

Industrial monitors with full flexibility

The NRN line monitors are manufactured by a leading European company with more than two decades of experience in design and manufacturing of industrial and marine monitors. This ensures meeting the demands of today's professional applications. With most of the design and engineering facilities in-house, we can meet today's demands for professional application solutions.

Display- enhancement (optical bonding) and touch screen integration (lamination) are also part of the in-house activities. This brings full flexibility in the features needed for a given application. With business partners for industrial computing most projects with touch displays can be realized, even with integrated or attached PC (Panel-PC).

With the new series of monitors, the NRN-Line, special attention has been taken regarding robustness in a stylish housing. All models within the NRN-line are based on the same concept chassis and can be configured to your needs and all options are available on each model. Below you can find some examples

- Metal bezel or Full-glass versions
- Projected capacitive (PCAP) or Resistive touchscreen
- Deep dimming backlight with front or external control
- Central dimming control for daisy chained monitors
- Optical Bonding
- Wide range DC input
- Stainless steel front on the Panelmount units
- Rugged desk stand for VESA mount units available
- Front switching between VGA, DVI-D, HDMI and PAL/NTSC inputs
- Further customized version on request

The OSD standard is setup via rubber buttons at the rear side of the monitor. The extended full-glass versions however can have an additional source select button via capacitive sensor integrated in the glass. The versions with a (illuminated) decoder at the front surface, can have full control of source-select, dimming, on/off and OSD through just this one control.

If you have any question or special request, feel free to ask our experts!

Marine Approvals / DNV

As an option, the extended glass models can be supplied with DNV marine certification. In this configuration not all sizes and options are available.

NRN230 Series

23" Industrial LCD

VESA, panelmount, chassis



Options / Partnumber breakdown

All models within the NRN-line are based on the same concept chassis and can be configured to your needs. Most options are available on each model.

Also combinations of options are possible, but with restrictions. Some combinations are technically impossible, e.g. full glass in combination with stainless steel front. Please always ask for availability of the requested combinations. If you have any question or special request, feel free to ask our experts!

NRN230 xx - yyy - zzzz		
Mechanical construction ^{xx}	C CR CV P PE PG PGE V VE	Rear mount, metal chassis with no front Rackmount, with metal bezel Panelmount, with legacy metal VISION front Panelmount, with metal bezel Panelmount, with extended metal bezel Panelmount, with full glass front Panelmount, with extended full glass front VESA mount, with metal bezel VESA mount, with extended metal bezel
High brightness ^{yyy}	1K0 1K5	1000 cd/m ² typical 1500 cd/m ² typical
Touch screen ^{zzzz}	R Q R-RS232 Q-RS232	Resistive touchscreen, USB interface, not available on PG and PGE versions Projected Capacitive touch, USB interface Resistive touchscreen, RS232 interface, not available on PG and PGE versions Projected Capacitive touch, RS232 interface
Dimming backlights ^{zzzz}	P PF	External or front mounted potmeter, illuminated, for on/off and dimming External or front mounted full control encoder, illuminated, for on/off dimming and osd
DC Power ^{zzzz}	I	Galvanic isolated DC input, 9-34Vdc, screw connection (instead of external adapter)
Glass ^{zzzz}	E G	Anti-Glare (etched) protection glass Anti-Reflective (coated) protection glass
Bonding ^{zzzz}	O	Optical bonding, to avoid dust and condensation, to minimize reflections and parallax
Stainless steel front ^{zzzz}	S	Stainless steel front, only available on P en PE versions

Controls / NRN-Control unit

There are different possibilities to setup and control the NRN monitors:

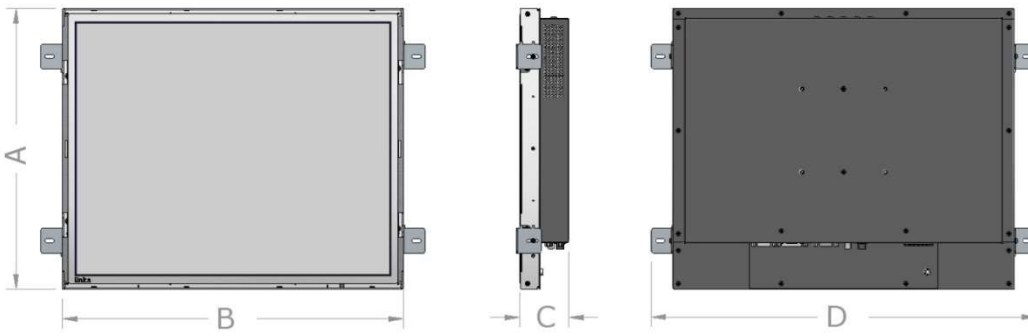
- OSD buttons
- Internal/external (illuminated) potmeter
- Internal/external (illuminated) encoder



In some applications however, it is preferred to control all monitors in console, bridge or control room by just one action. This can be done by the encoder option. For applications where the user needs more flexible control over each individual monitor, the NRN-CONTROL is on the market. The NRN-CONTROL is designed as an optional remote control for the NRN-Line monitors. It has a 4.3 inch TFT with PCAP touch screen. With the NRN-CONTROL you can select an input source and adjust the brightness remotely by pressing buttons or making presets.

Interested? Please call for further details.

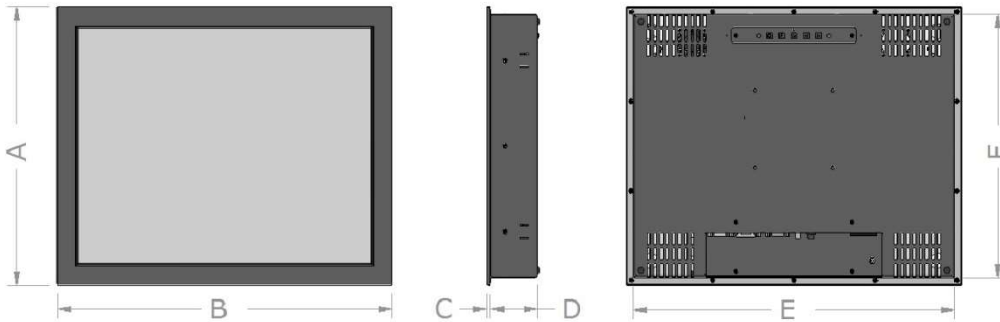
Rear mount Chassis NRN230C



Dimensions	
A	324.6 mm
B	547.2 mm
C	59.0 mm
D	600.2 mm

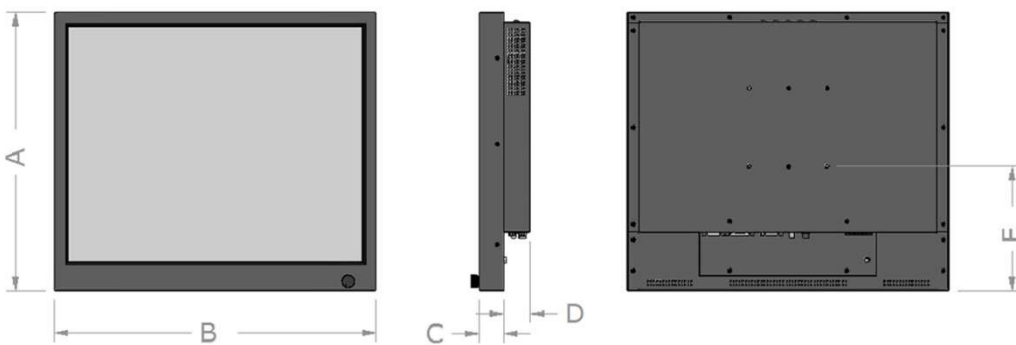
Without protective glass or touch sensor

Panelmount NRN230P, PE, PG, PGE



Dimensions	
A	347.2 mm on versions P, PG 363.6 mm on versions PE, PGE
B	569.8 mm
C	5.0 mm on versions P, PE 5.8 mm on versions PG, PGE
D	61.0 mm
E	551.8 mm
F	329.2 mm on versions P, PG 345.6 mm on versions PE, PGE

VESA mount NRN230VE



Dimensions	
A	343.6 mm on versions VE
B	549.8 mm
C	32.0 mm on versions VE
D	34.0 mm
E	151.8 mm
VESA	100 MIS-E

Detailed dimensional drawings on request.

Specifications		
Display	TFT Max. Resolution Video Pixel pitch Active Display Area Aspect Ratio Brightness Contrast Ratio Viewing Angles (at CR>10) Backlight life Number of Colours	23", a-Si TFT Active Matrix TFT 1920 x 1080 pixels Full HD 0.265 mm 533 x 312 mm 16 : 9 300 cd/m ² typical 1000 : 1 178°H, 178°V 50.000 hours 16.7 Million
Enhancements	High brightness * Optical Bonding * AR/AG Glass *	Not available, ask for 24" To avoid dust and to minimize reflections and parallax To minimize reflections
Power Supply	90 – 265VAC, 50/60 Hz 12VDC 9 - 36VDC	Separate Power Adapter Standard DC Jack Screw connection
Signal Inputs	Analog Digital PAL/NTSC video	D-sub HD15 (VGA) DVI-D & HDMI BNC
Dimming Backlight *	Integrated dimming External Dimming Central Dimming Auto dimming	Potmeter, Encoder Potmeter, Encoder, +/- Buttons External encoder, N-control Light sensor
Touchscreen *	Technology Communication Connection	Resistive, Projected Capacitive USB, RS232 USB B-type, DB9
Environmental	Storage Temperature Operating Temperature Operating Temperature TFT	-20 ~ 65 °C 0 ~ 50 °C 0 ~ 50 °C
Mechanical	Chassis VESA and Panelmount IP-rating (front only) Weight	Aluminium Steel, Black powder coated RAL 9005 IP65 (metal front versions) IP66 (full glass front versions) Appr. 8 kg.
* = Optional. See partnumber breakdown table		
Part numbers		
Rear mount Chassis Panelmount with Metal front	NRN230C NRN230P NRN230PE	Standard available Not available yet Standard available, Extended front
Panelmount with Full Glass front	NRN230PG NRN230PGE	Standard available Not available yet
VESA mount with Metal Front	NRN230V NRN230VE	Not available yet Standard available, Extended front
Marine approved (DNV)	-	Not available

Specifications are subject to change without notice

version LM230WF3-SLD1 220217



• Monitors

Desktop Monitors
Large Screen Monitors
Custom-made Monitors
19" Rack mount Monitors
Rear Mount Monitors
Monitors for Panel mount
Monitors for VESA Mount
Kiosks
Accessories

• Monitors - Specific applications

Stainless Steel Monitors
Car Displays
Train Monitors
Marine Monitors
Military Monitors
ATEX Monitors
Replacement Monitors

• Panel PC's

High Performance Systems
Custom Made Panel PC's
Low Power Systems
Extreme environments

• Pointing Devices

Accessories
Touchpads
Trackballs
Trackball Modules
Joysticks
ATEX Pointing Devices
Custom made Pointing Devices

• Keyboards

Desktop Keyboards with or without pointer
Built-in Keyboards with or without pointer
ATEX keyboards
Cables & Connectors
Custom made Keyboards



Mulder-Hardenberg, est. 1927, is the answer to professional demands in the domain of electronic related environments. We don't just sell products. We use our multidiscipline knowledge to provide the best solutions, designed to your interest.

Contact details:

The Netherlands

Mulder-Hardenberg B.V.
H.N. Werkmanweg 17
2031 BA Haarlem
Tel.: +31 (0)85 800 3700
info1@m-h.biz

Germany

Mulder-Hardenberg GmbH
Nordring 13
D-65719 Hofheim/Ts
Tel.: +49 (0)6192 979185
info2@m-h.biz