

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.

> Operating elements

Joysticks	– Up to 6 single-axis (MSA1)* – Up to 3 dual-axis (MSA2)*
Joystick options	– Stepped travel activation – Embedded push button (MSA2) – Travel limiting gates (MSA2)
Digital on/off switch	Up to 36 on/off functions available via toggle switches, push buttons, rotary switches, key switch, etc.*
Additional analog functions	Up to 2 analog devices such as potentiometers
Cable control interface	1 x CAN I/O for machine control and feedback
Optional	Optional infrared (IR) startup

* Consult NBB for available combinations.

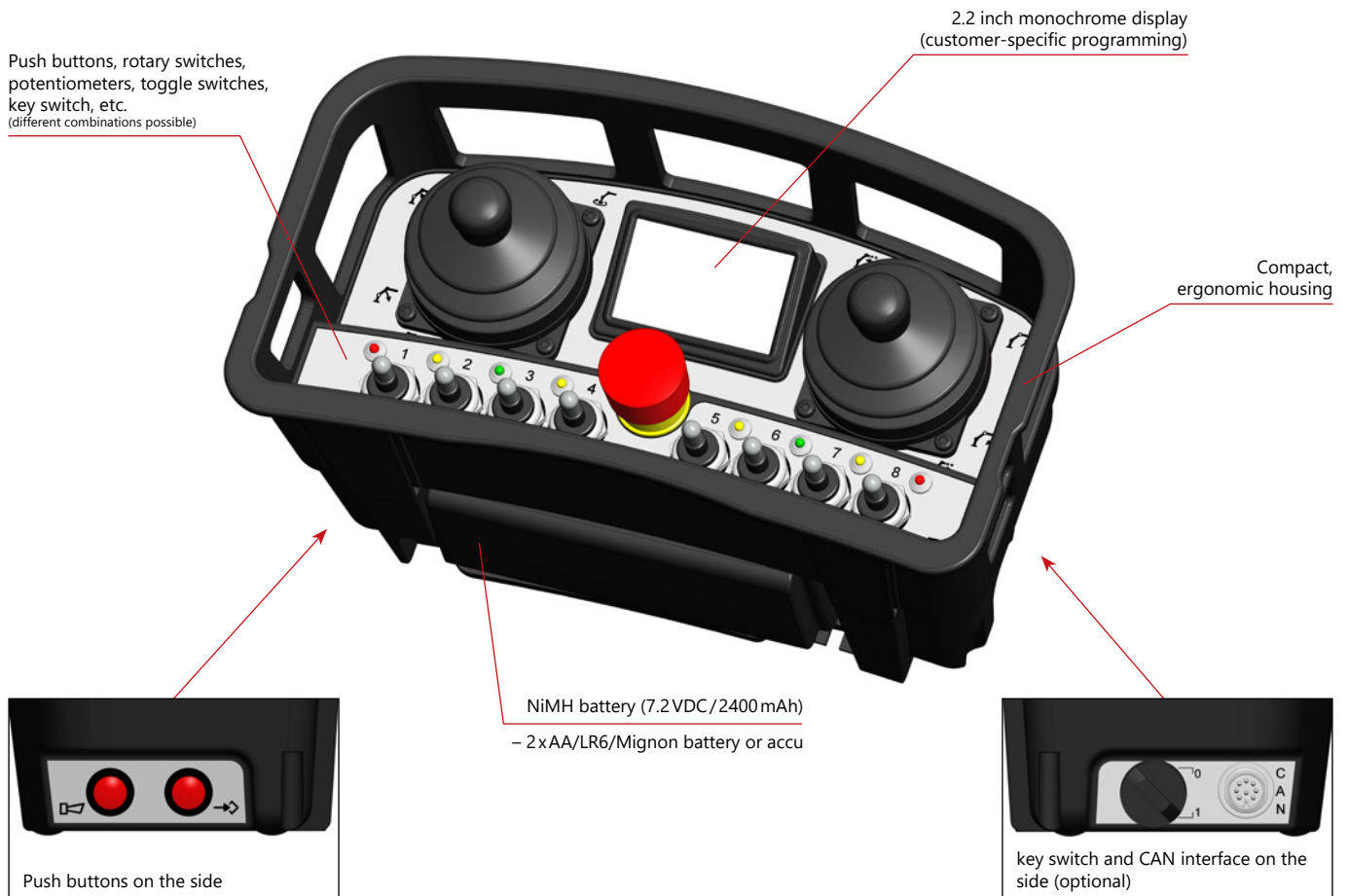


Illustration contains optional equipment.

> Technology



SMJ



Proximity Detection



Teach-In function



Multi-user system



NBB battery system



LBT frequency search



Data feedback

Technical data

> Technical information

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)
Frequency channel search, automatic	LBT-Modus (listen before talk) (depending on country and function configuration)
Antenna	Integrated
Typical response time of the control commands	Approx. 20 ms (SubGHz) / 5 ms (2.4 GHz)
LF modulation method	FSK/GFSK
Baud rate (depending on customer requirements)	– 1200 Baud (Bit/sec.) – 9600 Baud (Bit/sec.)
Ø Current consumption (depending on the expansion level)	– With LED 7-segment display: approx. 30 mA – With LCD display: approx. 50 mA
Prewarning time „Battery empty“	Approx. 15 minutes
Acoustic response	Integrated buzzer, customized setting
LCD/TFT display	Optional: 2.2 inch monochrome display (128x64 px) with customized design
Energy saving function (stand by)	Standard: after 60 min. Optional: setting according to customer requirements (continuous operation possible)

> Machine data

Ambient operating temperature	-20°C up to +70°C
Weight	1100 g
Dimensions (L x W x H)	248 mm x 140 mm x 118 mm
Case material	Impact resistant glass fiber reinforced polyamide
Status display (7-segment, depending on the configuration)	1x (2-digit)

> Equipment safety

CE certification	Yes
IP-Protection class	IP65
Data security	Addressing of each transmitter by unique bit combination
EMERGENCY STOP or STOP function	Yes (sending stop telegrams for 2 sec.)

> Power supply

Power supply	– Option 1: NiMH battery (7.2VDC/2400mAh), pluggable – Option 2: 2x AA/LR6/Mignon battery or accu
Operating time	– At Option 1: up to 48 hours – At Option 2: up to 38 hours
Loading form	Externally, via a separate charger
Automatic battery compartment switching	No
Available for (UE)	230VAC, 110VAC, 12/24VDC
Optional plug shape	EU, USA, JP, GB, AU