

## Acu-Tech EF300 Electrofusion Welder Manual

EF300 & EF300GPS



New technology has led to the development of a generation of HDPE welding products that boasts an array of unique and revolutionary features. The EF300 Pressure Welder has been designed and built by a reputable company in Germany, with the low weight and compact dimensions not compromising the top-notch performance ability and unconditional reliability.

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### 1. Introduction

This product is designed exclusively for jointing PE discharge lines assembled with electrofusion fittings.

This product has been checked for operational, reliability and safety features are functioning correctly. In the event of errors of handling or misuse, however, the following may be exposed to hazards:

- The operator's health,
- The product and other hardware of the operator,
- The efficient work of the product.

All persons involved in the installation, operation, maintenance, and service of the product must:

- Be properly qualified,
- Be able to operate the product only when observed,
- Read carefully and conform to the User's Manual before working with the product.

## **2. Safety Messages**

### **Improper Use of the Welding and Power Supply Cables**

Do not carry the product by one of its cables and do not pull the power cord to unplug the unit from the socket. Protect the cables against heat, oil, and cutting edges.

### **Securing the Fitting and the Joint**

Use appropriate clamps to secure the fitting and the joint before welding. The welding unit is intended exclusively for indoor installation applications. Use for buried pipeline construction applications is prohibited.

### **Cleaning the Welding Unit**

The product must not be sprayed with or immersed in water.

### **Opening the Unit**

Caution: The cover of the product may be removed only by Acu-Tech Piping Systems personnel, or of a partner organization properly trained and approved by the manufacturer.

### **Checking for Damage**

Every time before operating the product, carefully check safety features or possibly existing parts with minor damage for intended and proper function. Make sure that the push-on connection terminals work properly, that contact is fully established, and that the contact surfaces are clean. All parts have to be installed correctly and properly conform to all conditions in order for the operator to be sure that the product works as intended. Damaged safety features or functional parts should be properly repaired or replaced by a qualified organization/service shop.

### **Mains Power Supply**

Utility suppliers' wiring requirements, VDE provisions, occupational safety rules, DIN / CEN regulations, and national codes must be respected.

Mains power fuse protection should be max. 10 A.

The product must be protected against rain and humidity.

## **3. Operation**

The Acu-Tech EF300 welding unit allows using electrofusion fittings to join pressure pipes and fittings, of the makes Geberit, Akatherm-Euro, Coes, Valsir, Waviduo, and Vulcathene-Euro.

The microprocessor-controlled unit;

- Controls and monitors the welding process in a fully automated fashion,
- Determines welding duration depending on ambient temperature,
- Indicates all information with three LEDs and a seven-segment display screen.

### **1. Turning the Welding Unit On**

After connecting the power supply cord to 230 V mains power, turn the welding unit on at the On/Off switch. The unit then performs an auto-test. All three LEDs light up briefly and simultaneously to indicate that the unit is ready for operation. Furthermore, the seven-segment characters show the welding mode "H00" for approximately 1 second. After this, both the LEDs and the screen characters go off again.

## 2. Connecting the Electrofusion Fitting

Connect the connection terminals to the fitting and check for proper fit. The contact surfaces of the connection terminals and the fitting have to be clean. Dirty terminals may lead to improper welding and also to overheated and fused terminal plugs.

After the fitting was connected, the yellow LED (Fitting connected) lights up. At the same time, the screen displays the welding time. The welding process can now be started by pressing the START key.

The welding time is counted down from about 80 seconds.

## 3. Welding Process

The welding process is monitored for its entire duration, applying the welding parameters computed for the electrofusion fitting.

### 4. End of Welding

The welding process was completed successfully if the actual welding time is 0 s ("0000" on the display screen), the green LED (End) lights up at that point, and the audible signal beeps twice.

### 5. Aborted Welding

The welding process has caused errors if the red LED (Fault) is on and the audible signal beeps intermittently. Additionally, an error code is displayed on the screen. See section 4 for more detail.

An error has to be acknowledged by pressing the STOP key.

### 6. Cooling Time

The cooling time as given in the fitting manufacturer's instructions has to be respected. Note that for that time the pipe/fitting joint which is still warm must not be subjected to an external force.

### 7. Returning to the Start of Welding

After welding is finished, disconnecting the welded fitting from the welding unit will cause the unit to return to the start of welding. An additional safety feature prevents a given electrofusion fitting from being welded twice inadvertently: after a properly completed or an aborted welding operation, the welding unit has to be disconnected from the fitting first, in order to be ready for the next welding.

## **4. Error Messages - Self-Monitoring Functions Overview**

### 1. Power Supply Failure (E01)

The last welding is incomplete. The welding unit was disconnected from the power supply. This error has to be acknowledged by pressing the STOP key.

### 2. No Contact (E02)

There is no properly established electrical contact between the welding unit and the fitting (check push-on terminal on fitting), or the heater coil is defective.

### 3. Low Voltage (E03)

The input voltage is below 180 volts. Adjust generator output voltage.

#### 4. Overvoltage (E0)

The input voltage is above 280 volts. Adjust generator output voltage.

#### 5. Temperature Error or Temperature Sensor Defective (E05)

The measured ambient temperature is outside the operating range of the welding unit, i.e., below – 5°C or over + 40°C.

If this error is displayed during the unit’s auto-test, the temperature sensor is defective.

#### 6. Frequency Error (E06)

The frequency of the input voltage is out of tolerance (40 Hz - 70 Hz).

#### 7. Low or Excess Current (E07)

The message is displayed if there is a momentary current failure or if the current regulator is defective.

#### 8. Emergency Off (E08)

The welding process was interrupted by pressing the STOP key.

#### 9. Used Fitting Error (E09)

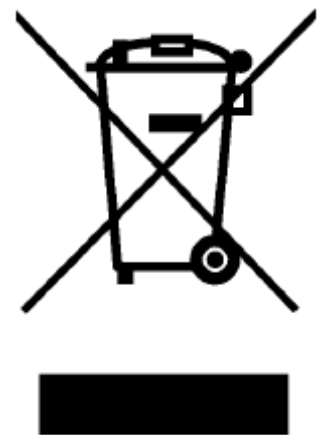
After welding, the unit was not disconnected from the electrofusion fitting, and the user tried to weld the same fitting a second time.

#### 10. System Error (E00)

Caution: The welding unit must be disconnected immediately from the power supply and the fitting. The auto-test has found an error in the system. The unit must no longer be operated and has to be turned in for check and repair.

### **5. Technical Specifications of the Product**

Specification:	Value:
Nominal Voltage:	230 V
Frequency:	40 Hz - 70 Hz
Power:	1200 VA, 80 % duty cy.
Ingress Protection:	IP 54
Primary Current:	Max. 10 A
Ambient Temperature:	– 5 °C to + 40 °C
Max. Output Current:	5 A
Tolerances:	
Temperature:	± 5 %
Current:	± 2 %



Pursuant to the directive 2002/96/EC on Waste Electrical and Electronic Equipment (so-called WEEE Directive), equipment that was manufactured or distributed by ourselves may be returned to us. To discuss the exact procedure we will follow, please contact us with the details below.

We also declare that equipment manufacture complies with the directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (so-called RoHS Directive).

## **6. Service & Repair**

### **Transport, Storage, Shipment**

The product is shipped in a cardboard box. Store the product in the box dry and protected against humidity. When shipped, the product should be placed into the box at any time.

### **Maintenance and Repair**

As the product is used in applications that are sensitive to safety considerations, it may be serviced and repaired only by the manufacturer or its duly authorized and trained partners. Thus, constantly high standards of operation quality and safety are maintained.

Important: Failure to comply with this provision will dispense the manufacturer from any warranty and liability claims for the product, including any consequential damage.

When serviced, the unit is upgraded automatically to the technical specifications of the product at the moment it is serviced, and we grant a three-month functional warranty on the serviced unit.

The manufacturer recommends having the product serviced at least every twelve months.

### **Service and Repair Contact**

Acu-Tech Piping Systems

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