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Bid Specifications for Smart Rf Admittance 2-Wire Self Calibrating — Dielectric Constant Compensating Level Transmitters Using The Hart™ Protocol

The 2 WIRE SMART RF ADMITTANCE type continuous Dielectric Constant Compensating Level transmitter shall produce an output of 4-20 mA, and HART protocol that is proportional to level and be independent of changes in material dielectric constant (k), conductivity (g) and/or density. Calibration shall be automatically handled by the transmitter and not require more than simple vessel configuration by the user.

The measurement shall be free from the effects of changes in temperature, density or acoustic noise in the vapor space above the level. The output can also display a second process variable (PV2) of volume or weight proportional to level from built in standard strapping tables or user defined tables. Configuration can be accomplished from a HART Communicator or PC software with a modem connected anywhere in the 2-wire loop. There shall be no easily accessible controls that unauthorized tampering. The output shall be certified compatible with the HART Protocol specification revision 5.

The level measuring system shall be intrinsically safe and suitable for installation in Division 1 hazardous areas when supplied from an approved power supply. The electronic unit shall be mounted in an explosion-proof enclosure and be capable of being either located integrally with the sensor or remotely from the sensor up to 25 feet (8 meters) away.

The electronic unit shall be capable of operating in harsh environments with temperature ranges from -40°F to 170°F (-40°C to 77°C) and be protected from corrosion with a NEMA 4X rated housing. The internal circuit boards shall be protected by a fungus resistant (tropicalized) coating.

The electronic unit shall be a single device capable of use over a wide range of level applications by having a capacitance tuning range of 1 to 2500 Pf. The electronic unit shall have provision for field changeable fail-safe (mode) and damping, in the event the measurement requires such changes to optimize the level reading. The reading shall be free from effects of Radio Frequency Interference (RFI) (when fitted with optional filters) in the event plant radios (walkie-talkies) are in the vicinity of the level transmitter. Further, the measurement shall be free from harmful effects of static electricity on the sensing element with discharges up to 10 Amperes being tolerated without damage. There shall be an optional 100 Amp spark protector available. The transmitter shall be a Drexelbrook Series 509-85 True Level III™ RF Admittance Level Transmitter.

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