



SAF-FRO

Arc Welding & Cutting Manual Equipment

Welding in Partnership

2012



Since their foundation in 1909 and 1924, SAF and FRO have never ceased to participate in the evolution of the welding and cutting industry. In the early days, using the autogeneous oxyacetylene flame welding technique (hence numerous early partnership agreements with AIR LIQUIDE), SAF (La Soudure Autogène Française) and FRO (Fabbrica Riunite Ossigeno) became the most important companies on the French and Italian welding markets. Their main activity was focussed on ship repairs and this was soon joined by boiler-making. As early as 1913, SAF recognised the advantages offered by the coated electrode welding process and in 1919 the first ship with an all-welded construction was launched: the SAF 4 which facilitated the carrying out of ship repair activities.

Since then, the evolution of the Submerged Arc, TIG, MIG/MAG, plasma, laser, electron beam processes have been progressively developed by SAF and FRO, and marketed to their customers.

Since 1993, SAF and FRO have been integrated into the **Air Liquide Welding** group (Air Liquide's equipment and consumables activity), which allows our customers to benefit from global solutions, processes, gases, equipment and consumables. Due to our experience in welding and cutting techniques, SAF and FRO can today propose innovative solutions aimed to improve the productivity of industrial companies involved in metal working.

Since 2006 SAF and FRO have been united under the name of **SAF-FRO** to provide the best of welding and cutting as your partner in welding.

CTAS, a unique center of innovation is at the customer's service. With the expertise of CTAS (Technical Centre for Welding Applications) and the design offices of our production units, we can offer innovative solutions to improve your productivity, your production quality as well as your industrial environment. By integrating and mastering the latest technologies, and by constantly improving the existing processes, equipment and consumables we create tomorrow's products.

Permanently listening to our customers

What helps us to create and propose these specific developments is our capacity of listening to your needs and understanding your requirements via the permanent feed-back of our technical and commercial teams. They understand perfectly that your company is under constant competitive pressure on your specific markets and the need to adapt your organisation to a moving environment, the best answer being an improvement of productivity... Due to these developments we are sure and able to help you in succeeding in the challenge of optimising the productivity of your fabrication processes. In this catalogue, you will find the complete range of our equipment for manual welding and cutting applications (MMA, MIG/MAG, TIG, Plasma and Flame processes...) and the collective and individual protection products for welders. Dedicated catalogues are also available for welding consumables (coated electrodes, wires, rods, fluxes, etc...) and for automated applications in welding and cutting, please request a copy.

A recognised quality for our customer: ISO certification

To permanently provide the best with regards to quality consumables and equipment, all our production units are ISO certified. In this way SAF-FRO offers the best with regards to services, sales administration, logistics and customer service is also ISO certified.



Glossary



Power Factor Control device that conforms with the new national standards to improve efficiency and reduce electrical consumption.



COMPATIBLE WITH MOTOR GENERATOR

Compatible with motor generator. Minimum power required (cf ISUM).



Voltage Reduce Device = Reduction of no load voltage to ensure maximum safety making the equipment suitable for demanding site environments, such as mining, shipyards and petrochemical plants.



SAVE ENERGY

Low electrical consumption.



MODULAR

Modular Design



Cellulosic electrode capability



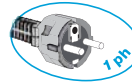
2 YEARS WARRANTY

Warranty period for professional equipment.



2 YEARS WARRANTY

Warranty period for industrial equipment.



SINGLE PHASE

Delivered with 16 A Schucko plug.



LONG : 70 m SECTION : 3 x 2.5 mm²

Can be used with long primary extension cable.



NEW

New product

General information on arc welding

Protection index IP 23

Most of the SAF-FRO power sources have a protection index of type IP 23.

Signification: IP **2** **3**

2

An object with a diameter of more than 12.5 mm cannot penetrate and make contact with an internal element under dangerous voltage.

3

The power source is protected against any deterioration caused by water falling in raindrops with a maximum angle of 60° (IP 21: protection against vertical water projections).

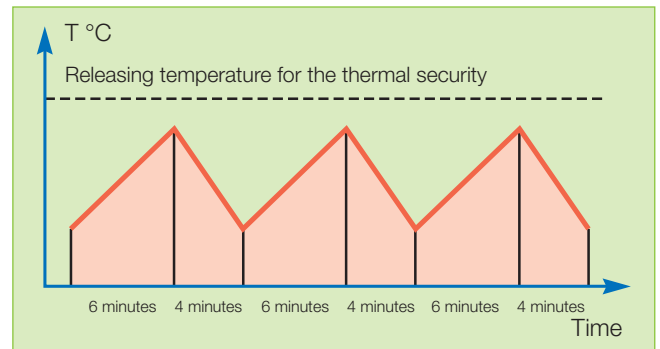


Duty cycle

(Defined by EN 60 974-1 standard)

Functioning cycle 10 min.
Ambient temperature 40 °C.

Example: 250 A at 60% means that, with a stabilised cycle and temperature, the power source will be able to deliver 250 A with a working cycle of 6 minutes and 4 minutes of pause (at an ambient temperature of 40 °C).



At a duty cycle of 100%, the power source can permanently deliver the corresponding intensity with an ambient temperature of 40 °C.

VRD: the must for security

Voltage Reduce Device.

The VRD isolates the welding power supply and supplies low voltage (14 V) to the welding terminals in 0.01 seconds. This feature allows the equipment to be used in all conditions without risk of electric shock. Maximum safety is ensured with the Voltage Reduction Device (VRD) making the equipment suitable for demanding site environments, such as mining, shipyards and petrochemical plants.

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Consumables catalogue

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SAF-FRO filler metal arc
welding catalogue
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