SIDAC-T Transformers

12

Introduction

Overview

Single-phase transformers


4AM


4AT


4AX24


4BT


4CH


4FK

Design	Rated power kVA	Rated input voltage AC V	Rated output voltage AC V	Protection class
SITAS safety, isolating, control and line transformers				
SITAS safety (line) and control transformers				
4AM with one input voltage	0.63 ... 1.0	230 +/–5 %; 400 +/–5 %	24; 42	I
4AM in European voltage design	0.63 ... 1.0	400/230 +/–15 V	24	I
4AM in multi-voltage design	0.63 ... 1.0	550 ... 208; 600 ... 230	24	I
SITAS safety transformers (line transformers)				
4AM with one input voltage	0.025 ... 0.4	230 +/–5 %; 400 +/–5 %	24; 42	I
SITAS isolating, control and line transformers				
4AM and 4AT with one input voltage	4AM: 0.63 ... 2.5; 4AT: 4 ... 10	230 +/–5 %; 400 +/–5 %; 440 +/–5 %; 500 +/–5 %	110; 230	I
4AM in European voltage design	0.63 ... 2.5	400/230 +/–15 V	2 × 115	I
4AM and 4AT in multi-voltage design	4AM: 0.63 ... 2.5; 4AT: 4 ... 10	550 ... 208; 600 ... 208	2 × 115	I
SITAS isolating and line transformers				
4AM with one input voltage	0.025 ... 0.4	230 +/–5 %; 400 +/–5 %	110; 230	I
Safety transformers				
4AX22, 4AX23 resin-enclosed	0.1 ... 1	230	42; 24	II
Isolating transformers				
4AX24 resin-enclosed	0.16 ... 2.5	230	230	II
Special transformers				
4AM and 4AT isolating, control, line transformers and autotransformers	4AM: 0.025 ... 2.5; 4AT: 4 ... 16	Selectable; 4AM: 12 ... 690[1]); 4AT: 24 ... 690[1])	Selectable; 4AM: 12 ... 690[1]); 4AT: 24 ... 690[1])	I I
4BT power transformers	18 ... 250	Selectable; 100 ... 1000[1])	Selectable; 100 ... 1000[1])	I
Variable transformers				
4CH toroidal-core variable transformers	0.28 ... 3.22	400	0 ... 230 stepless	I
	0.69 ... 3.22	230	0 ... 230 stepless	I
4CP pillar-type variable transformers	13.8 ... 207	230	0 ... 230 stepless	I
Voltage stabilizers				
4FL transformer-type	2.2 ... 63	230	230	
4FK solenoid-type	0.12 ... 0.75	230/selectable 110 ... 500	230/selectable 110 .. 500	I
	1 ... 2.5	230/selectable 110 ... 500	230/selectable 110 ... 500	I
	3.15 ... 10	230/selectable 110 ... 500	230/selectable 110 ... 500	I

Three-phase transformers


4AP20


4AU


4BU


4CQ


4FL

Design	Rated power kVA	Rated input voltage AC V	Rated output voltage AC V	Protection class
SITAS safety, isolating, control and line transformers				
SITAS isolating, control and line transformers				
4AP and 4AU in two-voltage version	0.63 ... 16	Y 500–400 /Δ 289–230	Y 400 /Δ 230	I
4AP and 4AU in multi-voltage version	0.63 ... 16	Y 520 ... 360 /Δ 300 ... 208	Y 400 /Δ 230	I
SITAS isolating and line transformers				
4AP in two-voltage version	0.16 ... 0.36	Y 500–400 /Δ 289–230	Y 400 /Δ 230	I
Special transformers				
4AP and 4AU isolating, control, line transformers and autotransformers	4AP: 0.16 ... 5; 4AU: 6.3 ...16	Selectable; 4AP: 12 ... 690[1]); 4AU: 24 ... 690[1])	Selectable; 4AP: 12 ... 690[1]); 4AU: 24 ... 690[1])	I I
4BU power transformers	18 ... 400	Selectable 100 ... 1000[1])	Selectable 100 ... 1000[1])	I
4BU power transformers (with UL approval for USA and Canada)	18 ... 400	Selectable 100 ... 1000[1])	Selectable 100 ... 1000[1])	I
Variable transformers				
4CJ toroidal-core variable transformers	2.07 ... 9.66	400	0 ... 400 stepless	I
4CQ pillar-type variable transformers	16 ... 240	400	0 ... 400 stepless	I
Voltage stabilizers				
4FL transformer-type	6.8 ...190	400	400	I

1) c UL us max. 600 V.

Further information

Delivery time class DT

The delivery time classes are specified in the selection tables in front of the order numbers.

The standard transport time for Germany is 1 day (see "Explanations" Page 2).

▶ Preferred type

This delivery time class applies with the IP00 degree of protection, i.e. these units can be supplied immediately from stock[1]) and will be dispatched within 24 hours. The transport times depend on the destination and the mode of delivery.

For the IP20, IP23 and IP54 degrees of protection, standard rail mounting and Cage Clamp terminals, as well as further options, see delivery time classes B and C.

Delivery time class A

The ordered units will be dispatched within 2 working days.

Delivery time classes B and C

Express service for IP00, IP20, IP23 and IP54 degree of protection, standard rail mounting and Cage Clamp terminals as well as for additional options, i.e. these units are not stock items. These delivery time classes are dependent on the order quantities.

Delivery time class B is applicable to an order quantity of up to 5 units.
The ordered units will be dispatched within 1 week.

For 6 units and more, delivery time class C is applicable, the ordered units will be dispatched within 3 weeks.

Delivery class D

The ordered units, including enclosure and additional options, will be dispatched within 6 weeks.

1) This is based on commercially available orders – normal order!

Ordering special transformers, variable transformers and solenoid-type voltage stabilizers with selectable input and output voltages

Please send your selection by e-mail with the basic Order No. and the required options specified in plain text to:

MD_Anfrage@brmr.siemens.de

or by fax to: +49 (0)421/5125 333

In response you will receive the complete Order No. for completing your order.

For further accessories for transformers, power supplies, chokes and filters, see the PD catalog series "Power Supplies & Components for Drives" or on the Internet at

www.siemens.de/sidac and www.ad.siemens.de/sitop

SIDAC-T Transformers
Catalog PD 10, Order No. E86060-K2801-A101-A1
(in German only)

SITOP power, LOGO!Power, SIDAC-S Power Supplies
Catalog PD 20, Order No. E86060-K2802-A101-A1
(in German only)

SIDAC-D Reactors
Catalog PD 30, Order No. E86060-K2803-A101-A1
(in German only)

SIDAC-F Filters
Catalog PD 40, Order No. E86060-K2804-A101-A1
(in German only)

General data

Overview

4AM../4AT.. SIDAC-T transformers

With the right transformer, the right voltage will be available whatever the conditions.

SIDAC-T transformers are the professionals for every type of application: they work reliably, safely and worldwide under a wide range of different conditions.

Whether in user-friendly combinations as isolating, control and line transformers or as safety, control and line transformers.

Note: line transformers with ≤ 50 V on the output side are, in the case of SITAS transformers, always designed as safety transformers.

SIDAC-T transformers offer optimal protection through high permissible ambient temperatures up to 40 °C or 55 °C, a high short-time rating in the case of control transformers, fuseless construction and thanks to its safety standard "Safety inside" EN 61558.

Benefits

- High short-time rating of the SITAS transformers: lower transformer rated power for a large number of contactors
- PC program ASIST as configuring aid: fast, optimum selection of the right control transformer
- Suitable for "fuseless construction": the small inrush current means that "circuit-breakers for motor protection" can also be used on the primary side
- UL approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability.

Area of application

In industrial machines, process engineering, heating and air-conditioning equipment, etc., for supplying control and signaling circuits, when:

- Several electromagnetic loads (e.g. contactors) have to be controlled
- Control and signaling units are used outside the control cabinet
- The operating voltage for the loads differs from the available voltage level.

Design

Standards

EN 61558-2-6, -2-4, -2-2, -2-1

The standard EN 61558 with the VDE classification VDE 0570 is the European edition of the international standard IEC 61558 (Safety of power transformers, power supply units and similar) and has completely replaced the previous standards VDE 0550 and VDE 0551.

Some of the transformers are subject to more stringent manufacturing and testing conditions in view of these changes.

Transformers for general applications always have double or reinforced insulation with SELV voltages (can be touched, maximum AC 50 V or DC 120 V), i.e. these transformers are exclusively safety isolating transformers.

Furthermore, all transformers are supplied with information on the protective elements with which they are protected against short-circuit and overload.

The SITAS transformer series contains the combined features of safety, isolating and control or line transformers, i.e. one transformer for (virtually) all applications.

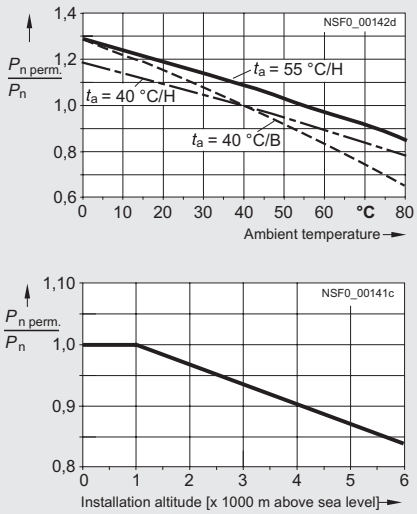
SITAS transformers meet the most stringent requirements (and in terms of safety, the most severe requirements) applicable to the transformer designs included in the series. A SITAS transformer is the right one whatever the application.

Rated output P_n at high ambient temperature – the reference for thermal load capacity

Reference conditions under which the transformers have the rated output P_n stated in the tables:

- Continuous operation P_n
- Frequency AC 50 Hz to 60 Hz
- IP00 degree of protection
- Installation altitude up to 1000 m above sea level and
- Rated ambient temperature t_a, 40 °C or 55 °C type-specific.

Other installation and operating conditions than this will affect the permissible continuous load capacity. In the case of the 4AM transformers, for example, with a lower ambient temperature of 30 °C, an increase in load of 8 % is possible (see load characteristics).



Load characteristics: permissible transformer continuous load in relation to the ambient temperature and the installation altitude

Short-time rating $P_{n(S6)}$ of control transformers – the characteristic variable for the dynamic capacity

The most important selection criterion for control transformers is their short-time rating $P_{n(S6)}$.

This is required for switching on electromagnetic loads, e.g. contactors with high making current in relation to the holding current. According to EN 61558-2-2 "Special requirements for control transformers", the output voltage with this load should not drop more than 5 % in relation to the rated voltage in order to ensure safe switching.

Depending on their application, control transformers 4AM, 4AT ≤ 16 kVA are optimized for high short-time ratings with comparatively low ratings and thus small size.

Low inrush current – primary-side short-circuit and overload protection with standard circuit-breakers

4AM and 4AT single-phase transformers in the rating range ≤ 16 kVA are matched to protective devices that reliably protect the transformers in the event of short-circuits or overloads.

Standard 3RV and 3VF circuit-breakers offer optimum protection. In this way the transformers are protected on the primary side against both short-circuits and overload, without the possibility of nuisance tripping on startup. The low inrush current, the short-circuit current and the thermal load capacity on overload are matched to the tripping characteristics of the circuit-breakers.

It is also possible to protect the transformers on the secondary side against short-circuits and overloads with circuit-breakers or miniature circuit-breakers with C characteristics.

Note: The specified primary-side circuit-breakers are for protecting the primary side of transformers in the event of short-circuits and overload on the secondary side. In the event of a possible short-circuit on the feeder lines between the protective device and the primary side of the transformer, the rated short-circuit breaking capacity of the circuit-breaker must be taken into account with regard to the maximum possible prospective short-circuit current at the place of installation. For these device assignments, see the tables in the "Technical specifications".

ASIST configuring aid

PC program for selecting SIDAC-T control transformers in English, German and Danish.

The current version of the ASIST program is available on the Internet at

www.siemens.de/sidac

and can be downloaded.

EN 61558-2-2 requires that the short-time rating is stated on the rating plate only in the case of a power factor p.f. = 0.5 of the load. The short-time rating of control transformers essentially depends on the power factor of the load.This increases particularly with smaller power factors. The exact calculation of the short-time rating with related p.f. is therefore even more important. The ASIST PC program has been developed as a configuring aid to minimize the time required to calculate the necessary type size, and ensures that the most suitable control transformer is selected in terms of engineering and price (see also "Technical specifications").

Design

Standard design

All 4AM and 4AT transformers are supplied for screw-fixing on a mounting plate (exception: 4AM32 to 4AM40 transformers are supplied as standard for both screw-fixing and with integrated standard rail mounting).

Standard rail mounting

For horizontal mounting, all 4AM single-phase transformers from 25 VA to 500 VA with snap-on mounting to the 35 mm rail make installation considerably easier. For the 4AM single-phase transformers from 63 VA to 250 VA, snap-on fixing for the 35 mm rail has been integrated into the fixing plate of the transformer as standard.

- Integrated version
  The SITAS single-phase transformers 4AM32, 4AM34, 4AM38 and 4AM40 are supplied for screw mounting as standard and also with integrated snap-on fastening for mounting on the 35 mm rail acc. to EN 50022.
- Optional version
  SITAS single-phase transformers 4AM23, 4AM26, 4AM43, 4AM46 and 4AM48 are supplied on request with a pre-mounted adapter for mounting on a 35 mm rail.

Connection

Screw-type terminals

The 4AM transformers up to a rated current of 60 A and 4AT transformers up to a rated current of 81 A in the standard version are supplied with screw-type terminals.

Cage Clamp connection

Most 4AM SITAS single-phase transformers for currents ≤ 24 A are optionally available with screw-less "Cage Clamp" terminals (multi-voltage version is not available). The ground connection is designed as a Cage Clamp terminal.

Enclosure mounting

4AM and 4AT SIDAC-T transformers are also available in protective enclosures with IP23 and IP54 degree of protection.

General data

Technical specifications

Transformers	Type	**4AM**	**4AT**
• Design		EI core	UI core
• Performance range (with IP00)	kVA	0.025 ... 2.5	> 2.5 ... 16
• Approvals		cULus	
Voltage range	V	≤ 690	
• Approvals for USA, Canada	V	≤ 600	
Rated frequency	Hz	50 ... 60	
Thermal class		B	H
• acc. to UL/CSA		Class 130	Class 180
Ambient conditions		Protection against harmful ambient conditions: Complete impregnation in polyester resin Climate-proof for mounting in rooms with an external climate to DIN 50010	
Permissible ambient temperature			
• At rated output power	°C	40	55
• Maximum value (after reduced output depending on load characteristics, see "Design")	°C	80	
• Minimum value	°C	–25	
Relative air humidity			
• Average up to	%	80	
• Maximum value for 30 days/year	%	95	
• At 40°C occasionally	%	100	
Protection class		I	
Degree of protection			
• without enclosure		IP00	
• with protective enclosure (according to "Selection and ordering data")		IP23 or IP54	
• Design		IP23, IP54: steel enclosure coated with epoxy resin, color gray RAL 7032	
Installation height		Up to 1000 m above sea level (above this, derating is necessary)	
Protective devices			
• external		The transformers can be protected against short-circuits and overload on the primary and secondary side with circuit-breakers. Specified protective devices (see "Technical specifications")	
Connection method		The permissible conductor cross-sections are assigned to the specified terminal types.	
• Terminal arrangement (see "Circuit diagrams")		Refer to VDE 0100 Part 430 Supplement 1 and EN 60204 (VDE 0113-1) for the permissible conductor cross-sections for the specified current according to the installation type.	
• for terminal designs and connectable cross-sections (see "Dimensional drawings")		Other terminal sizes than standard versions on request.	
Mounting position		The permissible mounting position for each type is shown in the "Dimensional drawings".	

For other technical specifications, see Catalog PD 60, Order No.: E86060-K2806-A101-A1 (in German only) or on the Internet at www.siemens.de/sidac

Rated outputs at different ambient temperatures

- with galvanically isolated windings
- IP00 degree of protection
- to EN 61558, cULus

Transformer	Rated output P_n	Permissible transformer load depending on the ambient temperature							
		t_a = 60 °C	t_a = 55 °C	t_a = 50 °C	t_a = 45 °C	t_a = 40 °C	t_a = 35 °C	t_a = 30 °C	t_a = 25 °C
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA
4AM23 4	0.025	0.021	0.022	0.023	0.024	0.025	0.026	0.027	0.0278
4AM26 4	0.04	0.0336	0.0352	0.0368	0.0384	0.04	0.0416	0.0432	0.0444
4AM32 4	0.063	0.0529	0.0554	0.058	0.0605	0.063	0.0655[1])	0.068[1])	0.0699[1])
4AM34 4	0.1	0.084	0.088	0.092	0.096	0.1	0.104[1])	0.108[1])	0.111[1])
4AM38 4	0.16	0.134	0.141	0.147	0.154	0.16	0.166[1])	0.173[1])	0.178[1])
4AM40 4	0.25	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.278
4AM43 4	0.315	0.265	0.277	0.29	0.302	0.315	0.328	0.34	0.35
4AM46 4	0.4	0.336	0.352	0.368	0.384	0.4	0.416	0.432	0.444
4AM48 4	0.5	0.42	0.44	0.46	0.48	0.5	0.52	0.54	0.555
4AM52 4	0.63	0.529	0.554	0.58	0.605	0.63	0.655	0.68	0.699
4AM55 4	0.8	0.672	0.704	0.736	0.768	0.8	0.832	0.864	0.888
4AM57 4	1	0.84	0.88	0.92	0.96	1	1.04	1.08	1.11
4AM61 4	1.6	1.34	1.41	1.47	1.54	1.6	1.66	1.73	1.78
4AM64 4	2	1.68	1.76	1.84	1.92	2	2.08	2.16	2.22
4AM65 4	2.5	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.78
4AT30 3	4	3.88	4	4.12	4.24	4.4	4.52	4.64	4.76
4AT36 1	5	4.85	5	5.15	5.3	5.5	5.65	5.8	5.95
4AT36 3	6.3	6.11	6.3	6.49	6.68	6.93	7.12	7.31	7.5
4AT39 1	8	7.76	8	8.24	8.48	8.8	9.04	9.28	9.52
4AT39 3	10	9.7	10	10.3	10.6	11	11.3	11.6	11.9

1) For control transformers, the values t_a = 40 °C apply.

Operating characteristics

- to EN 61558-2-6, EN 61558-2-4, EN 61558-2-2, EN 61558-2-1

Transformer	Rated output P_n 50 Hz ... 60 Hz 1000 m above sea level IP00 degree of protection	Core size	Voltage increase on no-load (operating temperature) u_A approx.	Voltage drop at rated load[1]) u_R approx.	Short-circuit voltage[1]) u_Z approx.	Efficiency η approx.
Type	kVA		%	%	%	%
4AM: t_a = 40 °C/B						
4AM23 4	0.025	EI 60/20	26	17.6	17.6	74
4AM26 4	0.04	EI 66/22	23	15.3	15.3	76
4AM32 4	0.063	EI 84/28	10	8.4	8.4	85
4AM34 4	0.1	EI 84/42	10	7.7	7.7	86
4AM38 4	0.16	EI 96/44	10.4	7.6	7.7	86
4AM40 4	0.25	EI 96/58	7.2	5.4	5.4	89
4AM43 4	0.315	EI 105/60	6.6	4.9	5	90
4AM46 4	0.4	EI 120/52	5.7	4.3	4.4	91
4AM48 4	0.5	EI 120/72	5	3.8	3.8	91
4AM52 4	0.63	EI 150/48	4.7	3.6	3.7	92
4AM55 4	0.8	EI 150/65	4	3	3.1	92
4AM57 4	1	EI 150/90	3.2	2.5	2.5	93
4AM61 4	1.6	EI 174/82	2.4	1.9	2.1	96
4AM64 4	2	EI 174/102	2.1	1.7	1.9	96
4AM65 4	2.5	EI 192/110	1.6	1.3	1.6	96
4AT: t_a = 55 °C/H						
4AT30 3	4	UI 150/75	3.9	2.8	2.8	95
4AT36 1	5	UI 180/75	5.6	3.9	3.9	94
4AT36 3	6.3	UI 180/75	4.4	3.1	3.2	95
4AT39 1	8	UI 210/70	4.4	3.1	3.2	95
4AT39 3	10	UI 210/70	3.5	2.5	2.8	96

Higher ratings and other conditions on request.

Calculation of heat dissipation P_V

$$P_V = \frac{P_n\,(100-\eta)}{\eta}\ \text{[kW]}$$

1) Winding reference temperature 20 °C.

General data

Primary-side short-circuit and overload protection with circuit-breakers

Design with one input voltage

Trans-former	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated input voltage U_{1N} in V																		
Type	kVA	Type	690	660	600	575	550	525	500	480	460	440	415	400	380	240	230	220	208	200	190
4AM23 4	0.025	3RV10 11–□□□10	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0CA	0CA	0CA	0CA	0DA	0DA
		Setting value in A	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.18	0.18	0.19	0.2	0.22	0.22
4AM26 4	0.04	3RV10 11–□□□10	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0BA	0BA	0BA	0BA	0CA	0CA	0EA	0EA	0EA	0EA	0FA	0FA
		Setting value in A	0.11	0.11	0.11	0.11	0.11	0.12	0.13	0.14	0.14	0.14	0.15	0.18	0.18	0.28	0.28	0.29	0.3	0.35	0.35
4AM32 4	0.063	3RV10 11–□□□10	0BA	0BA	0BA	0BA	0CA	0CA	0CA	0CA	0CA	0DA	0DA	0DA	0DA	0FA	0GA	0GA	0GA	0GA	0GA
		Setting value in A	0.14	0.14	0.15	0.16	0.18	0.18	0.18	0.19	0.19	0.22	0.22	0.22	0.24	0.37	0.45	0.45	0.45	0.45	0.47
4AM34 4	0.1	3RV10 11–□□□10	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0FA	0FA	0FA	0FA	0FA	0GA	0JA	0JA	0JA	0JA	0KA	0KA
		Setting value in A	0.22	0.23	0.28	0.28	0.28	0.28	0.3	0.35	0.35	0.35	0.36	0.37	0.45	0.7	0.7	0.7	0.72	0.9	0.9
4AM38 4	0.16	3RV10 11–□□□10	0FA	0FA	0FA	0FA	0FA	0GA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0KA	0KA	1AA	1AA	1AA	1AA
		Setting value in A	0.35	0.35	0.39	0.4	0.42	0.45	0.46	0.48	0.5	0.55	0.56	0.58	0.61	0.96	1	1.1	1.1	1.2	1.2
4AM40 4	0.25	3RV10 11–□□□10	0HA	0HA	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1BA	1BA	1CA	1CA	1CA	1CA
		Setting value in A	0.55	0.55	0.57	0.59	0.7	0.7	0.7	0.7	0.74	0.9	0.9	0.9	0.9	1.4	1.5	1.8	1.8	1.8	1.8
4AM43 4	0.315	3RV10 11–□□□10	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1CA	1DA	1DA	1DA	1DA	1DA
		Setting value in A	0.7	0.7	0.71	0.74	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.8	2.2	2.2	2.2	2.2	2.2
4AM46 4	0.4	3RV10 11–□□□10	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1DA	1DA	1EA	1EA	1EA	1EA
		Setting value in A	0.9	0.9	0.9	0.92	1.1	1.1	1.1	1.1	1.2	1.4	1.4	1.4	1.4	2.2	2.3	2.8	2.8	2.8	2.8
4AM48 4	0.5	3RV10 11–□□□10	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1EA	1FA	1FA	1FA	1FA	1FA
		Setting value in A	1.1	1.1	1.1	1.4	1.4	1.4	1.4	1.4	1.5	1.8	1.8	1.8	1.8	2.8	3.5	3.5	3.5	3.5	3.5
4AM52 4	0.63	3RV10 11–□□□10	1AA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1FA	1FA	1FA	1GA	1GA	1GA
		Setting value in A	1.2	1.4	1.4	1.4	1.5	1.6	1.8	1.8	1.8	1.9	2.2	2.2	2.2	3.5	3.5	3.7	4.5	4.5	4.5
4AM55 4	0.8	3RV10 11–□□□10	1CA	1CA	1CA	1DA	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1GA	1GA	1HA	1HA	1HA	1HA
		Setting value in A	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2	2.2	2.8	2.8	2.8	2.8	4.5	4.5	5.5	5.5	5.5	5.5
4AM57 4	1	3RV10 11–□□□10	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1FA	1HA	1HA	1JA	1JA	1JA	1JA
		Setting value in A	2.2	2.2	2.2	2.3	2.4	2.8	2.8	2.8	2.8	3	3.5	3.5	3.5	5.5	5.7	7	7	7	7
4AM61 4	1.6	3RV10 11–□□□10	1FA	1FA	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1HA	1HA	1HA	1HA	1KA	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4AA	4AA	4AA	4AA	4AA
		Setting value in A	3.5	3.5	3.5	3.7	3.9	4.5	4.5	4.5	4.6	5.5	5.5	5.5	5.6	9	11	11	11	11	11
4AM64 4	2	3RV10 11–□□□10	1GA	1GA	1GA	1GA	1HA	1HA	1HA	1HA	1HA	1JA	1JA	1JA	1JA	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4AA	4AA	4BA	4BA	4BA	4BA
		Setting value in A	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5.7	7	7	7	7	11	11	14	14	14	14
4AM65 4	2.5	3RV10 11–□□□10	1GA	1GA	1HA	1HA	1HA	1JA	1JA	1JA	1JA	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	1KA	1KA	1KA	1KA	4BA	4BA	4CA	4CA	4CA	4DA
		Setting value in A	4.5	5.5	5.5	5.5	5.7	7	7	7	7	9	9	9	9	14	14	17	17	17	20
4AT30 3	4	3RV10 11–□□□10	1JA	1JA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	1KA	1KA	1KA	1KA	4AA	4AA	4AA	4AA	4AA	4AA	4BA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4EA	4FA	4FA
		Setting value in A	8	8	9	9	9	10	11	11	11	12	12	13	14	22	22	23	24	28	28
4AT36 1	5	3RV10 11–□□□10	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4BA	4BA	4CA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4FA	4FA	4FA	4FA	4FA	4GA
		Setting value in A	10	10	11	11	12	12	14	14	14	15	16	16	17	28	28	29	31	32	36
4AT36 3	6.3	3RV10 21–□□□10	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4GA	4GA	4GA	4GA	4GA	4HA
		Setting value in A	12	12	14	14	15	15	17	17	17	18	20	20	21	36	36	36	38	39	41
4AT39 1	8	3RV10 21–□□□10	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4FA	4HA	4HA	4HA	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4JA	4JA
		Setting value in A	15	15	17	18	18	20	20	21	22	23	24	25	28	42	43	45	48	50	52
4AT39 3	10	3RV10 21–□□□10	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4FA	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4KA	4KA	4KA	4KA	4KA
		Setting value in A	18	19	21	22	23	24	25	26	28	28	30	31	32	51	57	57	59	69	64

1) Two-pole or single-pole circuit-breakers can be connected (3 conducting paths in series).

12

Primary-side short-circuit and overload protection with circuit-breakers

European voltage and multi-voltage design

Trans-former	Rated output P_n	Circuit-breaker[1])	Rated input voltage U_{1N} in V																		
Type	kVA	Type	690	660	600	575	550	525	500	480	460	440	415	400	380	240	230	220	208	200	190
Circuit-breaker design: transformer protection																					
4AM23 4	0.025	3RV14 21–□□□10	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0CA	0CA	0CA	0CA	0CA	0CA
		Setting value in A	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.19	0.2	0.2	0.23	0.24	0.25
4AM26 4	0.04	3RV14 21–□□□10	0AA	0AA	0AA	0AA	0AA	0BA	0BA	0BA	0BA	0BA	0BA	0CA	0CA	0DA	0DA	0DA	0EA	0EA	0EA
		Setting value in A	0.11	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.3	0.32	0.32	0.35	0.35	0.38
4AM32 4	0.063	3RV14 21–□□□10	0BA	0BA	0BA	0CA	0CA	0CA	0CA	0CA	0DA	0DA	0DA	0DA	0DA	0FA	0FA	0FA	0GA	0GA	0GA
		Setting value in A	0.15	0.15	0.17	0.18	0.19	0.2	0.2	0.21	0.22	0.23	0.25	0.26	0.27	0.43	0.45	0.47	0.49	0.5	0.55
4AM34 4	0.1	3RV14 21–□□□10	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0FA	0FA	0FA	0FA	0FA	0FA	0HA	0HA	0HA	0JA	0JA	0JA
		Setting value in A	0.25	0.26	0.29	0.3	0.31	0.33	0.34	0.35	0.35	0.39	0.41	0.43	0.45	0.72	0.75	0.75	0.83	0.85	0.9
4AM38 4	0.16	3RV14 21–□□□10	0FA	0FA	0GA	0GA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0HA	0HA	0KA	0KA	0KA	1AA	1AA	1AA
		Setting value in A	0.39	0.4	0.45	0.45	0.49	0.51	0.54	0.55	0.55	0.6	0.65	0.67	0.71	1.1	1.1	1.2	1.3	1.35	1.4
4AM40 4	0.25	3RV14 21–□□□10	0HA	0HA	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1BA	1BA	1BA	1BA	1BA	1BA
		Setting value in A	0.55	0.6	0.66	0.69	0.7	0.75	0.8	0.82	0.85	0.9	0.95	0.99	1	1.65	1.7	1.8	1.9	1.9	2
4AM43 4	0.315	3RV14 21–□□□10	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	0KA	0KA	0KA	1AA	1AA	1CA	1CA	1CA	1CA	1CA	1CA
		Setting value in A	0.7	0.75	0.8	0.85	0.9	0.9	1	1	1	1.1	1.2	1.24	1.3	2	2.1	2.2	2.3	2.4	2.5
4AM46 4	0.4	3RV14 21–□□□10	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1BA	1BA	1DA	1DA	1DA	1DA	1DA	1DA
		Setting value in A	0.9	0.9	1	1	1.1	1.1	1.2	1.3	1.35	1.4	1.48	1.55	1.63	2.6	2.7	2.8	3	3.1	3.2
4AM48 4	0.5	3RV14 21–□□□10	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1EA	1EA	1EA	1EA	1EA	1EA
		Setting value in A	1.1	1.1	1.3	1.35	1.4	1.4	1.5	1.6	1.65	1.75	1.85	1.9	2	3.2	3.3	3.5	3.7	3.8	4
4AM52 4	0.63	3RV14 21–□□□10	1AA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1CA	1CA	1DA	1DA	1FA	1FA	1FA	1FA	1FA	1FA
		Setting value in A	1.35	1.4	1.5	1.6	1.7	1.8	1.9	1.9	2	2.1	2.2	2.3	2.5	3.9	4	4	4.5	4.7	5
4AM55 4	0.8	3RV14 21–□□□10	1BA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1GA	1GA	1GA	1GA	1GA	1GA
		Setting value in A	1.5	1.8	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.9	3	3.1	5	5	5.5	5.8	6	6.3
4AM57 4	1	3RV14 21–□□□10	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1HA	1HA	1HA	1HA	1HA	1HA
		Setting value in A	2.2	2.3	2.5	2.6	2.7	2.9	3	3.1	3.3	3.4	3.6	3.8	4	6.3	6.5	6.5	7	7.6	8
4AM61 4	1.6	3RV14 21–□□□10	1FA	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1KA	1KA	1KA	1KA	1KA	1KA
		Setting value in A	3.6	3.7	4.1	4.3	4.5	4.7	5	5	5.4	5.6	5.9	6.2	6.3	10	10.5	11	12	12.3	12.5
4AM64 4	2	3RV14 21–□□□10	4.4	4.6	5	5.3	5.5	5.8	6.1	6.3	6.6	6.9	7.3	7.6	8	12.5	13	13.5	14.5	15	16
		Setting value in A	4.4	4.6	5	5.3	5.5	5.8	6.1	6.3	6.6	6.9	7.3	7.6	8	12.5	13	13.5	14.5	15	16
4AM65 4	2.5	3RV14 21–□□□10	1HA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1JA	1JA	1JA	1KA	1KA	4BA	4BA	4BA	4BA	4BA	–
		3RV14 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4DA
		Setting value in A	5.5	5.8	6.4	6.6	7	7.3	7.5	8	8.3	8.7	9.2	9.5	10	16	16.5	17	18.5	19	20
Circuit-breaker design: motor protection																					
4AT30 3	4	3RV10 11–□□□10	1JA	1JA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	1KA	1KA	1KA	1KA	4AA	4AA	4AA	4AA	4AA	4AA	4BA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4EA	4FA	4FA
		Setting value in A	8	8	9	9	9	10	11	11	11	12	12	13	14	22	22	23	24	28	28
4AT36 1	5	3RV10 11–□□□10	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4BA	4BA	4CA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4FA	4FA	4FA	4FA	4FA	4GA
		Setting value in A	10	10	11	11	12	12	14	14	14	15	16	16	17	28	28	29	31	32	36
4AT36 3	6.3	3RV10 21–□□□10	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4GA	4GA	4GA	4GA	4GA	4HA
		Setting value in A	12	12	14	14	15	15	17	17	17	18	20	20	21	36	36	36	8	39	41
4AT39 1	8	3RV10 21–□□□10	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4FA	4HA	4HA	4HA	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4JA	4JA
		Setting value in A	15	15	17	18	18	20	20	21	22	23	24	25	28	42	43	45	48	50	52
4AT39 3	10	3RV10 21–□□□10	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4FA	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4KA	4KA	4KA	4KA	4KA
		Setting value in A	18	19	21	22	23	24	25	26	28	28	30	31	32	51	57	57	59	69	64

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

General data

Secondary-side short-circuit and overload protection with circuit-breaker or miniature circuit-breaker

Transformer	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated output voltage U_{2N} in V				
Type	kVA	Type	230	115	110	42	24
4AM23 4	0.025	3RV10 11–□□□10	0AA	0DA	0DA	0HA	1AA
		Setting value in A	0.14	0.26	0.29	0.75	1.3
4AM26 4	0.04	3RV10 11–□□□10	0CA	0FA	0FA	0KA	1CA
		Setting value in A	0.21	0.41	0.45	1.2	2.1
4AM32 4	0.063	3RV10 11–□□□10	0EA	0HA	0HA	1BA	1EA
		Setting value in A	0.34	0.68	0.72	1.9	3.3
4AM34 4	0.1	3RV10 11–□□□10	0GA	0KA	0KA	1DA	1GA
		Setting value in A	0.55	1.1	1.14	3	5.2
4AM38 4	0.16	3RV10 11–□□□10	0JA	1BA	1BA	1FA	1JA
		Setting value in A	0.86	1.72	1.82	4.8	8.4
4AM40 4	0.25	3RV10 11–□□□10	1AA	1DA	1DA	1HA	–
		3RV10 21–□□□10	–	–	–	–	4AA
		Setting value in A	1.37	2.7	2.8	7.4	13
4AM43 4	0.315	3RV10 11–□□□10	1BA	1EA	1EA	1JA	–
		3RV10 21–□□□10	–	–	–	–	4BA
		Setting value in A	1.72	3.4	3.6	9.4	16.5
4AM46 4	0.4	3RV10 11–□□□10	1CA	1FA	1FA	1KA	–
		3RV10 21–□□□10	–	–	–	–	4CA
		Setting value in A	2.2	4.4	4.6	12	21
4AM48 4	0.5	3RV10 11–□□□10	1DA	1GA	1GA	–	–
		3RV10 21–□□□10	–	–	–	4AA	–
		3RV10 31–□□□10	–	–	–	–	4EA
		Setting value in A	2.7	5.4	5.7	15	26
4AM52 4	0.63	3RV10 11–□□□10	1EA	1HA	1HA	–	–
		3RV10 21–□□□10	–	–	–	4BA	–
		3RV10 31–□□□10	–	–	–	–	4FA
		Setting value in A	3.4	6.8	7.2	18.8	33
4AM55 4	0.8	3RV10 11–□□□10	1FA	1JA	1JA	–	–
		3RV10 21–□□□10	–	–	–	4DA	–
		3RV10 31–□□□10	–	–	–	–	4GA
		Setting value in A	4.4	8.8	9.2	24	42
4AM57 4	1	3RV10 11–□□□10	1GA	1KA	1KA	–	–
		3RV10 31–□□□10	–	–	–	4EA	–
		3RV10 41–□□□10	–	–	–	–	4JA
		Setting value in A	5.4	10.8	11.4	30	52
4AM61 4	1.6	3RV10 11–□□□10	1JA	–	–	–	–
		3RV10 31–□□□10	–	4BA	4BA	4HA	–
		3RV10 41–□□□10	–	–	–	–	4LA
		Setting value in A	8.6	17	18.5	48	81
4AM64 4	2	3RV10 11–□□□10	1KA	–	–	–	–
		3RV10 31–□□□10	–	4DA	4DA	–	–
		3RV10 41–□□□10	–	–	–	4JA	4MA
		Setting value in A	10.9	22	23	60	101
4AM65 4	2.5	3RV10 21–□□□10	4AA	–	–	–	–
		3RV10 31–□□□10	–	4EA	4EA	–	–
		3RV10 41–□□□10	–	–	–	4KA	–
		3VF32 11–□□□□□-0AA0	–	–	–	–	1BU41
		Setting value in A	13.6	27	28	72	125
4AT30 3	4	3RV10 21–□□□10	4CA	–	–	–	–
		3RV10 31–□□□10	–	4GA	–	–	–
		Setting value in A	21	41	–	–	–
4AT36 1	5	3RV10 31–□□□10	4EA	–	–	–	–
		3RV10 41–□□□10	–	4JA	–	–	–
		Setting value in A	26	51	–	–	–
4AT36 3	6.3	3RV10 31–□□□10	4FA	–	–	–	–
		3RV10 41–□□□10	–	4KA	–	–	–
		Setting value in A	32	64	–	–	–
4AT39 1	8	3RV10 31–□□□10	4GA	–	–	–	–
		3RV10 41–□□□10	–	4LA	–	–	–
		Setting value in A	41	81	–	–	–
4AT39 3	10	3RV10 41–□□□10	4JA	4MA	–	–	–
		Setting value in A	51	100	–	–	–

Transformer	Rated output P_n	Miniature circuit-breaker	Rated output voltage U_{2N} in V		
Type	kVA	Type	230	115	24
4AM23 4	0.025	5SX2 □□□-7	–	–	–
		Current value in A	–	–	–
4AM26 4	0.04	5SX2 □□□-7	–	–	102
		Current value in A	–	–	2
4AM32 4	0.063	5SX2 □□□-7	–	–	103
		Current value in A	–	–	3
4AM34 4	0.1	5SX2 □□□-7	105	101	–
		Current value in A	0.5	1	–
4AM38 4	0.16	5SX2 □□□-7	–	115	108
		Current value in A	–	1.6	8
4AM40 4	0.25	5SX2 □□□-7	–	–	–
		Current value in A	–	–	–
4AM43 4	0.315	5SX2 □□□-7	115	103	116
		Current value in A	1.6	3	16
4AM46 4	0.4	5SX2 □□□-7	102	104	120
		Current value in A	2	4	20
4AM48 4	0.5	5SX2 □□□-7	103	–	125
		Current value in A	3	–	25
4AM52 4	0.63	5SX2 □□□-7	104	106	132
		Current value in A	4	6	32
4AM55 4	0.8	5SX2 □□□-7	–	108	140
		Current value in A	–	8	40
4AM57 4	1	5SX2 □□□-7	–	110	150
		Current value in A	–	10	50
4AM61 4	1.6	5SX2 □□□-7	108	116	–
		Current value in A	8	16	–
4AM64 4	2	5SX2 □□□-7	110	120	–
		Current value in A	10	20	–
4AM65 4	2.5	5SX2 □□□-7	113	125	–
		Current value in A	13	25	–
4AT30 3	4	5SX2 □□□-7	120	140	–
	4	Current value in A	20	40	–
4AT36 1	5	5SX2 □□□-7	125	150	–
		Current value in A	25	50	–
4AT36 3	6.3	5SX2 □□□-7	132	163	–
		Current value in A	32	63	–
4AT39 1	8	5SX2 □□□-7	140	180	–
		Current value in A	40	80	–
4AT39 3	10	5SX2 □□□-7	150	191	–
		Current value in A	50	100	–

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

12

Short-time rating of control transformers $P_{shortt.}$[1]) = f (p.f.) for U_2 = 0.95 × U_{2N}

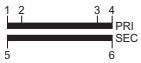
Trans-former	Rated output P_n	Short-time rating $P_{shortt.}$[1]) with										Voltage increase on no load (operating temperature)	Voltage drop on rated load (at 20 °C)	Short-circuit voltage (at 20 °C)
		p.f. = 0.1	p.f. = 0.2	p.f. = 0.3	p.f. = 0.4	p.f. = 0.5	p.f. = 0.6	p.f. = 0.7	p.f. = 0.8	p.f. = 0.9	p.f. = 1			
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	u_A %	u_R %	u_Z %
4AM32 4	0.063	0.56	0.37	0.28	0.23	0.19	0.16	0.14	0.12	0.12	0.11	10	8.4	8.5
4AM34 4	0.1	0.96	0.62	0.46	0.37	0.31	0.26	0.23	0.21	0.19	0.17	10	7.7	7.7
4AM38 4	0.16	1.52	0.98	0.73	0.58	0.49	0.42	0.37	0.33	0.3	0.28	10.4	7.6	7.7
4AM40 4	0.25	2.5	1.62	1.24	1	0.85	0.74	0.66	0.59	0.54	0.51	7.2	5.4	5.4
4AM43 4	0.315	3.4	2.15	2.63	1.33	1.12	1.97	1.86	0.77	0.71	0.67	6.6	4.9	5
4AM46 4	0.4	3.51	2.53	2	1.67	1.44	1.26	1.13	1	0.95	0.92	5.7	4.3	4.4
4AM48 4	0.5	5.34	3.75	2.9	2.4	2	1.75	1.55	1.4	1.3	1.25	5	3.8	3.8
4AM52 4	0.63	5.05	3.85	3.15	2.7	2.35	2.1	1.9	1.75	1.65	1.6	4.7	3.6	3.7
4AM55 4	0.8	7.69	5.8	4.65	3.9	3.4	3	2.7	2.5	2.3	2.25	4	3	3.1
4AM57 4	1.0	12.1	8.85	7	5.85	5	4.4	3.95	3.6	3.3	3.2	3.2	2.5	2.5
4AM61 4	1.6	12.1	10.3	9	8.1	7.3	6.8	6.4	6.1	5.9	6.4	2.4	1.9	2.1
4AM64 4	2	15.8	13.5	11.9	10.7	9.7	9	8.5	8.1	7.9	8.6	2.1	1.7	1.9
4AM65 4	2.5	19.6	17.3	15.6	14.3	13.3	12.5	12	11.6	11.5	13.2	1.6	1.3	1.6
4AT30 3	4	45.8	32.6	25.4	20.9	17.8	15.5	13.8	12.5	11.5	11	4.1	2.9	2.9
4AT36 1	5	48	36.7	27.9	22.6	19	16.5	14.6	13.1	12	11.2	5.9	4	4.1
4AT36 3	6.3	54.9	42.1	33.8	28.4	24.5	21.7	19.5	17.8	16.5	16.1	4.7	3.2	3.3
4AT39 1	8	70	53.6	43	36	31.1	27.5	24.8	22.6	21	20.4	4.6	3.2	3.3
4AT39 3	10	64.1	53.3	45.8	40.5	36.4	33.3	30.9	29.1	27.9	29.4	3.7	2.6	2.9

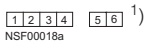
1) $P_{shortt.}$ applies to up to 300 contactor operations per hour.

Circuit diagrams

With one input voltage

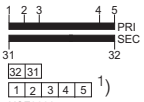
Circuit diagrams and terminal assignments[1])	Rated input voltage U_{1N}	Rated output voltage U_{2N}	Connection				
				Primary			Secondary
	V	V	Transformer type	U_{1N}	U_{1N} + 5 %	U_{1N} – 5 %	U_{2N}
4AM (≤ 2.5 kVA)	U_{1N} ± 5 %	U_{2N}	4AM23 to 4AM65	1–3	1–4	1–2	31–32
4AT (4 kVA ... 10 kVA)			4AT30 to 4AT39	1–3	1–4	2–3	5–6

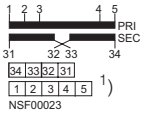




For European voltages

Circuit diagrams and terminal assignments[1])	Rated input voltage U_{1N}	Rated output voltage U_{2N}	Connections						
				Primary			Secondary		
	V	V	Transformer type	Connections U_{1N}	U_{1N} + 15 V	U_{1N} – 15 V	Connections U_{2N}	Circuit terminals	
4AM		24	4AM32 to 4AM65	400 V: 2–5 230 V: 2–4	1–5 1–4	3–5 3–4	24 V: 31–32	–	
4AM	400/230 ± 15	2 × 115	4AM32 to 4AM65	400 V: 2–5 230 V: 2–4	1–5 1–4	3–5 3–4	230 V: 31–34[2]) 115 V: 31–34[2])	32–33 31–32; 33–34	





1) With Cage Clamp terminals, the ground connection is connected to a terminal. The sequence of the terminal designations changes as follows ⏚ 1 2 .
NSF0_00183

2) Terminals 31–34 are duplicated in the Cage Clamp design.

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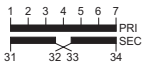
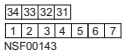
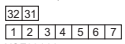
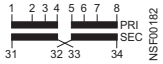
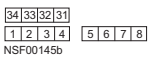
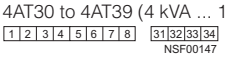
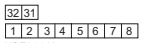
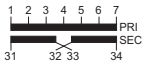
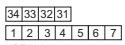
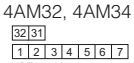
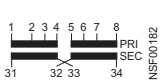
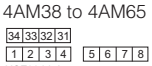
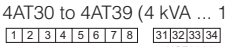
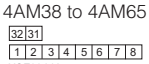
General data

Multi-voltage version

Circuit diagrams and terminal assignments	Rated input voltage U_{1N}	Rated output voltage U_{2N}	Connections and circuit terminals					
			Primary			Secondary		
			Rated voltage	Connection	Circuit terminals	Rated voltage	Connection	Circuit terminals
	V	V	V			V		
 4AM32, 4AM34 (0.063 kVA; 0.1 kVA)  NSF00143	550-525-500-480-460-440-415-400-380-230-208	2 × 115	550 525 500 480 460 440 415 400	1-7 2-7 3-7 1-6 2-6 3-6 1-5 2-5	–	230 115	31-34	32-33 31-32; 33-34
		24	380 230 208	3-5 2-4 3-4		24	31-32	–
 4AM32, 4AM34 (0.063 kVA; 0.1 kVA)  NSF00144								
 4AM38 to 4AM65 (0.16 kVA ... 2.5 kVA)  NSF00145b 4AT30 to 4AT39 (4 kVA ... 10 kVA)  NSF00147	550-525-500-480-460-440-415-400-380-230-208	2 × 115	550 525 500 480 460 440 415 400 380 230 208	1-8	4-5 3-5 2-5 2-5 4-6 3-6 3-7 2-6 2-7 1-6; 4-8 1-7; 3-8	230 115	31-34	32-33 31-32; 33-34
 4AM38 to 4AM65 (0.16 kVA ... 2.5 kVA)  NSF00146		24				24	31-32	–
 4AM32, 4AM34 (0.063 kVA; 0.1 kVA)  NSF00143	600-575-550-525-500-480-460-440-415-400-240-230	2 × 115	600 575 550 525 500 480 460 440	1-7 2-7 3-7 1-6 2-6 3-6 1-5 2-5	–	230 115	31-34	32-33 31-32; 33-34
 4AM32, 4AM34 (0.063 kVA; 0.1 kVA)  NSF00144		24	415 400 240 230	3-5 3-5 1-4 2-4		24	31-32	–
 4AM38 to 4AM65 (0.16 kVA ... 2.5 kVA)  NSF00145b 4AT30 to 4AT39 (4 kVA ... 10 kVA)  NSF00147	600-575-550-525-500-480-460-440-415-400-240-230	2 × 115	600 575 550 525 500 480 460 440 415 400 240 230	1-8	4-5 4-6 4-7 3-5 3-6 3-7 3-7 2-5 2-6 2-7 1-7; 3-8 1-7; 3-8	230 115	31-34	32-33 31-32; 33-34
 4AM38 to 4AM65 (0.16 kVA ... 2.5 kVA)  NSF00146		24				24	31-32	–

Overview

- acc. to EN 61558-2-6, -2-1, -2-2
- CE, cULus
- t_a = 40 °C/B
- AC 50/60 Hz
- IP00, IP23 and IP54 degree of protection

4AM with screw-type/tab terminals (figure on the left) and with Cage Clamp terminals (figure on the right)

Selection and ordering data

With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$ 1)	DT 2)	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT 2)	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard design 3)											
0.063	0.19	►	**4AM32 42–4TN00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–4TN00-0EA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–4TN00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–4TN00-0EA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–4TN00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–4TN00-0EA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–4TN00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–4TN00-0EA1**	1 unit	0.590	3.700
0.315	1.12	►	**4AM43 42–4TN00-0EA0**	1 unit	0.670	4.500	B	**4AM43 42–4TN00-0EA1**	1 unit	0.670	4.500
0.4	1.44	►	**4AM46 42–4TN00-0EA0**	1 unit	1.100	5.400	B	**4AM46 42–4TN00-0EA1**	1 unit	1.100	5.400
0.5	2	►	**4AM48 42–4TN00-0EA0**	1 unit	1.100	7.000	B	**4AM48 42–4TN00-0EA1**	1 unit	1.100	7.000
0.63	2.35	►	**4AM52 42–4TN00-0EA0**	1 unit	1.700	7.900		–			
0.8	3.4	B	**4AM55 42–4TN00-0EA0**	1 unit	1.900	11.000		–			
1	5	B	**4AM57 42–4TN00-0EA0**	1 unit	2.000	14.000		–			
IP00 degree of protection, standard rail mounting 3)											
0.063	0.19	►	**4AM32 42–4TN00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–4TN00-0EA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–4TN00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–4TN00-0EA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–4TN00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–4TN00-0EA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–4TN00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–4TN00-0EA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–4TN00-0EB0**	1 unit	0.670	4.500	B	**4AM43 42–4TN00-0EB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–4TN00-0EB0**	1 unit	1.100	5.400	B	**4AM46 42–4TN00-0EB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–4TN00-0EB0**	1 unit	1.100	7.000	B	**4AM48 42–4TN00-0EB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–4TN00-0EC0**	1 unit	0.240	2.700	B	**4AM32 42–4TN00-0EC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–4TN00-0EC0**	1 unit	0.260	3.300	B	**4AM34 42–4TN00-0EC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–4TN00-0EC0**	1 unit	0.320	5.600	B	**4AM38 42–4TN00-0EC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–4TN00-0EC0**	1 unit	0.590	6.600	B	**4AM40 42–4TN00-0EC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–4TN00-0EC0**	1 unit	0.670	7.400	B	**4AM43 42–4TN00-0EC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–4TN00-0EC0**	1 unit	1.100	8.300	B	**4AM46 42–4TN00-0EC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–4TN00-0EC0**	1 unit	1.100	9.900	B	**4AM48 42–4TN00-0EC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–4TN00-0EC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–4TN00-0EC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–4TN00-0EC0**	1 unit	2.000	16.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–4TN00-0ED0**	1 unit	0.240	2.700	B	**4AM32 42–4TN00-0ED1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–4TN00-0ED0**	1 unit	0.260	3.300	B	**4AM34 42–4TN00-0ED1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–4TN00-0ED0**	1 unit	0.320	5.600	B	**4AM38 42–4TN00-0ED1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–4TN00-0ED0**	1 unit	0.590	6.600	B	**4AM40 42–4TN00-0ED1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–4TN00-0ED0**	1 unit	0.670	7.400	B	**4AM43 42–4TN00-0ED1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–4TN00-0ED0**	1 unit	1.100	8.300	B	**4AM46 42–4TN00-0ED1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–4TN00-0ED0**	1 unit	1.100	9.900	B	**4AM48 42–4TN00-0ED1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–4TN00-0ED0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–4TN00-0ED0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–4TN00-0ED0**	1 unit	2.000	16.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS safety (line transformers) and control transformers

With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 42 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard design [3]											
0.063	0.19	►	**4AM32 42–4TV00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–4TV00-0EA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–4TV00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–4TV00-0EA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–4TV00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–4TV00-0EA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–4TV00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–4TV00-0EA1**	1 unit	0.590	3.700
0.315	1.12	B	**4AM43 42–4TV00-0EA0**	1 unit	0.670	4.500	B	**4AM43 42–4TV00-0EA1**	1 unit	0.670	4.500
0.4	1.44	B	**4AM46 42–4TV00-0EA0**	1 unit	1.100	5.400	B	**4AM46 42–4TV00-0EA1**	1 unit	1.100	5.400
0.5	2	B	**4AM48 42–4TV00-0EA0**	1 unit	1.100	7.000	B	**4AM48 42–4TV00-0EA1**	1 unit	1.100	7.000
0.63	2.35	B	**4AM52 42–4TV00-0EA0**	1 unit	1.700	7.900		–			
0.8	3.4	B	**4AM55 42–4TV00-0EA0**	1 unit	1.900	11.000		–			
1	5	B	**4AM57 42–4TV00-0EA0**	1 unit	2.000	14.000		–			
IP00 degree of protection, standard rail mounting [3]											
0.063	0.19	►	**4AM32 42–4TV00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–4TV00-0EA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–4TV00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–4TV00-0EA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–4TV00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–4TV00-0EA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–4TV00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–4TV00-0EA1**	1 unit	0.590	3.700
0.315	1.12	B	**4AM43 42–4TV00-0EB0**	1 unit	0.670	4.500	B	**4AM43 42–4TV00-0EB1**	1 unit	0.670	4.500
0.4	1.44	B	**4AM46 42–4TV00-0EB0**	1 Unit	1.100	5.400	B	**4AM46 42–4TV00-0EB1**	1 unit	1.100	5.400
0.5	2	B	**4AM48 42–4TV00-0EB0**	1 unit	1.100	7.000	B	**4AM48 42–4TV00-0EB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–4TV00-0EC0**	1 unit	0.240	2.700	B	**4AM32 42–4TV00-0EC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–4TV00-0EC0**	1 unit	0.260	3.300	B	**4AM34 42–4TV00-0EC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–4TV00-0EC0**	1 unit	0.320	5.600	B	**4AM38 42–4TV00-0EC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–4TV00-0EC0**	1 unit	0.590	6.600	B	**4AM40 42–4TV00-0EC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–4TV00-0EC0**	1 unit	0.670	7.400	B	**4AM43 42–4TV00-0EC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–4TV00-0EC0**	1 unit	1.100	8.300	B	**4AM46 42–4TV00-0EC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–4TV00-0EC0**	1 unit	1.100	9.900	B	**4AM48 42–4TV00-0EC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–4TV00-0EC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–4TV00-0EC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–4TV00-0EC0**	1 unit	2.000	16.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–4TV00-0ED0**	1 unit	0.240	2.700	B	**4AM32 42–4TV00-0ED1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–4TV00-0ED0**	1 unit	0.260	3.300	B	**4AM34 42–4TV00-0ED1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–4TV00-0ED0**	1 unit	0.320	5.600	B	**4AM38 42–4TV00-0ED1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–4TV00-0ED0**	1 unit	0.590	6.600	B	**4AM40 42–4TV00-0ED1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–4TV00-0ED0**	1 unit	0.670	7.400	B	**4AM43 42–4TV00-0ED1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–4TV00-0ED0**	1 unit	1.100	8.300	B	**4AM46 42–4TV00-0ED1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–4TV00-0ED0**	1 unit	1.100	9.900	B	**4AM48 42–4TV00-0ED1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–4TV00-0ED0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–4TV00-0ED0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–4TV00-0ED0**	1 unit	2.000	16.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard design [3]											
0.063	0.19	►	**4AM32 42–5AN00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–5AN00-0EA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–5AN00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–5AN00-0EA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–5AN00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–5AN00-0EA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–5AN00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–5AN00-0EA1**	1 unit	0.590	3.700
0.315	1.12	►	**4AM43 42–5AN00-0EA0**	1 unit	0.670	4.500	B	**4AM43 42–5AN00-0EA1**	1 unit	0.670	4.500
0.4	1.44	►	**4AM46 42–5AN00-0EA0**	1 unit	1.100	5.400	B	**4AM46 42–5AN00-0EA1**	1 unit	1.100	5.400
0.5	2	►	**4AM48 42–5AN00-0EA0**	1 unit	1.100	7.000	B	**4AM48 42–5AN00-0EA1**	1 unit	1.100	7.000
0.63	2.35	►	**4AM52 42–5AN00-0EA0**	1 unit	1.700	7.900		–			
0.8	3.4	A	**4AM55 42–5AN00-0EA0**	1 unit	1.900	11.000		–			
1	5	B	**4AM57 42–5AN00-0EA0**	1 unit	2.000	14.000		–			
IP00 degree of protection, standard rail mounting [3]											
0.063	0.19	►	**4AM32 42–5AN00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–5AN00-0EA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–5AN00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–5AN00-0EA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–5AN00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–5AN00-0EA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–5AN00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–5AN00-0EA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–5AN00-0EB0**	1 unit	0.670	4.500	B	**4AM43 42–5AN00-0EB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–5AN00-0EB0**	1 unit	1.100	5.400	B	**4AM46 42–5AN00-0EB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–5AN00-0EB0**	1 unit	1.100	7.000	B	**4AM48 42–5AN00-0EB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–5AN00-0EC0**	1 unit	0.240	2.700	B	**4AM32 42–5AN00-0EC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–5AN00-0EC0**	1 unit	0.260	3.300	B	**4AM34 42–5AN00-0EC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–5AN00-0EC0**	1 unit	0.320	5.600	B	**4AM38 42–5AN00-0EC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–5AN00-0EC0**	1 unit	0.590	6.600	B	**4AM40 42–5AN00-0EC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–5AN00-0EC0**	1 unit	0.670	7.400	B	**4AM43 42–5AN00-0EC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–5AN00-0EC0**	1 unit	1.100	8.300	B	**4AM46 42–5AN00-0EC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–5AN00-0EC0**	1 unit	1.100	9.900	B	**4AM48 42–5AN00-0EC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–5AN00-0EC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–5AN00-0EC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–5AN00-0EC0**	1 unit	2.000	16.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–5AN00-0ED0**	1 unit	0.240	2.700	B	**4AM32 42–5AN00-0ED1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–5AN00-0ED0**	1 unit	0.260	3.300	B	**4AM34 42–5AN00-0ED1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–5AN00-0ED0**	1 unit	0.320	5.600	B	**4AM38 42–5AN00-0ED1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–5AN00-0ED0**	1 unit	0.590	6.600	B	**4AM40 42–5AN00-0ED1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–5AN00-0ED0**	1 unit	0.670	7.400	B	**4AM43 42–5AN00-0ED1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–5AN00-0ED0**	1 unit	1.100	8.300	B	**4AM46 42–5AN00-0ED1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–5AN00-0ED0**	1 unit	1.100	9.900	B	**4AM48 42–5AN00-0ED1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–5AN00-0ED0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–5AN00-0ED0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–5AN00-0ED0**	1 unit	2.000	16.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

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*** This quantity or a multiple thereof can be ordered.**

SITAS safety (line transformers) and control transformers

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 42 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard design [3]											
0.063	0.19	▶	**4AM32 42–5AV00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–5AV00-0EA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5AV00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–5AV00-0EA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5AV00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–5AV00-0EA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5AV00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–5AV00-0EA1**	1 unit	0.590	3.700
0.315	1.12	B	**4AM43 42–5AV00-0EA0**	1 unit	0.670	4.500	B	**4AM43 42–5AV00-0EA1**	1 unit	0.670	4.500
0.4	1.44	B	**4AM46 42–5AV00-0EA0**	1 unit	1.100	5.400	B	**4AM46 42–5AV00-0EA1**	1 unit	1.100	5.400
0.5	2	B	**4AM48 42–5AV00-0EA0**	1 unit	1.100	7.000	B	**4AM48 42–5AV00-0EA1**	1 unit	1.100	7.000
0.63	2.35	B	**4AM52 42–5AV00-0EA0**	1 unit	1.700	7.900		–			
0.8	3.4	B	**4AM55 42–5AV00-0EA0**	1 unit	1.900	11.000		–			
1	5	B	**4AM57 42–5AV00-0EA0**	1 unit	2.000	14.000		–			
IP00 degree of protection, standard rail mounting [3]											
0.063	0.19	▶	**4AM32 42–5AV00-0EA0**	1 unit	0.240	1.400	B	**4AM32 42–5AV00-0EA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5AV00-0EA0**	1 unit	0.260	2.000	B	**4AM34 42–5AV00-0EA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5AV00-0EA0**	1 unit	0.320	2.700	B	**4AM38 42–5AV00-0EA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5AV00-0EA0**	1 unit	0.590	3.700	B	**4AM40 42–5AV00-0EA1**	1 unit	0.590	3.700
0.315	1.12	B	**4AM43 42–5AV00-0EB0**	1 unit	0.670	4.500	B	**4AM43 42–5AV00-0EB1**	1 unit	0.670	4.500
0.4	1.44	B	**4AM46 42–5AV00-0EB0**	1 unit	1.100	5.400	B	**4AM46 42–5AV00-0EB1**	1 unit	1.100	5.400
0.5	2	B	**4AM48 42–5AV00-0EB0**	1 unit	1.100	7.000	B	**4AM48 42–5AV00-0EB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–5AV00-0EC0**	1 unit	0.240	2.700	B	**4AM32 42–5AV00-0EC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–5AV00-0EC0**	1 unit	0.260	3.300	B	**4AM34 42–5AV00-0EC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–5AV00-0EC0**	1 unit	0.320	5.600	B	**4AM38 42–5AV00-0EC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–5AV00-0EC0**	1 unit	0.590	6.600	B	**4AM40 42–5AV00-0EC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–5AV00-0EC0**	1 unit	0.670	7.400	B	**4AM43 42–5AV00-0EC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–5AV00-0EC0**	1 unit	1.100	8.300	B	**4AM46 42–5AV00-0EC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–5AV00-0EC0**	1 unit	1.100	9.900	B	**4AM48 42–5AV00-0EC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–5AV00-0EC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–5AV00-0EC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–5AV00-0EC0**	1 unit	2.000	16.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–5AV00-0ED0**	1 unit	0.240	2.700	B	**4AM32 42–5AV00-0ED1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–5AV00-0ED0**	1 unit	0.260	3.300	B	**4AM34 42–5AV00-0ED1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–5AV00-0ED0**	1 unit	0.320	5.600	B	**4AM38 42–5AV00-0ED1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–5AV00-0ED0**	1 unit	0.590	6.600	B	**4AM40 42–5AV00-0ED1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–5AV00-0ED0**	1 unit	0.670	7.400	B	**4AM43 42–5AV00-0ED1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–5AV00-0ED0**	1 unit	1.100	8.300	B	**4AM46 42–5AV00-0ED1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–5AV00-0ED0**	1 unit	1.100	9.900	B	**4AM48 42–5AV00-0ED1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–5AV00-0ED0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–5AV00-0ED0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–5AV00-0ED0**	1 unit	2.000	16.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

For European voltages

Rated input voltage U_{1N} 400/230 V ± 15 V, Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard design [3]											
0.063	0.19	►	**4AM32 42–8JN00-0EA0**	1 unit	0.340	1.500	B	**4AM32 42–8JN00-0EA1**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8JN00-0EA0**	1 unit	0.360	2.100	B	**4AM34 42–8JN00-0EA1**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8JN00-0EA0**	1 unit	0.450	2.800	B	**4AM38 42–8JN00-0EA1**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8JN00-0EA0**	1 unit	0.820	3.900	B	**4AM40 42–8JN00-0EA1**	1 unit	0.820	3.900
0.315	1.12	B	**4AM43 42–8JN00-0EA0**	1 unit	1.000	4.800	B	**4AM43 42–8JN00-0EA1**	1 unit	1.000	4.800
0.4	1.44	B	**4AM46 42–8JN00-0EA0**	1 unit	1.500	5.800	B	**4AM46 42–8JN00-0EA1**	1 unit	1.500	5.800
0.5	2	B	**4AM48 42–8JN00-0EA0**	1 unit	1.500	7.400	B	**4AM48 42–8JN00-0EA1**	1 unit	1.500	7.400
0.63	2.35	B	**4AM52 42–8JN00-0EA0**	1 unit	2.400	8.600		–			
0.8	3.4	B	**4AM55 42–8JN00-0EA0**	1 unit	2.600	12.000		–			
1	5	B	**4AM57 42–8JN00-0EA0**	1 unit	2.800	15.000		–			
IP00 degree of protection, standard rail mounting [3]											
0.063	0.19	►	**4AM32 42–8JN00-0EA0**	1 unit	0.340	1.500	B	**4AM32 42–8JN00-0EA1**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8JN00-0EA0**	1 unit	0.360	2.100	B	**4AM34 42–8JN00-0EA1**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8JN00-0EA0**	1 unit	0.450	2.800	B	**4AM38 42–8JN00-0EA1**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8JN00-0EA0**	1 unit	0.820	3.900	B	**4AM40 42–8JN00-0EA1**	1 unit	0.820	3.900
0.315	1.12	B	**4AM43 42–8JN00-0EB0**	1 unit	1.000	4.800	B	**4AM43 42–8JN00-0EB1**	1 unit	1.000	4.800
0.4	1.44	B	**4AM46 42–8JN00-0EB0**	1 unit	1.500	5.800	B	**4AM46 42–8JN00-0EB1**	1 unit	1.500	5.800
0.5	2	B	**4AM48 42–8JN00-0EB0**	1 unit	1.500	7.400	B	**4AM48 42–8JN00-0EB1**	1 unit	1.500	7.400
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–8JN00-0EC0**	1 unit	0.340	2.800	B	**4AM32 42–8JN00-0EC1**	1 unit	0.340	2.800
0.09	0.31	B	**4AM34 42–8JN00-0EC0**	1 unit	0.360	3.400	B	**4AM34 42–8JN00-0EC1**	1 unit	0.360	3.400
0.145	0.49	B	**4AM38 42–8JN00-0EC0**	1 unit	0.450	5.700	B	**4AM38 42–8JN00-0EC1**	1 unit	0.450	5.700
0.225	0.85	B	**4AM40 42–8JN00-0EC0**	1 unit	0.820	6.800	B	**4AM40 42–8JN00-0EC1**	1 unit	0.820	6.800
0.268	1.12	B	**4AM43 42–8JN00-0EC0**	1 unit	1.000	7.700	B	**4AM43 42–8JN00-0EC1**	1 unit	1.000	7.700
0.34	1.44	B	**4AM46 42–8JN00-0EC0**	1 unit	1.500	8.700	B	**4AM46 42–8JN00-0EC1**	1 unit	1.500	8.700
0.425	2	B	**4AM48 42–8JN00-0EC0**	1 unit	1.500	10.300	B	**4AM48 42–8JN00-0EC1**	1 unit	1.500	10.300
0.535	2.35	B	**4AM52 42–8JN00-0EC0**	1 unit	2.400	11.500		–			
0.68	3.4	B	**4AM55 42–8JN00-0EC0**	1 unit	2.600	13.900		–			
0.85	5	B	**4AM57 42–8JN00-0EC0**	1 unit	2.800	17.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–8JN00-0ED0**	1 unit	0.340	2.800	B	**4AM32 42–8JN00-0ED1**	1 unit	0.340	2.800
0.08	0.31	B	**4AM34 42–8JN00-0ED0**	1 unit	0.360	3.400	B	**4AM34 42–8JN00-0ED1**	1 unit	0.360	3.400
0.128	0.49	B	**4AM38 42–8JN00-0ED0**	1 unit	0.450	5.700	B	**4AM38 42–8JN00-0ED1**	1 unit	0.450	5.700
0.2	0.85	B	**4AM40 42–8JN00-0ED0**	1 unit	0.820	6.800	B	**4AM40 42–8JN00-0ED1**	1 unit	0.820	6.800
0.236	1.12	B	**4AM43 42–8JN00-0ED0**	1 unit	1.000	7.700	B	**4AM43 42–8JN00-0ED1**	1 unit	1.000	7.700
0.3	1.44	B	**4AM46 42–8JN00-0ED0**	1 unit	1.500	8.700	B	**4AM46 42–8JN00-0ED1**	1 unit	1.500	8.700
0.375	2	B	**4AM48 42–8JN00-0ED0**	1 unit	1.500	10.300	B	**4AM48 42–8JN00-0ED1**	1 unit	1.500	10.300
0.475	2.35	B	**4AM52 42–8JN00-0ED0**	1 unit	2.400	11.500		–			
0.6	3.4	B	**4AM55 42–8JN00-0ED0**	1 unit	2.600	13.900		–			
0.75	5	B	**4AM57 42–8JN00-0ED0**	1 unit	2.800	17.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS safety (line transformers) and control transformers

Multi-voltage version

Rated input voltage U_{1N} 550–525–500–480–460–440–415–400–380–230–208 V, Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg
IP00 degree of protection, standard design [3]						
0.063	0.19	▶	**4AM32 42–8DN00-0EA0**	1 unit	0.340	1.500
0.1	0.31	▶	**4AM34 42–8DN00-0EA0**	1 unit	0.360	2.100
0.16	0.49	▶	**4AM38 42–8DN00-0EA0**	1 unit	0.450	2.800
0.25	0.85	▶	**4AM40 42–8DN00-0EA0**	1 unit	0.820	3.900
0.315	1.12	▶	**4AM43 42–8DN00-0EA0**	1 unit	1.000	4.800
0.4	1.44	▶	**4AM46 42–8DN00-0EA0**	1 unit	1.500	5.800
0.5	2	▶	**4AM48 42–8DN00-0EA0**	1 unit	1.500	7.400
0.63	2.35	▶	**4AM52 42–8DN00-0EA0**	1 unit	2.400	8.600
0.8	3.4	B	**4AM55 42–8DN00-0EA0**	1 unit	2.600	12.000
1	5	B	**4AM57 42–8DN00-0EA0**	1 unit	2.800	15.000
IP00 degree of protection, standard rail mounting [3]						
0.063	0.19	▶	**4AM32 42–8DN00-0EA0**	1 unit	0.340	1.500
0.1	0.31	▶	**4AM34 42–8DN00-0EA0**	1 unit	0.360	2.100
0.16	0.49	▶	**4AM38 42–8DN00-0EA0**	1 unit	0.450	2.800
0.25	0.85	▶	**4AM40 42–8DN00-0EA0**	1 unit	0.820	3.900
0.315	1.12	A	**4AM43 42–8DN00-0EB0**	1 unit	1.000	4.800
0.4	1.44	A	**4AM46 42–8DN00-0EB0**	1 unit	1.500	5.800
0.5	2	A	**4AM48 42–8DN00-0EB0**	1 unit	1.500	7.400
IP23 degree of protection						
0.057	0.19	B	**4AM32 42–8DN00-0EC0**	1 unit	0.340	2.800
0.09	0.31	B	**4AM34 42–8DN00-0EC0**	1 unit	0.360	3.400
0.145	0.49	B	**4AM38 42–8DN00-0EC0**	1 unit	0.450	5.700
0.225	0.85	B	**4AM40 42–8DN00-0EC0**	1 unit	0.820	6.800
0.268	1.12	B	**4AM43 42–8DN00-0EC0**	1 unit	1.000	7.700
0.34	1.44	B	**4AM46 42–8DN00-0EC0**	1 unit	1.500	8.700
0.425	2	B	**4AM48 42–8DN00-0EC0**	1 unit	1.500	10.300
0.535	2.35	B	**4AM52 42–8DN00-0EC0**	1 unit	2.400	11.500
0.68	3.4	B	**4AM55 42–8DN00-0EC0**	1 unit	2.600	13.900
0.85	5	B	**4AM57 42–8DN00-0EC0**	1 unit	2.800	17.900
IP54 degree of protection						
0.05	0.19	B	**4AM32 42–8DN00-0ED0**	1 unit	0.340	2.800
0.08	0.31	B	**4AM34 42–8DN00-0ED0**	1 unit	0.360	3.400
0.128	0.49	B	**4AM38 42–8DN00-0ED0**	1 unit	0.450	5.700
0.2	0.85	B	**4AM40 42–8DN00-0ED0**	1 unit	0.820	6.800
0.236	1.12	B	**4AM43 42–8DN00-0ED0**	1 unit	1.000	7.700
0.3	1.44	B	**4AM46 42–8DN00-0ED0**	1 unit	1.500	8.700
0.375	2	B	**4AM48 42–8DN00-0ED0**	1 unit	1.500	10.300
0.475	2.35	B	**4AM52 42–8DN00-0ED0**	1 unit	2.400	11.500
0.6	3.4	B	**4AM55 42–8DN00-0ED0**	1 unit	2.600	13.900
0.75	5	B	**4AM57 42–8DN00-0ED0**	1 unit	2.800	17.900

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

Multi-voltage version

Rated input voltage U_{1N} 600–575–550–525–500–480–460–440–415–400–240–230 V,
Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg
IP00 degree of protection, standard design [3]						
0.063	0.19	▶	**4AM32 42–8EN00-0EA0**	1 unit	0.340	1.500
0.1	0.31	▶	**4AM34 42–8EN00-0EA0**	1 unit	0.360	2.100
0.16	0.49	▶	**4AM38 42–8EN00-0EA0**	1 unit	0.450	2.800
0.25	0.85	▶	**4AM40 42–8EN00-0EA0**	1 unit	0.820	3.900
0.315	1.12	▶	**4AM43 42–8EN00-0EA0**	1 unit	1.000	4.800
0.4	1.44	▶	**4AM46 42–8EN00-0EA0**	1 unit	1.500	5.800
0.5	2	▶	**4AM48 42–8EN00-0EA0**	1 unit	1.500	7.400
0.63	2.35	▶	**4AM52 42–8EN00-0EA0**	1 unit	2.400	8.600
0.8	3.4	B	**4AM55 42–8EN00-0EA0**	1 unit	2.600	12.000
1	5	B	**4AM57 42–8EN00-0EA0**	1 unit	2.800	15.000
IP00 degree of protection, standard rail mounting [3]						
0.063	0.19	▶	**4AM32 42–8EN00-0EA0**	1 unit	0.340	1.500
0.1	0.31	▶	**4AM34 42–8EN00-0EA0**	1 unit	0.360	2.100
0.16	0.49	▶	**4AM38 42–8EN00-0EA0**	1 unit	0.450	2.800
0.25	0.85	▶	**4AM40 42–8EN00-0EA0**	1 unit	0.820	3.900
0.315	1.12	A	**4AM43 42–8EN00-0EB0**	1 unit	1.000	4.800
0.4	1.44	A	**4AM46 42–8EN00-0EB0**	1 unit	1.500	5.800
0.5	2	A	**4AM48 42–8EN00-0EB0**	1 unit	1.500	7.400
IP23 degree of protection						
0.057	0.19	B	**4AM32 42–8EN00-0EC0**	1 unit	0.340	2.800
0.09	0.31	B	**4AM34 42–8EN00-0EC0**	1 unit	0.360	3.400
0.145	0.49	B	**4AM38 42–8EN00-0EC0**	1 unit	0.450	5.700
0.225	0.85	B	**4AM40 42–8EN00-0EC0**	1 unit	0.820	6.800
0.268	1.12	B	**4AM43 42–8EN00-0EC0**	1 unit	1.000	7.700
0.34	1.44	B	**4AM46 42–8EN00-0EC0**	1 unit	1.500	8.700
0.425	2	B	**4AM48 42–8EN00-0EC0**	1 unit	1.500	10.300
0.535	2.35	B	**4AM52 42–8EN00-0EC0**	1 unit	2.400	11.500
0.68	3.4	B	**4AM55 42–8EN00-0EC0**	1 unit	2.600	13.900
0.85	5	B	**4AM57 42–8EN00-0EC0**	1 unit	2.800	17.900
IP54 degree of protection						
0.05	0.19	B	**4AM32 42–8EN00-0ED0**	1 unit	0.340	2.800
0.08	0.31	B	**4AM34 42–8EN00-0ED0**	1 unit	0.360	3.400
0.128	0.49	B	**4AM38 42–8EN00-0ED0**	1 unit	0.450	5.700
0.2	0.85	B	**4AM40 42–8EN00-0ED0**	1 unit	0.820	6.800
0.236	1.12	B	**4AM43 42–8EN00-0ED0**	1 unit	1.000	7.700
0.3	1.44	B	**4AM46 42–8EN00-0ED0**	1 unit	1.500	8.700
0.375	2	B	**4AM48 42–8EN00-0ED0**	1 unit	1.500	10.300
0.475	2.35	B	**4AM52 42–8EN00-0ED0**	1 unit	2.400	11.500
0.6	3.4	B	**4AM55 42–8EN00-0ED0**	1 unit	2.600	13.900
0.75	5	B	**4AM57 42–8EN00-0ED0**	1 unit	2.800	17.900

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS safety transformers (line transformers)

Overview

- acc. to EN 61558-2-6, -2-1
- CE, cULus
- t_a = 40 °C/B
- AC 50/60 Hz
- IP00, IP23 and IP54 degrees of protection

4AM with screw-type/tab terminals (figure on the left) and with Cage Clamp terminals (figure on the left)

Selection and ordering data

With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT 1)	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT 1)	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	►	**4AM23 42–4TN00-0EA0**	1 unit	0.110	0.600	B	**4AM23 42–4TN00-0EA1**	1 unit	0.110	0.600
0.04	–	►	**4AM26 42–4TN00-0EA0**	1 unit	0.150	0.800	B	**4AM26 42–4TN00-0EA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	A	**4AM23 42–4TN00-0EB0**	1 unit	0.110	0.600	B	**4AM23 42–4TN00-0EB1**	1 unit	0.110	0.600
0.04	–	A	**4AM26 42–4TN00-0EB0**	1 unit	0.150	0.800	B	**4AM26 42–4TN00-0EB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–4TN00-0EC0**	1 unit	0.110	1.900	B	**4AM23 42–4TN00-0EC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–4TN00-0EC0**	1 unit	0.150	2.100	B	**4AM26 42–4TN00-0EC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–4TN00-0ED0**	1 unit	0.110	1.900	B	**4AM23 42–4TN00-0ED1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–4TN00-0ED0**	1 unit	0.150	2.100	B	**4AM26 42–4TN00-0ED1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

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With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 42 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT 1)	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT 1)	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	B	**4AM23 42–4TV00-0EA0**	1 unit	0.110	0.600	B	**4AM23 42–4TV00-0EA1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–4TV00-0EA0**	1 unit	0.150	0.800	B	**4AM26 42–4TV00-0EA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	B	**4AM23 42–4TV00-0EB0**	1 unit	0.110	0.600	B	**4AM23 42–4TV00-0EB1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–4TV00-0EB0**	1 unit	0.150	0.800	B	**4AM26 42–4TV00-0EB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–4TV00-0EC0**	1 unit	0.110	1.900	B	**4AM23 42–4TV00-0EC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–4TV00-0EC0**	1 unit	0.150	2.100	B	**4AM26 42–4TV00-0EC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–4TV00-0ED0**	1 unit	0.110	1.900	B	**4AM23 42–4TV00-0ED1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–4TV00-0ED0**	1 unit	0.150	2.100	B	**4AM26 42–4TV00-0ED1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

*** This quantity or a multiple thereof can be ordered.**

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 24 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [1]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	►	**4AM23 42–5AN00-0EA0**	1 unit	0.110	0.600	B	**4AM23 42–5AN00-0EA1**	1 unit	0.110	0.600
0.04	–	►	**4AM26 42–5AN00-0EA0**	1 unit	0.150	0.800	B	**4AM26 42–5AN00-0EA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	A	**4AM23 42–5AN00-0EB0**	1 unit	0.110	0.600	B	**4AM23 42–5AN00-0EB1**	1 unit	0.110	0.600
0.04	–	A	**4AM26 42–5AN00-0EB0**	1 unit	0.150	0.800	B	**4AM26 42–5AN00-0EB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–5AN00-0EC0**	1 unit	0.110	1.900	B	**4AM23 42–5AN00-0EC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–5AN00-0EC0**	1 unit	0.150	2.100	B	**4AM26 42–5AN00-0EC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–5AN00-0ED0**	1 unit	0.110	1.900	B	**4AM23 42–5AN00-0ED1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–5AN00-0ED0**	1 unit	0.150	2.100	B	**4AM26 42–5AN00-0ED1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 42 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [1]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	B	**4AM23 42–5AV00-0EA0**	1 unit	0.110	0.600	B	**4AM23 42–5AV00-0EA1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–5AV00-0EA0**	1 unit	0.150	0.800	B	**4AM26 42–5AV00-0EA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	B	**4AM23 42–5AV00-0EB0**	1 unit	0.110	0.600	B	**4AM23 42–5AV00-0EB1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–5AV00-0EB0**	1 unit	0.150	0.800	B	**4AM26 42–5AV00-0EB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–5AV00-0EC0**	1 unit	0.110	1.900	B	**4AM23 42–5AV00-0EC1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–5AV00-0EC0**	1 unit	0.150	2.100	B	**4AM26 42–5AV00-0EC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–5AV00-0ED0**	1 unit	0.110	1.900	B	**4AM23 42–5AV00-0ED1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–5AV00-0ED0**	1 unit	0.150	2.100	B	**4AM26 42–5AV00-0ED1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating, control and line transformers

Overview

- acc. to EN 61558-2-4, -2-2, -2-1
- CE, cULus
- 4AM: t_a = 40 °C/B, 4AT: t_a = 55 °C/H
- AC 50/60 Hz
- IP00, IP23 and IP54 degrees of protection

4AM with screw-type/tab terminals (figure on the left) and 4AT with screw-type terminals (figure on the right)

Selection and ordering data

With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %,
Rated output voltage U_{2N} 110 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	▶	**4AM32 42–4TJ10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–4TJ10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–4TJ10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–4TJ10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–4TJ10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–4TJ10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–4TJ10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–4TJ10-0FA1**	1 unit	0.590	3.700
0.315	1.12	▶	**4AM43 42–4TJ10-0FA0**	1 unit	0.670	4.500	B	**4AM43 42–4TJ10-0FA1**	1 unit	0.670	4.500
0.4	1.44	▶	**4AM46 42–4TJ10-0FA0**	1 unit	1.100	5.400	B	**4AM46 42–4TJ10-0FA1**	1 unit	1.100	5.400
0.5	2	▶	**4AM48 42–4TJ10-0FA0**	1 unit	1.100	7.000	B	**4AM48 42–4TJ10-0FA1**	1 unit	1.100	7.000
0.63	2.35	▶	**4AM52 42–4TJ10-0FA0**	1 unit	1.700	7.900		–			
0.8	3.4	▶	**4AM55 42–4TJ10-0FA0**	1 unit	1.900	11.000		–			
1	5	▶	**4AM57 42–4TJ10-0FA0**	1 unit	2.000	14.000		–			
1.6	7.3	B	**4AM61 42–4TJ10-0FA0**	1 unit	4.100	19.000		–			
2	9.7	B	**4AM64 42–4TJ10-0FA0**	1 unit	4.700	23.000		–			
2.5	13.3	B	**4AM65 42–4TJ10-0FA0**	1 unit	6.400	29.000		–			
4	17.8	B	**4AT30 32–4TJ10-0FA0**	1 unit	6.600	27.000		–			
5	19	B	**4AT36 12–4TJ10-0FA0**	1 unit	5.200	32.000		–			
6.3	24.5	B	**4AT36 32–4TJ10-0FA0**	1 unit	8.700	37.000		–			
8	31.1	B	**4AT39 12–4TJ10-0FA0**	1 unit	9.900	45.000		–			
10	36.4	B	**4AT39 32–4TJ10-0FA0**	1 unit	17.000	52.000		–			
IP00 degree of protection, standard rail mounting [4]											
0.063	0.19	▶	**4AM32 42–4TJ10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–4TJ10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–4TJ10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–4TJ10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–4TJ10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–4TJ10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–4TJ10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–4TJ10-0FA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–4TJ10-0FB0**	1 unit	0.670	4.500	B	**4AM43 42–4TJ10-0FB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–4TJ10-0FB0**	1 unit	1.100	5.400	B	**4AM46 42–4TJ10-0FB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–4TJ10-0FB0**	1 unit	1.100	7.000	B	**4AM48 42–4TJ10-0FB1**	1 unit	1.100	7.000

IP23 and IP54 degrees of protection, see Page 12/23.

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating, control and line transformers

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–4TJ10-0FC0**	1 unit	0.240	2.700	B	**4AM32 42–4TJ10-0FC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–4TJ10-0FC0**	1 unit	0.260	3.300	B	**4AM34 42–4TJ10-0FC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–4TJ10-0FC0**	1 unit	0.320	5.600	B	**4AM38 42–4TJ10-0FC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–4TJ10-0FC0**	1 unit	0.590	6.600	B	**4AM40 42–4TJ10-0FC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–4TJ10-0FC0**	1 unit	0.670	7.400	B	**4AM43 42–4TJ10-0FC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–4TJ10-0FC0**	1 unit	1.100	8.300	B	**4AM46 42–4TJ10-0FC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–4TJ10-0FC0**	1 unit	1.100	9.900	B	**4AM48 42–4TJ10-0FC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–4TJ10-0FC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–4TJ10-0FC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–4TJ10-0FC0**	1 unit	2.000	16.900		–			
1.36	7.3	B	**4AM61 42–4TJ10-0FC0**	1 unit	4.100	26.700		–			
1.7	9.7	B	**4AM64 42–4TJ10-0FC0**	1 unit	4.700	30.700		–			
2.13	13.3	B	**4AM65 42–4TJ10-0FC0**	1 unit	6.400	36.700		–			
3.6	17.8	B	**4AT30 32–4TJ10-0FC0**	1 unit	6.600	34.700		–			
4.5	19	B	**4AT36 12–4TJ10-0FC0**	1 unit	5.200	39.700		–			
5.6	24.5	B	**4AT36 32–4TJ10-0FC0**	1 unit	8.700	44.700		–			
7.1	31.1	B	**4AT39 12–4TJ10-0FC0**	1 unit	9.900	58.900		–			
9	36.4	B	**4AT39 32–4TJ10-0FC0**	1 unit	17.000	65.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–4TJ10-0FD0**	1 unit	0.240	2.700	B	**4AM32 42–4TJ10-0FD1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–4TJ10-0FD0**	1 unit	0.260	3.300	B	**4AM34 42–4TJ10-0FD1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–4TJ10-0FD0**	1 unit	0.320	5.600	B	**4AM38 42–4TJ10-0FD1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–4TJ10-0FD0**	1 unit	0.590	6.600	B	**4AM40 42–4TJ10-0FD1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–4TJ10-0FD0**	1 unit	0.670	7.400	B	**4AM43 42–4TJ10-0FD1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–4TJ10-0FD0**	1 unit	1.100	8.300	B	**4AM46 42–4TJ10-0FD1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–4TJ10-0FD0**	1 unit	1.100	9.900	B	**4AM48 42–4TJ10-0FD1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–4TJ10-0FD0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–4TJ10-0FD0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–4TJ10-0FD0**	1 unit	2.000	16.900		–			
1.2	7.3	B	**4AM61 42–4TJ10-0FD0**	1 unit	4.100	26.700		–			
1.5	9.7	B	**4AM64 42–4TJ10-0FD0**	1 unit	4.700	30.700		–			
1.875	13.3	B	**4AM65 42–4TJ10-0FD0**	1 unit	6.400	36.700		–			
3.15	17.8	B	**4AT30 32–4TJ10-0FD0**	1 unit	6.600	34.700		–			
4	19	B	**4AT36 12–4TJ10-0FD0**	1 unit	5.200	39.700		–			
5	24.5	B	**4AT36 32–4TJ10-0FD0**	1 unit	8.700	44.700		–			
6.3	31.1	B	**4AT39 12–4TJ10-0FD0**	1 unit	9.900	58.900		–			
8	36.4	B	**4AT39 32–4TJ10-0FD0**	1 unit	17.000	65.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

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*** This quantity or a multiple thereof can be ordered.**

SITAS isolating, control and line transformers

With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	▶	**4AM32 42–4TT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–4TT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–4TT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–4TT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–4TT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–4TT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–4TT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–4TT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	▶	**4AM43 42–4TT10-0FA0**	1 unit	0.670	4.500	B	**4AM43 42–4TT10-0FA1**	1 unit	0.670	4.500
0.4	1.44	▶	**4AM46 42–4TT10-0FA0**	1 unit	1.100	5.400	B	**4AM46 42–4TT10-0FA1**	1 unit	1.100	5.400
0.5	2	▶	**4AM48 42–4TT10-0FA0**	1 unit	1.100	7.000	B	**4AM48 42–4TT10-0FA1**	1 unit	1.100	7.000
0.63	2.35	▶	**4AM52 42–4TT10-0FA0**	1 unit	1.700	7.900		–			
0.8	3.4	▶	**4AM55 42–4TT10-0FA0**	1 unit	1.900	11.000		–			
1	5	▶	**4AM57 42–4TT10-0FA0**	1 unit	2.000	14.000		–			
1.6	7.3	▶	**4AM61 42–4TT10-0FA0**	1 unit	4.100	19.000		–			
2	9.7	▶	**4AM64 42–4TT10-0FA0**	1 unit	4.700	23.000		–			
2.5	13.3	▶	**4AM65 42–4TT10-0FA0**	1 unit	6.400	29.000		–			
4	17.8	▶	**4AT30 32–4TT10-0FA0**	1 unit	6.600	27.000		–			
5	19	B	**4AT36 12–4TT10-0FA0**	1 unit	5.200	32.000		–			
6.3	24.5	B	**4AT36 32–4TT10-0FA0**	1 unit	8.700	37.000		–			
8	31.1	B	**4AT39 12–4TT10-0FA0**	1 unit	9.900	45.000		–			
10	36.4	B	**4AT39 32–4TT10-0FA0**	1 unit	17.000	52.000		–			
IP00 degree of protection, standard rail mounting [4]											
0.063	0.19	▶	**4AM32 42–4TT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–4TT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–4TT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–4TT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–4TT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–4TT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–4TT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–4TT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–4TT10-0FB0**	1 unit	0.670	4.500	B	**4AM43 42–4TT10-0FB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–4TT10-0FB0**	1 unit	1.100	5.400	B	**4AM46 42–4TT10-0FB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–4TT10-0FB0**	1 unit	1.100	7.000	B	**4AM48 42–4TT10-0FB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–4TT10-0FC0**	1 unit	0.240	2.700	B	**4AM32 42–4TT10-0FC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–4TT10-0FC0**	1 unit	0.260	3.300	B	**4AM34 42–4TT10-0FC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–4TT10-0FC0**	1 unit	0.320	5.600	B	**4AM38 42–4TT10-0FC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–4TT10-0FC0**	1 unit	0.590	6.600	B	**4AM40 42–4TT10-0FC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–4TT10-0FC0**	1 unit	0.670	7.400	B	**4AM43 42–4TT10-0FC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–4TT10-0FC0**	1 unit	1.100	8.300	B	**4AM46 42–4TT10-0FC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–4TT10-0FC0**	1 unit	1.100	9.900	B	**4AM48 42–4TT10-0FC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–4TT10-0FC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–4TT10-0FC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–4TT10-0FC0**	1 unit	2.000	16.900		–			
1.36	7.3	B	**4AM61 42–4TT10-0FC0**	1 unit	4.100	26.700		–			
1.7	9.7	B	**4AM64 42–4TT10-0FC0**	1 unit	4.700	30.700		–			
2.13	13.3	B	**4AM65 42–4TT10-0FC0**	1 unit	6.400	36.700		–			
3.6	17.8	B	**4AT30 32–4TT10-0FC0**	1 unit	6.600	34.700		–			
4.5	19	B	**4AT36 12–4TT10-0FC0**	1 unit	5.200	39.700		–			
5.6	24.5	B	**4AT36 32–4TT10-0FC0**	1 unit	8.700	44.700		–			
7.1	31.1	B	**4AT39 12–4TT10-0FC0**	1 unit	9.900	58.900		–			
9	36.4	B	**4AT39 32–4TT10-0FC0**	1 unit	17.000	65.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–4TT10-0FD0**	1 unit	0.240	2.700	B	**4AM32 42–4TT10-0FD1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–4TT10-0FD0**	1 unit	0.260	3.300	B	**4AM34 42–4TT10-0FD1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–4TT10-0FD0**	1 unit	0.320	5.600	B	**4AM38 42–4TT10-0FD1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–4TT10-0FD0**	1 unit	0.590	6.600	B	**4AM40 42–4TT10-0FD1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–4TT10-0FD0**	1 unit	0.670	7.400	B	**4AM43 42–4TT10-0FD1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–4TT10-0FD0**	1 unit	1.100	8.300	B	**4AM46 42–4TT10-0FD1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–4TT10-0FD0**	1 unit	1.100	9.900	B	**4AM48 42–4TT10-0FD1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–4TT10-0FD0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–4TT10-0FD0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–4TT10-0FD0**	1 unit	2.000	16.900		–			
1.2	7.3	B	**4AM61 42–4TT10-0FD0**	1 unit	4.100	26.700		–			
1.5	9.7	B	**4AM64 42–4TT10-0FD0**	1 unit	4.700	30.700		–			
1.875	13.3	B	**4AM65 42–4TT10-0FD0**	1 unit	6.400	36.700		–			
3.15	17.8	B	**4AT30 32–4TT10-0FD0**	1 unit	6.600	34.700		–			
4	19	B	**4AT36 12–4TT10-0FD0**	1 unit	5.200	39.700		–			
5	24.5	B	**4AT36 32–4TT10-0FD0**	1 unit	8.700	44.700		–			
6.3	31.1	B	**4AT39 12–4TT10-0FD0**	1 unit	9.900	58.900		–			
8	36.4	B	**4AT39 32–4TT10-0FD0**	1 unit	17.000	65.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 110 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	▶	**4AM32 42–5AJ10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5AJ10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5AJ10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5AJ10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5AJ10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5AJ10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5AJ10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5AJ10-0FA1**	1 unit	0.590	3.700
0.315	1.12	▶	**4AM43 42–5AJ10-0FA0**	1 unit	0.670	4.500	B	**4AM43 42–5AJ10-0FA1**	1 unit	0.670	4.500
0.4	1.44	▶	**4AM46 42–5AJ10-0FA0**	1 unit	1.100	5.400	B	**4AM46 42–5AJ10-0FA1**	1 unit	1.100	5.400
0.5	2	▶	**4AM48 42–5AJ10-0FA0**	1 unit	1.100	7.000	B	**4AM48 42–5AJ10-0FA1**	1 unit	1.100	7.000
0.63	2.35	▶	**4AM52 42–5AJ10-0FA0**	1 unit	1.700	7.900		–			
0.8	3.4	▶	**4AM55 42–5AJ10-0FA0**	1 unit	1.900	11.000		–			
1	5	▶	**4AM57 42–5AJ10-0FA0**	1 unit	2.000	14.000		–			
1.6	7.3	B	**4AM61 42–5AJ10-0FA0**	1 unit	4.100	19.000		–			
2	9.7	B	**4AM64 42–5AJ10-0FA0**	1 unit	4.700	23.000		–			
2.5	13.3	B	**4AM65 42–5AJ10-0FA0**	1 unit	6.400	29.000		–			
4	17.8	B	**4AT30 32–5AJ10-0FA0**	1 unit	6.600	27.000		–			
5	19	B	**4AT36 12–5AJ10-0FA0**	1 unit	5.200	32.000		–			
6.3	24.5	B	**4AT36 32–5AJ10-0FA0**	1 unit	8.700	37.000		–			
8	31.1	B	**4AT39 12–5AJ10-0FA0**	1 unit	9.900	45.000		–			
10	36.4	B	**4AT39 32–5AJ10-0FA0**	1 unit	17.000	52.000		–			
IP00 degree of protection, standard rail mounting [4]											
0.063	0.19	▶	**4AM32 42–5AJ10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5AJ10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5AJ10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5AJ10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5AJ10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5AJ10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5AJ10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5AJ10-0FA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–5AJ10-0FB0**	1 unit	0.670	4.500	B	**4AM43 42–5AJ10-0FB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–5AJ10-0FB0**	1 unit	1.100	5.400	B	**4AM46 42–5AJ10-0FB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–5AJ10-0FB0**	1 unit	1.100	7.000	B	**4AM48 42–5AJ10-0FB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–5AJ10-0FC0**	1 unit	0.240	2.700	B	**4AM32 42–5AJ10-0FC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–5AJ10-0FC0**	1 unit	0.260	3.300	B	**4AM34 42–5AJ10-0FC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–5AJ10-0FC0**	1 unit	0.320	5.600	B	**4AM38 42–5AJ10-0FC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–5AJ10-0FC0**	1 unit	0.590	6.600	B	**4AM40 42–5AJ10-0FC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–5AJ10-0FC0**	1 unit	0.670	7.400	B	**4AM43 42–5AJ10-0FC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–5AJ10-0FC0**	1 unit	1.100	8.300	B	**4AM46 42–5AJ10-0FC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–5AJ10-0FC0**	1 unit	1.100	9.900	B	**4AM48 42–5AJ10-0FC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–5AJ10-0FC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–5AJ10-0FC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–5AJ10-0FC0**	1 unit	2.000	16.900		–			
1.36	7.3	B	**4AM61 42–5AJ10-0FC0**	1 unit	4.100	26.700		–			
1.7	9.7	B	**4AM64 42–5AJ10-0FC0**	1 unit	4.700	30.700		–			
2.13	13.3	B	**4AM65 42–5AJ10-0FC0**	1 unit	6.400	36.700		–			
3.6	17.8	B	**4AT30 32–5AJ10-0FC0**	1 unit	6.600	34.700		–			
4.5	19	B	**4AT36 12–5AJ10-0FC0**	1 unit	5.200	39.700		–			
5.6	24.5	B	**4AT36 32–5AJ10-0FC0**	1 unit	8.700	44.700		–			
7.1	31.1	B	**4AT39 12–5AJ10-0FC0**	1 unit	9.900	58.900		–			
9	36.4	B	**4AT39 32–5AJ10-0FC0**	1 unit	17.000	65.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–5AJ10-0FD0**	1 unit	0.240	2.700	B	**4AM32 42–5AJ10-0FD1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–5AJ10-0FD0**	1 unit	0.260	3.300	B	**4AM34 42–5AJ10-0FD1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–5AJ10-0FD0**	1 unit	0.320	5.600	B	**4AM38 42–5AJ10-0FD1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–5AJ10-0FD0**	1 unit	0.590	6.600	B	**4AM40 42–5AJ10-0FD1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–5AJ10-0FD0**	1 unit	0.670	7.400	B	**4AM43 42–5AJ10-0FD1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–5AJ10-0FD0**	1 unit	1.100	8.300	B	**4AM46 42–5AJ10-0FD1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–5AJ10-0FD0**	1 unit	1.100	9.900	B	**4AM48 42–5AJ10-0FD1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–5AJ10-0FD0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–5AJ10-0FD0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–5AJ10-0FD0**	1 unit	2.000	16.900		–			
1.2	7.3	B	**4AM61 42–5AJ10-0FD0**	1 unit	4.100	26.700		–			
1.5	9.7	B	**4AM64 42–5AJ10-0FD0**	1 unit	4.700	30.700		–			
1.875	13.3	B	**4AM65 42–5AJ10-0FD0**	1 unit	6.400	36.700		–			
3.15	17.8	B	**4AT30 32–5AJ10-0FD0**	1 unit	6.600	34.700		–			
4	19	B	**4AT36 12–5AJ10-0FD0**	1 unit	5.200	39.700		–			
5	24.5	B	**4AT36 32–5AJ10-0FD0**	1 unit	8.700	44.700		–			
6.3	31.1	B	**4AT39 12–5AJ10-0FD0**	1 unit	9.900	58.900		–			
8	36.4	B	**4AT39 32–5AJ10-0FD0**	1 unit	17.000	65.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating, control and line transformers

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %,
Rated output voltage U_{2N} 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	▶	**4AM32 42–5AT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5AT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5AT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5AT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5AT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5AT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5AT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5AT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	▶	**4AM43 42–5AT10-0FA0**	1 unit	0.670	4.500	B	**4AM43 42–5AT10-0FA1**	1 unit	0.670	4.500
0.4	1.44	▶	**4AM46 42–5AT10-0FA0**	1 unit	1.100	5.400	B	**4AM46 42–5AT10-0FA1**	1 unit	1.100	5.400
0.5	2	▶	**4AM48 42–5AT10-0FA0**	1 unit	1.100	7.000	B	**4AM48 42–5AT10-0FA1**	1 unit	1.100	7.000
0.63	2.35	▶	**4AM52 42–5AT10-0FA0**	1 unit	1.700	7.900		–			
0.8	3.4	▶	**4AM55 42–5AT10-0FA0**	1 unit	1.900	11.000		–			
1	5	▶	**4AM57 42–5AT10-0FA0**	1 unit	2.000	14.000		–			
1.6	7.3	▶	**4AM61 42–5AT10-0FA0**	1 unit	4.100	19.000		–			
2	9.7	▶	**4AM64 42–5AT10-0FA0**	1 unit	4.700	23.000		–			
2.5	13.3	▶	**4AM65 42–5AT10-0FA0**	1 unit	6.400	29.000		–			
4	17.8	▶	**4AT30 32–5AT10-0FA0**	1 unit	6.600	27.000		–			
5	19	▶	**4AT36 12–5AT10-0FA0**	1 unit	5.200	32.000		–			
6.3	24.5	▶	**4AT36 32–5AT10-0FA0**	1 unit	8.700	37.000		–			
8	31.1	B	**4AT39 12–5AT10-0FA0**	1 unit	9.900	45.000		–			
10	36.4	B	**4AT39 32–5AT10-0FA0**	1 unit	17.000	52.000		–			
IP00 degree of protection, standard rail mounting [4]											
0.063	0.19	▶	**4AM32 42–5AT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5AT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5AT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5AT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5AT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5AT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5AT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5AT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–5AT10-0FB0**	1 unit	0.670	4.500	B	**4AM43 42–5AT10-0FB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–5AT10-0FB0**	1 unit	1.100	5.400	B	**4AM46 42–5AT10-0FB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–5AT10-0FB0**	1 unit	1.100	7.000	B	**4AM48 42–5AT10-0FB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–5AT10-0FC0**	1 unit	0.240	2.700	B	**4AM32 42–5AT10-0FC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–5AT10-0FC0**	1 unit	0.260	3.300	B	**4AM34 42–5AT10-0FC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–5AT10-0FC0**	1 unit	0.320	5.600	B	**4AM38 42–5AT10-0FC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–5AT10-0FC0**	1 unit	0.590	6.600	B	**4AM40 42–5AT10-0FC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–5AT10-0FC0**	1 unit	0.670	7.400	B	**4AM43 42–5AT10-0FC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–5AT10-0FC0**	1 unit	1.100	8.300	B	**4AM46 42–5AT10-0FC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–5AT10-0FC0**	1 unit	1.100	9.900	B	**4AM48 42–5AT10-0FC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–5AT10-0FC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–5AT10-0FC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–5AT10-0FC0**	1 unit	2.000	16.900		–			
1.36	7.3	B	**4AM61 42–5AT10-0FC0**	1 unit	4.100	26.700		–			
1.7	9.7	B	**4AM64 42–5AT10-0FC0**	1 unit	4.700	30.700		–			
2.13	13.3	B	**4AM65 42–5AT10-0FC0**	1 unit	6.400	36.700		–			
3.6	17.8	B	**4AT30 32–5AT10-0FC0**	1 unit	6.600	34.700		–			
4.5	19	B	**4AT36 12–5AT10-0FC0**	1 unit	5.200	39.700		–			
5.6	24.5	B	**4AT36 32–5AT10-0FC0**	1 unit	8.700	44.700		–			
7.1	31.1	B	**4AT39 12–5AT10-0FC0**	1 unit	9.900	58.900		–			
9	36.4	B	**4AT39 32–5AT10-0FC0**	1 unit	17.000	65.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–5AT10-0FD0**	1 unit	0.240	2.700	B	**4AM32 42–5AT10-0FD1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–5AT10-0FD0**	1 unit	0.260	3.300	B	**4AM34 42–5AT10-0FD1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–5AT10-0FD0**	1 unit	0.320	5.600	B	**4AM38 42–5AT10-0FD1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–5AT10-0FD0**	1 unit	0.590	6.600	B	**4AM40 42–5AT10-0FD1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–5AT10-0FD0**	1 unit	0.670	7.400	B	**4AM43 42–5AT10-0FD1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–5AT10-0FD0**	1 unit	1.100	8.300	B	**4AM46 42–5AT10-0FD1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–5AT10-0FD0**	1 unit	1.100	9.900	B	**4AM48 42–5AT10-0FD1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–5AT10-0FD0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–5AT10-0FD0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–5AT10-0FD0**	1 unit	2.000	16.900		–			
1.2	7.3	B	**4AM61 42–5AT10-0FD0**	1 unit	4.100	26.700		–			
1.5	9.7	B	**4AM64 42–5AT10-0FD0**	1 unit	4.700	30.700		–			
1.875	13.3	B	**4AM65 42–5AT10-0FD0**	1 unit	6.400	36.700		–			
3.15	17.8	B	**4AT30 32–5AT10-0FD0**	1 unit	6.600	34.700		–			
4	19	B	**4AT36 12–5AT10-0FD0**	1 unit	5.200	39.700		–			
5	24.5	B	**4AT36 32–5AT10-0FD0**	1 unit	8.700	44.700		–			
6.3	31.1	B	**4AT39 12–5AT10-0FD0**	1 unit	9.900	58.900		–			
8	36.4	B	**4AT39 32–5AT10-0FD0**	1 unit	17.000	65.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

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*** This quantity or a multiple thereof can be ordered.**

With one input voltage

Rated input voltage U_{1N} 440 V ± 5 %, Rated output voltage U_{2N} 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	►	**4AM32 42–5CT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5CT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–5CT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5CT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–5CT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5CT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–5CT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5CT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	►	**4AM43 42–5CT10-0FA0**	1 unit	0.670	4.500	B	**4AM43 42–5CT10-0FA1**	1 unit	0.670	4.500
0.4	1.44	►	**4AM46 42–5CT10-0FA0**	1 unit	1.100	5.400	B	**4AM46 42–5CT10-0FA1**	1 unit	1.100	5.400
0.5	2	►	**4AM48 42–5CT10-0FA0**	1 unit	1.100	7.000	B	**4AM48 42–5CT10-0FA1**	1 unit	1.100	7.000
0.63	2.35	►	**4AM52 42–5CT10-0FA0**	1 unit	1.700	7.900		–			
0.8	3.4	►	**4AM55 42–5CT10-0FA0**	1 unit	1.900	11.000		–			
1	5	►	**4AM57 42–5CT10-0FA0**	1 unit	2.000	14.000		–			
1.6	7.3	►	**4AM61 42–5CT10-0FA0**	1 unit	4.100	19.000		–			
2	9.7	►	**4AM64 42–5CT10-0FA0**	1 unit	4.700	23.000		–			
2.5	13.3	B	**4AM65 42–5CT10-0FA0**	1 unit	6.400	29.000		–			
4	17.8	B	**4AT30 32–5CT10-0FA0**	1 unit	6.600	27.000		–			
5	19	B	**4AT36 12–5CT10-0FA0**	1 unit	5.200	32.000		–			
6.3	24.5	B	**4AT36 32–5CT10-0FA0**	1 unit	8.700	37.000		–			
8	31.1	B	**4AT39 12–5CT10-0FA0**	1 unit	9.900	45.000		–			
10	36.4	B	**4AT39 32–5CT10-0FA0**	1 unit	17.000	52.000		–			
IP00 degree of protection, standard rail mounting [4]											
0.063	0.19	►	**4AM32 42–5CT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5CT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	►	**4AM34 42–5CT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5CT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	►	**4AM38 42–5CT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5CT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	►	**4AM40 42–5CT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5CT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–5CT10-0FB0**	1 unit	0.670	4.500	B	**4AM43 42–5CT10-0FB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–5CT10-0FB0**	1 unit	1.100	5.400	B	**4AM46 42–5CT10-0FB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–5CT10-0FB0**	1 unit	1.100	7.000	B	**4AM48 42–5CT10-0FB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–5CT10-0FC0**	1 unit	0.240	2.700	B	**4AM32 42–5CT10-0FC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–5CT10-0FC0**	1 unit	0.260	3.300	B	**4AM34 42–5CT10-0FC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–5CT10-0FC0**	1 unit	0.320	5.600	B	**4AM38 42–5CT10-0FC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–5CT10-0FC0**	1 unit	0.590	6.600	B	**4AM40 42–5CT10-0FC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–5CT10-0FC0**	1 unit	0.670	7.400	B	**4AM43 42–5CT10-0FC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–5CT10-0FC0**	1 unit	1.100	8.300	B	**4AM46 42–5CT10-0FC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–5CT10-0FC0**	1 unit	1.100	9.900	B	**4AM48 42–5CT10-0FC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–5CT10-0FC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–5CT10-0FC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–5CT10-0FC0**	1 unit	2.000	16.900		–			
1.36	7.3	B	**4AM61 42–5CT10-0FC0**	1 unit	4.100	26.700		–			
1.7	9.7	B	**4AM64 42–5CT10-0FC0**	1 unit	4.700	30.700		–			
2.13	13.3	B	**4AM65 42–5CT10-0FC0**	1 unit	6.400	36.700		–			
3.6	17.8	B	**4AT30 32–5CT10-0FC0**	1 unit	6.600	34.700		–			
4.5	19	B	**4AT36 12–5CT10-0FC0**	1 unit	5.200	39.700		–			
5.6	24.5	B	**4AT36 32–5CT10-0FC0**	1 unit	8.700	44.700		–			
7.1	31.1	B	**4AT39 12–5CT10-0FC0**	1 unit	9.900	58.900		–			
9	36.4	B	**4AT39 32–5CT10-0FC0**	1 unit	17.000	65.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–5CT10-0FD0**	1 unit	0.240	2.700	B	**4AM32 42–5CT10-0FD1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–5CT10-0FD0**	1 unit	0.260	3.300	B	**4AM34 42–5CT10-0FD1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–5CT10-0FD0**	1 unit	0.320	5.600	B	**4AM38 42–5CT10-0FD1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–5CT10-0FD0**	1 unit	0.590	6.600	B	**4AM40 42–5CT10-0FD1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–5CT10-0FD0**	1 unit	0.670	7.400	B	**4AM43 42–5CT10-0FD1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–5CT10-0FD0**	1 unit	1.100	8.300	B	**4AM46 42–5CT10-0FD1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–5CT10-0FD0**	1 unit	1.100	9.900	B	**4AM48 42–5CT10-0FD1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–5CT10-0FD0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–5CT10-0FD0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–5CT10-0FD0**	1 unit	2.000	16.900		–			
1.2	7.3	B	**4AM61 42–5CT10-0FD0**	1 unit	4.100	26.700		–			
1.5	9.7	B	**4AM64 42–5CT10-0FD0**	1 unit	4.700	30.700		–			
1.875	13.3	B	**4AM65 42–5CT10-0FD0**	1 unit	6.400	36.700		–			
3.15	17.8	B	**4AT30 32–5CT10-0FD0**	1 unit	6.600	34.700		–			
4	19	B	**4AT36 12–5CT10-0FD0**	1 unit	5.200	39.700		–			
5	24.5	B	**4AT36 32–5CT10-0FD0**	1 unit	8.700	44.700		–			
6.3	31.1	B	**4AT39 12–5CT10-0FD0**	1 unit	9.900	58.900		–			
8	36.4	B	**4AT39 32–5CT10-0FD0**	1 unit	17.000	65.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating, control and line transformers

With one input voltage

Rated input voltage U_{1N} 500 V ± 5 %, Rated output voltage U_{2N} 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	▶	**4AM32 42–5FT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5FT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5FT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5FT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5FT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5FT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5FT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5FT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	▶	**4AM43 42–5FT10-0FA0**	1 unit	0.670	4.500	B	**4AM43 42–5FT10-0FA1**	1 unit	0.670	4.500
0.4	1.44	▶	**4AM46 42–5FT10-0FA0**	1 unit	1.100	5.400	B	**4AM46 42–5FT10-0FA1**	1 unit	1.100	5.400
0.5	2	▶	**4AM48 42–5FT10-0FA0**	1 unit	1.100	7.000	B	**4AM48 42–5FT10-0FA1**	1 unit	1.100	7.000
0.63	2.35	▶	**4AM52 42–5FT10-0FA0**	1 unit	1.700	7.900		–			
0.8	3.4	▶	**4AM55 42–5FT10-0FA0**	1 unit	1.900	11.000		–			
1	5	▶	**4AM57 42–5FT10-0FA0**	1 unit	2.000	14.000		–			
1.6	7.3	▶	**4AM61 42–5FT10-0FA0**	1 unit	4.100	19.000		–			
2	9.7	▶	**4AM64 42–5FT10-0FA0**	1 unit	4.700	23.000		–			
2.5	13.3	▶	**4AM65 42–5FT10-0FA0**	1 unit	6.400	29.000		–			
4	17.8	▶	**4AT30 32–5FT10-0FA0**	1 unit	6.600	27.000		–			
5	19	B	**4AT36 12–5FT10-0FA0**	1 unit	5.200	32.000		–			
6.3	24.5	B	**4AT36 32–5FT10-0FA0**	1 unit	8.700	37.000		–			
8	31.1	B	**4AT39 12–5FT10-0FA0**	1 unit	9.900	45.000		–			
10	36.4	B	**4AT39 32–5FT10-0FA0**	1 unit	17.000	52.000		–			
IP00 degree of protection, standard rail mounting [4]											
0.063	0.19	▶	**4AM32 42–5FT10-0FA0**	1 unit	0.240	1.400	B	**4AM32 42–5FT10-0FA1**	1 unit	0.240	1.400
0.1	0.31	▶	**4AM34 42–5FT10-0FA0**	1 unit	0.260	2.000	B	**4AM34 42–5FT10-0FA1**	1 unit	0.260	2.000
0.16	0.49	▶	**4AM38 42–5FT10-0FA0**	1 unit	0.320	2.700	B	**4AM38 42–5FT10-0FA1**	1 unit	0.320	2.700
0.25	0.85	▶	**4AM40 42–5FT10-0FA0**	1 unit	0.590	3.700	B	**4AM40 42–5FT10-0FA1**	1 unit	0.590	3.700
0.315	1.12	A	**4AM43 42–5FT10-0FB0**	1 unit	0.670	4.500	B	**4AM43 42–5FT10-0FB1**	1 unit	0.670	4.500
0.4	1.44	A	**4AM46 42–5FT10-0FB0**	1 unit	1.100	5.400	B	**4AM46 42–5FT10-0FB1**	1 unit	1.100	5.400
0.5	2	A	**4AM48 42–5FT10-0FB0**	1 unit	1.100	7.000	B	**4AM48 42–5FT10-0FB1**	1 unit	1.100	7.000
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–5FT10-0FC0**	1 unit	0.240	2.700	B	**4AM32 42–5FT10-0FC1**	1 unit	0.240	2.700
0.09	0.31	B	**4AM34 42–5FT10-0FC0**	1 unit	0.260	3.300	B	**4AM34 42–5FT10-0FC1**	1 unit	0.260	3.300
0.145	0.49	B	**4AM38 42–5FT10-0FC0**	1 unit	0.320	5.600	B	**4AM38 42–5FT10-0FC1**	1 unit	0.320	5.600
0.225	0.85	B	**4AM40 42–5FT10-0FC0**	1 unit	0.590	6.600	B	**4AM40 42–5FT10-0FC1**	1 unit	0.590	6.600
0.268	1.12	B	**4AM43 42–5FT10-0FC0**	1 unit	0.670	7.400	B	**4AM43 42–5FT10-0FC1**	1 unit	0.670	7.400
0.34	1.44	B	**4AM46 42–5FT10-0FC0**	1 unit	1.100	8.300	B	**4AM46 42–5FT10-0FC1**	1 unit	1.100	8.300
0.425	2	B	**4AM48 42–5FT10-0FC0**	1 unit	1.100	9.900	B	**4AM48 42–5FT10-0FC1**	1 unit	1.100	9.900
0.535	2.35	B	**4AM52 42–5FT10-0FC0**	1 unit	1.700	10.800		–			
0.68	3.4	B	**4AM55 42–5FT10-0FC0**	1 unit	1.900	13.900		–			
0.85	5	B	**4AM57 42–5FT10-0FC0**	1 unit	2.000	16.900		–			
1.36	7.3	B	**4AM61 42–5FT10-0FC0**	1 unit	4.100	26.700		–			
1.7	9.7	B	**4AM64 42–5FT10-0FC0**	1 unit	4.700	30.700		–			
2.13	13.3	B	**4AM65 42–5FT10-0FC0**	1 unit	6.400	36.700		–			
3.6	17.8	B	**4AT30 32–5FT10-0FC0**	1 Unit	6.600	34.700		–			
4.5	19	B	**4AT36 12–5FT10-0FC0**	1 Unit	5.200	39.700		–			
5.6	24.5	B	**4AT36 32–5FT10-0FC0**	1 Unit	8.700	44.700		–			
7.1	31.1	B	**4AT39 12–5FT10-0FC0**	1 Unit	9.900	58.900		–			
9	36.4	B	**4AT39 32–5FT10-0FC0**	1 Unit	17.000	65.900		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–5FT10-0FD0**	1 unit	0.240	2.700	B	**4AM32 42–5FT10-0FD1**	1 unit	0.240	2.700
0.08	0.31	B	**4AM34 42–5FT10-0FD0**	1 unit	0.260	3.300	B	**4AM34 42–5FT10-0FD1**	1 unit	0.260	3.300
0.128	0.49	B	**4AM38 42–5FT10-0FD0**	1 unit	0.320	5.600	B	**4AM38 42–5FT10-0FD1**	1 unit	0.320	5.600
0.2	0.85	B	**4AM40 42–5FT10-0FD0**	1 unit	0.590	6.600	B	**4AM40 42–5FT10-0FD1**	1 unit	0.590	6.600
0.236	1.12	B	**4AM43 42–5FT10-0FD0**	1 unit	0.670	7.400	B	**4AM43 42–5FT10-0FD1**	1 unit	0.670	7.400
0.3	1.44	B	**4AM46 42–5FT10-0FD0**	1 unit	1.100	8.300	B	**4AM46 42–5FT10-0FD1**	1 unit	1.100	8.300
0.375	2	B	**4AM48 42–5FT10-0FD0**	1 unit	1.100	9.900	B	**4AM48 42–5FT10-0FD1**	1 unit	1.100	9.900
0.475	2.35	B	**4AM52 42–5FT10-0FD0**	1 unit	1.700	10.800		–			
0.6	3.4	B	**4AM55 42–5FT10-0FD0**	1 unit	1.900	13.900		–			
0.75	5	B	**4AM57 42–5FT10-0FD0**	1 unit	2.000	16.900		–			
1.2	7.3	B	**4AM61 42–5FT10-0FD0**	1 unit	4.100	26.700		–			
1.5	9.7	B	**4AM64 42–5FT10-0FD0**	1 unit	4.700	30.700		–			
1.875	13.3	B	**4AM65 42–5FT10-0FD0**	1 unit	6.400	36.700		–			
3.15	17.8	B	**4AT30 32–5FT10-0FD0**	1 unit	6.600	34.700		–			
4	19	B	**4AT36 12–5FT10-0FD0**	1 unit	5.200	39.700		–			
5	24.5	B	**4AT36 32–5FT10-0FD0**	1 unit	8.700	44.700		–			
6.3	31.1	B	**4AT39 12–5FT10-0FD0**	1 unit	9.900	58.900		–			
8	36.4	B	**4AT39 32–5FT10-0FD0**	1 unit	17.000	65.900		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

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*** This quantity or a multiple thereof can be ordered.**

For European voltages

Rated input voltage U_{1N} 400/230 V ± 15 V, Rated output voltage U_{2N} 2 × 115 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [2]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version [4]											
0.063	0.19	►	**4AM32 42–8JD40-0FA0**	1 unit	0.340	1.500	B	**4AM32 42–8JD40-0FA1**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8JD40-0FA0**	1 unit	0.360	2.100	B	**4AM34 42–8JD40-0FA1**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8JD40-0FA0**	1 unit	0.450	2.800	B	**4AM38 42–8JD40-0FA1**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8JD40-0FA0**	1 unit	0.820	3.900	B	**4AM40 42–8JD40-0FA1**	1 unit	0.820	3.900
0.315	1.12	►	**4AM43 42–8JD40-0FA0**	1 unit	1.000	4.800	B	**4AM43 42–8JD40-0FA1**	1 unit	1.000	4.800
0.4	1.44	►	**4AM46 42–8JD40-0FA0**	1 unit	1.500	5.8.00	B	**4AM46 42–8JD40-0FA1**	1 unit	1.500	5.800
0.5	2	►	**4AM48 42–8JD40-0FA0**	1 unit	1.500	7.400	B	**4AM48 42–8JD40-0FA1**	1 unit	1.500	7.400
0.63	2.35	►	**4AM52 42–8JD40-0FA0**	1 unit	2.400	8.600		–			
0.8	3.4	►	**4AM55 42–8JD40-0FA0**	1 unit	2.600	12.000		–			
1	5	►	**4AM57 42–8JD40-0FA0**	1 unit	2.800	15.000		–			
1.6	7.3	►	**4AM61 42–8JD40-0FA0**	1 unit	5.700	20.000		–			
2	9.7	B	**4AM64 42–8JD40-0FA0**	1 unit	6.500	24.000		–			
2.5	13.3	B	**4AM65 42–8JD40-0FA0**	1 unit	8.900	32.000		–			
IP00 degree of protection. standard rail mounting [4]											
0.063	0.19	►	**4AM32 42–8JD40-0FA0**	1 unit	0.340	1.500	B	**4AM32 42–8JD40-0FA1**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8JD40-0FA0**	1 unit	0.360	2.100	B	**4AM34 42–8JD40-0FA1**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8JD40-0FA0**	1 unit	0.450	2.800	B	**4AM38 42–8JD40-0FA1**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8JD40-0FA0**	1 unit	0.820	3.900	B	**4AM40 42–8JD40-0FA1**	1 unit	0.820	3.900
0.315	1.12	A	**4AM43 42–8JD40-0FB0**	1 unit	1.000	4.800	B	**4AM43 42–8JD40-0FB1**	1 unit	1.000	4.800
0.4	1.44	A	**4AM46 42–8JD40-0FB0**	1 unit	1.500	5.800	B	**4AM46 42–8JD40-0FB1**	1 unit	1.500	5.800
0.5	2	A	**4AM48 42–8JD40-0FB0**	1 unit	1.500	7.400	B	**4AM48 42–8JD40-0FB1**	1 unit	1.500	7.400
IP23 degree of protection											
0.057	0.19	B	**4AM32 42–8JD40-0FC0**	1 unit	0.340	2.800	B	**4AM32 42–8JD40-0FC1**	1 unit	0.340	2.800
0.09	0.31	B	**4AM34 42–8JD40-0FC0**	1 unit	0.360	3.400	B	**4AM34 42–8JD40-0FC1**	1 unit	0.360	3.400
0.145	0.49	B	**4AM38 42–8JD40-0FC0**	1 unit	0.450	5.700	B	**4AM38 42–8JD40-0FC1**	1 unit	0.450	5.700
0.225	0.85	B	**4AM40 42–8JD40-0FC0**	1 unit	0.820	6.800	B	**4AM40 42–8JD40-0FC1**	1 unit	0.820	6.800
0.268	1.12	B	**4AM43 42–8JD40-0FC0**	1 unit	1.000	7.700	B	**4AM43 42–8JD40-0FC1**	1 unit	1.000	7.700
0.34	1.44	B	**4AM46 42–8JD40-0FC0**	1 unit	1.500	8.700	B	**4AM46 42–8JD40-0FC1**	1 unit	1.500	8.700
0.425	2	B	**4AM48 42–8JD40-0FC0**	1 unit	1.500	10.300	B	**4AM48 42–8JD40-0FC1**	1 unit	1.500	10.300
0.535	2.35	B	**4AM52 42–8JD40-0FC0**	1 unit	2.400	11.500		–			
0.68	3.4	B	**4AM55 42–8JD40-0FC0**	1 unit	2.600	13.900		–			
0.85	5	B	**4AM57 42–8JD40-0FC0**	1 unit	2.800	17.900		–			
1.36	7.3	B	**4AM61 42–8JD40-0FC0**	1 unit	5.700	27.700		–			
1.7	9.7	B	**4AM64 42–8JD40-0FC0**	1 unit	6.500	31.700		–			
2.13	13.3	B	**4AM65 42–8JD40-0FC0**	1 unit	8.900	39.700		–			
IP54 degree of protection											
0.05	0.19	B	**4AM32 42–8JD40-0FD0**	1 unit	0.340	2.800	B	**4AM32 42–8JD40-0FD1**	1 unit	0.340	2.800
0.08	0.31	B	**4AM34 42–8JD40-0FD0**	1 unit	0.360	3.400	B	**4AM34 42–8JD40-0FD1**	1 unit	0.360	3.400
0.128	0.49	B	**4AM38 42–8JD40-0FD0**	1 unit	0.450	5.700	B	**4AM38 42–8JD40-0FD1**	1 unit	0.450	5.700
0.2	0.85	B	**4AM40 42–8JD40-0FD0**	1 unit	0.820	6.800	B	**4AM40 42–8JD40-0FD1**	1 unit	0.820	6.800
0.236	1.12	B	**4AM43 42–8JD40-0FD0**	1 unit	1.000	7.700	B	**4AM43 42–8JD40-0FD1**	1 unit	1.000	7.700
0.3	1.44	B	**4AM46 42–8JD40-0FD0**	1 unit	1.500	8.700	B	**4AM46 42–8JD40-0FD1**	1 unit	1.500	8.700
0.375	2	B	**4AM48 42–8JD40-0FD0**	1 unit	1.500	10.300	B	**4AM48 42–8JD40-0FD1**	1 unit	1.500	10.300
0.475	2.35	B	**4AM52 42–8JD40-0FD0**	1 unit	2.400	11.500		–			
0.6	3.4	B	**4AM55 42–8JD40-0FD0**	1 unit	2.600	13.900		–			
0.75	5	B	**4AM57 42–8JD40-0FD0**	1 unit	2.800	17.900		–			
1.2	7.3	B	**4AM61 42–8JD40-0FD0**	1 unit	5.700	27.700		–			
1.5	9.7	B	**4AM64 42–8JD40-0FD0**	1 unit	6.500	31.700		–			
1.875	13.3	B	**4AM65 42–8JD40-0FD0**	1 unit	8.900	39.700		–			

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating, control and line transformers

Multi-voltage version

Rated input voltage U_{1N} 550–525–500–480–460–440–415–400–380–230–208 V,
Rated output voltage U_{2N} 2 × 115 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg
IP00 degree of protection, standard version [4]						
0.063	0.19	►	**4AM32 42–8DD40-0FA0**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8DD40-0FA0**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8DD40-0FA0**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8DD40-0FA0**	1 unit	0.820	3.900
0.315	1.12	►	**4AM43 42–8DD40-0FA0**	1 unit	1.000	4.800
0.4	1.44	►	**4AM46 42–8DD40-0FA0**	1 unit	1.500	5.800
0.5	2	►	**4AM48 42–8DD40-0FA0**	1 unit	1.500	7.400
0.63	2.35	►	**4AM52 42–8DD40-0FA0**	1 unit	2.400	8.600
0.8	3.4	►	**4AM55 42–8DD40-0FA0**	1 unit	2.600	12.000
1	5	►	**4AM57 42–8DD40-0FA0**	1 unit	2.800	15.000
1.6	7.3	►	**4AM61 42–8DD40-0FA0**	1 unit	5.700	20.000
2	9.7	►	**4AM64 42–8DD40-0FA0**	1 unit	6.500	24.000
2.5	13.3	►	**4AM65 42–8DD40-0FA0**	1 unit	8.900	32.000
4	17.8	►	**4AT30 32–8DD40-0FA0**	1 unit	9.300	29.000
5	19	►	**4AT36 12–8DD40-0FA0**	1 unit	7.300	35.000
6.3	24.5	►	**4AT36 32–8DD40-0FA0**	1 unit	12.200	41.000
8	31.1	B	**4AT39 12–8DD40-0FA0**	1 unit	13.900	49.000
10	36.4	B	**4AT39 32–8DD40-0FA0**	1 unit	23.700	59.000
IP00 degree of protection, standard rail mounting [4]						
0.063	0.19	►	**4AM32 42–8DD40-0FA0**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8DD40-0FA0**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8DD40-0FA0**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8DD40-0FA0**	1 unit	0.820	3.900
0.315	1.12	A	**4AM43 42–8DD40-0FB0**	1 unit	1.000	4.800
0.4	1.44	A	**4AM46 42–8DD40-0FB0**	1 unit	1.500	5.800
0.5	2	A	**4AM48 42–8DD40-0FB0**	1 unit	1.500	7.400
IP23 degree of protection						
0.057	0.19	B	**4AM32 42–8DD40-0FC0**	1 unit	0.340	2.800
0.09	0.31	B	**4AM34 42–8DD40-0FC0**	1 unit	0.360	3.400
0.145	0.49	B	**4AM38 42–8DD40-0FC0**	1 unit	0.450	5.700
0.225	0.85	B	**4AM40 42–8DD40-0FC0**	1 unit	0.820	6.800
0.268	1.12	B	**4AM43 42–8DD40-0FC0**	1 unit	1.000	7.700
0.34	1.44	B	**4AM46 42–8DD40-0FC0**	1 unit	1.500	8.700
0.425	2	B	**4AM48 42–8DD40-0FC0**	1 unit	1.500	10.300
0.535	2.35	B	**4AM52 42–8DD40-0FC0**	1 unit	2.400	11.500
0.68	3.4	B	**4AM55 42–8DD40-0FC0**	1 unit	2.600	13.900
0.85	5	B	**4AM57 42–8DD40-0FC0**	1 unit	2.800	17.900
1.36	7.3	B	**4AM61 42–8DD40-0FC0**	1 unit	5.700	27.700
1.7	9.7	B	**4AM64 42–8DD40-0FC0**	1 unit	6.500	31.700
2.13	13.3	B	**4AM65 42–8DD40-0FC0**	1 unit	8.900	39.700
3.6	17.8	B	**4AT30 32–8DD40-0FC0**	1 unit	9.300	36.700
4.5	19	B	**4AT36 12–8DD40-0FC0**	1 unit	7.300	42.700
5.6	24.5	B	**4AT36 32–8DD40-0FC0**	1 unit	12.200	48.700
7.1	31.1	B	**4AT39 12–8DD40-0FC0**	1 unit	13.900	62.900
9	36.4	B	**4AT39 32–8DD40-0FC0**	1 unit	23.700	72.900
IP54 degree of protection						
0.05	0.19	B	**4AM32 42–8DD40-0FD0**	1 unit	0.340	2.800
0.08	0.31	B	**4AM34 42–8DD40-0FD0**	1 unit	0.360	3.400
0.128	0.49	B	**4AM38 42–8DD40-0FD0**	1 unit	0.450	5.700
0.2	0.85	B	**4AM40 42–8DD40-0FD0**	1 unit	0.820	6.800
0.236	1.12	B	**4AM43 42–8DD40-0FD0**	1 unit	1.000	7.700
0.3	1.44	B	**4AM46 42–8DD40-0FD0**	1 unit	1.500	8.700
0.375	2	B	**4AM48 42–8DD40-0FD0**	1 unit	1.500	10.300
0.475	2.35	B	**4AM52 42–8DD40-0FD0**	1 unit	2.400	11.500
0.6	3.4	B	**4AM55 42–8DD40-0FD0**	1 unit	2.600	13.900
0.75	5	B	**4AM57 42–8DD40-0FD0**	1 unit	2.800	17.900
1.2	7.3	B	**4AM61 42–8DD40-0FD0**	1 unit	5.700	27.700
1.5	9.7	B	**4AM64 42–8DD40-0FD0**	1 unit	6.500	31.700
1.875	13.3	B	**4AM65 42–8DD40-0FD0**	1 unit	8.900	39.700
3.15	17.8	B	**4AT30 32–8DD40-0FD0**	1 unit	9.300	36.700
4	19	B	**4AT36 12–8DD40-0FD0**	1 unit	7.300	42.700
5	24.5	B	**4AT36 32–8DD40-0FD0**	1 unit	12.200	48.700
6.3	31.1	B	**4AT39 12–8DD40-0FD0**	1 unit	13.900	62.900
8	36.4	B	**4AT39 32–8DD40-0FD0**	1 unit	23.700	72.900

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

Multi-voltage version

Rated input voltage U_{1N} 600–575–550–525–500–480–460–440–415–400–240–230 V, Rated output voltage U_{2N} 2 × 115 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg
IP00 degree of protection, standard version [4]						
0.063	0.19	►	**4AM32 42–8ED40-0FA0**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8ED40-0FA0**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8ED40-0FA0**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8ED40-0FA0**	1 unit	0.820	3.900
0.315	1.12	►	**4AM43 42–8ED40-0FA0**	1 unit	1.000	4.800
0.4	1.44	►	**4AM46 42–8ED40-0FA0**	1 unit	1.500	5.800
0.5	2	►	**4AM48 42–8ED40-0FA0**	1 unit	1.500	7.400
0.63	2.35	►	**4AM52 42–8ED40-0FA0**	1 unit	2.400	8.600
0.8	3.4	►	**4AM55 42–8ED40-0FA0**	1 unit	2.600	12.000
1	5	►	**4AM57 42–8ED40-0FA0**	1 unit	2.800	15.000
1.6	7.3	►	**4AM61 42–8ED40-0FA0**	1 unit	5.700	20.000
2	9.7	►	**4AM64 42–8ED40-0FA0**	1 unit	6.500	24.000
2.5	13.3	►	**4AM65 42–8ED40-0FA0**	1 unit	8.900	32.000
4	17.8	B	**4AT30 32–8ED40-0FA0**	1 unit	9.300	29.000
5	19	B	**4AT36 12–8ED40-0FA0**	1 unit	7.300	35.000
6.3	24.5	B	**4AT36 32–8ED40-0FA0**	1 unit	12.200	41.000
8	31.1	B	**4AT39 12–8ED40-0FA0**	1 unit	13.900	49.000
10	36.4	B	**4AT39 32–8ED40-0FA0**	1 unit	23.700	59.000
IP00 degree of protection, standard rail mounting [4]						
0.063	0.19	►	**4AM32 42–8ED40-0FA0**	1 unit	0.340	1.500
0.1	0.31	►	**4AM34 42–8ED40-0FA0**	1 unit	0.360	2.100
0.16	0.49	►	**4AM38 42–8ED40-0FA0**	1 unit	0.450	2.800
0.25	0.85	►	**4AM40 42–8ED40-0FA0**	1 unit	0.820	3.900
0.315	1.12	A	**4AM43 42–8ED40-0FB0**	1 unit	1.000	4.800
0.4	1.44	A	**4AM46 42–8ED40-0FB0**	1 unit	1.500	5.800
0.5	2	A	**4AM48 42–8ED40-0FB0**	1 unit	1.500	7.400
IP23 degree of protection						
0.057	0.19	B	**4AM32 42–8ED40-0FC0**	1 unit	0.340	2.800
0.09	0.31	B	**4AM34 42–8ED40-0FC0**	1 unit	0.360	3.400
0.145	0.49	B	**4AM38 42–8ED40-0FC0**	1 unit	0.450	5.700
0.225	0.85	B	**4AM40 42–8ED40-0FC0**	1 unit	0.820	6.800
0.268	1.12	B	**4AM43 42–8ED40-0FC0**	1 unit	1.000	7.700
0.34	1.44	B	**4AM46 42–8ED40-0FC0**	1 unit	1.500	8.700
0.425	2	B	**4AM48 42–8ED40-0FC0**	1 unit	1.500	10.300
0.535	2.35	B	**4AM52 42–8ED40-0FC0**	1 unit	2.400	11.500
0.68	3.4	B	**4AM55 42–8ED40-0FC0**	1 unit	2.600	13.900
0.85	5	B	**4AM57 42–8ED40-0FC0**	1 unit	2.800	17.900
1.36	7.3	B	**4AM61 42–8ED40-0FC0**	1 unit	5.700	27.700
1.7	9.7	B	**4AM64 42–8ED40-0FC0**	1 unit	6.500	31.700
2.13	13.3	B	**4AM65 42–8ED40-0FC0**	1 unit	8.900	39.700
3.6	17.8	B	**4AT30 32–8ED40-0FC0**	1 unit	9.300	36.700
4.5	19	B	**4AT36 12–8ED40-0FC0**	1 unit	7.300	42.700
5.6	24.5	B	**4AT36 32–8ED40-0FC0**	1 unit	12.200	48.700
7.1	31.1	B	**4AT39 12–8ED40-0FC0**	1 unit	13.900	62.900
9	36.4	B	**4AT39 32–8ED40-0FC0**	1 unit	23.700	72.900
IP54 degree of protection						
0.05	0.19	B	**4AM32 42–8ED40-0FD0**	1 unit	0.340	2.800
0.08	0.31	B	**4AM34 42–8ED40-0FD0**	1 unit	0.360	3.400
0.128	0.49	B	**4AM38 42–8ED40-0FD0**	1 unit	0.450	5.700
0.2	0.85	B	**4AM40 42–8ED40-0FD0**	1 unit	0.820	6.800
0.236	1.12	B	**4AM43 42–8ED40-0FD0**	1 unit	1.000	7.700
0.3	1.44	B	**4AM46 42–8ED40-0FD0**	1 unit	1.500	8.700
0.375	2	B	**4AM48 42–8ED40-0FD0**	1 unit	1.500	10.300
0.475	2.35	B	**4AM52 42–8ED40-0FD0**	1 unit	2.400	11.500
0.6	3.4	B	**4AM55 42–8ED40-0FD0**	1 unit	2.600	13.900
0.75	5	B	**4AM57 42–8ED40-0FD0**	1 unit	2.800	17.900
1.2	7.3	B	**4AM61 42–8ED40-0FD0**	1 unit	5.700	27.700
1.5	9.7	B	**4AM64 42–8ED40-0FD0**	1 unit	6.500	31.700
1.875	13.3	B	**4AM65 42–8ED40-0FD0**	1 unit	8.900	39.700
3.15	17.8	B	**4AT30 32–8ED40-0FD0**	1 unit	9.300	36.700
4	19	B	**4AT36 12–8ED40-0FD0**	1 unit	7.300	42.700
5	24.5	B	**4AT36 32–8ED40-0FD0**	1 unit	12.200	48.700
6.3	31.1	B	**4AT39 12–8ED40-0FD0**	1 unit	13.900	62.900
8	36.4	B	**4AT39 32–8ED40-0FD0**	1 unit	23.700	72.900

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AT types are only supplied with screw-type terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating and line transformers

Overview

- acc. to EN 61558-2-4, -2-1
- CE, cULus
- t_a = 40 °C/B
- AC 50/60 Hz
- IP00, IP23 and IP54 degrees of protection

4AM with screw-type/tab terminals (figure on the left) and with Cage Clamp terminals (figure on the left)

Selection and ordering data

With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 110 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [1]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	B	**4AM23 42–4TJ10-0FA0**	1 unit	0.110	0.600	B	**4AM23 42–4TJ10-0FA1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–4TJ10-0FA0**	1 unit	0.150	0.800	B	**4AM26 42–4TJ10-0FA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	B	**4AM23 42–4TJ10-0FB0**	1 unit	0.110	0.600	B	**4AM23 42–4TJ10-0FB1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–4TJ10-0FB0**	1 unit	0.150	0.800	B	**4AM26 42–4TJ10-0FB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–4TJ10-0FC0**	1 unit	0.110	1.900	B	**4AM23 42–4TJ10-0FC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–4TJ10-0FC0**	1 unit	0.150	2.100	B	**4AM26 42–4TJ10-0FC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–4TJ10-0FD0**	1 unit	0.110	1.900	B	**4AM23 42–4TJ10-0FD1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–4TJ10-0FD0**	1 unit	0.150	2.100	B	**4AM26 42–4TJ10-0FD1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

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With one input voltage

Rated input voltage U_{1N} 230 V ± 5 %, Rated output voltage U_{2N} 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [1]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	▶	**4AM23 42–4TT10-0FA0**	1 unit	0.110	0.600	B	**4AM23 42–4TT10-0FA1**	1 unit	0.110	0.600
0.04	–	▶	**4AM26 42–4TT10-0FA0**	1 unit	0.150	0.800	B	**4AM26 42–4TT10-0FA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	A	**4AM23 42–4TT10-0FB0**	1 unit	0.110	0.600	B	**4AM23 42–4TT10-0FB1**	1 unit	0.110	0.600
0.04	–	A	**4AM26 42–4TT10-0FB0**	1 unit	0.150	0.800	B	**4AM26 42–4TT10-0FB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–4TT10-0FC0**	1 unit	0.110	1.900	B	**4AM23 42–4TT10-0FC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–4TT10-0FC0**	1 unit	0.150	2.100	B	**4AM26 42–4TT10-0FC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–4TT10-0FD0**	1 unit	0.110	1.900	B	**4AM23 42–4TT10-0FD1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–4TT10-0FD0**	1 unit	0.150	2.100	B	**4AM26 42–4TT10-0FD1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

*** This quantity or a multiple thereof can be ordered.**

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 110 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [1]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	B	**4AM23 42–5AJ10-0FA0**	1 unit	0.110	0.600	B	**4AM23 42–5AJ10-0FA1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–5AJ10-0FA0**	1 unit	0.150	0.800	B	**4AM26 42–5AJ10-0FA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	B	**4AM23 42–5AJ10-0FB0**	1 unit	0.110	0.600	B	**4AM23 42–5AJ10-0FB1**	1 unit	0.110	0.600
0.04	–	B	**4AM26 42–5AJ10-0FB0**	1 unit	0.150	0.800	B	**4AM26 42–5AJ10-0FB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–5AJ10-0FC0**	1 unit	0.110	1.900	B	**4AM23 42–5AJ10-0FC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–5AJ10-0FC0**	1 unit	0.150	2.100	B	**4AM26 42–5AJ10-0FC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–5AJ10-0FD0**	1 unit	0.110	1.900	B	**4AM23 42–5AJ10-0FD1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–5AJ10-0FD0**	1 unit	0.150	2.100	B	**4AM26 42–5AJ10-0FD1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

With one input voltage

Rated input voltage U_{1N} 400 V ± 5 %, Rated output voltage U_{2N} 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT [1]	Cage Clamp connection Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
IP00 degree of protection, standard version											
0.025	–	►	**4AM23 42–5AT10-0FA0**	1 unit	0.110	0.600	B	**4AM23 42–5AT10-0FA1**	1 unit	0.110	0.600
0.04	–	►	**4AM26 42–5AT10-0FA0**	1 unit	0.150	0.800	B	**4AM26 42–5AT10-0FA1**	1 unit	0.150	0.800
IP00 degree of protection, standard rail mounting											
0.025	–	A	**4AM23 42–5AT10-0FB0**	1 unit	0.110	0.600	B	**4AM23 42–5AT10-0FB1**	1 unit	0.110	0.600
0.04	–	A	**4AM26 42–5AT10-0FB0**	1 unit	0.150	0.800	B	**4AM26 42–5AT10-0FB1**	1 unit	0.150	0.800
IP23 degree of protection											
0.023	–	B	**4AM23 42–5AT10-0FC0**	1 unit	0.110	1.900	B	**4AM23 42–5AT10-0FC1**	1 unit	0.110	1.900
0.36	–	B	**4AM26 42–5AT10-0FC0**	1 unit	0.150	2.100	B	**4AM26 42–5AT10-0FC1**	1 unit	0.150	2.100
IP54 degree of protection											
0.023	–	B	**4AM23 42–5AT10-0FD0**	1 unit	0.110	1.900	B	**4AM23 42–5AT10-0FD1**	1 unit	0.110	1.900
0.32	–	B	**4AM26 42–5AT10-0FD0**	1 unit	0.150	2.100	B	**4AM26 42–5AT10-0FD1**	1 unit	0.150	2.100

1) The delivery time class B depends on the quantity.

*** This quantity or a multiple thereof can be ordered.**

Completely encapsulated in resin

Overview

4AX22 12 (figure on the left) and 4AX22 14 (figure on the right)

4AX23 11

The 4AX22 and 4AX23 safety transformers are fully resin-enclosed.

- Safety class II (for other safety transformers, see SITAS transformers)
- Vector group Ii0
- Conditionally short-circuit proof
- t_a = 40 °C/E

4AX22 portable version

- Highly rugged
- IP44 degree of protection
- EN 60742
- CE, ⊂⊃, ▣, ▭, ⌓

4AX23 stationary version

- IP65 degree of protection
- EN 61558-2-6
- CE, ▣, ▭

Area of application

Safety transformers are used in applications in which protective measures for safety extra-low voltage are necessary.

The electrical loads used must comply with protection class III.

4AX22 portable version

The application areas are: handheld lamps, electrical tools

4AX23 stationary version

The application areas are: swimming pools, wet grinding machines, electrical tools

Design

The 4AX22 and 4AX23 single-phase safety transformers are fully resin-enclosed.

4AX22 portable version

These units are characterized by extreme ruggedness.

There is a connecting cable with a vulcanized power plug on the input side. The secondary connection can be fitted with one or two CEE sockets in accordance with the rating. The output plugs are supplied loose with the safety transformer.

A primary fuse that can be replaced from the outside protects against short-circuit and overload. The carrying handle makes it easy to move the unit around. The transformer is equipped with rubber feet that prevent slipping and absorb shocks.

4AX23 stationary version

The unit contains one cable gland each with strain relief for the input and for the output.

A primary fuse that can be replaced protects against short-circuit and overload. Mounting holes in the enclosure make mounting easy.

The safety transformers can be supplied in a special version with a CEE outlet. This reduces the degree of protection from IP65 to IP44. The output plug is supplied loose with the safety transformer.

Technical specifications

Type		4AX22	4AX23
• Design		Resin-enclosed, portable	Resin-enclosed, stationary
• Output range (with IP00)	kVA	0.1 ... 1	0.1 ... 1
Voltage range	V	≤ 230	
Rated frequency	Hz	50 ... 60	
Temperature class		E	
Ambient conditions		For external climate to DIN 50010	
Permissible ambient temperature			
• At rated output	°C	+40	
• Maximum value	°C	+60	
• Minimum value	°C	–25	
Protection class		II	
Degree of protection		IP44	IP65
Installation height		Up to 1000 m above sea level	
Protective devices, internal		Fuse links: G to 5 A, D01 to 16 A	G to 6.3 A, D01 to 16 A
Connection design		see "Selection and ordering data"	
Mounting position		Any position	

Selection and ordering data

Rated input voltage U_{1N} 230 V, rated output voltage U_{2N} 24 V or 42 V

Rated power P_n	Voltage increase at no load u_A	G fuse link, slow[1]	Number of CEE sockets (output plug also supplied, loose)	Rated output voltage U_{2N}	DT	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	%	A		V				kg	kg
Portable version, IP44 degree of protection									
0.1	7.5	0.63	1	24	▶	**4AX22 10–0BK**	1 unit	0.600	4.200
0.1	7.5	0.63	1	42	▶	**4AX22 10–1BK**	1 unit	0.600	4.200
0.2	6.5	1.25	2	24	▶	**4AX22 12–0CK**	1 unit	1.000	7.000
0.2	6.5	1.25	2	42	▶	**4AX22 12–1CK**	1 unit	1.000	7.000
0.4	5	2.5	1	42	▶	**4AX22 14–1BK**	1 unit	1.700	10.000
0.63	4	4	1	42	▶	**4AX22 15–1BK**	1 unit	3.100	12.800
1	3	5	1	42	▶	**4AX22 16–1BK**	1 unit	3.900	19.500
Stationary design									
Output side without CEE socket, IP65 degree of protection									
0.1	8	0.63	–	24	▶	**4AX23 10–0AL10**	1 unit	0.600	3.200
0.16	7	1	–	24	▶	**4AX23 11–0AL10**	1 unit	0.800	4.800
0.25	5	1.6	–	24	▶	**4AX23 13–0AL10**	1 unit	1.100	7.000
0.4	4	2.5	–	24	▶	**4AX23 14–0AL10**	1 unit	1.700	10.600
0.63	3	4	–	24	▶	**4AX23 15–0AL10**	1 unit	3.100	13.500
1	3	6.3	–	24	▶	**4AX23 16–0AL10**	1 unit	3.900	19.000
0.1	8	0.63	–	42	▶	**4AX23 10–1AL10**	1 unit	0.600	3.200
0.16	7	1	–	42	▶	**4AX23 11–1AL10**	1 unit	0.800	4.800
0.25	5	1.6	–	42	▶	**4AX23 13–1AL10**	1 unit	1.100	7.000
0.4	4	2.5	–	42	▶	**4AX23 14–1AL10**	1 unit	1.700	10.600
0.63	3	4	–	42	▶	**4AX23 15–1AL10**	1 unit	3.100	13.500
1	3	6.3	–	42	▶	**4AX23 16–1AL10**	1 unit	3.900	19.000
Output side with CEE socket, IP44 degree of protection									
0.1	8	0.63	1	24	A	**4AX23 10–0BL10**	1 unit	0.600	3.200
0.16	7	1	1	24	A	**4AX23 11–0BL10**	1 unit	0.800	4.800
0.25	5	1.6	1	24	A	**4AX23 13–0BL10**	1 unit	1.100	7.000
0.4	4	2.5	1	24	A	**4AX23 14–0BL10**	1 unit	1.700	10.600
0.63	3	4	1	24	A	**4AX23 15–0BL10**	1 unit	3.100	13.500
0.1	8	0.63	1	42	A	**4AX23 10–1BL10**	1 unit	0.600	3.200
0.16	7	1	1	42	A	**4AX23 11–1BL10**	1 unit	0.800	4.800
0.25	5	1.6	1	42	A	**4AX23 13–1BL10**	1 unit	1.100	7.000
0.4	4	2.5	1	42	A	**4AX23 14–1BL10**	1 unit	1.700	10.600
0.63	3	4	1	42	A	**4AX23 15–1BL10**	1 unit	3.100	13.500

1) G fuse link acc. to DIN VDE 0820 Part 22/IEC 60127, with D01 fuse link 16 A acc. to VDE 0636/IEC 60269.

*** This quantity or a multiple thereof can be ordered.**

Isolating Transformers

Completely encapsulated in resin

Overview

4AX24 13

The 4AX24 portable isolating transformers are completely resin-enclosed.

- EN 61558-2-4
- CE, ⊡, ⊟
- t_a = 40 °C/E
- IP44 degree of protection
- Safety class II
  (for other isolating transformers, see SITAS transformers)
- Vector group Ii0
- Conditionally short-circuit proof

Area of application

Isolating transformers are used in applications in which protective isolation is necessary.

The application areas are: test bays, laboratories, workshops, electrical tools.

Design

The 4AX24 single-phase isolating transformers are completely resin-enclosed.

There is a connecting cable with a vulcanized rubber plug on the input side. The secondary connection is designed as a two-pole socket with a flap cover (without grounding contact).

A primary fuse that can be replaced from the outside protects against short-circuit and overload.

The carrying handle makes it easy to move the unit around. The transformer is equipped with rubber feet that prevent slipping and absorb shocks.

Technical specifications

Type		**4AX24**
• Design		Resin-enclosed, portable
• Output range (with IP00)	kVA	0.16 ... 2.5
Voltage range	V	≤ 230
Rated frequency	Hz	50 ... 60
Temperature class		E
Ambient conditions		For external climate to DIN 50010
Permissible ambient temperature		
• At rated output	°C	+40
• Maximum value	°C	+60
• Minimum value	°C	–25
Protection class		II
Degree of protection		IP44
Installation height		Up to 1000 m above sea level
Protective devices, internal		Fuse links: G up to 10 A, D01 up to 16 A
Connection design		see "Selection and ordering data"
Mounting position		Any position

Selection and ordering data

Rated input voltage U_{1N} 230 V, rated output voltage U_{2N} 230 V

Rated power P_n	Voltage increase at no load u_A	G fuse insert, slow[1])	Number of SCHUKO outlets	DT	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	%	A					kg	kg
0.16	7	1	1	►	**4AX24 11–2BK10**	1 unit	0.800	5.000
0.25	6	1.6	1	►	**4AX24 13–2BK10**	1 unit	1.100	7.500
0.4	5	2.5	1	►	**4AX24 14–2BK10**	1 unit	1.700	10.000
0.63	4	3.15	1	►	**4AX24 15–2BK10**	1 unit	3.100	12.500
1	3	5	1	►	**4AX24 16–2BK10**	1 unit	3.900	19.500
1.6	3.3	8	1	►	**4AX24 17–2BK10**	1 unit	5.600	23.000
2.5	3	10	1	►	**4AX24 18–2BK10**	1 unit	9.800	38.600

1) G fuse insert acc. to DIN VDE 0820 Part 22/IEC 60127, with D01 fuse link 16 A acc. to VDE 0636/IEC 60269.

*** This quantity or a multiple thereof can be ordered.**

General data

Overview

SIDAC-T transformers 4AM../4AT.. /4BT..

With the right transformer, the right voltage will be available whatever the conditions.

SIDAC-T transformers are the professionals for every type of application: They work reliably, safely and worldwide under a wide range of different conditions.

- Special 4AM and 4AT transformers: either in user-friendly combinations as isolating, control and line transformers in accordance with EN 61558-2-4, -2-2, -2-1, or safety, control and line transformers in accordance with EN 61558-2-6, -2-2, -2-1, or as autotransformers in accordance with EN 61558-2-13 with selectable input and output voltages.
- 4BT special transformers: single-phase power transformers as matching, auto or converter transformers to DIN VDE 0532-6 with selectable input and output voltages.

Note: line transformers with ≤ 50 V on the output side are, in the case of SITAS transformers, always designed as safety transformers.

SIDAC-T transformers offer optimal protection through high permissible ambient temperatures of up to 40 °C or 55 °C, a high short-time rating in the case of control transformers, fuseless construction and due to its safety standard "Safety inside" EN 61558.

Benefits

- High short-time rating of the SITAS transformers: lower transformer rated power for a large number of contactors
- PC program ASIST as design tool: fast, optimum selection of the right control transformer
- Suitable for "fuseless construction": the small inrush current means that "circuit-breakers for motor protection" can also be used on the primary side
- UL approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability.

Area of application

In industrial machines, process engineering, heating and air-conditioning equipment, etc., for supplying control and signaling circuits, when:

- Several electromagnetic loads (e.g. contactors) have to be controlled
- Control and signaling units are used outside the control cabinet
- The operating voltage for the loads differs from the available voltage level.
- Voltage matching for machines and installations with galvanic isolation or as an autotransformer
- In drive systems: converter transformers for voltage matching and autotransformers for use as infeed/regenerative feedback modules.

Generally for voltage matching of electrical appliances, e.g. in communications, medical engineering and domestic appliances.

4BT single-phase power transformers are implemented in industrial and building systems and control and distribution. They are used to adapt the locally available line voltage to the operating voltage of the system or its subsystems. They also limit the possible short-circuit currents.

For adapting machines and systems to the local voltages that are available at the installation site, *power transformers* with galvanic isolation or designed as *autotransformers* are used.

Furthermore *power transformers* can be used with electrical appliances, for example in communications, medical engineering and domestic appliances. In drive systems, special *converter transformers* are used for voltage matching and *autotransformers* are used with infeed/regenerative feedback modules.

Design

Standards

EN 61558-2-6, -2-4, -2-2, -2-1, -2-13, DIN VDE 0532-6

The German standard EN 61558 with the VDE classification VDE 0570 is the German edition of the international standard IEC 61558 (Safety of power transformers, power supply units and similar) and has completely replaced the previous standards VDE 0550 and VDE 0551.

Some of the transformers are subject to more stringent manufacturing and testing conditions in view of these changes.

Transformers for general applications always have double or reinforced insulation with SELV voltages (can be touched, maximum AC 50 V and DC 120 V), i. e. these transformers are exclusively safety isolating transformers.

Furthermore, all transformers have stated on them the protective elements provided for protection against short-circuit and overload.

The SITAS transformer series contains the combined features of safety, isolating and control or line transformers, i. e. one transformer for (virtually) all applications. SITAS transformers meet the most stringent requirements (and in terms of safety, the most severe requirements) applicable to the transformer designs included in the series. One SITAS transformer is the right one whatever the application.

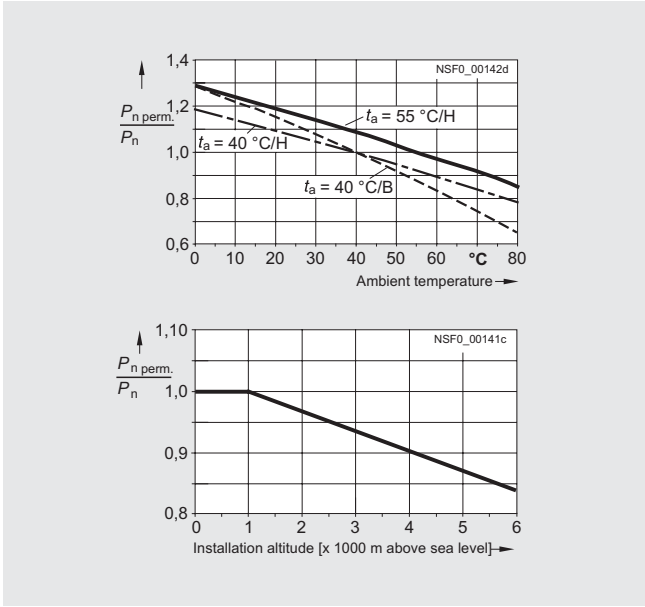
Rated output P_n at high ambient temperature – the reference for thermal load capacity

Reference conditions under which the transformers have the rated output P_n stated in the tables:

- Continuous duty P_n
- Frequency AC 50 Hz to 60 Hz
- IP00 degree of protection
- Installation altitude up to 1000 m above sea level and
- Ambient temperature t_a, 40 °C or 55 °C type-specific.

Other installation and operating conditions than this will affect the permissible continuous load capacity. In the case of the 4AM transformers, for example, with a lower ambient temperature of 30 °C an increase in load of 8 % is possible (see loading characteristics).

General data



Load characteristics: Permissible transformer continuous load in relation to the ambient temperature and the installation altitude

Short-time rating $P_{n(S6)}$ of control transformers – the characteristic variable for the dynamic capacity

The most important selection criterion for control transformers is their short-time rating $P_{n(S6)}$. This is required for switching on electromagnetic loads, e.g. contactors with high making current in relation to the holding current. According to EN 61558-2-2 "Special requirements for control transformers" the output voltage with this load should not drop more than 5 % in relation to the rated voltage in order to ensure safe switching.

Depending on their application, control transformers 4AM, 4AT ≤ 16 kVA are optimized for high short-time ratings with comparatively low ratings and thus small size.

Low inrush current – primary-side short-circuit and overload protection with standard circuit-breakers

4AM and 4AT single-phase transformers in the rating range ≤ 16 kVA are matched to protective devices that reliably protect the transformers in the event of short-circuits or overloads.

Standard 3RV and 3VF circuit-breakers offer optimum protection. In this way the transformers are protected on the primary side against both short-circuits and overload, without the possibility of nuisance tripping on startup. The low inrush current, the short-circuit current and the thermal load capacity on overload are matched to the tripping characteristics of the circuit-breakers.

It is also possible to protect the transformers on the secondary side against short-circuits and overloads with circuit-breakers or miniature circuit-breakers with C characteristics.

Note: The specified primary-side circuit-breakers are for protecting the primary side of transformers in the event of short-circuits and overload on the secondary side. In the event of a possible short-circuit on the feeder lines between the protective device and the primary side of the transformer, the rated short-circuit breaking capacity of the circuit-breaker must be taken into account with regard to the maximum possible prospective short-circuit current at the place of installation. For these device assignments, see the tables in the "Technical specifications".

ASIST design tool

PC program for selecting SIDAC-T control transformers in English, German and Danish.

The current version of the ASIST program is available on the Internet at

www.siemens.de/sidac

and can be downloaded.

EN 61558-2-2 requires that the short-time rating is stated on the rating plate only in the case of a power factor p.f. = 0.5 of the load. The short-time rating of control transformers essentially depends on the power factor of the load. This increases particularly with smaller power factors. The exact calculation of the short-time rating with related p.f. is therefore even more important. The ASIST PC program has been developed as a design tool to minimize the time required to calculate the necessary type size, and ensures that the most suitable control transformer is selected in terms of engineering and price (see also "Technical specifications").

Design

Standard design

All 4AM, 4AT and 4BT transformers are supplied for screw-fixing on a mounting plate (exception: 4AM32 to 4AM40 transformers are supplied as standard for both screw-fixing and with integrated standard rail mounting).

Standard rail mounting

All 4AM single-phase transformers from 25 VA to 500 VA offer a considerable saving in mounting requirements with snap-on mounting to the 35 mm rail for horizontal mounting. For the 4AM single-phase transformers from 63 VA to 250 VA, snap-on fixing for the 35 mm rail has been integrated into the fixing plate for the transformer as standard.

- Integrated version
  The SITAS control transformers 4AM32, 4AM34, 4AM38 and 4AM40 are supplied for screw mounting as standard and also with an integrated snap-on fastening for mounting on the 35 mm rail acc. to EN 50022.
- Optional version
  SITAS single-phase transformers types 4AM23, 4AM26, 4AM43, 4AM46 and 4AM48 are supplied on request with a premounted adapter for mounting on a 35 mm rail.

Connection

Screw-type terminals

The 4AM transformers are supplied up to a rated current of 60 A, the 4AT transformers are supplied up to a rated current of 43 A and the 4BT transformers are supplied up to a rated current of 81 A in the standard version with screw-type terminals.

For higher currents, the transformers are supplied with flat-type terminals or with threaded pins.

Cage Clamp connection

Most 4AM SITAS single-phase transformers for currents ≤ 24 A are also available with screw-less "Cage Clamp" terminals (multi-voltage version is not available). The earth connection is designed as a Cage Clamp terminal.

Enclosure mounting

SIDAC-T 4AM and 4AT transformers are available alternatively in protective enclosures to IP23 or IP54 degree of protection; 4BT transformers are available alternatively in protective enclosures to IP20 or IP23 degree of protection.

Information that has to be specified for enquiries and orders for 4AM, 4AT and 4BT special transformers

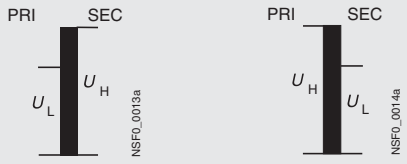
Rated output P_n (output division with separate SEC windings, $P_n = P_1 + P_2$, throughput rating = load rating for autotransformers), PRI and SEC voltages, frequency, vector group, degree of protection (derating with degrees of protection other than IP00), Order No. stem.

For delivery, the Order No. stem is completed to form the Order No.

Ordering example:

Single-phase special transformer 0.16 kVA
PRI 415 V ± 5%, SEC 115 V,
frequency 50 Hz ... 60 Hz,
IP00 degree of protection,
shielding winding,
Order No. stem. 4AM38 4.

4AM and 4BT autotransformers: determine the type rating $P_{n\ req.}$



$$P_{n\ req.} = P_{n\ load.} \frac{U_H - U_L}{U_H}$$

(the single-phase example also applies analogously for three-phase autotransformers)

Step-up transformer (figure on the left) and step-down transformer (figure on the right)

Thermistor transformer protection for 4BT special transformers

The transformers can be protected against excessive heating of the windings by means of thermistor transformer protection. PTC thermistors are used as temperature sensors which are wound into each shank of the transformer and connected in series. The rated response temperature is slightly higher than the temperature limit for continuous duty or during a short-circuit.

Possible versions:

- Warning
- Disconnection
- Warning and disconnection

The connections for the temperature sensors are routed to terminals, two terminals each for warning and disconnection.

The 3RN tripping units are not included in the transformer scope of supply, for the relevant selection and ordering data see the Section "SIMIREL time-delay, monitoring, coupling relays and converters –> Monitoring relays –> Thermistor motor protection".

General data

Technical specifications

Transformers	Type	**4AM**	**4AT**	**4BT**
• Design		EI core	UI core	UI core
• Output range (with IP00)	kVA	0.025 ... 2.5	> 2.5 ... 16	> 16 ... 250
• Approvals		cULus		
Voltage range	V	≤ 690		≤ 1000 (up to 3.6 kV on request)
• Approvals for USA, Canada	V	≤ 600		
Rated frequency	Hz	50 ... 60		
Temperature class		B	H	
• acc. to UL/CSA		Class 130	Class 180	
Ambient conditions		Protection against harmful ambient conditions: Complete impregnation in polyester resin Climate-proof for mounting in rooms with an external climate to DIN 50010		
Permissible ambient temperature				
• At rated output	°C	40	55	
• Maximum value (after reduced output depending on load characteristics, see "Design")	°C	80		
• Minimum value	°C	–25		
Relative air humidity				
• Average up to	%	80		
• Maximum value for 30 days/year	%	95		
• At 40°C occasionally	%	100		
Protection class		I		
Degree of protection				
• Without enclosure		IP00		
• With protective enclosure (according to "Selection and ordering data")		IP23 or IP54		IP20 or IP23
• Design		IP20, IP23, IP54: Steel enclosure coated with epoxy resin, color gray RAL 7032		
Installation height		Up to 1000 m above sea level (above this, derating is necessary)		
Protective devices				
• internal		–		Can be designed with thermistor transformer protection for warning or disconnection, or warning and disconnection, see "Design".
• external		The transformers can be protected against short-circuits and overload on the primary and secondary with circuit-breakers.		
		Respective protective devices (see "Technical specifications")		On request
Connection design		The permissible conductor cross-sections are assigned to the specified terminal types.		
• Terminal assignments		Refer to VDE 0100 Part 430 Supplement 1 and EN 60204 (VDE 0113-1) for the permissible conductor cross-sections for the specified current according to the installation type.		
• For terminal designs and connectable cross-sections (see "Dimensional drawings")		Other terminal sizes than standard versions on request.		
Mounting position		The permissible mounting position for each type is shown in the "Dimension drawings".		

For other technical specifications, see Catalog PD 60,
Order No.: E86060-K2806-A101-A1
or on the Internet at
www.siemens.de/sidac

Rated outputs at different ambient temperatures

- with separate, isolated windings
- IP00 degree of protection
- to EN 61558, cULus

Transformer	Rated output P_n	Permissible transformer load depending on the ambient temperature							
		t_a = 60 °C	t_a = 55 °C	t_a = 50 °C	t_a = 45 °C	t_a = 40 °C	t_a = 35 °C	t_a = 30 °C	t_a = 25 °C
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA
4AM23 4	0.025	0.021	0.022	0.023	0.024	0.025	0.026	0.027	0.0278
4AM26 4	0.04	0.0336	0.0352	0.0368	0.0384	0.04	0.0416	0.0432	0.0444
4AM32 4	0.063	0.0529	0.0554	0.058	0.0605	0.063	0.0655[1])	0.068[1])	0.0699[1])
4AM34 4	0.1	0.084	0.088	0.092	0.096	0.1	0.104[1])	0.108[1])	0.111[1])
4AM38 4	0.16	0.134	0.141	0.147	0.154	0.16	0.166[1])	0.173[1])	0.178[1])
4AM40 4	0.25	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.278
4AM43 4	0.315	0.265	0.277	0.29	0.302	0.315	0.328	0.34	0.35
4AM46 4	0.4	0.336	0.352	0.368	0.384	0.4	0.416	0.432	0.444
4AM48 4	0.5	0.42	0.44	0.46	0.48	0.5	0.52	0.54	0.555
4AM52 4	0.63	0.529	0.554	0.58	0.605	0.63	0.655	0.68	0.699
4AM55 4	0.8	0.672	0.704	0.736	0.768	0.8	0.832	0.864	0.888
4AM57 4	1	0.84	0.88	0.92	0.96	1	1.04	1.08	1.11
4AM61 4	1.6	1.34	1.41	1.47	1.54	1.6	1.66	1.73	1.78
4AM64 4	2	1.68	1.76	1.84	1.92	2	2.08	2.16	2.22
4AM65 4	2.5	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.78
4AT30 3	4	3.88	4	4.12	4.24	4.4	4.52	4.64	4.76
4AT36 1	5	4.85	5	5.15	5.3	5.5	5.65	5.8	5.95
4AT36 3	6.3	6.11	6.3	6.49	6.68	6.93	7.12	7.31	7.5
4AT39 1	8	7.76	8	8.24	8.48	8.8	9.04	9.28	9.52
4AT39 3	10	9.7	10	10.3	10.6	11	11.3	11.6	11.9
4AT43 0	11.2	10.9	11.2	11.5	11.9	12.3	12.7	13	13.3
4AT43 1	12.5	12.1	12.5	12.9	13.3	13.8	14.1	14.5	14.9
4AT43 2	14	13.6	14	14.4	14.8	15.4	15.8	16.2	16.7
4AT45 0	16	15.5	16	16.5	17	17.6	18.1	18.6	19

1) For control transformers, the values t_a = 40 °C apply.

General data

Operating characteristics

Transformer	Rated output P_n 50 Hz ... 60 Hz 1000 m above sea level IP00 degree of protection	Core size	Voltage increase on no-load (operating temperature)	Voltage drop on rated load [1]	Short-circuit voltage [1]	Efficiency
			u_A approx.	u_R approx.	u_Z approx.	η approx.
Type	kVA		%	%	%	%
4AM and 4AT						
acc. to EN 61558-2-6, EN 61558-2-4, EN 61558-2-2, EN 61558-2-1						
4AM: t_a = 40 °C/B						
4AM23 4	0.025	EI 60/20	26	17.6	17.6	74
4AM26 4	0.04	EI 66/22	23	15.3	15.3	76
4AM32 4	0.063	EI 84/28	10	8.4	8.4	85
4AM34 4	0.1	EI 84/42	10	7.7	7.7	86
4AM38 4	0.16	EI 96/44	10.4	7.6	7.7	86
4AM40 4	0.25	EI 96/58	7.2	5.4	5.4	89
4AM43 4	0.315	EI 105/60	6.6	4.9	5	90
4AM46 4	0.4	EI 120/52	5.7	4.3	4.4	91
4AM48 4	0.5	EI 120/72	5	3.8	3.8	91
4AM52 4	0.63	EI 150/48	4.7	3.6	3.7	92
4AM55 4	0.8	EI 150/65	4	3	3.1	92
4AM57 4	1	EI 150/90	3.2	2.5	2.5	93
4AM61 4	1.6	EI 174/82	2.4	1.9	2.1	96
4AM64 4	2	EI 174/102	2.1	1.7	1.9	96
4AM65 4	2.5	EI 192/110	1.6	1.3	1.6	96
4AT: t_a = 55 °C/H						
4AT30 3	4	UI 150/75	3.9	2.8	2.8	95
4AT36 1	5	UI 180/75	5.6	3.9	3.9	94
4AT36 3	6.3	UI 180/75	4.4	3.1	3.2	95
4AT39 1	8	UI 210/70	4.4	3.1	3.2	95
4AT39 3	10	UI 210/70	3.5	2.5	2.8	96
4AT43 0	11.2	UI 240/80	3.9	2.8	2.8	95
4AT43 1	12.5	UI 240/80	3.5	2.5	2.6	96
4AT43 2	14	UI 240/80	3.1	2.2	2.4	96
4AT45 0	16	UI 240/107	2.9	2.1	2.1	96
4BT						
acc. to DIN VDE 0532-6						
t_a = 55 °C/H						
4BT45 0	18	UI 240/107	2.7	2.6	2.7	97
4BT47 0	20	UI 240/137	2.6	2.5	2.5	97
4BT47 1	22.5	UI 240/137	2.3	2.2	2.5	97
4BT47 2	25	UI 240/137	2.1	2	2.1	97
4BT51 0	28	UIS 265/107	4.3	4.1	4.8	95
4BT52 0	31.5	UIS 265/120	3.9	3.8	4.4	96
4BT53 0	35.5	UIS 265/135	3.6	3.5	4.1	96
4BT54 0	40	UIS 305/125	3.7	3.5	3.9	96
4BT54 1	45	UIS 305/125	3.3	3.2	3.8	96
4BT55 0	50	UIS 305/140	3.1	2.9	3.5	97
4BT56 0	63	UIS 305/160	2.5	2.5	3.2	97
4BT58 1	80	UIS 370/150	3.1	3	3.9	97
4BT59 0	100	UIS 370/170	2.6	2.5	3.7	97
4BT60 1	125	UIS 370/195	2.1	2.1	3.6	97
4BT62 1	160	UIS 240/175	2.1	2	3.7	98
4BT63 0	200	UIS 455/200	1.7	1.7	3.7	98
4BT65 0	250	UIS 255/260	1.5	1.5	3	98

Higher ratings and other conditions on request.

Calculation of heat dissipation P_V

$$P_V = \frac{P_n\,(100-\eta)}{\eta}\ \text{[kW]}$$

1) Winding reference temperature for 4AM, 4AT: 20 °C; for 4BT: 115 °C.

Primary-side short-circuit and overload protection with circuit-breakers

Design with one input voltage

Trans-former	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated input voltage U_{1N} in V																		
Type	kVA	Type	690	660	600	575	550	525	500	480	460	440	415	400	380	240	230	220	208	200	190
4AM23 4	0.025	3RV10 11–□□□10	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0CA	0CA	0CA	0CA	0DA	0DA
		Setting value in A	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.18	0.18	0.19	0.2	0.22	0.22
4AM26 4	0.04	3RV10 11–□□□10	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0BA	0BA	0BA	0BA	0CA	0CA	0EA	0EA	0EA	0EA	0FA	0FA
		Setting value in A	0.11	0.11	0.11	0.11	0.11	0.12	0.13	0.14	0.14	0.14	0.15	0.18	0.18	0.28	0.28	0.29	0.3	0.35	0.35
4AM32 4	0.063	3RV10 11–□□□10	0BA	0BA	0BA	0BA	0CA	0CA	0CA	0CA	0CA	0DA	0DA	0DA	0DA	0FA	0GA	0GA	0GA	0GA	0GA
		Setting value in A	0.14	0.14	0.15	0.16	0.18	0.18	0.18	0.19	0.19	0.22	0.22	0.22	0.24	0.37	0.45	0.45	0.45	0.45	0.47
4AM34 4	0.1	3RV10 11–□□□10	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0FA	0FA	0FA	0FA	0FA	0GA	0JA	0JA	0JA	0JA	0KA	0KA
		Setting value in A	0.22	0.23	0.28	0.28	0.28	0.28	0.3	0.35	0.35	0.35	0.36	0.37	0.45	0.7	0.7	0.7	0.72	0.9	0.9
4AM38 4	0.16	3RV10 11–□□□10	0FA	0FA	0FA	0FA	0FA	0GA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0KA	0KA	1AA	1AA	1AA	1AA
		Setting value in A	0.35	0.35	0.39	0.4	0.42	0.45	0.46	0.48	0.5	0.55	0.56	0.58	0.61	0.96	1	1.1	1.1	1.2	1.2
4AM40 4	0.25	3RV10 11–□□□10	0HA	0HA	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1BA	1BA	1CA	1CA	1CA	1CA
		Setting value in A	0.55	0.55	0.57	0.59	0.7	0.7	0.7	0.7	0.74	0.9	0.9	0.9	0.9	1.4	1.5	1.8	1.8	1.8	1.8
4AM43 4	0.315	3RV10 11–□□□10	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1CA	1DA	1DA	1DA	1DA	1DA
		Setting value in A	0.7	0.7	0.71	0.74	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.8	2.2	2.2	2.2	2.2	2.2
4AM46 4	0.4	3RV10 11–□□□10	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1DA	1DA	1EA	1EA	1EA	1EA
		Setting value in A	0.9	0.9	0.9	0.92	1.1	1.1	1.1	1.1	1.2	1.4	1.4	1.4	1.4	2.2	2.3	2.8	2.8	2.8	2.8
4AM48 4	0.5	3RV10 11–□□□10	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1EA	1FA	1FA	1FA	1FA	1FA
		Setting value in A	1.1	1.1	1.1	1.4	1.4	1.4	1.4	1.4	1.5	1.8	1.8	1.8	1.8	2.8	3.5	3.5	3.5	3.5	3.5
4AM52 4	0.63	3RV10 11–□□□10	1AA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1FA	1FA	1FA	1GA	1GA	1GA
		Setting value in A	1.2	1.4	1.4	1.4	1.5	1.6	1.8	1.8	1.8	1.9	2.2	2.2	2.2	3.5	3.5	3.7	4.5	4.5	4.5
4AM55 4	0.8	3RV10 11–□□□10	1CA	1CA	1CA	1DA	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1GA	1GA	1HA	1HA	1HA	1HA
		Setting value in A	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2	2.2	2.8	2.8	2.8	2.8	4.5	4.5	5.5	5.5	5.5	5.5
4AM57 4	1	3RV10 11–□□□10	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1FA	1HA	1HA	1JA	1JA	1JA	1JA
		Setting value in A	2.2	2.2	2.2	2.3	2.4	2.8	2.8	2.8	2.8	3	3.5	3.5	3.5	5.5	5.7	7	7	7	7
4AM61 4	1.6	3RV10 11–□□□10	1FA	1FA	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1HA	1HA	1HA	1HA	1KA	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4AA	4AA	4AA	4AA	4AA
		Setting value in A	3.5	3.5	3.5	3.7	3.9	4.5	4.5	4.5	4.6	5.5	5.5	5.5	5.6	9	11	11	11	11	11
4AM64 4	2	3RV10 11–□□□10	1GA	1GA	1GA	1GA	1HA	1HA	1HA	1HA	1HA	1JA	1JA	1JA	1JA	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4AA	4AA	4BA	4BA	4BA	4BA
		Setting value in A	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5.7	7	7	7	7	11	11	14	14	14	14
4AM65 4	2.5	3RV10 11–□□□10	1GA	1GA	1HA	1HA	1HA	1JA	1JA	1JA	1JA	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	1KA	1KA	1KA	1KA	4BA	4BA	4CA	4CA	4CA	4DA
		Setting value in A	4.5	5.5	5.5	5.5	5.7	7	7	7	7	9	9	9	9	14	14	17	17	17	20
4AT30 3	4	3RV10 11–□□□10	1JA	1JA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	1KA	1KA	1KA	1KA	4AA	4AA	4AA	4AA	4AA	4AA	4BA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4EA	4FA	4FA
		Setting value in A	8	8	9	9	9	10	11	11	11	12	12	13	14	22	22	23	24	28	28
4AT36 1	5	3RV10 11–□□□10	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4BA	4BA	4CA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4FA	4FA	4FA	4FA	4FA	4GA
		Setting value in A	10	10	11	11	12	12	14	14	14	15	16	16	17	28	28	29	31	32	36
4AT36 3	6.3	3RV10 21–□□□10	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4GA	4GA	4GA	4GA	4GA	4HA
		Setting value in A	12	12	14	14	15	15	17	17	17	18	20	20	21	36	36	36	38	39	41
4AT39 1	8	3RV10 21–□□□10	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4FA	4HA	4HA	4HA	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4JA	4JA
		Setting value in A	15	15	17	18	18	20	20	21	22	23	24	25	28	42	43	45	48	50	52
4AT39 3	10	3RV10 21–□□□10	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4FA	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4KA	4KA	4KA	4KA	4KA
		Setting value in A	18	19	21	22	23	24	25	26	28	28	30	31	32	51	57	57	59	69	64
4AT43 0	11.2	3RV10 31–□□□10	4EA	4EA	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4GA	4GA	4GA	4HA	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4KA	4KA	4LA	4LA	4LA	4MA
		Setting value in A	22	22	23	24	25	28	28	29	30	36	36	36	40	58	60	70	70	70	80
4AT43 1	12.5	3RV10 31–□□□10	4EA	4EA	4FA	4FA	4FA	4FA	4FA	4GA	4GA	4GA	4HA	4HA	–	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4LA	4LA	4LA	4LA	4MA	4MA
		Setting value in A	22	23	28	28	28	29	31	36	36	36	40	40	45	70	70	70	73	80	80
4AT43 2	14	3RV10 31–□□□10	4EA	4FA	4FA	4FA	4FA	4GA	4GA	4HA	4HA	4HA	–	–	–	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	4JA	4JA	4JA	4MA	4MA	4MA	4MA	4MA	4MA
		Setting value in A	25	28	29	30	31	36	36	40	40	40	45	45	45	80	80	80	82	85	90
4AT45 0	16	3RV10 31–□□□10	4FA	4FA	4GA	4GA	4HA	4HA	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	4JA	4JA	4JA	4JA	4JA	4KA	4KA	4MA	4MA	4MA	4MA	4MA	4MA
		Setting value in A	29	30	33	36	40	40	45	45	45	45	47	57	57	81	85	89	94	97	100

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

General data

Primary-side short-circuit and overload protection with circuit-breakers

European voltage and multi-voltage design

Trans-former	Rated output P_n	Circuit-breaker[1])	Rated input voltage U_{1N} in V																		
Type	kVA	Type	690	660	600	575	550	525	500	480	460	440	415	400	380	240	230	220	208	200	190
Circuit-breaker design: Transformer protection																					
4AM23 4	0.025	3RV14 21–□□□10	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0CA	0CA	0CA	0CA	0CA	0CA
		Setting value in A	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.19	0.2	0.2	0.23	0.24	0.25
4AM26 4	0.04	3RV14 21–□□□10	0AA	0AA	0AA	0AA	0AA	0BA	0BA	0BA	0BA	0BA	0BA	0CA	0CA	0DA	0DA	0DA	0EA	0EA	0EA
		Setting value in A	0.11	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.3	0.32	0.32	0.35	0.35	0.38
4AM32 4	0.063	3RV14 21–□□□10	0BA	0BA	0BA	0CA	0CA	0CA	0CA	0CA	0DA	0DA	0DA	0DA	0DA	0FA	0FA	0FA	0GA	0GA	0GA
		Setting value in A	0.15	0.15	0.17	0.18	0.19	0.2	0.2	0.21	0.22	0.23	0.25	0.26	0.27	0.43	0.45	0.47	0.49	0.5	0.55
4AM34 4	0.1	3RV14 21–□□□10	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0FA	0FA	0FA	0FA	0FA	0FA	0HA	0HA	0HA	0JA	0JA	0JA
		Setting value in A	0.25	0.26	0.29	0.3	0.31	0.33	0.34	0.35	0.35	0.39	0.41	0.43	0.45	0.72	0.75	0.75	0.83	0.85	0.9
4AM38 4	0.16	3RV14 21–□□□10	0FA	0FA	0GA	0GA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0HA	0HA	0KA	0KA	0KA	1AA	1AA	1AA
		Setting value in A	0.39	0.4	0.45	0.45	0.49	0.51	0.54	0.55	0.55	0.6	0.65	0.67	0.71	1.1	1.1	1.2	1.3	1.35	1.4
4AM40 4	0.25	3RV14 21–□□□10	0HA	0HA	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1BA	1BA	1BA	1BA	1BA	1BA
		Setting value in A	0.55	0.6	0.66	0.69	0.7	0.75	0.8	0.82	0.85	0.9	0.95	0.99	1	1.65	1.7	1.8	1.9	1.9	2
4AM43 4	0.315	3RV14 21–□□□10	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	0KA	0KA	0KA	1AA	1AA	1CA	1CA	1CA	1CA	1CA	1CA
		Setting value in A	0.7	0.75	0.8	0.85	0.9	0.9	1	1	1	1.1	1.2	1.24	1.3	2	2.1	2.2	2.3	2.4	2.5
4AM46 4	0.4	3RV14 21–□□□10	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1BA	1BA	1DA	1DA	1DA	1DA	1DA	1DA
		Setting value in A	0.9	0.9	1	1	1.1	1.1	1.2	1.3	1.35	1.4	1.48	1.55	1.63	2.6	2.7	2.8	3	3.1	3.2
4AM48 4	0.5	3RV14 21–□□□10	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1EA	1EA	1EA	1EA	1EA	1EA
		Setting value in A	1.1	1.1	1.3	1.35	1.4	1.4	1.5	1.6	1.65	1.75	1.85	1.9	2	3.2	3.3	3.5	3.7	3.8	4
4AM52 4	0.63	3RV14 21–□□□10	1AA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1CA	1CA	1DA	1DA	1FA	1FA	1FA	1FA	1FA	1FA
		Setting value in A	1.35	1.4	1.5	1.6	1.7	1.8	1.9	1.9	2	2.1	2.2	2.3	2.5	3.9	4	4	4.5	4.7	5
4AM55 4	0.8	3RV14 21–□□□10	1BA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1GA	1GA	1GA	1GA	1GA	1GA
		Setting value in A	1.5	1.8	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.9	3	3.1	5	5	5.5	5.8	6	6.3
4AM57 4	1	3RV14 21–□□□10	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1HA	1HA	1HA	1HA	1HA	1HA
		Setting value in A	2.2	2.3	2.5	2.6	2.7	2.9	3	3.1	3.3	3.4	3.6	3.8	4	6.3	6.5	6.5	7	7.6	8
4AM61 4	1.6	3RV14 21–□□□10	1FA	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1KA	1KA	1KA	1KA	1KA	1KA
		Setting value in A	3.6	3.7	4.1	4.3	4.5	4.7	5	5	5.4	5.6	5.9	6.2	6.3	10	10.5	11	12	12.3	12.5
4AM64 4	2	3RV14 21–□□□10	4.4	4.6	5	5.3	5.5	5.8	6.1	6.3	6.6	6.9	7.3	7.6	8	12.5	13	13.5	14.5	15	16
		Setting value in A	4.4	4.6	5	5.3	5.5	5.8	6.1	6.3	6.6	6.9	7.3	7.6	8	12.5	13	13.5	14.5	15	16
4AM65 4	2.5	3RV14 21–□□□10	1HA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1JA	1JA	1JA	1KA	1KA	4BA	4BA	4BA	4BA	4BA	–
		3RV14 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4DA
		Setting value in A	5.5	5.8	6.4	6.6	7	7.3	7.5	8	8.3	8.7	9.2	9.5	10	16	16.5	17	18.5	19	20
Circuit-breaker design: Motor protection																					
4AT30 3	4	3RV10 11–□□□10	1JA	1JA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	1KA	1KA	1KA	1KA	4AA	4AA	4AA	4AA	4AA	4AA	4BA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4EA	4FA	4FA
		Setting value in A	8	8	9	9	9	10	11	11	11	12	12	13	14	22	22	23	24	28	28
4AT36 1	5	3RV10 11–□□□10	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4BA	4BA	4CA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4FA	4FA	4FA	4FA	4FA	4GA
		Setting value in A	10	10	11	11	12	12	14	14	14	15	16	16	17	28	28	29	31	32	36
4AT36 3	6.3	3RV10 21–□□□10	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4GA	4GA	4GA	4GA	4GA	4HA
		Setting value in A	12	12	14	14	15	15	17	17	17	18	20	20	21	36	36	36	8	39	41
4AT39 1	8	3RV10 21–□□□10	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA	4FA	4HA	4HA	4HA	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4JA	4JA
		Setting value in A	15	15	17	18	18	20	20	21	22	23	24	25	28	42	43	45	48	50	52
4AT39 3	10	3RV10 21–□□□10	4CA	4CA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4FA	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4KA	4KA	4KA	4KA	4KA
		Setting value in A	18	19	21	22	23	24	25	26	28	28	30	31	32	51	57	57	59	69	64
4AT43 0	11.2	3RV10 31–□□□10	4EA	4EA	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4GA	4GA	4GA	4HA	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	4KA	4KA	4LA	4LA	4LA	4MA
		Setting value in A	22	22	23	24	25	28	28	29	30	36	36	36	40	58	60	70	70	70	80
4AT43 1	12.5	3RV10 31–□□□10	4EA	4EA	4FA	4FA	4FA	4FA	4FA	4GA	4GA	4GA	4HA	4HA	–	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	4JA	4LA	4LA	4LA	4LA	4MA	4MA
		Setting value in A	22	23	28	28	28	29	31	36	36	36	40	40	45	70	70	70	73	80	80
4AT43 2	14	3RV10 31–□□□10	4EA	4FA	4FA	4FA	4FA	4GA	4GA	4HA	4HA	4HA	–	–	–	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	–	–	–	–	4JA	4JA	4JA	4MA	4MA	4MA	4MA	4MA	4MA
		Setting value in A	25	28	29	30	31	36	36	40	40	40	45	45	45	80	80	80	82	85	90
4AT45 0	16	3RV10 31–□□□10	4FA	4FA	4GA	4GA	4HA	4HA	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 41–□□□10	–	–	–	–	–	–	4JA	4JA	4JA	4JA	4JA	4KA	4KA	4MA	4MA	4MA	4MA	4MA	4MA
		Setting value in A	29	30	33	36	40	40	45	45	45	45	47	57	57	81	85	89	94	97	100

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

Secondary-side short-circuit and overload protection with circuit-breaker or miniature circuit-breaker

Transformer	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated output voltage U_{2N} in V				
Type	kVA	Type	230	115	110	42	24
4AM23 4	0.025	3RV10 11–□□□10	0AA	0DA	0DA	0HA	1AA
		Setting value in A	0.14	0.26	0.29	0.75	1.3
4AM26 4	0.04	3RV10 11–□□□10	0CA	0FA	0FA	0KA	1CA
		Setting value in A	0.21	0.41	0.45	1.2	2.1
4AM32 4	0.063	3RV10 11–□□□10	0EA	0HA	0HA	1BA	1EA
		Setting value in A	0.34	0.68	0.72	1.9	3.3
4AM34 4	0.1	3RV10 11–□□□10	0GA	0KA	0KA	1DA	1GA
		Setting value in A	0.55	1.1	1.14	3	5.2
4AM38 4	0.16	3RV10 11–□□□10	0JA	1BA	1BA	1FA	1JA
		Setting value in A	0.86	1.72	1.82	4.8	8.4
4AM40 4	0.25	3RV10 11–□□□10	1AA	1DA	1DA	1HA	–
		3RV10 21–□□□10	–	–	–	–	4AA
		Setting value in A	1.37	2.7	2.8	7.4	13
4AM43 4	0.315	3RV10 11–□□□10	1BA	1EA	1EA	1JA	–
		3RV10 21–□□□10	–	–	–	–	4BA
		Setting value in A	1.72	3.4	3.6	9.4	16.5
4AM46 4	0.4	3RV10 11–□□□10	1CA	1FA	1FA	1KA	–
		3RV10 21–□□□10	–	–	–	–	4CA
		Setting value in A	2.2	4.4	4.6	12	21
4AM48 4	0.5	3RV10 11–□□□10	1DA	1GA	1GA	–	–
		3RV10 21–□□□10	–	–	–	4AA	–
		3RV10 31–□□□10	–	–	–	–	4EA
		Setting value in A	2.7	5.4	5.7	15	26
4AM52 4	0.63	3RV10 11–□□□10	1EA	1HA	1HA	–	–
		3RV10 21–□□□10	–	–	–	4BA	–
		3RV10 31–□□□10	–	–	–	–	4FA
		Setting value in A	3.4	6.8	7.2	18.8	33
4AM55 4	0.8	3RV10 11–□□□10	1FA	1JA	1JA	–	–
		3RV10 21–□□□10	–	–	–	4DA	–
		3RV10 31–□□□10	–	–	–	–	4GA
		Setting value in A	4.4	8.8	9.2	24	42
4AM57 4	1	3RV10 11–□□□10	1GA	1KA	1KA	–	–
		3RV10 31–□□□10	–	–	–	4EA	–
		3RV10 41–□□□10	–	–	–	–	4JA
		Setting value in A	5.4	10.8	11.4	30	52
4AM61 4	1.6	3RV10 11–□□□10	1JA	–	–	–	–
		3RV10 31–□□□10	–	4BA	4BA	4HA	–
		3RV10 41–□□□10	–	–	–	–	4LA
		Setting value in A	8.6	17	18.5	48	81
4AM64 4	2	3RV10 11–□□□10	1KA	–	–	–	–
		3RV10 31–□□□10	–	4DA	4DA	–	–
		3RV10 41–□□□10	–	–	–	4JA	4MA
		Setting value in A	10.9	22	23	60	101
4AM65 4	2.5	3RV10 21–□□□10	4AA	–	–	–	–
		3RV10 31–□□□10	–	4EA	4EA	–	–
		3RV10 41–□□□10	–	–	–	4KA	–
		3VF32 11–□□□□□-0AA0	–	–	–	–	1BU41
		Setting value in A	13.6	27	28	72	125
4AT30 3	4	3RV10 21–□□□10	4CA	–	–	–	–
		3RV10 31–□□□10	–	4GA	–	–	–
		Setting value in A	21	41	–	–	–
4AT36 1	5	3RV10 31–□□□10	4EA	–	–	–	–
		3RV10 41–□□□10	–	4JA	–	–	–
		Setting value in A	26	51	–	–	–
4AT36 3	6.3	3RV10 31–□□□10	4FA	–	–	–	–
		3RV10 41–□□□10	–	4KA	–	–	–
		Setting value in A	32	64	–	–	–
4AT39 1	8	3RV10 31–□□□10	4GA	–	–	–	–
		3RV10 41–□□□10	–	4LA	–	–	–
		Setting value in A	41	81	–	–	–
4AT39 3	10	3RV10 41–□□□10	4JA	4MA	–	–	–
		Setting value in A	51	100	–	–	–

Transformer	Rated output P_n	Miniature circuit-breaker	Rated output voltage U_{2N} in V		
Type	kVA	Type	230	115	24
4AM23 4	0.025	5SX2 □□□-7	–	–	–
		Current value in A	–	–	–
4AM26 4	0.04	5SX2 □□□-7	–	–	102
		Current value in A	–	–	2
4AM32 4	0.063	5SX2 □□□-7	–	–	103
		Current value in A	–	–	3
4AM34 4	0.1	5SX2 □□□-7	105	101	–
		Current value in A	0.5	1	–
4AM38 4	0.16	5SX2 □□□-7	–	115	108
		Current value in A	–	1.6	8
4AM40 4	0.25	5SX2 □□□-7	–	–	–
		Current value in A	–	–	–
4AM43 4	0.315	5SX2 □□□-7	115	103	116
		Current value in A	1.6	3	16
4AM46 4	0.4	5SX2 □□□-7	102	104	120
		Current value in A	2	4	20
4AM48 4	0.5	5SX2 □□□-7	103	–	125
		Current value in A	3	–	25
4AM52 4	0.63	5SX2 □□□-7	104	106	132
		Current value in A	4	6	32
4AM55 4	0.8	5SX2 □□□-7	–	108	140
		Current value in A	–	8	40
4AM57 4	1	5SX2 □□□-7	–	110	150
		Current value in A	–	10	50
4AM61 4	1.6	5SX2 □□□-7	108	116	–
		Current value in A	8	16	–
4AM64 4	2	5SX2 □□□-7	110	120	–
		Current value in A	10	20	–
4AM65 4	2.5	5SX2 □□□-7	113	125	–
		Current value in A	13	25	–
4AT30 3	4	5SX2 □□□-7	120	140	–
	4	Current value in A	20	40	–
4AT36 1	5	5SX2 □□□-7	125	150	–
		Current value in A	25	50	–
4AT36 3	6.3	5SX2 □□□-7	132	163	–
		Current value in A	32	63	–
4AT39 1	8	5SX2 □□□-7	140	180	–
		Current value in A	40	80	–
4AT39 3	10	5SX2 □□□-7	150	191	–
		Current value in A	50	100	–

2) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

12

General data

Short-time rating of control transformers $P_{shortt.}$[1]) = f (p.f.) for $U_2 = 0.95 \times U_{2N}$

Trans-former	Rated output P_n	Short-time rating $P_{shortt.}$[1]) with										Voltage increase on no load (operating temperature)	Voltage drop on rated load (at 20 °C)	Short-circuit voltage (at 20 °C)
		p.f. = 0.1	p.f. = 0.2	p.f. = 0.3	p.f. = 0.4	p.f. = 0.5	p.f. = 0.6	p.f. = 0.7	p.f. = 0.8	p.f. = 0.9	p.f. = 1			
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	u_A %	u_R %	u_Z %
4AM32 4	0.063	0.56	0.37	0.28	0.23	0.19	0.16	0.14	0.12	0.12	0.11	10	8.4	8.5
4AM34 4	0.1	0.96	0.62	0.46	0.37	0.31	0.26	0.23	0.21	0.19	0.17	10	7.7	7.7
4AM38 4	0.16	1.52	0.98	0.73	0.58	0.49	0.42	0.37	0.33	0.3	0.28	10.4	7.6	7.7
4AM40 4	0.25	2.5	1.62	1.24	1	0.85	0.74	0.66	0.59	0.54	0.51	7.2	5.4	5.4
4AM43 4	0.315	3.4	2.15	2.63	1.33	1.12	1.97	1.86	0.77	0.71	0.67	6.6	4.9	5
4AM46 4	0.4	3.51	2.53	2	1.67	1.44	1.26	1.13	1	0.95	0.92	5.7	4.3	4.4
4AM48 4	0.5	5.34	3.75	2.9	2.4	2	1.75	1.55	1.4	1.3	1.25	5	3.8	3.8
4AM52 4	0.63	5.05	3.85	3.15	2.7	2.35	2.1	1.9	1.75	1.65	1.6	4.7	3.6	3.7
4AM55 4	0.8	7.69	5.8	4.65	3.9	3.4	3	2.7	2.5	2.3	2.25	4	3	3.1
4AM57 4	1.0	12.1	8.85	7	5.85	5	4.4	3.95	3.6	3.3	3.2	3.2	2.5	2.5
4AM61 4	1.6	12.1	10.3	9	8.1	7.3	6.8	6.4	6.1	5.9	6.4	2.4	1.9	2.1
4AM64 4	2	15.8	13.5	11.9	10.7	9.7	9	8.5	8.1	7.9	8.6	2.1	1.7	1.9
4AM65 4	2.5	19.6	17.3	15.6	14.3	13.3	12.5	12	11.6	11.5	13.2	1.6	1.3	1.6
4AT30 3	4	45.8	32.6	25.4	20.9	17.8	15.5	13.8	12.5	11.5	11	4.1	2.9	2.9
4AT36 1	5	48	36.7	27.9	22.6	19	16.5	14.6	13.1	12	11.2	5.9	4	4.1
4AT36 3	6.3	54.9	42.1	33.8	28.4	24.5	21.7	19.5	17.8	16.5	16.1	4.7	3.2	3.3
4AT39 1	8	70	53.6	43	36	31.1	27.5	24.8	22.6	21	20.4	4.6	3.2	3.3
4AT39 3	10	64.1	53.3	45.8	40.5	36.4	33.3	30.9	29.1	27.9	29.4	3.7	2.6	2.9
4AT43 0	11.2	117	85.8	67.8	56.3	48.3	42.4	37.9	34.5	31.9	30.7	4.1	2.9	2.9
4AT43 1	12.5	117	89.5	72.9	61.8	53.8	47.9	43.3	39.8	37.2	36.7	3.7	2.6	2.7
4AT43 2	14	111	90	75.9	66	58.7	53.1	48.8	45.5	43.2	44.2	3.3	2.3	2.5
4AT45 0	16	187	140	112	94	81.2	71.7	64.5	59	54.7	53.4	3.1	2.1	2.2

1) $P_{shortt.}$ applies up to 300 contactor operations per hour.

Overview

- 4AM and 4AT special transformers designed as isolating, control and line transformers in accordance with EN 61558-2-4, -2-2, -2-1
  or safety, control and line transformers in accordance with EN 61558-2-6, -2-2, -2-1
  or autotransformers in accordance with EN 61558-2-13
  with selectable input and output voltages from 0.025 kVA to 16 kVA (= type rating for autotransformers) and additional options
- CE, cULus
- 4AM: t_a = 40 °C/B, 4AT: t_a = 55 °C/H
- Standard vector group: Ii0, for autotransformer: Ia0
- When ordering, please specify the Order No. stem and state the options required in plain text (address for enquiries and ordering, see Page 12/3).

4AM (Figure on the left) and 4AT (figure on the right)

Selection and ordering data

Rated output[1] P_n for degree of protection IP00	IP23	IP54	Rated voltage, selectable U_{1N}, U_{2N}	DT[2]	Order No. stem	Standard options: Two tappings in the range ± 5 % rated input or output voltage for constant power	One tapping on the input or output side for falling output	One additional, separate winding on the input or output side	Shield winding (connection routed to terminal). This is not possible for autotransformers.	Rail mounting[3]	PS*	Copper weight per PU approx.	Transformer weight per PU approx.	Complete weight incl. enclosure per PU approx.
kVA	kVA	kVA										kg	kg	kg
0.025	0.023	0.02	12 V to 690 V, at cULus max. 600 V (incl. tappings)	B	**4AM23 4**					-	1 unit	0.110	0.600	1.900
0.04	0.036	0.03		B	**4AM26 4**					-	1 unit	0.150	0.800	2.100
0.063	0.057	0.05		B	**4AM32 4**					-	1 unit	0.240	1.400	2.700
0.1	0.09	0.08		B	**4AM34 4**					-	1 unit	0.260	2.000	3.300
0.16	0.145	0.128		B	**4AM38 4**					-	1 unit	0.320	2.700	5.600
0.25	0.225	0.2		B	**4AM40 4**					-	1 unit	0.590	3.700	6.600
0.315	0.268	0.236		B	**4AM43 4**					-	1 unit	0.670	4.500	7.400
0.4	0.34	0.3		B	**4AM46 4**					-	1 unit	1.100	5.400	8.300
0.5	0.425	0.375		B	**4AM48 4**					-	1 unit	1.100	7.000	9.900
0.63	0.535	0.475		B	**4AM52 4**					-	1 unit	1.700	7.900	10.800
0.8	0.68	0.6		B	**4AM55 4**					-	1 unit	1.900	11.000	13.900
1	0.85	0.75		B	**4AM57 4**					-	1 unit	2.000	14.000	16.900
1.6	1.36	1.2		B	**4AM61 4**					-	1 unit	4.100	19.000	27.000
2	1.7	1.5		B	**4AM64 4**					-	1 unit	4.700	23.000	31.000
2.5	2.13	1.88		B	**4AM65 4**					-	1 unit	6.400	29.000	37.000
4	3.6	3.15	24 V to 690 V, at cULus max. 600 V (incl. tappings)	B	**4AT30 3**					-	1 unit	6.600	27.000	35.000
5	4.5	4		B	**4AT36 1**					-	1 unit	5.200	32.000	40.000
6.3	5.6	5		B	**4AT36 3**					-	1 unit	8.700	37.000	45.000
8	7.1	6.3		B	**4AT39 1**					-	1 unit	9.900	45.000	59.000
10	9	8		B	**4AT39 3**					-	1 unit	17.000	52.000	66.000
11.2	10	–		B	**4AT43 0**					-	1 unit	12.000	62.000	76.000
12.5	11.2	–		B	**4AT43 1**					-	1 unit	15.000	65.200	79.200
14	12.5	–		B	**4AT43 2**					-	1 unit	19.000	69.300	83.300
16	14	–		D	**4AT45 0**					-	1 unit	16.000	83.200	107.000

1) For autotransformers = type rating.
2) The delivery time class B depends on the quantity.
3) Types 4AM32 4 to 4AM40 4 have integrated rail fixing.

Options

- Cage Clamp connection; up to 24 V
- Deviations from the standard vector groups Ii0 or Ia0 for autotransformers must be specified when ordering.

*** This quantity or a multiple thereof can be ordered.**

Power transformers

Overview

- 4BT special transformers designed as matching, auto-[1]) or converter transformers acc. to DIN VDE 0532-6 with selectable input and output voltages from 100 V to 1000 V and additional options
- CE, cULus[2])
- t_a = 55 °C/H
- Standard vector group: Ii0, for autotransformer: Ia0
- When ordering, please specify the Order No. stem and state the options required in plain text (address for enquiries and ordering, see Page 12/3).

4BT

1) For autotransformers = type rating.

2) cULus approvals for voltages ≤ 600 V (incl. tappings) and IP00 degree of protection.

Selection and ordering data

Rated output[1]) P_n for degree of protection IP00, IP20, IP23[2])	IP23	DT	Order No. stem	Standard options	PS*	Copper weight per PU approx.	Transformer weight per PU approx.	Complete weight incl. enclosure per PU approx.
kVA	kVA					kg	kg	kg
18	16	D	**4BT45 0**	Two tappings in the range ± 5% rated input or output voltage at constant output; One tapping on the input or output side for falling output; One additional, separate winding on the input or output side; Shield winding (connection routed to terminal). This is not possible for autotransformers.; Fitted into IP20 or IP23 protective enclosures	1 unit	18.500	85.000	105.000
20	18	D	**4BT47 0**		1 unit	16.000	104.000	124.000
22.5	20	D	**4BT47 1**		1 unit	20.500	106.000	126.000
25	22.5	D	**4BT47 2**		1 unit	26.500	112.000	132.000
28	25	D	**4BT51 0**		1 unit	25.000	109.000	166.000
31.5	28	D	**4BT52 0**		1 unit	26.500	122.000	179.000
35.5	32	D	**4BT53 0**		1 unit	28.000	135.000	192.000
40	36	D	**4BT54 0**		1 unit	26.000	159.000	221.000
45	40.5	D	**4BT54 1**		1 unit	33.000	166.000	228.000
50	45	D	**4BT55 0**		1 unit	34.000	183.000	245.000
63	56.5	D	**4BT56 0**		1 unit	45.000	214.000	276.000
80	72	D	**4BT58 1**		1 unit	46.000	259.000	371.000
100	90	D	**4BT59 0**		1 unit	60.500	302.000	414.000
125	112.5	D	**4BT60 1**		1 unit	78.000	355.000	467.000
160	144	D	**4BT62 1**		1 unit	100.000	444.000	578.000
200	180	D	**4BT63 0**		1 unit	129.000	523.000	657.000
250	225	D	**4BT65 0**		1 unit	134.500	646.000	780.000

1) For autotransformers = type rating.

2) No derating for ambient temperatures ≤ 40 °C.

Options

- Thermistor transformer protection for warning and/or disconnection, see "General data; Design".
- Deviations from the standard vector groups Ii0 or Ia0 for autotransformers must be specified when ordering.

Further designs with higher outputs up to 1250 kVA are available on request.

*** This quantity or a multiple thereof can be ordered.**

General data

Overview

- acc. to DIN VDE 0552
- Design with manual actuation of motorized operating mechanism
- IP00 or IP20 degree of protection
- CE
- t_a = 40 °C/E

Design

In 4CH toroidal-core variable transformers and 4CP pillar-type variable transformers, the transmission ratio can be changed steplessly using the moving contacts on the contact paths of the windings without altering the phase angle – also under load.

Design:

- Autotransformer circuit
- Rated current constant in the entire control range
- Overload capability (see characteristic)
- Input voltage is not affected (no harmonics)
- Normal operation: constant movement of the moving contact, output increase 20 % compared to "Heavy duty"
- Heavy duty: no movement of the moving contact over long periods (24 h), frequent switching on and disconnection under load conditions, operation with phase control (ratio of effective value to rectified value > 1.15)
- Toroidal-core, variable transformers: adjustment angle approx. 340°
- Pillar-type, variable transformers: points of contact hard silver-plated
- Accessories: motorized operating mechanism see "Selection and ordering data".

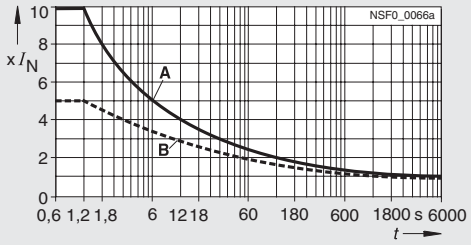
Stop brake and reversing contactor available on request.

Ambient conditions

The 4CH and 4CP variable transformers are climate-proof for mounting in rooms with an internal climate to DIN 50010.

Limit values:

- Ambient temperature
  - at rated output, +40 °C,
  - minimum –25 °C.
- Relative air humidity
  - at 40 °C up to 85 %,
  - annual average up to 65 %,
  - condensation not permitted.

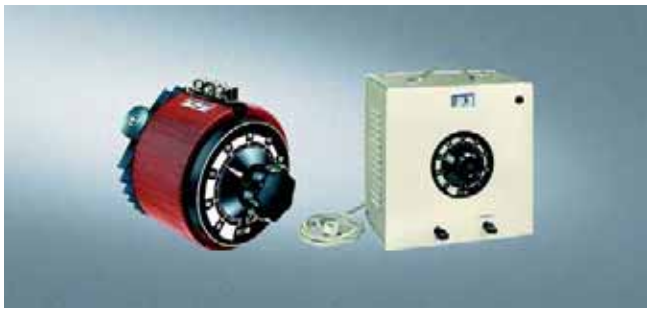


Reference temperature:
Curve A: winding temperature = ambient temperature
Curve B: winding temperature = operating temperature

Overload capability (guide values)

Toroidal-core variable transformers

Area of application



4CH, IP00 degree of protection (figure on the left) and IP20 degree of protection (figure on the right)

4CH toroidal-core variable transformers are used for continuous adjustment of AC voltages. All types can be used in the frequency range from 50 Hz to 400 Hz.

Design

The output voltage is sinusoidal, harmonics are not generated by toroidal-core variable transformers. All connections are routed to screw-type terminals. Solder terminals and tab terminals are available on request.

Toroidal-core variable transformers

Selection and ordering data

Manual operation, rated voltage: PRI 230 V, 50 Hz to 400 Hz; SEC 0 V to 230 V stepless; vector group Ia0

Normal operation		Heavy duty		DT [1]	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current					
kVA	A	kVA	A				kg	kg
IP00 degree of protection								
0.28	1.2	0.23	1	►	**4CH10 00–1AA**	1 unit	0.050	1.000
0.44	1.9	0.37	1.6	►	**4CH11 00–1AA**	1 unit	0.080	2.000
0.69	3	0.58	2.5	►	**4CH12 00–1AA**	1 unit	0.150	3.000
1.04	4.5	0.92	4	►	**4CH13 00–1AA**	1 unit	0.400	4.000
1.38	6	1.27	5.5	►	**4CH20 00–1AA**	1 unit	0.600	5.000
1.73	7.5	1.5	6.3	►	**4CH14 00–1AA**	1 unit	0.600	5.000
2.3	10	1.85	8	►	**4CH21 00–1AA**	1 unit	0.900	7.000
2.76	12	2.3	10	►	**4CH15 00–1AA**	1 unit	1.000	9.000
3.22	14	2.8	12	►	**4CH16 00–1AA**	1 unit	1.100	9.000
IP20 degree of protection								
stationary								
0.28	1.2	0.23	1	B	**4CH10 00–1AG**	1 unit	0.050	2.500
0.44	1.9	0.37	1.6	B	**4CH11 00–1AG**	1 unit	0.080	3.000
0.69	3	0.58	2.5	B	**4CH12 00–1AG**	1 unit	0.150	4.000
1.04	4.5	0.92	4	B	**4CH13 00–1AG**	1 unit	0.400	6.000
1.38	6	1.27	5.5	B	**4CH20 00–1AG**	1 unit	0.600	10.000
1.73	7.5	1.5	6.3	B	**4CH14 00–1AG**	1 unit	0.600	11.000
2.3	10	1.85	8	B	**4CH21 00–1AG**	1 unit	0.900	13.000
2.76	12	2.3	10	B	**4CH15 00–1AG**	1 unit	1.000	15.000
3.22	14	2.8	12	B	**4CH16 00–1AG**	1 unit	1.100	15.000
portable								
0.28	1.2	0.23	1	B	**4CH10 00–1AH**	1 unit	0.050	2.500
0.44	1.9	0.37	1.6	B	**4CH11 00–1AH**	1 unit	0.080	3.000
0.69	3	0.58	2.5	B	**4CH12 00–1AH**	1 unit	0.150	4.000
1.04	4.5	0.92	4	B	**4CH13 00–1AH**	1 unit	0.400	6.000
1.38	6	1.27	5.5	B	**4CH20 00–1AH**	1 unit	0.600	10.000
1.73	7.5	1.5	6.3	B	**4CH14 00–1AH**	1 unit	0.600	11.000
2.3	10	1.85	8	B	**4CH21 00–1AH**	1 unit	0.900	13.000
2.76	12	2.3	10	B	**4CH15 00–1AH**	1 unit	1.000	15.000
3.22	14	2.8	12	B	**4CH16 00–1AH**	1 unit	1.100	15.000

1) The delivery time class B depends on the quantity.

Motorized operating mechanism (AC 230 V motor) with 12 s actuating time, rated voltage: PRI 230 V, 50 Hz to 400 Hz; SEC 0 V to 230 V stepless; vector group Ia0

Normal operation		Heavy duty		DT [1]	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current					
kVA	A	kVA	A				kg	kg
IP00 degree of protection								
0.69	3	0.58	2.5	B	**4CH12 00–1BA**	1 unit	0.150	7.300
1.04	4.5	0.92	4	B	**4CH13 00–1BA**	1 unit	0.400	8.300
1.38	6	1.27	5.5	B	**4CH20 00–1BA**	1 unit	0.600	5.000
1.73	7.5	1.5	6.3	B	**4CH14 00–1BA**	1 unit	0.600	9.300
2.3	10	1.85	8	B	**4CH21 00–1BA**	1 unit	0.900	7.000
2.76	12	2.3	10	B	**4CH15 00–1BA**	1 unit	1.000	9.000
3.22	14	2.8	12	B	**4CH16 00–1BA**	1 unit	1.100	9.000
IP20 degree of protection								
0.69	3	0.58	2.5	B	**4CH12 00–1BG**	1 unit	0.150	8.300
1.04	4.5	0.92	4	B	**4CH13 00–1BG**	1 unit	0.400	10.300
1.38	6	1.27	5.5	B	**4CH20 00–1BG**	1 unit	0.600	10.000
1.73	7.5	1.5	6.3	B	**4CH14 00–1BG**	1 unit	0.600	15.300
2.3	10	1.85	8	B	**4CH21 00–1BG**	1 unit	0.900	13.000
2.76	12	2.3	10	B	**4CH15 00–1BG**	1 unit	1.000	15.000
3.22	14	2.8	12	B	**4CH16 00–1BG**	1 unit	1.100	15.000

1) The delivery time class B depends on the quantity.

Options

Designs for other currents, voltages, special constructions and combinations with fixed-ratio transformers available on request.

*** This quantity or a multiple thereof can be ordered.**

Area of application

4CP4, IP00 degree of protection

The 4CP pillar-type variable transformers are used whenever fine adjustment of output voltages for high currents with a stable sinusoidal form is required.

Design

For problem-free current transfer, the ground contact paths of the tapped windings are hard silver-plated.

Depending on the position of the moving contact, the full rated current can be obtained.

Selection and ordering data

Manual operation, rated voltage: PRI 400 V, 50 Hz to 400 Hz; SEC 0 V to 400 V stepless; Vector group Ia0

Normal operation		Heavy duty		Actuating time for design with motorized operating mechanism	DT	Order No.	PS*	Copper weight per PU approx.	Silver weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current							
kVA	A	kVA	A	s				kg	kg	kg
IP00 degree of protection										
13.8	34.5	12	30	19	D	**4CP4 050–2ED0**	1 unit	16.000	0.021	81.900
18.4	46	16	40	22	D	**4CP4 050–2FD0**	1 unit	24.000	0.023	90.900
23	57.5	20	50	33	D	**4CP4 080–2GD0**	1 unit	47.000	0.035	140.000
27.6	69	24	60	33	D	**4CP4 080–2HD0**	1 unit	54.000	0.035	148.000
36.8	92	32	80	40	D	**4CP4 090–2KD0**	1 unit	77.000	0.041	175.000
46	115	40	100	45	D	**4CP4 100–2LD0**	1 unit	91.000	0.046	214.000
55.2	138	48	120	48	D	**4CP4 110–2MD0**	1 unit	115.000	0.051	238.000
69	173	60	150	56	D	**4CP4 130–2PL0**	1 unit	152.000	0.115	279.000
73.6	184	64	160	38	D	**4CP4 090–2QF0**	1 unit	153.000	0.078	319.000
92	230	80	200	45	D	**4CP4 100–2SF0**	1 unit	182.000	0.092	342.000
110	275	96	240	48	D	**4CP4 110–2UF0**	1 unit	229.000	0.101	440.000
138	345	120	300	56	D	**4CP4 130–3BN0**	1 unit	304.000	0.230	549.000
166	415	144	360	48	D	**4CP4 110–3DG0**	1 unit	342.000	0.152	747.000
207	518	180	450	56	D	**4CP4 130–3GP0**	1 unit	455.000	0.230	819.000
IP20 degree of protection										
13.8	34.5	12	30	19	D	**4CP5 050–2ED0**	1 unit	16.000	0.021	91.000
18.4	46	16	40	22	D	**4CP5 050–2FD0**	1 unit	24.000	0.023	101.000
23	57.5	20	50	33	D	**4CP5 080–2GD0**	1 unit	47.000	0.035	156.000
27.6	69	24	60	33	D	**4CP5 080–2HD0**	1 unit	54.000	0.035	165.000
36.8	92	32	80	40	D	**4CP5 090–2KD0**	1 unit	77.000	0.041	195.000
46	115	40	100	45	D	**4CP5 100–2LD0**	1 unit	91.000	0.046	238.000
55.2	138	48	120	48	D	**4CP5 110–2MD0**	1 unit	115.000	0.051	265.000
69	173	60	150	56	D	**4CP5 130–2PL0**	1 unit	152.000	0.115	310.000
73.6	184	64	160	38	D	**4CP5 090–2QF0**	1 unit	153.000	0.078	355.000
92	230	80	200	45	D	**4CP5 100–2SF0**	1 unit	182.000	0.092	380.000
110	275	96	240	48	D	**4CP5 110–2UF0**	1 unit	229.000	0.101	489.000
138	345	120	300	56	D	**4CP5 130–3BN0**	1 unit	304.000	0.230	610.000
166	415	144	360	48	D	**4CP5 110–3DG0**	1 unit	342.000	0.152	830.000
207	518	180	450	56	D	**4CP5 130–3GP0**	1 unit	455.000	0.230	910.000

*** This quantity or a multiple thereof can be ordered.**

Transformer-type voltage stabilizers

Overview

4FL

- acc. to DIN VDE 0660 Part 500
- IP21 degree of protection
- CE
- t_a = 40 °C/E

Area of application

The 4FL transformer-type voltage stabilizers are used as voltage stabilizers on supply systems with varying voltages. On the output of the voltage stabilizer a constant voltage is available for the load, thus creating a constant machine performance which is immune to variations in the supply system.

Design

The transformer-type voltage stabilizer supplies electrical loads with a constant voltage despite mains variations.

The advantage of a voltage stabilizer with an autotransformer is the proportional changing of the sine wave, i.e. the voltage stabilizer is characterized in that the rms value, mean value and the peak value are held at constant ratios.

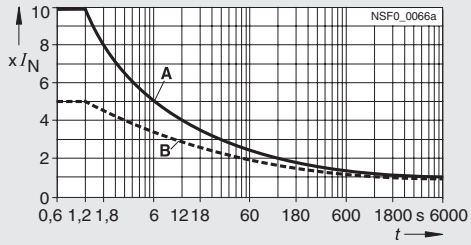
A perfect rms value is required, for example, by loads for which the loading is determined by the temperature limits. Strongly capacitive loading in DC units respond to the mean value. A slightly capacitive load is, however, influenced by the peak value. These factors are, however, only guaranteed for sinusoidal AC voltages and this can only be achieved easily by means of an autotransformer.

Voltage stabilizers stabilize the supply voltage U_1 regardless of the frequency and power factor to the rated value of the output voltage U_{2N} within the set control accuracy (± 1 % of U_{2N}). The correcting time from the upper or lower limit to the rated value is between 1.5 s and 2.5 s. The curve shape of the supplied voltage is not changed.

The output voltage U_2 is compared in the electronic step controller with a set reference voltage. In the event of a deviation in voltage greater than the set response value, the electronic step controller compensates the deviation with an accuracy of ±1 % using a servo motor and adjustable moving contact on the variable-ratio transformer.

Transformer voltage stabilizers:

- are galvanically connected to the supply system
- can be overloaded temporarily (see characteristic)
- can be installed in a sheet-steel housing to IP21 complete with any additional components
- have an efficiency of between 95 % and 98 %
- are not maintenance-free.
- For the values for control range and control deviation, see "Selection and ordering data".



Reference temperature:

Curve A: winding temperature = ambient temperature
Curve B: winding temperature = operating temperature

Overload capability (guide values)

Ambient conditions

Transformer-type voltage stabilizers 4FL are climate-proof for mounting in rooms with an internal climate to DIN 50010.

Limit values:

- Ambient temperature for
  - rated output, +40 °C,
  - minimum –25 °C.
- relative air humidity
  - 40 °C up to 85 %
  - annual average up to 65 %
  - condensation not permitted

Short-circuit and overload protection

Transformer voltage stabilizers must be protected with gL/gG fuses on the primary side against damage caused by short-circuits. The fuse rated current must be determined according to the highest primary current (present with the lowest input voltage). Overload and short-circuit protective devices according to the rated load current must be provided on the output side. An overload relay is integrated in the control circuit, the trip contacts (break or make) must be connected on a switch that automatically disconnects the transformer voltage stabilizer from the mains in the event of a fault.

Transformer-type voltage stabilizers

Selection and ordering data

Rated voltage: PRI = SEC: 230 V, 50 Hz to 60 Hz

Settling time	Rated output P_n	DT	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
s	kVA				kg	kg
Control range for input voltage: +10 % to –10 %						
1.5	2.2	D	**4FL13 00–2CN**	1 unit	1.300	25.000
1.5	3.6	D	**4FL16 00–2CN**	1 unit	1.600	30.000
1.5	5.6	D	**4FL22 00–2CN**	1 unit	2.800	35.000
1.5	8.5	D	**4FL26 00–2CN**	1 unit	3.500	40.000
1.5	11.5	D	**4FL29 00–2CN**	1 unit	5.100	45.000
1.5	17	D	**4FL33 00–2CN**	1 unit	8.500	80.000
1.5	22.5	D	**4FL37 00–2CN**	1 unit	10.800	90.000
1.5	31.5	D	**4FL41 00–2CN**	1 unit	12.600	110.000
1.5	63	D	**4FL48 00–2CN**	1 unit	32.200	220.000
Control range for input voltage: +15 % to –15 %						
1.5	1.5	D	**4FL11 10–2CN**	1 unit	1.300	25.000
1.5	2.2	D	**4FL13 10–2CN**	1 unit	1.600	30.000
1.5	3.6	D	**4FL16 10–2CN**	1 unit	2.800	35.000
1.5	5.3	D	**4FL21 10–2CN**	1 unit	3.500	40.000
1.5	7	D	**4FL24 10–2CN**	1 unit	5.100	45.000
1.5	11	D	**4FL28 10–2CN**	1 unit	8.500	80.000
1.5	14	D	**4FL30 10–2CN**	1 unit	10.800	90.000
1.5	20	D	**4FL34 10–2CN**	1 unit	12.600	110.000
1.5	40	D	**4FL44 10–2CN**	1 unit	32.200	220.000
Control range for input voltage: +20 % to –20 %						
1.5	1	D	**4FL10 20–2CN**	1 unit	1.300	25.000
1.5	1.6	D	**4FL12 20–2CN**	1 unit	1.600	30.000
1.5	2.5	D	**4FL14 20–2CN**	1 unit	2.800	35.000
1.5	3.8	D	**4FL17 20–2CN**	1 unit	3.500	40.000
1.5	5	D	**4FL20 20–2CN**	1 unit	5.100	45.000
1.5	7.5	D	**4FL25 20–2CN**	1 unit	8.500	80.000
1.5	10	D	**4FL27 20–2CN**	1 unit	10.800	90.000
1.5	14	D	**4FL30 20–2CN**	1 unit	12.600	110.000
1.5	28	D	**4FL39 20–2CN**	1 unit	32.200	220.000

*** This quantity or a multiple thereof can be ordered.**

Solenoid-type voltage stabilizers

Overview

4FK31 to 4FK34 (figure on the left) and 4FK35 to 4FK38 (figure on the right)

- acc. to DIN VDE 61558-2-12
- with sinusoidal output voltage
- Settling time 40 ms
- CE
- t_a = 40 °C

Area of application

The 4FK magnetic-type voltage stabilizers are used for loads that are supplied with AC voltage and that are particularly sensitive to voltage variations.

Design

The correcting time for the voltage stabilizers is about 40 ms, whereby they can bridge mains voltage interruptions of up to half a sine wave. The stabilizing effect is based on a tuned anti-resonant circuit with an iron-core reactor that is forced into saturation (see "Circuit diagrams"). This iron-core reactor is responsible for the distorted output voltage (harmonic distortion from 3 % to 4 %). Depending on the anti-resonant circuit, magnetic-type voltage stabilizers are frequency dependent.

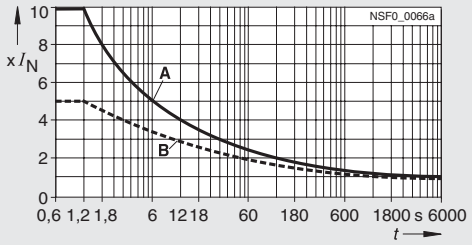
Voltage stabilizers are designed for resistive loads and harmonized. If the load has a power factor that lies outside the specification, the output voltage will be reduced for an inductive load and increased for a capacitive load. Inductive loads can be compensated by using appropriate compensation capacitors. It is also possible to construct voltage stabilizers that are adapted to a different power factor.

Magnetic-type voltage stabilizers have outputs that are short-circuit proof, i.e. when the outputs are short-circuited, the current rises to 1.3 to 1.5 times the value. The input current only changes insignificantly. Due to this characteristic, a voltage stabilizer cannot rupture a fuse. The load can be protected by a motor protection switch at the output that is set to rated current. Magnetic-type voltage stabilizers have, as a result of the high inductance in the iron core, inrush currents between 10 times and 30 times the rated current. For this reason, a slow-acting line fuse should be used at the input.

The characteristics of magnetic-type voltage stabilizers can be summarized as follows:

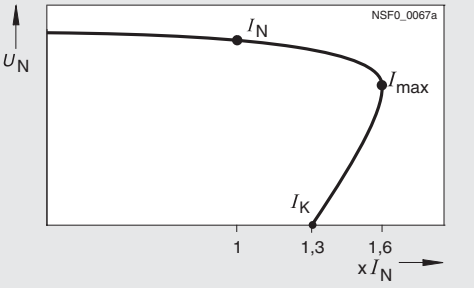
- Settling of mains voltage variations.
- Maintaining the output voltage at a constant value despite load variations.
- Galvanic isolation of the output voltage from the input voltage, transformation of the input voltage to the required output voltage.
- Limitation of the output current in the event of an overload or short-circuit to approximately 1.3 or 1.6 × I_n (see current/voltage characteristic), short-circuit resistant.
- Filtering of high-frequency faults (attenuation of 35 dB up to 100 kHz) and suppression of voltage spikes. Filtering of distorted input voltages, harmonic distortion factor of the output from 3 % to 4 % at rated load.
- Maintenance-free
- No moving parts
- Bridges mains voltage interruptions of up to half a sine wave.
- Depending on the anti-resonant circuit, magnetic-type voltage stabilizers are frequency dependent.

It must be taken into account that the operating temperature and the noise generation is higher for a magnetic-type voltage stabilizer than for an isolating transformer.



Reference temperature:
Curve A: Winding temperature = ambient temperature
Curve B: Winding temperature = operating temperature

Overload capability (guide values)



Current/voltage characteristic

Ambient conditions

Magnetic-type voltage stabilizers 4FK are climate-proof for mounting in rooms with an internal climate to DIN 50010.

Limit values:

- Ambient temperature for
  - At rated output, +40 °C,
  - Minimum –25 °C.
- Relative air humidity
  - At 40 °C up to 100 %
  - Annual average up to 85 %,
  - Condensation not permitted.

Solenoid-type voltage stabilizers

Selection and ordering data

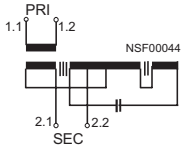
Rated output P_n	Rated voltage PRI/SEC	Degree of protection, design	Control accuracy in input voltage range from +10 % to –10 %	Control accuracy in input voltage range from +10 % to –20 %	PRI fuse external, operating class gL/gG	Distortion factor at P_n and U_{1N}	DT	Order No. or Order No. stem[1])	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	V		%	%	A	%				kg	kg
Adapted to rated frequency 50 Hz and p.f. = 1[2])											
0.12	230/230	IP65, resin-enclosed t_a = 40 °C/E	± 1.5	± 2	4	<4	▶	**4FK31 10–0AL10**	1 unit	1.700	9.000
0.25			± 1	± 2	6	<3	▶	**4FK32 10–0AL10**	1 unit	4.600	15.000
0.5					6		▶	**4FK33 10–0AL10**	1 unit	6.000	21.000
0.75					10		▶	**4FK34 10–0AL10**	1 unit	8.000	27.000
1		IP20, steel enclosure t_a = 40 °C/B	± 1	± 2	10	<3	▶	**4FK35 10–0AG10**	1 unit	9.600	32.000
1.5					16		▶	**4FK36 10–0AG10**	1 unit	14.000	42.000
2					16		▶	**4FK37 10–0AG10**	1 unit	18.000	52.000
2.5					20		▶	**4FK38 10–0AG10**	1 unit	22.000	68.000
3.15	400/230	IP21, steel enclosure t_a = 40 °C/F	± 1	± 2	16	<3	▶	**4FK39 10–1AN10**	1 unit	26.000	95.000
4					20		▶	**4FK40 10–1AN10**	1 unit	29.000	105.000
5					20		▶	**4FK41 10–1AN10**	1 unit	35.000	120.000
6.3					35		▶	**4FK42 10–1AN10**	1 unit	48.000	145.000
10					63		▶	**4FK44 10–1AN10**	1 unit	74.000	210.000
With selectable input and output voltages Adapted to rated frequency 50 Hz or 60 Hz and p.f. = 1 to p.f. = 0.5[3])											
0.12	Selectable from 110 to 500	IP65, resin-enclosed t_a = 40 °C/E	± 1.5	± 2	–	<4	D	**4FK31**	1 unit	1.700	9.000
0.25			± 1	± 2	–	<3	D	**4FK32**	1 unit	4.600	15.000
0.5							D	**4FK33**	1 unit	6.000	21.000
0.75							D	**4FK34**	1 unit	8.000	27.000
1		IP20, steel enclosure t_a = 40 °C/B	± 1	± 2	–	<3	D	**4FK35**	1 unit	9.600	32.000
1.5							D	**4FK36**	1 unit	14.000	42.000
2							D	**4FK37**	1 unit	18.000	52.000
2.5							D	**4FK38**	1 unit	22.000	68.000
3.15		IP21, steel enclosure t_a = 40 °C/F	± 1	± 2	–	<3	D	**4FK39**	1 unit	26.000	95.000
4							D	**4FK40**	1 unit	29.000	105.000
5							D	**4FK41**	1 unit	35.000	120.000
6.3							D	**4FK42**	1 unit	48.000	145.000
10							D	**4FK44**	1 unit	74.000	210.000

1) The Order No. stem is completed to the full order number when placing an order (enquiries/ordering address, see Page 12/3).

2) The units in the output range 3.15 kVA to 10 kVA have an additional connection for p.f. = 0.8.

3) Adjustment for only one p.f. value of 1 to 0.5 is possible.

Circuit diagrams



*** This quantity or a multiple thereof can be ordered.**

General data

Overview

SIDAC-T 4AP../4AU.. transformers

With the right transformer, the right voltage will be available whatever the conditions.

SIDAC-T transformers are the professionals for every type of application: They work reliably, safely and worldwide under a wide range of different conditions.

Whether in user-friendly combinations as isolating, control and line transformers or as isolating and line transformers.

Note: Line transformers with ≤ 50 V on the output side are, in the case of SITAS transformers, always designed as safety transformers.

SIDAC-T transformers offer optimal protection through high permissible ambient temperatures up to 40 °C or 55 °C, a high short-time rating in the case of control transformers, fuseless construction and due to its safety standard "Safety inside" EN 61558.

Benefits

- High short-time rating of the SITAS transformers: Lower transformer rated power for a large number of contactors
- Suitable for "fuseless construction": The small inrush current means that "circuit-breakers for motor protection" can also be used on the primary side
- UL approvals for the USA and Canada: Can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability.

Area of application

In industrial machines, process engineering, heating and air-conditioning equipment, etc., for supplying control and signaling circuits, when:

- Several electromagnetic loads (e.g. contactors) have to be controlled
- Control and signaling units are used outside the control cabinet
- The operating voltage for the loads differs from the available voltage level.

Design

Standards

EN 61558-2-4, -2-2, -2-1

The standard EN 61558 with the VDE classification VDE 0570 is the European edition of the international standard IEC 61558 (Safety of power transformers, power supply units and similar) and has completely replaced the previous standards VDE 0550 and VDE 0551.

Some of the transformers are subject to more stringent manufacturing and testing conditions in view of these changes.

Transformers for general applications always have double or reinforced insulation with SELV voltages (can be touched, maximum AC 50 V and DC 120 V), i.e. these transformers are exclusively safety isolating transformers.

Furthermore, all transformers have stated on them the protective elements provided for protection against short-circuit and overload.

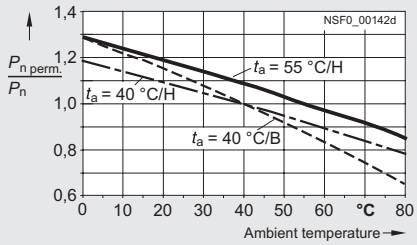
The SITAS transformer series contains the combined features of safety, isolating and control or line transformers, i.e. one transformer for (virtually) all applications. SITAS transformers meet the most stringent requirements (and in terms of safety, the most severe requirements) applicable to the transformer designs included in the series. A SITAS transformer is the right one whatever the application.

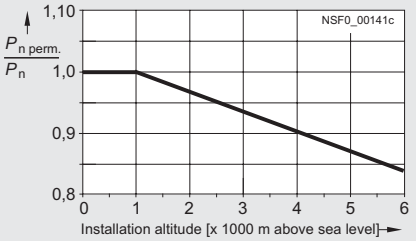
Rated output P_n at high ambient temperature – the reference for thermal load capacity

Reference conditions under which the transformers have the rated output P_n stated in the tables:

- Continuous operation P_n
- Frequency AC 50 Hz to 60 Hz
- IP00 degree of protection
- Installation altitude up to 1000 m above sea level and
- Rated ambient temperature t_a, 40 °C or 55 °C type-specific.

Other installation and operating conditions than this will affect the permissible continuous load capacity. In the case of the 4AP transformers, for example, with a lower ambient temperature of 30 °C, an increase in load of 8 % is possible (see loading characteristics).





Load characteristics: permissible transformer continuous load in relation to the ambient temperature and the installation altitude

Short-time rating $P_{n(S6)}$ of control transformers – the characteristic variable for the dynamic capacity

The most important selection criterion for control transformers is their short-time rating $P_{n(S6)}$.

This is required for switching on electromagnetic loads, e. g. contactors with high making current in relation to the holding current. According to EN 61558-2-2 "Special requirements for control transformers" the output voltage with this load should not drop more than 5 % in relation to the rated voltage in order to ensure safe switching.

Depending on their application, control transformers 4AP and 4AU ≤ 16 kVA are optimized for high short-time ratings with comparatively low ratings and thus small size.

General data

Low inrush current – primary-side short-circuit and overload protection with standard circuit-breakers

4AP and 4AU three-phase transformers in the rating range ≤ 16 kVA are matched to protective devices that reliably protect the transformers in the event of short-circuits or overloads.

Standard 3RV and 3VF circuit-breakers offer optimum protection. In this way the transformers are protected on the primary side against both short-circuits and overload, without the possibility of nuisance tripping on startup. The low inrush current, the short-circuit current and the thermal load capacity on overload are matched to the tripping characteristics of the circuit-breakers.

It is also possible to protect the transformers on the secondary side against short-circuits and overloads with circuit-breakers or miniature circuit-breakers with C characteristics.

Note: The specified primary-side circuit-breakers are for protecting the primary side of transformers in the event of short-circuits and overload on the secondary side. In the event of a possible short-circuit on the feeder lines between the protective device and the primary side of the transformer, the rated short-circuit breaking capacity of the circuit-breaker must be taken into account with regard to the maximum possible prospective short-circuit current at the place of installation. For these device assignments see the tables in the "Technical specifications".

Design

All 4AP and 4AU transformers are supplied for screw-fixing on a mounting plate

Connection

The 4AP transformers are supplied up to a rated current of 60 A, the 4AU transformers are supplied up to a rated current of 43 A and the 4BU transformers are supplied up to a rated current of 81 A in the standard version with screw-type terminals.

For higher currents, the transformers are supplied with flat connections or with threaded pins.

Enclosure mounting

4AP and 4AU SIDAC-T transformers are also available in protective enclosures of the IP23 and IP54 degree of protection.

Technical specifications

Transformers	Type	**4AP**	**4AU**
• Design		3UI core	3UI core
• Output range (with IP00)	kVA	0.16 ... 5	> 5 ... 16
• Approvals		cULus	
Voltage range	V	≤ 690	
• Approvals for USA, Canada	V	≤ 600	
Rated frequency	Hz	50 ... 60	
Temperature class		B	H
• acc. to UL/CSA		Class 130	Class 180
Ambient conditions		Protection against harmful ambient conditions: Complete impregnation in polyester resin Climate-proof for mounting in rooms with an external climate to DIN 50010	
Permissible ambient temperature			
• At rated output	°C	40	55
• Maximum value (after reduced output depending on load characteristics, see "Design")	°C	80	
• Minimum value	°C	–25	
Relative air humidity			
• Average up to	%	80	
• Maximum value for 30 days/year	%	95	
• At 40°C occasionally	%	100	
Protection class		I	
Degree of protection			
• Without enclosure		IP00	
• With protective enclosure (according to "Selection and ordering data")		IP23 or IP54	
• Design		IP23, IP54: Steel enclosure coated with epoxy resin, color gray RAL 7032	
Installation height		Up to 1000 m above sea level (above this, derating is necessary)	
Protective devices			
• external		The transformers can be protected against short-circuits and overload on the primary and secondary with circuit-breakers.	
		Assigned protective devices (see "Technical specifications")	
Connection design		The permissible conductor cross-sections are assigned to the specified terminal types.	
• Terminal arrangement (see "Circuit diagrams")		Refer to VDE 0100 Part 430 Supplement 1 and EN 60204 (VDE 0113-1) for the permissible conductor cross-sections for the specified current according to the installation type.	
• For terminal designs and connectable cross-sections (see "Dimensional drawings")		Other terminal sizes than standard versions on request.	
Mounting position		The permissible mounting position for each type is shown in the "Dimension drawings".	

For other technical specifications, see Catalog PD 60,
Order No.: E86060-K2806-A101-A1
or on the Internet at
www.siemens.de/sidac

General data

Rated outputs at different ambient temperatures

- with separate, isolated windings
- IP00 degree of protection
- to EN 61558, cULus

Transformer	Rated output	Permissible transformer load depending on the ambient temperature							
	P_n	t_a = 60 °C	t_a = 55 °C	t_a = 50 °C	t_a = 45 °C	t_a = 40 °C	t_a = 35 °C	t_a = 30 °C	t_a = 25 °C
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA
4AP17 4	0.16	0.134	0.141	0.147	0.154	0.160	0.166	0.173	0.178
4AP18 4	0.25	0.210	0.220	0.230	0.240	0.250	0.260	0.270	0.278
4AP19 4	0.4	0.336	0.352	0.368	0.384	0.400	0.416	0.432	0.444
4AP20 4	0.63	0.529	0.554	0.580	0.605	0.630	0.655	0.680	0.699
4AP21 4	1	0.840	0.880	0.920	0.960	1	1.04	1.08	1.11
4AP25 4	1.6	1.34	1.41	1.47	1.54	1.60	1.66	1.73	1.78
4AP27 4	2.5	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.78
4AP30 4	4	3.36	3.52	3.68	3.84	4	4.16	4.32	4.44
4AP30 5	5	4.20	4.40	4.60	4.80	5.50	5.20	5.40	5.55
4AU30 3	6.3	6.11	6.30	6.49	6.68	6.93	7.12	7.31	7.50
4AU36 1	8	7.76	8	8.24	8.48	8.80	9.04	9.28	9.52
4AU36 3	10	9.70	10	10.3	10.6	11	11.3	11.6	11.9
4AU39 1	12.5	12.1	12.5	12.9	13.3	13.8	14.1	14.5	14.9
4AU39 3	16	15.5	16	16.5	17	17.6	18.1	18.6	19

Operating characteristics

- acc. to EN 61558-2-6, EN 61558-2-4, EN 61558-2-1

Transformer	Rated output P_n 50 Hz ... 60 Hz 1000 m above sea level IP00 degree of protection	Core size	Voltage increase at no load (operating temperature)	Voltage drop at rated load[1])	Short-circuit voltage[1])	Efficiency
			u_A approx.	u_R approx.	u_Z approx.	η approx.
Type	kVA		%	%	%	%
4AP: t_a = 40 °C/B						
4AP17 4	0.16	3UI 60/30	13.3	10.1	10.1	85
4AP18 4	0.25	3UI 75/25	11.7	8.9	9	87
4AP19 4	0.4	3UI 75/40	11.8	8.5	8.5	87
4AP20 4	0.63	3UI 90/30	9.3	6.8	6.8	89
4AP21 4	1	3UI 90/50	6.4	4.8	4.8	92
4AP25 4	1.6	3UI 114/62	4.9	3.6	3.6	93
4AP27 4	2.5	3UI 132/70	4.5	3.4	3.4	94
4AP30 4	4	3UI 150/75	3.5	2.6	2.7	95
4AP30 5	5	3UI 150/75	2.8	2.1	2.2	96
4AU: t_a = 55 °C/H						
4AU30 3	6.3	3UI 150/75	3.8	2.6	2.6	96
4AU36 1	8	3UI 180/75	5.1	3.6	3.6	94
4AU36 3	10	3UI 180/75	4.1	2.9	3	95
4AU39 1	12.5	3UI 210/70	4.1	2.9	3.1	95
4AU39 3	16	3UI 210/70	3.2	2.3	2.8	96

Higher ratings and other conditions on request.

Calculation of heat dissipation P_V

$$P_V = \frac{P_n\,(100-\eta)}{\eta}\ \text{[kW]}$$

1) Winding reference temperature: 20 °C.

Primary-side short-circuit and overload protection with circuit-breakers

Trans-former	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated input voltage U_{1N} in V																
Type	kVA	Type	520	500	480	460	440	420	400	380	360	300	288	277	265	254	242	230	220	208
4AP17 4	0.16	3RV10 11–□□□10	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0EA	0FA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0HA	0HA
		Setting value in A	0.26	0.26	0.29	0.29	0.29	0.31	0.32	0.34	0.4	0.48	0.52	0.54	0.55	0.55	0.56	0.56	0.58	0.62
4AP18 4	0.25	3RV10 11–□□□10	0FA	0FA	0FA	0FA	0FA	0GA	0GA	0GA	0HA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	0KA
		Setting value in A	0.4	0.4	0.44	0.44	0.44	0.47	0.49	0.51	0.6	0.75	0.75	0.8	0.85	0.9	0.9	0.9	0.9	0.94
4AP19 4	0.4	3RV10 11–□□□10	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0JA	0KA	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA
		Setting value in A	0.62	0.62	0.7	0.7	0.71	0.75	0.78	0.82	1	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.5
4AP20 4	0.63	3RV10 11–□□□10	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1AA	1BA	1CA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1DA
		Setting value in A	0.95	0.95	1.1	1.1	1.1	1.2	1.2	1.3	1.5	1.8	1.9	2	2	2	2.2	2.2	2.2	2.3
4AP21 4	1	3RV10 11–□□□10	1BA	1BA	1CA	1CA	1CA	1CA	1CA	1CA	1DA	1EA	1EA	1EA	1EA	1EA	1EA	1EA	1FA	1FA
		Setting value in A	1.5	1.5	1.7	1.8	1.8	1.8	2	2	2.3	2.8	2.9	3.1	3.2	3.2	3.2	3.2	3.5	3.5
4AP25 4	1.6	3RV10 11–□□□10	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1GA	1GA	1GA	1GA	1GA	1HA	1HA	1HA	1HA
		Setting value in A	2.3	2.3	2.8	2.8	2.8	2.8	3	3.5	3.5	4.5	4.5	4.9	5	5	5.5	5.5	5.5	5.6
4AP27 4	2.5	3RV10 11–□□□10	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1JA	1JA	1KA	1KA
		Setting value in A	3.6	3.6	4	4.5	4.5	4.5	4.5	5.8	5.8	7	7	7.5	7.5	8	8	8	9	9
4AP30 4	4	3RV10 11–□□□10	1HA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1KA	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	4AA	4AA	4AA	4AA	4AA	4AA	4BA	4BA	4BA
		Setting value in A	5.7	5.7	6	7	7	7	7.2	8	9	11	11	12	12	13	13	14	14	14
4AP30 5	5	3RV10 11–□□□10	1JA	1JA	1JA	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	1KA	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA
		Setting value in A	7.2	7.2	8	9	9	9	9	11	11	13	14	15	15	16	17	17	17	17
4AU30 3	6.3	3RV10 11–□□□10	1KA	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	1KA	4AA	4AA	4AA	4AA	4BA	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA
		Setting value in A	9	9	10	10	10	11	11	12	13	15	16	16	17	18	19	20	20	22
4AU36 1	8	3RV10 21–□□□10	4AA	4AA	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA
		Setting value in A	12	12	13	13	13	14	15	15	16	20	20	21	22	23	24	25	26	28
4AU36 3	10	3RV10 21–□□□10	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4CA	4DA	4DA	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4FA	4FA	4FA	4FA	4FA
		Setting value in A	15	15	16	16	17	17	18	19	20	25	25	26	27	28	30	31	32	34
4AU39 1	12.5	3RV10 21–□□□10	4CA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4GA
		Setting value in A	9	19	20	20	20	22	22	23	25	30	31	32	34	35	37	39	40	43
4AU39 3	16	3RV10 21–□□□10	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	4EA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4HA	4HA	4HA	4HA	4HA	4HA
		Setting value in A	24	24	25	25	26	28	28	30	31	38	39	40	43	44	47	49	50	50

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

12

General data

Secondary-side short-circuit and overload protection with circuit-breaker or miniature circuit-breaker

Trans-former	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated output voltage U_{2N} in V	
Type	kVA	Type	400	230
4AP17 4	0.16	3RV10 11–□□□10 Setting value in A	0DA 0.27	0FA 0.5
4AP18 4	0.25	3RV10 11–□□□10 Setting value in A	0FA 0.42	0HA 0.75
4AP19 4	0.4	3RV10 11–□□□10 Setting value in A	0HA 0.7	0KA 1.2
4AP20 4	0.63	3RV10 11–□□□10 Setting value in A	0KA 1.1	1BA 1.9
4AP21 4	1	3RV10 11–□□□10 Setting value in A	1BA 1.7	1DA 3
4AP25 4	1.6	3RV10 11–□□□10 Setting value in A	1DA 2.7	1FA 5
4AP27 4	2.5	3RV10 11–□□□10 Setting value in A	1FA 4.2	1HA 7.5
4AP30 4	4	3RV10 11–□□□10 Setting value in A	1HA 6.7	1KA 12
4AP30 5	5	3RV10 11–□□□10 3RV10 21–□□□10 Setting value in A	1JA – 8.5	– 4AA 15
4AU30 3	6.3	3RV10 11–□□□10 3RV10 21–□□□10 Setting value in A	1KA – 11	– 4BA 19
4AU36 1	8	3RV10 21–□□□10 Setting value in A	4AA 14	4DA 24
4AU36 3	10	3RV10 21–□□□10 3RV10 31–□□□10 Setting value in A	4BA – 17	– 4EA 29
4AU39 1	12.5	3RV10 21–□□□10 3RV10 31–□□□10 Setting value in A	4CA – 21	– 4FA 37
4AU39 3	16	3RV10 31–□□□10 Setting value in A	4EA 27	4HA 47

Trans-former	Rated output P_n	Miniature circuit-breaker	Rated output voltage U_{2N} in V	
Type	kVA	Type	400	230
4AP17 4	0.16	5SX2 □□□-7 Current value in A	– –	– –
4AP18 4	0.25	5SX2 □□□-7 Current value in A	– –	– –
4AP19 4	0.4	5SX2 □□□-7 Current value in A	– –	– –
4AP20 4	0.63	5SX2 □□□-7 Current value in A	101 1	– –
4AP21 4	1	5SX2 □□□-7 Current value in A	115 1.6	103 3
4AP25 4	1.6	5SX2 □□□-7 Current value in A	– –	– –
4AP27 4	2.5	5SX2 □□□-7 Current value in A	104 4	– –
4AP30 4	4	5SX2 □□□-7 Current value in A	– –	– –
4AP30 5	5	5SX2 □□□-7 Current value in A	108 8	– –
4AU30 3	6.3	5SX2 □□□-7 Current value in A	110 10	– –
4AU36 1	8	5SX2 □□□-7 Current value in A	113 13	– –
4AU36 3	10	5SX2 □□□-7 Current value in A	116 16	– –
4AU39 1	12.5	5SX2 □□□-7 Current value in A	120 20	– –
4AU39 3	16	5SX2 □□□-7 Current value in A	– –	– –

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

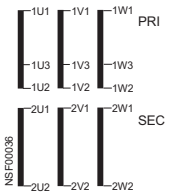
Short-time rating of control transformers $P_{shortt.}$[1]) = f (p.f.) for $U_2 = 0.95 \times U_{2N}$

Trans-former	Rated output P_n	Short-time rating $P_{shortt.}$[1]) with										Voltage rise at no load (operating temperature)	Voltage drop at rated load (at 20 °C)	Short- circuit voltage (at 20 °C)
		p.f. = 0.1	p.f. = 0.2	p.f. = 0.3	p.f. = 0.4	p.f. = 0.5	p.f. = 0.6	p.f. = 0.7	p.f. = 0.8	p.f. = 0.9	p.f. = 1			
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	u_A %	u_R %	u_Z %
4AP20 4	0.63	4.5	3.3	2.6	2.1	1.8	1.6	1.4	1.3	1.2	1.1	9.3	6.8	6.8
4AP21 4	1	9.3	6.5	5	4.1	3.5	3	2.7	2.4	2.2	2.1	6.4	4.8	4.8
4AP25 4	1.6	21	14	10	8.3	6.9	5.9	5.2	4.7	4.2	3.9	4.9	3.6	3.6
4AP27 4	2.5	37	24	17	14	11	9.9	8.7	7.8	7	6.5	4.5	3.4	3.4
4AP30 4	4	60	40	30	24	20	18	16	14	13	12	3.5	2.6	2.7
4AU30 3	6.3	64.5	48.5	39	32.5	28	25	22.5	20.5	19	18.5	3.5	2.6	2.6
4AU36 1	8	83	58.5	45	37	31.5	27.5	24	22	20	19	5.1	3.6	3.6
4AU36 3	10	80.5	63	52	44	39	35	31.5	29	27.5	27	4.1	2.9	3
4AU39 1	12.5	104	80.5	66	56	49	44	39.5	36	34.5	34	4.1	2.9	3.1
4AU39 3	16	85	74	66	60	55	51.5	48.5	46.5	46	51	3.2	2.3	2.8

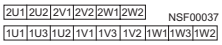
1) $P_{shortt.}$ applies up to 300 contactor operations per hour.

Circuit diagrams

Dual-voltage version

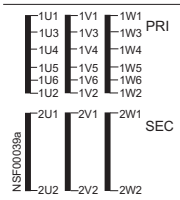
Circuit diagrams and terminal assignments	Rated input voltage U_{1N}	Rated output voltage U_{2N}	Connections and circuit terminals		
			Rated voltage	Connection	Circuit terminals[1])
	V	V	V		
 Vector group IIIiii0	Y 500–400/ Δ 289–230	Y 400/ Δ 230	**Primary**		
			500	1U1–1V1–1W1	1U2–1V2–1W2
			400		1U3–1V3–1W3
			289		1U1–1W2, 1V1–1U2, 1W1–1V2
			230		1U1–1W3, 1V1–1U3, 1W1–1V3
			Secondary		
			400	2U1–2V1–2W1	2U2–2V2–2W2
			230	2U1–2V1–2W1	2U1–2W2, 2V1–2U2, 2W1–2V2

4AP17 to 4AP30

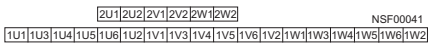


4AU30 to 4AU39

Multi-voltage version

Circuit diagrams and terminal assignments	Rated input voltage U_{1N}	Rated output voltage U_{2N}	Connections and circuit terminals		
			Rated voltage	Connection	Circuit terminals[1])
	V	V	V		
 Vector group IIIiii0	Y 520–500–480–460–440–420–400–380–360/ Δ 300–289–277–266–254–240–230–220–208	Y400/ Δ230	**Primary**		
			520	1U1–1V1–1W1	1U2–1V2–1W2
			500	1U1–1V1–1W1	1U6–1V6–1W6
			480	1U1–1V1–1W1	1U5–1V5–1W5
			460	1U3–1V3–1W3	1U2–1V2–1W2
			440	1U3–1V3–1W3	1U6–1V6–1W6
			420	1U3–1V3–1W3	1U5–1V5–1W5
			400	1U4–1V4–1W4	1U2–1V2–1W2
			380	1U4–1V4–1W4	1U6–1V6–1W6
			360	1U4–1V4–1W4	1U5–1V5–1W5
			300	1U1–1V1–1W1	1U2–1V1, 1V2–1W1, 1W2–1U1
			289	1U1–1V1–1W1	1U6–1V1, 1V6–1W1, 1W6–1U1
			277	1U1–1V1–1W1	1U5–1V1, 1V5–1W1, 1W5–1U1
			266	1U3–1V3–1W3	1U2–1V3, 1V2–1W3, 1W2–1U3
			254	1U3–1V3–1W3	1U6–1V3, 1V6–1W3, 1W6–1U3
			240	1U3–1V3–1W3	1U5–1V3, 1V5–1W3, 1W5–1U3
			230	1U4–1V4–1W4	1U2–1V4, 1V2–1W4, 1W2–1U4
			220	1U4–1V4–1W4	1U6–1V4, 1V6–1W4, 1W6–1U4
			208	1U4–1V4–1W4	1U5–1V4, 1V5–1W4, 1W5–1U4
			Secondary		
			400	2U1–2V1–2W1	2U2–2V2–2W2
			230	2U1–2V1–2W1	2U2–2V1, 2V2–2W1, 2W2–2U1

4AP20 to 4AP30



4AU30 to 4AU39

1) Y/Δ jumpers are not included in the scope of supply.

SITAS isolating, control and line transformers

Overview

- acc. to EN 61558-2-4, -2-2, -2-1
- CE, cULus
- 4AP: t_a = 40 °C/B, 4AU: t_a = 55 °C/H
- AC 50/60 Hz
- IP00, IP23 and IP54 degrees of protection

4AP20 (figure on the left) and 4AU (figure on the right)

Selection and ordering data

In dual-voltage version

Rated input voltage U_{1N} 3 AC Y 500–400 V/Δ 289–230 V, rated output voltage U_{2N} 3 AC Y 400 V/Δ 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$ [1]	DT [2]	Screw-type/tab terminals [3] Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg
IP00 degree of protection						
0.63	1.8	►	**4AP20 42–8BC40-0HA0**	1 unit	3.000	7.200
1	3.5	►	**4AP21 42–8BC40-0HA0**	1 unit	3.500	11.000
1.6	6.9	►	**4AP25 42–8BC40-0HA0**	1 unit	5.000	19.000
2.5	11	►	**4AP27 42–8BC40-0HA0**	1 unit	6.000	27.000
4	20	►	**4AP30 42–8BC40-0HA0**	1 unit	9.700	39.000
6.3	28	►	**4AU30 32–8BC40-0HA0**	1 unit	13.500	43.000
8	32	►	**4AU36 12–8BC40-0HA0**	1 unit	10.000	53.000
10	39	►	**4AU36 32–8BC40-0HA0**	1 unit	16.300	60.000
12.5	49	►	**4AU39 12–8BC40-0HA0**	1 unit	18.000	73.000
16	55	►	**4AU39 32–8BC40-0HA0**	1 unit	32.800	89.000
IP23 degree of protection						
0.57	1.8	B	**4AP20 42–8BC40-0HC0**	1 unit	3.000	14.900
0.9	3.5	B	**4AP21 42–8BC40-0HC0**	1 unit	3.500	18.700
1.44	6.9	B	**4AP25 42–8BC40-0HC0**	1 unit	5.000	26.700
2.25	11	B	**4AP27 42–8BC40-0HC0**	1 unit	6.000	34.700
3.2	20	B	**4AP30 42–8BC40-0HC0**	1 unit	9.700	46.700
5	28	B	**4AU30 32–8BC40-0HC0**	1 unit	13.500	50.700
6.3	32	B	**4AU36 12–8BC40-0HC0**	1 unit	10.000	66.900
8	39	B	**4AU36 32–8BC40-0HC0**	1 unit	16.300	73.900
10	49	B	**4AU39 12–8BC40-0HC0**	1 unit	18.000	86.900
12.5	55	B	**4AU39 32–8BC40-0HC0**	1 unit	32.800	102.000
IP54 degree of protection						
0.44	1.8	B	**4AP20 42–8BC40-0HD0**	1 unit	3.000	14.900
0.8	3.5	B	**4AP21 42–8BC40-0HD0**	1 unit	3.500	18.700
1.12	6.9	B	**4AP25 42–8BC40-0HD0**	1 unit	5.000	26.700
2	11	B	**4AP27 42–8BC40-0HD0**	1 unit	6.000	34.700
2.8	20	B	**4AP30 42–8BC40-0HD0**	1 unit	9.700	46.700
4.4	28	B	**4AU30 32–8BC40-0HD0**	1 unit	13.500	50.700
5.6	32	B	**4AU36 12–8BC40-0HD0**	1 unit	10.000	66.900
7.1	39	B	**4AU36 32–8BC40-0HD0**	1 unit	16.300	73.900
8.8	49	B	**4AU39 12–8BC40-0HD0**	1 unit	18.000	86.900
11.2	55	B	**4AU39 32–8BC40-0HD0**	1 unit	32.800	102.000

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AU transformers are only supplied with screw-type terminals.

12

*** This quantity or a multiple thereof can be ordered.**

Multi-voltage version

Rated input voltage U_{1N}
3 AC Y 520–500–480–460–440–420–400–380–360 V/Δ 300–289–277–266–254–240–230–220–208 V,
rated output voltage U_{2N} 3 AC Y 400 V/Δ 230 V

Rated output P_n	Short-time rating $P_{n(S6)}$ 1)	DT 2)	Screw-type/tab terminals 3) Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg
IP00 degree of protection						
0.63	1.8	B	**4AP20 42–8CC40-0HA0**	1 unit	4.000	8.300
1	3.5	B	**4AP21 42–8CC40-0HA0**	1 unit	4.700	12.000
1.6	6.9	B	**4AP25 42–8CC40-0HA0**	1 unit	5.500	20.000
2.5	11	B	**4AP27 42–8CC40-0HA0**	1 unit	6.200	28.000
4	20	B	**4AP30 42–8CC40-0HA0**	1 unit	11.000	41.000
6.3	28	B	**4AU30 32–8CC40-0HA0**	1 unit	16.000	47.000
8	32	B	**4AU36 12–8CC40-0HA0**	1 unit	13.000	56.000
10	39	B	**4AU36 32–8CC40-0HA0**	1 unit	21.000	65.000
12.5	49	B	**4AU39 12–8CC40-0HA0**	1 unit	24.000	78.000
16	55	B	**4AU39 32–8CC40-0HA0**	1 unit	43.000	99.000
IP23 degree of protection						
0.57	1.8	B	**4AP20 42–8CC40-0HC0**	1 unit	4.000	16.000
0.9	3.5	B	**4AP21 42–8CC40-0HC0**	1 unit	4.700	19.700
1.44	6.9	B	**4AP25 42–8CC40-0HC0**	1 unit	5.500	27.700
2.25	11	B	**4AP27 42–8CC40-0HC0**	1 unit	6.200	35.700
3.2	20	B	**4AP30 42–8CC40-0HC0**	1 unit	11.000	48.700
5	28	B	**4AU30 32–8CC40-0HC0**	1 unit	16.000	54.700
6.3	32	B	**4AU36 12–8CC40-0HC0**	1 unit	13.000	69.900
8	39	B	**4AU36 32–8CC40-0HC0**	1 unit	21.000	78.900
10	49	B	**4AU39 12–8CC40-0HC0**	1 unit	24.000	92.000
12.5	55	B	**4AU39 32–8CC40-0HC0**	1 unit	43.000	104.000
IP54 degree of protection						
0.44	1.8	B	**4AP20 42–8CC40-0HD0**	1 unit	4.000	16.000
0.8	3.5	B	**4AP21 42–8CC40-0HD0**	1 unit	4.700	19.700
1.12	6.9	B	**4AP25 42–8CC40-0HD0**	1 unit	5.500	27.700
2	11	B	**4AP27 42–8CC40-0HD0**	1 unit	6.200	35.700
2.8	20	B	**4AP30 42–8CC40-0HD0**	1 unit	11.000	48.700
4.4	28	B	**4AU30 32–8CC40-0HD0**	1 unit	16.000	54.700
5.6	32	B	**4AU36 12–8CC40-0HD0**	1 unit	13.000	69.900
7.1	39	B	**4AU36 32–8CC40-0HD0**	1 unit	21.000	78.900
8.8	49	B	**4AU39 12–8CC40-0HD0**	1 unit	24.000	92.000
11.2	55	B	**4AU39 32–8CC40-0HD0**	1 unit	43.000	104.000

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class B depends on the quantity.

3) The 4AU transformers are only supplied with screw-type terminals.

12

*** This quantity or a multiple thereof can be ordered.**

SITAS isolating and line-transformers

Overview

- acc. to EN 61558-2-4, -2-1
- CE, cULus
- t_a = 40 °C/B
- AC 50/60 Hz
- IP00, IP23 and IP54 degrees of protection

4AP17

Selection and ordering data

In dual-voltage version

Rated input voltage U_{1N} 3 AC Y 500–400 V/△ 289–230 V, rated output voltage U_{2N} 3 AC Y 400 V/△ 230 V

Rated output P_n	DT [1]	Screw-type/tab terminals Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
kVA				kg	kg
IP00 degree of protection					
0.16	►	**4AP17 42–8BC40-0HA0**	1 unit	0.680	3.000
0.25	►	**4AP18 42–8BC40-0HA0**	1 unit	1.100	4.000
0.4	►	**4AP19 42–8BC40-0HA0**	1 unit	1.300	5.500
IP23 degree of protection					
0.14	B	**4AP17 42–8BC40-0HC0**	1 unit	0.680	5.900
0.23	B	**4AP18 42–8BC40-0HC0**	1 unit	1.100	6.900
0.36	B	**4AP19 42–8BC40-0HC0**	1 unit	1.300	8.400
IP54 degree of protection					
0.11	B	**4AP17 42–8BC40-0HD0**	1 unit	0.680	5.900
0.2	B	**4AP18 42–8BC40-0HD0**	1 unit	1.100	6.900
0.32	B	**4AP19 42–8BC40-0HD0**	1 unit	1.300	8.400

1) The delivery time class B depends on the quantity.

12

*** This quantity or a multiple thereof can be ordered.**

General data

Overview

SIDAC-T 4AP../4AU../4BU.. transformers

With the right transformer, the right voltage will be available whatever the conditions.

SIDAC-T transformers are the professionals for every type of application: they work reliably, safely and worldwide under a wide range of different conditions.

- 4AU and 4AP special transformers: either in user-friendly combinations as isolating, control and line transformers in accordance with EN 61558-2-4, -2-2, -2-1 or safety, control and line transformers in accordance with EN 61558-2-6, -2-2, -2-1 or as autotransformers in accordance with EN 61558-2-13 with selectable input and output voltages.
- 4BU special transformers: three-phase power transformers as matching, auto- or converter transformers according to DIN VDE 0532-6 with selectable input and output voltages.

Note: line transformers with ≤ 50 V on the output side are, in the case of SITAS transformers, always designed as safety transformers.

SIDAC-T transformers offer optimal protection through high permissible ambient temperatures up to 40 °C or 55 °C, a high short-time rating in the case of control transformers, fuseless construction and due to its safety standard "Safety inside" EN 61558.

Benefits

- High short-time rating of the SITAS transformers: Lower transformer rated power for a large number of contactors
- Suitable for "fuseless construction": the small inrush current means that "circuit-breakers for motor protection" can also be used on the primary side
- UL approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability.

Area of application

In industrial machines, process engineering, heating and air-conditioning equipment, etc., for supplying control and signaling circuits, when:

- Several electromagnetic loads (e.g. contactors) have to be controlled
- Control and signaling units are used outside the control cabinet
- The operating voltage for the loads differs from the available voltage level.
- Voltage matching for machines and installations with galvanic isolation or as an autotransformer
- In drive systems: converter transformers for voltage matching and autotransformers for use as infeed/regenerative feedback modules.

Generally for voltage matching of electrical appliances, e.g. in communications, medical engineering and domestic appliances.

4BU three-phase power transformers are implemented in industrial and building systems and control and distribution and are used to adapt the locally available line voltage to the operational voltage of the system or its subsystems. They also limit the possible short-circuit currents.

For adapting machines and systems to the local voltages that are available at the installation site *power transformers* with galvanic isolation or designed as *autotransformers* are used.

Furthermore *power transformers* can be used with electrical appliances, for example in communications, medical engineering and domestic appliances. In drive systems, special *converter transformers* are used for voltage matching and *autotransformers* are used with infeed/regenerative feedback modules.

Design

Standards

EN 61558-2-6, -2-4, -2-2, -2-1, -2-13, DIN VDE 0532-6

The standard EN 61558 with the VDE classification VDE 0570 is the European edition of the international standard IEC 61558 (Safety of power transformers, power supply units and similar) and has completely replaced the previous standards VDE 0550 and VDE 0551.

Some of the transformers are subject to more stringent manufacturing and testing conditions in view of these changes.

Transformers for general applications always have double or reinforced insulation with SELV voltages (can be touched, maximum AC 50 V and DC 120 V), i. e. these transformers are exclusively safety isolating transformers.

Furthermore, all transformers have stated on them the protective elements provided for protection against short-circuit and overload.

The SITAS transformer series contains the combined features of safety, isolating and control or line transformers, i.e. one transformer for (virtually) all applications. SITAS transformers meet the most stringent requirements (and in terms of safety, the most severe requirements) applicable to the transformer designs included in the series. A SITAS transformer is the right one whatever the application.

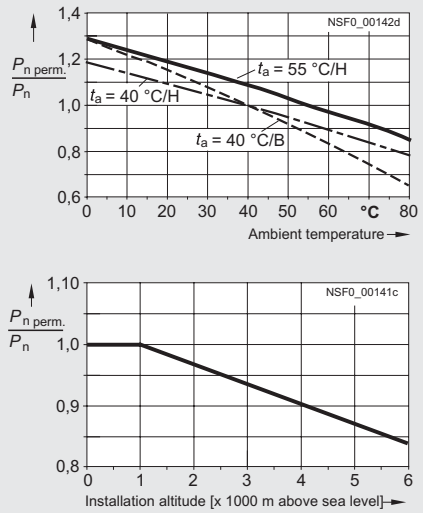
Rated output P_n at high ambient temperature – the reference for thermal load capacity

Reference conditions under which the transformers have the rated output P_n stated in the tables:

- Continuous operation P_n
- Frequency AC 50 Hz to 60 Hz
- IP00 degree of protection
- Installation altitude up to 1000 m above sea level
- Ambient temperature t_a, 40 °C or 55 °C type-specific.

Other installation and operating conditions than this will affect the permissible continuous load capacity. In the case of the 4AP transformers, for example, with a lower ambient temperature of 30 °C an increase in load of 8 % is possible (see loading characteristics).

General data



Load characteristics: Permissible transformer continuous load in relation to the ambient temperature and the installation altitude

Short-time rating $P_{n(S6)}$ of control transformers – the characteristic variable for the dynamic capacity

The most important selection criterion for control transformers is their short-time rating $P_{n(S6)}$.

This is required for switching on electromagnetic loads, e.g. contactors with high making current in relation to the holding current. According to EN 61558-2-2 "Special requirements for control transformers" the output voltage with this load should not drop more than 5 % in relation to the rated voltage in order to ensure safe switching.

Depending on their application, control transformers 4AP and 4AU ≤ 16 kVA are optimised for high short-time ratings with comparatively low ratings and thus small size.

Low inrush current – primary-side short-circuit and overload protection with standard circuit-breakers

4AP and 4AU three-phase transformers in the rating range ≤ 16 kVA are matched to protective devices that reliably protect the transformers in the event of short-circuits or overloads.

Standard 3RV and 3VF circuit-breakers offer optimum protection. In this way the transformers are protected on the primary side against both short-circuits and overload, without the possibility of nuisance tripping on startup. The low inrush current, the short-circuit current and the thermal load capacity on overload are matched to the tripping characteristics of the circuit-breakers.

It is also possible to protect the transformers on the secondary side against short-circuits and overloads with circuit-breakers or miniature circuit-breakers with C characteristics.

Note: The specified primary-side circuit-breakers are for protecting the primary side of transformers in the event of short-circuits and overload on the secondary side. In the event of a possible short-circuit on the feeder lines between the protective device and the primary side of the transformer, the rated short-circuit breaking capacity of the circuit-breaker must be taken into account with regard to the maximum possible prospective short-circuit current at the place of installation. For these device assignments, see the tables in the "Technical specifications".

Design

All 4AP, 4AU and 4BU transformers are supplied for screw-fixing on a mounting plate

Connection

The 4AP transformers are supplied up to a rated current of 60 A, the 4AU transformers are supplied up to a rated current of 43 A and the 4BU transformers are supplied up to a rated current of 81 A in the standard version with screw-type terminals.

For higher currents, the transformers are supplied with flat connections or with threaded pins.

Enclosure mounting

SIDAC-T 4AP and 4AU transformers are available alternatively in protective enclosures to IP23 or IP54 degree of protection; 4BU transformers are available alternatively in protective enclosures to IP20 or IP23 degree of protection.

Information that has to be specified for enquiries and orders for 4AP, 4AU and 4BU special transformers

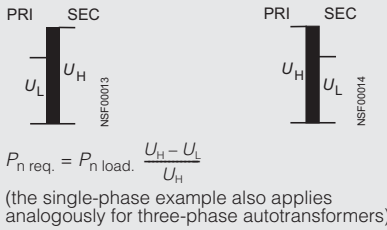
Rated output P_n (output division with separate SEC windings, $P_n = P_1 + P_2$, throughput rating = load rating for autotransformers), PRI and SEC voltages, frequency, vector group, degree of protection (output reduction with degrees of protection other than IP00), Order No. stem.

The Order No. stem is added to the Order No. for delivery.

Ordering example:

Three-phase special transformer 180 kVA
PRI 415 V ± 5%, SEC 115 V,
frequency 50 Hz ... 60 Hz,
IP00 degree of protection, shielding winding,
Order No. stem. 4BU60 32 (without UL), 4BU60 33 (with cULus)

4AU and 4BU autotransformers: determine the type rating $P_{n\,req.}$



Step-up transformer (figure on the left) and step-down transformer (figure on the right)

Thermistor transformer protection for 4BU special transformers

The transformers can be protected against excessive heating of the windings by means of thermistor transformer protection. PTC thermistors are used which are wound into each shank of the transformer and connected in series. The rated response temperature is slightly higher than the temperature limit for continuous duty or during a short-circuit.

Possible versions:

- Warning
- Shutdown
- Warning and shutdown

The connections for the temperature sensor are routed to terminals, two terminals each for warning and disconnection.

The 3RN tripping units are not included in the transformer scope of supply, for the relevant selection and ordering data see the Section "SIMIREL time-delay, monitoring, coupling relays and converters –> Monitoring relay –> Thermistor motor protection".

Technical specifications

Transformers	Type	**4AP**	**4AU**	**4BU**
• Design		3UI core	3UI core	3UI core
• Output range (with IP00)	kVA	0.16 ... 5	> 5 ... 16	> 16 ... 400 (up to 2000 kVA on request)
• Approvals		cULus		
Voltage range	V	≤ 690		≤ 1000 (up to 3.6 kV on request)
• Approvals for USA, Canada	V	≤ 600		
Rated frequency	Hz	50 ... 60		
Temperature class		B	H	
• acc. to UL/CSA		Class 130	Class 180	
Ambient conditions		Protection against harmful ambient conditions: Complete impregnation in polyester resin Climate-proof for mounting in rooms with an external climate to DIN 50010		
Permissible ambient temperature				
• At rated output	°C	40	55	40 and optionally 55
• Maximum value (after reduced output depending on load characteristics, see "Design")	°C	80		
• Minimum value	°C	–25		
Relative air humidity				
• Average up to	%	80		
• Maximum value for 30 days/year	%	95		
• At 40°C occasionally	%	100		
Protection class		I		
Degree of protection				
• Without enclosure		IP00		
• With protective enclosure (according to "Selection and ordering data")		IP23 or IP54		IP20 or IP23
• Design		IP20, IP23, IP54: steel enclosure coated with epoxy resin, color gray RAL 7032		
Installation height		Up to 1000 m above sea level (above this, derating is necessary)		
Protective devices				
• internal		–		Can be designed with thermistor transformer protection for warning or disconnection or warning or disconnection, see "Design".
• external		The transformers can be protected against short-circuits and overload on the primary and secondary with circuit-breakers.		
		Specified protective devices (see "Technical specifications")		On request
Connection design		The permissible conductor cross-sections are assigned to the specified terminal types.		
• Terminal assignments		Refer to VDE 0100 Part 430 Supplement 1 and EN 60204 (VDE 0113-1) for the permissible conductor cross-sections for the specified current according to the installation type.		
• For terminal designs and connectable cross-sections (see "Dimensional drawings")		Other terminal sizes than standard versions on request.		
Mounting position		The permissible mounting position for each type is shown in the "Dimension drawings".		

For other technical specifications, see Catalog PD 60,
Order No.: E86060-K2806-A101-A1
or on the Internet at
www.siemens.de/sidac

General data

Rated outputs at different ambient temperatures

- with separate, isolated windings
- IP00 degree of protection
- to EN 61558, cULus

Transformer	Rated output	Permissible transformer load depending on the ambient temperature							
	P_n	t_a = 60 °C	t_a = 55 °C	t_a = 50 °C	t_a = 45 °C	t_a = 40 °C	t_a = 35 °C	t_a = 30 °C	t_a = 25 °C
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA
4AP17 4	0.16	0.134	0.141	0.147	0.154	0.160	0.166	0.173	0.178
4AP18 4	0.25	0.210	0.220	0.230	0.240	0.250	0.260	0.270	0.278
4AP19 4	0.4	0.336	0.352	0.368	0.384	0.400	0.416	0.432	0.444
4AP20 4	0.63	0.529	0.554	0.580	0.605	0.630	0.655	0.680	0.699
4AP21 4	1	0.840	0.880	0.920	0.960	1	1.04	1.08	1.11
4AP25 4	1.6	1.34	1.41	1.47	1.54	1.60	1.66	1.73	1.78
4AP27 4	2.5	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.78
4AP30 4	4	3.36	3.52	3.68	3.84	4	4.16	4.32	4.44
4AP30 5	5	4.20	4.40	4.60	4.80	5.50	5.20	5.40	5.55
4AU30 3	6.3	6.11	6.30	6.49	6.68	6.93	7.12	7.31	7.50
4AU36 1	8	7.76	8	8.24	8.48	8.80	9.04	9.28	9.52
4AU36 3	10	9.70	10	10.3	10.6	11	11.3	11.6	11.9
4AU39 1	12.5	12.1	12.5	12.9	13.3	13.8	14.1	14.5	14.9
4AU39 3	16	15.5	16	16.5	17	17.6	18.1	18.6	19

Operating characteristics

Transformer	Rated output P_n 50 Hz ... 60 Hz 1000 m above sea level IP00 degree of protection	Core size	Voltage increase at no load (operating temperature) u_A approx.	Voltage drop at rated load [1] u_R approx.	Short-circuit voltage [1] u_Z approx.	Efficiency η approx.
Type	kVA		%	%	%	%
4AP and 4AU						
acc. to EN 61558-2-6, EN 61558-2-4, EN 61558-2-1						
4AP: t_a = 40 °C/B						
4AP17 4	0.16	3UI 60/30	13.3	10.1	10.1	85
4AP18 4	0.25	3UI 75/25	11.7	8.9	9	87
4AP19 4	0.4	3UI 75/40	11.8	8.5	8.5	87
4AP20 4	0.63	3UI 90/30	9.3	6.8	6.8	89
4AP21 4	1	3UI 90/50	6.4	4.8	4.8	92
4AP25 4	1.6	3UI 114/62	4.9	3.6	3.6	93
4AP27 4	2.5	3UI 132/70	4.5	3.4	3.4	94
4AP30 4	4	3UI 150/75	3.5	2.6	2.7	95
4AP30 5	5	3UI 150/75	2.8	2.1	2.2	96
4AU: t_a = 55 °C/H						
4AU30 3	6.3	3UI 150/75	3.8	2.6	2.6	96
4AU36 1	8	3UI 180/75	5.1	3.6	3.6	94
4AU36 3	10	3UI 180/75	4.1	2.9	3	95
4AU39 1	12.5	3UI 210/70	4.1	2.9	3.1	95
4AU39 3	16	3UI 210/70	3.2	2.3	2.8	96
4BU						
acc. to DIN VDE 0532-6						
t_a = 40 °C/H, t_a = 55 °C/H						
4BU43 3	18	3UI 230/80	4.5	4.1	4.2	95
4BU43 4	20	3UI 230/80	4.1	3.7	3.9	95
4BU43 5	22.5	3UI 230/80	3.6	3.3	3.6	96
4BU45 3	25	3UI 230/107	3.4	3.1	3.2	96
4BU45 4	28	3UI 230/107	3	2.8	3	96
4BU47 3	31.5	3UI 230/137	2.8	2.6	2.7	96
4BU47 4	35.5	3UI 230/137	2.5	2.3	2.4	97
4BU47 5	40	3UI 230/137	2.2	2.1	2.3	97
4BU52 3	45	3UIS 220/120	3.7	3.4	4.1	96
4BU53 3	50	3UIS 220/135	3.4	3.1	3.7	96
4BU53 4	56	3UIS 220/135	3	2.8	3.7	97
4BU54 3	63	3UIS 305/125	4.2	3.9	4.4	95
4BU54 4	71	3UIS 305/125	3.7	3.4	4.3	96
4BU55 3	80	3UIS 305/140	3.4	3.2	4	96
4BU56 3	91	3UIS 305/160	3.1	2.9	3.7	96
4BU56 4	100	3UIS 305/160	2.9	2.6	3.7	97
4BU58 3	112	3UIS 395/150	4.4	4	4.9	95
4BU58 4	125	3UIS 395/150	3.9	3.6	4.9	96
4BU58 5	140	3UIS 395/150	3.5	3.3	5.1	96
4BU59 3	160	3UIS 395/170	3.2	3	4.7	96
4BU60 3	180	3UIS 395/195	3	2.8	4.3	97
4BU62 3	200	3UIS 455/175	3	2.8	3.9	96
4BU62 4	225	3UIS 455/175	2.7	2.5	4.1	97
4BU62 5	250	3UIS 455/175	2.4	2.2	4.5	97
4BU63 3	280	3UIS 455/200	2.2	2.1	4	97
4BU63 4	315	3UIS 455/200	2	1.9	4.6	98
4BU64 3	355	3UIS 455/230	1.9	1.7	4.1	98
4BU65 3	400	3UIS 455/260	1.7	1.6	4.1	98

Higher ratings and other conditions on request.

Calculation of heat dissipation P_V

$$P_V = \frac{P_n\,(100 - \eta)}{\eta}\ \text{[kW]}$$

1) Reference winding temperature for 4AP, 4AU: 20 °C; for 4BU: 115 °C.

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General data

Primary-side short-circuit and overload protection with circuit-breakers

Trans-former	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated input voltage U_{1N} in V																	
Type	kVA	Type	520	500	480	460	440	420	400	380	360	300	288	277	265	254	242	230	220	208
4AP17 4	0.16	3RV10 11–□□□10	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0EA	0FA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0HA	0HA
		Setting value in A	0.26	0.26	0.29	0.29	0.29	0.31	0.32	0.34	0.4	0.48	0.52	0.54	0.55	0.55	0.56	0.56	0.58	0.62
4AP18 4	0.25	3RV10 11–□□□10	0FA	0FA	0FA	0FA	0FA	0GA	0GA	0GA	0HA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	0KA
		Setting value in A	0.4	0.4	0.44	0.44	0.44	0.47	0.49	0.51	0.6	0.75	0.75	0.8	0.85	0.9	0.9	0.9	0.9	0.94
4AP19 4	0.4	3RV10 11–□□□10	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0JA	0KA	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA
		Setting value in A	0.62	0.62	0.7	0.7	0.71	0.75	0.78	0.82	1	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.5
4AP20 4	0.63	3RV10 11–□□□10	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1AA	1BA	1CA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1DA
		Setting value in A	0.95	0.95	1.1	1.1	1.1	1.2	1.2	1.3	1.5	1.8	1.9	2	2	2	2.2	2.2	2.2	2.3
4AP21 4	1	3RV10 11–□□□10	1BA	1BA	1CA	1CA	1CA	1CA	1CA	1CA	1DA	1EA	1EA	1EA	1EA	1EA	1EA	1EA	1FA	1FA
		Setting value in A	1.5	1.5	1.7	1.8	1.8	1.8	2	2	2.3	2.8	2.9	3.1	3.2	3.2	3.2	3.2	3.5	3.5
4AP25 4	1.6	3RV10 11–□□□10	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1GA	1GA	1GA	1GA	1GA	1HA	1HA	1HA	1HA
		Setting value in A	2.3	2.3	2.8	2.8	2.8	2.8	3	3.5	3.5	4.5	4.5	4.9	5	5	5.5	5.5	5.5	5.6
4AP27 4	2.5	3RV10 11–□□□10	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1JA	1JA	1KA	1KA
		Setting value in A	3.6	3.6	4	4.5	4.5	4.5	4.5	5.8	5.8	7	7	7.5	7.5	8	8	8	9	9
4AP30 4	4	3RV10 11–□□□10	1HA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1KA	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	–	–	–	4AA	4AA	4AA	4AA	4AA	4AA	4BA	4BA	4BA
		Setting value in A	5.7	5.7	6	7	7	7	7.2	8	9	11	11	12	12	13	13	14	14	14
4AP30 5	5	3RV10 11–□□□10	1JA	1JA	1JA	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	–	–	1KA	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA
		Setting value in A	7.2	7.2	8	9	9	9	9	11	11	13	14	15	15	16	17	17	17	17
4AU30 3	6.3	3RV10 11–□□□10	1KA	1KA	1KA	1KA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 21–□□□10	–	–	–	–	1KA	4AA	4AA	4AA	4AA	4BA	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA
		Setting value in A	9	9	10	10	10	11	11	12	13	15	16	16	17	18	19	20	20	22
4AU36 1	8	3RV10 21–□□□10	4AA	4AA	4AA	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4EA
		Setting value in A	12	12	13	13	13	14	15	15	16	20	20	21	22	23	24	25	26	28
4AU36 3	10	3RV10 21–□□□10	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4CA	4DA	4DA	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	–	–	4EA	4EA	4FA	4FA	4FA	4FA	4FA
		Setting value in A	15	15	16	16	17	17	18	19	20	25	25	26	27	28	30	31	32	34
4AU39 1	12.5	3RV10 21–□□□10	4CA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	–	–	–	–	–	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4GA
		Setting value in A	9	19	20	20	20	22	22	23	25	30	31	32	34	35	37	39	40	43
4AU39 3	16	3RV10 21–□□□10	4DA	4DA	4DA	4DA	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		3RV10 31–□□□10	–	–	–	–	4EA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4HA	4HA	4HA	4HA	4HA	4HA
		Setting value in A	24	24	25	25	26	28	28	30	31	38	39	40	43	44	47	49	50	50

2) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

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Secondary-side short-circuit and overload protection with circuit-breaker or miniature circuit-breaker

Trans-former	Rated output P_n	Circuit-breaker design: Motor protection[1])	Rated output voltage U_{2N} in V	
Type	kVA	Type	400	230
4AP17 4	0.16	3RV10 11–□□□10 Setting value in A	0DA 0.27	0FA 0.5
4AP18 4	0.25	3RV10 11–□□□10 Setting value in A	0FA 0.42	0HA 0.75
4AP19 4	0.4	3RV10 11–□□□10 Setting value in A	0HA 0.7	0KA 1.2
4AP20 4	0.63	3RV10 11–□□□10 Setting value in A	0KA 1.1	1BA 1.9
4AP21 4	1	3RV10 11–□□□10 Setting value in A	1BA 1.7	1DA 3
4AP25 4	1.6	3RV10 11–□□□10 Setting value in A	1DA 2.7	1FA 5
4AP27 4	2.5	3RV10 11–□□□10 Setting value in A	1FA 4.2	1HA 7.5
4AP30 4	4	3RV10 11–□□□10 Setting value in A	1HA 6.7	1KA 12
4AP30 5	5	3RV10 11–□□□10 3RV10 21–□□□10 Setting value in A	1JA – 8.5	– 4AA 15
4AU30 3	6.3	3RV10 11–□□□10 3RV10 21–□□□10 Setting value in A	1KA – 11	– 4BA 19
4AU36 1	8	3RV10 21–□□□10 Setting value in A	4AA 14	4DA 24
4AU36 3	10	3RV10 21–□□□10 3RV10 31–□□□10 Setting value in A	4BA – 17	– 4EA 29
4AU39 1	12.5	3RV10 21–□□□10 3RV10 31–□□□10 Setting value in A	4CA – 21	– 4FA 37
4AU39 3	16	3RV10 31–□□□10 Setting value in A	4EA 27	4HA 47

Trans-former	Rated output P_n	Miniature circuit-breaker	Rated output voltage U_{2N} in V	
Type	kVA	Type	400	230
4AP17 4	0.16	5SX2 □□□-7 Current value in A	– –	– –
4AP18 4	0.25	5SX2 □□□-7 Current value in A	– –	– –
4AP19 4	0.4	5SX2 □□□-7 Current value in A	– –	– –
4AP20 4	0.63	5SX2 □□□-7 Current value in A	101 1	– –
4AP21 4	1	5SX2 □□□-7 Current value in A	115 1.6	103 3
4AP25 4	1.6	5SX2 □□□-7 Current value in A	– –	– –
4AP27 4	2.5	5SX2 □□□-7 Current value in A	104 4	– –
4AP30 4	4	5SX2 □□□-7 Current value in A	– –	– –
4AP30 5	5	5SX2 □□□-7 Current value in A	108 8	– –
4AU30 3	6.3	5SX2 □□□-7 Current value in A	110 10	– –
4AU36 1	8	5SX2 □□□-7 Current value in A	113 13	– –
4AU36 3	10	5SX2 □□□-7 Current value in A	116 16	– –
4AU39 1	12.5	5SX2 □□□-7 Current value in A	120 20	– –
4AU39 3	16	5SX2 □□□-7 Current value in A	– –	– –

1) Two-pole or single-pole circuit-breakers can be connected (3 conductors in series).

Short-time rating of control transformers $P_{shortt.}$[1]) = f (p.f.) for $U_2 = 0.95 \times U_{2N}$

Trans-former	Rated output P_n	Short-time rating $P_{shortt.}$[1]) with										Voltage rise at no load (operating temperature)	Voltage drop on rated load (at 20 °C)	Short- circuit voltage (at 20 °C)
		p.f. = 0.1	p.f. = 0.2	p.f. = 0.3	p.f. = 0.4	p.f. = 0.5	p.f. = 0.6	p.f. = 0.7	p.f. = 0.8	p.f. = 0.9	p.f. = 1			
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	u_A %	u_R %	u_Z %
4AP20 4	0.63	4.5	3.3	2.6	2.1	1.8	1.6	1.4	1.3	1.2	1.1	9.3	6.8	6.8
4AP21 4	1	9.3	6.5	5	4.1	3.5	3	2.7	2.4	2.2	2.1	6.4	4.8	4.8
4AP25 4	1.6	21	14	10	8.3	6.9	5.9	5.2	4.7	4.2	3.9	4.9	3.6	3.6
4AP27 4	2.5	37	24	17	14	11	9.9	8.7	7.8	7	6.5	4.5	3.4	3.4
4AP30 4	4	60	40	30	24	20	18	16	14	13	12	3.5	2.6	2.7
4AU30 3	6.3	64.5	48.5	39	32.5	28	25	22.5	20.5	19	18.5	3.5	2.6	2.6
4AU36 1	8	83	58.5	45	37	31.5	27.5	24	22	20	19	5.1	3.6	3.6
4AU36 3	10	80.5	63	52	44	39	35	31.5	29	27.5	27	4.1	2.9	3
4AU39 1	12.5	104	80.5	66	56	49	44	39.5	36	34.5	34	4.1	2.9	3.1
4AU39 3	16	85	74	66	60	55	51.5	48.5	46.5	46	51	3.2	2.3	2.8

1) $P_{shortt.}$ applies up to 300 contactor operations per hour.

Special Transformers

Isolating, control, line transformers and autotransformers

Overview

- 4AP and 4AU special transformers designed as isolating, control and line transformers in accordance with EN 61558-2-4, -2-2, -2-1
  or safety, control and line transformers in accordance with EN 61558-2-6, -2-2, -2-1
  or autotransformers in accordance with EN 61558-2-13
  with selectable input and output voltages from 0.025 kVA to 16 kVA (= type rating, for autotransformers) and additional options
- CE, cULus
- 4AP: t_a = 40 °C/B, 4AU: t_a = 55 °C/H
- Standard vector group: Dyn5, for autotransformer: Ya0
- When ordering, please specify the Order No. stem and state the options required in plain text (address for enquiries and ordering, see Page 12/3).

4AP20 (figure on the left) and 4AU (figure on the right)

Selection and ordering data

Rated output[1] P_n for degree of protection IP00	IP23	IP54	Rated voltage, selectable U_{1N}, U_{2N}	DT[2]	Order No. stem	Standard options	PS*	Transformer weight per PU approx.	Copper weight per PU approx.	Complete weight incl. enclosure per PU approx.
kVA	kVA	kVA						kg	kg	kg
0.16	0.14	0.11	12 V to 690 V, (line-to-line-voltage U_L) Y or Δ at cULus max. 600 V (incl. tappings)	B	**4AP17 4**	Two tappings in the range ± 5% rated input or output voltage for constant power One tapping on the input or output side for falling output star point connected to terminal One additional, separate winding on the input or output side Shield winding (connection routed to terminal). This is not possible for autotransformers.	1 unit	0.600	3.000	5.900
0.25	0.23	0.2		B	**4AP18 4**		1 unit	0.900	4.000	6.900
0.4	0.35	0.32		B	**4AP19 4**		1 unit	1.300	5.500	8.400
0.63	0.57	0.44		B	**4AP20 4**		1 unit	2.700	7.000	15.000
1	0.9	0.8		B	**4AP21 4**		1 unit	3.600	11.000	19.000
1.6	1.44	1.12		B	**4AP25 4**		1 unit	5.000	19.000	27.000
2.5	2.25	2		B	**4AP27 4**		1 unit	6.000	25.000	33.000
4	3.2	2.8		B	**4AP30 4**		1 unit	9.700	36.000	44.000
5	4	3.5		B	**4AP30 5**		1 unit	15.000	42.000	50.000
6.3	5	4.4	24 V to 690 V, (line-to-line-voltage U_L) Y or Δ at cULus max. 600 V (incl. tappings)	B	**4AU30 3**		1 unit	11.600	42.000	56.000
8	6.8	5.6		B	**4AU36 1**		1 unit	10.000	52.000	66.000
10	8	7.1		B	**4AU36 3**		1 unit	15.000	57.000	71.000
12.5	10	8.8		B	**4AU39 1**		1 unit	17.200	67.000	81.000
16	12.5	11.2		B	**4AU39 3**		1 unit	30.000	81.000	95.000

1) For autotransformers = type rating.

2) The delivery time class B depends on the quantity.

Options

- Deviations from the standard vector groups Dyn5 or Ya0 for autotransformers must be specified when ordering.

*** This quantity or a multiple thereof can be ordered.**

Overview

- 4BU special transformers designed as matching, auto- or converter transformers in accordance with DIN VDE 0532-6 with selectable input and output voltage from 100 V to 1000 V (line-to-line-voltage U_L) Y or Δ and additional options
- CE
- t_a = 40 °C/H and optional t_a = 55 °C/H
- Standard vector group: Dyn5, for autotransformer: Ya0
- When ordering, please specify the Order No. stem and state the options required in plain text (address for enquiries and ordering, see Page 12/3).

4BU

Selection and ordering data

Rated output[1] P_n for degree of protection IP00, IP20[2]	IP23	DT[3]	Order No. stem	Standard options	PS*	Copper weight[4] per PU approx.	Transformer weight[4] per PU approx.	Total weight[4] incl. enclosure per PU approx.
kVA	kVA					kg	kg	kg
18	16	B	**4BU43 32**	Two tappings in the range ± 5% rated input or output voltage for constant power One tapping on the input or output side for falling output; star point connected to terminal One additional, separate winding on the input or output side Shield winding (connection routed to terminal). This is not possible for autotransformers. Fitted into IP20 or IP23 protective enclosures Rated ambient temperature t_a = 55 °C/H	1 unit	19.000	98.000	142.000
20	18	B	**4BU43 42**		1 unit	24.000	103.000	147.000
22.5	20	B	**4BU43 52**		1 unit	32.000	111.000	155.000
25	22.5	D	**4BU45 32**		1 unit	25.000	130.000	174.000
28	25	D	**4BU45 42**		1 unit	33.000	138.000	182.000
31.5	28	D	**4BU47 32**		1 unit	29.000	163.000	207.000
35.5	32	D	**4BU47 42**		1 unit	38.000	173.000	217.000
40	36	D	**4BU47 52**		1 unit	51.000	185.000	229.000
45	40.5	D	**4BU52 32**		1 unit	52.000	187.000	238.000
50	45	D	**4BU53 32**		1 unit	55.000	208.000	259.000
56	50	D	**4BU53 42**		1 unit	71.000	224.000	275.000
63	56.5	D	**4BU54 32**		1 unit	45.000	261.000	322.000
71	63.5	D	**4BU54 42**		1 unit	59.000	274.000	335.000
80	72	D	**4BU55 32**		1 unit	63.000	304.000	365.000
91	81.5	D	**4BU56 32**		1 unit	66.000	343.000	404.000
100	90	D	**4BU56 42**		1 unit	82.000	358.000	419.000
112	100.5	D	**4BU58 32**		1 unit	62.000	426.000	531.000
125	112.5	D	**4BU58 42**		1 unit	77.000	441.000	546.000
140	126	D	**4BU58 52**		1 unit	99.000	463.000	568.000
160	144	D	**4BU59 32**		1 unit	106.000	519.000	624.000
180	162	D	**4BU60 32**		1 unit	108.000	581.000	686.000
200	180	D	**4BU62 32**		1 unit	105.000	671.000	806.000
225	202.5	D	**4BU62 42**		1 unit	136.000	703.000	838.000
250	225	D	**4BU62 52**		1 unit	172.000	738.000	873.000
280	252	D	**4BU63 32**		1 unit	174.000	821.000	956.000
315	283.5	D	**4BU63 42**		1 unit	227.000	873.000	1008.000
355	319.5	D	**4BU64 32**		1 unit	231.000	975.000	1110.000
400	360	D	**4BU65 32**		1 unit	259.000	1100.000	1235.000

1) For autotransformers = type rating.

2) No output reduction for ambient temperatures ≤ 40 °C.

3) The delivery time class B depends on the quantity.

4) All weights are based on t_a = 40 °C/H, at t_a = 55 °C/H the weight is greater.

Options

- Thermistor transformer protection for warning and/or disconnection, see "General data; Design".
- Deviations from the standard vector groups Dyn5 or Ya0 for autotransformers must be specified when ordering.

*** This quantity or a multiple thereof can be ordered.**

Power transformers (with UL approval for USA and Canada)

Overview

- 4BU special transformers designed as matching, auto- or converter transformers in accordance with DIN VDE 0532-6 with selectable input and output voltage from 100 V to 1000 V (line-to-line-voltage U_L) Y or Δ and additional options
- CE, c UL us[1)]
- t_a = 40 °C/H and optional t_a = 55 °C/H
- Standard vector group: Dyn5, for autotransformer: Ya0
- When ordering, please specify the Order No. stem and state the options required in plain text (address for enquiries and ordering, see Page 12/3).

4BU

1) c UL us approvals for voltages ≤ 600 V (incl. tappings) and IP00 degree of protection.

Selection and ordering data

Rated output[1)] P_n for degree of protection IP00, IP20[2)]	IP23	DT[3)]	Order No. stem	Standard options	PS*	Copper weight[4)] per PU approx.	Transformer weight[4)] per PU approx.	Total weight[4)] incl. enclosure per PU approx.
kVA	kVA					kg	kg	kg
18	16	B	**4BU43 33**	Two tappings in the range ± 5% rated input or output voltage for constant power One tapping on the input or output side for falling output; star point connected to terminal One additional, separate winding on the input or output side Shield winding (connection routed to terminal). This is not possible for autotransformers. Fitted into IP20 or IP23 protective enclosures Rated ambient temperature t_a = 55 °C/H	1 unit	21.000	100.000	144.000
20	18	B	**4BU43 43**		1 unit	27.000	106.000	150.000
22.5	20	B	**4BU43 53**		1 unit	36.000	115.000	159.000
25	22.5	D	**4BU45 33**		1 unit	28.000	133.000	177.000
28	25	D	**4BU45 43**		1 unit	36.000	141.000	185.000
31.5	28	D	**4BU47 33**		1 unit	32.000	167.000	211.000
35.5	32	D	**4BU47 43**		1 unit	43.000	177.000	221.000
40	36	D	**4BU47 53**		1 unit	57.000	191.000	235.000
45	40.5	D	**4BU52 33**		1 unit	57.000	192.000	243.000
50	45	D	**4BU53 33**		1 unit	61.000	213.000	264.000
56	50	D	**4BU53 43**		1 unit	78.000	231.000	282.000
63	56.5	D	**4BU54 33**		1 unit	50.000	265.000	326.000
71	63.5	D	**4BU54 43**		1 unit	64.000	280.000	341.000
80	72	D	**4BU55 33**		1 unit	69.000	310.000	371.000
91	81.5	D	**4BU56 33**		1 unit	73.000	349.000	410.000
100	90	D	**4BU56 43**		1 unit	90.000	366.000	427.000
112	100.5	D	**4BU58 33**		1 unit	65.000	429.000	534.000
125	112.5	D	**4BU58 43**		1 unit	82.000	446.000	551.000
140	126	D	**4BU58 53**		1 unit	105.000	469.000	574.000
160	144	D	**4BU59 33**		1 unit	112.000	525.000	630.000
180	162	D	**4BU60 33**		1 unit	114.000	587.000	692.000
200	180	D	**4BU62 33**		1 unit	111.000	677.000	812.000
225	202.5	D	**4BU62 43**		1 unit	144.000	711.000	846.000
250	225	D	**4BU62 53**		1 unit	181.000	748.000	883.000
280	252	D	**4BU63 33**		1 unit	184.000	831.000	966.000
315	283.5	D	**4BU63 43**		1 unit	240.000	886.000	1021.000
355	319.5	D	**4BU64 33**		1 unit	244.000	988.000	1123.000
400	360	D	**4BU65 33**		1 unit	273.000	1115.000	1250.000

1) For autotransformers = type rating.

2) No output reduction for ambient temperatures ≤ 40 °C.

3) The delivery time class B depends on the quantity.

4) All weights are based on t_a = 40 °C/H, at t_a = 55 °C/H the weight is greater.

Options

- Thermistor transformer protection for warning and/or disconnection, see "General data; Design".
- Deviations from the standard vector groups Dyn5 or Ya0 for autotransformers must be specified when ordering.

*** This quantity or a multiple thereof can be ordered.**

Overview

- acc. to DIN VDE 0552
- Design with manual actuation of motorized operating mechanism
- IP00 or IP20 degree of protection
- CE
- t_a = 40 °C/E

Design

In 4CJ toroidal-core variable transformers and 4CQ pillar-type variable transformers, the transmission ratio can be changed steplessly using the moving contacts on the contact paths of the windings without altering the phase angle – also under load.

Design:

- Autotransformer circuit
- Rated current constant in the entire control range
- Overload capability (see characteristic)
- Input voltage is not affected (no harmonics)
- Normal operation: constant movement of the moving contact, output increase 20 % compared to "Heavy duty"
- Heavy duty: no movement of the moving contact over long periods (24 h), frequent switching on and disconnection under load conditions, operation with phase control (ratio of rms value to rectified value > 1.15)
- Toroidal-core, variable transformers: adjustment angle approx. 340°
- Pillar-type, variable transformers: points of contact hard silver-plated
- Accessories: motorized operating mechanism see "Selection and ordering data".

Stop brake and reversing contactor available on request.

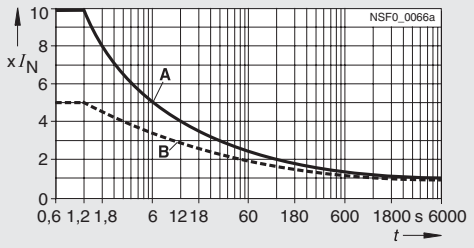
General data

Ambient conditions

The 4CJ and 4CQ variable transformers are climate-proof for mounting in rooms with an internal climate to DIN 50 010.

Limit values:

- Ambient temperature
  - at rated output, +40 °C,
  - minimum –25 °C.
- Relative air humidity
  - at 40 °C up to 85 %,
  - annual average up to 65 %,
  - condensation not permitted.



Reference temperature:
Curve A: Winding temperature = ambient temperature
Curve B: Winding temperature = operating temperature

Overload capability (guide values)

Toroidal-core variable transformers

Area of application

4CJ, IP00 degree of protection (figure on the left) and IP20 degree of protection (figure on the right)

4CJ toroidal-core variable transformers are used for continuous adjustment of AC voltage. All types can be used in the frequency range from 50 Hz to 400 Hz.

Design

The output voltage is sinusoidal, harmonics are not generated by toroidal-core variable transformers. All connections are routed to screw-type terminals. Solder terminals and tab terminals are available on request.

Toroidal-core variable transformers

Selection and ordering data

Manual operation, rated voltage: PRI Y 400 V, 50 Hz to 400 Hz; SEC Y 0 V to 400 V stepless; vector group Yna0

Normal operation		Heavy duty		DT	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current					
kVA	A	kVA	A				kg	kg
IP00 degree of protection								
2.07	3	1.7	2.5	C	**4CJ10 10–1AA**	1 unit	0.500	12.000
3.11	4.5	2.77	4	C	**4CJ11 10–1AA**	1 unit	0.800	16.000
4.14	6	3.76	5.5	C	**4CJ20 10–1AA**	1 unit	1.800	19.000
5.18	7.5	4.35	6.3	C	**4CJ12 10–1AA**	1 unit	1.800	22.000
6.9	10	5.52	8	C	**4CJ21 10–1AA**	1 unit	2.700	32.000
8.28	12	6.9	10	C	**4CJ13 10–1AA**	1 unit	3.000	33.000
9.66	14	8.3	12	C	**4CJ14 10–1AA**	1 unit	3.300	33.000
IP20 degree of protection								
2.07	3	1.7	2.5	C	**4CJ10 10–1AG**	1 unit	0.500	20.000
3.11	4.5	2.77	4	C	**4CJ11 10–1AG**	1 unit	0.800	25.000
4.14	6	3.76	5.5	C	**4CJ20 10–1AG**	1 unit	1.800	28.000
5.18	7.5	4.35	6.3	C	**4CJ12 10–1AG**	1 unit	1.800	32.000
6.9	10	5.52	8	C	**4CJ21 10–1AG**	1 unit	2.700	52.000
8.28	12	6.9	10	C	**4CJ13 10–1AG**	1 unit	3.000	53.000
9.66	14	8.3	12	C	**4CJ14 10–1AG**	1 unit	3.300	53.000

Motorized operating mechanism (AC 230 V motor) with 12 s actuating time, rated voltage: PRI Y 400 V, 50 Hz to 400 Hz; SEC Y 0 V to 400 V stepless; vector group Yna0

Normal operation		Heavy duty		DT	Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current					
kVA	A	kVA	A				kg	kg
IP00 degree of protection								
2.07	3	1.7	2.5	C	**4CJ10 10–1BA**	1 unit	0.500	12.000
3.11	4.5	2.77	4	C	**4CJ11 10–1BA**	1 unit	0.800	16.000
4.14	6	3.76	5.5	C	**4CJ20 10–1BA**	1 unit	1.800	19.000
5.18	7.5	4.35	6.3	C	**4CJ12 10–1BA**	1 unit	1.800	22.000
6.9	10	5.52	8	C	**4CJ21 10–1BA**	1 unit	2.700	32.000
8.28	12	6.9	10	C	**4CJ13 10–1BA**	1 unit	3.000	33.000
9.66	14	8.3	12	C	**4CJ14 10–1BA**	1 unit	3.300	33.000
IP20 degree of protection								
2.07	3	1.7	2.5	C	**4CJ10 10–1BG**	1 unit	0.500	20.000
3.11	4.5	2.77	4	C	**4CJ11 10–1BG**	1 unit	0.800	25.000
4.14	6	3.76	5.5	C	**4CJ20 10–1BG**	1 unit	1.800	28.000
5.18	7.5	4.35	6.3	C	**4CJ12 10–1BG**	1 unit	1.800	32.000
6.9	10	5.52	8	C	**4CJ21 10–1BG**	1 unit	2.700	52.000
8.28	12	6.9	10	C	**4CJ13 10–1BG**	1 unit	3.000	53.000
9.66	14	8.3	12	C	**4CJ14 10–1BG**	1 unit	3.300	53.000

Options

Designs for other currents, voltages, special constructions and combinations with fixed-ratio transformers available on request.

*** This quantity or a multiple thereof can be ordered.**

Area of application

4CQ, IP00 degree of protection

The 4CQ pillar-type variable-ratio transformers are used whenever fine adjustment of output voltages for high currents with a stable sinusoidal form is required.

Design

For problem-free current transfer, the ground contact paths of the tapped windings are hard silver-plated.

Depending on the position of the moving contact, the full rated current can be obtained.

Selection and ordering data

Manual operation, rated voltage: PRI ⅄ 400 V, 50 Hz to 400 Hz; SEC ⅄ 0 V to 400 V stepless; vector group Yna0

Normal operation		Heavy duty		Actuating time for design with motorized operating mechanism	DT	Order No.	PS*	Copper weight per PU approx.	Silver weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current							
kVA	A	kVA	A	s				kg	kg	kg
IP00 degree of protection										
16	23	13.9	20	22	D	**4CQ4 050–0BE0**	1 unit	20.000	0.035	126.000
24	34.6	20.8	30	22	D	**4CQ4 050–0DE0**	1 unit	48.000	0.035	163.000
32	46.2	27.8	40	24	D	**4CQ4 060–0FE0**	1 unit	71.000	0.038	189.000
40	57.7	34.7	50	26	D	**4CQ4 060–0HE0**	1 unit	81.000	0.041	200.000
48	69.3	41.7	60	29	D	**4CQ4 070–0JE0**	1 unit	101.000	0.045	221.000
60	86.6	52.1	75	33	D	**4CQ4 080–0NM0**	1 unit	133.000	0.104	270.000
64	92.4	55.6	80	24	D	**4CQ4 060–0PG0**	1 unit	141.000	0.076	364.000
80	115	69.5	100	26	D	**4CQ4 060–0SG0**	1 unit	161.000	0.083	385.000
96	139	83.4	120	29	D	**4CQ4 070–0VG0**	1 unit	201.000	0.090	416.000
120	173	104.2	150	33	D	**4CQ4 080–1DP0**	1 unit	267.000	0.138	508.000
128	185	111	160	24	D	**4CQ4 060–1EQ0**	1 unit	283.000	0.152	765.000
193	279	167.4	240	29	D	**4CQ4 070–1LQ0**	1 unit	403.000	0.179	922.000
240	346	208	300	33	D	**4CQ4 080–1RS0**	1 unit	534.000	0.414	1039.000
IP20 degree of protection										
16	23	13.9	20	22	D	**4CQ5 050–0BE0**	1 unit	20.000	0.035	141.000
24	34.6	20.8	30	22	D	**4CQ5 050–0DE0**	1 unit	48.000	0.035	182.000
32	46.2	27.8	40	24	D	**4CQ5 060–0FE0**	1 unit	71.000	0.038	210.000
40	57.7	34.7	50	26	D	**4CQ5 060–0HE0**	1 unit	81.000	0.041	223.000
48	69.3	41.7	60	29	D	**4CQ5 070–0JE0**	1 unit	101.000	0.045	246.000
60	86.6	52.1	75	33	D	**4CQ5 080–0NM0**	1 unit	133.000	0.104	300.000
64	92.4	55.6	80	24	D	**4CQ5 060–0PG0**	1 unit	141.000	0.076	405.000
80	115	69.5	100	26	D	**4CQ5 060–0SG0**	1 unit	161.000	0.083	428.000
96	139	83.4	120	29	D	**4CQ5 070–0VG0**	1 unit	201.000	0.090	463.000
120	173	104.2	150	33	D	**4CQ5 080–1DP0**	1 unit	267.000	0.138	565.000
128	185	111	160	24	D	**4CQ5 060–1EQ0**	1 unit	283.000	0.152	850.000
193	279	167.4	240	29	D	**4CQ5 070–1LQ0**	1 unit	403.000	0.179	1025.000
240	346	208	300	33	D	**4CQ5 080–1RS0**	1 unit	534.000	0.414	1155.000

*** This quantity or a multiple thereof can be ordered.**

Pillar-type variable transformers

Motorized operating mechanism[1]),
Rated voltage: PRI Y 400 V, 50 Hz to 400 Hz; SEC Y 0 V to 400 V stepless; vector group Yna0

Normal operation		Heavy duty		Actuating time for design with motorized operating mechanism	DT	Order No.	PS*	Copper weight per PU approx.	Silver weight per PU approx.	Total weight per PU approx.
Rated output P_n	Rated current	Rated output P_n	Rated current							
kVA	A	kVA	A	s				kg	kg	kg
IP00 degree of protection										
16	23	13.9	20	22	D	**4CQ4 050–0BE3**	1 unit	20.000	0.035	126.000
24	34.6	20.8	30	22	D	**4CQ4 050–0DE3**	1 unit	48.000	0.035	163.000
32	46.2	27.8	40	24	D	**4CQ4 060–0FE3**	1 unit	71.000	0.038	189.000
40	57.7	34.7	50	26	D	**4CQ4 060–0HE3**	1 unit	81.000	0.041	200.000
48	69.3	41.7	60	29	D	**4CQ4 070–0JE3**	1 unit	101.000	0.045	221.000
60	86.6	52.1	75	33	D	**4CQ4 080–0NM3**	1 unit	133.000	0.104	270.000
64	92.4	55.6	80	24	D	**4CQ4 060–0PG3**	1 unit	141.000	0.076	364.000
80	115	69.5	100	26	D	**4CQ4 060–0SG3**	1 unit	161.000	0.083	385.000
96	139	83.4	120	29	D	**4CQ4 070–0VG3**	1 unit	201.000	0.090	416.000
120	173	104.2	150	33	D	**4CQ4 080–1DP3**	1 unit	267.000	0.138	508.000
128	185	111	160	24	D	**4CQ4 060–1EQ3**	1 unit	283.000	0.152	765.000
193	279	167.4	240	29	D	**4CQ4 070–1LQ3**	1 unit	403.000	0.179	922.000
240	346	208	300	33	D	**4CQ4 080–1RS3**	1 unit	534.000	0.414	1039.000
IP20 degree of protection										
16	23	13.9	20	22	D	**4CQ5 050–0BE3**	1 unit	20.000	0.035	141.000
24	34.6	20.8	30	22	D	**4CQ5 050–0DE3**	1 unit	48.000	0.035	182.000
32	46.2	27.8	40	24	D	**4CQ5 060–0FE3**	1 unit	71.000	0.038	210.000
40	57.7	34.7	50	26	D	**4CQ5 060–0HE3**	1 unit	81.000	0.041	223.000
48	69.3	41.7	60	29	D	**4CQ5 070–0JE3**	1 unit	101.000	0.045	246.000
60	86.6	52.1	75	33	D	**4CQ5 080–0NM3**	1 unit	133.000	0.104	300.000
64	92.4	55.6	80	24	D	**4CQ5 060–0PG3**	1 unit	141.000	0.076	405.000
80	115	69.5	100	26	D	**4CQ5 060–0SG3**	1 unit	161.000	0.083	428.000
96	139	83.4	120	29	D	**4CQ5 070–0VG3**	1 unit	201.000	0.090	463.000
120	173	104.2	150	33	D	**4CQ5 080–1DP3**	1 unit	267.000	0.138	565.000
128	185	111	160	24	D	**4CQ5 060–1EQ3**	1 unit	283.000	0.152	853.000
193	279	167.4	240	29	D	**4CQ5 070–1LQ3**	1 unit	403.000	0.179	1028.000
240	346	208	300	33	D	**4CQ5 080–1RS3**	1 unit	534.000	0.414	1155.000

1) Three-phase induction motor 230/400 V without reversing contactor, without stop brake with limit switch (further designs available on request).

Options

Designs for other currents, voltages, special constructions and combinations with fixed-ratio transformers available on request.

12

*** This quantity or a multiple thereof can be ordered.**

Overview

4FL

- acc. to EN 60439-1
- IP21 degree of protection
- CE
- t_a = 40 °C/E

Area of application

The 4FL transformer-type voltage stabilizers are used as voltage stabilizers on supply systems with varying voltages. On the output of the voltage stabilizer, a constant voltage is available for the load which creates a constant machine performance which is immune to variations in the supply system.

Design

The transformer-type voltage stabilizer supplies electrical loads with a constant voltage despite mains variations.

The advantage of a voltage stabilizer with an autotransformer is proportional changing of the sinewave, i.e. the voltage stabilizer is characterized in that the rms value, mean value and the peak value are held at constant ratios.

A perfect rms value is required, for example, by loads for which the loading is determined by the temperature limits. Strongly capacitive loading in DC units respond to the mean value. A slightly capacitive load is, however, influenced by the peak value. These factors are, however, only guaranteed for sinusoidal AC voltages and this can only be achieved easily by means of an autotransformer.

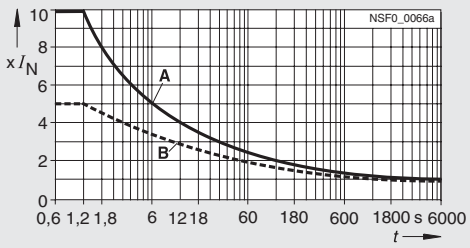
Voltage stabilizers stabilize the supply voltage U_1 regardless of the frequency and power factor to the rated value of output voltage U_{2N} within the set control accuracy (±1 % of U_{2N}). The control time is 1.5 s to 2.5 s from the top or bottom limit. The curve shape of the input voltage is not modified.

The output voltage U_2 is compared in the electronic step controller with a set reference voltage. In the event of a deviation in voltage greater than the set response value, the electronic step controller compensates the deviation with an accuracy of ±1 % using a servo motor and adjustable moving contact on the variable transformer.

Transformer-type voltage stabilizers

Transformer voltage stabilizers:

- are galvanically connected to the supply system
- can be overloaded temporarily (see characteristic)
- can be installed in a sheet-steel housing to IP21 complete with any additional components
- have an efficiency of between 95 % and 98 %
- are not maintenance-free.
- For the values for control range and control deviation, see "Selection and ordering data".
- For symmetrical mains voltage: The voltage deviation is only monitored on one conductor and set for all three conductors.
- For asymmetrical mains voltage: the voltage deviation is monitored on each conductor and set individually for each conductor.
- The neutral conductor 1N must be connected. If no neutral conductor is present on the mains side, a neutral grounding transformer is required (on request).



Reference temperature:
Curve A: winding temperature = ambient temperature
Curve B: winding temperature = operating temperature

Overload capability (guide values)

Ambient conditions

Transformer-type voltage stabilizers 4FL are climate-proof for mounting in rooms with an internal climate to DIN 50010.

Limit values:

- Ambient temperature at
  - rated output +40 °C,
  - minimum –25 °C.
- Relative humidity
  - at 40 °C up to 85 %,
  - annual average up to 65 %,
  - condensation not permitted.

Short-circuit and overload protection

Transformer voltage stabilizers must be protected with gL/gG fuses on the primary side against damage caused by short-circuits. The fuse rated current must be determined according to the highest primary current (present with the lowest input voltage). Overload and short-circuit protective devices according to the rated load current must be provided on the output side. An overload relay is integrated in the control circuit, the trip contacts (break or make) must be connected on a switch that automatically disconnects the transformer voltage stabilizer from the mains in the event of a fault.

Transformer-type voltage stabilizers

Selection and ordering data

Rated voltage: PRI = SEC: 400 V, 50 Hz to 60 Hz

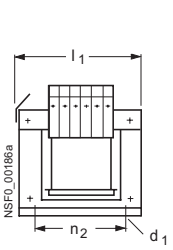
Settling time	Rated output P_n	DT	For symmetrical mains voltage Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.	DT	For asymmetrical mains voltage Order No.	PS*	Copper weight per PU approx.	Total weight per PU approx.
s	kVA				kg	kg				kg	kg
Control range for input voltage: +10 % to –10 %											
1.5	6.8	D	**4FL23 01–3CN**	1 unit	3.900	80.000	D	**4FL23 02–3CN**	1 unit	3.900	80.000
1.5	11	D	**4FL28 01–3CN**	1 unit	4.800	80.000	D	**4FL28 02–3CN**	1 unit	4.800	80.000
1.5	17	D	**4FL33 01–3CN**	1 unit	8.400	90.000	D	**4FL33 02–3CN**	1 unit	8.400	90.000
1.5	25	D	**4FL38 01–3CN**	1 unit	10.500	110.000	D	**4FL38 02–3CN**	1 unit	10.500	110.000
1.5	34	D	**4FL43 01–3CN**	1 unit	15.300	150.000	D	**4FL43 02–3CN**	1 unit	15.300	150.000
1.5	51	D	**4FL46 01–3CN**	1 unit	25.500	210.000	D	**4FL46 02–3CN**	1 unit	25.500	210.000
1.5	68	D	**4FL49 01–3CN**	1 unit	32.400	240.000	D	**4FL49 02–3CN**	1 unit	32.400	240.000
2.5	95	D	**4FL51 01–3CN**	1 unit	47.200	320.000	D	**4FL51 02–3CN**	1 unit	47.200	320.000
2.5	190	D	**4FL53 01–3CN**	1 unit	80.800	400.000	D	**4FL53 02–3CN**	1 unit	80.800	400.000
Control range for input voltage: +15 % to –15 %											
1.5	4.2	D	**4FL18 11–3CN**	1 unit	3.900	80.000	D	**4FL18 12–3CN**	1 unit	3.900	80.000
1.5	7	D	**4FL24 11–3CN**	1 unit	4.800	80.000	D	**4FL24 12–3CN**	1 unit	4.800	80.000
1.5	11	D	**4FL28 11–3CN**	1 unit	8.400	90.000	D	**4FL28 12–3CN**	1 unit	8.400	90.000
1.5	16	D	**4FL32 11–3CN**	1 unit	10.500	110.000	D	**4FL32 12–3CN**	1 unit	10.500	110.000
1.5	21	D	**4FL35 11–3CN**	1 unit	15.300	150.000	D	**4FL35 12–3CN**	1 unit	15.300	150.000
1.5	32	D	**4FL42 11–3CN**	1 unit	25.500	210.000	D	**4FL42 12–3CN**	1 unit	25.500	210.000
1.5	42	D	**4FL45 11–3CN**	1 unit	32.400	240.000	D	**4FL45 12–3CN**	1 unit	32.400	240.000
2.5	60	D	**4FL47 11–3CN**	1 unit	47.200	320.000	D	**4FL47 12–3CN**	1 unit	47.200	320.000
2.5	110	D	**4FL52 11–3CN**	1 unit	80.800	400.000	D	**4FL52 12–3CN**	1 unit	80.800	400.000
Control range for input voltage: +20 % to –20 %											
1.5	3	D	**4FL15 21–3CN**	1 unit	3.900	80.000	D	**4FL15 22–3CN**	1 unit	3.900	80.000
1.5	4.8	D	**4FL19 21–3CN**	1 unit	4.800	80.000	D	**4FL19 22–3CN**	1 unit	4.800	80.000
1.5	7.5	D	**4FL25 21–3CN**	1 unit	8.400	90.000	D	**4FL25 22–3CN**	1 unit	8.400	90.000
1.5	11	D	**4FL28 21–3CN**	1 unit	10.500	110.000	D	**4FL28 22–3CN**	1 unit	10.500	110.000
1.5	15	D	**4FL31 21–3CN**	1 unit	15.300	150.000	D	**4FL31 22–3CN**	1 unit	15.300	150.000
1.5	22.5	D	**4FL37 21–3CN**	1 unit	25.500	210.000	D	**4FL37 22–3CN**	1 unit	25.500	210.000
1.5	30	D	**4FL40 21–3CN**	1 unit	32.400	240.000	D	**4FL40 22–3CN**	1 unit	32.400	240.000

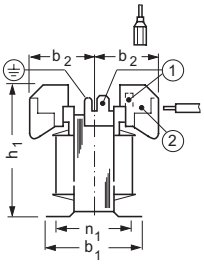
*** This quantity or a multiple thereof can be ordered.**

Dimension drawings

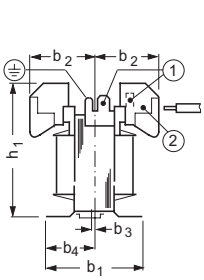
SITAS safety, isolating, control and line transformers < 16 kVA, special transformers < 16 kVA

4AM23 to 4AM26
4AM43 to 4AM65
for mounting in any position,
standard design

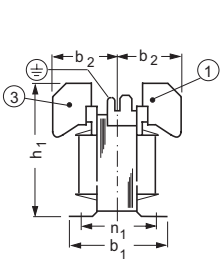




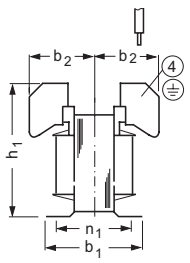
4AM32 to 4AM40
for mounting in any position,
standard design
(with integrated rail mounting)



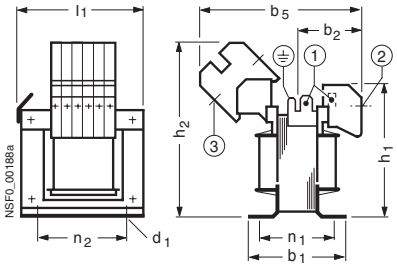
4AM23 to 4AM65
for mounting in any position,
design with 10 mm², terminal up to 44 A



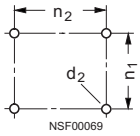
4AM23 to 4AM65
for mounting in any position,
design with Cage Clamp terminals,
as for standard design,
but with b_2 + 2 mm,
cable entry from above



4AM23 to 4AM65
for mounting in any position, with terminals ≤ 60 A
via terminal strip



Mounting holes



① Flat connector DIN 46224-A 6.3-0.8

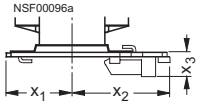
② Screw-type terminals
24 A:
solid 0.5 mm² up to 6 mm²,
finely stranded 0.5 mm² up to 4 mm²

③ Screw-type connections
44 A:
solid 1.0 mm² up to 16 mm²,
finely stranded 1.0 mm² up to 10 mm²
60 A:
solid 1.0 mm² up to 16 mm²,
stranded 10 mm² up to 25 mm²,
finely-stranded 2.5 mm² up to 16 mm²

④ Cage Clamp terminals
(also ground connection)
24 A:
solid 0.08 mm² up to 4 mm²,
finely stranded 0.08 mm² up to 4 mm²

Type	Rated output kVA[1])	Designation to DIN 41302	b_1	b_2	b_3	b_4	b_5	d_1	d_2	h_1	h_2	l_1	n_1	n_2	max. number of terminals per side		
															24 A	44 A	60 A
4AM23	0.025	EI 60/20	50	39	–	–	102	3.6 × 6	M3	75	104	62	39	44	5	4	4
4AM26	0.04	EI 66/22	56	40	–	–	104	4.5 × 8	M4	79	108	68	42	50	5	4	4
4AM32	0.063	EI 84/28	86	45	2	34	112	4.8 × 8	M4	98	126	86	64	64	7	4	4
4AM34	0.1	EI 84/42	86	51	2	34	126	4.8 × 8	M4	98	122	86	64	64	7	4	4
4AM38	0.16	EI 96/44	102	52	5	44	128	5.8 × 9.3	M5	106	133	98	86	84	8	6	6
4AM40	0.25	EI 96/58	102	59	5	44	142	5.8 × 9.3	M5	106	133	98	86	84	8	6	6
4AM43	0.315	EI 105/60	103	60	–	–	143	5.8 × 12	M5	111	140	107	86	80.5	8	6	6
4AM46	0.4	EI 120/52	102	57	–	–	137	5.8 × 12	M5	121	150	122	87	90	10	6	6
4AM48	0.5	EI 120/72	123	67	–	–	157	5.8 × 12	M5	121	150	122	103	90	10	6	6
4AM52	0.63	EI 150N/48	111	55	–	–	134	7 × 15	M6	144	173	152	90	122	14	10	8
4AM55	0.8	EI 150N/65	128	63	–	–	152	7 × 15	M6	144	173	152	106	122	14	10	8
4AM57	1	EI 150N/90	154	66	–	–	176	7 × 15	M6	144	173	152	134	122	14	10	8
4AM61	1.6	EI 174/82	155	69	–	–	165	7 × 15	M6	164	192	176	126	145	16	10	10
4AM64	2	EI 174/102	177	79	–	–	185	7 × 15	M6	164	192	176	146	145	16	10	10
4AM65	2.5	EI 192/110	188	88	–	–	203	9 × 16	M8	180	208	194	164	160	16	10	10

Standard rail mounting for 4AM transformers in a special design with a preassembled adapter plate



The 4AM32, 4AM34, 4AM38 and 4AM40 transformers are supplied as standard both for screw-fixing and with an integrated standard rail fixture.

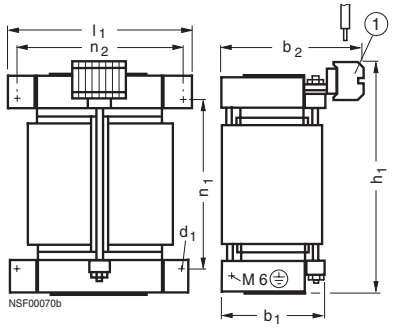
Type	x_1 max.	x_2 max.	x_3	Rail mm
4AM23	b_1/2+2	b_1/2+21	9	35 × 7.5
4AM26	b_1/2+5	b_1/2+21	9	35 × 7.5
4AM43	b_1/2+3	b_1/2+8	15	35 × 15
4AM46 to 4AM48	b_1/2+3	b_1/2+3	15	35 × 15

1) The rated output is only applicable to transformers with separate windings (not to autotransformers).

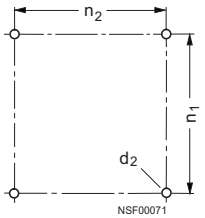
Project planning aids

SITAS safety, isolating, control and line transformers < 16 kVA, special transformers < 16 kVA (continued)

4AT30 to 4AT43
for any mounting position



Mounting holes

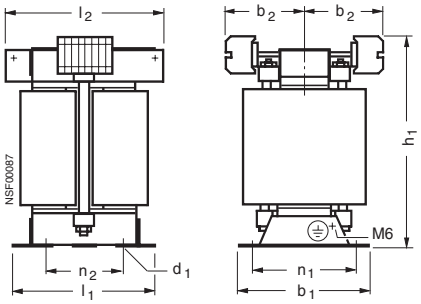


① Screw-type terminals
18 A:
solid 0.5 mm² up to 6 mm²,
finely stranded 1.5 mm² up to 4 mm²
23 A:
solid 0.75 mm² up to 10 mm²,
finely stranded 1.5 mm² up to 6 mm2
43 A:
solid 1.0 mm² up to 16 mm²,
stranded 10 mm² up to 25 mm²,
finely-stranded 2.5 mm² up to 16 mm²

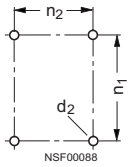
Permissible permanent load for 4AT36 and 4AT39 for arrangement on horizontal surfaces:
$0.95 \cdot P_n$ at t_a = 55 °C
P_n at t_a = 45 °C

Type	Rated output kVA[1])	Designation to DIN 41302	b_1	b_2	d_1	d_2	h_1	l_1	n_1	n_2	max. number of terminals per side 18 A	23 A	43 A
4AT30	4	UI 150/75	147	205	9 × 14	M8	263	214	200	190	20	18	13
4AT36	5; 6.3	UI 180/75	180	238	9 × 14	M8	315	244	240	220	24	22	16
4AT39	8; 10	UI 210/70	185	243	11 × 16	M10	365	285	280	260	29	26	19
4AT43	12.5; 14	UI 240/80	195	253	11 × 16	M10	415	325	320	290	33	33	22

4AT30 to 4AT43
for arrangement on horizontal surfaces, special constructions can only be supplied for transformers with selectable data



Mounting holes



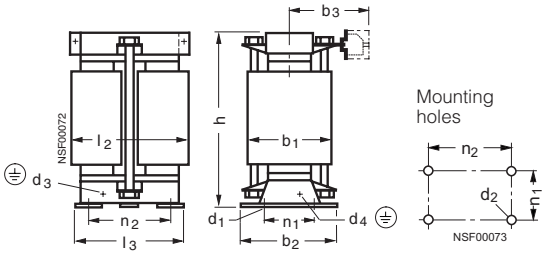
Screw-type terminals
18 A:
solid 0.5 mm² up to 6 mm²,
finely stranded 1.5 mm² up to 4 mm²,
terminal size 4
23 A:
solid 0.75 mm² up to 10 mm²,
finely stranded 1.5 mm² up to 6 mm²,
terminal size 6
43 A:
solid 1.0 mm² up to 16 mm²,
stranded 10 mm² up to 25 mm²,
finely stranded 2.5 mm² up to 16 mm²,
terminal size 16

Type	Rated output kVA[1])	Designation to DIN 41302	b_1 max.	b_2 min.	b_2 max.	d_1	d_2	h_1 max.	l_1	l_2 max.	n_1	n_2	max. number of terminals per side 18 A	23 A	43 A
4AT30	4	UI 150/75	155	109	117	10 × 18	M8	270	164	200	118	124	20	18	13
4AT36	5; 6.3	UI 180/75	169	114	122	10 × 18	M8	320	194	240	138	144	24	22	16
4AT39	8; 10	UI 210/70	174	111	119	12 × 18	M10	370	226	280	141	176	29	26	19
4AT43	12.5; 14	UI 240/80	194	116	124	15 × 22	M12	420	256	310	155	196	33	30	22

1) The rated output is only applicable to transformers with separate windings (not to autotransformers).

SITAS safety, isolating, control and line transformers and autotransformers ≤ 16 kVA, special transformers ≥ 18 kVA

4AT45 and 4BT
for arrangement on horizontal surfaces



Terminal		Screw connection for cross-section			Current-carrying capacity
		solid	stranded	finely stranded	
Type	Size	mm²	mm²	mm²	A
8WA1 011–1DG11	4	0.5 ... 6	–	1.5 ... 4	18
8WA1 011–1DH11	6	0.75 ... 10	–	1.5 ... 6	23
8WA1 204	16	1 ... 16	10 ... 25	2.5 ... 16	43
8WA1 205	35	4 ... 16	10 ... 50	6 ... 35	81

For transformers >81 A, see flat and threaded pin connections on Page 12/87.

Type	Rated output kVA[1]	Type size according to DIN 41302	b_1	b_2	$b_3 \pm 3$ for terminal size (4) 6	16	35	d_1	d_2	d_3	d_4	H	l_2	l_3	n_1	n_2	max. number of terminals for terminal size 4	6	16	35
Safety, isolating, control and line transformers and autotransformers ≤ 16 kVA																				
4AT45	16	UI 240/107	221	221	126	134	146	15 × 22	M12	–	M6	420	320	256	182	196	33	30	22	13
Power transformers and autotransformers ≥ 18 kVA																				
4BT45	18	UI 230/107	230	221	152	163	174	15	M12	–	M6	422	300	250	182	190	28	22	18	11
4BT47	20; 22.5; 25	UI 230/137	260	251	172	178	190	15	M12	–	M6	422	300	250	212	190	28	22	18	11
4BT51	28	UIS 265/107	267	207	147	155	167	12.5	M10	M 12	–	515	370	285	170	225	–	36	26	16
4BT52	31.5	UIS 265/120	280	220	153	161	173	12.5	M10	M 12	–	515	370	285	183	225	–	36	26	16
4BT53	35.5	UIS 265/135	295	235	161	169	181	12.5	M10	M 12	–	515	370	285	198	225	–	36	26	16
4BT54	45	UIS 305/125	295	245	166	174	186	15	M12	M 12	–	585	420	330	198	260	–	36	26	16
4BT55	50	UIS 305/140	310	260	173	181	193	15	M12	M 12	–	585	420	330	213	260	–	36	26	16
4BT56	63	UIS 305/160	330	280	183	191	203	15	M12	M 12	–	585	420	330	233	260	–	36	26	16
4BT58	80	UIS 370/150	330	290	180	188	200	15	M12	M 12	–	665	520	400	241	320	–	46	32	20
4BT59	100	UIS 370/170	350	310	190	198	210	15	M12	M 12	–	665	520	400	261	320	–	46	32	20
4BT60	125	UIS 370/195	375	335	203	211	223	15	M12	M 12	–	665	520	400	286	320	–	46	32	20
4BT62	160	UIS 455/175	405	315	193	201	213	21	M16	M 12	–	760	650	495	261	395	–	56	40	24
4BT63	200	UIS 455/200	430	340	205	213	225	21	M16	M 12	–	760	650	495	298	395	–	56	40	24
4BT65	250	UIS 455/260	490	400	235	243	255	21	M16	M 12	–	760	650	495	353	395	–	56	40	24

1) The rated output is only applicable to transformers with separate windings (not to autotransformers).

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Project planning aids

Protective enclosure with safety, isolating, control and line transformers ≤16 kVA, for IP23 and IP54 degree of protection

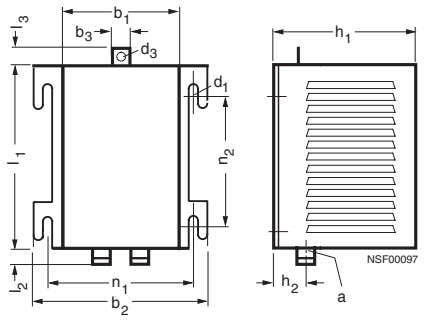
Mounting positions

Type	Mounting position	Degree of protection	
		IP23	IP54
4AM, 4AT30 to 4AT43	horizontal		×
	vertical	×	×

× permissible

Sheet-steel enclosure, epoxy-resin coated, for IP23 and IP54 degree of protection

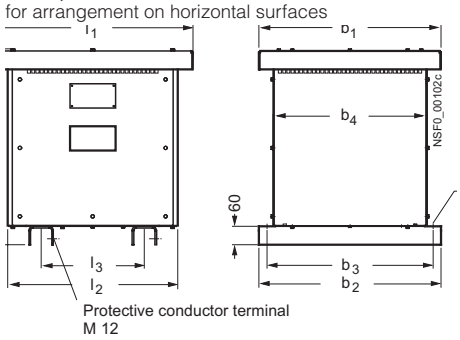
4AM, 4AT



Type	A	b_1	b_2	b_3	d_1	d_3	h_1	h_2	l_1	l_2	l_3	n_1	n_2
4AM23 to 4AM34	2 × M25	112	149	–	5.8	–	135	35	155	35	–	137	125
4AM38 to 4AM57	2 × M25	187	224	–	5.8	–	230	42	245	35	–	212	200
4AM61 to 4AM65, 4AT30, 4AT36	2 × M32	305	351	–	9	–	330	56	395	45	–	333	335
4AT39, 4AT43	2 × M32	395	460	50	13	35	465	60	555	45	50	430	480

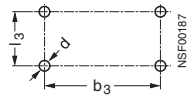
Protective enclosure with dry transformers >16 kVA, for IP20 and IP23 degree of protection

Sheet-steel housing, epoxy-resin coated
4AT45, 4BT
for arrangement on horizontal surfaces



Type	b_1	b_2	b_3	b_4	h_1	D	l_1	l_2	l_3
4AT45, 4BT45 and 4BT47	600	600	570	507	645	15	660	560	340
4BT51 to 4BT53	600	600	570	507	735	15	660	560	316
4BT54 to 4BT56	600	600	570	507	825	15	900	800	465
4BT58 to 4BT60	730	730	696	637	905	19	1220	1120	630
4BT62 to 4BT65	900	900	858	807	1005	21	1220	1120	720

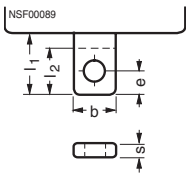
Mounting holes



12

Flat-type and threaded pin connections

Flat-type terminal with thru-hole

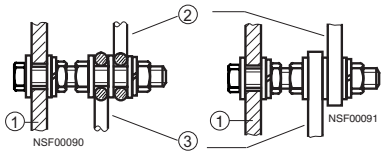


Flat-type connection on the transformer winding with thru-hole for rail or cable lug

Terminal covers for protection against inadvertent touching of free rail connections
up to 800 A (DIN VDE 0106-100) see "Controlgear: Contactors and contactor combinations", "Accessories and spare parts for 3T contactors",
Order No. depends on the flat-type terminal 3TX6 5.6-3B.

Transformer Type	Terminal size A	$b = l_2$	with hole for screw	e	l_1	s
4AT, 4BT	100	16	M6	8	25	2.5
	200	20	M8	10	30	3
	400	25	M10	12.5	35	5
	630	30	M10	15	40	6
	800	30	M12	15	40	8
	1000	40	M12	20	50	8

Threaded pins on insulating strip



Round wire or cable lug

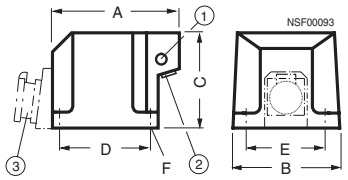
Rail or cable lug

① Insulating strip
② External connection
③ Internal connection

Transformer Type	Terminal size A	Threaded pins	for conductor cross-sections mm^2
4AT, 4BT	200	M8	≤ 50
	315	M10	≤ 120
	500	M12	≤ 300

Safety transformers resin-enclosed, isolating transformers resin-enclosed

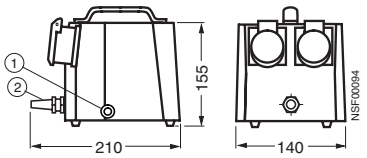
4AX23 10 to 4AX23 16
safety transformer, stationary,
for mounting in any position, suitable for construction sites



① Fuse
② Cable gland
③ Design with CEE socket

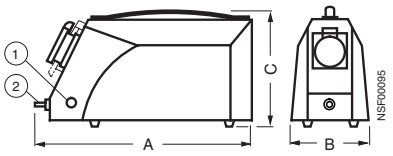
Type	P_n kVA	A	B	C	D	E	F
4AX23 10	0.1	115	130	100	64	115	5
4AX23 11	0.16	115	130	100	64	115	5
4AX23 13	0.25	138	145	125	108	125	5
4AX23 14	0.4	165	145	125	108	125	5
4AX23 15	0.63	200	176	152	120	151	6
4AX23 16	1	220	210	175	138	180	6

4AX22 12
safety transformer, portable,
with 2 CEE outlets, suitable for construction sites



① Fuse
② Connecting cable 2.5 m

Safety and isolating transformer, portable,
suitable for construction sites
4AX22 10 to 4AX22 16
with CEE sockets,
4AX24 11 to 4AX24 18
with 1 SCHUKO outlet



① Fuse
② Connecting cable 2.5 m

Type Safety transformer	Type Isolating transformer	P_n kVA	A	B	C
4AX22 10	–	0.1	235	95	115
–	4AX24 11	0.16	235	95	115
–	4AX24 13	0.25	280	100	150
4AX22 14	4AX24 14	0.4	280	115	150
4AX22 15	4AX24 15	0.63	280	130	150
4AX22 16	4AX24 16	1	340	140	200
–	4AX24 17	1.6	340	160	200
–	4AX24 18	2.5	340	190	200

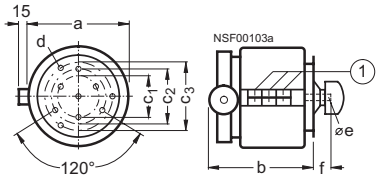
12

Project planning aids

Variable transformers

Toroidal-core variable transformers

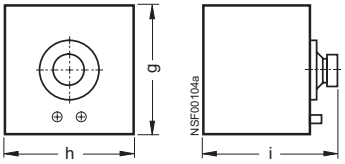
4CH10 to 4CH21
IP00 degree of protection, front view without knob and dial
Manual operation



① Terminals

Type	IP00 degree of protection								IP20 degree of protection		
	a	b	c_1	c_2	c_3	d	e	f	g	h	i
4CH10	72	61	Central fixing			–	6	20	125	170	140
4CH11	72	86	M10 × 0.75			–	6	20	125	170	140
4CH12	86	105	26	60	–	M4	6	28	130	200	180
4CH13	120	110	80	–	–	M6	10	45	210	200	230
4CH20	120	130	80	–	–	M6	10	45	210	200	230
4CH14	120	150	80	–	–	M6	10	45	210	200	230
4CH21	160	145	80	95	100	M6	10	35	310	300	260
4CH15	160	150	80	95	100	M6	10	35	310	300	260
4CH16	160	150	80	95	100	M6	10	35	310	300	260

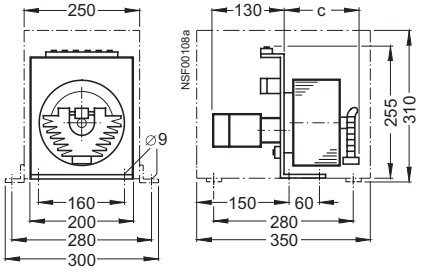
4CH10 to 4CH21
IP20 degree of protection, manual operation



Portable design
Input: up to 14 A: 3-core cable with SCHUKO plug, via 14 A: terminals at the transformer.
Output: experimenting terminals on the outside of enclosure for Types 4CH13 to 4CH16, SCHUKO plug for Type 4CH10 to 4CH12.

Stationary design
input and output terminals on the inside.

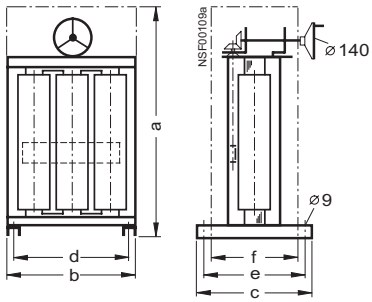
4CH12 to 4CH21
With motorized operating mechanism, IP00/IP20 degree of protection



Type	C
4CH12	105
4CH13	110
4CH20	130
4CH14	150
4CH21	145
4CH15	150
4CH16	150

Pillar-type variable transformers

4CP,
with dry self-cooling,
IP00/IP20 degree of protection



Order No. 5th to 7th position	a
050	1000
060	1100
070	1200
080	1300
090	1400
100	1500
110	1600
130	1800

Examples from the table:
4CP5**0 45**-2ED0

Order No. 10th position	a	b	c	d	e	f
D or L	see	364	430	310	400	360
E or M	Table	514	490	460	460	419
F or N	left	684	430	630	400	360
G or P		1004	450	935	420	380
Q or S		1004	780	935	740	700

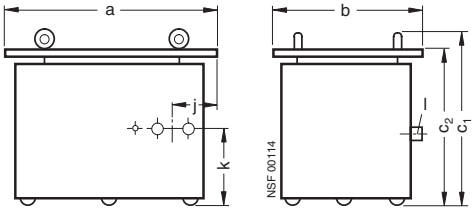
4CP50 45-2E**D**0

12

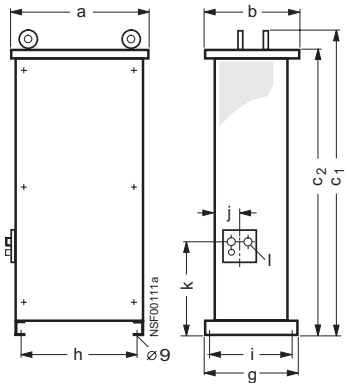
Voltage stabilizers

Transformer-type voltage stabilizers

4FL, IP21 degree of protection



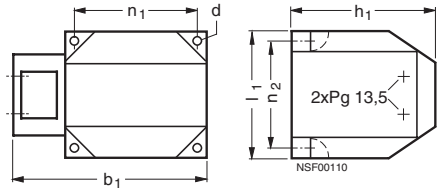
Type	A	B	c_1	c_2	j	k	l
4FL10 to 4FL14, 4FL16, 4FL17, 4FL20 to 4FL22, 4FL24, 4FL26, 4FL29	490	360	–	430	140	70	Pg16
4FL25, 4FL27, 4FL28, 4FL30 10, 4FL33, 4FL37	700	500	560	510	145	260	Pg36



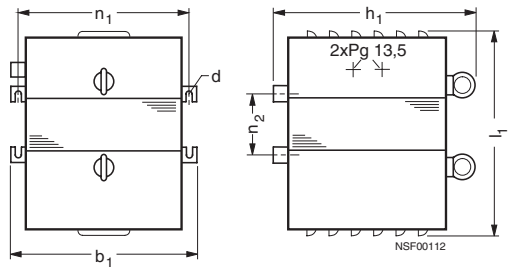
Type	A	B	c_1	c_2	g	H	l	j	k	l
4FL30 20, 4FL34	505	380	1065	1010	380	360	360	120	395	Pg36
4FL41										Pg42
4FL39, 4FL44, 4FL48	720	470	1355	1290	470	450	450	250	440	Pg42

Solenoid-type voltage stabilizers

4FK31 to 4FK34
IP65 degree of protection, any arrangement



4FK35 to 4FK38
IP20 degree of protection, any arrangement



Type	Rated output kVA	b_1	D	h_1	l_1	n_1	n_2
4FK31	0.12	250	5	160	120	162	100
4FK32	0.25	305	5	170	140	200	118
4FK33	0.5	305	5	180	155	200	134
4FK34	0.75	320	6	185	185	198	166
4FK35	1	265	9	325	330	240	83
4FK36	1.5	265	9	325	345	240	96
4FK37	2	265	9	325	370	240	122
4FK38	2.5	265	9	325	415	240	167

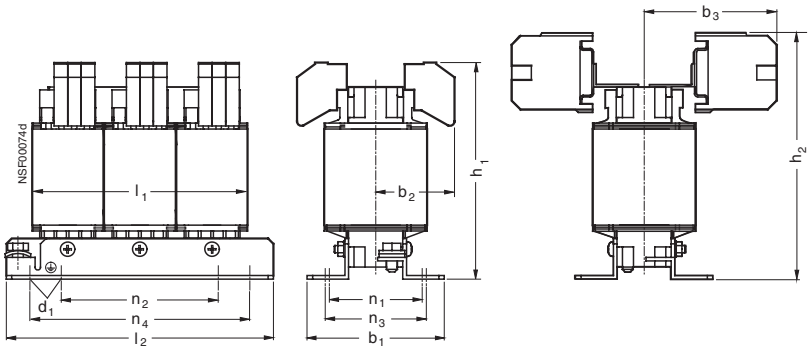
4FK39 to 4FK44 (3.15 kVA to 10 kVA) not shown
IP21 degree of protection, horizontal arrangement, H × W × D (mm):
750 × 580 × 510

Project planning aids

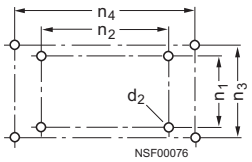
Dimension drawings

SITAS safety, isolating, control and line transformers and autotransformers ≤ 16 kVA, special transformers ≤ 16 kVA

4AP17 to 4AP25
for mounting in any position,
fixing dimensions according to EN 60852-4



Mounting hole



Screw connection
(flat connector DIN 46244-A 6.3–0.8)

24 A:
solid 0.5 mm² to 6 mm²,
finely stranded 0.5 mm² to 4 mm²

Screw-type terminals

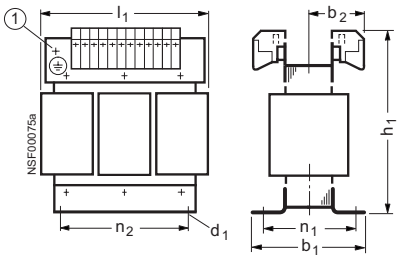
32 A:
solid 0.75 mm² up to 10 mm²,
finely stranded 1.5 mm² up to 6 mm²

44 A:
solid 1 mm² up to 16 mm²,
finely stranded 1 mm² up to 10 mm²

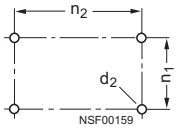
60 A:
solid 1 mm² up to 16 mm²,
stranded 10 mm² up to 25 mm²,
finely-stranded 2.5 mm² up to 16 mm²

> 60 A:
Flat-type terminals
(see Page 12/92)

4AP27 and 4AP30
for mounting in any position



Mounting hole



① M 6 grounding screws

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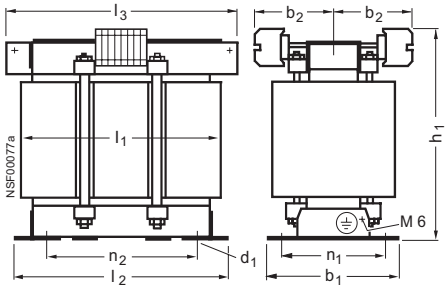
Type	Rated output kVA[1])	Designation to DIN 41302	b_1	b_2 max	b_3	d_1	d_2	h_1	h_2	l_1	l_2	n_1	n_2	n_3	n_4	max. number of terminals per side			
																24 A	32 A	44 A	60 A
4AP17	0.16	3UI 60/30	76	45	76	4.8 × 9	M4	125	139	122	148	47	90	56	136	12	12	6	9
4AP18	0.25	3UI 75/25	73	56	73	5.8 × 11	M5	148	164	156	178	49	113	53	166	15	16	6	12
4AP19	0.4	3UI 75/40	88	64	81	5.8 × 11	M5	151	164	156	178	64	113	68	166	15	16	6	12
4AP20	0.63	3UI 90/30	99	59	76	7 × 12	M6	168	189	182	219	56	136	69	201	21	19	12	15
4AP21	1	3UI 90/50	119	69	86	7 × 12	M6	168	189	182	219	76	136	89	201	21	19	12	15
4AP25	1.6	3UI 114/62	131	76	92	7 × 12	M6	203	230	229	267	94	176	101	249	27	22	18	19
4AP27	2.5	3UI 132/70	133	102	–	10 × 18	M8	241	–	264	–	101	200	–	–	27	21	–	15
4AP30	4; 5	3UI 150/75	148	104	–	10 × 18	M8	270	–	300	–	118	224	–	–	27	21	–	15

1) The rated output is only applicable to transformers with separate windings (not to autotransformers).

SITAS safety, isolating, control and line transformers ≤ 16 kVA, special transformers ≤ 16 kVA (continued)

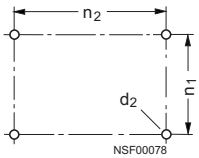
4AU30 to 4AU39 for any mounting position



Permissible permanent load for 4AU36 and 4AU39 for arrangement on vertical surfaces:
0.95 · P_n at t_a = 55 °C
P_n at t_a = 45 °C

Type	Rated output kVA[1]	Designation acc. to DIN 41302	b_1	b_2	d_1	d_2	h_1	l_1	l_2	l_3	n_1	n_2	max. number of terminals per side 18 A	23 A	43 A
4AU30	6.3	3UI 150/75	155	129	10 × 18	M8	270	300	264	310	118	224	35	31	23
4AU36	8; 10	3UI 180/75	169	134	10 × 18	M8	320	360	314	360	138	264	43	38	28
4AU39	12.5; 16	3UI 210/70	174	131	12 × 18	M10	370	420	366	410	141	316	50	45	33

Mounting holes



Screw-type terminals

18 A:
solid 0.5 mm² to 6 mm²,
finely stranded 1.5 mm² to 4 mm²

23 A:
solid 0.75 mm² to 10 mm²,
finely stranded 1.5 mm² to 6 mm²

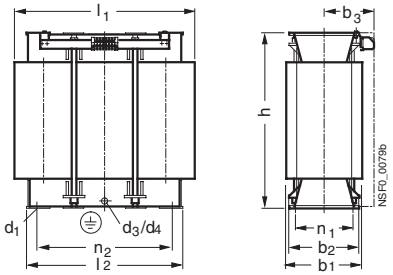
43 A:
solid 1 mm² up to 16 mm²,
stranded 10 mm² up to 25 mm²,
finely-stranded 2.5 mm² up to 16 mm²

81 A:
solid or stranded
4 mm² up to 16 mm²

>81 A:
Flat-type terminals
(see Page 12/92)

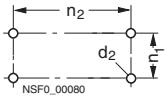
Safety, isolating, control and line transformers > 16 kVA

4BU
for arrangement on horizontal surfaces



Terminal Type	Size	Screw connection for cross-section solid mm²	stranded mm²	finely stranded mm²	Current-carrying capacity A
8WA1 011–1DG11	4	0.5 ... 6	–	1.5 ... 4	18
8WA1 011–1DH11	6	0.75 ... 10	–	1.5 ... 6	23
8WA1 204	16	1 ... 16	10 ... 25	2.5 ... 16	43
8WA1 205	35	4 ... 16	10 ... 50	6 ... 35	81

Mounting hole



For transformers >81 A, see flat and threaded pin connections on Page 12/92.

Type	Rated output kVA[1]	Type size in accordance with DIN 41302	b_1	b_2	$b_3 \pm 3$ for terminal size 4 (6)	16	35	d_1	d_2	d_3	d_4	H	l_1	l_2	n_1	n_2	max. number of terminals for terminal size 4	6	16	35
4BU43	18; 20; 22.5	3UI 230/80	203	194	143	149	161	15	M12	–	M6	422	450	400	155	340	44	36	29	18
4BU45	25; 28	3UI 230/107	230	221	152	163	174	15	M12	–	M6	422	450	400	182	340	44	36	29	18
4BU47	31.5; 35.5; 40	3UI 230/137	260	251	172	178	190	15	M12	–	M6	422	450	400	212	340	44	36	29	18
4BU52	45	3UIS 220/120	295	225	159	165	177	12.5	M10	M12	–	512	420	382	183	316	–	35	28	17
4BU53	50; 56	3UIS 220/135	310	240	166	172	184	12.5	M10	M12	–	512	420	382	198	316	–	35	28	17
4BU54	63; 71	3UIS 305/125	265	240	166	172	184	15	M12	M12	–	602	630	537	198	465	–	52	42	26
4BU55	80	3UIS 305/140	280	255	174	180	191	15	M12	M12	–	602	630	537	213	465	–	52	42	26
4BU56	91; 100	3UIS 305/160	300	275	184	190	201	15	M12	M12	–	602	630	537	233	465	–	52	42	26
4BU58	112; 125; 140	3UIS 395/150	315	269	181	187	198	15	M12	M12	–	686	855	712	227	630	–	70	55	35
4BU59	160	3UIS 395/170	335	289	191	197	208	15	M12	M12	–	686	855	712	247	630	–	70	55	35
4BU60	180	3UIS 395/195	360	314	203	209	221	15	M12	M12	–	686	855	712	272	630	–	70	55	35
4BU62	200; 225; 250	3UIS 455/175	360	305	199	205	216	21	M16	M12	–	780	975	812	256	720	–	70	55	35
4BU63	280; 315	3UIS 455/200	385	330	211	217	229	21	M16	M12	–	780	975	812	281	720	–	70	55	35
4BU64	355	3UIS 455/230	415	360	226	232	244	21	M16	M12	–	780	975	812	311	720	–	70	55	35
4BU65	400	3UIS 455/260	445	390	238	247	259	21	M16	M12	–	780	975	812	341	720	–	70	55	35

1) The rated output is only applicable to transformers with separate windings (not to autotransformers).

Project planning aids

Protective enclosure with safety, isolating, control and line transformers ≤ 16 kVA, for IP23 and IP54 degree of protection

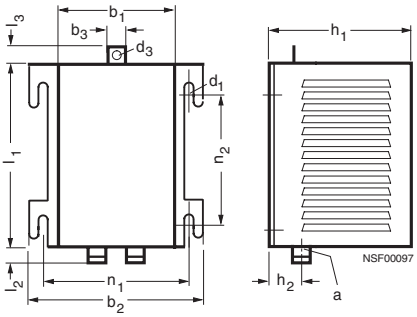
Mounting positions

Type	Mounting position	Degree of protection	
		IP23	IP54
4AP, 4AU	horizontal		×
	vertical	×	×

× permissible

Sheet-steel enclosure, epoxy-resin coated, for IP23 and IP54 degree of protection

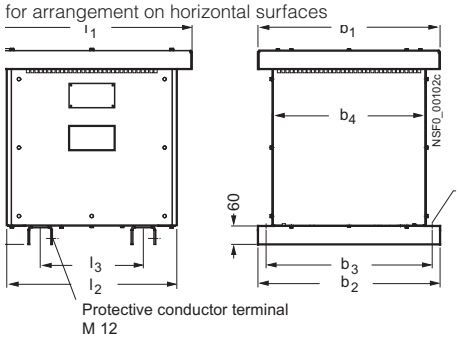
4AP, 4AU



Type	A	b_1	b_2	b_3	d_1	d_3	h_1	h_2	l_1	l_2	l_3	n_1	n_2
4AP17 to 4AP19	2 × M25	187	224	–	5.8	–	230	42	245	35	–	212	200
4AP20 to 4AP30, 4AU30	2 × M32	305	351	–	9	–	330	56	395	45	–	333	335
4AU36, 4AU39	2 × M32	395	460	50	13	35	465	60	555	45	50	430	480

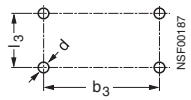
Protective enclosure with dry transformers >16 kVA, for IP20 and IP23 degree of protection

Sheet-steel housing, epoxy-resin coated
4BU
for arrangement on horizontal surfaces



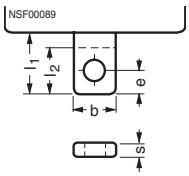
Type	b_1	b_2	b_3	b_4	h_1	d	l_1	l_2	l_3
4BU43 to 4BU47	600	600	570	507	645	15	660	560	340
4BU52 to 4BU53	600	600	570	507	735	15	660	560	316
4BU54 to 4BU56	600	600	570	507	825	15	900	800	465
4BU58 to 4BU60	730	730	696	637	905	19	1220	1120	630
4BU62 to 4BU65	900	900	858	807	1005	21	1220	1120	720

Mounting holes



Flat and threaded pin connections

Flat-type terminal with thru-hole

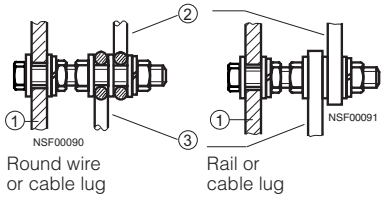


Flat connection on the transformer winding with thru-hole for rail or cable lug

Terminal covers for protection against inadvertent touching of spare rail connections
up to 800 A (DIN VDE 0106-100) see "Controlgear: Contactors and contactor combinations", "Accessories and spare parts for 3T contactors",
Order No. depends on the flat-type terminal 3TX6 5.6-3B.

Trans-former Type	Terminal size A	$b = l_2$	with hole for screw	e	l_1	s
4AP, 4AU, 4BU	100	16	M6	8	25	2.5
	200	20	M8	10	30	3
	400	25	M10	12.5	35	5
	630	30	M10	15	40	6
	800	30	M12	15	40	8
	1000	40	M12	20	50	8

Threaded pin on insulating strip



① Insulating strip
② External connection
③ Internal connection

Round wire or cable lug

Rail or cable lug

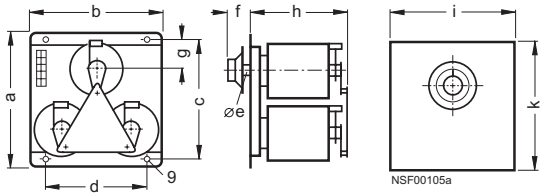
Trans-former Type	Terminal size A	Threaded pins	for conductor cross-sections mm²
4AU, 4BU	200	M8	≤ 50
	315	M10	≤ 120
	500	M12	≤ 300

Variable transformers

Toroidal-core variable transformers

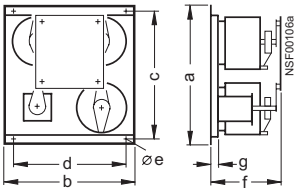
4CJ10 to 4CJ21
IP00 degree of protection
Manual operation

l = depth inclusive
l = knob
IP20 degree of protection



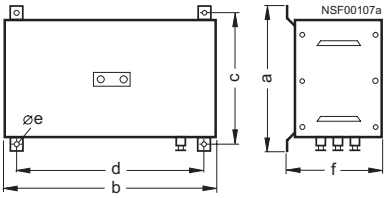
Type	IP00 degree of protection								IP20 degree of protection		
	A	B	C	D	E	F	g	H	l	k	l
4CJ10	230	200	210	170	6	37	60	170	300	300	250
4CJ11	265	250	240	210	10	43	56	170	380	290	300
4CJ20	265	250	240	210	10	43	56	190	380	290	300
4CJ12	265	250	240	210	10	43	56	220	380	290	300
4CJ21	350	340	325	300	10	56	80	200	440	400	280
4CJ13, 4CJ14	350	340	325	300	10	56	80	210	440	400	280

4CJ10 to 4CJ21
with motorized operating mechanism, IP00 degree of protection



Type	A	B	C	D	E	F	g
4CJ10	230	240	210	170	7	170	35
4CJ11	350	250	325	210	8.5	180	30
4CJ20	350	250	325	210	8.5	200	30
4CJ12	350	250	325	210	8.5	220	30
4CJ21	350	340	325	300	8.5	210	30
4CJ13, 4CJ14	350	340	325	300	8.5	220	30

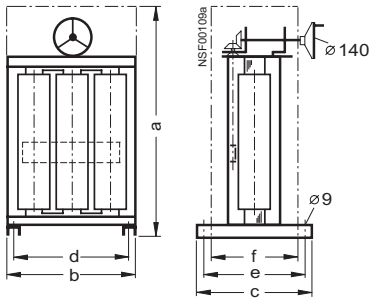
4CJ10 to 4CJ21
with motorized operating mechanism, IP20 degree of protection



Type	A	B	C	D	E	F
4CJ10	360	350	330	270	8.5	250
4CJ11, 4CJ20, 4CJ12	370	420	340	350	8.5	260
4CJ13, 4CJ21, 4CJ14	475	450	445	330	10	295

Pillar-type transformers

4CQ,
with dry self-cooling,
IP00/IP20 degree of protection



Order No. 5th to 7th position	A
050	1000
060	1100
070	1200
080	1300
090	1400
100	1500
110	1600
130	1800

Examples from the table:
4CP5**0 45**-2ED0

Order No. 10th position	A	B	C	D	E	F
D or L	see	364	430	310	400	360
E or M	Tab.	514	490	460	460	419
F or N	left	684	430	630	400	360
G or P		1004	450	935	420	380
Q or S		1004	780	935	740	700

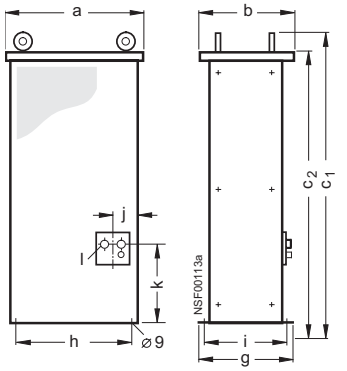
4CP50 45-2E**D**0

Project planning aids

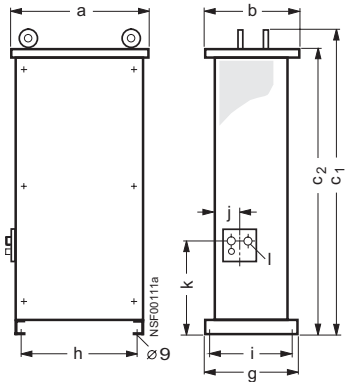
Voltage stabilizers

4FL transformer-type voltage stabilizers

4FL, IP21 degree of protection



Type	A	B	c_1	c_2	g	H	l	j	k	l
4FL45 2, 4FL47 4FL50, 4FL51, 4FL52, 4FL53	730	500	1615	1550	480	640	460	155	500	Pg36 Pg42



Type	A	B	c_1	c_2	g	H	l	j	k	l
4FL15, 4FL18, 4FL19, 4FL23, 4FL24, 4FL25, 4FL28	505	380	1065	1010	380	360	360	120	395	Pg16
4FL31, 4FL32, 4FL33, 4FL35, 4FL38										Pg21
4FL43										Pg29
4FL36, 4FL37 4FL40, 4FL42 4FL45, 4FL46, 4FL49	720	470	1355	1290	470	450	450	140	440	Pg21 Pg29 Pg36