Company: Northrop Grumman Corporation

FCC registration number: 0003-8001-33

Equipment Name: Meter Reader

Model: VersaProbe FCC ID: LC3VP

PRODUCT DESCRIPTION

The VersaProbe meter reader is a device that reads water and gas meters equipped with wired electronic remote register readout devices. Meters having remote register readout fall into three principal categories: wired DC communication, wired AC communication with transformer coupling, and wireless radio communication. The VersaProbe addresses only the wired DC communication and the wired AC (with transformer coupling) communication categories. The attached block diagram (VPblock.pdf) depicts the functional blocks of the VersaProbe and enumerates the power transmission and signal frequencies present at each point within the circuit.

The "antenna" coil in the VersaProbe is not an RF antenna in the traditional sense. It is instead half of the transformer used with meter registers that require the transformer-coupled wired AC signaling method. The other half of the transformer is permanently attached to the meter via a two-conductor cable that may be up to 100 ft long, and is usually mounted in a location having public access such as on the outside wall of a home. The two parts of the transformer must be held in very close physical proximity (0-1 cm) by the operator for the transformer to function. The "antenna" coil is internal to the VersaProbe and is not user-replaceable.

Some types of transformer-coupled meters have no internal electrical power source, but instead are supplied power via the coupling transformer. The "transmitter" in the VersaProbe supplies power to such meters via its "antenna" coil during the reading operation only. At all other times the meter is powered mechanically by the flow of the commodity being measured.

AC transformer-coupled meters having internal battery power respond to a low-level 154 kHz AC interrogation trigger signal from the VersaProbe, in a half-duplex communication mode, with a low-level 160 kHz AM-modulated AC data signal.

AC transformer-coupled meters without battery power receive a high-level AC power carrier from the VersaProbe, in the frequency range of 10.2–28.6 kHz, and respond in one of two ways: either they modulate their resistive loading of the power carrier in a manner that communicates the register data, or they transmit a low-level 28 kHz AC return signal during momentary interruptions of the power carrier (using capacitively stored energy). For reading wired DC meters, the VersaProbe provides an industry-standard electromechanical connector for making connection to wired DC communication

registers. This connector may be omitted from a VersaProbe if a customer does not require it.

DC direct-coupled meters are supplied with DC power from the VersaProbe. They transmit a single binary bit of data back to the VersaProbe each time the DC power is interrupted momentarily.

FCC & CE LABELS

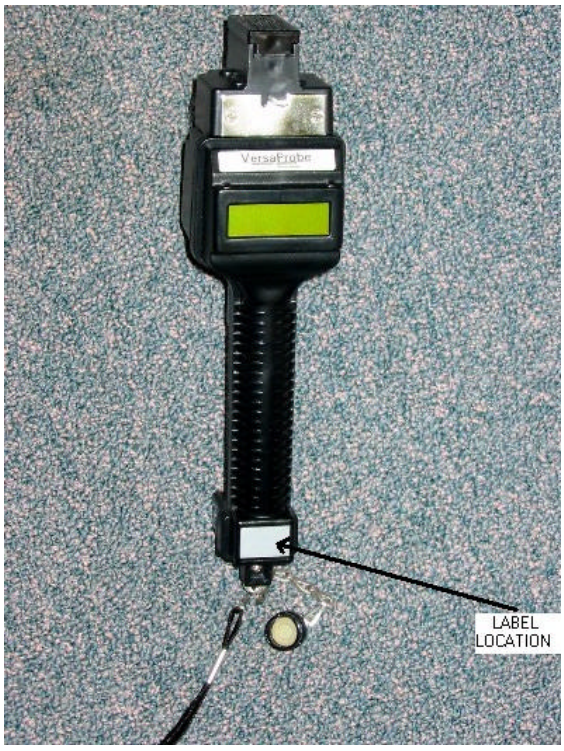
Sample ID labels (actual size 25mm W x 16mm H): Material: Aluminized mylar. The front label will be adhered to the lower label boss on the front side of the VersaProbe, in lieu of the blank label depicted in the attached front photograph. This same photograph also depicts the Model / Manufacturer label adhered to the upper label boss (above the LCD display) on the front side of the VersaProbe. The rear label will be adhered to the lower boss on the rear side of the VersaProbe, in lieu of the blank label depicted in the attached rear photograph. The object above the Model / Manufacturer label on the front and above the circular antenna coil on the rear is an optional meter interface connector for direct-connect meter registers. This connector is omitted on some assemblies and therefore is not available as a labeling surface.

SERIAL NO.
VP14A12345
FCC ID: LC3VP

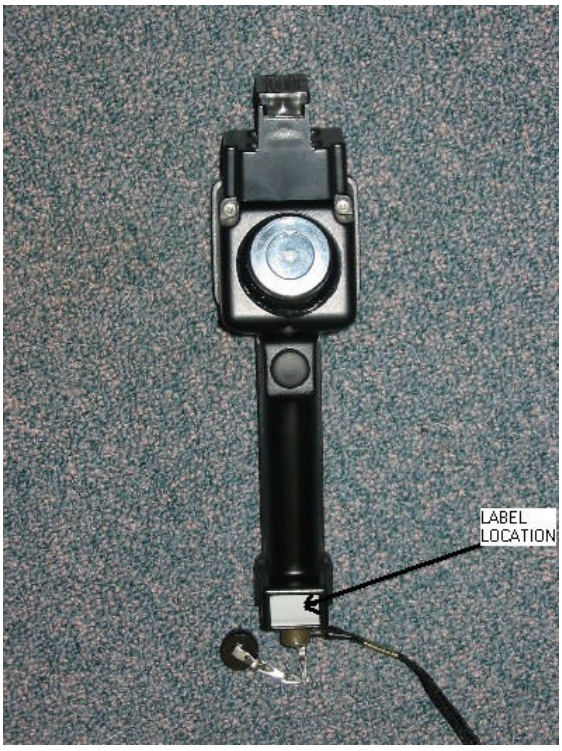
Front label

CE 0976

Rear label



VersaProbe Front



VersaProbe Rear