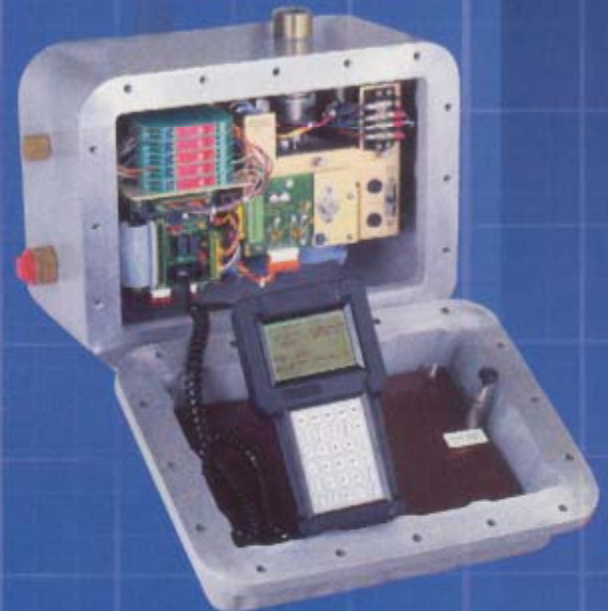


# Model 6290

PC-Based LTD Tank Gauging System

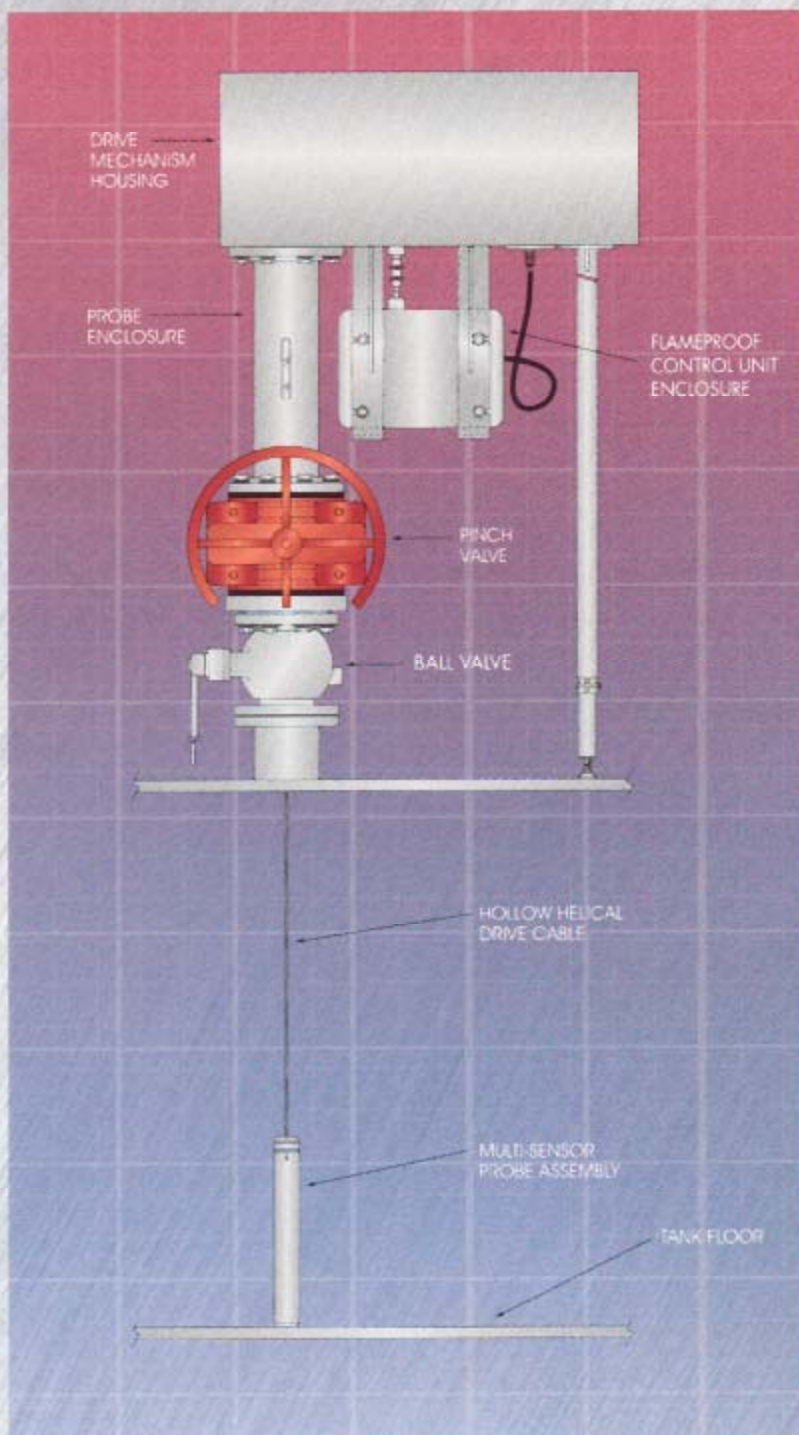


# Model 6290 PC-Based Tank Gauging System

## System Description

The Model 6290 Tank Gauging System is capable of providing automatic continuous level gauging, temperature monitoring, and density measuring of liquid media. These measurements are achieved by means of a PC based control unit and an electro-mechanical

drive mechanism which operates as a unit to position a multi-sensor probe assembly suspended within the liquid storage tank. The system can accommodate LNG, propane, butane, ethane, or similar cryogenic media. The probe is moved vertically by the drive mechanism in response to commands generated by the control unit. Both automatic and manual control of the probe assembly are incorporated into the system design. All system components which are located inside the tank can be completely removed from the tank for inspection and/or maintenance at any time. All operational data is displayed continuously on the customer's DCS display or an optional PC.



- **Typical installation requires no stilling well.**
- Flameproof enclosure and zener barriers provide ATEX safety approval.
- All connections between mechanical unit and tank ball valve supplied by SII.
- Probe enclosure assembly with viewing glass allows for probe to be removed from tank for maintenance.
- Buna lined pinch valve may be closed on drive cable for tank isolation during service.
- Transition piece allows for mechanical system to be interfaced to isolation valve.
- All field wiring terminations are made inside the flameproof enclosure housing the control unit.

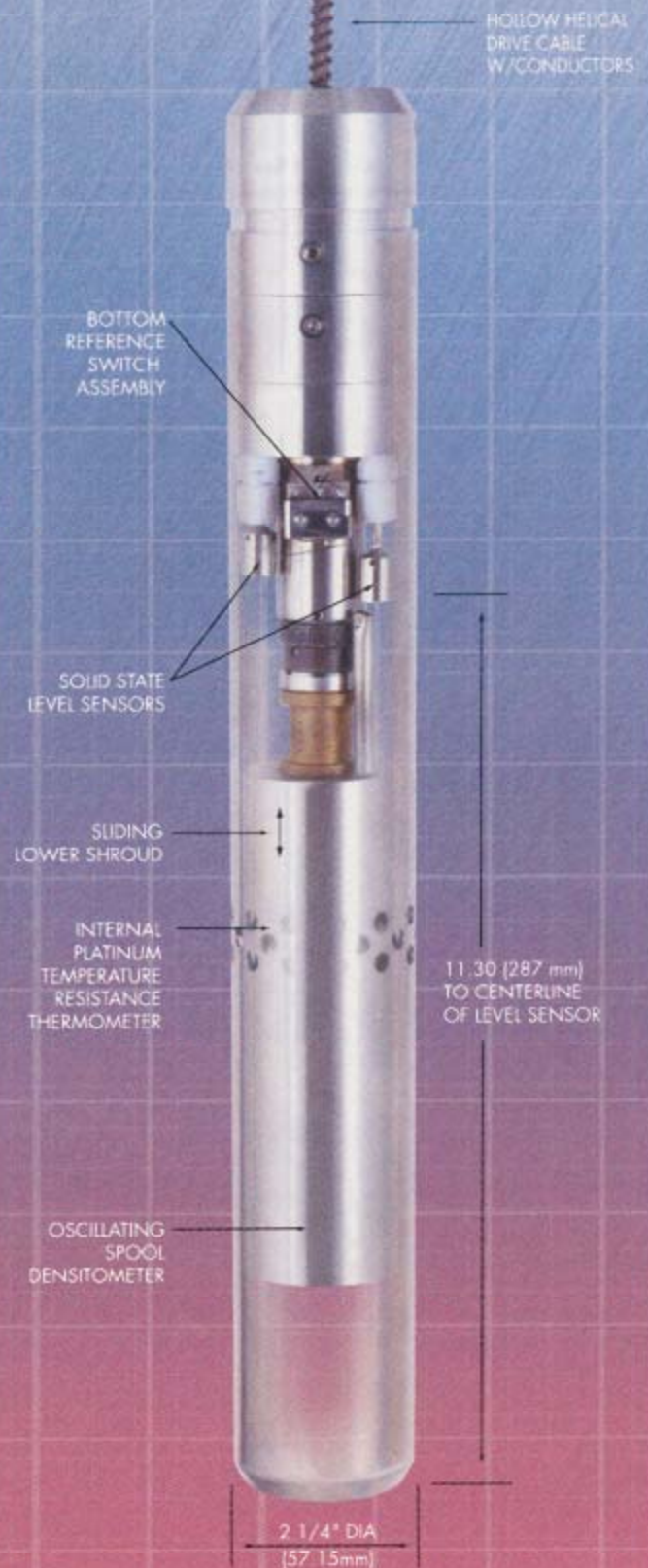
## Multisensor Probe Assembly

- All primary probe components are stainless steel.
- Solid-state level sensors detect liquid / vapor interface.
- Calibrated Platinum resistance thermometer provides temperature measurement.
- Oscillating spool densitometer provides density measurement.
- Hermetically sealed bottom reference switch detects tank floor for calibration.
- Stainless steel helical drive cable contains and protects all sensor wires.

## Tank Top Mechanical Unit



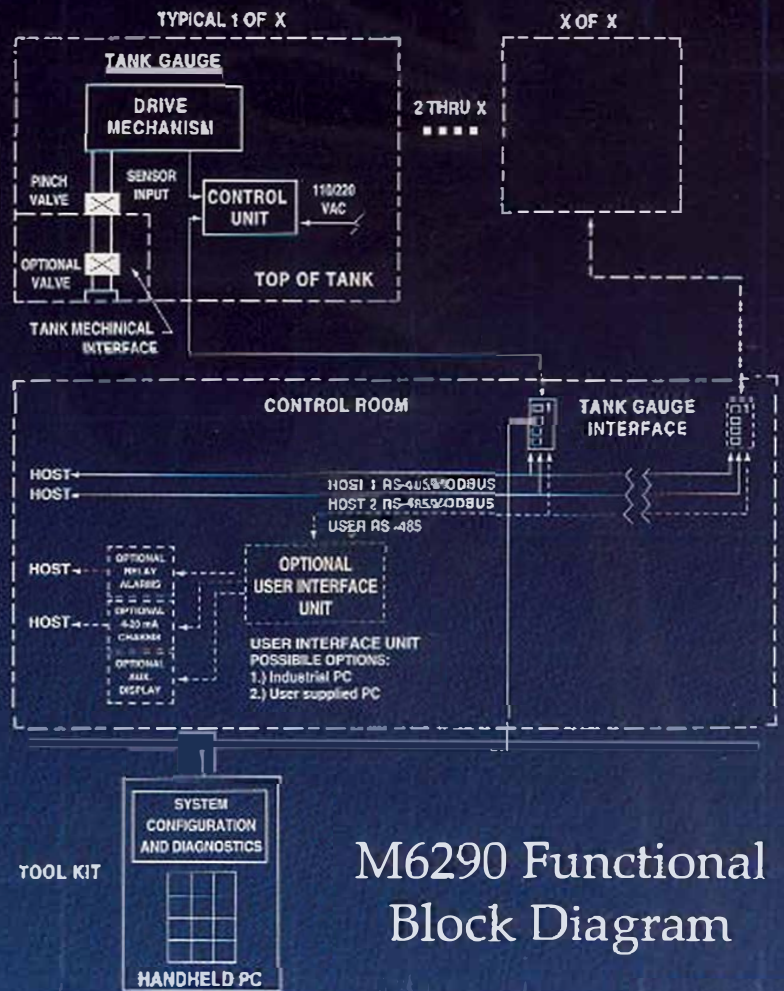
- Arc plate eliminates bending stress on helical drive cable.
- Spring motor drives helical cable take-up reel.
- Viewing windows located on end plates to verify operation.
- Stepping motor / drive gear assembly provides accurate probe positioning.
- Magnetic switch confirms continuous take-up reel rotation and provides alarm capability.
- "O" ring enclosure assures leak-free installation.
- Continuous conductor path (brushless) by reverse winding ribbon cable inside take-up reel assembly.



**M6290 LTD PROBE ASSEMBLY**

# Model 6290 Microprocessor Control Unit

The control unit for the M6290 is mounted on the tank inside a flameproof box. The basic components making up this control unit are a PC/104 control module based on a 386SX processor, signal conditioning boards, stepping motor and associated driver, safety barriers, and power supplies. Communication to the control room for both the host computer and an optional PC based operator interface is via RS-485. System configuration is accomplished by means of a handheld PC which can be used either on the tank or in the control room. A small DIN rail mounted module in the control room provides a field wiring termination point as well as power and communication control. Additional options to meet specific user requirements include an industrial rack mount PC, relay alarm outputs, 4-20 ma output of basic parameters, and additional alpha-numeric displays at remote locations. All system data is available to the host computer via industry standard MODBUS format. When installed, the program running on the PC in the control room provides complete system control including tabular and graphic display of tank profile data for layering detection.



## M6290 Functional Block Diagram

- Power requirements: 115 or 220VAC 50/60 Hz
- Drive Mechanism: 44 x 29 x 16" (117 x 74 x 40 cm)
- Intrinsic Safety: Discrete Zener Barriers
- Media: LNG, Propane, Butane, Ethylene, Various Cryogenic Liquids

	Level	Temperature	Density
Range of Measurements*	45 Meters	-200°C to 0°C	400 to 600 Kg/M <sup>3</sup>
Resolution	0.001M	0.01°C	0.01 Kg/M <sup>3</sup>
Repeatability	±0.001M	±0.1°C	0.1% of Range
Accuracy	±0.002M	±0.1°C	0.1% of Range, ±0.5 Kg/M <sup>3</sup>

\* Ranges in excess of 45 meters can be accommodated. Consult factory.



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