

SX144/430 SWR/WATTMETER (VHF/UHF)

The SX144/430 is a high quality switchable UHF & VHF instrument, that measures at the same time: the forward power, the reflected power and the SWR value. The SWR is indicated at the cross point of the two needles.

Specifications:

Frequency	: VHF = 140 - 160 MHz
UHF = 400 - 480 MHz	
Impedance	: 50 Ω
Ratio fwd vs. ref	: 5:1
Power range	
forward	: 10 - 100 - 1000 W
reflected	: 2 - 20 - 200 W
Tolerance	: 10% full scale
Dimensions	: 160 x 120 x 80 mm
Weight	: 835 g.

Instructions:

- 1.) Connect the input connector (RTX) to the transmitter and the output (ANT) to the antenna.
- 2.) Select VHF/UHF switch to proper application according to the frequency specification. Select the correct power range to measure the power. If you do not know the power output of your transmitter, select the highest range, then reduce step by step. For accurate power measurements use a 50 Ω dummy load.
- 3.) Read the forward power on the left scale.
- 4.) Read the reflected power on the right scale.
- 5.) Read the SWR value on the red line at the needle cross point.
- 6.) To compute the effective radiated power, subtract the reflected power from the forward power.
- 7.) On the 100W and 1000W power ranges multiply the readings by 10 and 100.

Remarks:

Adjust the SWR of your installation, in order to obtain the best performances. A SWR value of 3 means that $\frac{1}{4}$ of the output power is reflected. A SWR over 3 can even destroy the transmitter.

$$Pd = 100W \quad Pr = 25W$$

$$SWR = \frac{\sqrt{Pd} + \sqrt{Pr}}{\sqrt{Pd} - \sqrt{Pr}} = \frac{\sqrt{100} + \sqrt{25}}{\sqrt{100} - \sqrt{25}} = \frac{10 + 5}{10 - 5} = \frac{15}{5} = 3$$

CE DECLARATION

Description of the product	: SWR / Power Meter
Model	: SX144/430
Brand	: KPO

This product is in conformity with the EC-directive 89/336. The essential EMC requirements are fulfilled as long as the product is used according to this user manual and under the condition, that all cables connected to the equipment (except antenna cables) do not exceed a length of 3 meters. Following European Standards have been applied:
EN 50081-1 and EN 50082-1.