N&H Technology GmbH

PRODUCT RANGE

System supplier for HMI operating units

ENGINEERING | PRODUCTION | LOGISTICS

COMPLETE SOLUTIONS & ASSEMBLIES

KEYBOARDS & BUTTONS

CABLE ASSEMBLIES & CONNECTORS

MOLDED PARTS & TOOLMAKING

TÜVRheinland ZERTIFIZIERT
Management System ISO 9001:2015
www.tuv.com ID 9105016406

N&H Technology GmbH

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2001

Founded in Krefeld with a team of four employees.

2012

New headquarters in Willich with in-house test laboratory and logistics center.

2013

Opening of our Shanghai office to strengthen local engineering and supplier support.

2021

Expansion of logistics capacity to support further growth.

2023

Majority stake in SNT Technology Co., Ltd. Own production of HMI solutions.

2026

25 years of HMI expertise. More than 50 employees. Ready for the next generation of input solutions.

ABOUT N&H TECHNOLOGY

N&H Technology is a reliable full-service partner for electromechanical assemblies, customized molded parts, and components, with a strong focus on HMI control units. Founded in 2001, we combine the flexibility of a medium-sized German company with a robust technical and organizational infrastructure.

Through our established global supplier network and close coordination with our subsidiary in Shanghai, we deliver cost-efficient, high-quality manufacturing solutions.

Our partners are certified to international standards including DIN ISO 9001, ISO 14001, IATF 16949, and DIN ISO 13485. Product quality is ensured by our in-house testing and inspection laboratory at our Willich site.

In 2023, we further strengthened our expertise in membrane keyboards and input systems through the majority acquisition of a highly specialized electronics manufacturer in China. Direct oversight of production enables consistent quality, efficient processes, and customer-specific solutions.

Our customers include leading companies in automotive, medical technology, telecommunications, industrial automation, and building management. Long-term partnerships and high customer satisfaction underline our performance.

Driven by an experienced international team, N&H Technology stands for innovation, quality, and reliability – your trusted partner for demanding electromechanical solutions.

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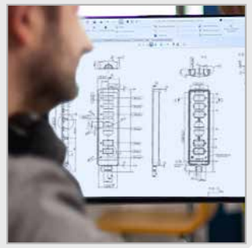
FROM IDEA TO SERIES PRODUCTION

From concept to series production, we support our customers throughout every stage of the product development process. Combining engineering expertise, manufacturing know-how and global sourcing, we deliver efficient and reliable solutions from a single source.

Our integrated approach reduces interfaces, shortens development cycles and ensures smooth project execution—from the initial idea to the finished product.

Technical Consulting

Product Engineering



Manufacturing

Final Product

Assembly

End-To-End Logistics

Buffer Stock

OUR SERIVCES

TECHNICAL SUPPORT

- From concept to series production
- Feasibility studies
- Design optimization
- Material selection support
- Manufacturing consulting
- Cost optimization

ENGINEERING & DESIGN

- Development of HMI components and complete assemblies
- Plastic part and enclosure design
- Silicone keypad and membrane switch design
- 3D CAD design
- Design for Manufacturing (DFM)
- Technical drawings and production documentation
- Functional prototypes using 3D printing

TESTING & VALIDATION

- Project-specific validation testing
- Electromechanical testing
- Optical and acoustic testing
- Material analysis
- Surface, insulation and conductivity measurements
- Failure analysis for third-party products

PURCHASING

- Global component sourcing
- Procurement of third-party components
- Supply chain optimization

LOGISTICS

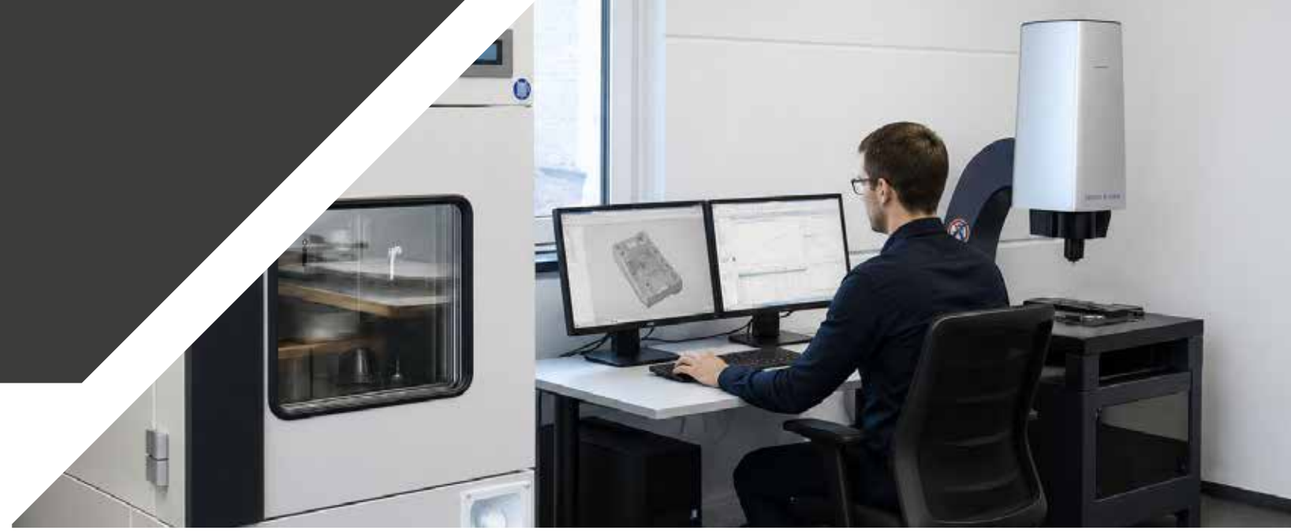
- End-to-end logistics management
- Buffer stock and safety inventory
- Warehousing and logistics services in Willich, Germany
- Worldwide shipping and customs handling

LABORATORY & VALIDATION

Reliable Validation for Industrial HMI Components

Our in-house laboratory supports product development, qualification and quality assurance with a wide range of mechanical, electrical and environmental tests. This enables early validation, shorter development cycles and reliable series production.

Our testing services are included free of charge for N&H Technology products during development and qualification. We also perform testing and failure analysis for third-party products on request.



VALIDATION CAPABILITIES

Comprehensive testing ensures the reliability, durability and functionality of every HMI component throughout development and series production.

ELECTRICAL TESTING

- Contact resistance
- Operating force
- Current carrying capacity
- Cable testing

MECHANICAL TESTING

- Actuation force
- Life cycle testing
- Peel strength
- Adhesion testing

OPTICAL INSPECTION

- Microscope inspection
- Color measurement
- Surface analysis
- Backlight evaluation

ENVIRONMENTAL & FUNCTIONAL TESTING

- Climate chamber
- Temperature & humidity testing
- Acoustic measurements
- Functional validation
- Material analysis
- Prototype verification

REFERENCES

Our customers include leading companies from the industrial automation, medical technology, building automation, telecommunications and automotive sectors.

The examples shown represent only a small selection of the customized HMI solutions we have developed and manufactured for our customers.

YOUR PROJECT

FROM CONCEPT TO SERIES PRODUCTION

N&H Technology supports your project from the initial idea through engineering and prototyping to series production. Our interdisciplinary team combines development expertise, global sourcing and manufacturing know-how to deliver reliable, cost-efficient HMI solutions.

YOUR REQUEST

To prepare a quotation, we typically require:

- Technical drawings, sketches or samples
- Technical specifications
- Required options and features
- Estimated annual demand

Upon request, a Non-Disclosure Agreement (NDA) can be signed prior to the exchange of confidential information.

PERSONAL CONSULTATION

Whether online, by phone or in person, our engineers are available to discuss your application and recommend the most suitable solution for your project.

OUR SHOWROOM

Visit our showroom in Willich to explore a wide range of HMI components, assemblies and customized solutions. Experience materials, functions and product quality firsthand.

WHY CUSTOMERS CHOOSE N&H TECHNOLOGY

- Engineering expertise
- Customized solutions
- Global sourcing
- Reliable series production
- Complete HMI assemblies
- More than 25 years of experience

PRODUCT RANGE

Everything for your HMI - from a single source.

Our portfolio combines custom-engineered HMI components with a comprehensive range of proven standard products. Whether you require individual components or complete assemblies, we support your project from development and sourcing to series production.

CUSTOM ENGINEERED SOLUTIONS

HMI COMPONENTS

- Silicone Rubber Keypads
- Membrane Keypads
- Capacitive Touch Panels
- Front Panels
- Buttons & Switches

MOULDED COMPONENTS

- Plastic Parts
- Rubber Parts
- Metal Parts
- Glass Components
- 2K / 3K Parts

ELECTROMECHANICAL COMPONENTS

- Cable Assemblies
- Connectors
- Pogo Pins
- PCB

STANDARD COMPONENTS

INPUT DEVICES

- Stainless Steel Keyboards
- Hygienic Keyboards
- Pushbuttons
- Piezo Buttons
- Capacitive Buttons
- Microswitches

CONNECTIVITY

- Spring Contacts
- High Current Connectors

DISPLAY & SIGNAL

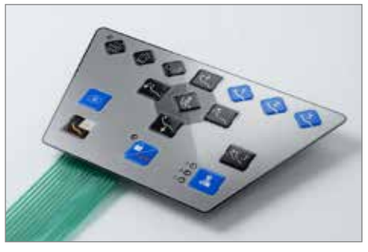
- TFT Displays
- Buzzers
- Transducers

EXPLORE OUR ONLINE CATALOG

Thousands of standard components available online. Browse technical specifications, request samples and send inquiries directly.
katalog.nh-technology.de

HMI COMPONENTS

MEMBRANE KEYPADS



COMPLETE HMI INTEGRATION

Membrane keypads can be integrated with displays, plastic housings, carrier plates, cable assemblies and electronics to create complete, ready-to-install HMI assemblies from a single source.

TECHNOLOGY
Tactile Feedback Metal domes or embossed keys
LED Illumination Icons and symbols with backlighting
Integrated Functions Duraswitch & RFID / NFC functions
EMC / ESD shielding Protection against interference
Capacitive touch Hybrid membrane solutions
Carrier plates Plastic or aluminum backplates

DESIGN
Screen & digital printing
Embossed keys
Metal dome integration
Surface textures & finishes
Windows & display cut-outs

Development & Manufacturing Expertise

N&H Technology develops customized membrane keypads from concept to series production.

We support material selection, circuit design, tactile optimization, prototyping and manufacturing to achieve reliable HMI solutions with long service life.

Our engineering team focuses on cost-efficient production, high-quality materials and seamless integration into complete HMI assemblies.

FACTS

- Actuating force: 40g - 750g
  2000g with metal dome
- Key stroke: 0.1mm -1.5mm
- Service life > 1 million cycles
- Current carrying capacity up to 2A
- IP protection available
- Resistant to moisture & chemicals

DESIGN GUIDES

Scan to download our Membrane keypad design guide

HMI COMPONENTS

SILICONE RUBBER KEYPAD

Custom-Engineered for Your Application

Silicone rubber keypads combine reliable switching performance with excellent tactile feedback and high design flexibility. They are widely used as user interfaces in industrial, medical, automotive, and electronic applications.

In addition to providing a precise switching function, silicone keypads can integrate sealing features, helping to protect sensitive electronics from dust and moisture. We support you from material selection and design optimization through to series production, ensuring a solution tailored to your technical and commercial requirements.

FACTS

- Actuation force: 20g - 500g
- Key travel 0.3mm - 0.5mm
- Service life at least 10 million cycles
- Current carrying capacity up to 2A
- Resistant to moisture, dirt & chemicals

FEATURES	SPECIAL MATERIALS	KEY DESIGN
Injection-molded keypad on plastic	Highly transparent silicone	Plastic & Metal caps
Integrated light guides for spot	Phosphorescent silicone	Epoxy coating
Individual key backlighting		Laser engraving
Mounting holes for easy integration		Printing

More Than a Keypad – A Complete HMI Solution

Silicone rubber keypads are only one part of a reliable human-machine interface. N&H Technology develops and manufactures complete HMI assemblies by combining silicone keypads with plastic housings, PCBs, display windows, electronics, cable assemblies and customized front panels.

From the initial design phase to series production, we support our customers with engineering, material selection, tooling, validation and final assembly. The result is a ready-to-install solution that reduces interfaces, simplifies procurement and shortens time to market.

COMPLETE HMI ASSEMBLY

- Silicone rubber keypad
- Plastic housing & injection-molded parts
- PCB assembly
- Display integration
- Cable assemblies & connectors
- Front panels & overlays
- Optical bonding & sealing
- Functional testing and final assembly

DESIGN GUIDE

Scan to download our silicone rubber keypad design guide

HMI COMPONENTS

BUTTONS

Designed for Industrial Applications

From illuminated push buttons to wear-free piezo and capacitive buttons, N&H Technology develops reliable input solutions for demanding HMI applications.

Our products are available as proven standard components or fully customized solutions, combining reliable operation with long service life and robust industrial performance.

Working closely with our customers, we develop application-specific solutions with customized housing designs, illumination concepts, symbols, connection options and electrical specifications.

PUSH BUTTONS

- Installation Ø 12mm - 30mm
- Protection class IP65 / IP67
- Current carrying capacity: 2A / 5A
- Multicolor LED illumination
- Multiple connection options

PIEZO BUTTONS

- Protection class IP68
- Installation Ø 16mm, 19mm, 22mm
- Actuating force: 2N to 6N
- LED lighting with multicolor effect
- Service life ≥ 50 million cycles

CAPACITIVE BUTTONS

- Installation Ø 16 mm, 19 mm, 22 mm
- Protection class up to IP69K
- Multicolor LED illumination

CUSTOMIZATION OPTIONS

Configure your button to match your application, environment and design requirements.

MECHANICAL	ELECTRICAL	VISUAL
Housing dimensions	Connection types	Housing colors
Button shapes	Electrical specifications	LED illumination
Housing materials	Actuation force	Symbols & legends
Surface finishes	IP protection class	Laser engraving
	Terminal options	

ONLINE CONFIGURATOR

With over 50,000 possible variants across four product series, push buttons can be tailored to your specific requirements. Our online configurator simplifies the selection and configuration process.

MOULDED COMPONENTS

CUSTOM MOLDED PARTS

From Custom Molded Parts to Complete HMI Assemblies

From simple sealing elements to complex technical components, N&H Technology develops and manufactures custom moulded parts made from silicone, rubber and engineering plastics.

Designed to meet your exact mechanical, thermal and environmental requirements, our components ensure reliable performance in demanding industrial applications.

Beyond individual moulded parts, we also manufacture complete sub-assemblies by integrating membrane switches, silicone rubber keypads, PCBs, cable assemblies, connectors, metal inserts and other functional components.

From engineering and material selection to tooling, moulding and final assembly, we provide ready-to-install solutions from a single source.

FEATURES

- High precision and repeatabilit
- Excellent sealing and damping properties
- Single- and multi-component moulding
- Metal insert molding
- Complete sub-assembly manufacturing
- Prototype to high-volume production

CUSTOMIZATION OPTIONS

Select the ideal material, manufacturing process and design features for your application.

MATERIAL	MANUFACTURING	DESIGN
Silicone	Shore hardness (Shore A)	Part geometry
Rubber (EPDM, NBR, CR, FKM, etc.)	Material approvals (FDA, UL, etc.)	Dimensions
Commodity plastics (PE, PS, PP, etc.)	Overmoulding	Color matching
Engineering plastics (ABS, PA6, PET, PBT, PMMA, PC, etc.)	Metal inserts	Surface textures
High-performance plastics (PEI, PBI, PPS, PPE, LCP, etc.)	Tight tolerances	Logos & markings
Bio-based plastics	Flame-retardant materials	

ENGINEERING RESOURCES

Scan to download our design guide for plastic molded parts or order your free VDI / SPI surface sample card.

MOULDED COMPONENTS

CUSTOM MOLDED PARTS

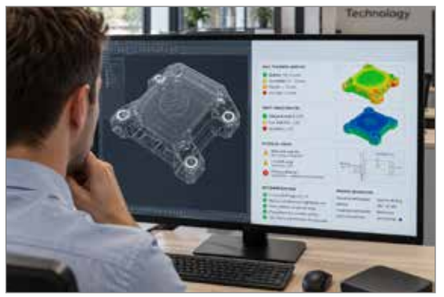
ENGINEERING SUPPORT

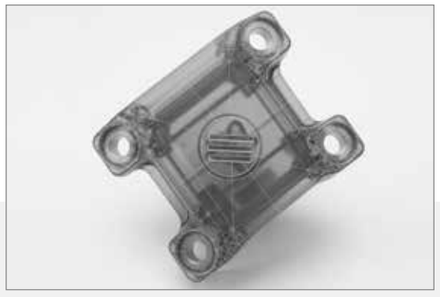
From concept to series production, N&H Technology supports the entire development process for custom molded parts.

Our engineering team coordinates design, prototyping, tooling, validation and series production to ensure an efficient, reliable and cost-effective project execution.

FEATURES

- Design and development of custom moulded parts
- Design for Manufacturing (DFM) support
- Feasibility studies and design optimization
- Cost optimization through material and process selection
- Mold flow analysis and computer-aided simulation
- Rapid prototyping using 3D printing
- Tool design and toolmaking
- Sample production and validation
- Series production and assembly





DESIGN FOR MANUFACTURING (DFM)

We optimize every component for efficient manufacturing, reduced tooling costs and reliable series production.

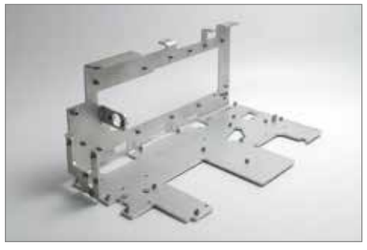
PROCESS	DESIGN	MATERIAL	COST	QUALITY
Selection of the most suitable manufacturing process.	Design optimized for the selected manufacturing process.	Selection based on functional & manufacturing requirements	Optimized for tooling, production efficiency & cost.	Designed for consistent quality & reliable production.

DFM INCLUDES
Part geometry optimization
Wall thickness analysis
Draft angle optimization
Material selection
Tolerance review
Gate and runner optimization
Cost reduction analysis

CUSTOMER BENEFITS
Lower tooling costs
Shorter development cycles
Optimized production processes
Improved product quality
Reduced material consumption
Faster time-to-market
Reliable series production

MOULDED COMPONENTS

CUSTOM MOLDED PARTS



METAL PARTS

Metal Components for Industrial Applications

N&H Technology develops and supplies custom metal components for demanding industrial and HMI applications. From housings and heat sinks to precision-machined and stamped parts, we deliver high-quality metal components tailored to your mechanical, thermal and functional requirements.

In addition to individual metal parts, we integrate inserts, threaded components and sealing elements into complete assemblies, providing ready-to-install solutions from a single source.

FEATURES

- Aluminum and stainless steel components
- Precision-machined and stamped parts
- Custom housings and heat sinks
- Extruded and die-cast components
- Threaded inserts and bearing bushes
- Contact and busbar solutions
- Surface finishing and coatings
- Integration into complete assemblies

GLASS COMPONENTS

Precision Glass Solutions for HMI Applications

N&H Technology develops and manufactures custom glass components for demanding HMI and industrial applications

Whether used as cover glass, display windows or front panels, our glass solutions combine high optical quality with outstanding mechanical strength and can be customized with a wide range of processing and surface treatments.

FEATURES

- Cover glass, front panels and display windows
- Decorative and functional glass components
- Capacitive touch glass
- Acrylic (PMMA)
- Thermally Tempered Glass
- Chemically Strengthened Glass
- Custom printing and graphics

OPTICAL COATINGS
Anti-reflex (AR)
Anti-glare (AG)
PDP filter glass
ITO coating
EMI / RFI shielding
Optical filter coatings
Custom coating solutions

PROCESSING
CNC cutting and milling
Holes and cut-outs
Edge grinding and polishing
Drilling and countersinking
Sandblasting and etching
Screen and digital printing
Optical bonding

CONNECTIVITY

CABLE ASSEMBLY & CONNECTORS

PRODUCT RANGE
Power cables
Signal cables
Data cables
Coaxial cables
FFC/FPC Cable
High-flex cables
Spiral cables
Hybrid cables
Customized cable solutions

CABLE ASSEMBLY

Custom Cable Assemblies for Industrial Applications

N&H Technology develops and manufactures customized cable assemblies for demanding industrial applications.

From single cable assemblies to complex wiring harnesses, our solutions ensure reliable power and signal transmission tailored to your electrical and mechanical requirements.

As part of complete HMI assemblies, our cable assemblies can be integrated into ready-to-install solutions from a single source.

FEATURES

- Custom cable assemblies and wiring harnesses
- Power, signal and data cable solutions
- Wide range of connector systems
- Overmolded cable assemblies
- High-flex and shielded cables
- Prototype to mass production
- 100% electrical testing
- Integration into complete assemblies

MAGNETIC CABLE & CONNECTORS

Customized Magnetic Connector Solutions

N&H Technology develops and manufactures customized magnetic connectors, including complete cable assembly, for demanding industrial applications.

From concept and engineering to series production, we provide application-specific solutions that combine reliable electrical performance with intuitive handling.

FEATURES

- Custom design and development
- Complete cable assembly
- Current carrying capacity up to 15 A per contact (depending on contact design)
- Self-aligning magnetic connection
- Shock- and vibration-resistant design
- Reverse polarity protection through defined magnetic orientation
- Adjustable magnetic holding force
- Protection classes up to IP67

MAGNETIC CONNECTOR GUIDE

Scan to explore design options, technical specifications and applications.

CONNECTIVITY

POGO PINS & CONNECTORS

POGO PINS

Reliable Spring Contact Solutions for Industrial Applications

N&H Technology develops and manufactures high-quality spring contacts and pogo pin solutions for reliable power and signal transmission.

From individual spring contacts to complete connector systems, our solutions are engineered for demanding industrial applications requiring high durability, low contact resistance and long service life.

Our spring contacts can be integrated into customized magnetic connectors, charging systems, docking stations and complete electromechanical assemblies.

FEATURES

- Current carrying capacity up to 15 A
- Contact resistance <10 mΩ
- Up to 1 million cycles
- Gold-plated contact surfaces
- High vibration resistance
- SMT and THT versions
- RoHS & REACH compliant

DESIGN VARIANTS
Standard spring contacts
High-current contacts
SMT spring contacts
Double-ended spring contacts
Threaded spring contacts
Right-angle spring contacts
Custom contact solutions

CUSTOMIZATION
Spring force 20–900 g
Surface coatings (e.g. Super-AP)
Current up to 15A
Mounting style
Connection type
Pin geometry
Housing geometry

CUSTOM POGO PIN CONNECTORS

N&H Technology develops application-specific pogo pin connectors with customized pin layouts, housing designs and electrical characteristics.

From individual contacts to complete connector systems with cable assemblies and overmolded housings, we deliver reliable, ready-to-install solutions tailored to your requirements.

POGO PIN CATALOG

Explore our standard spring contacts, technical data and design options.

STANDARD SOLUTIONS

Complementary standard components for complete HMI solutions.

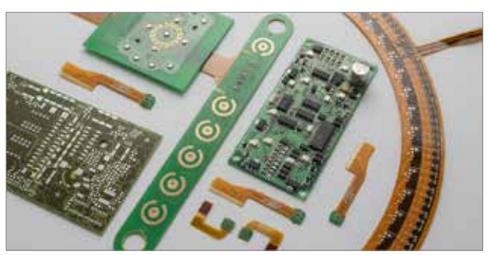
ACOUSTIC COMPONENTS

Reliable Acoustic Solutions

Our portfolio includes buzzers, transducers, speakers and microphones for industrial and HMI applications. Available in SMD, THT and custom designs, they provide reliable acoustic feedback and signal generation.

PCB ASSEMBLY

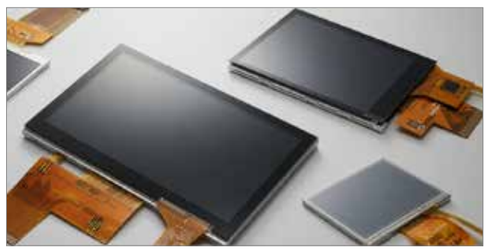
Complete Electronic Assemblies



We provide PCB assembly services from prototypes to high-volume production. Combined with our HMI components, we deliver complete electromechanical assemblies from a single source.

LCD & TFT DISPLAYS

Display Solutions for Modern HMIs



From monochrome LCDs to high-resolution TFT displays, we supply display technologies tailored to your application. Optional touch integration and optical bonding ensure excellent readability and user experience.

MICROSWITCHES

Precision Switching Solutions

Our range includes high-quality microswitches for reliable switching performance in industrial, medical and consumer applications. Various actuator types and electrical ratings are available.

INDUSTRIAL MEMBRANE KEYBOARDS

Designed for harsh industrial environments, these keyboards offer excellent resistance to dust, water, chemicals and mechanical stress. Available with IP67/IP68 protection and customized layouts.

MEDICAL & HYGIENIC KEYBOARDS

Developed for healthcare and hygienic environments, these keyboards feature sealed, easy-to-clean surfaces with high resistance to disinfectants and cleaning agents.

STAINLESS STEEL KEYBOARDS

Robust stainless steel keyboards for industrial and public applications. Featuring vandal-resistant construction, laser-engraved legends and IP-rated protection for long-term reliability.

CAN'T FIND THE RIGHT PRODUCT?

Looking for a specific component not shown in this catalog?
Through our global supplier network, we can source a wide range of additional HMI components.
Our team will support you in finding the right solution.

LET‘S START YOUR NEXT PROJECT

Whether you need a single component or a complete HMI assembly, our engineering team supports you from concept to series production. Together, we develop reliable, manufacturable and cost-effective solutions tailored to your application.

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V-Card

N&H Technology GmbH

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YOUR SOLUTION.

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