



Technical Data Sheet

PolyMax

Electrofusion Control Unit with optional Bluetooth capability



Scope of application

The electrofusion control units of type PolyMax 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.

**Applicable for this data sheet:**

- The specifications apply to the standard setup of the product. Depending on the ordered setup there may be variations.
- Errata and technical modifications reserved!

Input of welding parameters

Barcode (ISO TR 13950, Type 2/5i, 24-digits) 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 PolyMax electrofusion control units are optionally supplied with a plug-in 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.

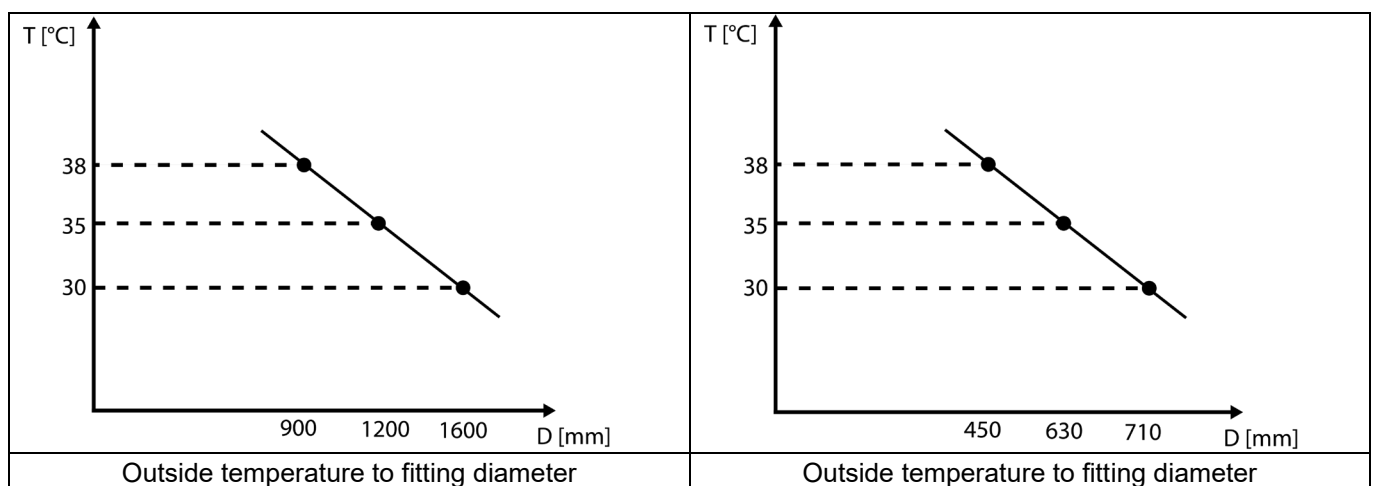


Attention!

For electrofusion control units of type PolyMax 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. During breaks, the device must still be left switched on, as it has an active cooling system (fan).

230 V devices	110 V devices
Maximum fitting diameter: 1600 mm	Maximum fitting diameter: 710 mm
Cooling time 20-630 mm: Preparation time	Cooling time 20-355 mm: Preparation time
Cooling time 630-1600 mm: 35 min	Cooling time 355-710 mm: 35 min



From a diameter of 630 mm (230 V devices) or 355 mm (110 V devices), longer cooling times of approx. 35 min must be ensured when the appliance is switched on (active cooling), otherwise the appliance will display the error message "Device too hot". In this case, it is necessary to let the electrofusion control unit cool down before putting it to use again.



Attention!

If the fan on the back of the device fails, further use of the device is not recommended. However, if the use of the device is mandatory, the following guide values and restrictions apply:

- 20-63 mm: Usable without restrictions
- 125 mm: Max. 10 fittings can be welded without interruption.
- 180 mm: Max. 5 fittings can be welded without interruption.
- 200-315 mm: After each fitting, the electrofusion control units must cool down for at least 1 hour.

Fittings with a diameter larger than 315 mm must not be welded without a functioning fan.




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 25 °C.

Scope of delivery



Note

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

	PolyMax		Enclosed
	1 ×	Instruction manual	EN015
	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_000

Technical data

PolyMax					
General					
Output voltage	[V]	8 to 48 AC			
Data recording		Yes			
Barcode reader		Scanner			
Power (60 % ON time) according to ISO 12176-2		230 V devices: 3500 W (87 A) 110 V devices: 3200 W (80 A)			
Operating temperature range	[°C]	-10 to +50			
International protection		IP54			
Appliance class		1			
Conformity		CE			
ISO 12176-2 Class - classification		P ₂ 4 U S ₁ 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 _{OUT} : 8 to 48 V, t _{WELD} : 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)	
Nominal current	[A]	16		33	
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]	3,4,5,10 other length 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 (with welding cable length)		No	3 m	5 m	10 m
	[kg]	Approx. 9	Approx. 11	Approx. 12	Approx. 15
Packaging type		Box			
Packaging material		Plastic			
Packaging dimensions L×W×H	[mm]	470×350×310			
Packaging weight	[kg]	2.7			
Transport weight	[kg]	Depending on configuration			

Data recording

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

PolyMax		
Data recording		
Number of reports		Approx. 1000
Interface		USB stick
Data format		PDF, CSV
Recorded data		
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
Traceability functions		
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)
Additional functions		
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

Technical file according to ISO 12176-2 230 V device and 110 V device																																									
Classification																																									
Device type		PolyMax																																							
Classification		P ₂ 4 U S ₁ V AK D X																																							
Duty cycle according to ISO 12176-2 at 30 %, 60 % and 100 %, Test time t = 60 minutes																																									
	<table><tr><th colspan="3">230 V devices</th></tr><tr><th colspan="2">Power at</th><th>Output current</th></tr><tr><th>U_{OUT} = 36 V</th><th>U_{OUT} = 40 V</th><th>I_{OUT}</th></tr><tr><td>30 %</td><td>3500 W</td><td>3900 W</td><td>97.3 A</td></tr><tr><td>60 %</td><td>3100 W</td><td>3500 W</td><td>87 A</td></tr><tr><td>100 %</td><td>2450 W</td><td>2700 W</td><td>68 A</td></tr></table>	230 V devices			Power at		Output current	U _{OUT} = 36 V	U _{OUT} = 40 V	I _{OUT}	30 %	3500 W	3900 W	97.3 A	60 %	3100 W	3500 W	87 A	100 %	2450 W	2700 W	68 A	<table><tr><th colspan="3">110 V devices</th></tr><tr><th colspan="2">Power at</th><th>Output current</th></tr><tr><th>U_{OUT} = 36 V</th><th>U_{OUT} = 40 V</th><th>I_{OUT}</th></tr><tr><td>2880 W</td><td>3200 W</td><td>80 A</td></tr><tr><td>2880 W</td><td>2700 W</td><td>68 A</td></tr><tr><td>2450 W</td><td>2000 W</td><td>50 A</td></tr></table>	110 V devices			Power at		Output current	U _{OUT} = 36 V	U _{OUT} = 40 V	I _{OUT}	2880 W	3200 W	80 A	2880 W	2700 W	68 A	2450 W	2000 W	50 A
230 V devices																																									
Power at		Output current																																							
U _{OUT} = 36 V	U _{OUT} = 40 V	I _{OUT}																																							
30 %	3500 W	3900 W	97.3 A																																						
60 %	3100 W	3500 W	87 A																																						
100 %	2450 W	2700 W	68 A																																						
110 V devices																																									
Power at		Output current																																							
U _{OUT} = 36 V	U _{OUT} = 40 V	I _{OUT}																																							
2880 W	3200 W	80 A																																							
2880 W	2700 W	68 A																																							
2450 W	2000 W	50 A																																							

Additional Information	
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