



# MiniRanger Plus

The advantages of non-contacting ultrasonic level measurement in economical mounted, rack and panel mount models.



# MiniRanger Plus

## Everything you want in an easy to use, low cost ultrasonic level measurement control device ... and more

**D**o you need simplicity and economy for basic level measurement applications, but want the performance advantages of Milltronics' non-contacting ultrasonic technology too?

The MiniRanger Plus, now available in rack and panel mount models as well as the original wall mount, is the simple, reliable answer. It works effectively without the complexity of higher priced solutions, or the problems inherent in comparably priced invasive mechanical devices.



Reliable dual-pump control in a narrow lift station with obstructions.

### All the basics you need to get the job done

These low cost, single point ultrasonic level monitors use the same advanced Sonic Intelligence® echo processing software found in our more sophisticated systems. The MiniRanger Plus works with Milltronics' hermetically sealed, chemically resistant Echomax® transducers to monitor liquid levels to 10 metres (33 ft.) and solids levels to 5 metres

(16.5 ft.), without ever touching the process.

It comes with 2 relays and a true isolated 4-20mA output... just what you need to get the job done right, without the tangles and downtime associated with bubblers and floats.

The MiniRanger Plus can control a 2-pump lift station (including pump back-up and alternating pumps), or one pump and a high alarm shutoff, or a high and a low alarm, or any other combination of pumps and alarms.



Monitoring levels in a limestone crushing process.

### More for less

You expect more from the world's leader in ultrasonic level measurement ... and you get it.

- Chemical, UV and impact resistant polypropylene alloy enclosure of the Wall mount version is sealed to protect the electronics from condensation, corrosive vapours and chemicals. It is a certified Type 4X (NEMA 4X/IP65) housing.
- Large, easy-to-read graphic LCD continuously displays relay status. There is a bar graph so you can see rapidly changing liquid/solid levels at a glance. Level readings can be in feet, m, inches, cm, mm or %. Air temperature and mA output and reading as a percentage of measurement span are keypad selectable.
- Optically isolated milliamp output drives up to 750  $\Omega$  load. No ground loop problems. No damaged electronics.
- Hard gold plated relay contacts. They're immune to corrosion and ideally suited for both PLC logic inputs and power switching.
- All units are simple to mount and wire, without removing or exposing the electronics. With the wall mount model, there is space for bottom and side entry for cable.
- The electronics in the MiniRanger Plus are rated for operation at temperatures from -20° to 50°C (-5° to 122°F).



Wall mount unit: Its rugged, sealed enclosure is certified to Type 4X (NEMA 4X/IP65) for harsh environments. The big, easy-to-use keys are waterproof.

### Get the best of both worlds

- Low cost of ownership
- Virtually no maintenance
- Available in Rack, Panel and Wall mount models
- Range: Liquids - 10m  
Solids - 5m
- Simple, reliable and easy to operate
- Optically isolated  
4-20 mA output
- 2 Alarms
- Remote programming

# Our popular Rack and Panel mount models can be integrated quickly and easily into your system

## RACK AND PANEL MOUNT MODELS

Is your control room already over-crowded? The MiniRanger Plus now comes in streamlined, low-cost Rack and Panel mount models that can be integrated into your existing system.

Both models offer you all of the reliability and exceptional performance of the Wall mount unit, with added convenience and adaptability.

## Installation is simple and straightforward

A turn of the screw and the **Rack mount** model slides neatly into place with up to five other units in your rack. It fits an industry-standard 3U high, 84 HP (19") sub rack. The unit has a DIN 3U, 14 HP 4-rail plug-in housing.

The **Panel mount** model fits a DIN 43700 standard 72 x 144 panel cut-out.

Both units have an easy-access RJ-11 jack on the face plate, protected by a splash-proof guard. The jack makes it very easy to connect to your PC or laptop computer for immediate access to the programming parameters.

Installation costs are kept to a minimum and wiring is simplified with integrated, self-selecting universal power supplies (ac/dc) in both models.

Extra-large, ergonomic push buttons allow you to program the MiniRanger Plus quickly and easily for your application. A menu steps you through the entire process. The backlit LCD on Rack and Panel mount models clearly displays numbers, custom icons and even a bar graph for viewing at a glance.



MiniRanger Plus Rack and Panel mount units. Sleek, adaptable designs fit in with your existing system.

## Very simple to program

We know you don't have time to spend on complicated set-ups. That's why all units come pre-calibrated with "Quick Start" parameters so you are up and running in a few minutes.

Instructions for operation are simple and easy to understand. Operating parameters are common to all new Milltronics products so it's easy to move from one unit to another.



The MiniRanger Plus Parameter Card is a handy reference guide, listing all of the unit's set-up and programming parameters.

## Rack and Panel Unit Features

- ❑ Self-selecting Universal ac/dc power supply
- ❑ Easy-to-read backlit LCD display with numeric and icon formats including a bar graph
- ❑ Large, ergonomic pushbuttons
- ❑ RJ-11 jack on instrumentation plate for simple connection to your PC, protected by a splash-proof flap
- ❑ RS-232 connector compatible with a BIC II
- ❑ Space-saving design
- ❑ Tough, polycarbonate face-plate



Panel mount unit with Dolphin Plus communications connection via an RJ-11 jack on the instrumentation face.



Data link to a host computer, PLC or DCS through an optional BIC II converter.

# Laptop Programming with Dolphin Plus

With Milltronics' Dolphin Plus software you can program more than one unit at a time by inputting the information and downloading it to the other units in your system from your PC or laptop computer.

Configure your MiniRanger Plus, change parameters, back up and restore parameters to a PC disk and update the Windows 95®-based software, all without opening the wiring panel ... because it's optical.

Dolphin Plus connects quickly, with a simple RJ-11 jack on the front of the rack and panel units, or through the infrared ComVerter (provided with your Dolphin Plus software) on the Wall mount unit.

No components to change. No electrical connections to make. You do it all with your PC in Windows 95®.



*Reduce field set-up time with Milltronics' Dolphin Plus Software for Windows 95®.*

## ECHOMAX®

A choice of transducers can be used in harsh environments at temperatures from -40° to 95°C (-40° to 203°F). High temperature XCT-8 and XCT-12 models are rated for temperatures as high as 145°C (293°F).

Built-in temperature compensation is standard with any Echomax or ST-H transducer. No additional cable is needed so you save on wiring and installation costs.

An optional submergence shield stabilizes operation in overflow or flood conditions.



*Echomax® transducers are hermetically sealed in chemically resistant Kynar® for reliable operation in harsh environments.*

The success of Milltronics' ultrasonic techniques to solve level measurement problems is recognized in the most demanding applications. By measuring the time delay between transmitted and reflected pulses, the level in vessels with constantly changing bulk solids or liquids is reliably processed.

But it is the advanced echo processing techniques of Sonic Intelligence® software that drives the exceptional echo analysis performance of the MiniRanger Plus. It not only differentiates between the real echo and echoes generated by acoustical or electrical noise, but also captures weak "true" echoes in tough environments where extremely hot, cold and harsh conditions can stop other systems in their tracks.

**MILLTRONICS**  
Technology based. Customer driven.

### Why Settle for Less?

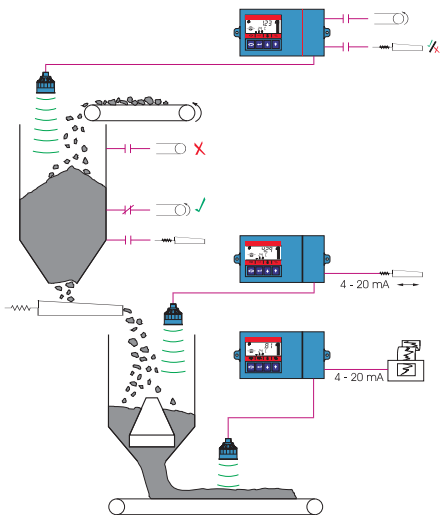
The reliability of our ultrasonics is proven in over 200,000 applications worldwide. They're used in virtually all primary and secondary industrial processes including mining, food, chemical, water/wastewater, manufacturing and cement.

**They work.**

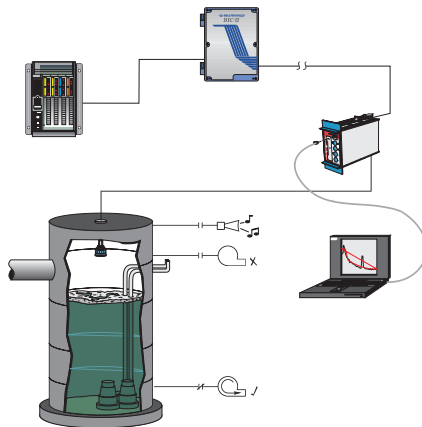
### Service Support Worldwide

Milltronics assures you of expert technical support as close as the telephone. This support is provided by our worldwide sales and service network and our products are backed by a 2-year warranty. That's our long term commitment to you.

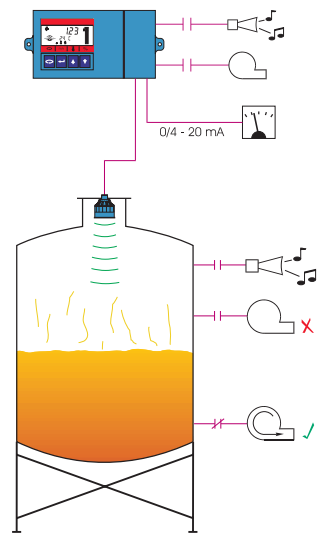
# The MiniRanger Plus is cost effective in a wide range of applications



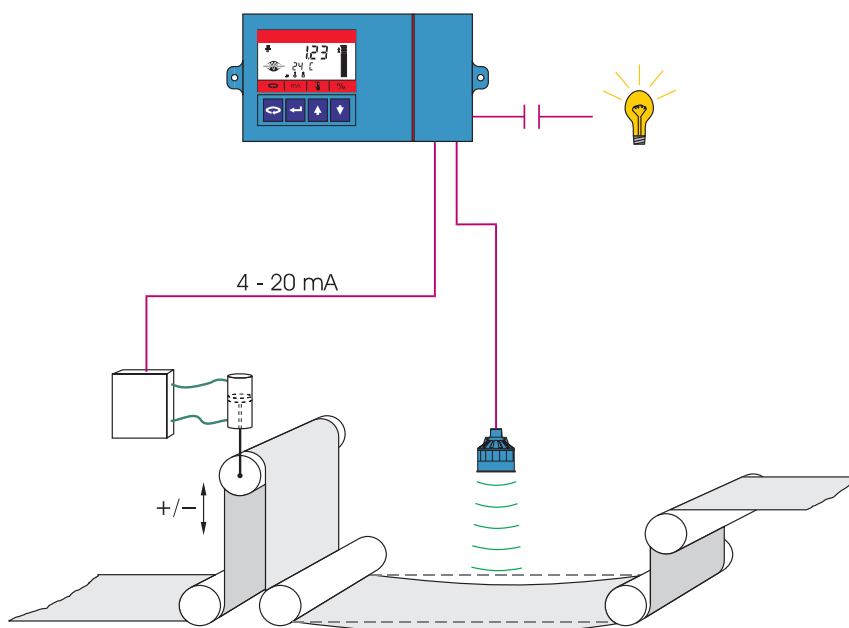
Crusher Control: Maximizing throughput of a choke fed crusher operation.



The panel mount unit with Dolphin Plus communications option in a liquid measurement application.



Monitoring liquid level in a chemical tank. Controls the pump and a high level alarm to prevent spillage.



Paper tension control and paper break alarm reduces downtime.

## THIS IS ALL YOU NEED TO DO FOR A TYPICAL SET-UP

- Choose the reading for material, space or distance
- Select liquid or solid operation
- Enter transducer type
- Choose units of display
- Set empty distance and span
- Program relay function for alarm or pump
- Set relay on and off trip points
- Set the lock parameter to prevent unauthorized or inadvertent changes... and you're in business.

