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Technical Data Sheet

PolyControl Plus USB V2.0

PolyControl Plus USB (Bluetooth) V2.0

Universal electrofusion control unit
Universal Electrofusion Control Unit with Bluetooth capability

Scope of application

The electrofusion control units of type PolyControl Plus USB V2.0 and PolyControl Plus USB (Bluetooth) V2.0 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 PolyControl Plus USB V2.0 and PolyControl Plus USB (Bluetooth) V2.0 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 electrofusion control unit. The barcodes mainly contain 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.

Bluetooth functionality

The electrofusion control units of type PolyControl Plus USB (Bluetooth) V2.0 feature a built-in Bluetooth LE module. 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.

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 has to be checked separately. For electrofusion control units of type PolyControl Plus USB V2.0 and PolyControl Plus USB (Bluetooth) V2.0 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:

Suitable without restriction for all coupler dimensions that have a maximum continuous current consumption of up to 85 A.

The statements refer to an outside temperature of 20 °C.

Note: If the fan on the back of the unit fails, the dimension range in which the unit can be used is changed to: 20-250 mm without restriction; 280-400 mm with occasional breaks.

In order to avoid damaging the controller, you must not use it without a properly working fan on coupler dimensions larger than 400 mm.

Note

The electrofusion control unit described in this document can weld couplers in sizes up to and including 1600 mm. The precondition for this is that the electrical characteristics of the coupler to be welded are within the performance range of the electrofusion control unit.

Scope of delivery

	PolyControl Plus USB V2.0 PolyControl Plus USB (Bluetooth) V2.0		**Enclosed**
	1 ×	Instruction manual	EN016
	1 ×	USB memory stick	5_5001_512
	1 ×	Adapter 4,0/4,7 mm (optional)	
	1 ×	Flightcase	1_2800_026

***) A wooden box is available as an alternative to the flight case.**

Technical data

	PolyControl Plus USB V2.0 PolyControl Plus USB (Bluetooth) V2.0			
General				
Output voltage	**[V]**	8 to 48 DC		
Data recording		Yes		
Power (60 % ON time) according to ISO 12176-2		3600 W (100 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				
	Yes	**No**	**Opt.**	
Barcode with reading pen (optional with scanner)	☒	☐	☐	
SmartFuse	☒	☐	☐	
Manual input of the barcode digits.	☒	☐	☐	
Manual input of welding parameters	☒	☐	☐	**U_{OUT}: 8 to 48 V** **t_{WELD}: 0 to 9999 s**
Manual input of welding parameters	☐	☒	☐	**U_{OUT}: 40 V (preset)** **t_{WELD}: 0 to 9999 s**

Input/Mains		230 V devices
Nominal voltage (tolerance)	**[V]**	230 AC (190 to 300)
Nominal frequency (tolerance)	**[Hz]**	50/60 (40 to 70)
Power factor cos ρ		1 – PFC (EN 61000-3-3)
Nominal current	**[A]**	16
Power consumption	**[VA]**	3600
Length of cord	**[m]**	5
Plug type		Euro Schuko plug
Output		
Output voltage	**[V]**	8 to 48 DC
Output current (max.)		110
Output current (t → ∞)	**[A]**	85
Output current (min.)	**[A]**	2
Energy adjustment		Temperature compensation, Inductivity compensation
Welding cable length	**[m]**	5, other lengths on request
Welding cable mounting		Fixed
Welding terminals	**[mm]**	Optional 4.0, 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		Cast aluminium
Display		4×20 Characters (alphanum.), background lighting
Dimensions, weights and packaging		
Product dimensions L×W×H	**[mm]**	230×317×435
Product weight (incl. welding cable)	**[kg]**	15,5*
Product weight (excl. welding cable)	**[kg]**	13*
Packaging dimensions L×W×H	**[mm]**	470×440×380
Packaging material		Aluminiumframe with composite wood
Packaging type		Box
Packaging weight	**[kg]**	8.3
Transport weight	**[kg]**	23.8

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

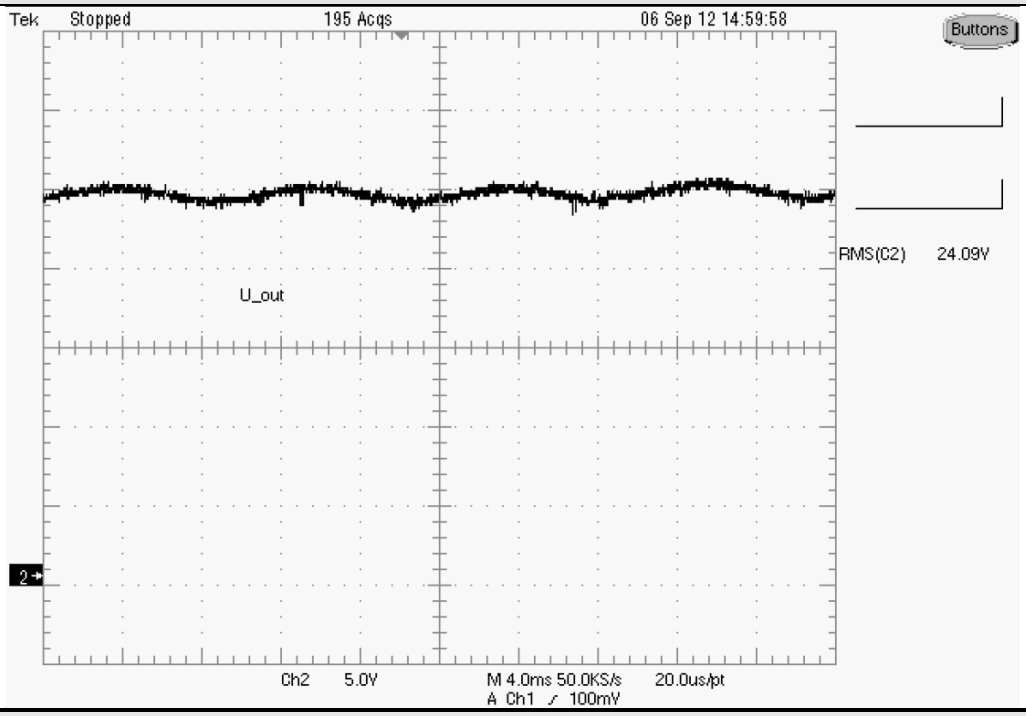
Data recording

The electrofusion control units of type PolyControl Plus USB V2.0 and PolyControl Plus USB (Bluetooth) V2.0 provide data recording for approx. 1000 welding cycles and their barcode identifier conforming to ISO 12176-4 (traceability).

	PolyControl Plus USB V2.0 PolyControl Plus USB (Bluetooth) V2.0	
Data recording		
Number of reports		Approx. 1000
Interface		USB (USB memory stick, USB printer)
Data format		PDF, CSV
Recorded data		
General data		Time, date, report number, ambient temperature, welder name, job number max. 40-digits (alphanumerical)
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		Max. 40 digits (alphanumerical), 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
1st Pipecode		ISO 12176-4
2nd Pipecode		ISO 12176-4
3rd Pipe code / Infotext		ISO 12176-4 / 40 digits (alphanumerical)
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

	PolyControl Plus USB V2.0 **PolyControl Plus USB (Bluetooth) V2.0**	
Classification		
Device type		PolyControl Plus USB V2.0 PolyControl Plus USB (Bluetooth) V2.0
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

Test time: 60 min	Output power at U_{OUT} = 36 V	Output power at U_{OUT} = 40 V	Output current I_{OUT}
30 %	3960 W	4400 W	110 A
60 %	3600 W	4000 W	100 A
100 %	3240 W	3600 W	90 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 module		Bluetooth LE PolyControl Plus USB (Bluetooth) V2.0 only