

**MSA250-SE**  
**MSA250-EX**  
Electrofusion Unit



**EVERY**  
**SECOND COUNTS**

**+GF+**

**GEORG FISCHER**  
PIPING SYSTEMS

# MSA250-SE, MSA250-EX Electrofusion Unit

## MSA250 Fusion Unit Offers

- Barcode Fusion Parameter Input
- Multiple Joint Capability
- Advanced Transformer Technology
- Network and Generator Compatible
- Self Diagnostic System
- Automatic compensation for ambient temperature
- Network or generator input power capability

## Applications

The MSA250 can be used to join the following piping systems:

- Fuseal® PPR and PPNFR (1½" - 12")
- Fuseal Squared® PPR and PPNFR (1½" x 4" - 8" x 12")
- Fuseal 25/50™ PVDF (1½" - 6")
- PPro-Seal™ PPN (½" - 3")

## Electrofusion Process

Electrofusion is defined as the joining process where two plastic parts are fused utilizing electrical heat resistance to form a permanent joint.

A plastic coated copper wire is wound into a "coil" and is then inserted into a fitting socket.

The pipe is then inserted into the fitting socket and an electric current is applied to the coil producing heat that generates sufficient temperatures to melt the surrounding plastic and create a "melt zone," as shown in Figure 1.

Fusion occurs when the joint cools below the melt temperature of the plastic material, leaving a permanent joint that is proven to be as strong as, if not stronger than, the individual components.

The computer simulation seen in Figure 2 shows the heat distribution around the "melt zone" region.

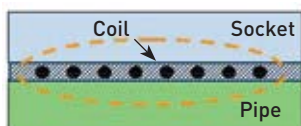


Figure 1

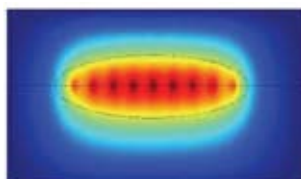


Figure 2



Barcodes also provide the capability to perform program updates for new products in the field.

## Fusion Barcodes

All required fusion parameters are programmed into the MSA250 by simply scanning a barcode specific to each sized joint.

## Multiple Joint Capability

The MSA250 has the time and labor saving features of multiple joint fusion. Multiple joint capability significantly reduces installation time requirements and contributes directly to your bottom line.

### Number of Joints Per Cycle

Size	Fuseal	PPro-Seal	Fuseal 25/50 PVDF
½	n/a	4	n/a
¾	n/a	4	n/a
1	n/a	4	n/a
1½	4	4	4
2	4	4	4
3	4	4	4
4	4	n/a	4
6	4	n/a	4
8	2	n/a	n/a
10	2	n/a	n/a
12	2	n/a	n/a



## MSA250 Specification

Part Number	MSA250-SE	MSA250-EX
Input Voltage	90-130 VAC Nominal Voltage: 110 V/Generator: 110-120 VAC Nominal Voltage	200-250 VAC Nominal Voltage: 230 V/Generator: 210-230 VAC Nominal Voltage
Input Current	15 Amps	15 Amps
Output Voltage	0 to 45 VAC	0 to 45 VAC
Output Current	0 to 30 Amps	0 to 30 Amps
Power Consumption	max. 1200 W nominal output	max. 1200 W nominal output
Generator Output Performance	2 KVA Sinusoidal unipolar operation) depending on the fitting diameter	2 KVA Sinusoidal unipolar operation) depending on the fitting diameter
Back-up Fuse	10-16 AT depending on the fitting size	10-16 AT depending on the fitting size
Fusion Voltage	3,7-32 VAC galvanically separated	3,7-32 VAC galvanically separated
Protection Type	Protection class 1/IP 65	Protection class 1/IP 65
Operating Temperature	14°F (-10°C) to 113°F (45°C)	14°F (-10°C) to 113°F (45°C)
Operation Time	24%-100% depending on the fitting size, with electronic temperature monitoring of the unit	24%-100% depending on the fitting size, with electronic temperature monitoring of the unit
Duty Cycle	100%	100%
Dimensions	Width: 11 in (280 mm) Depth: 7 7/8 in (200 mm) Height: 13 3/4 in (350 mm) (measured inc. carrying handle)	Width: 11 in (280 mm) Depth: 7 7/8 in (200 mm) Height: 13 3/4 in (350 mm) (measured inc. carrying handle)
Weight	25 lbs (11.5 kg) (with cables)	25 lbs (11.5 kg) (with cables)
Power Cable Length	10 ft. (3 m)	10 ft. (3 m)
Extension Cord Requirement	150 ft (46 m) maximum	150 ft (46 m) maximum

## MSA250 Fusion Parameters

### Fuseal II (v2.0)

### PPro-Seal (v4.0)

### Fuseal 25/50 PVDF (v2.0)

Size	Volts	Time (Sec)	# Joints	Size	Volts	Time (Sec)	# Joints	Size	Volts	Time (Sec)	# Joints
1½	6.0	80	4	½	3.8	80	4	1½	6.7	86	4
2	7.5	90	4	¾	4.4	87	4	2	6.7	99	4
3	13.0	100	4	1	5.0	92	4	3	9.1	112	4
4	16.9	115	4	1½	6.6	96	4	4	12.3	130	4
6	23.0	190	4	2	8.0	110	4	6	17.0	235	4
8	20.7	240	2	3	13.5	90	4				
10	23.7	240	2								
12	23.7	300	2								

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