9 Power Supply Units

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Introduction

Overview

Devices	Application	Standards	Usage		
			Non-res. bldgs.	Res. bldgs.	Industry
 **Bell transformers** 4AC3 0, 4AC3 1	AC voltage/current supply up to 40 VA as safety extra-low voltage for the supply of gongs, buzzers, bells, door openers, intercoms, remote control switches and AC power supplies for safety e.l.v. systems for short-time operation.	EN 61558-2-8	•	•	
 **Transformers** for permanent load 4AC3 4, 4AC3 5, 4AC3 6	AC voltage/current supply up to 63 VA as safety extra-low voltage for the supply of calibration circuits, switching relays, Insta contactors and AC power supplies for safety e.l.v. systems for continuous operation.	EN 61558-2-2	•		•
 **Power supply units** for direct voltages 4AC2 4	Direct voltage/current supply up to 24 V DC, 2.0 A as safety extra-low voltage for the supply of gongs, buzzers, bells, door openers, switching relays, Insta contactors and DC power supplies for safety e.l.v. systems for continuous operation.	EN 61558-2-6	•	•	•
 **Socket outlets** 5TE6 7	For power supply during maintenance in distribution boards	DIN VDE 0620, CEE 7 Standard Sheet V	•	•	•

Definitions

I_e = Rated operational current
U_e = Rated operational voltage
I_c = Rated control supply current
U_c = Rated control supply voltage
P_s = Rated operational capacity
1 MW = 18 mm modular width

4AC3 0, 4AC3 1 bell transformers

Overview

Certification

The bell transformers are IMQ and VDE approved.

Uniform standards

The standard EN 61558 distinguishes between transformers for short-time loading and those for permanent loading. This means that clear requirements for bell transformers are defined. A bell transformers must maintain 100 % of its rated power for 1 min or 20 % for 5 min, without shutting down.

Failsafe with PTC

Siemens bell transformers are protected against short circuit or moderate overload by a PTC resistor. If a disconnection occurs, the bell transformer must be switched off for approx. 30 min to cool down the PTC resistor.

Two secondary voltages

The 12 V outputs must be switched in parallel or in series. In parallel connection, they can be used, e.g. for 12 V 8 VA, in series connection for 24 V 8 VA. In these types of circuits, the PTC resistor ensures full protection of the transformer.

Typical applications

Short-time use, as occurs with bells, gongs, door openers or remote control switches in residential buildings.

Technical specifications

Data acc. to EN 61558-2-8			4AC3 008	4AC3 016	4AC3 108	4AC3 116	4AC3 140
Rated operating capacity P_s		VA	8	16	8	16	40
Rated operational voltage U_e		V AC	230				
Operating range × U_c	at 50/60 Hz		0.9 ... 1.06				
Rated frequency		Hz	50				
Operating range frequency		Hz	48 ... 62				
Secondary rated voltage U_{sec}	 in series connection	V AC V AC	2 x 4 8		2 x 12 24		
Secondary rated current I_{sec}	at 4 V at 8 V at 12 V at 24 V	A AC A AC A AC A AC	2 x 1.0 1 – –	2 x 2.0 2	– – 2 x 0.33 0.33	2 x 0.67 0.67	2 x 1.67 1.67
Rated power dissipation P_v	in no-load operation at rated load	W W	1.8 5	2.4 23	1.6 3.6	8.2	1.2 17.2
Safe isolation	creepage and clearances	mm	> 3				
Insulation class			B				
Test voltage, 50 Hz 1 minute	primary against secondary winding	kV	> 3.75				
Terminals	± screw (Pozidrive)		1				
Conductor cross-sections	rigid flexible with sleeve	max. mm^2 min. mm^2	1.5 ... 6 0.75				
Permissible ambient temperature		°C	-10 ... +25				
Permissible humidity		%	≤80				
Degree of protection	acc. to EN 60529		IP20				
Protection class	acc. to EN 60730		II				

Selection and ordering data

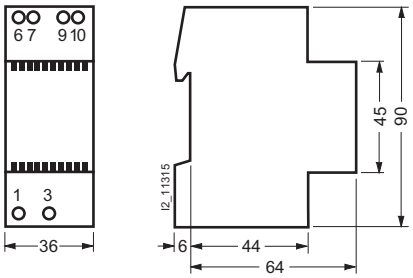
U_e	U_{sec}	I_{sec}	P_s	MW	Order No.	Weight 1 item	PS*/ P. unit
V AC	V AC	A AC	VA			kg	Items
Bell transformers							
with PTC protection for AC voltage/current supply as safety extra-low voltage for short-time operation, for the supply of gongs, buzzers, bells, door openers, intercoms and remote control switches							
with two secondary voltages, optionally for series or parallel switching							
230	2x4/8	2x1/1	8	2	**4AC3 008**	0.290	1
		2x2/2	16	2	**4AC3 016**	0.370	1
	2x12/24	2x0.33/0.33	8	2	**4AC3 108**	0.260	1
		2x0.67/0.67	16	2	**4AC3 116**	0.320	1
		2x1.67/1.67	40	3	**4AC3 140**	0.490	1

* You can order this quantity or a multiple thereof.

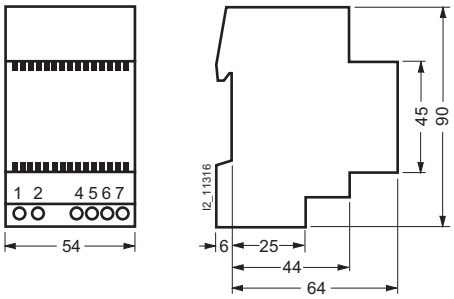
4AC3 0, 4AC3 1 bell transformers

Dimensional drawings

4AC3 008
4AC3 016
4AC3 108
4AC3 116



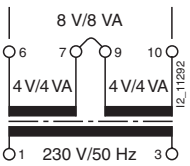
4AC3 140



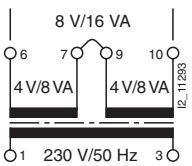
Schematics

Circuit diagrams

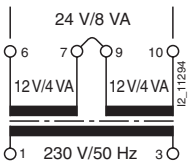
4AC3 008



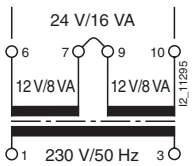
4AC3 016



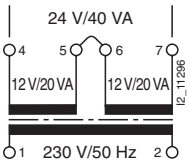
4AC3 108



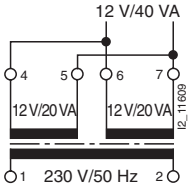
4AC3 116



4AC3 140



4AC3 140
parallel switching



The 12 V outputs must be switched in parallel or in series. Our example shows the 4AC3 140. In parallel connection, they can be used for 12 V/40 VA, in series connection for 24 V/40 VA. In these types of circuits, the PTC resistor ensures full protection of the transformer.

Overview

Certification

The transformers are IMQ and VDE approved.

Uniform standards

The standard EN 61558 distinguishes between transformers for short-time loading and those for permanent loading.

Failsafe with PTC

Siemens transformers for permanent loading are protected against short circuit or moderate overload by a PTC resistor. If a disconnection occurs, the transformer must be switched off for approx. 30 min to cool down the PTC resistor.

Two secondary voltages

The 12 V outputs must be switched in parallel or in series. In parallel connection, they can be used, e.g. for 12 V, 16 VA, in series connection for 24 V, 16 VA. In these types of circuits, the PTC resistor ensures full protection of the transformer.

Hum-free

The transformers with 24, 40 and 63 VA cores are molded, which means that they are hum-free and suitable for installation in sound-sensitive distribution boards.

Voltage stability

According to EN 61558-2-2, in the case of transformers for permanent loading, the difference between the non-loaded output voltage and the output voltage loaded with the rated load must not be higher than 10 %. This requirement places the highest demands on the design of this type of transformer. It can only be met by using high-quality core materials and a core design with an extraordinarily high efficiency, such as type EI acc. to DIN 41302.

Typical applications

AC voltage/current supply for 8, 12 or 24 V AC up to 63 VA as safety extra-low voltage for the supply of calibration circuits, switching relays or Insta contactors in continuous duty.

Technical specifications

Data acc. to EN 61558-2-2			4AC3 408	4AC3 516	4AC3 524	4AC3 540	4AC3 616	4AC3 624	4AC3 640	4AC3 663
Rated operating capacity P_s		VA	8	16	24	40	16	24	40	63
Rated instantaneous power p. f. = 0.5; t = 10 s		VA	10	18	27	48	18	27	48	80
Rated operational voltage U_e		V AC	230							
Operating range × U_c	at 50/60 Hz		0.9 ... 1.1							
Rated frequency		Hz	50							
Operating range frequency		Hz	48 ... 62							
Secondary rated voltage U_{sec} in series connection		V AC V AC	8 –	2 x 4 8	8 –		2 x 12 24			
Secondary rated current I_{sec} at 4 V at 8 V at 12 V at 24 V		 A AC A AC A AC A AC	 – 1 – –	 2 x 2 2	 – 3	 5	 – 2 x 0.67 0.67	 2 x 1 1	 2 x 1.67 1.67	 2 x 2.62 2.62
Rated power dissipation P_V in no-load operation at rated load		 VA W	 3.5 2.6	 10.3 4.6	 8.0 2.7	 13.8 6.9	 8.0 3.6	 13.1 6.3	 8.3 5.7	 23.0 10.0
Hum-free	core molded		–		yes		–	yes		
Safe isolation creepage and clearances		mm	≥3							
Insulation class			B							
Test voltage, 50Hz 1 minute primary against secondary winding		kV	≥4							
Terminals	± screw (Pozidrive)		1							
Conductor cross-sections rigid flexible with sleeve		 mm^2 min. mm^2	 1 ... 6 0.75							
Permissible ambient temperature in operation		°C	-10 ... +40							
Permissible humidity		%	≤80							
Degree of protection	acc. to EN 60529		IP20							
Protection class	acc. to EN 60730		II							

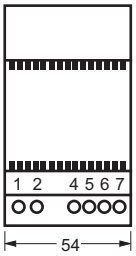
4AC3 4, 4AC3 5, 4AC3 6 transformers

Selection and ordering data

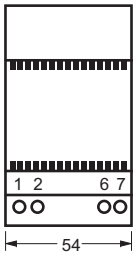
	U_e	U_{sec}	I_{sec}	P_s	MW	Order No.	Weight 1 item	PS*/ P. unit
	V AC	V AC	A AC	VA			kg	Items
	**Transformers for permanent loads**							
	with PTC protection for AC voltage/current supply as safety extra-low voltage for continuous operation for the supply of calibration circuits, switching relays and Insta contactors							
	with one secondary voltage							
	230	8	1	8	3	**4AC3 408**	0.320	1
			3	24	4	**4AC3 524**	0.940	1
			5	40	4	**4AC3 540**	0.870	1
	with two secondary voltages, optionally available with series or parallel switching							
	230	2x4/8	2x2/2	16	3	**4AC3 516**	0.600	1
		2x12/24	2x0.67/0.67	16	3	**4AC3 616**	0.600	1
			2x1.0/1.0	24	4	**4AC3 624**	0.910	1
			2x1.67/1.67	40	4	**4AC3 640**	0.840	1
			2x2.62/2.62	63	5	**4AC3 663**	1.170	1

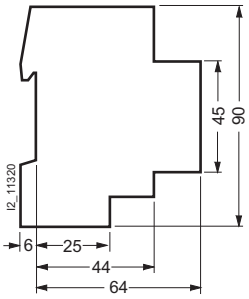
Dimensional drawings

4AC3 516
4AC3 616

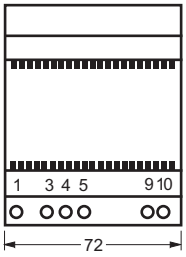


4AC3 408

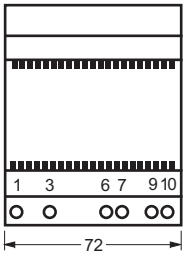


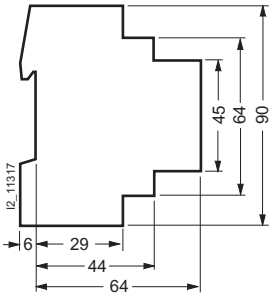


4AC3 524
4AC3 540

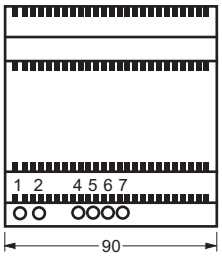


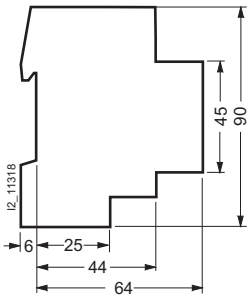
4AC3 624
4AC3 640





4AC3 663



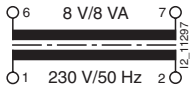


* You can order this quantity or a multiple thereof.

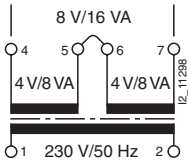
Schematics

Circuit diagrams

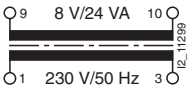
4AC3 408



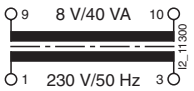
4AC3 516



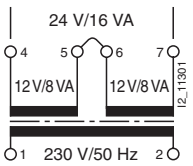
4AC3 524



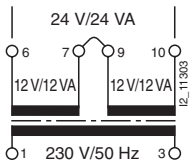
4AC3 540



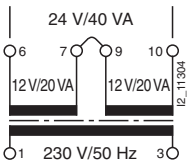
4AC3 616



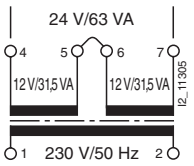
4AC3 624



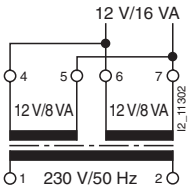
4AC3 640



4AC3 663



4AC3 616
Parallel connection



The 12 V outputs must be switched in parallel or in series. Our example shows the 4AC3 616. In parallel connection, they can be used for 12 V/16 VA, in series connection for 24 V/16 VA.
In these types of circuits, the PTC resistor ensures full protection of the transformer.

4AC2 4 power supply units

Overview

Certification

The power supply units are IMQ and VDE approved.

Failsafe with PTC

Siemens power supply units are protected against short circuit or moderate overload by a PTC resistor. If a disconnection occurs, the power supply unit must be switched off for approx. 30 min to cool down the PTC resistor.

Typical applications

Direct current supply up to 24 V DC, 2.0 A with safety extra-low voltage for the supply of gongs, bells, door openers, switching relays, remote control switches, Insta contactors and DC power supplies for safety e.l.v. systems in continuous operation.

Technical specifications

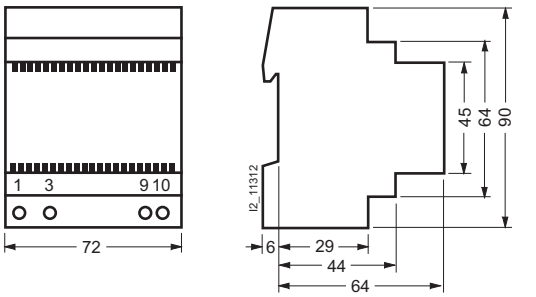
Data acc. to EN 61558-2-6			4AC2 400	4AC2 401
Rated operating capacity P_s		W	24	48
Rated operational voltage U_e		V AC	230	
Operating range × U_c	at 50/60 Hz		0.9 ... 1.1	
Rated frequency		Hz	50	
Operating range frequency		Hz	48 ... 52	
Secondary rated voltage U_{sec}		V DC	12	24
Secondary rated current I_{sec}		A DC	2.0	2.0
Rated power dissipation P_V	in no-load operation at rated load	W W	5 10	6 15
Hum-free	core molded		Yes	
Safe isolation	creepage and clearances	mm	8	
Insulation class			B	
Test voltage 50 Hz, 1 min	primary against secondary winding	kV	> 4	
Terminals	± screw (Pozidrive)		1	
Conductor cross-sections	rigid flexible with sleeve	mm^2 min. mm^2	1.5 ... 6 0.75	
Permissible ambient temperature		°C	-10 ... +40	
Permissible humidity		%	≤80	
Degree of protection	acc. to EN 60529		IP20	
Protection class	acc. to EN 60730		II	

Selection and ordering data

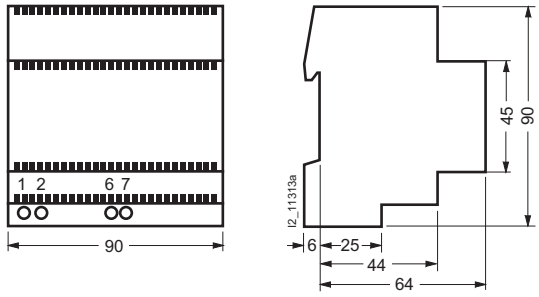
	U_e	U_{sec}	I_{sec}	P_s	MW	Order No.	Weight 1 item	PS*/ P. unit
	V AC	V DC	A DC	W			kg	Items
	**Power supply units**							
	with transformer for safety extra-low voltage, with bridge rectifier							
	230	12	2.0	24	4	**4AC2 400**	0.860	1
		24	2.0	48	5	**4AC2 401**	1.170	1

Dimensional drawings

4AC2 400



4AC2 401

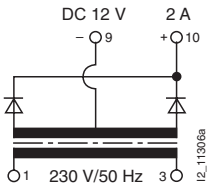


* You can order this quantity or a multiple thereof.

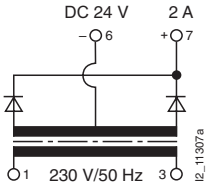
Schematics

Circuit diagrams

4AC2 400



4AC2 401



5TE6 7 socket outlets

Overview

Standard equipment

A socket outlet is a standard product in all distribution boards. In the event of faults, this then proves to be a very worthwhile investment.

Application

Power supply for maintenance purposes, when required in distribution boards in buildings and in switchgear. In order to make sure that it is possible to work on the distribution board in the event of a power failure, we recommend that the socket outlet is fed from the incoming supply using a short-circuit current proof cable installation and a separate fuse.

Connection of plug-in communication devices in communication distribution boards or in private plants for the occasional use of devices with heavy starting and separate fusing.

Technical specifications

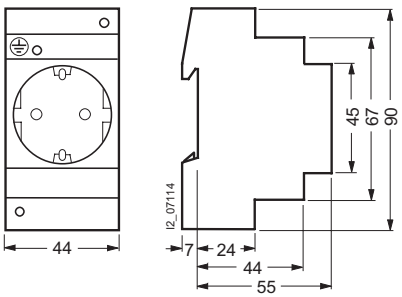
Data acc. to DIN VDE 0620 and CEE 7 standard sheet V			5TE6 700	5TE6 710	5TE6 711
Rated operational voltage U_e		V AC	230		
Secondary rated current I_{sec}		A AC	16		
Terminals	± screw (Pozidrive)		1		
Conductor cross-sections	rigid flexible with sleeve	max. mm^2 min. mm^2	1.5 ... 4 0.5		
Permissible ambient temperature		°C	-10 ... +50		
Degree of protection	acc. to EN 60529		IP20		
Protection class	acc. to EN 60730-1		I		

Selection and ordering data

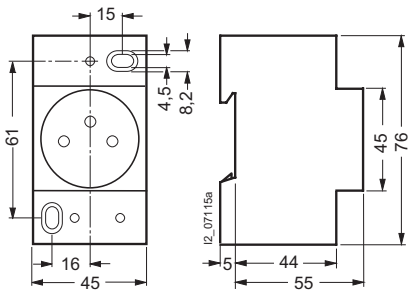
	U_e	I_e	Conductor cross-section	MW	Order No.	Weight 1 item	PS*/ P. unit
	V AC	A	mm^2			kg	Items
	**SCHUKO Socket outlet according to DIN VDE 0620**						
55 mm mounting depth	230	16	6	2.5	**5TE6 700**	0.140	1/10
Socket outlet according to CEE 7 Standard sheet V							
with grounding pin	230	16	6	2.5	**5TE6 710**	0.120	1
with grounding pin and child-proof device	230	16	6	2.5	**5TE6 711**	0.120	1

Dimensional drawings

5TE6 700



5TE6 710
5TE6 711



Schematics

Circuit diagram

5TE6 700
5TE6 710
5TE6 711

According to the currently valid standards, L and N can be connected any way required. The terminals are therefore not indicated.

* You can order this quantity or a multiple thereof.