



**Flexibly designed
complete solutions for
construction technology,
mobile hydraulic systems,
industrial engineering,
forestry and municipal
service equipment,
IECEX/ATEX
and special applications**



We are System Integrator of NBB in Hong Kong



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NBB radio control technology



NBB radio control



The standard for radio control of machines and functional components when wired radio control systems are not possible. Intrinsic safety, functional safety according to the current machine guidelines and comfort functions for the operator are the state-of-the-art.

NBB cable control system



A wireless connection between transmitter and receiver or directly with the machine controller (also CAN bus) is the appropriate solution for some radio control tasks. NBB radio control systems can also be operated in combination with both systems (radio and cable) as an option.

NBB infrared control system



For the radio control with infrared control system, the controller operator is forced to make visual contact with the machine performing a task.

This safety aspect is gaining importance in some markets and applications.

All NBB radio control systems have the following technical data and functions:

Frequency band (F-Band):	434.050 – 434.750 MHz
Frequency band EU (G-Band):	866 – 870 MHz
Frequency band USA:	915 MHz
RF output:	< or = 10 mW
Operating range:	up to 300 m
Antenna:	integrated
Typical response time (control commands):	15 ms
Advance warning "battery empty":	15 minutes
Operating ambient temperature:	-20 °C to +65 °C
CE label:	yes
Protection class:	IP65

The transmitter types

Joystick transmitter



Transmitter with console design with 2-axis joysticks. Different housing designs. Also available as cable console (CAN bus interface).

In figure: Nano-M SMJ A2/4 with display



Transmitter with console design with narrow 1-axis joysticks. Different housing designs. Also available as cable console (CAN bus interface).

In figure: Planar®-NL SMJ A1/4 with display



Transmitter with console design for hydraulic applications with 1-axis joysticks. Several design versions. Also available as cable console (CAN bus interface).

In figure: HyPro®-6 with display

www.nbbcontrols.de

In addition to this introductory brochure, a detailed description of all NBB radio control systems can be found on the NBB web-site: nbbcontrols.de

For more information or specific queries, please contact our advisory service.

Phone: +49 7237 999-0

Toggle switch transmitter



Transmitter with console design with toggle switches. Different housing designs. Also available as cable console (interface on/off outputs).

In figure: Planar®-V



Transmitter with toggle switches for one-hand operation. Different unit designs.

In figure: Planar®-V4



One-hand transmitter with toggle switches. Specially for forestry winches.

In figure: Planar®-V4 Forestry

Pushbutton transmitter



Pushbutton transmitter in breast pocket format. Different designs.

In figure: Planar®-B2



Pushbutton transmitter for application in gas-explosive endangered areas. Different designs.

In figure: Planar®-B2 EX



Robust pushbutton transmitter with external antenna and key-operated emergency STOP. Different designs.

In figure: Pocket-V

Receiver



Receiver in different designs. The solution is adapted according to specifications.

Joystick transmitter with console design

Nano-S/L/M series with power supply from 7.2 V NBB quick-change battery system



Nano-S
With two joysticks, 2-axis
Small console
(Width 175 x Depth 127 x Height 120)



Nano-L SMJ A2/2
Modular system design
Example with two SMJ joysticks, 2-axis
Medium-size console
(Width 248 x Depth 140 x Height 118)



Nano-M SMJ A2/3
Modular system design
Example with three SMJ joysticks, 2-axis
Two battery compartments
Large console
(Width 354 x Depth 205 x Height 142)



SMJ technology
SMJ joysticks (1- and 2-axis) are integrated in the console housing with positive locking without housing openings. Joysticks can therefore be changed directly on site without risk of contamination if there is a fault.



Nano-L SMJ A1/4 with display
Modular system design
Example with four SMJ joysticks, 1-axis
Data feedback on monochrome display
Medium-size console
(Width 248 x Depth 140 x Height 118)



Nano-L SMJ A1/6
Modular system design
Example with six SMJ joysticks, 1-axis
Medium-size console
(Width 248 x Depth 140 x Height 118)



Nano-M SMJ A1/8
Modular system design
Example with eight SMJ joysticks, 1-axis
Two battery compartments
Large console
(Width 354 x Depth 205 x Height 142)



7.2 V NBB battery pack Ni-MH (1500 mAh)

Planar®-N/NL series with power supply from AA mignon batteries



Planar®-N
With two joysticks, 2-axis
Small console
(Width 175 x Depth 127 x Height 99)



Planar®-NL SMJ A2/3 standard
Modular system design
Example with three SMJ joysticks, 2-axis
Medium-size console
(Width 248 x Depth 140 x Height 99)



Planar®-NL SMJ A1/6
Modular system design
Example with six SMJ joysticks, 1-axis
Medium-size console
(Width 248 x Depth 140 x Height 99)



AA mignon batteries

An example of the innovative Nano-M SMJ modular system



Everything is possible

The Nano-M SMJ consists of three housing parts: an upper part, a middle part and a lower part.

Each of these parts is available in different designs. In this way, an upper part with or without display can be chosen.

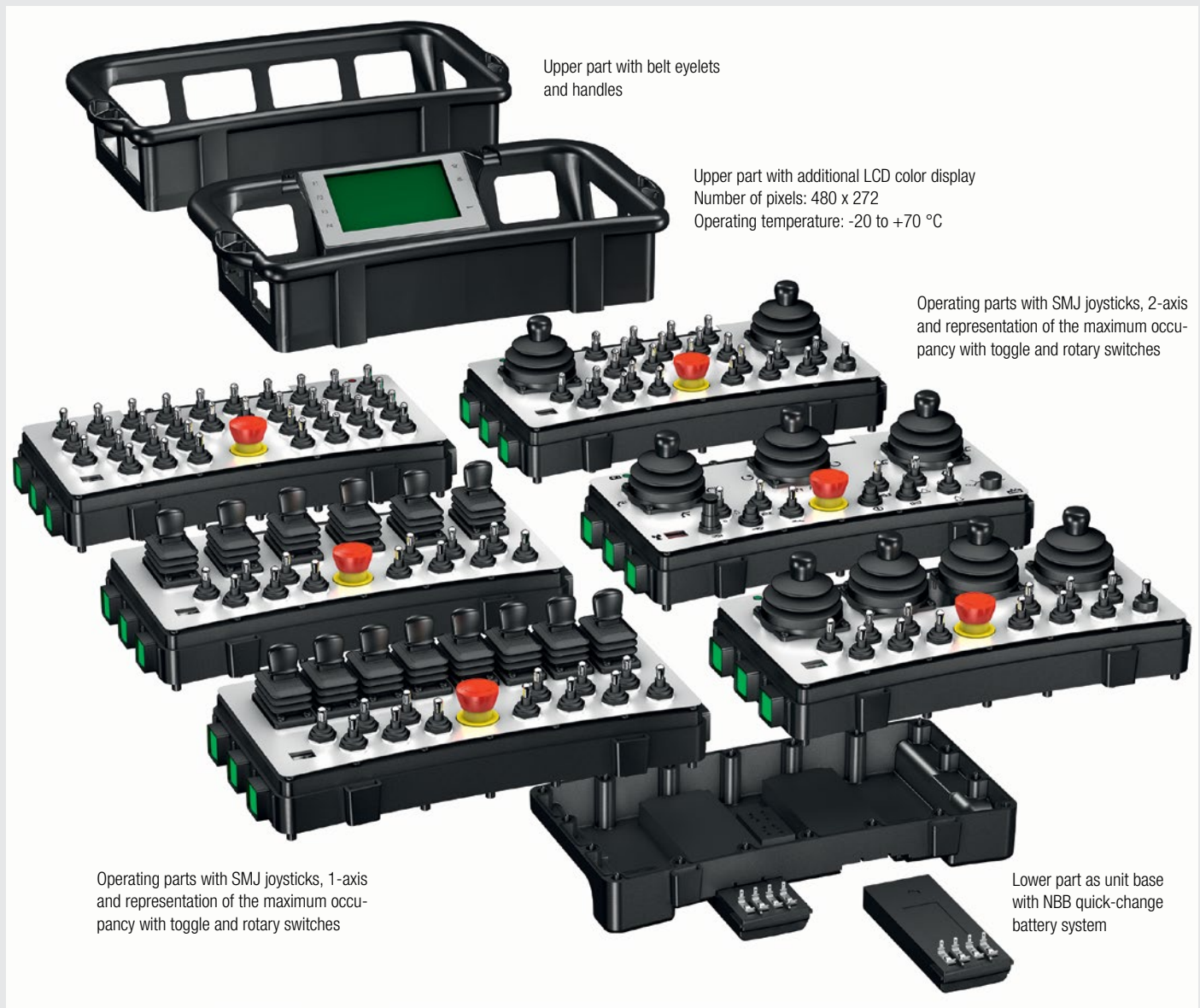
The lower part offers different connection options for data communication and for the power supply.

The middle part (operating part) can have countless designs. As a result of the variety of operating elements, almost every operating concept for machines or system control can be implemented.

Example of a specific customer solution



Ergonomics and almost limitless functional design (Nano-M SMJ A2/3 in the figure)
In addition to control using a joystick, the operating layout can be extended with many additional functions that can be executed via an additional switch.



Excerpt from the NBB complete program (Made in Germany)

HyPro® series



HyPro®-6 with protectors, for hydraulics,
6 joysticks (1-axis)



HyPro®-8 for hydraulics,
8 joysticks (1-axis)

Toggle switch transmitter



Nano-V
max. 11 toggle switches



Planar®-V
max. 11 toggle switches



Planar®-V4
4 toggle switches with 2 operating levels



Planar®-V8
8 toggle switches with 2 operating levels

Pushbutton transmitter



Planar®-B1
16 pushbuttons (1-stage), dot matrix display



Planar®-C4
8 pushbuttons (2-stage), 3 pushbuttons
(1-stage)



Planar®-D2
2 pushbuttons (2-stage), 5 pushbuttons
(1-stage)



Pocket-B
15 pushbuttons (1-stage)

Receiver



Compact-V



Compact-M



Compact-M2



BUS3

NBB quick-change battery system

The special advantage of the nickel metal hydride batteries (Ni-MH) is their high energy density. The contacts have a self-cleaning design.

As the Ni-MH technology does not have a memory effect, it can be regularly recharged to prevent deep discharge.

The NBB battery pack is charged with a high charge current with special NBB chargers.

This quick charge is thermally controlled to optimize recharging and prevent overcharging.

AA mignon batteries as rechargeable battery or other battery

AA batteries that are not rechargeable are often simply called batteries. Rechargeable AA mignon batteries are often distinguished by calling them accumulators.

Both designs of the AA mignon batteries, battery or accumulator, can be used as required.

7.2 V NBB battery pack Ni-MH



7.2 V NBB battery pack Ni-MH (1500 mAh)



Nano-S transmitter with 7.2 V NBB quick-change battery system



Nano-V transmitter with 7.2 V NBB quick-change battery system

3.6 V NBB battery pack Ni-MH



3.6 V NBB battery pack Ni-MH (750 mAh)



Planar®-V8 transmitter, optionally with 3.6 V NBB battery pack replacement system. Standard operation with AA mignon batteries



Planar®-D2 transmitter with 3.6 V NBB battery pack replacement system

AA mignon batteries



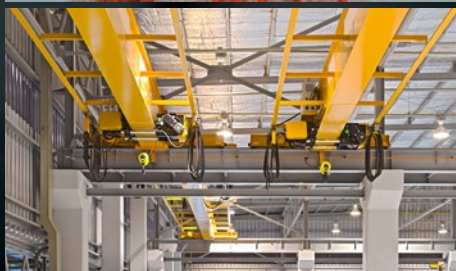
AA mignon batteries



Planar®-NL SMJ A2/2 transmitter with open compartment for AA mignon batteries



Planar®-B transmitter with open compartment for AA mignon batteries





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