

# 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%

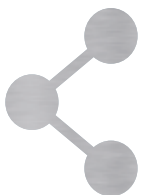
**Economical & efficient:**  
**Gas savings of 60% or more!**

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



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

The EWR 2 devices have been equipped with a closed loop flow measuring unit for optimal gas flow control.



**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.



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

CO<sub>2</sub> emissions are minimized for shielding gases containing CO<sub>2</sub> components, which helps to achieve climate protection targets and quantify CO<sub>2</sub> savings

## EWR 2 and EWR 2 Net:

**More economical, more precise and perfectly suitable for the requirements of Industry 4.0!**

The patented EWR 2 systems use 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 constant measurement of the gas flow
- Easy handling and monitoring
- Recalibration possible with calibration certificate
- Data recording and viewing possible
- ABICOR BINZEL Service-Software for standard Windows computers incl. ROI calculator for the amortization period

# Technical Data

## EWR 2 and EWR 2 Net

### General

Operating voltage:	24 V DC ±20%, 10 W (0.42 A) max
Input voltage:	24 V DC
	110 V AC
	20 - 50 V AC/DC
Media temperature:	14 - 122 °F (10-40 °C)
Ambient temperature:	50 - 104 °F (-10-+50 °C)
Relative humidity:	20 - 90%
Flow rate range:	2-30 l/min (4.23 - 63.5 cfh)
Gas inlet pressure:	1-6 bar (14.5 - 87 psi)
Tolerance flow rate:	±1 l/min (2.1 cfh)
Shunt types:	150 A/300 A/500 A

### Additional interfaces at EWR 2 Net

- Ethernet interface
- CAN interface

### Universally applicable!

The innovative EWR 2 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 and mixtures
- Gas inlet pressure 1 - 6 bar (14.5 - 87 psi)
- Flow range of 2-30 l/min (4.23 - 63.5 cfh)

### Easy handling:

The integration of the EWR 2 system on new and existing equipment is quick and easy. Just connect the power supply and the current measurement shunt and set the basic flow rate, then set pressure and the gas conversion factor and the EWR 2 is ideally set for any application!

Recalibrations can be performed by ABICOR BINZEL service technicians. Calibration certificate provided upon completion which can be filed with company ISO documentation.



# The Details: The EWR 2 Devices at a Glance

## EWR 2: The base for gas management and savings!

All EWR 2 devices have a closed gas control loop which reduces deviation between set and actual gas volume. EWR 2 units are all equipped with an integrated LED display that allows easy overview of the current status and the system parameters. Settings can be done directly with the push button controls. Furthermore, the system is equipped with a stereo jack that can be used to connect to a computer USB with optional ABICOR BINZEL service software and connection cable.



## 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<sup>1</sup>.

**Ethernet interface:** Enables the EWR Net to be integrated into local networks in order to be able to access the device through these networks with the ABICOR BINZEL service software<sup>1</sup>.



<sup>1</sup>Requires optional service software/cable kit.

## EWR 2 Net system overview:



<sup>1</sup>See "EWR 2 Service kit" in chart on page 9

# 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 EWR2 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 typically 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 requirement	Gas price	Gas price	Gas price
4	220	18	02	\$	User level: 1 - setter not connected Shunt type: 300 A
1 Shift: 0 2 Shift: 0 3 Shift: 1	1753.00 \$	2.851.200 Liter	6655.00 \$	<	Home
Savings: Savings/year: Return of invest[years]: Gas saving/year:	50 % 2.851,20 € 0,53 1.425.600 l	18 %	256.608 Liter	>	Close

# The Essentials in Brief: Functional Principle and Technical Data

## The functions of the EWR 2 devices:

The welding current is not always constant, and can vary a lot during different welding tasks. Without a gas management system, the gas flow is generally set for the highest required amperage, which often consumes more gas than is required. The EWR 2 adjust the gas flow automatically and as needed while welding.

The EWR 2 systems manages the gas flow to provide high gas flow as needed while reducing flow when amperage is reduced.

Additionally, the fast acting solenoid valve stops and starts flow much quicker to provide noticeable gas use savings.

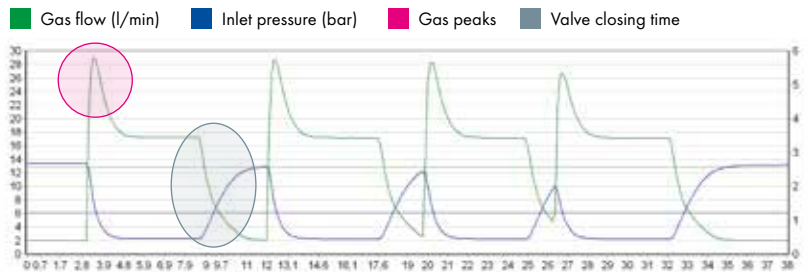
### Avoiding demand gas peaks:

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

### Quick regulation magnet valve:

The quick reacting valve is able to provide a controlled gas flow weld start to stop. Therefore, gas savings are realized at the process start, the process end and during welding breaks. This action is contrast to and compensates for the standard magnet valves integrated in the wire feed unit, which are slower and more wasteful of shielding gas.

### Without EWR 2:



### With EWR 2:

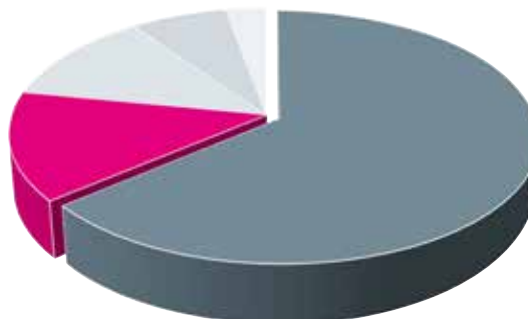


## Cost composition of a welding seam:

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

### Where can you really reduce costs?

Without sacrificing productivity, you can only reduce costs meaningfully by managing your shielding gas! This is the only cost that can be decreased without potentially reducing the quality of the welding seam.



### Example welding seam:

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

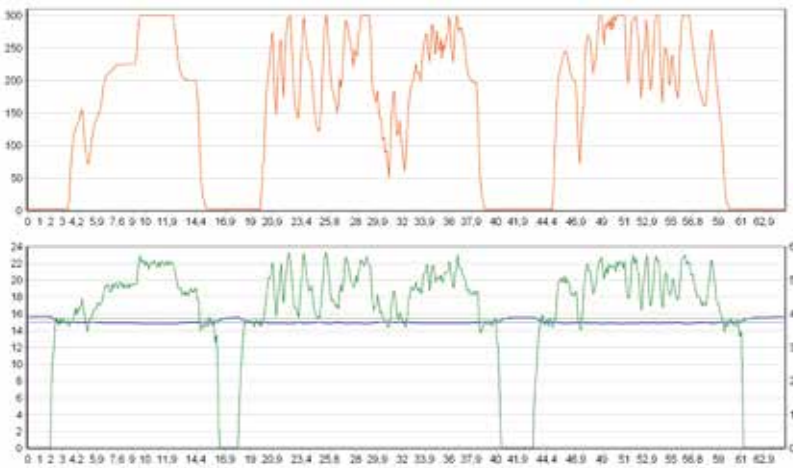
(For each welding seam, the percentages are distributed differently.)

### 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 excess shielding gas.

#### With EWR 2:

■ Power (A) ■ Gas flow (l/min) ■ Inlet pressure (bar)



### 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 base volume and flow rate, which the EWR 2 adjusts based on welding current signal out of the shunt. Within the shunt 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, which has been calibrated to air. To receive the exact measurement 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 further gas mixtures can be easily added.

### EWR 2 and EWR 2 Net

#### General

Operating voltage:	24 V DC $\pm 20\%$ , 10 W (0.42 A) max
Input voltage:	24 V DC 110 V AC
Media temperature:	20 - 50 V AC/DC
Ambient temperature:	14 - 122 °F (10-40 °C)
Relative humidity:	50 - 104 °F (-10-+50 °C)
Flow rate range:	20 - 90%
Gas inlet pressure:	2-30 l/min (4.23 - 63.5 cfh)
Tolerance flow rate:	1-6 bar (14.5 - 87 psi)
Shunt types:	$\pm 1$ l/min (2.1 cfh) 150 A/300 A/500 A

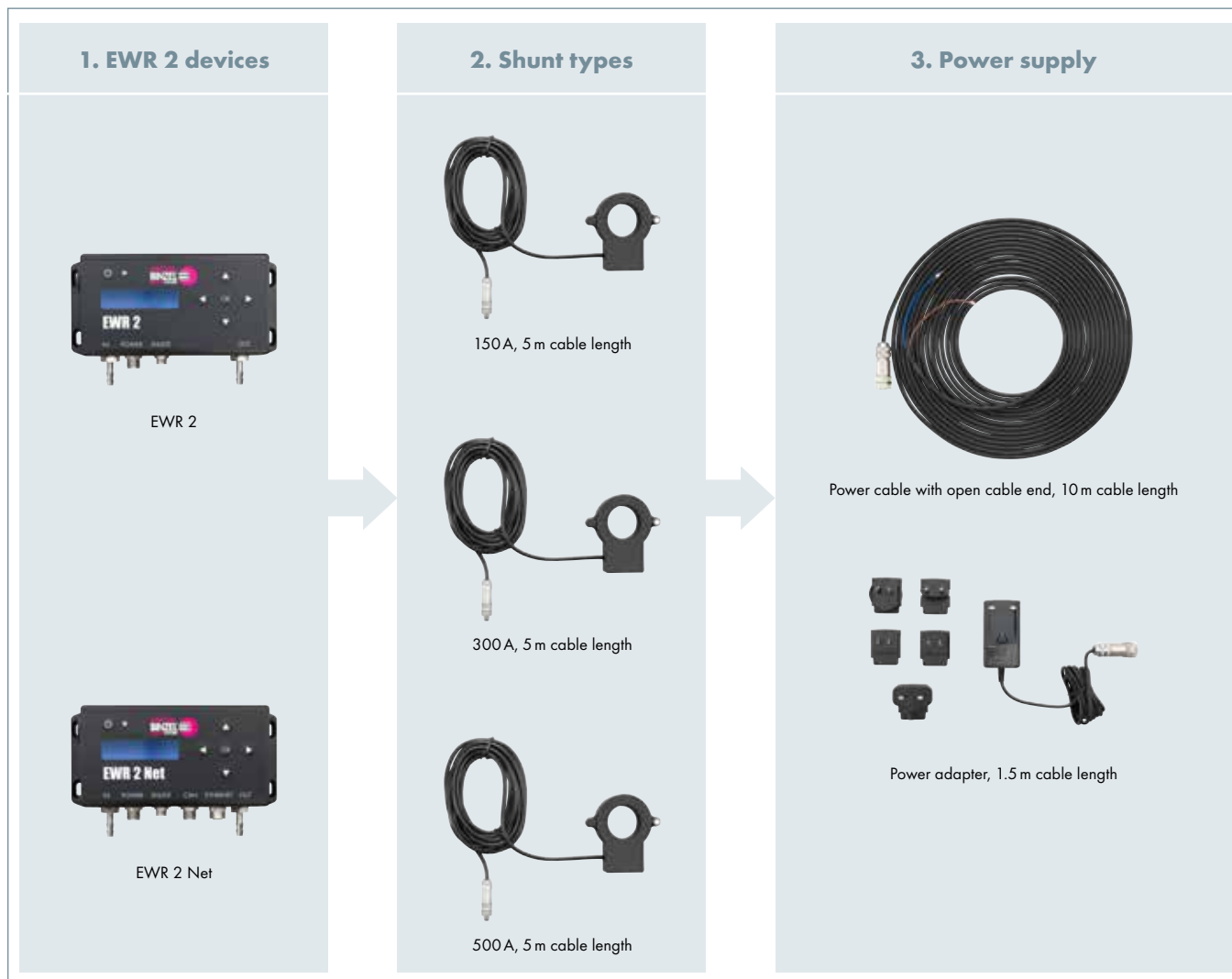
#### Additional interfaces at EWR 2 Net

- Ethernet interface
- CAN interface





# EWR 2 and EWR 2 Net System packages

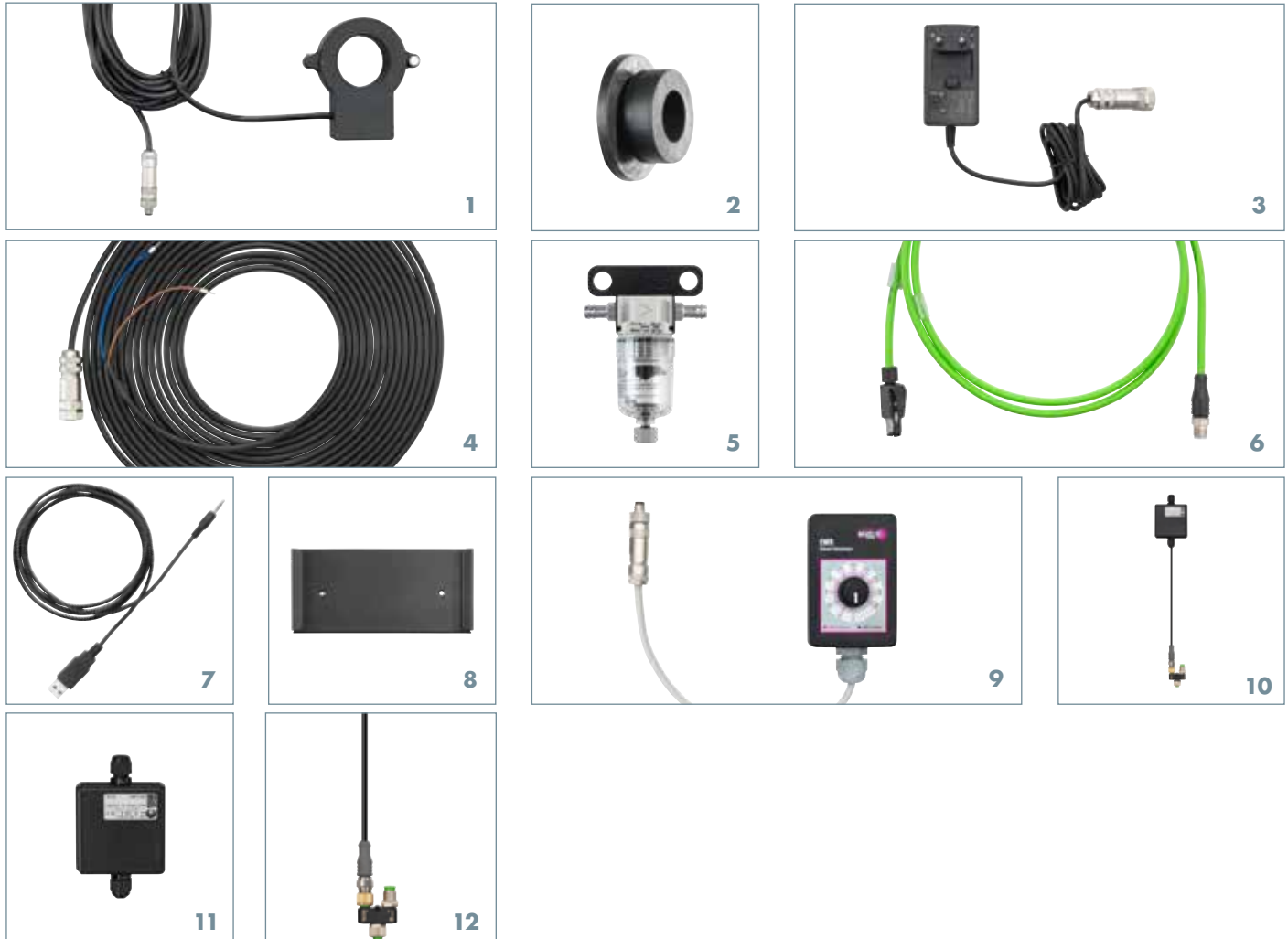


1. Device	2. Shunt types	3. Power supply	PU	Order-No.
<b>System packages with EWR 2 devices</b>				
EWR 2	150 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0256.1
	150 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0259.1
	300 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0257.1
	300 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0260.1
	500 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0258.1
	500 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0261.1
<b>System packages with EWR 2 Net devices</b>				
EWR 2 Net	150 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0269.1
	150 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0272.1
	300 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0270.1
	300 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0273.1
	500 A, 5 m cable	24 V DC power cable with open cable end, 10 m cable length	1	514.0271.1
	500 A, 5 m cable	110 V AC power adapter, 1.5 m cable length with adapters	1	514.0274.1



# EWR 2 and EWR 2 Net

## Spare parts & Accessories



Pos.	Description	Details	suitable for	PU	Order-No.
1	EWR 2 Shunt	150 A, 5 m cable length	EWR 2 and EWR 2 Net	1	514.0283.1
	EWR 2 Shunt	300 A, 5 m cable length	EWR 2 and EWR 2 Net	1	514.0284.1
	EWR 2 Shunt	500 A, 5 m cable length	EWR 2 and EWR 2 Net	1	514.0285.1
2	EWR 2 Plug	Sealing plug for side port USB connection	EWR 2 and EWR 2 Net	1	514.0280.1
3	EWR 2 Power adapter for EWR 2 Unit (115V)	1.5 m cable length with various socket adapters	EWR 2 and EWR 2 Net	1	514.0286.1
4	EWR 2 DC converter (24 V DC)	Open cable end, 10 m cable length	EWR 2 and EWR 2 Net	1	514.0287.1
	w/o fig. Protective cap CAN		EWR 2 Net	1	514.0296.1
	w/o fig. Protective cap Ethernet		EWR 2 Net	1	514.0297.1
	w/o fig. Gas line filter element	Gas line filter element	Filter unit (see pos. 6)	1	514.0236.1
	w/o fig. EWR 2 Unit	EWR 2 base unit w/o accessories	EWR 2	1	514.0252.1
	w/o fig. EWR 2 Net Unit	EWR 2 Net base unit w/o accessories	EWR 2 Net	1	514.0265.1
5	Gas line filter unit	incl. bracket and 3 filter elements	EWR 2 and EWR 2 Net	1	514.0222.1
6	EWR 2 Net cable	Ethernet cable, 5 m cable length	EWR 2 Net	1	514.0281.1
7	EWR 2 USB cable	USB jack, 1.8 m cable length	EWR 2 and EWR 2 Net	1	514.0282.1
8	EWR 2 holder	Mounting bracket	EWR 2 and EWR 2 Net	1	514.0289.1
9	Shunt simulator		EWR 2 and EWR 2 Net	1	514.0291.1
	w/o fig. EWR 2 Service KIT	incl. service software, items #7 & #8	EWR 2 and EWR 2 Net	1	514.0292.1
10	Relay box complete	Contains rekey box and spare connector	EWR 2 and EWR 2 Net	1	514.0307.1
11	Relay box spare	Spare relay box	EWR 2 and EWR 2 Net	1	514.0308.1
12	T connector	For relay box	EWR 2 and EWR 2 Net	1	514.0309.1

**EWR 2 and EWR 2 Net**

**Videos, Installation Guide, Articles, and more...**



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