

MSA 250SE



Technical and Operation Manual

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Introduction

The MSA 250SE represents the most advanced fusion unit in the industry featuring advanced transformer technology. This unit can be used to join all George Fischer Sloane polypropylene products including Fuseal II, Fuseal Squared, Fuseal 25/50 PVDF, and PPro-Seal.

The MSA 250SE has the capability to run on both on-site power (110V/60Hz.) and generator power sources.

All required fusion parameters are programmed into the MSA 250SE by simply scanning a barcode specific to each pipe size. Barcodes also provide the capability to perform program updates for new products in the field.

The MSA 250SE has multiple joint capability as well as a built in fail-safe mode.

Please read all operating instructions prior to use to ensure safe and proper operation of the MSA 250SE.

Validity

These Operating Instructions are valid for the MSA 250SE series (beginning with unit number 30000). The unit number is located on the identification plate, on the right-hand side of the unit.

Product Description

The MSA 250SE is an electrofusion power control unit for the joining of polypropylene and polyvinylidene electrofusion fittings. Fusion programming of fittings, with a fusion barcode supplied by George Fischer Sloane (Interleaved 2/5 according to ISO/TC138/SC5/WG12), should be used.

Do not attempt to create fusion barcodes – this will void all warranties.

Power Supply

This unit is designed for a single-phase alternating current of 110VAC/60Hz. (For more specific details see the Product Specification section of this guide.)

WARNING: Use AC power only. DC power will damage the MSA 250SE.

Main Supply

Power connections must have safety conductors (i.e. ground fault interrupters) and fuses with 16A capacity (inert). An FI safety switch is recommended.

Generator Operation

Generators must be calibrated between 110-120V nominal voltage.

Fusion Cables

Only use factory supplied cables.

Extension Cord

The required extension cord is 150 ft. maximum (10 gauge/3 wire minimum.) Unit includes 10 ft. 110 V 3 prong power cord.

Starting Up

- Ensure that the MSA 250SE is standing firmly and the ventilators have an unobstructed air supply.
- Confirm correct power connections.
- Operate the MSA 250SE according to the official George Fischer Operating Instructions.

Operation Controls

The display and control functions are located on the front panel.

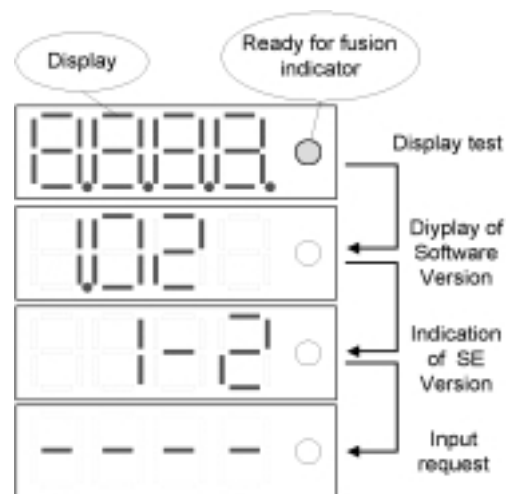
1. UP Key



2. START/STOP Key



Switching On



Operation with Barcode Reader

The barcode reader operates best when held at an angle of 10–30 degrees from the vertical position and is run across the barcode strip in one continuous movement. After use, return the barcode reader to its protective case. As an

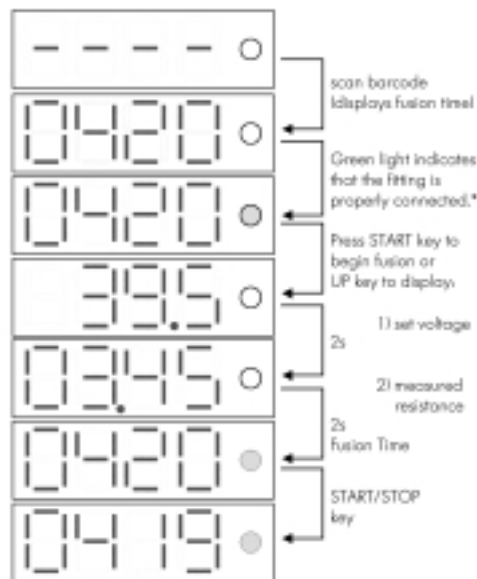
Operation with Barcode Reader

The barcode reader operates best when held at an angle of 10–30 degrees from the vertical position and is run across the barcode strip in one continuous movement. After use, return the barcode reader to its protective case. As an option, a barcode scanner is also available.



Time-based Fusion

- After connecting the fitting, the displayed fusion time may change as a result of temperature compensation.



Multiple Joint Fusion Capability

Joint Size	Fuseal	PPro-Seal
1/2"	n/a	4
3/4"	n/a	4
1"	n/a	4
1-1/2"	4	4
2"	4	4
3"	4	4
4"	6	n/a
6"	5	n/a
8"-12"	2	n/a

Manual Operation

MANUAL MODE can be initiated by pressing the up or down arrows. The fusion voltage and time can be set in this mode:

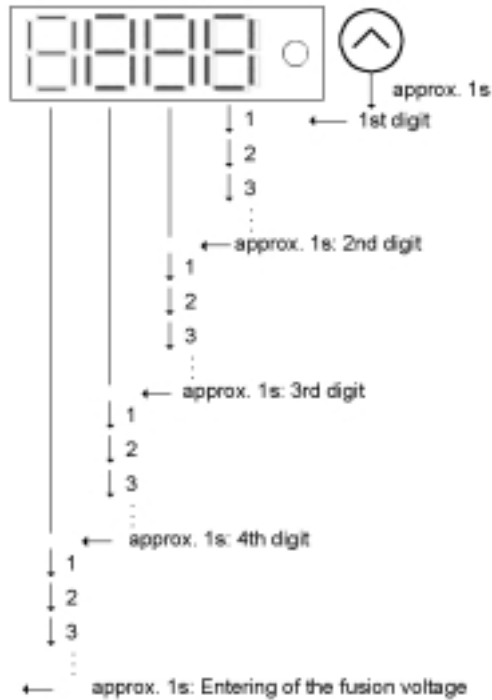
Manual Input of Fusion Time and Voltage

Entering the fusion time

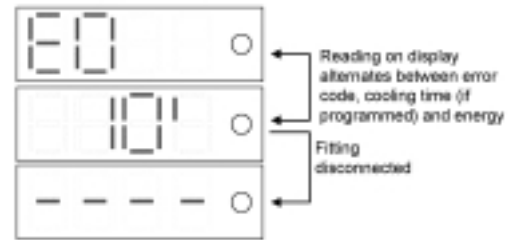
The fusion time is entered and displayed in seconds.

1. Press the UP key for approximately 1 second.
 - The unit is now in the programming mode.
 - The digit to be programmed will blink.
2. Press the UP key several times until the desired number appears on the display.
 - With every push of the key, the active display moves up one position: 0,1,2,3...9,0,1...
3. The next digit is reached by pressing the UP key for approximately 1 second.
4. Repeat steps 2 and 3 until all 4 digits are inserted.
5. By pressing and holding on the last digit, the input is confirmed and the process continues with the input of the fusion voltage.

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End of Fusion



Interrupting the Fusion Process

In case of irregularities, the fusion process can be abandoned with the START/STOP key at any time. In this case, an error message will be displayed (refer to *Error Messages*).

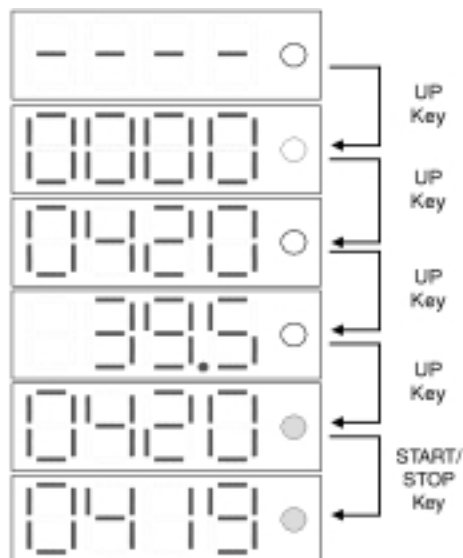
Some cases may lead to an automatic abandonment of the fusion process (refer to *Error Messages*).

Entering the fusion voltage

Entering the fusion voltage works the same as entering the fusion time. The fusion voltage is displayed in volts. It can be programmed to an accuracy of 0.1 volts.

By pressing and holding on the last digit, the input is confirmed and the MSA 250SE is ready for fusion.

If the key is pressed for a longer time on the first digit, the input of the fusion voltage can be skipped over.



Error Messages

No	Description	Comments
E2	MAINS VOLTAGE TOO HIGH	Check generator 110V VAC Nominal
E5	AMBIENT TEMP. TOO LOW	Must be between +14°F - +113°F
E6	AMBIENT TEMP. TOO HIGH	Must be between +14°F - +113°F
E7	INTERNAL TEMP. TOO LOW	Allow MSA 250SE to warm up in a heated room
E8	INTERNAL TEMP. TOO HIGH	Allow MSA 250SE to cool off
E9	FITTING RESISTANCE TOO LOW	Check fitting (Display switches between error code and measured resistance)
E10	FITTING RESISTANCE TOO HIGH	Check fitting (Display switches between error code and measured resistance)
E11	FUSION VOLTAGE TOO LOW	Check generator output/extension cable
E12	FUSION VOLTAGE TOO HIGH	If this occurs frequently, send MSA 250SE in for servicing
E13	FUSION CIRCUIT INTERRUPTED	Check the power connection/extension cable (To dismiss this error message, switch off MSA 250SE)
E14	FUSION CURRENT TOO HIGH	Damaged coil. If this occurs frequently, return MSA 250SE for servicing
E15	POWER SUPPLY TEMP. TOO LOW	Allow MSA 250SE to warm up in a heated room
E16	POWER SUPPLY TEMP. TOO HIGH	Allow MSA 250SE to cool off
E21	OUTAGE DURING LAST FUSION	Check the last fusion operation
E22	FUSION INTERRUPTED WITH STOP	Check the last fusion operation
E28	UNIT RANGE EXCEEDED	Use a fitting which can be joined with the MSA 250SE
E71	ERROR MEASURING AMBIENT TEMP.	Send MSA 250SE in for servicing
E74	FUSION POWER TOO LOW	Check the generator output/extension cable
E75	FUSION POWER TOO HIGH	Allowed fusion-power exceeded. Use MSA 250SE with less fittings in parallel
E78	POWER SUPPLY ERROR	Send MSA 250SE in for servicing
E100	FUSION PROGRAM INCORRECT	Use a barcode from the standard ISO/TR 13950
E101	WRONG BARCODE TYPE	Use a barcode from the standard ISO/TR 13950
E102	CONFIGURATION ERROR	Send MSA 250SE in for servicing
E103	RESISTANCE MEASUREMENT ERROR	Disconnect MSA 250SE and fitting from the generator, check the connection
E104	VENTILATOR ERROR	Check ventilator opening if unobstructed, send MSA 250SE for servicing

Product Specification

Input Voltage	90-130VAC Nominal voltage: 110VAC, 60Hz
Input Current	15 Amps
Output Voltage	0 to 45VAC
Output Current	0 to 30 Amps
Power Consumption	max. 1200W nominal output
Generator Output Performance	2 KVA Sinusoidal (unipolar operation) depending on the fitting diameter
Fusion Voltage	3,7 -32 VAC galvanically separated
Protection Type	Protection class 1/IP 65
Operating Temperature	-10°C (14°F) to + 45 °C (113°F)
Duty Cycle	100%
Dimensions	Width: 280 mm (11 in.)
Depth:	200 mm (8 in.)
Height:	350 mm (14 in.) (measured inc. carrying handle)
Weight	11.5 kg (25 lbs.) (with cables)
Power Cable	Length 3 m (10 ft.)
Fusion Cable	12 ft.
Approvals	CE
Accessories	Operating manual, multi-fusion cables

Maintenance

Cleaning

Clean the unit and the barcode reader regularly with a slightly damp cloth. The front panel and other panels can be cleaned with spirits if necessary (no solvents or Trichlor products).

Attention: Under no circumstances should the unit be sprayed, immersed in water or cleaned with compressed air.

Operational Check

Regular, annual operational checks and calibration are necessary, and must be performed by a George Fischer authorized service agent.

Industrial safety regulations

Operating the Unit

Do not let unauthorized or untrained personnel use the unit.

When the unit is not in operation, avoid unauthorized use by keeping it in a dry, locked room.

Safe operation of the fusion unit can only be ensured when the following criteria are fulfilled:

- appropriate transport
- appropriate storage
- professional installation
- use only in accordance with the intended purpose
- careful handling and operation in accordance with specified guidelines
- annual maintenance

Attention: The MSA 250SE may only be used under supervision.

Every person who is involved in the installation and operation of the fusion unit must be properly trained and certified by an official George Fischer +GF+ representative and should follow these Operating Instructions exactly. Use of the unit can be dangerous, if the Operating Instructions are not followed.

The unit may not be used in surroundings with a high risk of explosion.

Check before Operation

Before each operation, check the unit for damage and whether it is able to function properly. All components must be mounted correctly to ensure proper operation.

Protection of the Unit

Keep the main lead and secondary

cables away from sharp edges. Make sure that an authorized service agent immediately replaces damaged cables. Do not subject the unit to heavy mechanical strain. The unit is water spray resistant.

Defective Unit

Arrange for damaged housings or other parts to be replaced or repaired by an authorized service agent. If the unit is not functioning properly, it must be repaired by an authorized service agent without delay.

Attention: Only authorized and properly qualified personnel are allowed to make repairs on the unit. Such specialized technicians must be fully aware of all the safety guidelines, maintenance measures, and possible dangers described in this manual.

Opening the Unit

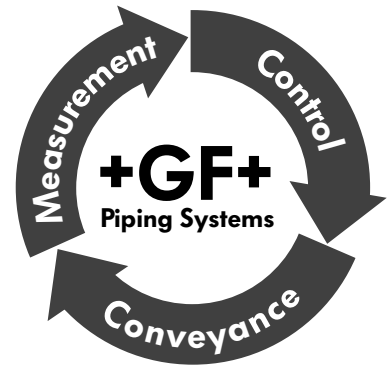
The unit may only be opened by an authorized service agent.

Attention: When the unit has been opened or the housing removed, parts of the fusion unit are exposed which may be electrically charged.

Warranty

Seller's Products are carefully inspected for manufacturing defects; however, it is not always possible to detect hidden defects. **Said Products are warranted only to the extent that Seller will replace without charge. Products proved to have manufacturing defects within six (6) months / Signet products twenty-four (24) months of the date of shipment thereof and provided Seller has been given an opportunity to inspect the Product alleged to be defective and the installation or use thereof. NO WARRANTY IS INCLUDED AGAINST ANY EXPENSE FOR REMOVAL, REINSTALLATION OR OTHER CONSEQUENTIAL DAMAGES OF ANY NATURE ARISING FROM ANY DEFECT. THE WARRANTIES SET OUT ABOVE ARE THE ONLY WARRANTIES MADE BY SELLER AND ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ALL WARRANTIES IMPLIED BY ANY COURSE OF DEALING OR USAGE BETWEEN THE PARTIES ARE EXPRESSLY EXCLUDED.**

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+GF+ PPro-Seal Natural Polypropylene
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