MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7138-7EC00-0AA0

AC DISTRIBUTED I/O POWER SUPPLY

Used with the applicable SIMATIC ET 200iSP configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens 6ES7138-7EC00-0AA0 Data Sheet, 2026-11-06, pp.1-2; ET200iSP A5E00247483-07, pp.113-114 and 224-226.

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Data sheet 6ES7138-7EC00-0AA0



Figure similar

SIMATIC, power supply module 120/230 V AC for ET200iSP, Ex db eb [ib] IIC T4 Gb, Ex db eb [ib] I Mb

General information	
Product type designation	PS 120/230 V AC
Redundancy	
● Redundancy capability	Yes
Supply voltage	
Type of supply voltage	AC
Rated value (AC)	230 V; 120/230 V AC
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
external protection for power supply lines (recommendation)	protection with 6 A miniature circuit breaker and tripping characteristic C (per ET 200iSP station)
Line frequency	
● permissible range, lower limit	47 Hz
● permissible range, upper limit	63 Hz
Mains buffering	
● bridging time for backplane bus, min.	20 ms
● buffering time for powerbus, min.	20 ms
● buffering time for IM 152 CPU, min.	20 ms
Input current	
Inrush current, max.	28 A; at 120/230 V AC
from supply voltage L1, max.	1.04 A; at rated voltage 230 VAC:0.45A at rated voltage 120 VAC:0.75A
At 50 Hz AC, max.	1.04 A
At 60 Hz AC, max.	1.04 A
Power loss	
Power loss, typ.	5 W; 5 W + 1.2 x total power loss of the electronics modules
Power loss, max.	21.3 W
Interrupts/diagnostics/status information	
Status indicator	Yes
Alarms	No
Diagnoses	
● Diagnostic information readable	Yes; via IM 152
Diagnostics indication LED	
● Group error SF (red)	No
Ex(i) characteristics	
maximum values for connecting terminals for gas group IIC	
● Um (voltage at non-intrinsically safe connecting terminals), max.	264 V; for more AC/DC information, see certificate IECEx KEM 09.0070
Potential separation	

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primary/secondary	Yes
between supply voltage and electronics	No
Degree and class of protection	
IP degree of protection	IP30
Standards, approvals, certificates	
CE mark	CE 0344
UKCA mark	DEKRA 21UKEX0033 Importer UK: Siemens plc Manchester M20 2UR
cULus	LISTED E334384
FM approval	CLASSIFIED 3025852
BIS	Yes
Suitable for safety functions	Yes
INMETRO certificate	UL-BR 12.0066
reference designation according to IEC 81346-2 (2009)	K
Use in hazardous areas	
● ATEX marking	II 2 G Ex db eb [ib] IIC T4 Gb I M2 Ex db eb [ib] I Mb
● ATEX certificate	KEMA 09 ATEX 0156
● IECEx	IECEx KEM 09.0070
● CCC Ex	2020322303002989
● EAC Ex	1Ex d e [ib] IIC T4 Gb PII Ex d e [ib Mb] I Mc
● FM marking	Class I, Zone 1 AEx d e [ib] IIC T4 NI, Class I, DIV.2, GP. A,B,C,D T4 DIP, Class II, III, GP. E,F,G
● Explosion protection category for gas	ATEX gas explosion protection, Zone 1
● Explosion protection category for dust	ATEX dust explosion protection, Zone 21 always install in corresponding enclosure
● associated equipment (Ex ia)	No
● associated equipment (Ex ib)	Yes
Marine approval	
● Germanischer Lloyd (GL)	Yes
● American Bureau of Shipping (ABS)	Yes
● Bureau Veritas (BV)	Yes
● Det Norske Veritas (DNV)	Yes
Ambient conditions	
Ambient temperature during operation	
● min.	-20 °C
● max.	70 °C
Dimensions	
Width	60 mm
Height	190 mm
Depth	136.5 mm
Weights	
Weight, approx.	2 700 g

Classifications

	Version	Classification
eClass	16	27-24-26-11
eClass	14	27-24-26-11
eClass	12	27-24-26-11
eClass	9.1	27-24-26-11
eClass	9	27-24-26-11
eClass	8	27-24-26-11
eClass	7.1	27-24-26-11
eClass	6	27-24-26-11
ETIM	10	EC002583
ETIM	9	EC002583
ETIM	8	EC002583
ETIM	7	EC002583
IDEA	4	3575
UNSPSC	15	32-15-17-06

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DANGER

Threat to explosion protection in the Zone 2 and Zone 22 potentially explosive area:

In Zone 2/ Zone 22, in cases subject to explosion hazard, always switch off power before you disconnect the PS 24 VDC power supply cable on terminal module TM-PS-A/ TM-PS-A UC or TM-PS-B/ TM-PS-B UC.

If there is no risk of explosion, the PS 24 VDC power supply cables can be disconnected from terminal module TM-PS-A/ TM-PS-A UC or TM-PS-B/ TM-PS-B UC in Zone 2/ Zone 22 while power is on.

Safety instructions for the power supply PS 120/230 VAC

DANGER

Unplug cable only in a voltage-free state

In Zone 1/ Zone 21, Zone 2/ Zone 22 and in the safe area, always switch off power before you disconnect the PS 120/230 VAC power supply cable on terminal module TM-PS-A UC or TM-PS-B UC. In zone 21, you may only open the enclosure of the ET 200iSP when no explosive dust is present!

Properties

Connect the ET 200iSP power supply to the terminal module TM-PS-A/ TM-PS-A UC.

Connect the power supply for redundancy to the terminal module TM-PS-B/ TM-PS-B UC.

The active Power Supply PS supplies interface module IM 152 and all electronic modules with the required voltage.

Requirements

- Wire the terminal module with the power supply turned off.
- Observe the wiring rules.

Required tools

- 3.5 mm screwdriver
- Insulation stripper

Procedure

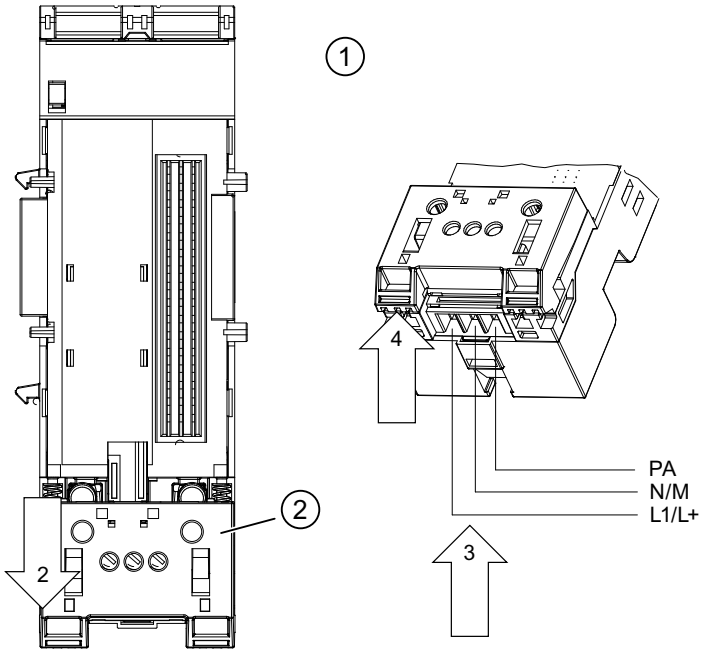
1. Strip the wires for the power supply to the ET 200iSP.
2. Pull the slide down as far as the end stop until it clicks into place.
   You can only pull the slide down when the two fastening screws on the terminal module are screw to the mounting rail.

3. Secure the individual wires using the 3.5 mm screwdriver.

Note

The grounding cable (equipotential bonding) must have a cross-section of at least 4 mm^2. Connect the other end of the grounding cable Pa with the ground bus PA.

4. Lift the slide until this move upwards of its own accord.



① Terminal module TM-PS-A/ TM-PS-A UC

② Catch

Figure 5-5 Connecting the Power Supply and Grounding Conductor PA to the TM-PS-A/ TM-PS-A UC.

Note

When wiring the TM-PS-A UC / TM-PS-B UC, make sure to connect the phase L1 and the neutral conductor N properly. This is necessary to ensure a trouble-free operation of the ET 200iSP.

5.4.6 Wiring Terminal Modules TM-IM/EM and TM-IM/IM

Properties

Connect the PROFIBUS RS 485-IS connector to terminal module TM-IM/EM. The connector is on the left-hand side of the module. Terminal module TM-IM/EM also forms the interface to the actuators and sensors. The connectors are on the right-hand side of the module.

Connect the bus connector to terminal module TM-IM/IM for redundant operation of the two IM 152s.

10.2 Power supply PS 120/230 VAC

Order number

6ES7138-7EC00-0AA0

Properties

⚠ WARNING
Death or severe personal injury could result if the following precautions are not taken
There must be a wait of at least 2 minutes after unlocking the power supply in potentially explosive atmospheres. The power supply of the ET 200iSP can be then be safely removed.

- PS 120/230 VAC supplies the ET 200iSP with necessary output voltages electrically isolated:
  - Power bus
  - Interface module supply
  - Backplane bus
- PS 120/230 VAC handles the safety-related limitation of the output voltages.
- PS 120/230 VAC can be inserted on the TM-PS-A UC / TM-PS-B UC

Block diagram

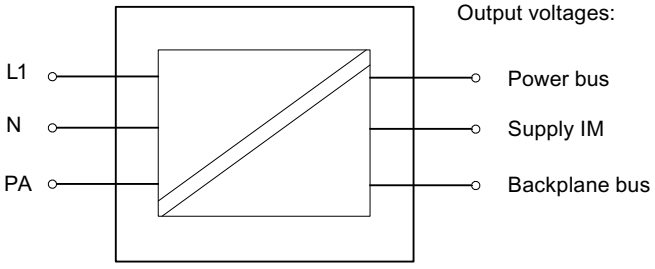


Figure 10-2 Block diagram of the power supply PS 120/230 VAC

Technical specifications

Technical specifications	
Dimensions and weight	
Dimensions W x H x D (mm)	60 x 190 x 136.5
Weight	Approx. 2700g
Module-specific data	
Type of protection of the module	

Technical specifications		
• ATEX		II 2 G and I M2 Ex d e [ib] IIC T4 Gb; Ex d e [ib] I Mb KEMA 09 ATEX 0156  0344
• IECEx		IECEx KEM 09.0070
• INMETRO [1]	 INMETRO  BR OCP-0029	BR-Ex d e [ib] IIC T4 Gb; BR-Ex d e [ib] I Mb
• FM [1]		Class I, Zone 1, AEx de [ib] IIC T4; Ex de [ib] IIC T4 NI, Class I, DIV. 2, GP A,B,C,D T4 Class II, III, GP EFG
• cULus [1]	 LISTED 47ER	Process Cont. Eq. for Use in HAZ.LOC. Class I, Zone 1, AEx de [ib] IIC T4; Ex de [ib] IIC T4 Class I, Div 2, GP .ABCD T4
• NEPSI		Ex de [ib] IIC T4 GYJ111180X

Voltages, currents, electrical potentials	
Nominal power supply voltage	120/230 VAC [2]
• Power failure buffering power bus	min. 20 ms
• Power failure buffering IM 152	min. 20 ms
• Power failure buffering backplane bus	min. 20 ms
Electrical isolation	
• between the supply voltage and power bus	Yes
• between the supply voltage and backplane bus as well as IM supply	Yes
Insulation tested	
• between supply voltage and all output voltages	2500V AC
Current consumption	
• from power supply L1	Max. 1.04A [3]
Starting current inrush	
• for 120/230 VAC	28 A
Power loss from the module	21.3 W [4]
Permitted input power	max. 82.2 W
Output current for 230 VAC (170 VAC to 264 VAC) and ambient temperature	
• -20°C to +70°C with horizontal installation	max. 4A
• From -20°C to +60°C with horizontal installation and -20°C to +50°C for all other installation positions	max. 5A

Technical specifications	
Output current for 120 VAC (85 VAC to 132 VAC) and ambient temperature	
• From -20°C to +70°C with horizontal installation and -20°C to +50°C for all other installation positions	max. 3A
• from -20°C to +60°C with horizontal installation	max. 4A
• -20°C to +50°C with horizontal installation	max. 5A
Status, interrupts, diagnostics	
Status display	yes (on IM 152)
Interrupts	No
Diagnostic functions	
• Group error display	No
• Diagnostic information can be read	yes (over IM 152)
Safety data	
See EC-type-examination certificate	KEMA 09ATEX0156
U_M	264V DC, 264V AC
[1] Available soon [2] Tolerance range 85 VAC to 264 VAC. Fusing with 6 A automatic circuit breaker and tripping characteristic C (for each ET 200iSP station) [3] Rated current: 0.75A (for 120 VAC)/ 0.45A (for 230 VAC) [4] You can find additional information about in the section "Restricted Number of Connectable Electronics Modules (Page 52)"	

Note

Take appropriate measures to ensure that U_m = 264 VDC, 264 VAC is not exceeded.