

The MiniRanger Plus level monitor uses non-contacting ultrasonic technology to provide effective monitoring for a range up to 15 m (50 ft.) on liquids and 7.5 m (25 ft.) on solids.

It offers optional volume calculation for 8 standard vessel configurations or open channel flow with 11-point characterization. It comes with 2 relays and a true isolated 4-20 mA output.

MiniRanger Plus has built-in Sonic Intelligence® advanced echo-processing software for superior reliability.

It is economical and easy to use. The unit can be programmed using the keypad or through a laptop using Milltronics' Dolphin Plus software.

It is compatible with chemical-resistant Echomax® transducers and can be used in hostile environments at temperatures as high as 145°C (293°F).

MiniRanger Plus is also available in a wall mount version.



Product Features

- Universal power supply
- Multi-field backlit LCD
- Two alarm/pump control relays
- High level switch operation
- Lead/lag pump operation
- Dolphin Plus compatible via RS-232
- Isolated mA output
- Sonic Intelligence®
- Integral keypad
- Optional level to volume conversion and open channel monitoring (OCM)
- Bi-polar communications loop

Technical Specifications

Power

- 9 – 250 Vac, 40-70 Hz, 38 VA, 12W or 9-250 Vdc, 11W

Environmental

- location: indoor
- altitude: 2000 m max.
- ambient temperature: -20 to 50°C (-5 to 122°F)
- relative humidity: 80% for temperature up to 50°C (122°F)
- installation category: II
- pollution degree: 2

Range

- solids applications: 7.5 m (25 ft.) (transducer dependent)
- liquid applications: 15 m (50 ft.) (transducer dependent)

Accuracy

- 0.25% of range or 6 mm (0.24"), whichever is greater

Resolution

- 0.1% of program range* or 2 mm (0.08"), whichever is greater

Memory

- program stored in non-volatile FLASH memory, for software upgrades via optional Dolphin interface
- parameters stored in non-volatile EEPROM

Display

- 75 x 20 mm (3 x 0.8") multi-field backlit LCD

Enclosure

- **Rack Mount:** DIN 3U/14HP, 4 rail plug in unit suitable for standard 84HP (19") sub rack
- **Panel Mount:** suitable for DIN 43700, 72 x 144 standard panel cut-out

Outputs

Transducer Drive

- 43.5 kHz, 250 V peak pulses of 1 ms max. duration at max. repetition rate of 300 ms

Relays

- 2 alarm/pump control relays
- 1 form 'C' SPDT contact per relay, rated 5 A at 250 Vac non-inductive

mA

- optically isolated 0/4 to 20 mA
- max loading: 750 Ω
- resolution: 0.1% of 20 mA

Transducer

- compatible models: ST-H and Echomax® models XPS-10/10F, XPS-15/15F, XCT-8, XCT-12, XRS-5, XKS-6

Cable

- co-axial to be RG62-A/U low capacitance
- signal to be 2-3 copper conductors, twisted, with foil shield, drain wire, 300V 0.5 – 0.75 mm² (22 – 18 AWG)
- relay/power to be copper conductors per local requirements to meet 250V 5A contact rating

Weight

- 0.5 kg (1.1 lbs.)

Options

Open Channel Monitoring

- for weirs and flumes, using a total of 11 point characterization

Volume Conversion

- automatic level to volume conversion for eight standard vessel configurations

Communications

- Dolphin Plus compatible via RJ-11 phone jack/RS-232

Approvals

- CE**, FM, CSA NRTL/C

* Program range is defined as the empty distance to the face of the transducer plus any range extension.

**EMC performance available upon request.

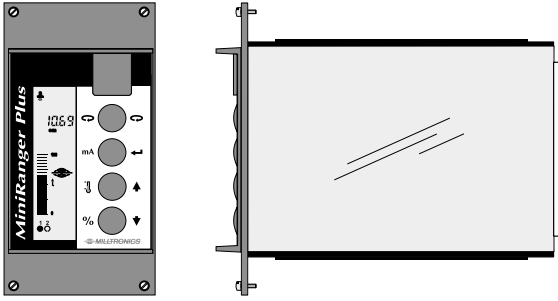
Specifications are subject to change without notice.

MiniRanger Plus – Rack and Panel Mount

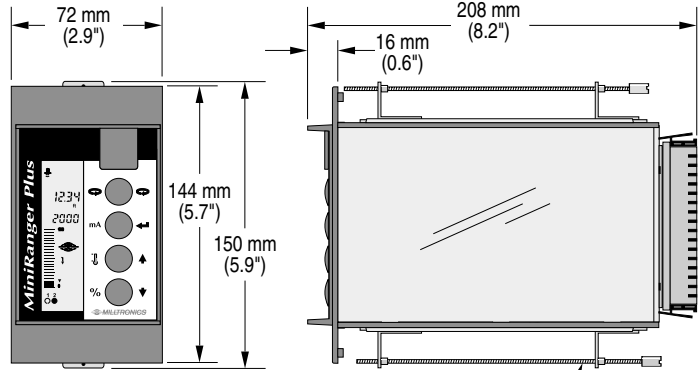
Dimensions

Rack Mount

DIN 3U/14HP, 4 rail plug in unit suitable for standard 84HP (19") sub rack.

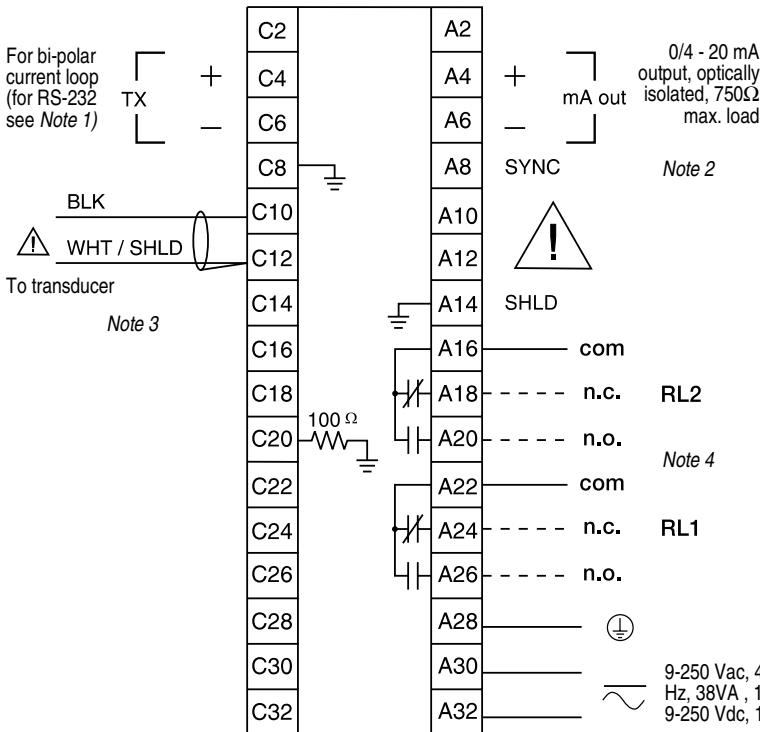


Panel Mount



Slipping on mounting bracket top and bottom. Screws to be tightened to no more than 5.9 Nm (1 inch-lb. torque)

Wiring



Notes:

- To convert the bi-polar current loop to RS-232 use C4 as TX and C20 as ground.
- Required only if mounted adjacent to other Milltronics equipment (with the exception of the MultiRanger Plus and HydroRanger). Interconnect all 'SYNC' terminals with a single 18 gauge (0.5 mm²) wire.
- Use RG-62 A/U Coaxial (or equivalent) for extensions up to 365 m (1200 ft.). Run in grounded metal conduit, separate from other wiring.
- Each relay has 1 set of form 'C' (SPDT) contacts, relay rated at 5A 250 Vac, non-inductive, when equal or lower rated limiting fuses are installed. Relay de-energized when in alarm conditions and energized for pump control.

Relays shown in de-energized position.



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France	Tel.: +33 4 42 65 69 00	Fax: +33 4 42 58 63 95
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