



## Technical Data Sheet

### Polymatic Plus

Electrofusion Control Unit with optional Bluetooth capability



#### Scope of application

The electrofusion control units of type Polymatic Plus are solely meant for the welding of thermoplastic pipes (e. g. made of PE-HD, PE80, PE100 or PP) when used with electrofusion fittings that have an input voltage of less than 48 V. These devices are conforming to the standards DVS 2208-1 and ISO 12176-2, of which the applicable standards for the electrofusion fittings to be used are derived from.

## Input of welding parameters

The electrofusion control units of type Polymatic Plus provide the following means for entering the welding parameters:

### Barcode (ISO TR 13950, Typ 2/5i, 24-digit) or QR Code



The barcode or QR code attached on most electro fusion fittings on the market contains all necessary data for processing them. After scanning with the scanner, this data is automatically transferred to the electrofusion unit and evaluated. The code essentially contains the following data: Manufacturer, type, diameter, fusion voltage, fusion time (with temperature correction, if applicable), resistance and resistance tolerance.

### SmartFuse-System\*



By reading out the reference resistor in one of the connector pins of the SmartFuse-fitting the control unit automatically determines the welding parameters for the fitting.

### Manual input of the barcode digits



If the barcode on the fitting or the barcode reading device is damaged or defective, it is possible to enter the barcode digits (if available) into the control unit manually.

### Manual input of welding voltage and -time



If no barcode is available, it is possible to enter the fusion parameters provided by the fitting manufacturer (like voltage and time) manually.

**\*) Not all electrofusion control units feature the SmartFuse-System. Please ask your distributor for further information. Electrofusion control units without the SmartFuse-System can be recognised by the two welding terminals partially covered by black pvc caps. Electrofusion control units with the system have one terminal covered by a red pvc cap and one terminal covered by a black one.**

## Bluetooth functionality

The electrofusion control units of type Polymatic Plus can be equipped with an optionally available USB Bluetooth dongle. That makes it possible to control and record the welding procedure with the PFS app "ElectroFusion Studio".

The app for smartphones and tablets is available for Android in the Google Play Store and for iOS in the Apple App Store. When using Bluetooth, the electrofusion control unit can only be used together with this app.



#### Attention!

To be able to use the app with the electrofusion control unit it is mandatory to have a registered account. Please ask your distributor.

### PFS Scanner App (optional)

With the PFS Scanner app, you can use a smartphone or tablet to read the fitting code and transmit it to the electrofusion control units when using the Bluetooth connection.

The app for smartphones and tablets is available for Android in the Google Play Store and for iOS in the Apple App Store.

## Range of fitting dimensions

The range of fitting dimensions for which an electrofusion control unit can be used depends essentially on the power consumption of the used fittings. Since the power consumption of the fittings is different for different fitting manufacturers, it is not possible to provide a general rule which covers all the possible fitting dimensions. When in doubt, each fitting size must be checked separately.



### Attention!

For electrofusion control units of type Polymatic Plus when all welding work is performed successively, such that the control unit has pauses in welding that correspond to the preparation time of the next fitting, the following rule applies.

The duration of the pause after each weld must be at least equal to the preparation time for the next welding joint. When you allow only shorter pauses, the electrofusion control unit is put under heavy load and can therefore heat up so much, even when welding smaller fittings, that a longer pause must be allowed for cooling down.

Usage for dimensions **from 20 to 630 mm** without limitation.

When working with dimensions from **630 mm on**, longer cool-down times must be provided for because otherwise the device might show the "Device too hot" error message. In this case, it is necessary to let the electrofusion control unit cool down before putting it to use again.



### Attention!

Before processing fittings in this dimension range, you have to check that the welding current demand of the fitting does not continuously exceed the output current of the device and that the maximum output current is not exceeded.

The statements made above are made under the assumption that the ambient temperature is 20 °C.

## Scope of delivery



### Note

The Polymatic Plus is available in different variants. The scope of delivery differs, depending on the ordered variant. Errata and technical modifications reserved!

	Polymatic Plus		Enclosed
	1 ×	Instruction manual	EN004
	1 ×	2D scanner	1_0120_011 / _013
	1 ×	USB stick	5_5001_512
	1 ×	Bluetooth dongle	2_5100_006
	1 ×	Accessory bag	1_2800_002
	1 ×	Transport box	1_2800_005

A Flightcase is available as alternative to the transport box.

# Technical data

Polymatic Plus			
General			
Output voltage	[V]	8 to 48 AC	
Data recording		Yes	
Barcode reader		Scanner	
Power (60 % ON time) according to ISO 12176-2		2600 W (72.5 A)	
Operating temperature range	[°C]	-10 to +50	
International protection		IP54	
Appliance class		1	
Conformity		CE	
ISO 12176-2 Class - classification		P <sub>2</sub> 4 U S <sub>1</sub> V AK D X	
Input of welding parameters			
Barcode with scanner SmartFuse Manual input of the barcode digits Manual input of the welding parameters (U <sub>OUT</sub> : 8 to 48 V, t <sub>WELD</sub> : 0 to 9999 s)			
Input/Mains		230 V devices	110 V devices
Nominal voltage (tolerance)	[V]	230 AC (190 to 300)	110 AC (90 to 150)
Nominal frequency (tolerance)	[Hz]	50/60 (40 to 70)	50/60 (40 to 70)
Power factor cos ϕ		0.6 to 0.9 (phase-angle control)	0.6 to 0.9 (phase-angle control)
Nominal current	[A]	16	40
Power consumption	[VA]	3680	3680
Length of cord	[m]	4.5	On request
Plug type		Euro Schuko plug	On request
Output			
Output voltage	[V]	8 to 48 AC	
Output current (max.)		110	
Output current (t → ∞)	[A]	40	
Output current (min.)	[A]	2	
Energy adjustment		Temperature compensation	
Welding cable length	[m]	5, other lengths on request	
Welding cable installation		Fixed, optional detachable	
Welding terminals	[mm]	4.0 (optional 4.7 or universal terminals for 4.0 und 4.7)	
Monitoring functions			
Input		Voltage, current, frequency	
Output		Voltage, current, resistance, contact, short circuit	
Other		System, Working Temperature, Service	
Error messages		Plain Text, Acoustic Signal	
Casing/Display			
Material		Steel plate with plastic frame	
Display		4×20 Characters (alphanum.), background lighting	
Dimensions, weights and packaging			
Product dimensions L×W×H	[mm]	400×300×260	
Product weight (incl. welding cable)	[kg]	20	
Packaging type		Flightcase	Box
Packaging material		Aluminiumframe with composite wood	Wood
Packaging dimensions L×W×H	[mm]	470×380×370	440×340×310
Packaging weight	[kg]	7.5	3.6
Transport weight	[kg]	28	24

The given technical information is valid for the standard setup of the electrofusion control unit. Depending on the ordered setup there may be variations.

## Data recording

The electrofusion control units of type Polymatic Plus provide data recording for approx. 1000 welding cycles and their barcode identifier conforming to ISO 12176-4 (traceability).

Polymatic Plus		
<b>Data recording</b>		
Number of reports		Approx. 1000
Interface		USB stick
Data format		PDF, CSV
<b>Recorded data</b>		
General data		Time, date, report number, ambient temperature, welder name, job number max. 40-digits (alphanumeric)
Fusion data		Voltage, current, energy, nominal and actual welding time, mode, resistance, error messages with 10 voltage and current values
Fitting data		Barcode Information (ISO/TR 13950), Type, Dimension, Manufacturer
Device data		Serial number, inventory number, date of last service, working hours, system configuration
Worker code		Barcode (PF or ISO 12176-3) for operator identification and access to manual input and system configuration
<b>Traceability functions</b>		
Job number		Job number max. 40 digits (alphanumeric), input by barcode or manual
Worker code		ISO 12176-3
Weather condition		DVS 2207 / 2208
Welding Barcode		ISO TR 13950
Traceability barcode of fitting		ISO 12176-4
Traceability Barcode of 1st pipe		ISO 12176-4
Traceability Barcode of 2nd pipe		ISO 12176-4
Traceability barcode of 3rd pipe / infotext		ISO 12176-4 / 40 digits (alphanumeric)
<b>Additional functions</b>		
Output options		Whole memory, selectable by job number
Job code input/selection		Barcode, manual, internal list of job numbers for selection
Input of position data / free text		40 characters, per joint

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Technical file according to ISO 12176-2				
<b>Classification</b>				
Device type				Polymatic Plus
Classification				P <sub>2</sub> 4 U S <sub>1</sub> V AK D X
<b>Duty cycle according to ISO 12176-2 at 30 %, 60 % and 100 %, Test time t = 60 minutes</b>				
	Test time: 60 min	Power at U <sub>OUT</sub> = 36 V	Power at U <sub>OUT</sub> = 40 V	Output current I <sub>OUT</sub>
	30 %	3500 W	3900 W	97.3 A
	60 %	2600 W	2900 W	72.5 A
	100 %	2100 W	2350 W	58.4 A
<b>Additional Information</b>				
Soft Start	At least 3 seconds (ramp)			
Ambient temperature compensation	According to ISO 13950			
Fitting temperature compensation	No			
Data recording	Yes			
Bluetooth dongle	Bluetooth LE			

The given technical information is valid for the standard setup of the electrofusion control unit. Depending on the ordered setup there may be variations.