



pm3.1/ze/k, l, m

The industrial PC *pm3.1/ze/pc/k, l, m* has a 17" screen. It is a completely industrial-compatible PC for use in fire-damp endangered environments. Its components have been selected for rough operating conditions and are protected by an explosion-proof box. It is characterised by the following features: suitable for universal implementation, a high level of computing power, compact housing with a large LCD screen and optional board mirroring which provides high reliability.

A completely intrinsically safe standard keyboard with touchpad as well as all function keys allows normal use of any program, particularly those based on MS Windows. Good keyboard operability is ensured by tangible pressure points. The touchpad allows both ergonomic and reliable positioning of the cursor whereby particularly emphasis has been given to the ruggedness of this input device. Its relatively light-weight (compared to other EX-protected PCs) and very compact design facilitates implementation in difficult conditions underground.

Using Ethernet or fibre optic cables and by means of a PXE protocol, a fully unattended installation of operating system and application programs is possible. The graphic card supports high resolution modes up to 1600 x 1200 pixels on the 17" size screen.

A range of communication options are available. Connection to various Bus systems (DUST, BB22444, Profibus, MODBus, TCP/IP, marco Bidi) enable even complex control tasks to be carried out. Fibre optic cables, ethernet and USB connections allow access to LAN networks on the one hand and on the other, connections to additional hardware via USB (e.g. video cameras).



Features	
Operating systems supported	Linux, Windows 98, Windows NT, Windows 2000, WindowsXP
Screen	LCD colour monitor with active backlighting
Screen diagonal	17" (1280 x 1024)
Size	338 x 270 mm
Contrast	400:1 (typ.)
Brightness	250 cd/m ² (typ.)
Processor/tact frequency	VIA 1 GHz
Main memory	512 MB
Hard disc	2x 20 Gbyte (option 2 x 80 GByte)
Flash disc	up to 1024 MByte (option)
Available PC104 slots	1 x (e.g. for Interbus or Profibus adapter)
Graphic card	high resolution, max. 1600 x 1200 pixels
Keyboard with touchpad (intrinsically safe)	complete PC keyboard, 2-key mouse, dust protected
Cable glands	2 x M36 x 1.5 for mains power supply (1x assembled for cable diameter 20-24 mm, 1x peg) 1 x M36 x 1.5 fitted with fibre optic cable gland in versions pc/l,pc/m pegs in version pc/k 6 x G1/2, (keyboard, communication interfaces)
Power connector	10 mm ² clamping socket
Supply voltage	optional 42/115/230 Vac
Fibre-optic cable interface	100 MBaud with Microsens media converter 40 km single mode E2000 8° angled polish, a available in "e" box upgrade options for 2nd fibre-optic cable interface with integrated switch to "link" several devices
Interfaces, intrinsically safe on request	1 x 10/100 BaseT Ethernet (alternative to fibre-optic cable) 1 x USB 2.0
Interfaces, non-intrinsically safe	1 x RS232 at COM2
Interfaces, intrinsically safe	3 x marco standard Bidi 3 x current loop 20 mA (optionally active/passive or mixed) 2 x RS485/422 (e.g. suitable for Profibus) 1 x modem (19200 Baud), range without signal repeater 13 km
Bus protocols available	Profibus, DUST (BB22444), MODBus TCP/IP, TCP/IP PPP, TCP/IP SLIP marco BIDI Bus
Protection class according to EN 60 529	IP 65
Ambient temperature	0°C .. 50°C
Dimensions (B x H x D)	ca. 411 x 343 x 158 mm
Weight	ca. 45 kg plus 5 kg mounting brackets
Approvals	ATEX: Ex I M2, EEx d [ia] I, INERIS 03ATEX0269X (for parameters see Operating Instructions) type certificate number MPA-NRW-HS-027-02 RIALTO approval available POCC DE.ГБ05.В02014 NANIO CCVE PPC 00-25498 Rostekhnadzor



Examples of Applications

- Underground station for support control, MDA, interface to shearers/ploughs and other peripherals (BB22444, Profibus), as well as for data transfer to above ground (TCP/IP and PPP via modem).
- Universal applications, compact IPC can be retrofitted with Profibus interface for controlling underground systems such as conveyor lines, power trains, pumps, irrigation, ventilation etc.
- Data collection computer with TCP/IP (fibre optic cable) data transfer to above ground.

Order Number	Release	Description
<i>pm3.1/ze/pc/k, l, m</i>	1.0	Explosion-proof industrial PC
<i>pm3.1/ze/k</i>	1.1	Explosion-proof 17" industrial PC
<i>pm3.1/ze/kr</i>	1.1	Explosion-proof 17" industrial PC, Russian version
<i>pm3.1/ze/kr1</i>	1.1	Explosion-proof 17" industrial PC, Russian version with RS422
<i>pm3.1/ze/m</i>	1.1	Explosion-proof 17" industrial PC with fibre-optic cable
<i>pm3.1/ze/mr</i>	1.1	Explosion-proof 17" industrial PC with fibre-optic cable, Russian version
<i>pm3.1/ze/l</i>	1.1	Explosion-proof 17" industrial PC with fibre-optic cable and Profibus
<i>pm3.1/ze/utz/k</i>	1.0	Explosion-proof 17" industrial PC complete for main controller application
<i>pm3.1/ze/utz/m</i>	1.0	Explosion-proof 17" industrial PC complete for main controller application with fibre-optic ethernet cable
<i>pm3.1/ze/kb/c</i>	1.0	Underground PC keyboard/mouse
<i>pm3.1/ze/kb/cr</i>	1.0	Underground PC keyboard/mouse "jcuken", Russian
<i>pm3.1/ze/kb/ce</i>	1.0	Underground PC keyboard/mouse "qwerty", US