

1900 Series Digital Antenna Monitors

Key Features

FCC authorization number:
IJ3PI1900

Digital display of ratio and phase of up to 12 towers

Same phase accuracy as the industry standard AM-19

Modular design simplifies expansion, reduces downtime

Provides continuous analog outputs of all tower measurements

Fully compatible with any standard remote control system

Simplified operating controls, local or external

Measurements for up to 12 towers in 5¼ inch rack height



Introduction

There are three different units in the 1900 Series. The basic unit is the Model 1901. This 5¼ inch unit contains control/measurement circuitry for up to 12 towers, digital display of all measurements, local operating controls, and an interface to a remote control system. The control/measurement circuitry for each tower is contained in a separate module. The modules plug into the rear of the unit, and may be easily added to an expanding station.

The Model 1902 Monitor Display contains a duplication of the display and control circuitry from the Model 1901. This 1-inch unit provides remote control and monitoring of a Model 1901 or 1903.

The Model 1903 is equivalent to a Model 1901, but does not contain any front panel control or display circuitry. This function may be performed with a Model 1902 or any standard remote control system.

Simplified Operation

The operating controls are identical for the 1901 and 1902 models. The monitoring system is controlled with four pushbuttons, three are located to the left of the display and one to the right. The first pushbutton is used to select one of three different modes. The RATIO mode displays the true ratio of the selected tower sample as compared to the reference sample. The AMPLITUDE mode displays the relative amplitude of the selected tower sample. The TEST mode is used to check the calibration of the instrument. Separate LED indicators display the selected mode.

The next two pushbuttons are labeled DOWN and UP. These buttons are used to select the tower to be monitored and displayed on the front panel LED displays. The selected tower number is shown to the right of these pushbuttons.

Two separate four digit displays are used to indicate the amplitude or ratio and the phase of the selected tower. The pushbutton to the right of the digital display is used to select the PATTERN. Separate LEDs indicate Day, Night, or a Third pattern. LEDs in the display also indicate whether the monitor is under local or external control.

Performance Features

The 1900 Series offers improved performance and simplified operation at a lower cost than the current generation of AM-19 monitors. The 1900 Series indicates sample ratio directly with virtually no modulation effect, independent of the power level. The 1900 Series also provides the same phase accuracy, with automatic polarity indication, as the industry standard AM-19.

The 1900 Series utilizes a separate control/ measurement module for each tower. The modules plug into the rear of the 1901 and 1903 units. This feature provides a continuous readout of the ratio and phase of each tower, simplifying the interface to a remote control device and eliminating input switching within the monitor. The modular design also simplifies expansion when another tower is added and eliminates extended downtime if a spare module is available on-site. The 1900 Series can accommodate up to 12 towers.

continued next page



Potomac Instruments, inc.

932 Philadelphia Ave./ Silver Spring, MD 20910-4912 / Voice: 1 301.589.2662 / Fax: 1 301.589.2665 / web: www.pi-usa.com

1900 Series Digital Antenna Monitors



System Interfacing

The 1901 and 1903 units provide a direct interface to a remote control device. Each of the control/ measurement modules (one for each tower in the system) provides continuous analog outputs relative to the ratio and phase for each tower. These outputs may be connected to the telemetering inputs of the remote control device. The outputs may also be connected to an array of meters to provide a continuous and simultaneous display of each tower in the system.

External control inputs to the 1901 and 1903 units, in the form of contact closure to ground, can switch the units to the correct pattern and can also select the amplitude and test modes.

Modular Construction

The modular construction technique used in the 1900 Series simplifies expansion and repair procedures. All active circuitry is contained in modules that plug into the rear of the chassis. The unit does not have to be removed from the rack when adding or replacing modules.

Specifications

(Model 1901 alone or models 1902 and 1903 together)

Frequency Range:	540 kHz to 1700 kHz
Number of Towers:	2 to 12
RF Inputs:	Level range, reference: 1.5 V to 25 V RMS carrier Level range, non-reference: 0.3 V to 25 V RMS carrier Impedance: 50 ohms, 72 ohms, or Special
Connector:	UHF, adapters supplied to other types
Ratio/Amplitude Display:	Ratio range: 0 to 1.999 Ratio accuracy: ± 0.010 Amplitude range: 0 to 1999, scale factor and decimal position user set
Phase Display:	Range: 0 to ± 180.0 degrees Accuracy: ± 1.0 degree for ratios from 0.2 to 1.999
Patterns:	Up to 3 different reference towers; any number of power levels, subject to the input range limits
Remote Data Outputs:	DC voltage proportional to parameter, separate outputs for each tower; Ratio/Amplitude: 0 to 2.5 V for 0-1999 local display reading, for any decimal position Phase: 0 to ± 2.25 V corresponding to the range of 0 to ± 180.0 degrees Source Resistance: 1000 ohms ± 1 ohm Connector: Plug for each tower with screw clamp terminals
External Control Inputs:	For external pattern and mode selection. Contact closure or collector to ground, $+5$ V open circuit, 10 mA closed circuit.
Dimensions:	1901 and 1903: 19" rack panel, $5\frac{1}{4}$ " high, 14" deep 1902: 19" rack panel, $1\frac{3}{4}$ " high, 6" deep
AC Power:	117 VAC ± 10 or 234 VAC ± 10 , 50-60 Hz, 50 VA maximum.