

ECO-GÁS

NEW ELECTRONIC WELDING GAS REGULATOR



**ECONOMICAL
AND EFFICIENT**

for automated and manual
MIG/MAG Welding processes

AVERAGE
SAVINGS

60%

THE FUNCTION OF SHIELDING GAS

In welding, the shielding gas has two main functions:

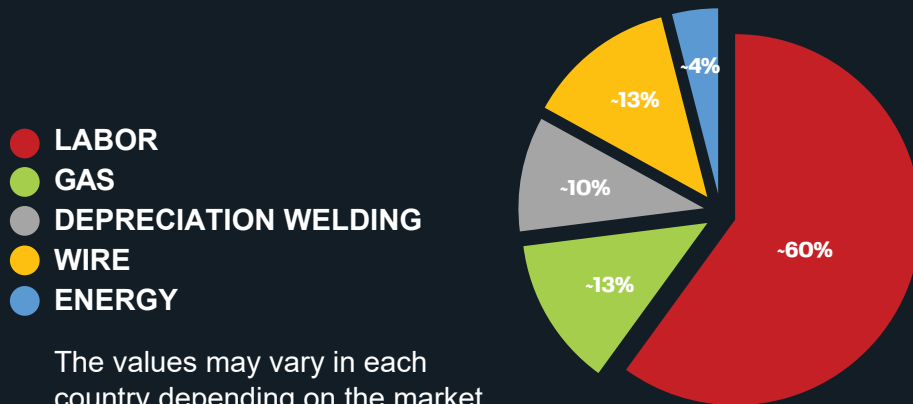


Protect the weld puddle by not allowing impure gases from the environment to enter.



Ionize the welding process, ensuring the quality of the welding arc and of the weld.

HOW MUCH DOES GAS CONTRIBUTE TO THE WELDING COSTS?



The values may vary in each country depending on the market .

HOW ECO-GAS WORKS?

To provide maximum savings, ECO-GAS checks 4 process parameters, regulates the linear actuation solenoid valve to deliver the correct flow and generate savings.



GAS PRESSURE



WELDING CURRENT



WELDING PROCESS SPECIFICATION



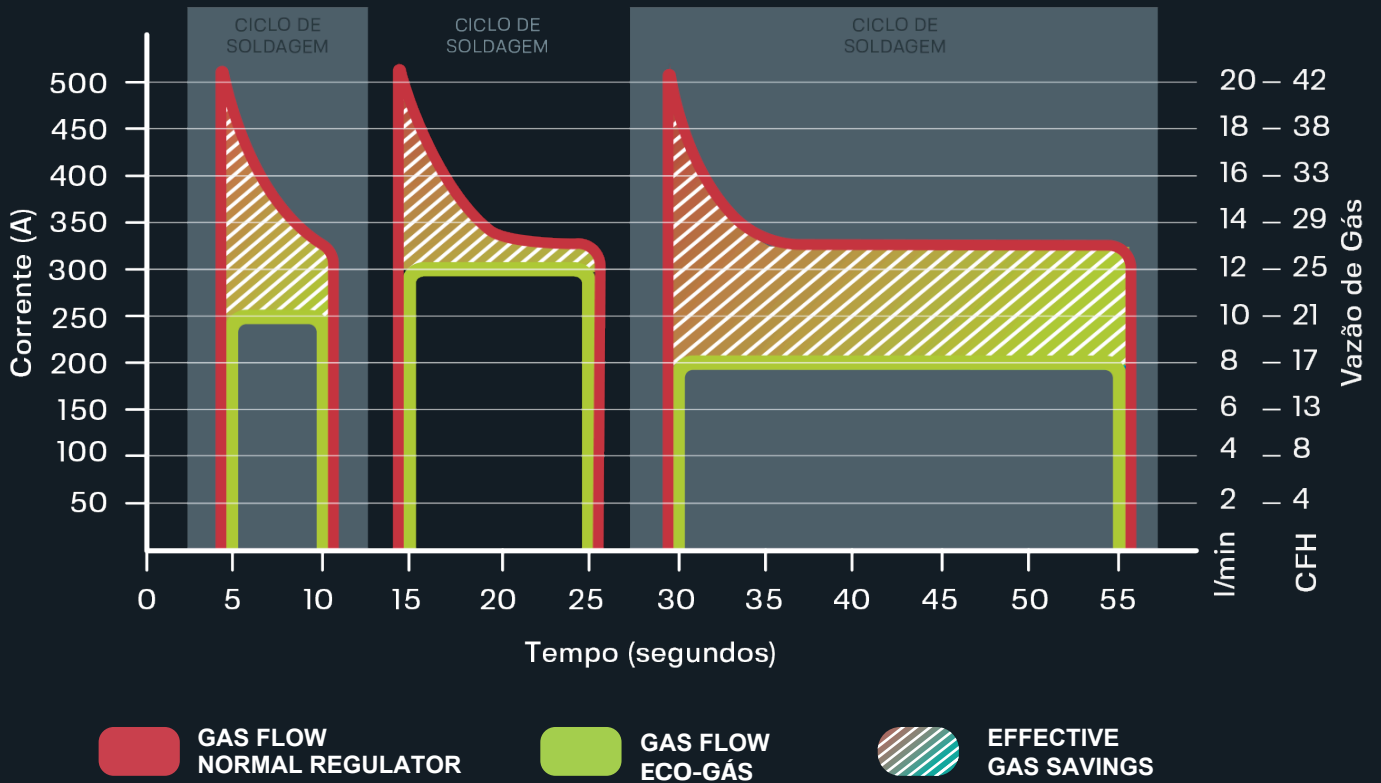
INSTANT FLOW RATE

Based on the parameters checked, the linearly actuated solenoid valve precisely and correctly delivers the amount of gas to the welding process. The WPS - Welding Process Specification indicates for each process a gas flow rate. The Eco-gas has 10 scales to meet any WPS. (see table below)

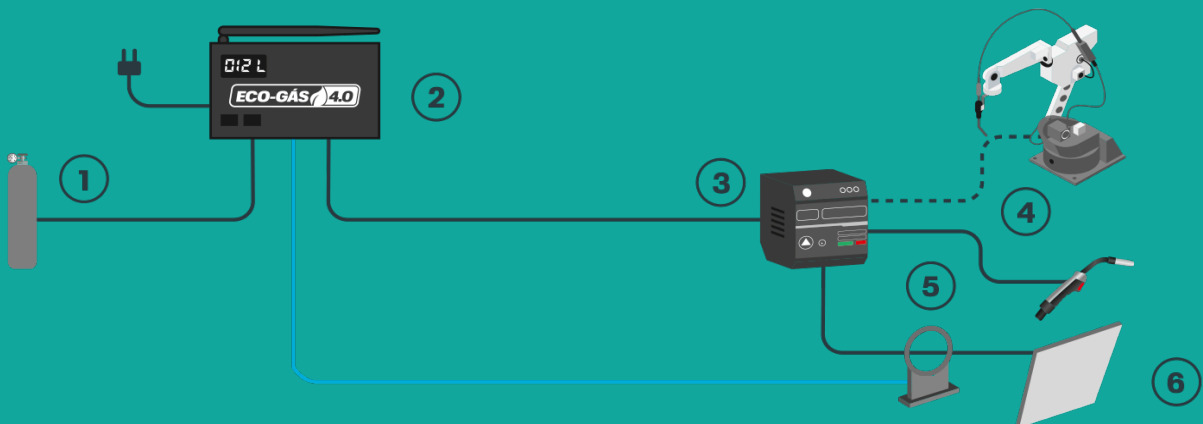
CURRENT (A)	SCALE 1	SCALE 2	SCALE 3	SCALE 4	SCALE 5	SCALE 6	SCALE 7	SCALE 8	SCALE 9	SCALE 10
150	5	7	9	11	13	15	17	19	21	23
200	6	8	10	12	14	16	18	20	22	24
250	7	9	11	13	15	17	19	21	23	25
300	8	10	12	14	16	18	20	22	24	26
350	9	11	13	15	17	19	21	23	25	27
400	10	12	14	16	18	20	22	24	26	28
450	11	13	15	17	19	21	23	25	27	29
500	12	14	16	18	20	22	24	26	28	30

WHERE ECO-GAS SAVES GAS?

WELDING CURRENT X GAS FLOW



HOW TO INSTALL ECO-GAS?



1 Gas supply by cylinder, cylinder battery, or gas network.

2 Eco Gas Synergic Economizer

3 MIG/MAG welding power source.

4 Weld torch, Manual or Robotic

5 Current sensor

6 Work piece

THE 4 MAIN BENEFITS



FINANCIAL



PROCESS



PEOPLE



ENVIRONMENT

HOW TO SEE THE SAVINGS?

ECO-GAS has two work modes for checking and comparing productivity:



DISABLED

It only reads the amount of gas that is passing through the ECO-gas, without saving, generating welding data for a determined amount of welded parts.



ENABLED

By welding the same amount of parts, the customer is able to immediately know the gas savings, without the need for extra equipment.

WHAT ARE THE UNIQUE FEATURES OF ECO-GAS?



VISUALIZATION OF THE ACCUMULATED GAS CONSUMPTION

Checks and records the accumulated gas consumption, that is, how much in l/min or CFH was used on a part, on the day, or in a certain period.



WELDING CYCLE COUNTER

Registers the amount of welding cycles, so it is possible to make comparisons between welders, teams, and shifts in the day or in a certain period.



RECORD OF TIME OF EQUIPMENT ENABLED

It registers in an accumulative way the time the equipment is enabled, so it is possible to plan the preventive maintenance.



PRE- AND POSTFLOW CONTROL

Controls the amount of flow at the beginning and end of the weld bead, avoiding gas waste and guaranteeing the quality of the process.



VISUALIZATION OF THE ACTUAL GAS FLOW

In real time, it is possible to view the actual gas flow rate in l/min or CFH on the ECO-GAS 4.0 display itself.



SOFTWARE AVAILABLE IN FOUR LANGUAGES

Interface in the languages: Portuguese, English, Spanish and Italian.



PASSWORD-PROTECTED SETTINGS

The operation of the ECO-GAS 4.0 is protected by a configurable password. Besides being allowed to set all parameters, it is possible to define which errors will be managed by the operator or supervisor.



OPEN ARC MONITORING

Registers in an accumulative and precise way the open arc time, so it is possible to make comparisons between welders and monitor the welding time per piece, per day, or per determined period.



AUTOMATION INTERFACE

It has a friendly interface for automation systems (welding robot or special machine) with PNP or NPN input and output selection. Thus, enabling the selection of the type of gas, selection of work scales and error indications on the robot Teaching Pendant.



OUTPUT FLOW SCALES SETTING

The equipment has 10 pre-set scales, in order to guarantee high flexibility. Aiming to meet the several variables of the process such as oxidized parts or even environments with high air circulation.



LACK OF GAS INDICATION

When detecting the lack of gas, the equipment emits a sound signal and activates a relay contact that interrupts the welding process to avoid repairwork and unnecessary losses.



STAND-BY FUNCTION

The Stand-by function interrupts the system's power supply after 4 hours not using the Equipment, increasing its lifespan.



OUTPUT FLOW CHECK

Allows the output flow test to check the flow rate specified in the ECO-GAS 4.0 and the real flow rate of the torch (nozzle). Thus, making it easy to identify possible leaks or obstructions in the torch.



CURRENT SENSOR FAULT DETECTION

The intelligent system recognizes possible failures in the current sensor and provides faster problem diagnosis.



INTELLIGENT CALIBRATION LEARNING SYSTEM

At each cycle the system recognizes the network pressure and flow conditions and adjusts the regulation parameters to have more savings in the process. Note: ECO-GAS 4.0 does not adjust the valve to work with high or low pressures, the network pressure limitations continue to exist.



WELDING CURRENT MONITORING

When monitoring it is possible to verify the stability of the welding current in relation to each process. With the ECO-GAS 4.0 it is possible to compare the welding current indicated on the welding source, with the one verified on the ECO-GAS 4.0, indicating possible anomalies in the welding source.

THE BENEFITS IN DETAIL



GAS SAVINGS

PRODUCTION LOSS

Whether the processes are manual, automated or robotic, setting the shielding gas flow rate is still a common challenge. This is because in order to maintain the optimum flow rate, the operator must set the correct adjustment for each situation, i.e. the correct setting of the flow and gas pressure regulator. The productivity loss occurs because more time is spent with each adjustment.

COMMON AND INCORRECT PRACTICE

In an effort to reduce time loss, in 95% of observed cases, the flow rate is kept at too HIGH a level to accommodate all situations. In practice, this means opening the regulator too wide, which means wasted gas. The cost of this practice can be high, because in addition to the large gas consumption, the improper flow still has a major impact on the quality of the weld.

THE CERTAINTY OF SAVINGS

The ECO-GAS 4.0 technology uses a dedicated microprocessor, a linear solenoid valve and a flow sensor. The unit adjusts the gas flow safely and automatically for each situation, using preset parameters. This avoids excessive gas consumption, without the operator losing time adjusting the parameters for each situation.

The weld is affected and in most cases it has to be repaired, With the introduction of ECO-GAS 4.0, this problem is over, because in addition to any warnings in the system, the consumption information remains extremely accurate and safe.

THE COSTS OF REWORK

It is possible that some rework can be tolerated, but the cost of continuous loss or serious errors entails financial losses and can damage the reliability of production processes.



QUALITY

HIGH QUALITY CORPORATE CULTURE

To maintain high quality production, the workforce must also have access to technologies that improve the quality of work. Promoting quality benefits all industries, as companies are interdependent and highly interconnected systems.

DETAILS MAKE THE DIFFERENCE

Improvements in welding are realized when we implement process standardization. Since gas is an important variable, it's automatic control reduces the likelihood of errors. In addition to avoiding unwanted porosity caused by excessive gas, a better weld finish is noted.



MANAGEMENT AND CONTROL

YOU CAN ONLY MANAGE WHAT IS MEASURED

Every manager, regardless of company size - small, medium or large - must have reliable process data at hand before pursuing improvements. All areas, including welding, must evolve to achieve productivity gains. Detailed monitoring of welding parameters is the first step. With ECO-GAS 4.0 it is possible to obtain constant, customized data for each situation. Thus, any deviations from the norm are quickly detected.



ENVIRONMENT

A BETTER ENVIRONMENT

The use of ECO-GAS 4.0 has the positive effect of reducing pollutant emissions, since the gas in the welding environment is much less. Less pollution is in line with the new recommended manufacturing practices. In addition to being a marketing asset, companies that use more sustainable processes are given priority in the market dispute.



REWORK / REPAIRS

SERIOUS ERROR: THE LACK OF GAS

A situation we often observe relates to the inaccuracy of gas-flow measurement by mechanical controllers. The lack of protective gas leads to unwanted stops during the welding process.

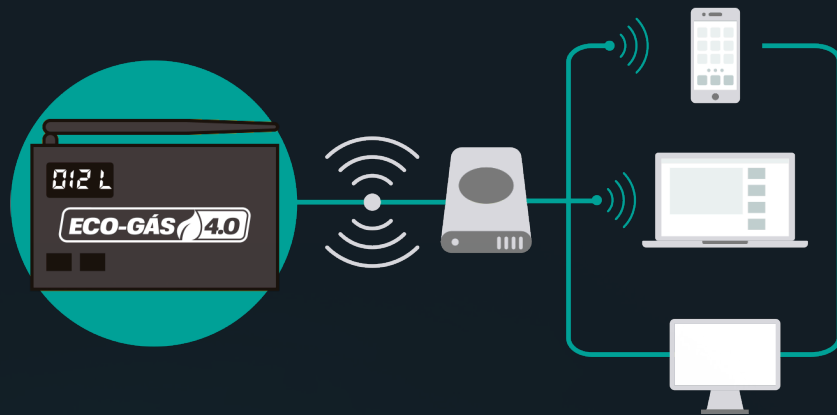


HEALTH BENEFIT

PEOPLE MAKE COMPANIES

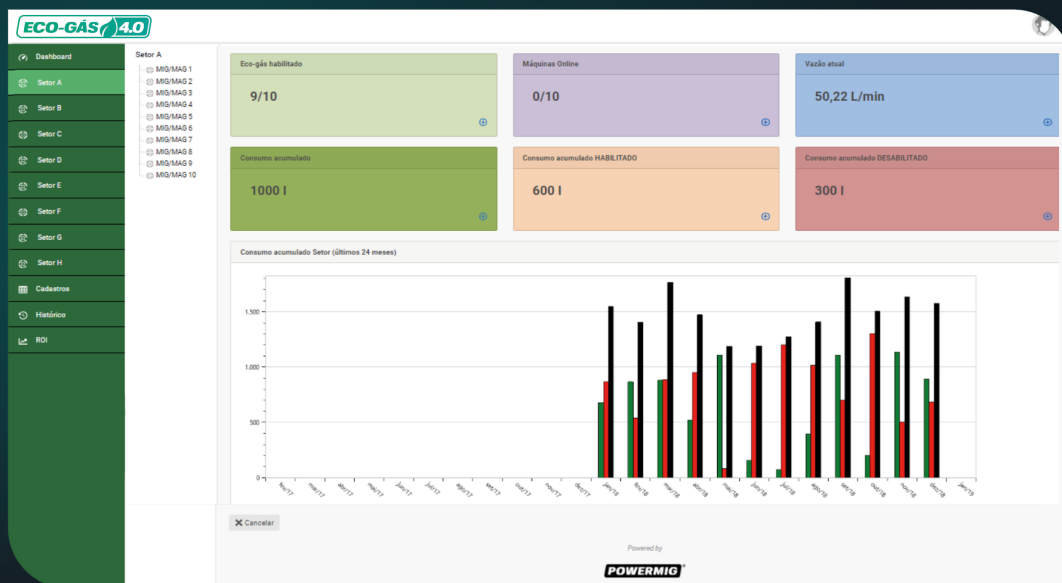
The fumes from the MIG/ MAG welding process are extremely harmful to users, so the use of equipment that reduces this exposure is of great value. Another benefit of fume reduction is that less fumes are released and therefore the work environment is cleaner.

HOW THE CONECTIVITY WORKS?

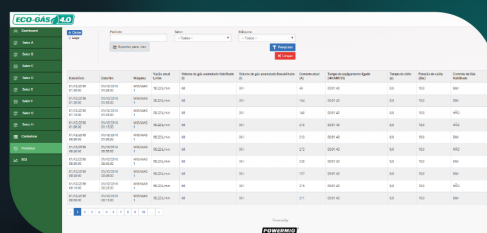


HOW TO MANAGE THE GAS CONSUMPTION?

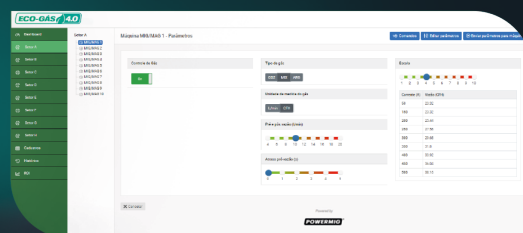
ECO-GÁS 4.0 stands out for its ability to manage consumption online using a software designed to meet the needs of a demanding market. In addition to the Wi-Fi connection, it allows the online parametric management of devices and the monitoring of activity history and has a friendly interface for viewing spreadsheets.



ONLINE CONSUMPTION MANAGEMENT VIA SOFTWARE



ACTIVITY HISTORY



ONLINE PARAMETERIZATION OF THE UNITS



WANT
DISCOVER
HOW MUCH
YOU CAN SAVE?

SEND AN E-MAIL

REQUEST A DEMO AND
PRODUCT PRESENTATION

AND OBTAIN THE RIGHT
INFORMATION AND ADVISE
FROM OUR EXPERTS

- Personalized ROI Calculation
- Honest advice on the equipment suitable for your type of production



www.rswinternational.pt



WHEREAS:

During 330 days, of 24 hours, a year, every 10 seconds, 1 arc opens per unit.

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