a solution ready at hand for this application.

- Front installation control
- IP65 at the front
- Scalable display sizes
- Scalable CPU-performance
- RFID-reader integrated behind glass

- Heightadjustable suspensionsystem GTV light
- Load up to 25kg
- Slim IPC enclosure
- VESA 100 connection
- Scalable performance

Since the chassis forms the interface to the road, it has a significant impact on the safety of the vehicle. There are many different work steps to be carried out here. Brake discs have to be cast and turned, brake pads manufactured and axles installed. An important part of the chassis construction is the shock absorber technology, the production of castings and the entire process of steel construction.

ROSE Systemtechnik has developed sophisticated control solutions for all of these applications.


The casting process plays a key role in the manufacturing of components for the automotive industry. Cylinder crankcases, crankshafts, cylinder heads, housings for disc brake systems, and much more are made in the foundry. This places high demands on the periphery: reliable conveyor technology, waste technology, extended temperature ranges, but also EMC-protected versions of products and applications are required.

- Control enclosure SL4000 frontdoor
- Stand system GTN II
- Interfaces integrated
- Signal light and Peltier cooling device
- EKS, push button and emergency stop in front panel
- Scalable built-in control

A motor does mechanical work and converts various forms of energy into kinetic energy. An electric motor, on the other hand, converts electrical power into kinetic energy. The various components in an engine are produced, among other things, in foundry machines, plastic injection machines and in machining centres, where e.g. the inductive hardening of drive shafts takes place.

ROSE Systemtechnik has been working with well-known automobile manufacturers for years and has also developed clever automation solutions for these areas of application.

| | | |
|---|---|---|
| Robust supportarm system GTN II | Heightadjustable GTV 2.0 | Control enclosure SL4000 |
| Max. load up to 80kg on 1m | Max. load up to 60 kg | Variable assignment of the front panel |
| Customer specific Panel-PC | Control ennclosure SL4000 | Integrated keyboard drawer |
| Degree of protection IP65 | Integrated keyboard drawer | Signal light |
| | Additional monitor holder on top | Scalable built-in control |

Most cars today are made in line production. The unfinished vehicle passes through numerous stations. Here, either a worker takes care of some work steps or they are carried out automatically. The car is gradually being completed in this way, here we are talking about classic assembly line production, whereby automobile manufacturers like to only manufacture the vehicles according to customer orders, i.e. „build-to-order“, with the highest possible degree of „mass customization“.

The degree of automation in the different plants differs from location to location. Therefore, individual automation solutions are always in demand.

The body shop is not only concerned with the construction of bodies, but also with repairs. ROSE supports the partially and fully automated assembly lines of the body construction with a wide variety of solutions and helps to control steel, aluminium and aluminium / steel connections in sandwich construction.

- Scalable control enclosure SL4000
- Door opens to the front
- Push buttons and controls in the front panel
- Can be rotated on a workstation
- Integrated keyboard drawer

When considering press shops, three major areas are dealt with: delivery, cutting and press lines. The material is usually delivered in the form of colis, which can weigh several tons and are delivered directly by the steel producer. First, the continuous material goes into the cut and from there on into blanking lines or other cutting lines, such as belt cutting plants where it is broken down into smaller units. Then the presses bring the material into the desired shape.

It is crucial for the manufacturers to manufacture many vehicle variations on their belts and production systems. If there are obstacles in the diversity, some activities are also moved to suppliers, logistics centres or to pre-assembly. This unburdens the final assembly and guarantees a variety of variants. The pre-assembly includes both the component pre-assembly, the engine assembly and the gear assembly, which can be automatic, shift, double clutch or electric transmission.

- Stand system GTS
- S-Line Panel-PC
- VESA connection
- „QuickLock“ quick change system
- IPC change in 30 seconds

## Assembly

As soon as the body is merged with the drive train or engine, we speak of the “wedding” in automotive engineering. If the car can stand on its own wheels, doors and flaps are reinstalled. The vehicle is filled with the corresponding operating materials, such as fuel and oil. Then the vehicle is „flashed“, now it is ensured that the control units in the vehicles contain the correct information, such as the radio central locking.

Good worker guidance is essential on the way to a fully assembled automobile. A touch panel with a central data acquisition device visualizes the individual work steps and thus represents the “brain” of such a system.

The worker guidance is comparable to a machine data acquisition system. The only difference here is that the entry is manual and not automatic. Sensor technology, industrial communication and automation are the key factors. The data acquisition in the worker guidance can thus be imagined as an electronic wagon accompanying card.

The process control technology ensures that these process engineering systems are controlled, regulated and secured. The target conditions in a production are monitored and secured, if the system is not complied with, the system sounds an alarm or activates a safety function.

- Stainless steel suspension system GTH easy
- Quick change system „QuickLock“
- Rotatable and tiltable connection
- High performance S-Line Panel-PC
- RFID-reading device behind company logo


- Stand system
- Drawer
- ESK-Euchner
- Push button and emergency stop
- Scalable displaysizes
- Scalable CPU-performance
- RFID-reader

Typical components in process control technology are fieldbus systems such as Profinet, Profibus, etc. These components can be easily installed in all touch panels, IPC and control housings from ROSE Systemtechnik. We would be happy to advise you in detail on the selection and configuration of your solutions and systems.

Since the body and all other parts are moved automatically in the factory, the corresponding conveyor technology is also required.

This means not only the direct conveying of materials, but also the associated process. All of this is part of the factory logistics. ROSE has already developed specialized solutions for these types of applications. We would be happy to develop the ideal configuration with you.

During assembly, the vehicle moves on the in-house transport system and continuously goes through the screwing technology. The securing of all screw connections is thus generally ensured and visualized using ROSE HMI SOLUTIONS. In addition, the re-screwing process can then be started. This ensures that all screw connections in the vehicle are checked again.

Today, nothing works in the paint shop without robot technology. The body and all other parts are picked up by robotic arms and then brought through various process steps.

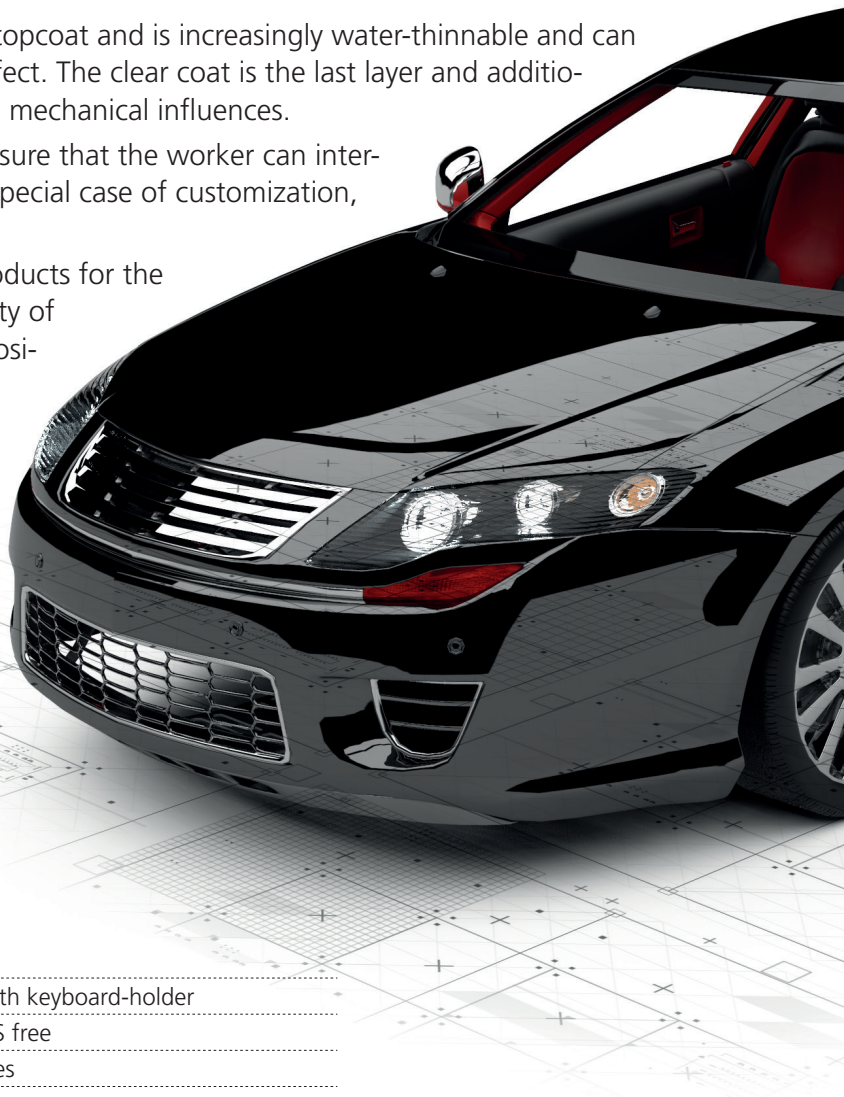
Before the actual painting process, the weld seams are treated in the automated sealing system with seam sealing. Then the body is sprayed with phosphate salt solution, now a metal-phosphate layer is formed, which is crystalline. The anti-corrosion primer is then applied to the phosphated sheet. In most cases, this is done using the CP coating (cathodic protection). This is an electrophoretic deposition process that very well coats the workpiece in an immersion bath - even if the workpiece has hard-to-reach areas.

The next step involves using filler. The surface can have unevenness that is filled in this way, protection against UV radiation of the layer below is guaranteed and there is greater flexibility in regard to annoying stone chips.

The colouring layer is referred to as a basecoat or topcoat and is increasingly water-thinnable and can contain effect pigments, e.g. a metallic or pearl effect. The clear coat is the last layer and additionally protects against chemical, environmental and mechanical influences.

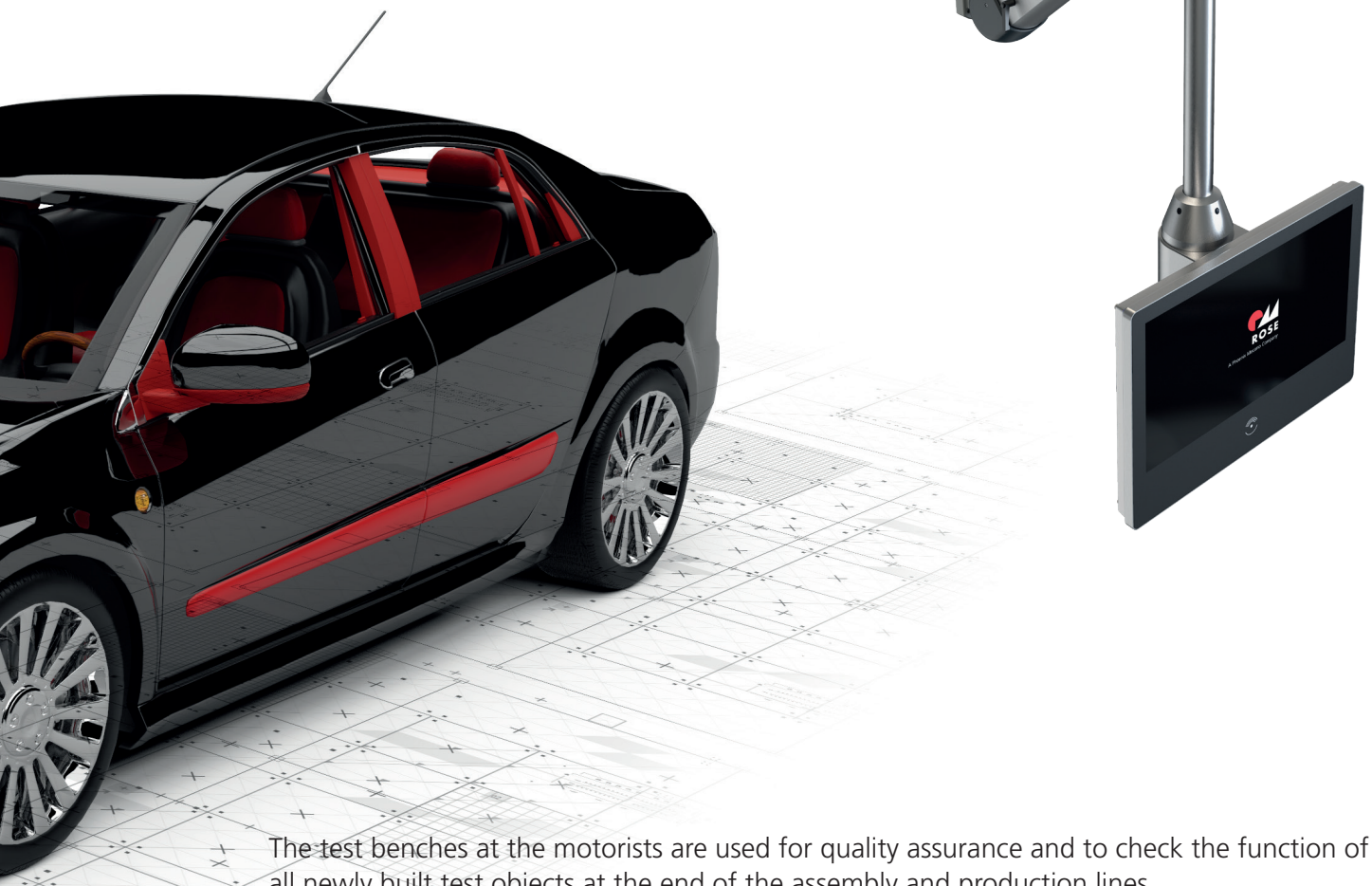
The control solutions from ROSE Systemtechnik ensure that the worker can intervene manually in this process, if necessary or in a special case of customization, and can control the process as desired.

ROSE Systemtechnik not only produces reliable products for the control area. Depending on the type and complexity of your application, we are also happy to supply explosion-proof enclosure solutions - also in the form of terminal boxes - for your requirements.




- S-Line Panel-PC with keyboard-holder
- Silicone free / LABS free
- Scalable displaysizes
- Scalable CPU-performance
- Button and emergency stop integrated in the glass

- Stainless steel Panel-PC CS-Line
- Degree of protection IP69
- Heightadjustment support arm system GTV light
- Stainless steel supportarm
- RFID-reading device behind company logo





The test benches at the motorists are used for quality assurance and to check the function of all newly built test objects at the end of the assembly and production lines.

There are different types of test benches: e.g.  an engine test bench, transmission test bench, roller test bench or brake test bench. All ensure that the car is delivered to the consumer in a safe and perfect condition.

A reliable, technically high-quality system also requires a sophisticated control system. Solutions from ROSE Systemtechnik also accompany you in the leak test, the headlight adjustment portal, the chassis geometry adjustment, and much more.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# Complete Systems

The IPCs and the classic support arm and control housing range can be found as a new product line “HMI Solutions” at ROSE.
HMI Solutions manufactures industrial panel PCs, industrial monitors, and embedded PCs for numerous industries such as the automotive industry, the food industry as well as logistics and building automation. ROSE HMI Solutions offers a wide range of products, ranging from one-off production to large series. Development and production take place in-house, so that perfect quality is always guaranteed.Industrial Panel PCs from HMI Solutions are available as a standard version or a customer-specific solution that is precisely tailored to the respective application. Both versions have a robust aluminium housing and are available as touch, multitouch or button devices with different display sizes.In recent years, ROSE has increasingly developed from a pure component manufacturer to a system provider. The company has now partially or completely equipped most of its housings with customer-specific electronics. The extensive range of support arm systems made of aluminium, steel or stainless steel also underlines the system character.With the expansion at our Hohenlockstedt location, ROSE customers benefit from a very large range of panel PCs, industrial monitors and equipment rack systems that have the right solution for every application. The comprehensive machining service with individual drillings, paintwork and assemblies makes the all-round carefree package perfect.


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# S-Line – Industrial Panel PCs / Monitors

## Technical Data

- Long-term availability of components
  Passively cooled design
- Service-friendly layout
- CPUs up to Intel Core i7
- 230V AC / 24V DC operating voltage
- Power consumption starts at just 20 W
- Wide range of operating systems

## Display

- 18,5“, 21,5“, 23,8“
  (other sizes on request)
- Resistive or industry-optimised PCAP touch
- Multi-touch ‘EagleEtch’ screen – anti-glare glass
- Usable while wearing gloves, interference suppression
- Can be cleaned while running
- LED backlight
- High luminous transmission
- Wide viewing angles (horizontal / vertical)

## Options

- RFID scanner
- Bluetooth, WLAN
- Conventional buttons, emergency stop
- Uninterruptible power supply
- Bussystems (Profinet, Arcnet, IO-Link, etc.)
- Enclosure in V4A stainless steel
- Acrylic film coating


HMI SOLUTIONS

# CS-Line – Stainless Steel Panel-PCs / Monitors

Technical Data

- Long-term availability of PC components
- Passively cooled design
- Service-friendly layout
- CPUs up to Intel Core i7
- 230V AC / 24V DC operating voltage
- Power consumption starts at just 20 W
- Various operating systems
- Hygienic, food-certified seals
- No condensation due to special membrane

Display

- 18,5“, 21,5“, 23,8“
  (special sizes on request)
- Industry-optimised PCAP touch
- Multi-touch glass - chemically anti-reflective and hardened
- Glove operable, interference suppression
- Can be cleaned while running
- LED backlight
- High luminous transmission
- Wide viewing angles (horizontal / vertical)

Options

- RFID-scanner
- Bluetooth / WLAN
- Conventional buttons, emergency stop
- Bussystems (Profinet, Arcnet, IO-Link, etc.)
- Enclosure in stainless steel V4A
- Acrylic film coating




# Quick-release Mechanism „QuickLock“

Production time is money – and downtime due to faults is very expensive. But this can be minimised, thanks to our patented ‘QuickLock’ mechanism. One person working alone and without tools can : position, lock into place – ready. Mechanically, pedestal or suspension arm mounting is possible, at various angles of pivot and tilt. The PC ports and interfaces are easily accessible in the generously proportioned, lockable terminal compartment, while being securely protected from unauthorised personnel.

- Can be installed on suspension arm systems in a few seconds – just fit and lock into place
- No tools required
- Anti-theft protection (E1 or other closure) and detent on locking bolt
- Continuously adjustable rotate/tilt function with end stop (20° up/down and 350° left/right)
- One-person panel installation and replacement
- All connections can be pre-installed (depends on suspension arm system)
- Large terminal compartment with various interfaces
- Can be fitted to all 48 mm Ø, GTN II and CP60/40 suspension arms
- Integrated, automatic device identification for panel installation/change
- Additional preconfigured hardware connection options

# Mobile Industrial PCs / Tablets

Mobile panel PCs are becoming more and more common in manufacturing, and often need to handle very harsh environments. We can always offer you the right solution for a range of industry sectors. Mature technology where space is at a premium plus simple user controls and versatile mounting options are just some of our product features. Our transflective displays also offer excellent image quality even in direct sunlight.
Our industrial and tablet PCs are ideal companions when you are out in the field. They are perfectly suited to any industrial application and have been specially designed to handle harsh conditions. A full range of accessories is available for all models shown.

- Mass storage up to 2 TB SSD
- Random access memory up to 16 GB
- Front camera
- Back camera
- 2D Barcode scanner (exept DT340)
- Long-Range BT
- 4G/LTE
- GPS (GNSS)
- NFC / RFID Reader (13,56 MHz), UHF-RFID, other on request



## DT301 – rugged Tablet, 10,1”

- Robust tablet 10,1“
- Resolution 1920 x 1080
- Brightness: 1000 cd/m²,
- IP65, MIL-STD-810G shock tested, MIL-STD-461F
- Intel® Celeron® Processor 3955U, Intel ® Core™ i5/i7 of the 8th generation
- Wi-Fi (2,4 and 5 Ghz), DT301Y: BT 4.2 LE, other models: BT 4.0 LE
- Batteries exchangeable during operation (Hot-Swap)
- Windows 10

- Robust tablet 11,6“
- Resolution 1920 x 1080
- Brightness 1000 cd/m²
- IP65, MIL-STD-810G shock tested, MIL-STD-461F
- Intel ® Core™ i5/i7 of the 8th generation
- Wi-Fi (2,4 and 5 Ghz), BT 4.2 LE
- Batteries exchangeable during operation (Hot-Swap)
- Windows 10


- Robust 13,3“ Tablet
- Resolution 1920 x 1080
- Brightness 1000 cd/m²
- IP65, MIL-STD-810G shock tested
- Intel ® Core™ i5/i7 of the 8th generation
- Wi-Fi (2,4 and 5 Ghz), BT 4.2 LE
- Batteries exchangeable during operation (Hot-Swap)
- Windows 10


- Robust 14“ Tablet
- Resolution 1920 x 1080, 4K on request
- Helligkeit 1000 cd/m²
- IP65, MIL-STD-810G shock tested
- Intel ® Core™ i5/i7 ot the 8. generation
- Wi-Fi (2,4 and 5 Ghz), BT 4.2 LE
- Batteries exchangeable during operation (Hot-Swap)
- Windows 10
- Optional with integrated NVIDIA GeForce® GTX1050 grafic card


- Operating station in a slimline design
- Siemens KP32 Integration
- Docking station incl. mechanical mounting
- NFC integrated behind Porsche emblem
- Tablet-PC 11,6“with emblem
- Intel Core i7 8. generation
- 16 GB RAM
- SSD 512GB
- IP65, MIL-STD-810G, MIL-STD-461F

The extensive range of accessories for our industrial tablet PCs round off the offer and are ideal when you are out in the field.

- Keyboard
- Digital pen
- Batteries
- Battery charger for 1 or up to 5 batteries
- Docking station
- Wall/vehicle mount cradle
- Car / truck power supply
- Carrying case, shoulder strap, handstrap
- Screen protector

# Control enclosures

## SL 4000
(PG 20)

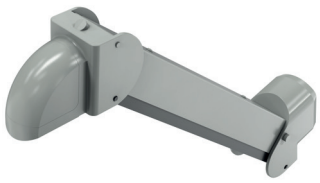
## SL 3000
(PG 20)

| | | |
|---|---|---|
| Product highlights | • Modern enclosure system for control and display systems<br>• Flexible size variability in height and width, 3 enclosure depths<br>• Easy mounting of door hinge<br>• Integrated handle system | • Universal control enclosure for automation engineering<br>• Variable size in height, width and depth<br>• Hinged door profile at front and rear<br>• Front panel insertion from front and rear |
| Technical data | | |
| Material | Profile: DIN EN 573 EN AW-AlMgSi<br>Cast corners: DIN EN AC-AlSi 12 Cu 1 (Fe) | Profile: DIN EN 573 EN AW-AlMgSi<br>Cast corners: DIN EN 1706 EN AC-AlSi 12 Cu 1 (Fe) |
| Ingress protection | IP65 to EN 60529 | IP65 to EN 60529 |
| Seal | CR or PU foam | CR or PU foam |
| Surface | Powder coating or natural anodised | Powder coating or natural anodised |
| Colour | Profile: opt. RAL 7035, light grey, or natural anodised<br>Corner element: optional RAL 7035, light grey, or RAL 9007, grey aluminium<br>Special colour on request | RAL 7035, light grey |
| Temperature range | -30 °C to +80 °C | -30 °C to +80 °C |
| Approvals | c UL us LISTED | c UL us LISTED |
| Mounting depth | 55 mm to 270 mm | 60 mm to 675 mm |
| Accessories | Handles<br>Wall holder<br>Aerator set<br>Keyboard drawer<br>Data interfaces | Handles<br>Coupling flange<br>Adapter plate<br>Locking plate<br>Keyboard drawer<br>Data interfaces |
| Included in delivery | Complete enclosure system incl. corners, seals, fixing elements, rear panel or door, front panel fixing set | Enclosure body with rear wall, fixing elements, cover profile with corners |

# Control enclosures

| | SL 2000<br>(PG 19) | Commander 450<br>(PG 56) |
|---|---|---|
| Product highlights | • Enclosure system for control and display fittings<br>• Variable size available in width and depth<br>• All-round adaption capabilities for accessories<br>• Front panel insertion from front and rear | • Stainless steel Commander for industrial controls<br>• Outstanding price / performance ratio<br>• Individual handle systems |
| Technical data | | |
| Material | Profile: DIN EN 573 EN AW-AlMgSi<br>Front plate, rear wall: DIN EN 573 EN AW-AlMg3<br>Corner: DIN EN 1706 EN AC-AlSi 12 (Fe) | Stainless steel 1.4301/304<br>other materials on request |
| Ingress protection | IP65 to EN 60529 | IP65 to EN 60529 |
| Seal | CR seal | VMQ-(Silicone) |
| Surface | Powder coating | grinded, grain 240 |
| Colour | RAL 7035, light grey<br>Handle tube: powdered RAL 3003, ruby red | |
| Temperature range | -30 °C to +80 °C | -40°C to +80°C |
| Approvals | c UL us LISTED | |
| Dimensions (H x W x D) | 155 x 483 mm to 267 x 483 mm<br>in 3 enclosure depth: 90 mm, 120 mm, 195 mm | 400 x 300 x 120 mm to<br>500 x 500 x 200 mm |
| Mounting depth | 80,5 mm, 110 mm, 185 mm | |
| Accessories | Handle set<br>Coupling flange<br>Control attachment set | Handle / handle set |
| Included in delivery | Enclosure body with rear panel or door, front panel fixing set, cover profile and T-groove cover | Enclosure with door, handles (order separately) and individual machining for installation and suspension system |

# Height adjustment systems



## GTH light
(PG 49,84)

## GTV 2.0
(PG 49,85)

Product highlights

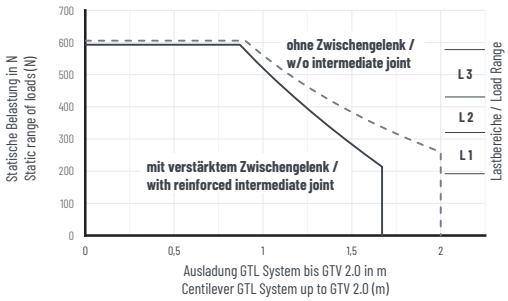
- Step less adjustment
- Adjustable end stops
- Adjustable load range
- Possible subsequent integration into existing GTN II system

- Very good hovering behavior
- Precise adaptation of the load range by users on site
- Freely positionable version
- Adjustable binding

Technical data

| | | |
|---|---|---|
| Material | | Connecting plates: S235<br>Components: EN 1706 AC-46000DF<br>Cable channel cover sheet: EN 573-3 AW-5754 H22 |
| Ingress protection | IP54 to EN 60529 | IP40 to EN 60529 |
| Load range | 5 - 25 kg | 20 - 60 kg |
| Life time | 20.000 double strokes | 25.000 double strokes |
| Colour | Diecast components: RAL 7035, light grey<br>Profile: natural anodised<br>Caps: RAL 7016, anthracite<br>Other colours on request | Connecting plates: RAL 7016<br>Cast parts: RAL 7035<br>Cable channel cover sheet: RAL 7035 |
| Surface | Powder coating | Powder coating |
| Free cable passage | approx. 40 x 20 mm | approx. 40 x 30 mm |
| Temperature range | 0 °C to appr. 80 °C | 0 °C to appr. 80 °C |
| System length | 454 mm, 573 mm, 714 mm<br>(depending on weight classes) | 1050 mm |
| System stroke | 400 mm, 600 mm, 800 mm | 400 - 961 mm |

Load diagram



# Suspension systems

## GTS
(PG 49,44)

## GTN II
(PG 49,47)

Product highlights

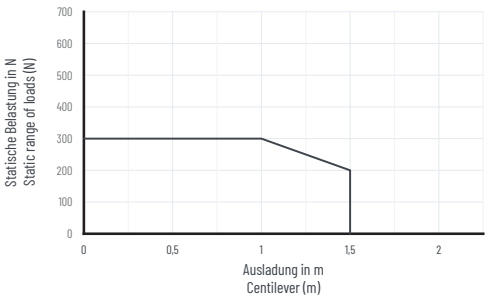
- Aluminium profile suspension system for light/medium loads up to 30 kg
- Product family GTN / GTS / GTL
- Combined with all Commander systems
- Adjustable version for individual loads

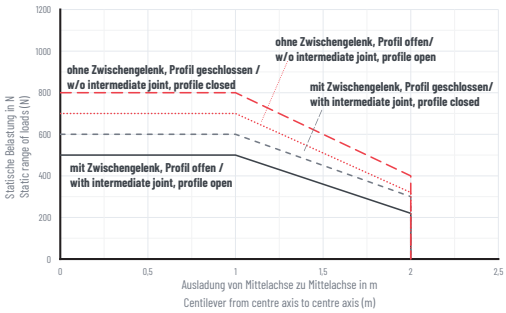
- Design aluminium suspension system
- Closed profile system / profile with free accessible cable duct
- Can be combined with all control enclosures

Technical data

| | GTS | GTN II |
|---|---|---|
| Material | Connecting tube: DIN EN 573 EN AW-AlMgSi<br>Components: DIN EN 1706 EN AC-AlSi 12 (Fe) | Connecting tube: DIN EN 573 EN AW-AlMgSi<br>Components: DIN EN 1706 EN AC-AlSi 12 (Fe)<br>Cover profile: TPE |
| Ingress protection | IP54 to EN 60529 | IP54 to EN 60529 |
| Seal | CR or PU foam | CR or PU foam |
| Painting | Tube, components: RAL 7035, light grey | Tube, components: RAL 7035, light grey<br>Cover profile: RAL 9005, jet black |
| Surface | Powder coating | Powder coating |
| Free cable passage | Connecting tube: 53 x 19 mm<br>System components: 53 x 19 mm | Connecting tube: open 51 x 34 mm<br>Connecting tube: closed 55 x 56 mm<br>System components: 53 x 48 mm |
| Temperature range | -25 °C to +60 °C | -25 °C to +60 °C |
| Max. statische Belastung | 30 kg/1 m | 80 kg/1 m |

Load diagram



# Suspension systems

## GTL
(PG 49,62)

## GTH 48 easy / GTH 60 easy
(PG 57)

**Product highlights**

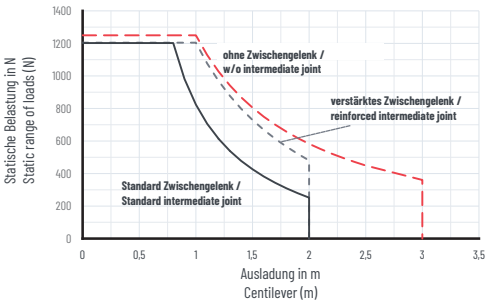
- Aluminium profile suspension system for heavy loads
- Can be combined with GTN II suspension system/heightadjustment system GTV and control enclosures
- Optional adjustment for horizontal alignment of the profile

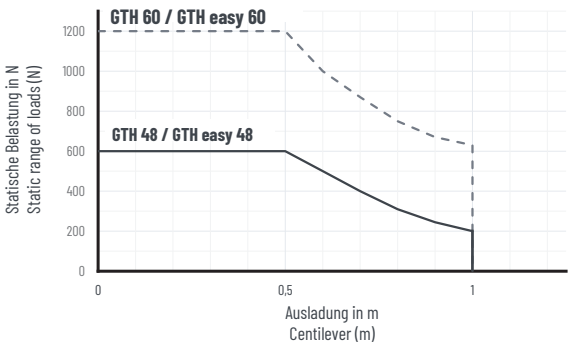
- Compact, slim design
- Significantly reduced installation effort
- Ideal alternative to self-made construction solutions
- Reduction of edges and gaps of the system and less dead space

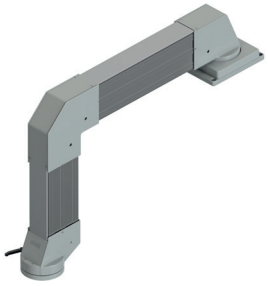
**Technical data**

| | GTL | GTH 48 easy / GTH 60 easy |
|---|---|---|
| Material | Connecting tube: DIN EN 573 EN AW-AlMgSi<br>Components: DIN EN 1706 EN AC-AlSi 12 (Fe)<br>Cover plate: PS | Tube: Stainless steel 1.4301<br>System components: Stainless steel 1.4301 |
| Ingress protection | IP54 to EN 60529 | IP69 to EN 60529 |
| Seal | CR or PU foam | CR or PU foam |
| Surface | Powder coating | Tube: grinded, grain 240 |
| Colour | Tube an components: RAL 7035, light grey<br>Cover profile: RAL 9005, jet black | |
| Free cable passage | Tube and components: Ø 70 mm | GTH 48: 41 mm<br>GTH 60: 53 mm |
| Temperature range | -25 °C to +60 °C | -25 °C to +60 °C |
| Max. static load | 125 kg/1 m | GTH 48: 80 kg/0.5 m - GTH 60: 120 kg/0.5 m |

**Load diagram**





## GTK 80
(PG 49,90)

## GT 48/2
(PG 49,49)

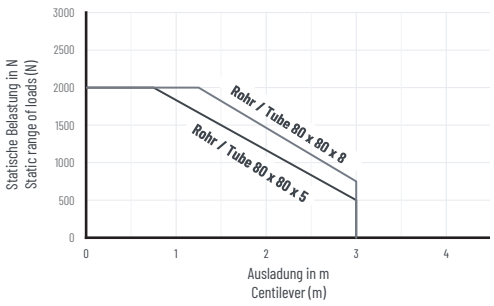
**Product highlights**

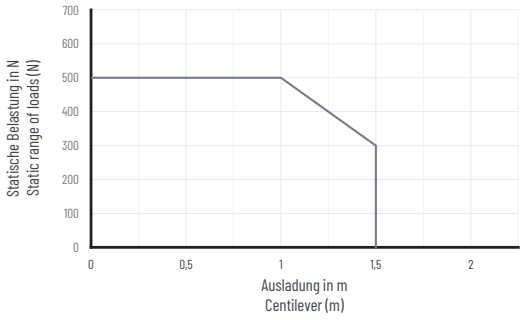
- Industrial square suspension system with open cable duct for heavy loads
- Modular construction with cable channel
- Floor, top-mounting or wall exit options

- Industrial circular tube system for control enclosures
- Modular construction for individual components
- Protected internal cable routing

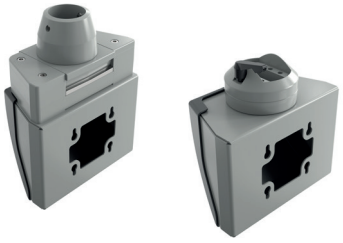
| | GTK 80 (PG 49,90) | GT 48/2 (PG 49,49) |
|---|---|---|
| Material | Connecting tube: square ST 37 similar to DIN EN 10305-5<br>Wall thickness 5 mm or 8 mm<br>Components: spheroidal graphite cast iron and/or cast aluminium<br>Cable duct / cover: aluminium extruded profile<br>Bearing: ball bearing,<br>Bellow: textile fabric | Connecting tube: Steel 48 x 4 mm DIN 2393-St. 37<br>Components: DIN EN 1706 EN AC-AlSi 12 (Fe) |
| Ingress protection | with top-mounting flange: IP65 to EN 60529 | IP54 to EN 60529 |
| Seal | CR or NBR | CR or NBR |
| Surface | Powder coating | Powder coating |
| Colour | Cable duct / cover: RAL 7035, light grey<br>Components: RAL 7043, traffic grey B<br>Special colour on request | Tube: galvanized<br>Components: RAL 7043, traffic grey B<br>Special colour on request |
| Free cable passage | 57 cm² | Connection tube: 40 mm diameter<br>System elements: 40 mm diameter |

**Load diagram**



## Suspension systems



### Flat Panel Adapter
(PG 50)

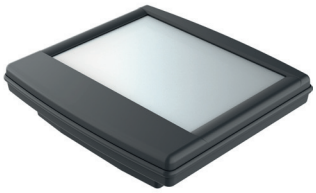
- Turn-tilt coupling for the individual connection between the enclosure and ROSE suspension systems
- Optional inclination range of +/- 20°
- On request, we process the adapter individually and, for example, drill holes in the sides of the connection space, e.g. for cable glands

### Moterm II
(PG 50)

- Mobile stand system for control components
- Version with 4 rollers or with foot stand
- Fixed or height-adjustable version with pneumatic spring
- Optionally foot stand for anchoring

Technical data

| | | |
|---|---|---|
| Material | Connection compartment: Stainless steel 1.4301<br>Inclining adjustment: Stainless steel 1.4301<br>Deckel: ABS | Base and stand profile: Aluminium profile system<br>DIN EN 573 EN AW-AlMgSi |
| Ingress protection | with GTS coupling: IP54<br>with GTH coupling: IP65 | IP54 to EN 60529 |
| Dichtung | CR or NBR | |
| Surface | Powder coating | Stand profile: plain anodised, power-coated optional |
| Colour | Connection compartment: RAL 7035, optional special colour<br>Inclining adjustment: RAL 7035, optional special colour<br>Lid: RAL 7021 | Foot: RAL 9005, jet black |
| Max. static load | 25 kg | 8 - 80 kg |
| Free cable passage | GTS: 53 x 19 mm<br>GTH: Ø 41 mm | |
| System height | | 908 - 1149 mm (depending on type) |
| Stroke | | up to 242 mm (depending on type) |

Pilot 10/20:
Enclosure with handle and wall holder

## Limanda
(PG 27)

## Pilot 110-150
(PG 29)

Product highlights

- Polyamide hand held enclosure for MCR, automation engineering and data acquisition
- For installations and command devices mobile and stationary applicable
- Variable mounting depths

- Polyamide hand enclosure for automation and control engineering
- Version with handle and integrated cable entry
- Large fitting space

Technical data

| | | |
|---|---|---|
| Material | Enclosure: Polyamide<br>border profile: NBR | Polyamide<br>Front plate: Polystyrol |
| Ingress protection | IP65 to EN 60529 | IP65 to EN 60529 |
| Flammability | UL 94 V-2 | UL 94 HB |
| Surface resistance | $10^{12}$ Ohm, IEC 60093 | |
| Colour | RAL 7021, black grey<br>border profile: RAL 9005, jet black | RAL 1003, signal yellow |
| Temperature range | -20°C to +60°C | -40°C to +60°C |
| Other versions on request | EMC | |
| Dimensions (H x W x D) | 270 x 248 x 64 mm to<br>311 x 281 x 97 mm | 85/75 x 85 x 191 mm to<br>105/75 x 85 x 266 mm |
| Accessories | Holder<br>Carrying strap<br>Quiver<br>Front plate<br>Intermediate frame<br>Inclining adapter | Wall holder |
| Included in delivery | Clam sheel enclosure with top and base, each with fixing domes incl. seals and border profile,<br>3 cover flaps for interface garages, screws and fixing materials for front panel mounting | Enclosure with handle, including cable gland M 20 x 1.5, front plate, enclosure and front panel screws, and wall holder |

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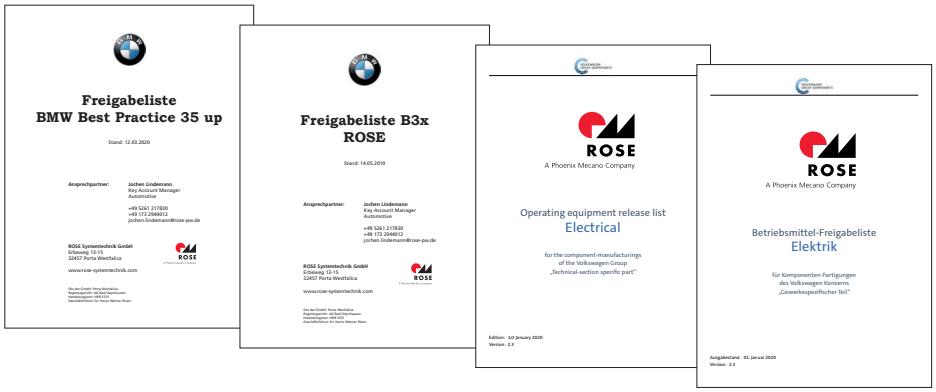


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