

# EWR 2 and EWR 2 Net Up to 60 % Gas Savings!



# The best made better! The Gas Management System of the EWR 2 Series

# 60%

**Economical & efficient:**  
Gas savings of 60% or more!

The use of EWR2 devices yields on average 40 to 60% savings in protective gas.



**Simple & flexible networking:**  
Digital data exchange and network connection with the EWR 2 Net!

CAN open and Ethernet interfaces for real-time data exchange and software access via local networks.



**Intelligent & precise:**  
Permanent control and adjustment of the gas flow!

The EWR 2 devices have been equipped with a measuring unit for optimal gas flow control. For the realization of this closed gas control loop the pulse function was deliberately omitted, since the benefits are convincing.



**Environmentally friendly & sustainable:**  
Reduction of CO<sub>2</sub> emissions!

CO<sub>2</sub> emissions are minimized for shielding gases with CO<sub>2</sub> components, which helps to achieve climate protection targets.

# SERVICES

## EWR 2 and EWR 2 Net: More economical, more precise and perfectly suitable for the requirements of Industry 4.0!

The EWR 2 systems use a patented function principle with an extremely fast solenoid valve to regulate the gas flow in real-time and in synchronization with the welding current. External factors such as changes in ambient temperatures, changing gas inlet, or counter-pressures from the connected cable assembly can be safely compensated. In this way, the EWR 2 guarantees the savings potential and controls the gas flow more precisely than traditional gas control systems.

### New and Improved:

- Reduction of gas consumption, therefore reduction in operating costs
- Environmentally friendly; CO<sub>2</sub> emission reduced
- Calibrated gas regulation unit
- Active, closed gas control loop by permanent measurement of the gas flow
- Easy handling and monitoring
- Recalibration at the job site possible
- Data recording possible
- ABICOR BINZEL Service-Software for standard Windows computers incl. ROI calculator for the amortization period

### Universally applicable!

The innovative EWR2 gas management systems set new standards not only with MIG/MAG and TIG welding but also with plasma welding. They can be integrated into almost any welding process that is customary in the market.

### Applications:

- Can be used in both automated and manual welding processes
- Easy installation on new and already existing equipment
- Suitable for all types of gases
- Gas inlet pressure 1-6 bar
- Flow range of 2-30 l/min

### Easy handling:

The integration of the EWR2 system on new and already existing equipment is quick and easy. Just connect the power supply and the current measurement shunt and set the basic flow rate, the set pressure and the gas conversion factor and the EWR2 is ideally set for any application! Details are described on page 7 of the brochure.

Recalibrations can be done on-site by ABICOR BINZEL service technicians without needing to send the system in.

# The Details: The EWR 2 Devices at a Glance

## EWR 2: The base for efficient gas management!

All EWR 2 devices have a closed gas control loop at disposal, reducing the deviations between set and actual of gas volume current to a minimum. They are all equipped with an integrated LED display that allow easy overview of the current status and the system parameters. Settings can be done directly with the cross button. Furthermore, the system is equipped with a stereo jack that can be used to connect to a computer with installed ABICOR BINZEL service software.



## EWR 2 Net: Easy networking for industry 4.0!

EWR 2 Net has two additional interfaces and can be flexibly interconnected.

**CAN open interface:** The system can be connected by an additional gateway with any fieldbus systems and exchange data in real time.

**Ethernet interface:** Enables the EWR Net to be integrated into local networks in order to be able to access the appliance through these networks with the ABICOR BINZEL service software.



## EWR 2 Net system overview:



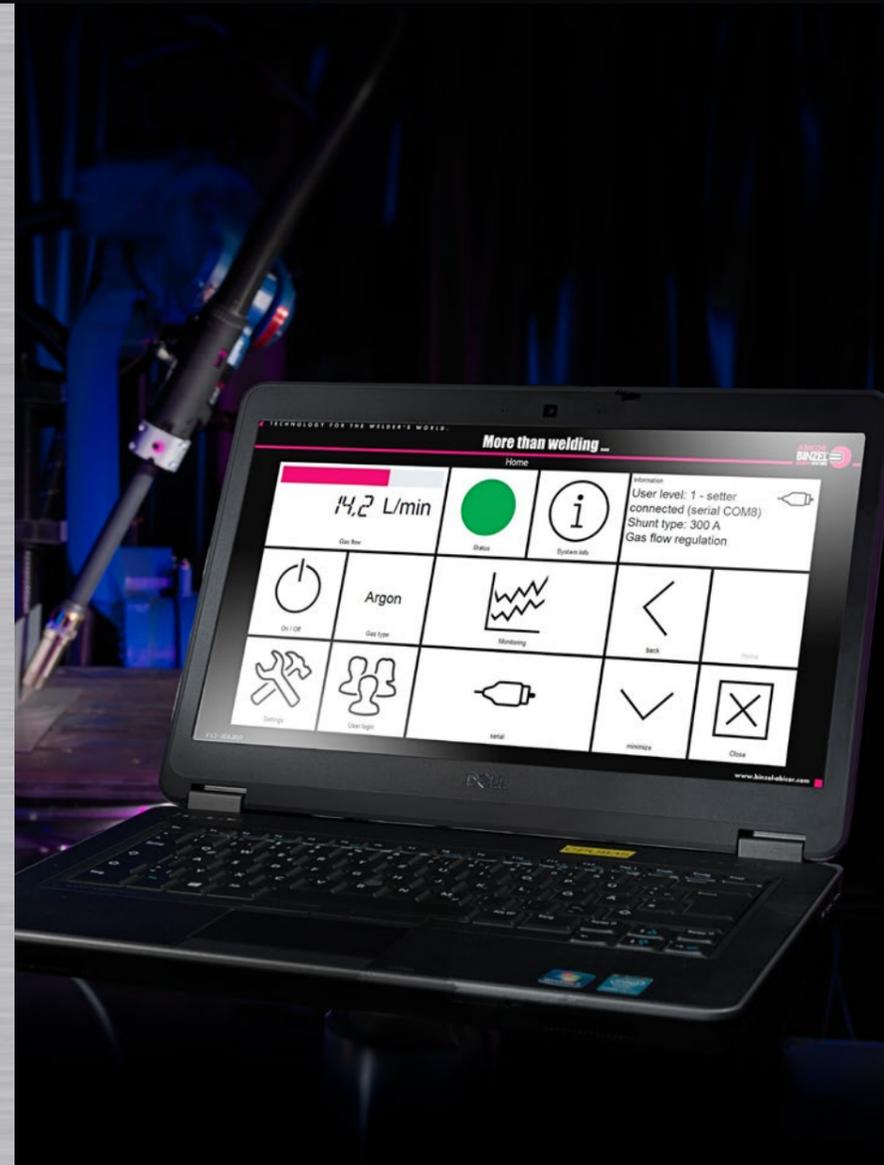
# Digital on the Road! The ABICOR BINZEL Service Software

## The perfect addition!

The ABICOR BINZEL service software is an optional tool that facilitates and optimizes how you work with the EWR 2 devices. It can be operated with any standard Windows computer; an external welding-monitor is no longer required. The devices can be accessed directly via a jack plug or network connection.

### Main functions at a glance:

- **Setup and adjustment:** The user-friendly service software allows an easily configuration of the EWR 2 devices from the computer.
- **Determination of the gas saving:** All EWR 2 systems enable the recording and storage of data which can be read out and evaluated via the software in the menu item "Monitoring".
- **Monitoring errors:** The software displays the current operating status – including error message and error log.
- **Determination of the gas type:** In the menu item "Gas type", it is possible to select the shielding gas used and configure the usage.
- **Network integration with the EWR 2 Net:** The Ethernet connection on the EWR 2 Net allows access via the local network.



## Amortization at a glance!

EWR 2 systems are extremely economical. The equipment pays off within the first year.

The individual amortization period can be calculated easily with the ROI calculator (ROI=Return on Investment) integrated in the new service software: simply enter the gas price, EWR 2 purchase price, gas requirement, hours worked identified with the software savings via the EWR 2 and read off the date from which the breakeven point is passed. An example calculation is shown in the figure on the right.

Investment	Gas price	Gas consumption	Gas cost/year	Information
4	220	18	0,02 €	User level: 1 - setter not connected Shunt type: 300 A
1 Shift: 0 2 Shift: 0 3 Shift: 1	1.500,00 €	2.851.200 Liter	5.702,40 €	Navigation icons
Savings: 50 % Savings/year: 2.851,20 € Return of invest(years) 0,53 Gas saving/year: 1.425.600 l		18 %	256.608 Liter	Navigation icons

ROI-calculator to to calculate the individual amortization period

# The Essentials in Brief: Functional Principle and Technical Data

## The functions of the EWR 2 devices:

The welding current is not constant, and can vary a lot during different welding tasks. Without a gas management system, the highest gas flow isn't always adjusted in order to get a sufficient gas covering. The EWR 2 systems interfere here with the patented method.

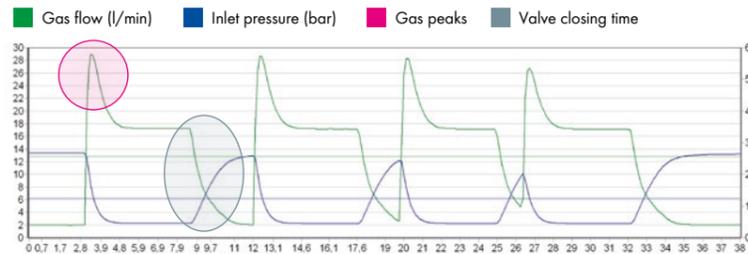
### Avoiding demand gas peaks:

Constant regulation eliminates or at least reduces gas flow peaks at any point of the process.

### Quick regulation magnet valve:

The quick reacting frequency valve is able to provide a controlled gas flow power at the pre gas current. After the gas slipstream the gas flow power is stopped immediately. Therefore, gas savings are realized at the process start, the process end and during welding breaks. The standard magnet valves integrated in the feed unit are rather lazy and can only open and close the gas flow slowly.

### Without EWR 2:



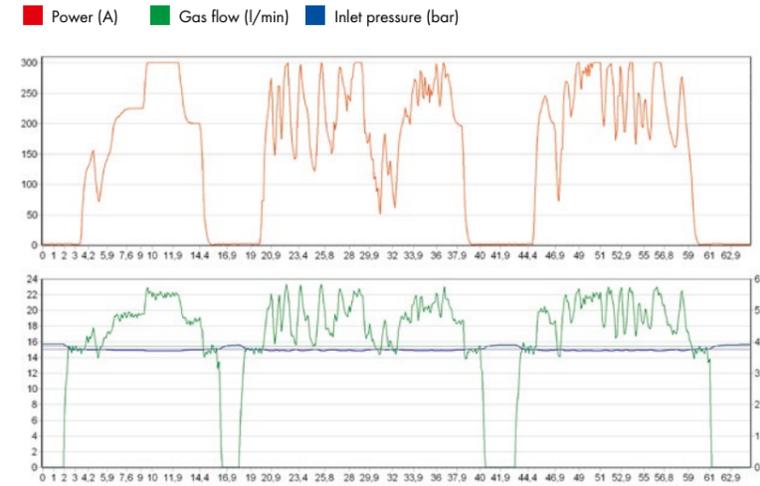
### With EWR 2:



### Gas flow regulation synchronized to the welding current:

The EWR 2 adjusts the shielding gas amount to the current during the welding process and allows the saving of superfluous shielding gas.

### With EWR 2:



## Good to know:

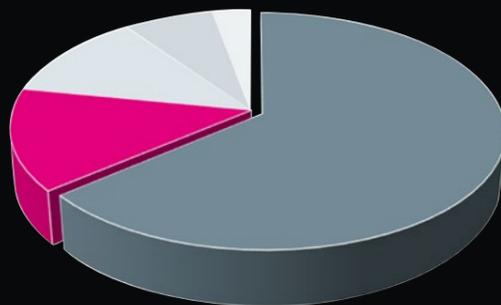
For startup and accurate function of the EWR 2 systems the values of basic flow rate, set pressure and gas conversion factor have to be set either directly at the EWR 2 or via the service software.

- Basic flow:** This is the gas volume flow rate, which the EWR 2 adjusts in case of a welding current signal out of the shunt regulation area. Within the shunt regulation area the EWR 2 adjusts the gas flow rate linear up to a maximum volume flow rate (basic flow +7 l/min).
- Set pressure:** This represents the pressure the device will set between EWR 2 outlet and solenoid valve when no welding is occurring and the solenoid valve in the feed unit is closed.
- Gas factor:** To set up the control loop, a gas flow rate measuring element is integrated in the EWR 2 devices that has been calibrated to air. To receive the exact measuring values during operation, a conversion factor for the gas used has to be set in the EWR 2. Standard gas types are all pre-configured and can be chosen together with the fitting gas factor directly. Further gas type can be easily added.

## Cost composition of a welding seam:

The adjoining diagram shows the average cost composition of a welding seam.

**In reality, which areas can be cost reduced?** Actually only in the field of shielding gas! These are the only costs that can be decreased without reducing the quality of the welding seam.



### Example welding seam:

- Wages (64%)
- Shielding gas (14%)
- Machines (12%)
- Additional material (7%)
- Energy (3%)

(For each welding seam, the percentages are distributed differently.)

# Technical data

## EWR 2 and EWR 2 Net

### General

Operating voltage:	24 V DC ±20%
Media temperature:	10-40 °C
Ambient temperature:	-10-+50 °C
Relative humidity:	20-90%
Flow rate range:	2-30 l/min
Gas inlet pressure:	1-6 bar
Tolerance flow rate:	±1 l/min
Shunt types:	150 A/300 A/500 A

### Additional interfaces at EWR 2 Net

- Ethernet interface
- CAN interface





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