

# MILLTRONICS HydroRanger Plus – Rack and Panel Mount

The HydroRanger Plus uses Milltronics non-contacting ultrasonic echo ranging technology and Sonic Intelligence™ software to monitor water and wastewater of any consistency up to 15 metres (50 ft.) in depth.

The system is effective in wet wells, weirs and flumes where foam and turbulence are typical operating conditions. It can be customized to meet your specific application needs – from measuring flow rate in a narrow flume to volume in a ferric chloride storage bank.

The system consists of the electronics housed in a rack or panel mount enclosure and a hermetically sealed, corrosion-resistant Echomax® transducer. These components can be separated by up to 365 m (1200 ft.).

Optional submergence shields ensure consistent operation in wet wells where the transducer may be submerged during flooding from rainfall or a power outage. Milltronics' patented detection software can differentiate between a submerged condition and a high level.

The HydroRanger Plus is also available in a wall mount version.



Environmental  
Controllers

## Product Features

- Outputs for alarms, chart recorders, controllers and existing system integration
- Monitors wet wells, weirs and flumes
- Energy saving with a built-in real time clock
- Anti-grease ring/tide mark build-up
- Integrated temperature compensation
- Pump performance monitoring
- Energy management
- System monitoring and network analysis

## Technical Specifications

### Power

- ac: 100/115/200/230 Vac, ± 15%, 50/60 Hz, 15VA and/or
- dc: 9 - 30 Vdc, 8W

### Environmental

- location: indoor
- altitude: 2000 m max.
- ambient temp.: -20 to 50°C (-5 to 122°F)
- relative humidity: 80% for temperature up to 31°C (88°F)
- installation category: II
- pollution degree: 2

### Range

- 0.3 to 15 m max. (1 to 50 ft.)

### 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

- EEPROM (non-volatile), no back-up battery required

### Input

- 0/4 to 20 mA, from alternate level monitoring device, scalable

### Display

- 75 x 20 mm (3 x 0.8") custom 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 on 100 mm centers

### Temperature Compensation

- -50 to 150°C (-58 to 302°F)
- integral transducer sensor
- TS-3 temperature sensor
- programmable fixed temperature

### Temperature Error

- with compensation: 0.09% of range
- fixed temperature: 0.17%/°C deviation from programmed temperature

### Outputs

#### Transducer Drive

- 250 V peak (transducer model dependent)

#### Relays

- 5 alarm/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: 1K Ω
- resolution: 0.1% of 20 mA

### Programming

- via removable programmer or optional Dolphin Plus

### Transducer

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

### 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 to 0.75 mm<sup>2</sup> (22 to 18 AWG)
- relay/power to be copper conductors per local requirements to meet 250V 5A contact rating

### Weight

- 0.87 kg (1.9 lbs.)

### Options

#### Temperature Sensor

- TS-3

#### Communications

- Dolphin Plus compatible via Milltronics ComVerter

### 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.

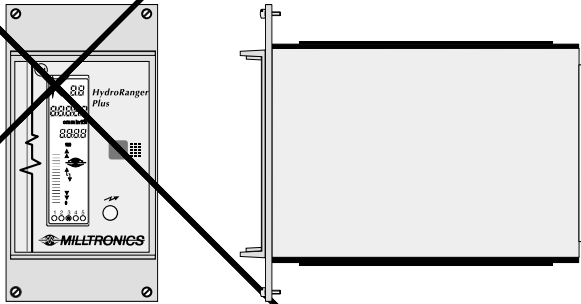
Specifications are subject to change without notice.

# HydroRanger Plus -- Rack and Panel Mount

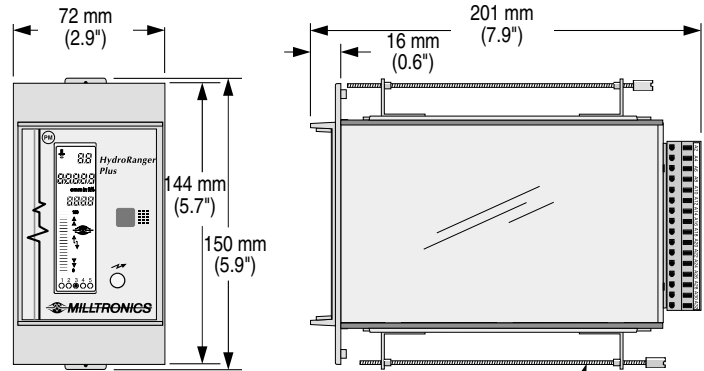
## Dimensions

### Rack Mount

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

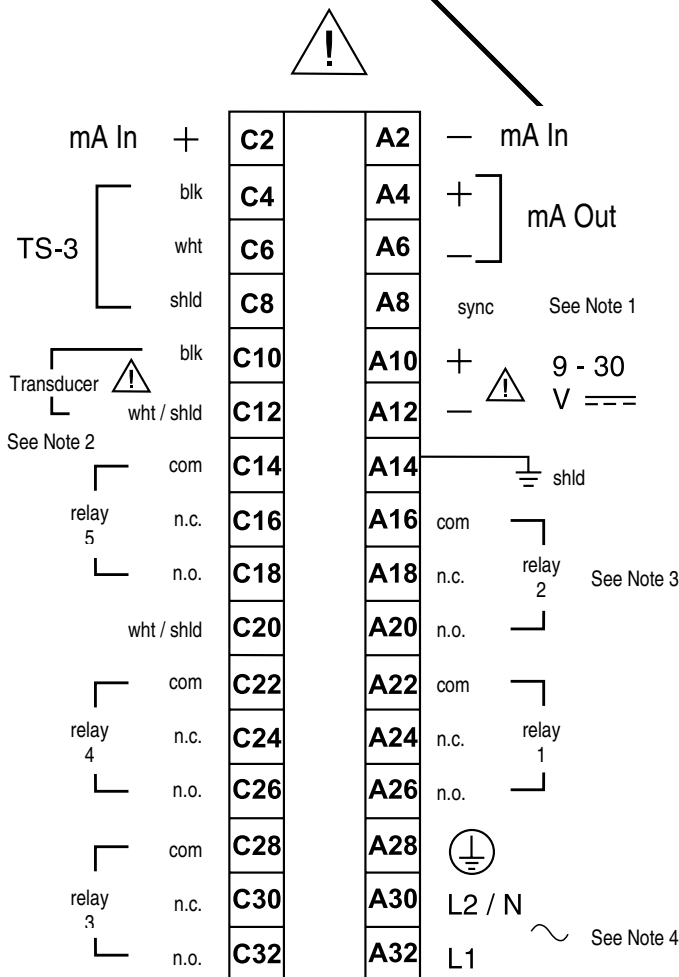


### Panel Mount



Slip on mounting bracket top and bottom screws to be tightened to no more than 5.9 Nm (1 inch/lb.) torque.

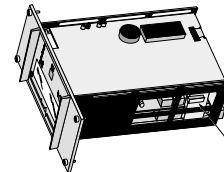
## Wiring



### Notes

1. 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 mm<sup>2</sup>) wire.
2. 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.
3. 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.
4. Before applying ac power (mains), ensure the correct voltage is selected. Never operate the HydroRanger Plus with the ground (earth) wire disconnected.

### Voltage Selection



Voltage Selection Switches



Australia	Tel.: +61 3-9695-2400	Fax: +61 3-9695-2450
Belgium	Tel.: +32(0)3326 45 54	Fax: +32(0)3326 05 25
Canada	Tel.: +1 705-745-2431	Fax: +1 705-741-0466
France	Tel.: +33 4 42 65 69 00	Fax: +33 4 42 58 63 95
Germany	Tel.: +49 721 595 4607	Fax: +49 721 595 4937
Hong Kong	Tel.: +85 2-2856-3166	Fax: +85 2-2856-2962
Mexico	Tel.: +52 5 575-27-28	Fax: +52 5 575-26-86
The Netherlands	Tel.: +31(0)76 542 7 542	Fax: +31(0)76 542 8 542
Switzerland	Tel.: +41 21 791 58 28	Fax: +41 21 791 58 40
United Kingdom	Tel.: +44 1905-450500	Fax: +44 1905-450501
United States	Tel.: +1 817-277-3543	Fax: +1 817-277-3894

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