

SIEMENS



FP2015-A1

Power supply (70 W)

Technical Manual

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Table of contents

1	About this document	5
1.1	Applicable documents	6
1.2	Download center	7
1.3	Revision history	7
2	Safety	8
2.1	Safety instructions	8
2.2	Safety regulations for the method of operation	9
2.3	Standards and directives complied with	11
2.4	Release Notes	11
3	Description	12
4	Structure and function	13
4.1	Views	13
4.2	Pin assignments	14
4.2.1	X1 mains connection	14
4.2.2	X2 battery supply and signal lines	14
5	Switching the mains voltage to AC 115 V	15
6	Technical data	16
7	Disposal	18

1 About this document

Goal and purpose

This manual describes the design and functions, as well as the key work steps required for mounting and installation. Information about the function check, maintenance, and troubleshooting makes it possible to use the product as intended.

Scope

The information contained in this document is valid for FP2015-A1 power supply (70 W).

Intended use

This power supply can be installed in fire control panels or in additional housing intended for this purpose. When it is used in additional housing, the power supply must be monitored by the fire control panel.

Target groups

The information in this document is intended for the following target groups:

Target group	Activity	Qualification
Installation personnel	<ul style="list-style-type: none"> Assembles and installs the product components at the place of installation. Carries out a function check following installation. 	<ul style="list-style-type: none"> Has received specialist training in the area of building installation technology or electrical installations.
Maintenance personnel	<ul style="list-style-type: none"> Carries out all maintenance work. Checks that the products are in perfect working order. Searches for and corrects malfunctions. 	<ul style="list-style-type: none"> Has obtained suitable specialist training for the function and for the products.

Source language and reference document

- The source/original language of this document is German (de).
- The reference version of this document is the international version in English. The international version is not localized.

Document identification

The document ID is structured as follows:

ID code	Examples
ID_ModificationIndex_Language_COUNTRY	A6V10215123_a_de_DE
-- = multilingual or international	A6V10215123_a_en_-- A6V10315123_a_--_--

Date format

The date format in the document corresponds to the recommendation of international standard ISO 8601 (format YYYY-MM-DD).

Conventions for text marking

Markups

Special markups are shown in this document as follows:

▷	Requirement for a behavior instruction
1. 2.	Behavior instruction with at least two operation sequences
-	Version, option, or detailed information for a behavior instruction
⇒	Intermediate result of a behavior instruction
⇨	End result of a behavior instruction
•	Numbered lists and behavior instructions with an operation sequence
[→ X]	Reference to a page number
'Text'	Quotation, reproduced identically
<Key>	Identification of keys
>	Relation sign and for identification between steps in a sequence, e.g., 'Menu bar' > 'Help' > 'Help topics'
↑ Text	Identification of a glossary entry

Supplementary information and tips



The 'i' symbol identifies supplementary information and tips for an easier way of working.

1.1 Applicable documents

Document ID	Title
008836	FS20 Fire Detection System - System Description
008837	FS20 Fire detection system - Product Data
008843	FS20 Fire detection system - Planning
008851	FS20 Fire detection system - Mounting / Installation
A6V10210355	FS720 Fire detection system - System Description
A6V10210362	FS720 Fire detection system - Planning
A6V10210368	FS720 Fire detection system - Product Data
A6V10210390	FS720 Fire detection system - Mounting / Installation
A6V10367041	FP2015-A1 power supply (70 W) – Data sheet

1.2 Download center

You can download various types of documents, such as data sheets, installation instructions, and license texts via the following Internet address:

<http://siemens.com/bt/download>

- Enter the document ID in the 'Find by keyword' input box.



You will also find information about search variants and links to mobile applications (apps) for various systems on the home page.

1.3 Revision history

The reference document's version applies to all languages into which the reference document is translated.



The first edition of a language version or a country variant may, for example, be version 'd' instead of 'a' if the reference document is already this version.

The table below shows this document's revision history:

Version	Edition date	Brief description
b	2015-06-26	Technical data revised
a	2014-02-19	First edition

2 Safety

2.1 Safety instructions

The safety notices must be observed in order to protect people and property.

The safety notices in this document contain the following elements:

- Symbol for danger
- Signal word
- Nature and origin of the danger
- Consequences if the danger occurs
- Measures or prohibitions for danger avoidance

Symbol for danger



This is the symbol for danger. It warns of **risks of injury**.
Follow all measures identified by this symbol to avoid injury or death.

Additional danger symbols

These symbols indicate general dangers, the type of danger or possible consequences, measures and prohibitions, examples of which are shown in the following table:



General danger



Explosive atmosphere



Voltage/electric shock



Laser light



Battery



Heat


Signal word

The signal word classifies the danger as defined in the following table:

Signal word	Danger level
DANGER	DANGER identifies a dangerous situation, which will result directly in death or serious injury if you do not avoid this situation.
WARNING	WARNING identifies a dangerous situation, which may result in death or serious injury if you do not avoid this situation.
CAUTION	CAUTION identifies a dangerous situation, which could result in slight to moderately serious injury if you do not avoid this situation.
<i>NOTICE</i>	<i>NOTICE</i> identifies possible damage to property that may result from non-observance.


How risk of injury is presented

Information about the risk of injury is shown as follows:

	⚠ WARNING
	Nature and origin of the danger Consequences if the danger occurs <ul style="list-style-type: none"> • Measures / prohibitions for danger avoidance

How possible damage to property is presented

Information about possible damage to property is shown as follows:


	NOTICE
	Nature and origin of the danger Consequences if the danger occurs <ul style="list-style-type: none"> • Measures / prohibitions for danger avoidance

2.2 Safety regulations for the method of operation

National standards, regulations and legislation

Siemens products are developed and produced in compliance with the relevant European and international safety standards. Should additional national or local safety standards or legislation concerning the planning, mounting, installation, operation or disposal of the product apply at the place of operation, then these must also be taken into account together with the safety regulations in the product documentation.

Electrical installations

	⚠ WARNING
	Electrical voltage Electric shock <ul style="list-style-type: none"> • Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.

- Wherever possible disconnect products from the power supply when carrying out commissioning, maintenance or repair work on them.
- Lock volt-free areas to prevent them being switched back on again by mistake.
- Label the connection terminals with external external voltage using a 'DANGER External voltage' sign.
- Route mains connections to products separately and fuse them with their own, clearly marked fuse.
- Fit an easily accessible disconnecting device in accordance with IEC 60950-1 outside the installation.
- Produce earthing as stated in local safety regulations.

Mounting, installation, commissioning and maintenance

- If you require tools such as a ladder, these must be safe and must be intended for the work in hand.
- When starting the fire control panel ensure that unstable conditions cannot arise.
- Ensure that all points listed in the 'Testing the product operability' section below are observed.
- You may only set controls to normal function when the product operability has been completely tested and the system has been handed over to the customer.

Testing the product operability

- Prevent the remote transmission from triggering erroneously.
- If testing building installations or activating devices from third-party companies, you must collaborate with the people appointed.
- The activation of fire control installations for test purposes must not cause injury to anyone or damage to the building installations. The following instructions must be observed:
 - Use the correct potential for activation; this is generally the potential of the building installation.
 - Only check controls up to the interface (relay with blocking option).
 - Make sure that only the controls to be tested are activated.
- Inform people before testing the alarm devices and allow for possible panic responses.
- Inform people about any noise or mist which may be produced.
- Before testing the remote transmission, inform the corresponding alarm and fault signal receiving stations.

Modifications to the system design and the products

Modifications to the system and to individual products may lead to faults, malfunctioning and safety risks. Written confirmation must be obtained from Siemens and the corresponding safety bodies for modifications or additions.

Modules and spare parts

- Components and spare parts must comply with the technical specifications defined by Siemens. Only use products specified or recommended by Siemens.
- Only use fuses with the specified fuse characteristics.
- Wrong battery types and improper battery changing lead to a risk of explosion. Only use the same battery type or an equivalent battery type recommended by Siemens.
- Batteries must be disposed of in an environmentally friendly manner. Observe national guidelines and regulations.

Disregard of the safety regulations

Before they are delivered, Siemens products are tested to ensure they function correctly when used properly. Siemens disclaims all liability for damage or injuries caused by the incorrect application of the instructions or the disregard of danger warnings contained in the documentation. This applies in particular to the following damage:


- Personal injuries or damage to property caused by improper use and incorrect application
- Personal injuries or damage to property caused by disregarding safety instructions in the documentation or on the product
- Personal injury or damage to property caused by poor maintenance or lack of maintenance


2.3 Standards and directives complied with

A list of the standards and directives complied with is available from your Siemens contact.

2.4 Release Notes

Limitations to the configuration or use of devices in a fire detection installation with a particular firmware version are possible.

	⚠ WARNING
	<p>Limited or non-existent fire detection</p> <p>Personal injury and damage to property in the event of a fire.</p> <ul style="list-style-type: none"> • Read the 'Release Notes' before you plan and/or configure a fire detection installation. • Read the 'Release Notes' before you carry out a firmware update to a fire detection installation.

	NOTICE
	<p>Incorrect planning and/or configuration</p> <p>Important standards and specifications are not satisfied. Fire detection installation is not accepted for commissioning. Additional expense resulting from necessary new planning and/or configuration.</p> <ul style="list-style-type: none"> • Read the 'Release Notes' before you plan and/or configure a fire detection installation. • Read the 'Release Notes' before you carry out a firmware update to a fire detection installation.

3 Description

- The power supply (70 W) converts mains voltage to system voltage and charges the batteries.
- The DC 24 V system voltage is electrically isolated.
- For the supply of consumers in accordance with EN 54-4 and VdS.
- The output voltage is short-circuit-proof and battery charging is current-limited.
- Must not be connected in parallel.
- The battery charge voltage is regulated with temperature compensation.
- A jumper can be used to switch the mains voltage from AC 230 V to AC 115 V.

Monitoring of mains voltage and the batteries

- A failure of the AC 230 V supply voltage or a higher internal battery resistance are detected and an error message is generated.

Uninterruptible power supply

- If the mains voltage fails, the supply switches automatically from mains operation to battery operation.

Protecting the battery against total discharge

- When the final voltage is reached, the battery switches off automatically.

4 Structure and function

4.1 Views

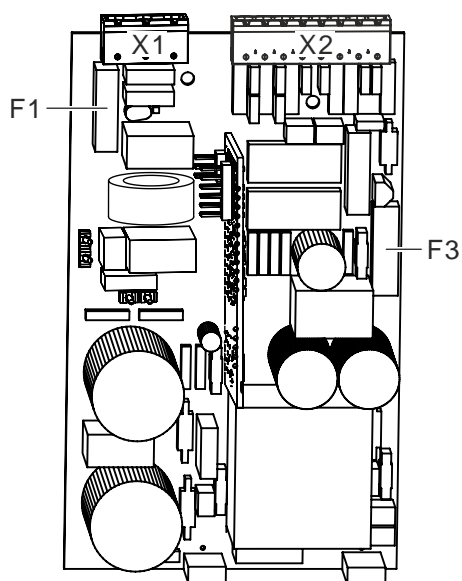



Figure 1: View of PCB FP2015-A1 power supply (70 W)

Designation	Position	Function
Connector	X1	Mains connection
	X2	Output for battery supply and signal lines
Fuses	F1	Mains fuse 3.15 A/T AC 250 V; 5 x 20 mm
	F3	Battery fuse 3.15 A/T AC 250 V; 5 x 20 mm

4.2 Pin assignments

4.2.1 X1 mains connection

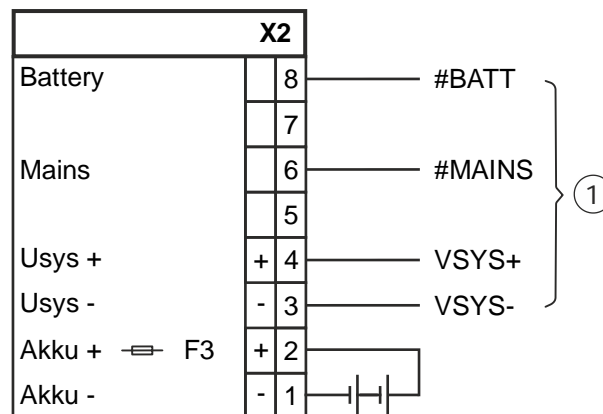
Pin	Designation	Description
1		Ground (protective conductor PE)
2	N	Neutral conductor
3	L	External conductor (L1)

Admissible cable cross-section: 0.2...2.5 mm²

4.2.2 X2 battery supply and signal lines

Pin	Designation	Description
8	Battery	Detection line (#BATT): Battery fault
7	Not used	
6	Mains	Detection line (#MAINS): Mains fault
5	Not used	
4	U _{sys} +	System supply (V _{SY} S+)
3	U _{sys} -	System supply (V _{SY} S-)
2	Akku +	Battery supply (+), protected with F3
1	Akku -	Battery supply (-)

Admissible cable cross-section: 0.2...2.5 mm²



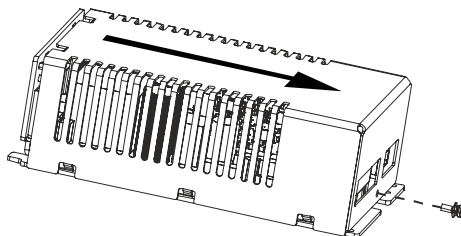
1 Cable tree to periphery board or fire terminal board

5 Switching the mains voltage to AC 115 V

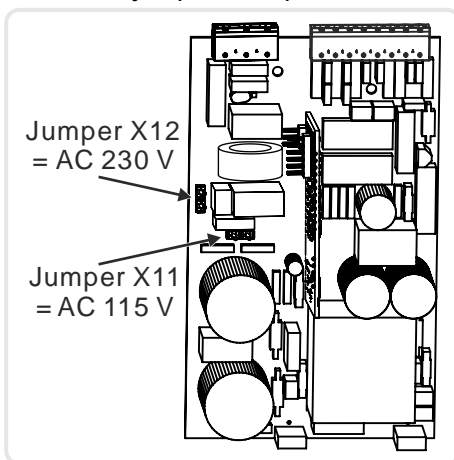


The mains voltage set in the factory is AC 230 V.

1. Open the power supply housing.



2. Switch the jumper from position X12 = AC 230 V to position X11 = AC 115 V.



3. Mark the change from AC 230 V to AC 115 V on the product label as shown below.

S

Power supply (70 W) Typ: FP2015-A1 P.Nr.: S54400-B121-A1 ES: Control Code: xxvzwww	Rated voltage: 115/230 V Frequency: 50-60 Hz I in: 1/0,5 A Output: 70 W
--	--

Selected voltage
 230 V
 115 V

→

Selected voltage
~~230 V~~
 115 V

DO NOT OPEN COVER

EN54-4
VdS: G213083
0786-CPR-21302

Siemens Switzerland Ltd Country of Origin: China

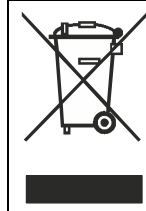
X2 <table style="width: 100%; border-collapse: collapse; font-size: 0.7em;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Akku</td> <td style="border-right: 1px solid black; padding: 2px;">Usys</td> <td style="border-right: 1px solid black; padding: 2px;">Not Used</td> <td style="border-right: 1px solid black; padding: 2px;">Main</td> <td style="border-right: 1px solid black; padding: 2px;">Not Used</td> <td style="padding: 2px;">Battery</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px; text-align: center;">- +</td> <td style="border-right: 1px solid black; padding: 2px; text-align: center;">- +</td> <td style="border-right: 1px solid black; padding: 2px;"></td> <td style="border-right: 1px solid black; padding: 2px;"></td> <td style="border-right: 1px solid black; padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>	Akku	Usys	Not Used	Main	Not Used	Battery	- +	- +					X1 <table style="width: 100%; border-collapse: collapse; font-size: 0.7em;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"></td> <td style="border-right: 1px solid black; padding: 2px;">N</td> <td style="padding: 2px;">L</td> </tr> </table>		N	L
Akku	Usys	Not Used	Main	Not Used	Battery											
- +	- +															
	N	L														

6 Technical data

Mains supply	Voltage	AC 97...127 V, AC 196...253 V, 50 / 60 Hz
	Current	0.5...1 A
	Power consumption	Max. 90 VA
System supply output	Designation	'Usys'
	Voltage	DC 20.5...28.6 V, depending on charge and temperature
	Current:	
	• Maximum output current with battery charge ($I_{\max a}$)	0.9 A
	• Maximum output current without battery charge ($I_{\max b}$)	2.5 A
	• Minimum output current (I_{\min})	0.05 A
Output power	70 W	
Ripple	Max. 5 %	
Battery supply output	Designation	'Accu'
	Voltage	DC 20.5...28.6 V, depending on charge and temperature
	Charging current	Max. 1.6 A, the charging current is reduced at full load
	Connectable batteries	2x 12 V / 7...17 Ah Battery types recommended by Siemens in acc. with planning document
	Battery internal resistance (R_{\max})	Max. 1 Ω , batteries incl. line
	Batteries are monitored for	<ul style="list-style-type: none"> • Short-circuit • Open line • Presence
	Low discharge protection	Battery voltage DC 20.5 V...21.0 V
Mains fault monitoring signal	Designation	'Mains'
	Active in event of	<ul style="list-style-type: none"> • No mains voltage Signaling within 10 s
	Design	Open collector
Battery fault monitoring signal	Designation	'Battery'
	Active in event of	<ul style="list-style-type: none"> • Battery fault • Battery voltage <DC 21.0 V
	Design	Open collector
Connections	Mains supply, battery supply and monitoring signals	Plug-type connections
Mechanical data	Dimensions (W x H x D)	95 x 170 x 54 mm
	Weight	576 g

ApprovalsVdS
LPCBG213083
Pending

7 Disposal



The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

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