



## 4-STUB AUTOMATIC IMPEDANCE TUNER 915 MHz REF. AI4SA WR975 D40X38 LRR2PE



The AI4S automatic tuner integrates the impedance sensors, the tuning stubs and the electronic control system all integrated in one waveguide.

As soon as the generator delivers microwaves, the auto-tuner matches instantaneously the load and maintains permanently the reflected power to the minimum level. The maximum traveling time of the stubs (from maximum mismatch to full match) is 8 seconds.

The auto-tuner is specially designed with an efficient water cooling system for high power applications up to 100 kW.

An external control system makes possible to control the auto-tuner either manually or automatically, using Labview or a PLC (programmable logic controller) – see OPTIONS below.

REF	AI4SA WR975 D40X38 LRR2PE
Description	2 pairs x 2 stubs matching system, integrated sensor consists of 4 diodes, integrated electronic control and motor driver unit, X&Y remote giving the load impedance “rho”, manual or automatic control by the external connector.
Frequency	915 MHz $\pm$ 10 MHz
Calibration	Calibration is realized at the factory according to the generator’s maximum power, e.g. 25, 50, 75 or 100 kW. <b>The power MUST be indicated on ordering</b>
Impedance adjustment	SWR 1 to 5 max (or 0 % to 44 % of reflected power, or to -3.5 dB of return loss), any phase
Response time	Maximum 8s from the medium position of the stub to the matching point
Voltage	24 VDC, max. 3 A
Wave guide	WR975
Weight	31 kg
Size	Length between flanges 885 mm, height above guide 248 mm, width above guide 244 mm
Material	Waveguide in aluminium alloy painted externally with epoxy-type paint, stubs in copper.
Cooling	By water; temperature safety interlocks installed along the tuner
Options	Analogue + RS232/485 standard control, optional ModBus, ProfiBus or CanOpen

## OPTIONS FOR THE AI4S IMPEDANCE TUNER CONTROL

The AI4S automatic 4-stub tuner works in automatic mode if supplied with 24 V dc. The standard remote control board is Modbus on RS232.

For additional manual control mode, for example to start at a specific stub position, several options are proposed:

- Control using your own Labview program via Modbus on RS232 remote control;
- Control using a PLC via PROFIBUS or CanOpen remote control;
- Control using SAIREM HMI. The HMI allows to switch between automatic and manual control of the impedance sensors at the click of a button. Another possibility is to record and export the position of sensors vs. time; for example, during change of operating conditions – Fig. 1;
- Control using SAIREM CBA AI4S, consists of a 19 " 5 U control rack with integrated touch screen and 24 V dc power supply – Fig.2.

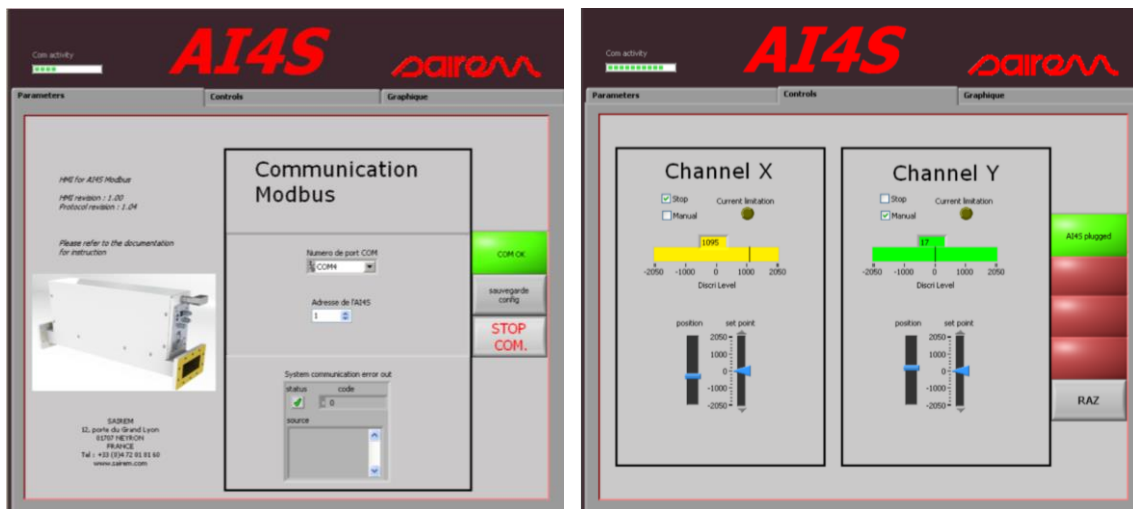
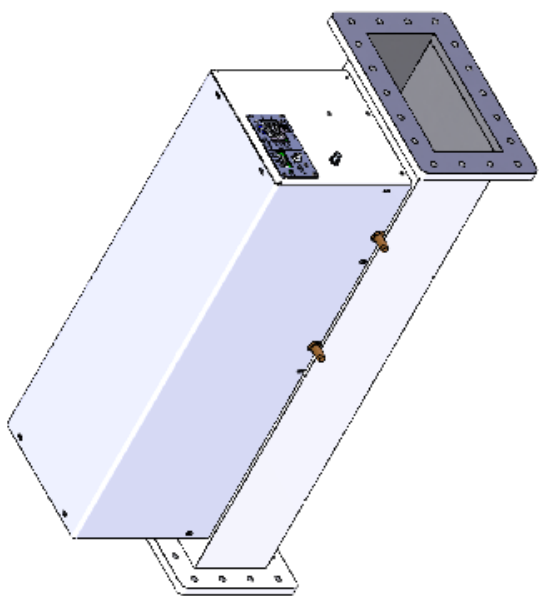
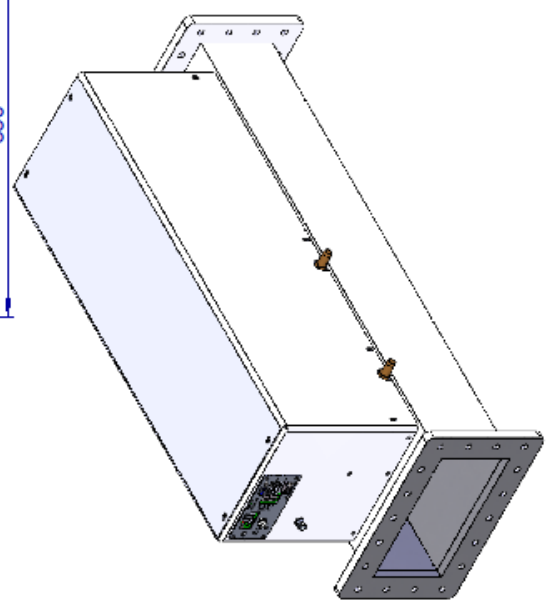
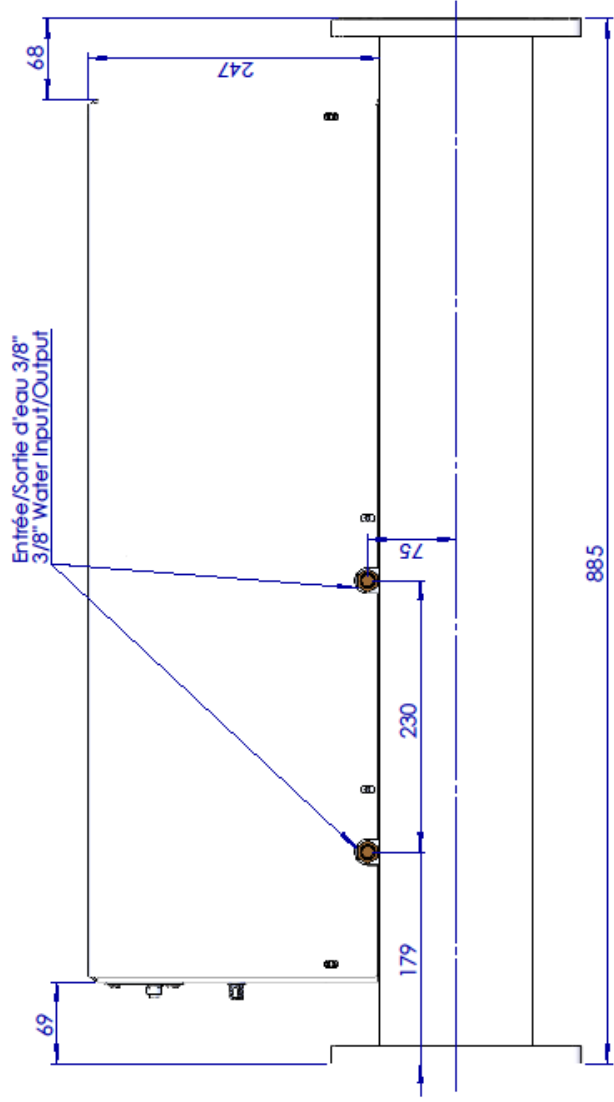
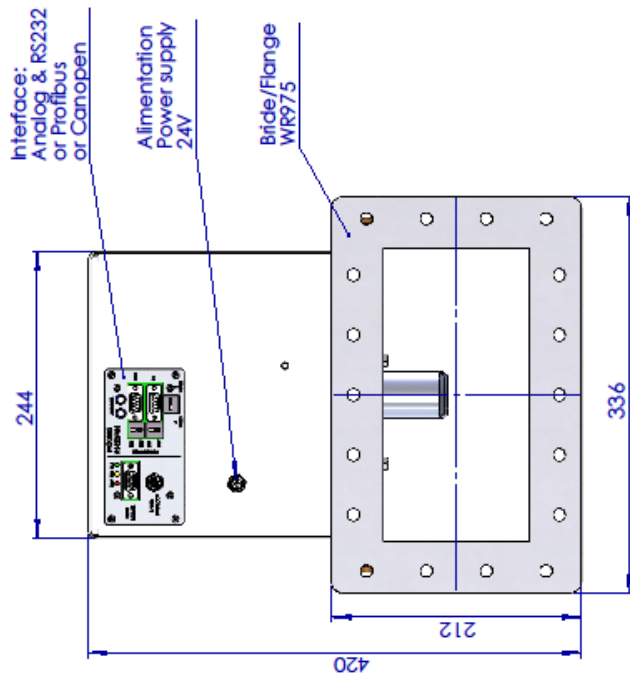


Fig. 1. Control of AI4S using SAIREM HMI



Fig. 2. Control of AI4S using SAIREM CBA AI4S



THE ADAPTEUR D'IMPEDANCE MOTORISE AUTOMATIC STUB TUNNER 915MHz  
**AI4SAWR975D40X38LRR2PE**  
 DESIGN: 3310-COM

FORMAT: A3  
 ECHELLE: 1:4  
 WEIGHT: 26.72

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INDEX	11/05/10 DATE	ML DESSINE	VERIFIE APPROUVE	EMISSION ORIGINALE MODIFICATION DU DESSIN
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