

Transformers, Power Supply Units and Socket Outlets

9



9/2	Introduction
9/3	4AC3 bell transformers
9/4	4AC3 safety transformers
9/5	4AC2 power supply units
9/6	5TE6 REG socket outlets

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Technical specifications

→ Entry List:
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Transformers, Power Supply Units and Socket Outlets

Introduction

Overview

Devices	Page	Application	Standards	Used in		
				Non-residential buildings	Residential buildings	Industry
	9/3	Power supply up to 18 VA as safety extra-low voltage (SELV) in residential buildings for the supply of gongs, buzzers, bells, door openers and remote control switches	EN 61558-1 EN 61558-2-8	✓	✓	--
	9/4	Power supply up to 63 VA as safety extra-low voltage (SELV) for the supply of control circuits, switching relays and Insta contactors	EN 61558-1 EN 61558-2-6	✓	--	✓
	9/5	Direct voltage power supply up to 24 V DC and 2 A as safety extra-low voltage (SELV) for the supply of gongs, buzzers, bells, door openers, switching relays and Insta contactors	EN 61558-2-6	✓	✓	✓
	9/6	For power supply during maintenance in distribution boards in DIN VDE, CEE 7, CEI 23-50 and UL 489 versions	DIN VDE 0620-1, CEE 7 standard sheet V, CEI 23-50, UL 489	✓	✓	✓

Overview

A typical application for these bell transformers is short-time use, as occurs with bells, gongs, door openers or remote control switches in residential buildings.

Siemens bell transformers are protected against short-circuit or moderate overload by a PTC resistor. After a short circuit, the

primary current must be briefly disconnected from the mains before restarting.

Higher output voltages will occur in the event of low-load or no-load operation.

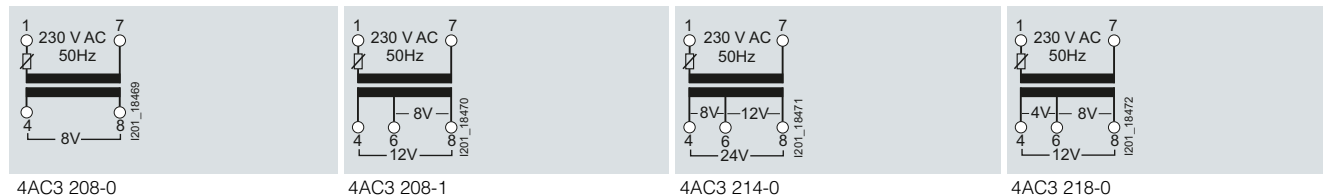
Technical specifications

		4AC3 208-0	4AC3 208-1	4AC3 214-0	4AC3 218-0
Standards		EN 61558-1:2005, EN 61558-2-8:2010			
Approvals					
Rated operational power P_s	VA	8	8	14	18
Rated operational voltage U_e	V AC	230			
Operating range at 50 Hz	$\times U_e$	1.04			
Rated frequency	Hz	50			
Rated secondary voltage U_{sec}	V AC	--	--	--	4
	V AC	8	8	8	8
	V AC	--	12	12	--
	V AC	--	--	24	--
Rated secondary current I_{sec}	A AC	--	--	--	2.0
	A AC	1.0	1.0	2.0	2.0
	A AC	--	0.6	1.3	1.5
	A AC	--	--	0.6	--
Rated power dissipation P_v	W	1.2	1.2	1.3	1.3
	W	--	--	--	5.5
	W	5.7	5.7	10.5	8.1
	W	--	3.8	7.4	8.4
	W	--	--	4.2	--
	W	--	--	--	--
Safe separation					
• Creepage distances and clearances	mm	> 6			
Insulation class		E			
Test voltage , 50 Hz, 1 second					
• Primary against secondary winding	kV	4			
Conductor cross-sections					
• Rigid	mm ²	1 x 4 or 2 x 2.5			
• Flexible, with end sleeve	mm ²	1 x 2.5 or 2 x 1.5			
Permissible ambient temperature	°C	40	35	40	40
Permissible humidity	%	91			
Degree of protection		IP20			
Safety class		II			

Selection and ordering data

	U_e	U_{sec}	I_{sec}	P_s	Mounting width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	V AC	V AC	A AC	VA	MW							
Bell transformers												
	230	8	1.0	8	2		4AC3 208-0		1	1 unit	028	0.241
		8/12	1.0/0.6	8	2		4AC3 208-1		1	1 unit	028	0.266
		8/12/24	2.0/1.3/0.6	14	2		4AC3 214-0		1	1 unit	028	0.376
		8/12	2.0/1.5	18	2		4AC3 218-0		1	1 unit	028	0.358

Circuit diagrams



Transformers, Power Supply Units and Socket Outlets

4AC3 safety transformers

Overview

These transformers up to 63 VA provide a safety extra-low voltage for supplying control circuits, switching relays or Insta contactors in continuous operation as alternating voltage power supply for 8 V, 12 V, 16 V, 24 V and 32 V AC.

Higher output voltages will occur in the event of low-load or no-load operation. Siemens safety transformers are protected against short circuit or moderate overload by a PTC resistor. After a short circuit, the primary current must be briefly disconnected from the mains before restarting.

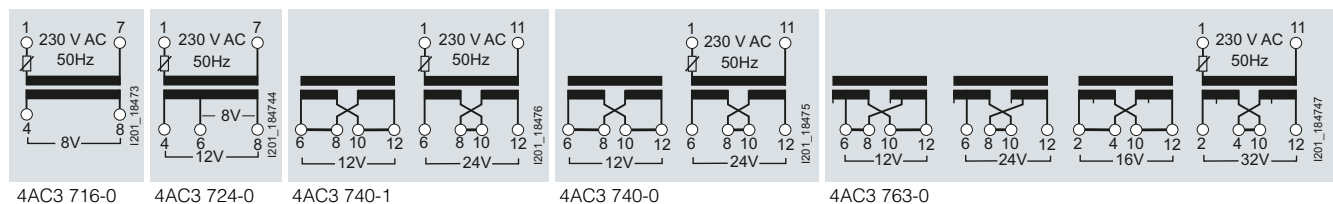
Technical specifications

		4AC3 716-0	4AC3 724-0	4AC3 740-0	4AC3 740-1	4AC3 763-0
Standards		EN 61558-1:2005, EN 61558-2-6:2009				
Rated operational power P_s	VA	16	24	40	40	63
Rated operational voltage U_e	V AC	230				
Operating range at 50 Hz	$\times U_e$	1.04				
Rated frequency	Hz	50				
Rated secondary voltage U_{sec}	V AC	8	8	--	--	--
	V AC	--	--	12	12	2 × 12
	V AC	--	12	--	--	--
	V AC	--	--	--	16	--
	V AC	--	--	24	24	24
	V AC	--	--	--	32	--
Rated secondary current I_{sec} • At 8 V • At 12 V • At 16 V • At 24 V • At 32 V	A AC	2.0	2.0	--	--	--
	A AC	--	2.0	3.3	3.3	5.2
	A AC	--	--	--	2.5	--
	A AC	--	--	1.6	1.6	2.6
	A AC	--	--	--	1.2	--
Rated power dissipation P_v • In no-load operation • At a rated voltage of 8 V • At a rated voltage of 12 V • At a rated voltage of 16 V • At a rated voltage of 24 V • At a rated voltage of 32 V	W	1.1	1.1	3.5	3.9	3.9
	W	6.8	4.6	--	--	--
	W	--	7.6	7.1	7.5	13.2
	W	--	--	--	7.7	--
	W	--	--	7.7	8.1	13.5
	W	--	--	--	7.6	--
Safe separation • Creepage distances and clearances	mm	> 6				
Insulation class		E		F		
Test voltage, 50 Hz, 1 second • Primary against secondary winding	kV	4				
Conductor cross-sections • Rigid • Flexible, with end sleeve	mm ²	1 × 4 or 2 × 2.5				
	mm ²	1 × 2.5 or 2 × 1.5				
Permissible ambient temperature	°C	25				
Permissible humidity	%	91				
Degree of protection	Acc. to EN 60529	IP20				
Safety class	Acc. to EN 61140	II				

Selection and ordering data

	U_e	U_{sec}	I_{sec}	P_s	Mounting width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	V AC	V AC	A AC	VA	MW							
	Safety transformers											
	230	8	2.0	16	2		4AC3 716-0		1	1 unit	028	0.413
		8/12	2.0/2.0	24	3		4AC3 724-0		1	1 unit	028	0.610
		12/16/24/32	3.3/2.5/1.6/1.2	40	5		4AC3 740-1		1	1 unit	028	1.220
		12/24	3.3/1.6	40	5		4AC3 740-0		1	1 unit	028	1.186
		2 x 12/24	5.2/2.6	63	5		4AC3 763-0		1	1 unit	028	1.321

Circuit diagrams



Overview

The electronic power supply unit provides a 24 V DC supply to systems with an operational voltage of 85 ... 265 V AC or 85 ... 300 V DC. The device operates in the lower class for minimum power supply with a safety extra-low voltage (SELV).

The electronic power supply unit is suitable for supplying the 5TT7 1 GSM alarm modules within a supply voltage range of 150 ... 230 V AC.

Technical specifications

4AC2 402			
Standards	EN 60068-2, EN 61558-1, EN 61000-4		
Approvals	--		
Rated operational power P_s	W	8.4	
Rated operational voltage U_e	V AC V DC	85 ... 265 85 ... 300	
Permissible operational voltage For the 5TT7 1 GSM alarm modules	V AC/DC	150 ... 265	
Primary operating range At 50/60 Hz	$\times U_e$	--	
Rated frequency	Hz	50/60	
Operating frequency range	Hz	--	
Rated secondary voltage U_{sec}	V DC	24 $\pm$ 5 %	
Rated secondary current I_{sec}	A DC	0.35	
Current limitation	Electronic overload protection		
Residual ripple	mV	< 100	
Rated power dissipation P_v In no-load operation At rated load	W W	-- --	
Hum-free Core molded	--		
Safe separation Creepage distances and clearances	mm	> 5.5	
Insulation class	--		
Test voltage Primary against secondary winding	50 Hz, 1 min	kV	--
Insulation resistance		kV	4
Rated impulse withstand voltage/ degree of pollution Acc. to IEC 60664-1			6 kV/2
Static discharge Acc. to IEC/EN 61000-4-2		kV	8
RF irradiation Acc. to IEC/EN 61000-4-3		V/m	10
Transient overvoltage (burst) Acc. to IEC/EN 61000-4-4		kV	4
Transient overvoltage (surge) Acc. to IEC/EN 61000-4-5 • Supply lines A1, A2 • A1/A2 and ground		kV kV	1 2
RF, conducted disturbance Acc. to IEC/EN 61000-4-6		V	10
Interference suppression to lower limit class Acc. to EN 61000-6-3			Complied with
Terminals • Screw (slotted-head) • $\pm$ screw (Pozidriv)			M2.5 --
Conductor cross-sections • Rigid • Flexible, with end sleeve, min.	mm ² mm ²	0.5 ... 2.5 0.5 ... 1.5	
Permissible ambient temperature	°C	-20 ... +60	
Permissible humidity	%		
Resistance to climate Acc. to IEC/EN 60068-1			20/045/04
Resistance to vibrations Frequency 10 ... 55 Hz Acc. to IEC/EN 60068-2-6	mm		0.35 amplitude
Degree of protection Acc. to EN 60529			IP20, with connected conductors
Safety class Acc. to EN 61140			II

Selection and ordering data

U_e	U_{sec}	I_{sec}	P_s	Mounting width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
V AC	V DC	V DC	A DC	W	MW						
 Electronic power supply unit SELV, short-circuit resistant						4AC2 402		1	1 unit	028	0.081
85 ... 265	85 ... 300	24 $\pm$ 5 %	0.35	8.4	2						

* You can order this quantity or a multiple thereof.

5TE6 REG socket outlets

Overview

The socket outlets for mounting in distribution boards to DIN 43880 and on standard mounting rails to DIN 60715 have since become standard in modern switchgear assemblies/distribution boards. The socket outlet range complies with a number of different standards and is available according to the standards of the following countries: VDE for Germany, CEE7 for Belgium/France, CEI for Italy and UL for USA.

In distribution boards with 55 mm mounting depth the socket outlet can only be used without the hinged lid. The lids can be retrofitted on all devices. In system components where equipment is still live, even after the main switch has been disconnected, this must be indicated according to EN 60204-1. Yellow socket outlets are used for these applications.

Technical specifications

	5TE6 800	5TE6 801	5TE6 810	5TE6 802	5TE6 803	5TE6 804
Standards	VDE 0620-1	VDE 0620-1	VDE 0620-1	CEI 23-50	CEE 7 standard sheet V	UL 498
Approvals	VDE 0620-1			--		UL File No. E258598/ CSA C22.2 No. 182.3M
Rated operational voltage U_e	V AC	230				125
Rated operational current I_e	A AC	16				15
Terminals $\pm$screw (Pozidriv)	PZ1					
Terminal tightening torque, max.	N	1.2				
Stripped length	mm	10				
Conductor cross-sections						
• Rigid	mm ²	1.5 ... 6				
• Flexible, with end sleeve	mm ²	0.5 ... 4				
• Rigid	AWG	10 ... 14				
• Flexible	AWG	14				
Permissible ambient temperature	°C	-10 ... +55				
Degree of protection Acc. to EN 60529		IP20, with connected conductors				
Mounting position		Without cover: any, with cover: vertical or horizontal				

Selection and ordering data

	U_e	I_e	Conductor cross-section	Mounting width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	V AC	A	mm ²	MW							kg
	SCHUKO® socket outlets according to DIN VDE 0620-1										
	• Without hinged lid										
	230	16	6	2.5	►	5TE6 800		1	1 unit	029	0.086
	SCHUKO® socket outlets according to DIN VDE 0620-1										
	• With hinged lid										
	230	16	6	2.5	►	5TE6 801		1	1 unit	029	0.093

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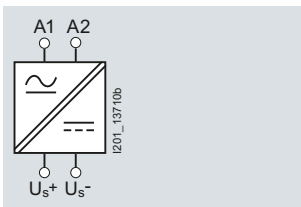
5TE6 REG socket outlets

	U_e	I_e	Conductor cross-section	Mounting width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	V AC	A	mm ²	MW							kg
	SCHUKO® socket outlets according to DIN VDE 0620-1										
	• Without hinged lid, yellow RAL 1018										
	230	16	6	2.5	▶	5TE6 810		1	1 unit	029	0.089
	Socket outlets according to CEI 23-50										
	• With hinged lid										
	230	16	6	2.5	▶	5TE6 802		1	1 unit	029	0.093
	Socket outlets according to CEE 7 Standard sheet V										
	• Without hinged lid, with grounding pin										
	230	16	6	2.5	▶	5TE6 803		1	1 unit	029	0.089
	UL 498 socket outlets										
	• Without hinged lid										
	125	15	6	2.5	▶	5TE6 804		1	1 unit	029	0.088
	Hinged lids for 5TE6 socket outlets			2.5		5TE9 120		1	1 unit	029	0.019

9

Circuit diagrams

Graphical symbols



4AC2 402

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Notes

9