



Technical Data Sheet

3_0206_103

Polymatic Plus (USB)

Electrofusion Control Unit



Scope of application

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

BARCODE (ISO-TR 13950, Type 2/5i, 24-digits)



The barcode attached on most electro fusion fittings on the market contains all necessary data for processing them. After the read-in with the reading device (reading pen or scanner) the data is automatically transferred and processed by the device. The barcodes mainly contain the following data: Manufacturer, type, diameter, fusion voltage, fusion time (with temperature correction, if applicable), resistance and resistance tolerance.

FUSAMATIC-/SmartFuse-System



By reading out the reference resistor in the connector pins of the FUSAMATIC-/SmartFuse-fitting the control unit automatically determines the welding data 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 the fusion 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.

Range of fitting dimensions

For which range of fitting dimensions an electro fusion control unit can be used depends essentially on the power consumption of the used fittings. Since the power consumption of the fittings are different for different fitting manufacturers, a general statement concerning this point cannot be made. When in doubt, each single case has to be checked separately. For electrofusion control units of type Polymatic Plus (USB) the following general statement can be made, with the assumption, that all welding processes were made one after another, i.e. that the control unit is able to cool down during the preparation time of the next fitting:

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 device cool down before putting it to use again.

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.

All above made statements refer to an ambient temperature of 20°C.

Scope of delivery

Polymatic Plus (USB)

3_0206_103	Polymatic Plus (USB)		Enclosed
	1 ×	Instruction manual	GB013
	1 ×	USB Memorystick 2 GB	5_5001_512
	1 ×	Accessory bag	1_2800_002
	1 ×	Transport box	1_2800_005

Technical Data

3_0206_103		Polymatic Plus (USB)		
General				
Output voltage	[V]	8 to 48 AC		
Data recording		Yes		
Power (60 % ON time) according to ISO 12176-2		2600 W (72.5 A)		
Operating temperature range	[°C]	-10 to +50		
International protection		IP54		
Protection class		1		
Conformity		CE		
ISO 12176-2 Class - classification		P ₂ 4 U S ₁ V AK D X		
Input of welding parameters				
	Yes	No	Opt.	
Barcode with reading pen (with scanner optional)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FUSAMATIC/SmartFuse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manual input of fittingcode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manual input of welding parameters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	U _{OUT} : 8 to 48 V t _{WELD} : 0 to 9999 s
Manual input of welding parameters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	U _{OUT} : 40 V (preset) t _{WELD} : 0 to 9999 s

Input/Mains		
Type of voltage		AC
Nominal voltage	[V]	230
Nominal voltage range (tolerance)	[V]	185 to 300
Nominal frequency	[Hz]	50
Nominal frequency range (tolerance)	[Hz]	40 to 70
Power factor cos ρ		0.6 to 0.9 (phase-angle control)
Nominal current	[A]	16
Power consumption	[VA]	3600
Length of cord	[m]	4.5
Plug type		Euro plug
Output		
Type of voltage		AC
Output voltage	[V]	8 to 48
Output current (max.)	[A]	110
Output current ($t \rightarrow \infty$)	[A]	40
Output current (min.)	[A]	2
Energy adjustment		Temperature compensation
Welding cable length	[m]	5, other lengths on request
Welding cable mounting		Fixed
Welding terminals	[mm]	4
Optional adapters for terminals	[mm]	4 to 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		
Material		Steel plate with plastic casing
Display		4 × 20 Characters (alphanum.), background lighting
Product weight (excl. welding cable)	[kg]	16
Product weight (incl. welding cable)	[kg]	18
Dimensions L × W × H	[mm]	450 × 325 × 380

3_0206_103		Packaging
Material		Plastic
Type		Box
Dimensions L x W x H	[mm]	470 x 440 x 380
Packaging weight	[kg]	4
Transport weight	[kg]	22

Data recording

The electrofusion control unit Polymatic Plus (USB) provides data recording for approx. 1000 welding cycles.

3_0206_103		Polymatic Plus (USB)
Data recording		
Number of reports		1000
Interface		USB (USB-Memorystick)
Data format		PDF, CSV
Recorded data		
General data		Time, date, report number, ambient temperature
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
Workercode		Barcode (PF or ISO 12176-3) for operator identification and access to manual input and system configuration
Traceability functions		
Job-code		Job number max. 40-digits (alphanumeric), input by barcode or manual
Workercode		ISO-1276-3
Weld Number		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
3rd Traceability Code / Infotext		ISO-12176-4 / 40-digit (alphanumeric)
Additional Functions		
Output options		Whole memory, for each job code separately
Job code input/selection		Barcode, manual, internal list of job numbers for selection

Technical file according to ISO 12176-2

3_0206_103		Polymatic Plus (USB)																	
Classification																			
Device type		Polymatic Plus (USB)																	
Classification		P ₂ 4 U S ₁ V AK D X																	
Simulation curved at 24 V output voltage																			
Duty cycle according to ISO 12176-2 at 30 %, 60 % and 100 %, Test time t = 60 minutes																			
<table border="1"> <thead> <tr> <th>Test time 60 min</th> <th>Output power at U_{OUT} = 36 V</th> <th>Output power at U_{OUT} = 40 V</th> <th>Output current I_{OUT}</th> </tr> </thead> <tbody> <tr> <td>30 %</td> <td>3500 W</td> <td>3900 W</td> <td>97.3 A</td> </tr> <tr> <td>60 %</td> <td>2600 W</td> <td>2900 W</td> <td>72.5 A</td> </tr> <tr> <td>100 %</td> <td>2100 W</td> <td>2350 W</td> <td>58.4 A</td> </tr> </tbody> </table>				Test time 60 min	Output power at U _{OUT} = 36 V	Output power at U _{OUT} = 40 V	Output current I _{OUT}	30 %	3500 W	3900 W	97.3 A	60 %	2600 W	2900 W	72.5 A	100 %	2100 W	2350 W	58.4 A
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Additional Information																			
Soft Start		At least 3 seconds (ramp)																	
Ambient temperature compensation		According to ISO 13950																	
Fitting temperature compensation		No																	
Data recording		Yes																	