

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.

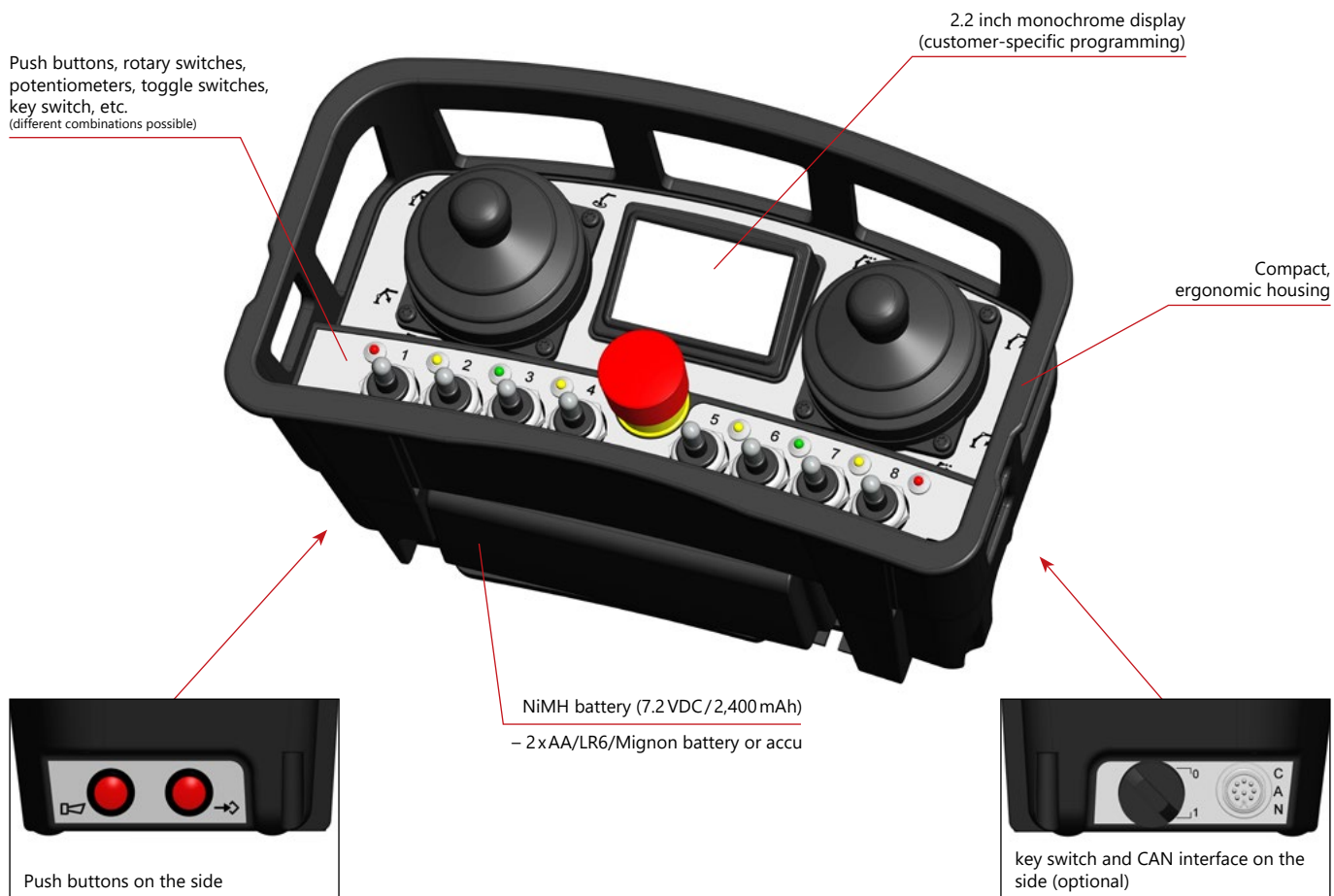


Illustration contains optional equipment.

> 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. 50 ms
LF modulation method	FSK/GFSK
Datarate (depending on customer requirements)	– 1,200 Baud (Bit/sec.) – 9,600 Baud (Bit/sec.)
Ø Current consumption (depending on the expansion level)	– approx. 30 mA (with LED 7-segment display) – approx. 50 mA (with LCD display)
Prewarning time „Battery empty“	Approx. 15 minutes
Acoustic response	Integrated buzzer, customized setting
LCD/TFT display	Optional: 2.2 inch monochrome display (128 x 64 px), customized illustration possible
Energy saving function (Standby)	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
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 (7.2 VDC/2,400 mAh), pluggable Option 2: 2x AA/LR6/Mignon battery or accu
Operating time	Option 1: up to 48 hours Option 2: up to 38 hours
Loading form	Externally, via a separate charger
Charger available for (UE)	110 VAC–230 VAC, 12/24 VDC
Plug form AC (adapter set)	EU, USA, JP, GB, AU
Plug form DC	Car charger plug