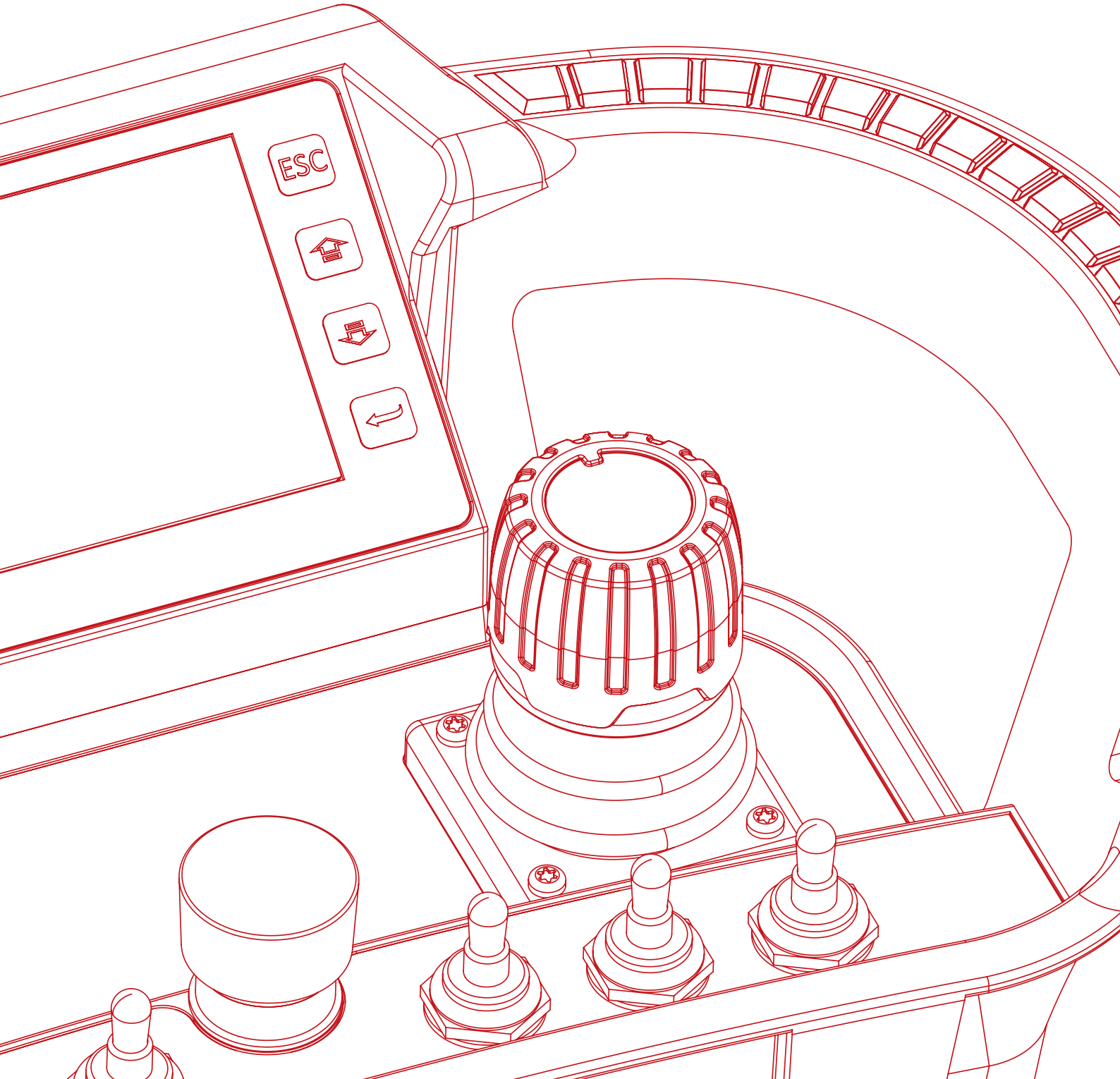
Radio Remote Controls



Your partner for Radio Control Systems Cable Control Systems Infrared Control Systems

Safe Radio Control Systems by NBB – for over 40 years

Easy Movement

Since our founding in 1977 we have been able to establish ourselves as market leaders for digital safety radio control systems.

It's our mission to offer you the perfect technically matured solution with the newest technology and safety standards.

Besides the delivery of the standard version of our products, we additionally offer the possibility to customize your transmitter to your complete satisfaction.

We live by the motto: Easy Movement – and that's why we're constantly investing in the continuous development of our products and technologies. By doing so, always keeping our customers' needs in mind – should they be safety, convenience, efficiency or whatever else it may be.

Made in Germany
Production & development as well as components & software are located centrally in Germany

Global Presence
Subsidiaries in USA & China. Global network of dealers and partners.

Customization
Flexible design of all transmitters. Adaptation to customer needs.

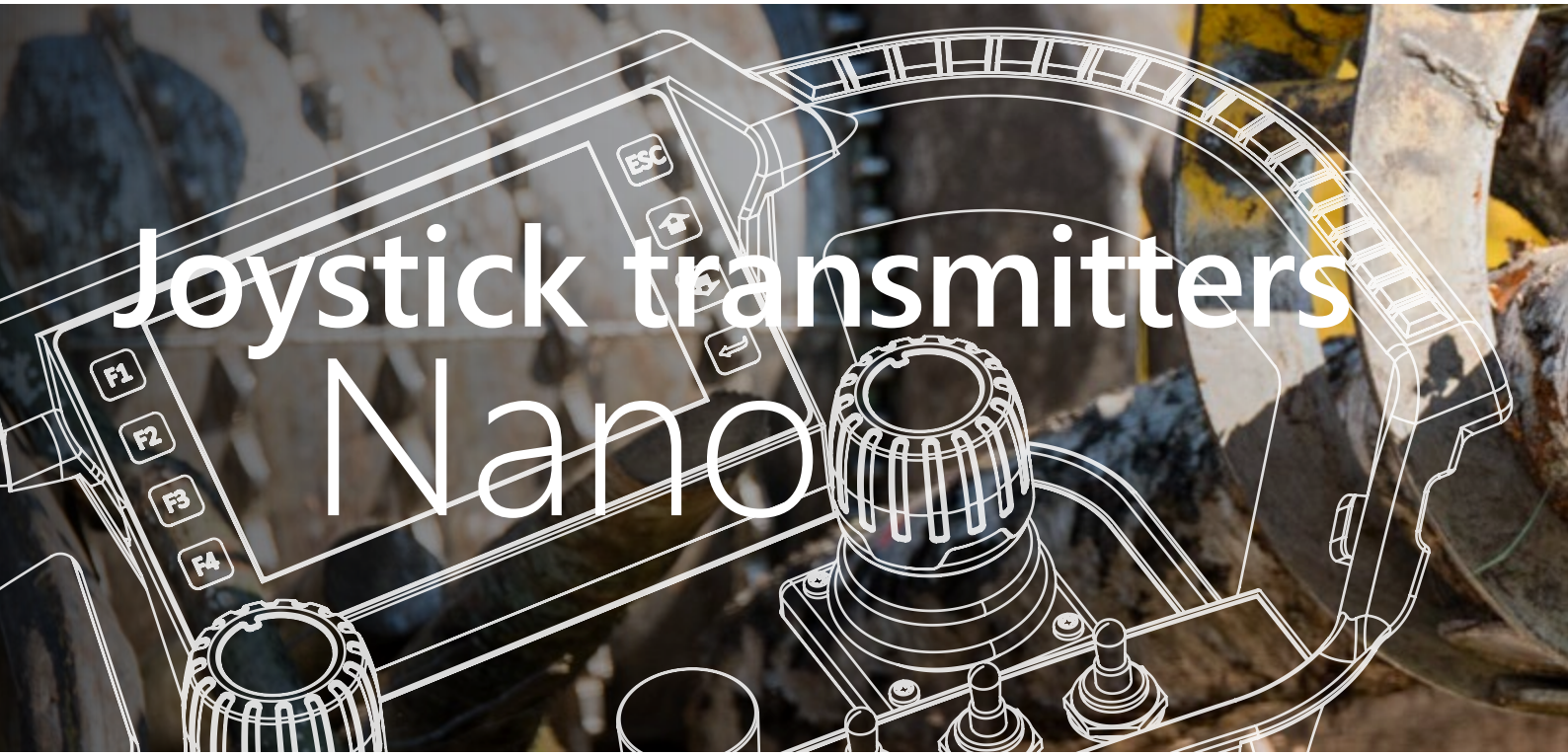
All Industries
Expertise in all relevant industries.

Certified quality Made in Germany

> DIN EN ISO 9001
– Quality Management
– Certified since 1995
– Quality assurance in design, development, production, assembly and services

> DIN/VDE and EN/IEC standardised
– Electronic fuse
– Products comply with all applicable European directives
– Valid for all products, national and international

> IECEx/ATEX
– Certificate: ATEX (Marking: II 2 G Ex ib IIB T4)
– Certificate IECEx (Marking: Ex ib IIB T4)
– Valid for Planar-B1(B2) EX



Joystick transmitters
Nano

Nano-Series

The Nano series is the heart of the NBB product range and has always been convincing through a timeless, compact design. The proven and robust design has proven itself over the decades, especially in outdoor applications. The Nano series is divided into 3 sizes, which are defined according to customer requirements. The series includes almost all common control elements as well as various display variants.

Frequency range	419 MHz, 429 MHz, 434 MHz, 868 MHz, 915 MHz, (2,4 GHz) (depending on customer requirements and country-specific regulations)
RF power	≤1 mW, ≤10 mW, ≤25 mW (depending on frequency range and country-specific regulations)
Typical working range	≤ 100 m (depending on environmental conditions)
Antenna	Integrated
Typical response time of the control commands	approx. 20 ms (SubGHz) / 5 ms (2.4 GHz)
Prewarning time "Battery empty"	approx. 15 minutes
Ambient operating temperature	-20 °C up to +70 °C
Weight	Nano-minor: 1,100 g Nano-media: 1,900 g Nano-magna: 2,800 g
CE label	Yes
Protection class	IP65

Nano-minor

The Nano-minor is our top seller in the field of joystick transmitters. Despite its compact design, numerous operating elements can be integrated.

– Compact, ergonomic design
– Can be used in numerous fields of application
– Optional: 2.2 inch monochrome display with customized design
– SMJ Technology

Nano-media

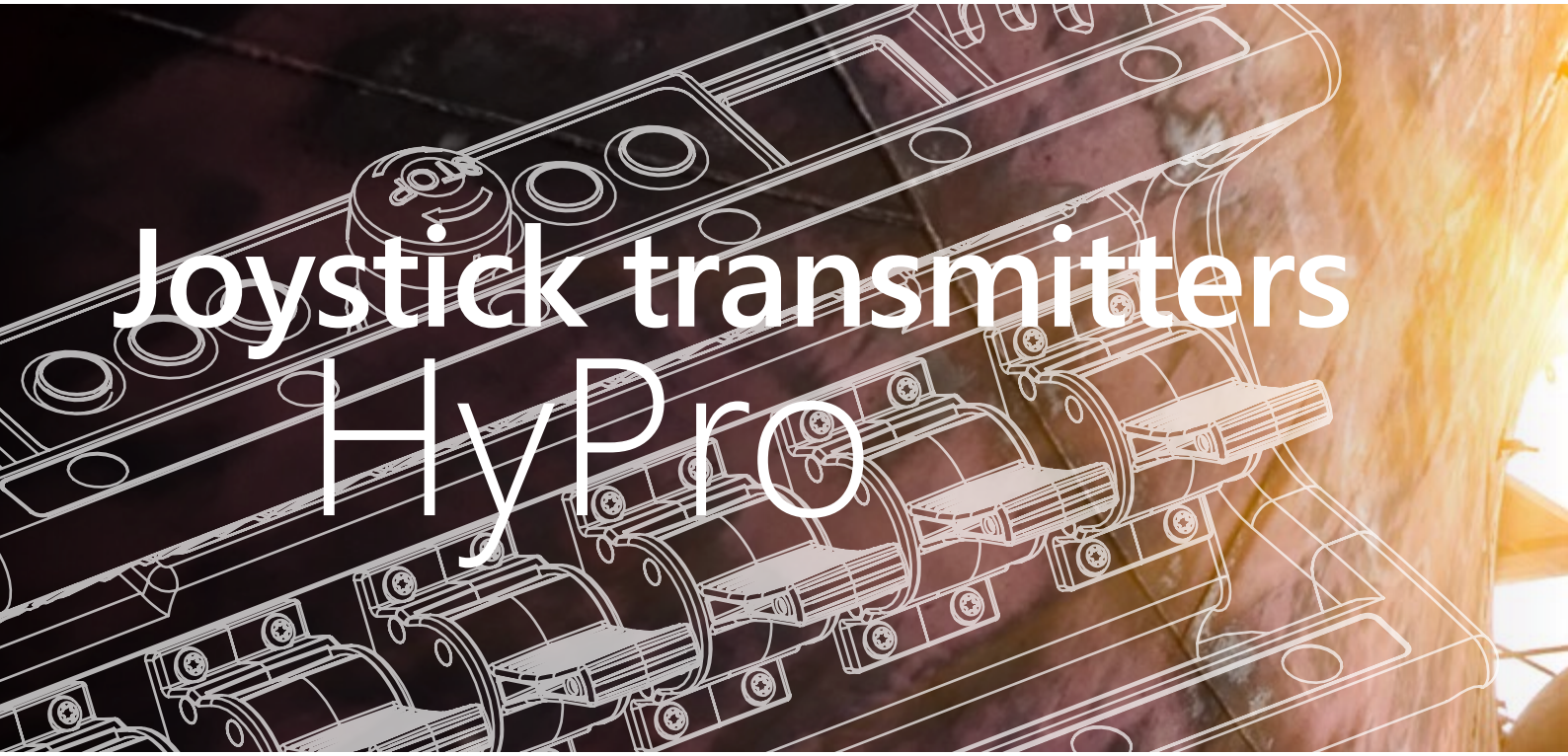
Nano-media combines the compact design of the Nano-minor with the technical variance of the Nano-magna – for the greatest variety of operating and feedback options in the smallest space.

– Compact, ergonomic design
– Also suitable for complex applications
– Optional: 3-axis joysticks in NBB design
– Optional: 4.3 inch graphic TFT color display with customized design
– SMJ Technology

Nano-magna

The Nano-magna is our largest joystick transmitter, which is particularly suitable for complex applications.

– Maximum number of control elements possible
– Also suitable for extremely complex applications
– Low weight despite the size
– Optional: 4.3 inch graphic TFT color display with customized design
– Operation with two rechargeable batteries possible, therefore up to 60 hours without interruption
– SMJ Technology



Joystick transmitters HyPro

HyPro-Series

The HyPro-Line of joystick radio remote controls convinces with its ergonomic shape and compact design. Originally developed for mobile hydraulics, the concept is now also being used in other areas. Its robust housing offers space for 8 single-axis joysticks, which can be optionally 1-, 2-, 3-, 4- or 5-stage. You have the option of using both a monochrome display and a TFT display for data feedback.

Frequency range	419 MHz, 429 MHz, 434 MHz, 868 MHz, 915 MHz, (2,4 GHz) (depending on customer requirements and country-specific regulations)
RF power	≤1 mW, ≤10 mW, ≤25 mW (depending on frequency range and country-specific regulations)
Typical working range	≤ 100 m (depending on environmental conditions)
Antenna	Integrated
Typical response time of the control commands	HyPro-6: approx. 20 ms HyPro-8: approx. 20 ms HyPro+: approx. 20 ms (SubGHz) / 5 ms (2.4 GHz)
Prewarning time "Battery empty"	HyPro-6: approx. 30 minutes HyPro-8: approx. 30 minutes HyPro+: approx. 15 minutes
Ambient operating temperature	-20 °C up to +70 °C
Weight	HyPro-6: 1,400 g HyPro-8: 1,450 g HyPro+: 1,500 g
CE label	Yes
Protection class	HyPro-6: IP65 HyPro-8: IP65 HyPro+ : IP67

HyPro-6

Originally designed for hydraulic applications, the HyPro has become a popular transmitter in other application areas as well.

– Exceptional, compact and ergonomic design
– Integrated display
– Optional: additional dust and impact protection through protectors and bellows-joysticks
– SMJ Technology

HyPro-8

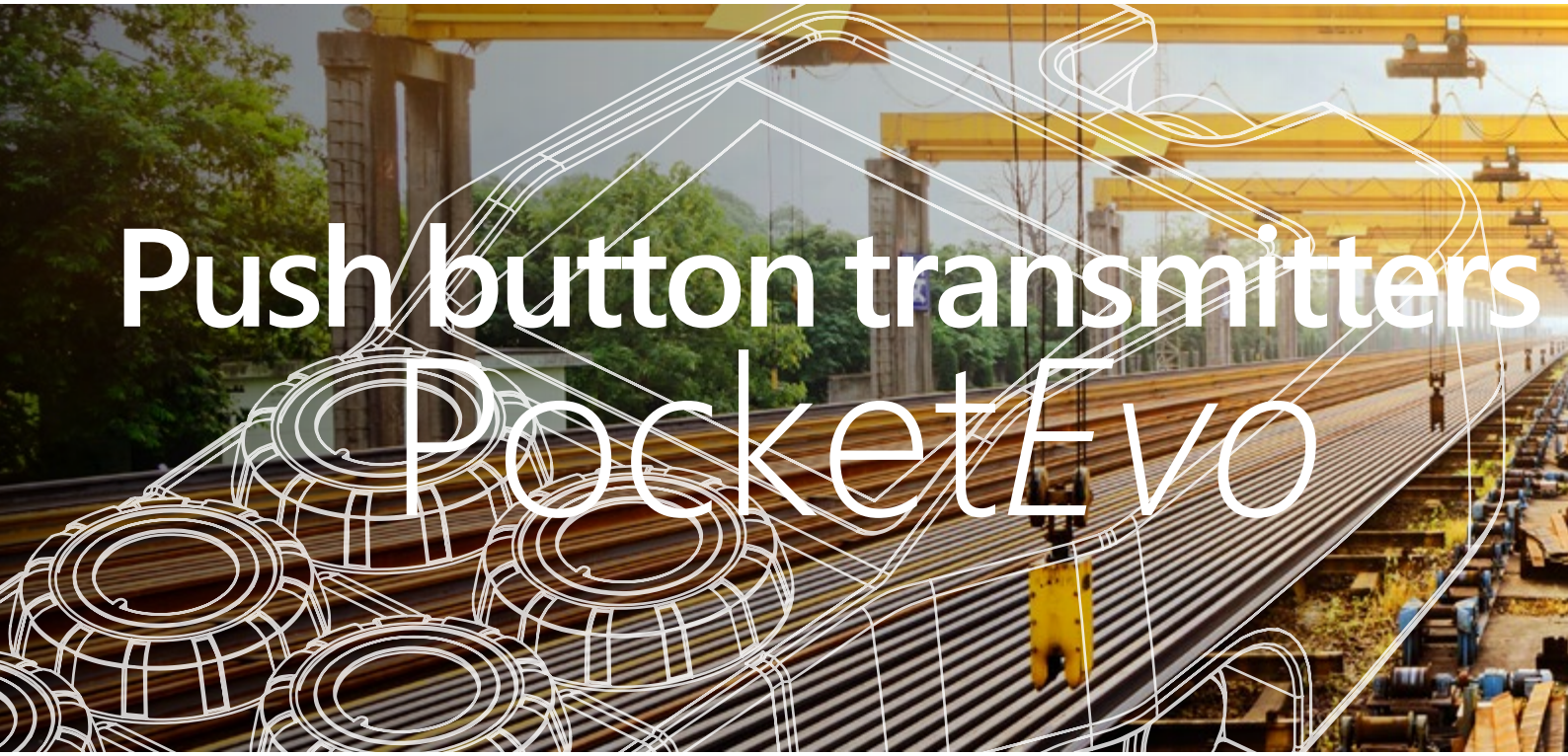
Just like its "little brother", the HyPro-8 also features ergonomic design and compact construction. It is the ideal transmitter for loading cranes and other hydraulic applications.

– Exceptional, compact and ergonomic design
– Integrated display
– Optional: additional dust and impact protection through protectors and bellows-joysticks
– SMJ Technology

HyPro+

The latest addition to the HyPro-Line adds a 3.2 inch TFT display to the HyPro-8. This makes it possible to display any data feedback in high resolution.

– Exceptional, compact and ergonomic design
– Integrated 3.2 inch TFT display
– Optional: up to 6 toggle switches, 2 potentiometers and rotary switches
– Optional: additional dust and shock protection through protectors and bellows joysticks
– SMJ technology
– IP67



Push button transmitters

Pocket*Evo*

Pocket*Evo*-Series

A robust special housing ensures that the key transmitter itself can withstand the application under extreme conditions. Electronic components can withstand extreme mechanical effects from the outside. The new design of the Pocket*Evo* provides maximum functionality such as proportional or stepped buttons as well as free configurable buttons. Any customer requirements can be fulfilled. A modular design in three different sizes also offers the possibility to use a 2.3 inch color display.

Compact, handy and easy to use, the Pocket*Evo* button transmitter allows you to work in complete safety conditions without reducing the effectiveness of machine operation. This results in a consistent optimization of the workforce potential and a minimization of the risks at work.

Frequency range	419 MHz, 429 MHz, 434 MHz, 868 MHz, 915 MHz (depending on customer requirements and country-specific regulations)
RF power	≤ 1 mW, ≤ 10 mW, ≤ 25 mW (depending on frequency range and country-specific regulations)
Typical working range	≤ 100 m (depending on environmental conditions)
Antenna	Integrated
Typical response time of the control commands	approx. 20 ms
Prewarning time "Battery empty"	approx. 15 minutes
Ambient operating temperature	-20 °C up to +70 °C
Weight	Pocket*Evo*-minor: 630 g Pocket*Evo*-media: 700 g Pocket*Evo*-magna: 800 g
CE label	Yes
Protection class	IP65

Pocket*Evo*-minor

With the Pocket*Evo* series NBB has developed a new generation of radio remote control for crane & machine control. The smallest model is distinguished above all by its compact but extremely robust housing.

– Compact, robust special housing
– 6 proportional SMP-buttons, optionally one-, two- or three-step
– Optional: 2.2 inch TFT display, side button, rotary switch or potentiometer
– Radiokey with individual customer-specific parameters (stored on an RFID tag)
– SMP Technology

Pocket*Evo*-media

The Pocket*Evo* media belongs to the latest generation of industrial radio remote controls. The second largest model in the series impresses with the variety of functions that can be covered.

– Compact, robust special housing
– 8 proportional SMP-buttons, optionally one-, two- or three-step
– Optional: 2.2 inch TFT display, side button, rotary switch or potentiometer
– Radiokey with individual customer-specific parameters (stored on an RFID tag)
– SMP Technology

Pocket*Evo*-magna

The Pocket*Evo* magna is the largest model in the Pocket*Evo* series. However, the housing is designed so that even this large transmitter can be operated with one hand.

– Compact, robust special housing
– 10 proportional SMP-buttons, optionally one-, two- or three-step
– Optional: 2.2 inch TFT display, side button, rotary switch or potentiometer
– Radiokey with individual customer-specific parameters (stored on an RFID tag)
– SMP Technology

Push button transmitters Planar

Planar-Series

The Planar-Line impresses with its small and compact design and can be used in many different ways. With up to 17 single-stage keys and an extremely flat design in breast pocket format, this is the smallest station in the NBB product portfolio. Exchangeable AA cells allow maximum functionality. The Planar are equipped with charging contacts, which enable rechargeable batteries to be charged using a charging cradle. The 3.6 V battery developed by NBB itself can also be used as an optional power source. With just one charge, it can power the transmitter for up to 40 hours. The feedback of your machine can be displayed on the integrated 7-segment display.

Frequency range	419 MHz, 429 MHz, 434 MHz, 868 MHz, 915 MHz (depending on customer requirements and country-specific regulations)
RF power	≤ 1 mW, ≤ 10 mW, ≤ 25 mW (depending on frequency range and country-specific regulations)
Typical working range	≤ 100 m (depending on environmental conditions)
Antenna	Integrated
Typical response time of the control commands	approx. 20 ms
Prewarning time "Battery empty"	approx. 15 minutes
Ambient operating temperature	-20 °C up to +70 °C
Weight	Planar-D: 160 g Planar-C: 200 g Planar-B: 220 g
CE label	Yes
Protection class	IP65

Planar-D

The smallest button transmitter in the NBB portfolio is particularly impressive with its extremely flat design in breast pocket format.

– Extremely flat and light
– Particularly short charging time thanks to the charging cradle
– 7-segment display for data feedback
– Optional: power supply via 3.6 V NBB battery

Planar-C

Thanks to its small and flat design, the Planar-C fits in any breast pocket.
It is particularly suitable for controlling skip loaders, chippers, screening machines, conveyor belts, mobile transport systems, light poles, mixers, fog machines, high racks, suction/dishwashing vehicles, grinding machines and scrap presses.

– Extremely flat and light
– Particularly short charging time thanks to the charging cradle
– 7-segment display for data feedback
– Optional: power supply via 3.6 V NBB battery

Planar-B

Despite its extremely handy and flat design, the Planar-B offers enough space for the integration of your functions. The monochrome display can also show various data feedback messages.

– Extremely flat and light
– Particularly short charging time thanks to the charging cradle
– Integrated 1.2 inch monochrome display
– Optional: power supply via 3.6 V NBB battery

Receivers Compact

The Compact-Line

In order to be able to respond to customer requirements at all times, NBB has developed a wide range of receiver variants. The modular structure and the variety should always offer the optimal solution for the customer.

The receiver family differs in 4 housing variants. In terms of content, most recipients can be combined with each other.

Frequency range	419 MHz, 429 MHz, 434 MHz, 868 MHz, 915 MHz (depending on customer requirements and country-specific regulations)
Power supply	Compact-M: 8–36 VDC Compact-M2: 8–36 VDC or 48 VAC / 115 VAC / 230 VAC ±10 % Compact-V: 8–36 VDC or 48–230 VAC ±10 % Compact-XL: 8–36 VDC or 48–230 VAC ±10 %
Ambient operating temperature	-20 °C up to +70 °C
Dimensions (L x W x H)	Compact-M: 180 x 90 x 70 mm Compact-M2: 151 x 113 x 61 mm Compact-V: 215 x 160 x 65 mm Compact-XL: 294 x 160 x 76 mm
Weight	Compact-M: 800 g Compact-M2: 800 g Compact-V: 1,500 g Compact-XL: depending on the version
CE label	Yes
Protection class	IP65

Industrial Ethernet

The term Industrial Ethernet stems from the requirement to make Ethernet standards usable and thus to integrate into the networking of industrial production. NBB developed a receiver that meets the requirements and can serve a variety of interfaces. For example the Profinet, Ethernert/IP, EtherCAT

Manufacturer ID	047B h	
Device ID	0010 h	
I/O Daten	Input: 51 byte Output: 12 byte	
Data transfer rate	100 Mbps Full-duplex	
Features	Integrated switch Web server	
Power supply	8 VDC to 36 VDC	
Power consumption	4,8 W	
Connections	– Data interface: – Supply interface:	2 x M12 D-Code socket 1 x M12 A-Code code plug
Temperature range	-20 °C to +60 °C	
Measurements without antenna and connector (L x B x H)	172 mm x 70 mm x 191 mm	
Weight	approx. 1.500 g	
CE label	Yes	
IP-Protection Class	IP65	

Receivers Compact

Compact-M

The smallest receiver variant from NBB enjoys great popularity with mobile applications. In general, this variant includes all common interfaces available. The Compact-M offers both digital and serial outputs in a limited number.

Interfaces:
RS232, RS485, CANBus, CANOpen

Compact-M2

The next larger model in our receiver family, also frequently used in mobile applications. The Compact-M2 is for all those who would like „a little bit more".

Interfaces:
RS232, RS485, CANBus, CANOpen, Profibus, Relais

Compact-V

This housing variant is the all-rounder and its functionality covers most application areas. The Compact-V offers all common interfaces and is therefore suitable for all applications.

Interfaces:
RS232, RS485, CANBus, CANOpen, Profinet, Profibus, relays, transistors, voltage outputs

Compact-XL

The Compact-XL is the largest available housing variant. It allows several receiver variants to be combined with each other if required. From a technical point of view, it houses all technologies available at NBB. This variant is used particularly in the area of special applications.

Interfaces:
RS232, RS485, CANBus, CANOpen, Profinet, Profibus, relays, transistors, voltage outputs

Compact-V IE

Medium-sized receiver with 8 VDC to 36 VDC supply. This housing variant is an allrounder and its functionality covers most application areas. The Compact-V IE offers all common Industrial Ethernet interfaces and is therefore designed for many applications.

Interfaces:
Profinet, Ethernet/IP, EtherCAT

Industrial Ethernet

PROFINET®

Modbus

Product and system safety

Technology

The continuous development of technological refinements is the decisive factor for the product and system safety of radio remote controls. It often makes the difference when it comes to stability under the most adverse conditions.

NBB Controls + Components GmbH, as a manufacturer of radio remote controls for industry, is one of the leading innovators in the industry. For us, innovation goes hand in hand with long proven experience. This enables us to always offer reliable system solutions.

SMJ

Surface Mounted Joysticks (SMJ) allow for a defective joystick to be replaced without having to open the transmitter. Joysticks can be replaced directly on-site while the housing remains completely sealed, minimizing the risk of damage or contamination.

SMP

The Surface **Mounted Push buttons (SMP)** are form-fit integrated into the Pocket*Evo* series housings. In the event of service, the operator can easily replace a broken button himself on site. The housing does not have to be opened for this purpose, so no protective measures against soiling need to be taken.

Proximity Detection

The **Radio Distance Guard** system is designed to automatically disable or stop equipment once the operator enters a defined danger zone around the machine. The Radio Distance Guard safely operates independent of weather conditions and creates a danger zone of approximately 6 meters.

Teach-In function

The **Teach-In** adjustment feature allows for customized response for each joystick for optimum safety and performance. Several adjustments can be made to each individual motion such as min/max values and joystick deadband adjustment.

Multi-user system

Multi-user-system capabilities allow for radio communications between combinations of transmitters and receivers. One transmitter can work with several receivers, several transmitters can work with one receiver or combinations of transmitters and receivers working together is possible. Failsafe measures can be put in place to ensure only one operator is controlling the machine at any given time.

NBB battery system

NBB rechargeable batteries have a high energy density and self-cleaning contacts. NBB chargers use a thermally monitored high current charging cycle that optimizes charging and prevents overcharging.

Radiokey

The **Radiokey** is an RFID device that stores parameters such as the safety code and configuration information. Removing the Radiokey from the original transmitter and inserting it into a replacement transmitter configures the replacement transmitter for immediate use and deactivates the original transmitter.

LBT frequency search

With the **Listen before Talk (LBT)** feature, when the transmitter is switched on or when the frequency is changed, the transmitter checks to see whether the frequency channel is occupied by other RF sources. If the channel is occupied, the next frequency channel is automatically selected and checked until a clear frequency channel is found.

Data feedback

Information during operation via an LED or LCD display is possible including signal strength, machine function status or customized customer-specific information and company logos. Feedback alerts via a buzzer are also available.

IECEx/ATEX

If transmitters are to be used in potentially explosive environments, appropriate technical precautions must be taken. The Planar-B1 and -B2 EX transmitters have been specially developed and certified for such applications.

Inclination sensor

The built-in tilt sensor can detect when the transmitter exceeds a preset tilt value. This feature can help identify when an operator has fallen and can place a machine in a safe state. This inclination feature can also be programmed to initiate other actions such as an alarm.

NBB Worldwide

Easy Movement

Our ultimate goal is always to provide all our customers with the highest quality made in Germany. That is why it is also important to us to be able to help you with service questions as quickly as possible – whether directly through our own service center or through our service partners around the world. Because for us one thing's clear: when the radio's good – the machine's good.

NBB's worldwide service network is continually expanding – so you can always rely on qualified service, even when abroad.

So don't hesitate – call us if you have any questions. We would be pleased to inform you about the topics accessories, spare parts and device repair. Please also contact us for software downloads.

With NBB you can be sure that you will be advised and supported by experts.

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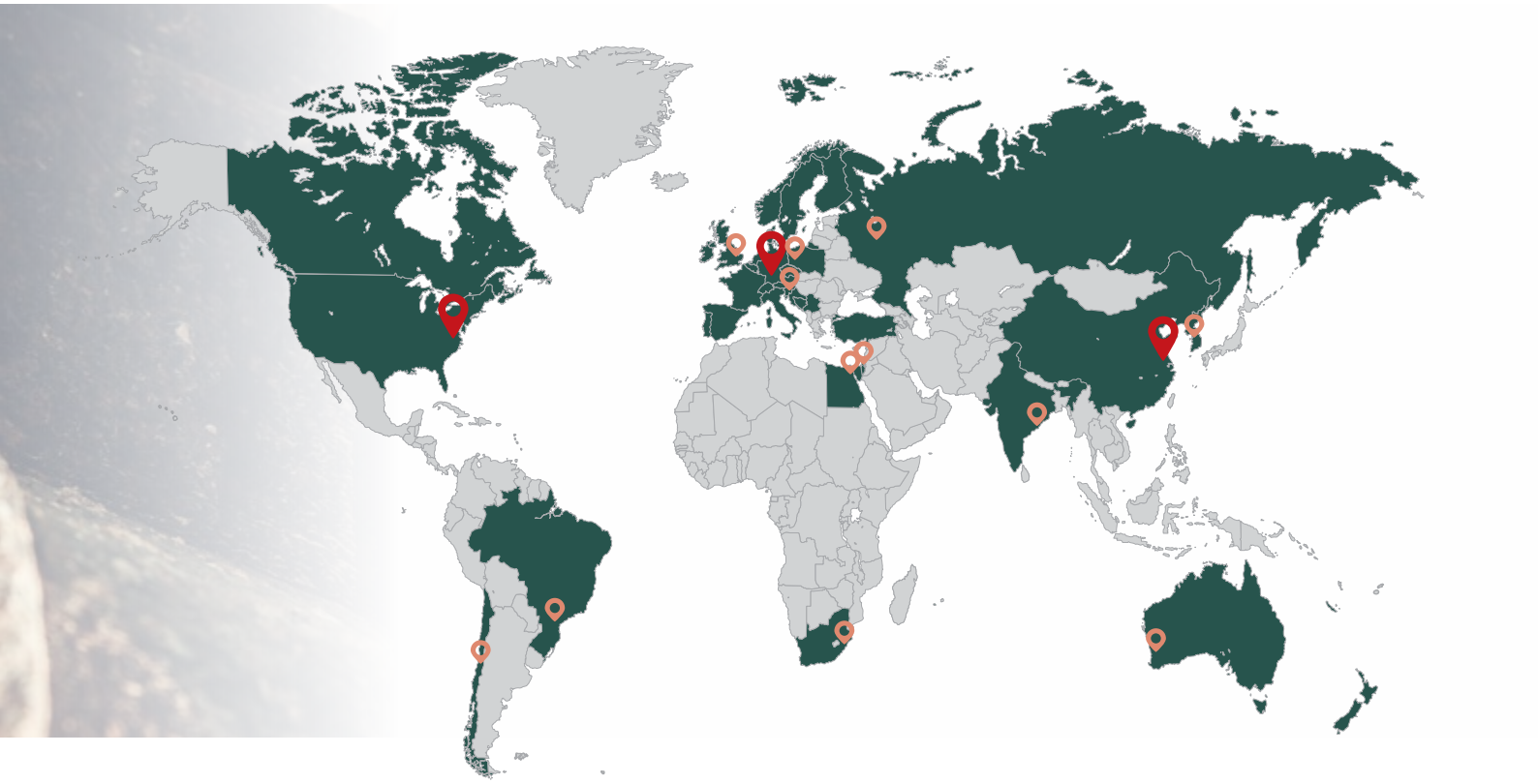
Our service centre can be reached at the following times:
> Monday – Thursday: 08:00 – 17:00
> Friday: 08:00 – 16:00



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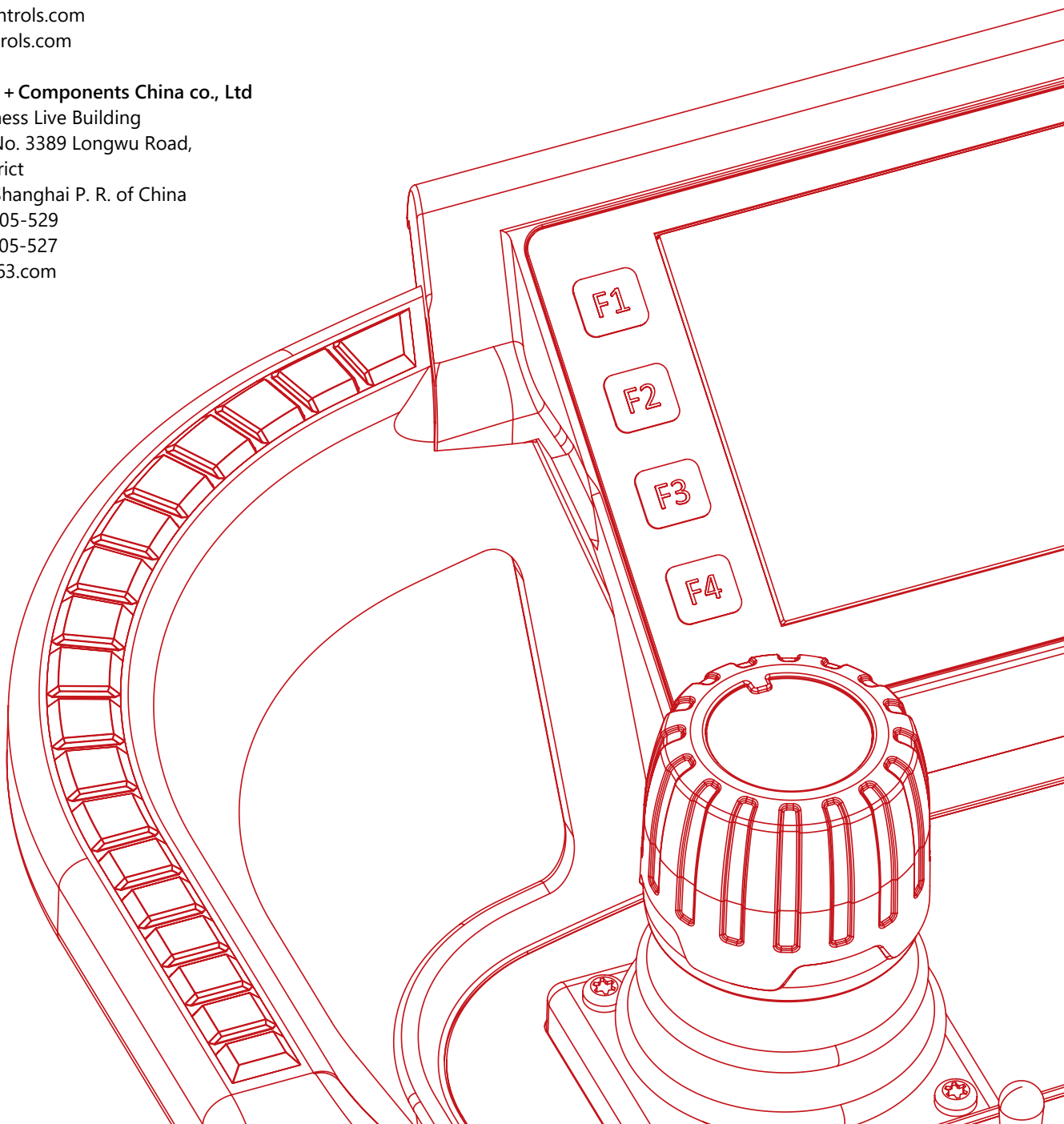

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