SIEMENS

Engineering Specifications
Ultrasonic Level Controller
HydroRanger 200 HMI
(Enhanced replacement for HydroRanger 200 - 6 relay version)

Typical applications:
Wet wells, chemical storage, flumes/weirs, bar screens, pump control, hoppers, bin level.

Measurements:
Level**,** distance, space, or level, distance, space, open channel monitoring, differential level, volumetric conversion.

HydroRanger 200 HMI Ultrasonic Level Controller Specifications:
The multi-purpose level controller system shall be a microprocessor based echo-time measuring type providing an electronic output signal proportional to the level of material, space, differential level, flow, or volume, as may be required. It shall consist of a transmitter and a transducer(s) connected by up to 1200 feet (365 meters) of cable.

1. Controller Enclosure:
   - Type 4X NEMA 4X /IP65 polycarbonate

2. Power supply:
   - AC Power – 100-230 VAC ±15% @ 50/60 Hz, 36VA or
   - DC Power – 12 to 30 VDC (20W)

3. Operating temperature:
   - –4°F to 122°F

4. Outputs:
   - 6 relays rating 5A @ 250VAC, non-inductive
     - 4 SPST Form A / 2 SPDT Form C
   - Two isolated 0-20mA or 4-20mA into 750Ω

5. Inputs other than transducer:
   - One 0-20mA or 4-20mA, from alternate device, scalable
   - Discrete inputs
   - 10 to 50 V DC switching level
   - Logical 0 = < 0.5 V DC
   - Logical 1 = 10 to 50 V DC
   - Max. 3 mA.

6. Accuracy:
   - Error in Measurement: 0.25% of measurement or 6mm (.24”) whichever is greater
   - Resolution: 0.1% of measurement or 2mm (.08”) whichever is greater

7. Communication:
   - RS-232 running MODBUS RTU or ASCII via RJ-11 connector
   - RS-485 running MODBUS RTU or ASCII via terminal Blocks
   - Optional Smartlinx Cards for:
   - Profibus DP
   - DeviceNet ™

8. Programming:
   - Graphical Quick Start Wizards on the local user interface with four-button keypad from outside the enclosure without opening the enclosure or via PC using SIMATIC PDM optionally available software.

9. Indication:
   - Multi-field backlit LCD

10. Measurement Range:
    - 1-50ft dependent on transducer

11. Cable: Transducer and mA Output:
    - 2-core copper conductor, twisted, shielded, 300Vrms, 0.82 mm^2 (18AWG)
    - Belden® 8760 or equivalent is acceptable
    - Maximum separation between transducer and transducer is 1200 ft

12. Approvals:
    - CE, C-Tick
    - Lloyd's Register for Shipping
    - ABS Type Approval
    - FM, $CSA_{US/C}$, UL Listed
    - $CSA_{US/C}$ Class I, Div.2, Groups A, B, C and D,
    - $CSA_{US/C}$ Class II, Div. 2, Groups F and G,
    - $CSA_{US/C}$ Class III (wall mount only)
    - MCERTS Class 1 approved for Open Channel Flow

Installation:
All equipment shall be installed, configured and commissioned by qualified persons in accordance with the manufacturer's instructions and guidelines as well as in compliance with all governing regulations and accepted engineering practices.