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Technical Data Sheet

SmartFuse 180
SmartFuse 180 (Bluetooth)

SmartFuse electrofusion control unit
Universal Electrofusion Control Unit with Bluetooth capability

Scope of application

The electrofusion control units of type SmartFuse 180 and SmartFuse 180 (Bluetooth) 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 SmartFuse 180 and SmartFuse 180 (Bluetooth) provide the following means for entering the welding parameters:

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.

Bluetooth functionality

The electrofusion control units of type SmartFuse 180 (Bluetooth) 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.

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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 SmartFuse 180 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 pauses must correspond to the preparation time for the next welding joint, but must be at least 5 minutes. 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.

Fitting	Requirements
20 s to 240 s	Usable without restrictions.
300 s to 400 s	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.
>400 s	**Only couplers that have a welding time of 400 s or below can be welded.**

The following table shows example values of the cooling time to be expected after each weld to ensure continuous operation. The table contains guide values and recommendations, as exact statements cannot be made due to the numerous influencing factors.

Fitting	Recommendation cooling time (ambient temperature 20°C)	Recommendation cooling time (ambient temperature 30°C)
16-140 mm	Usable without additional restrictions.	Usable without additional restrictions.
160-180 mm	15-30 min	20-45 min
PLASSON saddle <315-90 mm	Usable without additional restrictions.	Usable without additional restrictions.
PLASSON saddle 450-800x160 mm	Usable without additional restrictions.	Usable without additional restrictions.
PLASSON saddle 500-630x250 mm	15-30 min	20-45 min

Attention!

For welding of couplers in with a welding time of 400 s a stable and continuous supply voltage of 230 V is mandatory. When using a generator, it must be set to a no load voltage of between 240 V and 260 V.

The SmartFuse 160 electrofusion control unit can only be used together with SmartFuse-capable fittings and couplers.

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.

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Scope of delivery

	SmartFuse 180 **SmartFuse 180 (Bluetooth)**		**Enclosed**
	1 ×	Instruction manual	EN014

Technical data

	SmartFuse 180 **SmartFuse 180 (Bluetooth)**			
General				
Output voltage	**[V]**	40 AC		
Data recording		No		
Power (60 % ON time) according to ISO 12176-2		1250 W (31 A)		
Operating temperature range	**[°C]**	-10 to +50		
International protection		IP54		
Appliance class		1		
Conformity		CE		
ISO 12176-2 Class - classification		P_2 2 U S_1 F A M		
Input of welding parameters				
	Yes	**No**	**Opt.**	
Barcode with scanner	☐	☒	☐	
SmartFuse	☒	☐	☐	
Manual input of the barcode digits	☐	☒	☐	
Manual input of welding parameters	☐	☒	☐	**U_{OUT}: 8 to 48** **t_{WELD}: 0 to 9999 s**
Manual input of welding parameters	☐	☒	☐	**U_{OUT}: 40 V (preset)** **t_{WELD}: 0 to 9999 s**

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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 ρ		0.6 to 0.9 (phase-angle control)	0.6 to 0.9 (phase-angle control)
Nominal current	**[A]**	9	18
Power consumption	**[VA]**	1450	1450
Length of cord	**[m]**	5	On request
Plug type		Euro Schuko plug	On request

Output		
Output voltage	**[V]**	40 AC
Output current (max.)		54
Output current (t → ∞)	**[A]**	14
Output current (min.)	**[A]**	2
Energy adjustment		None
Welding cable length	**[m]**	3
Welding cable installation		Fixed*
Welding terminals	**[mm]**	Universal terminal for 4.0 and 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 casing
Display		4×20 Characters (alphanum.), background lighting
Dimensions, weights and packaging		
Product dimensions L×W×H	**[mm]**	-
Product weight (incl. welding cable)	**[kg]**	-
Product weight (excl. welding cable)	**[kg]**	-
Packaging dimensions W×H×D	**[mm]**	466×176×366
Packaging material		Plastic
Packaging type		Suitcase
Packaging weight	**[kg]**	-
Transport weight	**[kg]**	13

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

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Data recording SmartFuse 180

The electrofusion control unit of type SmartFuse 180 does not generate reports.

Data recording SmartFuse 180 (Bluetooth)

When using the PFS app and the connection via Bluetooth, the electrofusion control unit SmartFuse 180 (Bluetooth) transfers reports to the connected smartphone or tablet. An internal memory is not available in the electrofusion control unit.

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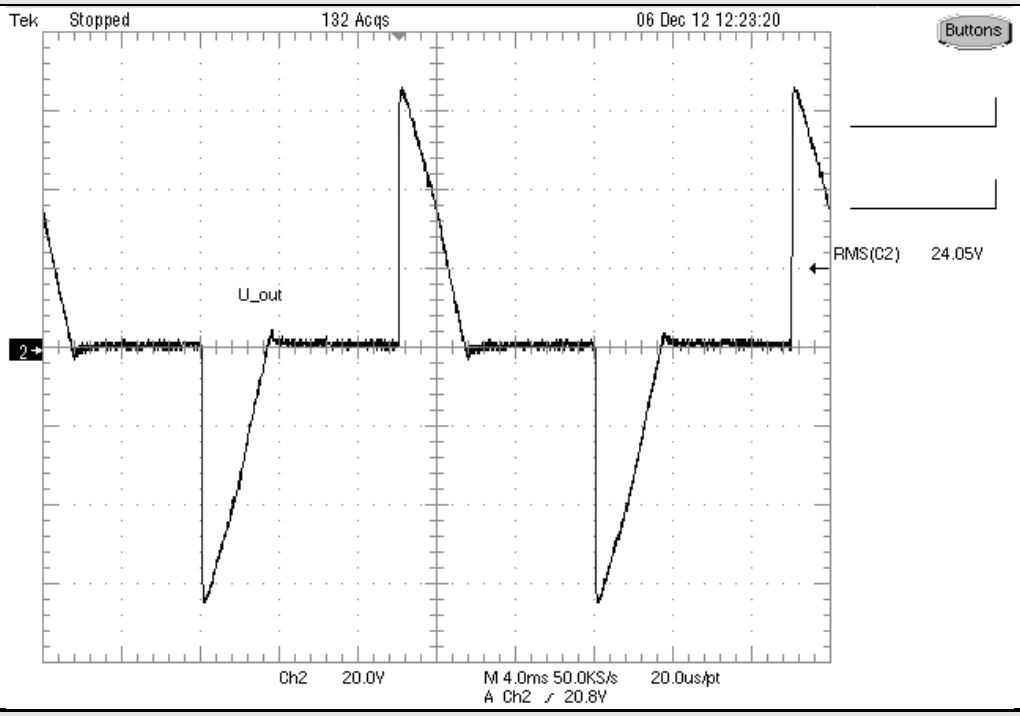
Technical file according to ISO 12176-2

	SmartFuse 180 **SmartFuse 180 (Bluetooth)**	
Classification		
Device type		SmartFuse 180 SmartFuse 180 (Bluetooth)
Classification		P_2 2 U S_1 F A M
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 %	1190 W	1470 W	36.75 A
60 %	1012 W	1250 W	31.25 A
100 %	800 W	1025 W	25.4 A

Additional Information	
Soft Start	At least 3 seconds (ramp)
Ambient temperature compensation	According to ISO 13950
Fitting temperature compensation	No
Data recording	No
Bluetooth module	Bluetooth LE Only SmartFuse 180 (Bluetooth)

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