

FAQs for EWR

Electronic Welding Regulator



**Up to 60%
saving on
shielding gas!**

ABICOR BINZEL offers the EWR (Electronic Welding Regulator) electronic shielding gas regulator. This system saves shielding gas at the same time as providing better gas cover! Reliable, defined and verifiable.

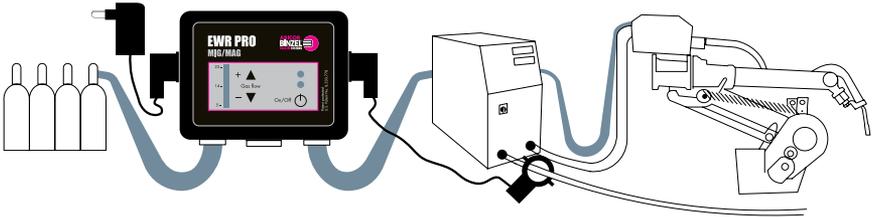
Arguments that speak for themselves:

- High gas saving
- Increased process stability
- Longer lifetimes
- Reduction of the costs for handling
- Standardized processes
- Less reworking

EWR FAQ

1) What is EWR?

- A. The EWR (Electronic Welding Regulator) is a device which controls the flow of shielding gas for arc welding processes. The combination of pulsed gas supply, distribution of gas flow based on welding current, surge suppression, and quick responding valve for shut-off enables large scale reduction in gas usage compared to other gas control technologies in the market place.



2) How does the EWR deliver gas?

- A. At the start of the process, the gas that is between the outlet of the EWR and the inlet of the gas solenoid is set at a predetermined pressure, between 6 and 29psi, in a non-flow state. This pressure is being monitored and maintained at all times by the EWR unit during a non-flow condition. The required psi is determined by the length of gas hose between the EWR outlet and the gas solenoid inlet (see Chart #1). This section of hose is where the gas is stored. When the solenoid is opened the pressurized gas is then released into the welding torch purging the torch of moisture and atmosphere that may have developed in the torch gas line during a non-welding condition.

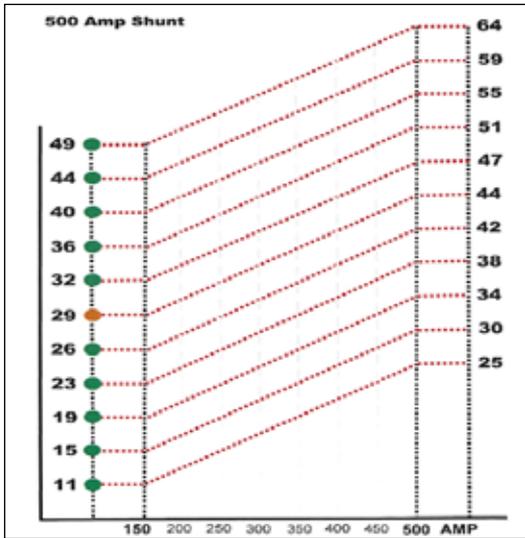
Chart #1 Recommendation:

MIG/MAG (Length of gas hose between outlet of EWR and inlet of gas solenoid)

< 8 m (26 ft)	0,4 - 0,6 bar (5.8 - 8.7 psi)
9-18 m (29-59 ft)	0,8 - 1,0 bar (11.6 - 14.5 psi)
19-40 m (62-131 ft)	1,2 - 1,4 bar (17.4 - 20.3 psi)
> 41 m (134ft)	1,6 - 2,0 bar (23.2 - 29 psi) <i>not recommended</i>

- B. During the welding cycle, the EWR monitors welding current via a shunt and meters shielding gas based on the amount of current in the welding arc. The current is applied via a standardized curve within the unit. Additional flow can be added or reduced by changing the start point of the curve as noted on the left side of the graph on page 3. Top end gas flow for that setting is depicted on the right side of the chart with current ranges noted along with bottom.

EWR Gas Flow Chart



2) How does the EWR deliver gas? (continued)

- C. At the end of the weld, the arc is extinguished via the process controls (i.e. the welder) and gas solenoid will begin to close. The drop in current will result in a reduction of gas flow commensurate with the curve above. The valve in the EWR will close completely once the required outgoing pressure in the line is achieved.

Note: Pre- and Post-Flow: Just because there is no welding current, this does not mean there is no gas flow. It means that the gas flow is no longer controlled directly by the EWR. Assuming the solenoid is left open and no welding current is present, gas will flow at a rate equal to that of the setting noted on the left side of the chart above. This is typically what addresses the pre- and post-flow requirements of the process.

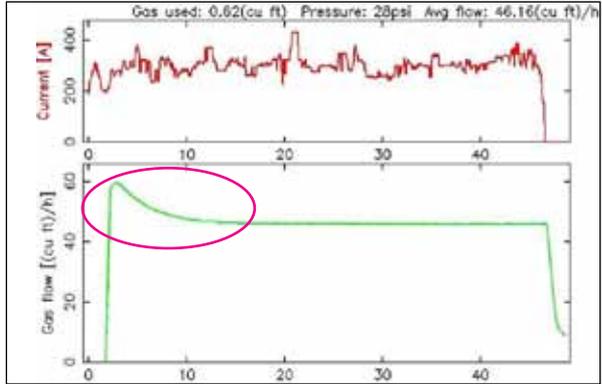


EWR FAQ

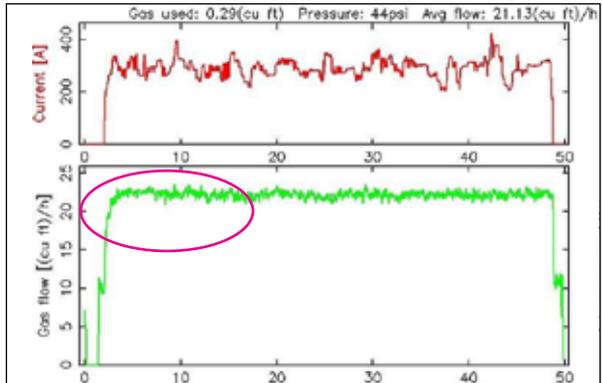
3) Does the EWR reduce gas spike at the start of a weld?

A. Yes, the EWR does. See comparison charts to reflect two cases of arc start.

Without EWR



With EWR



4) Can the EWR be locked out?

A. Yes. The standard power supply cable is used for controlling power to the unit as well as enabling ability to change settings on the unit. In case a customer desires to have lock-out capability, a different power supply cable can be used, which eliminates the ability to make setting changes to the unit.

Note: In the event of a customer using a locking power supply in normal operation, they will require a standard power supply cable on hand as well to make changes should they be required.

5) Will the EWR work on a bulk system?

- A. Yes. The EWR will work on bulk systems as well as bottles assuming the gas pressure is controlled between 45 and 65 PSI. Lower air pressure will result in decreased performance of unit; higher gas pressure will lead to possible damage of unit (Note: 90 psi max). It will work as well with any standard combination of gases including CO₂, Oxygen, Argon, and Helium.

Note: An EWR is required to be installed on each machine. One unit cannot serve multiple welding arcs.

6) How far from the welding torch do I need to have the unit mounted?

- A. Rule of thumb for placement:
- i. Minimum - Distance from the solenoid to the welding nozzle plus one foot (i.e. no less than 6 ft)
 - ii. Maximum - No further than 50 feet from solenoid. If longer is required, please inquire with your local ABICOR BINZEL representative.

7) Can I use the EWR with TIG or pulsed MIG?

- A. Yes. The EWR works with TIG. In the case of low amperage TIG (under 150 amps) use the TIG specific unit. In the case of over 150 amperes it is advised to use the MIG (300A shunt) unit. The difference is in the piston size for gas delivery.
- B. The EWR works with pulse using the average current for the pulse welding arc.

8) How do I know how much gas is being used? Is there notification of low gas/gas pressure?

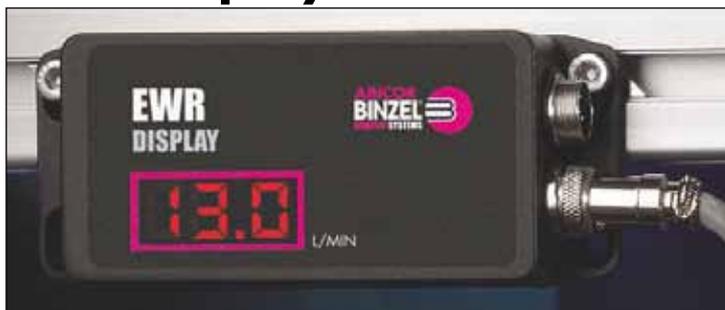
- A. Gas usage and pressure can be viewed only through the usage of one of these options:
- i. EWR Pro with display unit. Flow rate is depicted on a small screen in l/min. (Additional information on page 6)
 - ii. Usage of an EWR monitor (not advised for normal production).
- B. There are two ways to verify pressure on a given system:
- i. Usage of the gas controller unit, with the EWR Pro only.
 - ii. Use an in-line SMC (or other) pressure switch prior to the EWR and have it monitor externally through the robot or PLC controller.
 - iii. Usage of the display unit noted above.



Part-No. 514.1004

EWR FAQ

EWR Pro Display Unit



Part-No. 514.1013

Additional information:

Code	Message
(ELE) - Error Leakage	There is a leakage between the outgoing side of the EWR and the magnetic valve in the feeder. This is possible only when not welding.
(EPO) - Error Pressure Out	The back-pressure (the reason can be a closed hose or a dirty gas nozzle, for example) in the outgoing hose side between the EWR and the process is more than 50% of incoming (into the EWR) pressure. This is possible only during welding.
(EPI) - Error Pressure In	The incoming pressure, into the EWR, is less than 2.0 bar. This is possible with and without welding.

9) Can the EWR be used with other gas control devices such as flow meters, orifices or the like?

- A. No. All other gas control devices must be removed from the circuit in order for the EWR to operate correctly.

10) What is the warranty and how long does the EWR last?

- A. Warranty on the unit is 2 years from the date of delivery to the initial purchaser.
- B. There is no definitive answer to how long the EWR will last. Some units in production settings have lasted for over four years with no issues. The key is to ensure the gas supply lines are free of debris. The biggest failure of the EWR units is related to dirt getting into the fast acting valve and impeding operation.



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