

Technical Data Sheet

Tiny Data

Electrofusion control unit



Scope of application

The electrofusion control units of type Tiny Data 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 Tiny Data provide the following means for entering the welding parameters:

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



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 Tiny Data 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.

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 Tiny Data, 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.

Devices with 3600 VA transformer:

Fitting	Requirements
16-355 mm	Usable without additional restrictions.
>355 mm	When working with dimensions from 355 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.

Devices with 4800 VA transformer:

Fitting	Requirements
16-630 mm	Usable without additional restrictions.
>630 mm	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.

General:



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 Tiny Data electrofusion control unit is available in different versions. The scope of delivery differs, depending on the ordered variant. Errata and technical modifications reserved!

	Tiny Data		Enclosed
	1 ×	Instruction manual	EN007
	1 ×	2D scanner	1_0120_012
	1 ×	USB stick	5_5001_512
	1 ×	Bluetooth dongle	2_5100_006

A Flightcase is available as an alternative to the wooden box.

Technical data

Tiny Data				
General				
Output voltage	[V]	8 to 48 AC		
Data recording		Yes		
Barcode reader		Scanner		
Power (60 % ON time) according to ISO 12176-2		2050 W (55.9 A)		
Operating temperature range	[°C]	-10 to +50		
International protection		IP54		
Appliance class		1		
Conformity		CE		
ISO 12176-2 Class - classification		P ₂ 3 U S ₂ V AK D X		
Input of welding parameters				
	Yes	No	Opt.	
Barcode with scanner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SmartFuse Tiny Data M	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SmartFuse Tiny Data MF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manual input of the barcode digits	<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 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)		
Power factor cos ρ		0.6 to 0.9 (phase-angle control)		
Nominal current	[A]	16		40
Power consumption	[VA]	3680		3680
Length of cord	[m]	5		On request
Plug type		Euro Schuko plug, others on request		On request
Output				
Output voltage	[V]	8 to 48 AC		
Output current (max.)		110		
Output current (t → ∞)	[A]	30		
Output current (min.)	[A]	2		
Energy adjustment		Temperature compensation		
Welding cable length	[m]	4, other lengths on request		
Welding cable installation		Fixed		
Welding terminals	[mm]	4.0 (or universal terminals 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
Display		4×20 Characters (alphanum.), background lighting
Dimensions, weights and packaging		
Product dimensions L×W×H	[mm]	325×275×290
Product weight	[kg]	16,5*
Packaging dimensions L×W×H	[mm]	390×320×340
Packaging material		Wood*
Packaging type		Box*
Transport weight	[kg]	22*

*) The specifications apply to the standard design of the device. Depending on the ordered setup there may be variations.

Data recording

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

Tiny Data		
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

Tiny Data																		
Classification:																		
Type		Tiny Data																
Classification:		P ₂ 3 U S ₂ V AK D X																
Duty cycle according to ISO 12176-2 at 30 %, 60 % and 100 %, Test time t = 60 minutes																		
<table><tr><th>Test time 60 min</th><th>Power at U_{OUT} = 36 V</th><th>Power at U_{OUT} = 40 V</th><th>Output current I_{OUT}</th></tr><tr><td>30 %</td><td>2700 W</td><td>3000 W</td><td>74.1 A</td></tr><tr><td>60 %</td><td>2050 W</td><td>2250 W</td><td>55.9 A</td></tr><tr><td>100 %</td><td>1600 W</td><td>1800 W</td><td>44.7 A</td></tr></table>			Test time 60 min	Power at U _{OUT} = 36 V	Power at U _{OUT} = 40 V	Output current I _{OUT}	30 %	2700 W	3000 W	74.1 A	60 %	2050 W	2250 W	55.9 A	100 %	1600 W	1800 W	44.7 A
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60 %	2050 W	2250 W	55.9 A															
100 %	1600 W	1800 W	44.7 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																	