

# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

### General data

#### Overview

##### 4AM../4AT.. transformers

With the right transformer, the right voltage will be available at any conditions.

Our transformers are the right choice for each application: They work reliably, safely and worldwide under a wide range of different conditions.

Transformers are summarized in a user-friendly manner as:

- Isolating, control and mains transformers according to EN 61558-2-4, -2-2, -2-1 or
- Safety, control and mains transformers according to EN 61558-2-6, -2-2, -2-1

##### Note:

*Mains transformers with  $\leq 50$  V on the output side are, in the case of SIRIUS transformers, always designed as safety transformers.*

Our transformers provide 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 their safety standard "Safety inside" EN 61558.

##### Connection methods

4AM../4AT.. transformers are available with screw terminals/flat connectors.



Screw terminals



Flat connectors

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

#### Order No. scheme

Digit of the Order No.	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th		
Transformer product type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Product group	4	A	<input type="checkbox"/>															
Rated power				<input type="checkbox"/>	<input type="checkbox"/>													
Power level						<input type="checkbox"/>												
Development status							<input type="checkbox"/>											
Rated input voltage								<input type="checkbox"/>	<input type="checkbox"/>									
Rated output voltage										<input type="checkbox"/>	<input type="checkbox"/>							
Version, e.g. coil form												<input type="checkbox"/>						
Application													<input type="checkbox"/>	<input type="checkbox"/>				
Degree of protection															<input type="checkbox"/>			
Connection type																	<input type="checkbox"/>	
Example	4	A	M	4	0	4	2	-	5	A	T	1	0	-	0	F	A	0

##### Note:

*The Order No. scheme is presented here merely for information purposes and for better understanding of the logic behind the order numbers.*

*For your orders, please use the order numbers quote in the catalog in the Selection and ordering data.*

#### Benefits

- High short-time rating of the SIRIUS 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
- **cTUVus** approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability

#### Application

Transformers are used 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 devices are used outside the control cabinet
- The operational voltage for the loads differs from the available voltage level
- Voltage matching for machines and installations with electrical isolation or as an autotransformer

Generally our transformers are used for voltage matching of electrical devices, e.g. in communications, medical engineering and domestic appliances.

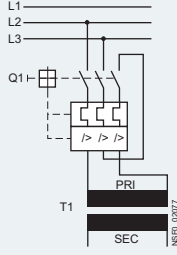
# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

General data

### Technical specifications

#### General data

Transformers		Type	4AM	4AT
• Version			EI core	UI core
• Performance range (with IP00)	kVA		0.025 ... 2.5	> 2.5 ... 16
• Approvals			<b>CE</b>	
<b>Voltage range</b>	V		≤ 690	
• Approvals for USA, Canada	V		≤ 600	
<b>Rated frequency</b>	Hz		50 ... 60	
<b>Thermal class</b>			B	H
• Acc. to UL/CSA			CLASS 130	CLASS 180
<b>Ambient conditions</b>	Protection against harmful ambient conditions: Complete impregnation in polyester resin Climate-proof for installation in rooms with an external climate to DIN 50010			
Rated ambient temperature				
• At rated power	°C		40	55
• Maximum value (after power reduction in accordance with load characteristic <sup>1)</sup> )	°C		80	
• Minimum value	°C		-25	
<b>Relative air humidity</b>				
• Mean value up to	%		80	
• Maximum value for 30 days/year	%		95	
• At 40 °C occasionally	%		100	
<b>Protection class</b>			I	
<b>Degree of protection</b>				
• Without enclosure			IP00	
• With protective enclosure (see "Selection and ordering data")			IP23 or IP54 Version: sheet-steel enclosure coated with epoxy resin, color gray RAL 7032	
<b>Installation altitude</b>			Up to 1000 m above sea level (above this, power reduction is necessary)	
<b>Protective devices</b>				
• External			The transformers can be protected against short-circuits and overload on the primary and secondary side with circuit breakers, see the following diagram.	
				
			For reliable protection against short-circuits, overload and touch, the cables between the output terminals of the transformer and the load must have a negligible line impedance. For more details see DIN VDE 0100 (Erection of low-voltage systems) Part 410, Part 520 (particularly section 525) and Part 610.	
			Assigned protective devices (see "Primary-side short-circuit and overload protection with motor starter protectors")	
<b>Connection methods</b>			The permissible conductor cross-sections are assigned to the specified terminal types.	
• Terminal arrangement <sup>2)</sup>			Refer to DIN VDE 0298-4 and EN 60204 for the permissible conductor cross-sections for the specified current according to the installation type. The terminals used are finger-safe according to EN 50274.	
• Terminal versions and connectable cross-sections <sup>3)</sup>			Other terminal sizes than standard versions on request.	
<b>Mounting position</b>			The permissible mounting position for each version is shown in the "Project Planning Aids" <sup>3)</sup> .	

1) See note on Technical Information on page 11/1 --> "Design".

2) See note on Technical Information on page 11/1 --> "Circuit diagrams".

3) See note on Technical Information on page 11/1 --> "Project Planning Aids".

For more specifications see  
[www.siemens.de/sirius-versorgen](http://www.siemens.de/sirius-versorgen) --> "Technical Information"  
 or

[www.siemens.com/industrial-controls/support](http://www.siemens.com/industrial-controls/support) -->  
 "Transformers and Power Supplies" -->  
 "Manuals/Operating Instructions".

# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

### General data

#### Rated power at different ambient temperatures

- With electrically separated windings
- Degree of protection IP00
- According to EN 61558, **CLASS**

Transformer Type	Rated power $P_n$ kVA	Permissible transformer load depending on the ambient temperature							
		$t_a = 60\text{ °C}$ kVA	$t_a = 55\text{ °C}$ kVA	$t_a = 50\text{ °C}$ kVA	$t_a = 45\text{ °C}$ kVA	$t_a = 40\text{ °C}$ kVA	$t_a = 35\text{ °C}$ kVA	$t_a = 30\text{ °C}$ kVA	$t_a = 25\text{ °C}$ kVA
<b>4AM transformers</b>									
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 <sup>1)</sup>	0.068 <sup>1)</sup>	0.0699 <sup>1)</sup>
4AM34 4	0.1	0.084	0.088	0.092	0.096	0.1	0.104 <sup>1)</sup>	0.108 <sup>1)</sup>	0.111 <sup>1)</sup>
4AM38 4	0.16	0.134	0.141	0.147	0.154	0.16	0.166 <sup>1)</sup>	0.173 <sup>1)</sup>	0.178 <sup>1)</sup>
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
<b>4AT transformers</b>									
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

<sup>1)</sup> For control transformers, the values  $t_a = 40\text{ °C}$  apply.

#### Operation characteristics

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

Transformer Type	Rated power $P_n$ 50 Hz ... 60 Hz 1000 m above sea level degree of protection IP00 kVA	Core size	Voltage rise in no-load operation (operating temperature) $u_A$ approx. %	Voltage drop on rated load <sup>1)</sup> $u_R$ approx. %	Short-circuit voltage <sup>1)</sup> $u_Z$ approx. %	Degree of efficiency $\eta$ approx. %
<b>4AM transformers: <math>t_a = 40\text{ °C/B}</math></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
<b>4AT transformers: <math>t_a = 55\text{ °C/H}</math></b>						
4AT30 3	4	UI 150/75	3.8	2.7	2.9	95
4AT36 1	5	UI 180/75	5.5	3.8	3.9	94
4AT36 3	6.3	UI 180/75	4.3	3.1	3.3	95
4AT39 1	8	UI 210/70	4.3	3.1	3.3	95
4AT39 3	10	UI 210/70	3.5	2.5	3.3	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

Calculation of power loss  $P_V$

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

<sup>1)</sup> Winding reference temperature: 20 °C.

# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

### General data

#### Primary-side short-circuit and overload protection with motor starter protectors

Version with one input voltage

Transformer	Rated power $P_n$	Motor starter protector version: Motor protection <sup>1)</sup>	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						
<b>4AM transformers</b>																														
<b>4AM23 4</b>	0.025	3RV20 11-□□□10 Set value in A	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	
<b>4AM26 4</b>	0.04	3RV20 11-□□□10 Set value in A	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	OAA	
<b>4AM32 4</b>	0.063	3RV20 11-□□□10 Set value in A	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	OBA	
<b>4AM34 4</b>	0.1	3RV20 11-□□□10 Set value in A	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	ODA	
<b>4AM38 4</b>	0.16	3RV20 11-□□□10 Set value in A	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	OFA	
<b>4AM40 4</b>	0.25	3RV20 11-□□□10 Set value in A	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	OHA	
<b>4AM43 4</b>	0.315	3RV20 11-□□□10 Set value in A	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	OJA	
<b>4AM46 4</b>	0.4	3RV20 11-□□□10 Set value in A	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	OKA	
<b>4AM48 4</b>	0.5	3RV20 11-□□□10 Set value in A	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	
<b>4AM52 4</b>	0.63	3RV20 11-□□□10 Set value in A	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	1AA	
<b>4AM55 4</b>	0.8	3RV20 11-□□□10 Set value in A	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA	1CA
<b>4AM57 4</b>	1	3RV20 11-□□□10 Set value in A	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA	1DA
<b>4AM61 4</b>	1.6	3RV20 11-□□□10 3RV20 21-□□□10 Set value in A	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA	1FA
<b>4AM64 4</b>	2	3RV20 11-□□□10 3RV20 21-□□□10 Set value in A	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA
<b>4AM65 4</b>	2.5	3RV20 11-□□□10 3RV20 21-□□□10 Set value in A	1GA	1GA	1HA	1HA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1JA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA
<b>4AT transformers</b>																														
<b>4AT30 3</b>	4	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1JA	1JA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA
<b>4AT36 1</b>	5	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA	1KA
<b>4AT36 3</b>	6.3	3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	4AA	4AA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA	4BA
<b>4AT39 1</b>	8	3RV20 21-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4BA	4BA	4CA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA
<b>4AT39 3</b>	10	3RV20 21-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4CA	4CA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA	4DA
<b>4AT43 0</b>	11.2	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA	4EA
<b>4AT43 1</b>	12.5	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA	4EA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA	4FA
<b>4AT43 2</b>	14	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA	4FA	4FA	4FA	4FA	4FA	4GA	4GA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA
<b>4AT45 0</b>	16	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4FA	4FA	4GA	4GA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA	4HA

<sup>1)</sup> Two-pole or single-pole motor starter protectors can be connected (3 conducting paths in series), see circuit diagram on page 11/7.



# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

### General data

European voltage and multi-voltage version

Transformer Type	Rated power $P_n$ kVA	Motor starter protector <sup>1)</sup> Type	Rated input voltage $U_{IN}$ in V																	
			690	660	600	575	550	525	500	480	460	440	415	400	380	240	230	220	208	200
<b>Motor starter protector version for 4AM transformers: Transformer protection</b>																				
<b>4AM23 4</b>	0.025	3RV24 11-□□□10 Set value in A	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA	0AA
<b>4AM26 4</b>	0.04	3RV24 11-□□□10 Set value in A	0AA	0AA	0AA	0AA	0AA	0BA	0BA	0BA	0BA	0BA	0BA	0CA	0CA	0DA	0DA	0DA	0EA	0EA
<b>4AM32 4</b>	0.063	3RV24 11-□□□10 Set value in A	0BA	0BA	0BA	0CA	0CA	0CA	0CA	0CA	0DA	0DA	0DA	0DA	0DA	0FA	0FA	0FA	0GA	0GA
<b>4AM34 4</b>	0.1	3RV24 11-□□□10 Set value in A	0DA	0DA	0EA	0EA	0EA	0EA	0EA	0FA	0FA	0FA	0FA	0FA	0FA	0HA	0HA	0HA	0JA	0JA
<b>4AM38 4</b>	0.16	3RV24 11-□□□10 Set value in A	0FA	0FA	0GA	0GA	0GA	0GA	0GA	0HA	0HA	0HA	0HA	0HA	0HA	0KA	0KA	0KA	1AA	1AA
<b>4AM40 4</b>	0.25	3RV24 11-□□□10 Set value in A	0HA	0HA	0HA	0HA	0JA	0JA	0JA	0JA	0JA	0KA	0KA	0KA	0KA	1BA	1BA	1BA	1BA	1BA
<b>4AM43 4</b>	0.315	3RV24 11-□□□10 Set value in A	0JA	0JA	0JA	0KA	0KA	0KA	0KA	0KA	0KA	0KA	1AA	1AA	1CA	1CA	1CA	1CA	1CA	1CA
<b>4AM46 4</b>	0.4	3RV24 11-□□□10 Set value in A	0KA	0KA	0KA	0KA	1AA	1AA	1AA	1AA	1AA	1AA	1BA	1BA	1DA	1DA	1DA	1DA	1DA	1DA
<b>4AM48 4</b>	0.5	3RV24 11-□□□10 Set value in A	1AA	1AA	1AA	1AA	1BA	1BA	1BA	1BA	1BA	1BA	1CA	1CA	1EA	1EA	1EA	1EA	1EA	1EA
<b>4AM52 4</b>	0.63	3RV24 11-□□□10 Set value in A	1AA	1BA	1BA	1BA	1BA	1CA	1CA	1CA	1CA	1CA	1DA	1DA	1FA	1FA	1FA	1FA	1FA	1FA
<b>4AM55 4</b>	0.8	3RV24 11-□□□10 Set value in A	1BA	1CA	1CA	1CA	1CA	1DA	1DA	1DA	1DA	1DA	1EA	1EA	1GA	1GA	1GA	1GA	1GA	1GA
<b>4AM57 4</b>	1	3RV24 11-□□□10 Set value in A	1DA	1DA	1DA	1DA	1EA	1EA	1EA	1EA	1EA	1EA	1FA	1FA	1HA	1HA	1HA	1HA	1HA	1HA
<b>4AM61 4</b>	1.6	3RV24 11-□□□10 Set value in A	1FA	1FA	1FA	1FA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1GA	1KA	1KA	1KA	1KA	1KA	1KA
<b>4AM64 4</b>	2	3RV24 11-□□□10 Set value in A	1FA	1GA	1GA	1GA	1HA	1HA	1HA	1HA	1HA	1HA	1HA	1HA	4AA	4AA	4AA	4AA	4AA	4AA
<b>4AM65 4</b>	2.5	3RV24 11-□□□10 3RV24 21-□□□10 Set value in A	1HA	1HA	1HA	1HA	1JA	1JA	1JA	1JA	1JA	1JA	1KA	1KA	4BA	4BA	4BA	4BA	4BA	4BA
<b>Motor starter protector version for 4AT transformers: Motor protection</b>																				
<b>4AT30 3</b>	4	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1JA	1JA	1KA	1KA	1KA	1KA	--	--	--	--	--	--	--	--	--	--	--	--
<b>4AT36 1</b>	5	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1KA	1KA	1KA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>4AT36 3</b>	6.3	3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	4AA	4AA	4BA	4BA	4BA	4BA	4CA	4CA	4CA	4CA	4DA	4DA	4DA	--	--	--	--	--
<b>4AT39 1</b>	8	3RV20 21-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4BA	4BA	4CA	4CA	4CA	4DA	4DA	4DA	4DA	--	--	--	--	--	--	--	--	--
<b>4AT39 3</b>	10	3RV20 21-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4CA	4CA	4DA	4DA	4DA	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>4AT43 0</b>	11.2	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA	4EA	4EA	4EA	4EA	4FA	4FA	4FA	4FA	4GA	4GA	4GA	4HA	--	--	--	--	--
<b>4AT43 1</b>	12.5	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA	4EA	4FA	4FA	4FA	4FA	4FA	4GA	4GA	4GA	4HA	4HA	--	--	--	--	--	--
<b>4AT43 2</b>	14	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA	4FA	4FA	4FA	4FA	4GA	4GA	4HA	4HA	4HA	--	--	--	--	--	--	--	--
<b>4AT45 0</b>	16	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4FA	4FA	4GA	4GA	4HA	4HA	--	--	--	--	--	--	--	--	--	--	--	--

<sup>1)</sup> Two-pole or single-pole motor starter protectors can be connected (3 conducting paths in series), see circuit diagram on page 11/7.

# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

General data

### Secondary-side short-circuit and overload protection with motor starter protector

Transformer Type	Rated power $P_n$ kVA	Motor starter protectors Version: Motor protection <sup>1)</sup> Type	Rated output voltage $U_{2N}$ in V				
			230	115	110	42	24
<b>4AM transformers</b>							
<b>4AM23 4</b>	0.025	3RV20 11-□□□10 Set value in A	0AA 0.14	0DA 0.26	0DA 0.29	0HA 0.75	1AA 1.3
<b>4AM26 4</b>	0.04	3RV20 11-□□□10 Set value in A	0CA 0.21	0FA 0.41	0FA 0.45	0KA 1.2	1CA 2.1
<b>4AM32 4</b>	0.063	3RV20 11-□□□10 Set value in A	0EA 0.34	0HA 0.68	0HA 0.72	1BA 1.9	1EA 3.3
<b>4AM34 4</b>	0.1	3RV20 11-□□□10 Set value in A	0GA 0.55	0KA 1.1	0KA 1.14	1DA 3	1GA 5.2
<b>4AM38 4</b>	0.16	3RV20 11-□□□10 Set value in A	0JA 0.86	1BA 1.72	1BA 1.82	1FA 4.8	1JA 8.4
<b>4AM40 4</b>	0.25	3RV20 11-□□□10 3RV20 21-□□□10 Set value in A	1AA -- 1.37	1DA -- 2.7	1DA -- 2.8	1HA -- 7.4	-- 4AA 13
<b>4AM43 4</b>	0.315	3RV20 11-□□□10 3RV20 21-□□□10 Set value in A	1BA -- 1.72	1EA -- 3.4	1EA -- 3.6	1JA -- 9.4	-- 4BA 16.5
<b>4AM46 4</b>	0.4	3RV20 11-□□□10 3RV20 21-□□□10 Set value in A	1CA -- 2.2	1FA -- 4.4	1FA -- 4.6	1KA -- 12	-- 4CA 21
<b>4AM48 4</b>	0.5	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1DA -- -- 2.7	1GA -- -- 5.4	1GA -- -- 5.7	-- 4AA -- 15	-- -- 4EA 26
<b>4AM52 4</b>	0.63	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1EA -- -- 3.4	1HA -- -- 6.8	1HA -- -- 7.2	-- 4BA -- 18.8	-- 4FA 33
<b>4AM55 4</b>	0.8	3RV20 11-□□□10 3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	1FA -- -- 4.4	1JA -- -- 8.8	1JA -- -- 9.2	-- 4DA -- 24	-- 4GA 42
<b>4AM57 4</b>	1	3RV20 11-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	1GA -- -- 5.4	1KA -- -- 10.8	1KA -- -- 11.4	-- 4EA -- 30	-- 4JA 52
<b>4AM61 4</b>	1.6	3RV20 11-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	1JA -- -- 8.6	-- 4BA -- 17	-- 4BA -- 18.5	-- 4HA -- 48	-- 4LA 81
<b>4AM64 4</b>	2	3RV20 11-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	1KA -- -- 10.9	-- 4DA -- 22	-- 4DA -- 23	-- 4JA 60	-- 4MA 101
<b>4AM65 4</b>	2.5	3RV20 21-□□□10 3RV10 31-□□□10 3RV10 41-□□□10 3VF32 11-□□□□□-0AA0 Set value in A	4AA -- -- -- 13.6	-- 4EA -- -- 27	-- 4EA -- -- 28	-- 4KA -- -- 72	-- -- -- 1BU41 125
<b>4AT transformers</b>							
<b>4AT30 3</b>	4	3RV20 21-□□□10 3RV10 31-□□□10 Set value in A	4CA -- 21	-- 4GA 41	-- -- --	-- -- --	-- -- --
<b>4AT36 1</b>	5	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4EA -- 26	-- 4JA 51	-- -- --	-- -- --	-- -- --
<b>4AT36 3</b>	6.3	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4FA -- 32	-- 4KA 64	-- -- --	-- -- --	-- -- --
<b>4AT39 1</b>	8	3RV10 31-□□□10 3RV10 41-□□□10 Set value in A	4GA -- 41	-- 4LA 81	-- -- --	-- -- --	-- -- --
<b>4AT39 3</b>	10	3RV10 41-□□□10 Set value in A	4JA 51	4MA 100	-- --	-- --	-- --

<sup>1)</sup> Two-pole or single-pole motor starter protectors can be connected (3 conducting paths in series), see circuit diagram on page 11/7.

# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

### General data

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

Transformer	Rated power $P_n$	Short-time rating $P_{\text{shortt.}}^{1)}$ with p.f. of										Voltage rise in no-load operation (operating temperature)	Voltage drop on rated load (at 20 °C)	Short-circuit voltage (at 20 °C)	
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1				
Type	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	$u_A$ %	$u_R$ %	$u_Z$ %
<b>4AM transformers</b>															
<b>4AM32 4</b>	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	
<b>4AM34 4</b>	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	
<b>4AM38 4</b>	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	
<b>4AM40 4</b>	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	
<b>4AM43 4</b>	0.315	3.4	2.15	1.63	1.33	1.12	0.97	0.86	0.77	0.71	0.67	6.6	4.9	5	
<b>4AM46 4</b>	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	
<b>4AM48 4</b>	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	
<b>4AM52 4</b>	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	
<b>4AM55 4</b>	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	
<b>4AM57 4</b>	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	
<b>4AM61 4</b>	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	
<b>4AM64 4</b>	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	
<b>4AM65 4</b>	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	
<b>4AT transformers</b>															
<i>With one input voltage</i>															
<b>4AT30 3</b>	4	31.2	25	20.9	18	16	14.4	13.2	12.2	11.6	11.7	3.8	2.7	2.9	
<b>4AT36 1</b>	5	44.3	32.5	25.8	21.4	18.5	16.1	14.4	13.1	12.1	11.6	5.5	3.8	3.9	
<b>4AT36 3</b>	6.3	40.7	33.4	28.4	24.9	22.5	20.3	18.7	17.5	16.7	16.9	4.3	3.1	3.3	
<b>4AT39 1</b>	8	52.7	43.1	36.5	31.8	28.5	25.6	23.4	21.9	20.8	21.3	4.3	3.1	3.3	
<b>4AT39 3</b>	10	42	37.7	34.4	31.9	30	28.4	27.3	26.7	26.8	29	3.5	2.5	3.3	
<i>In European voltage version or multi-voltage version</i>															
<b>4AT30 3</b>	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	
<b>4AT36 1</b>	5	48	36.7	27.9	22.6	19	16.5	14.6	13.1	12	11.2	5.9	4	4.1	
<b>4AT36 3</b>	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	
<b>4AT39 1</b>	8	70	53.6	43	36	31.1	27.5	24.8	22.6	21	20.4	4.6	3.2	3.3	
<b>4AT39 3</b>	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	
<i>With selectable voltages</i>															
<b>4AT30 3</b>	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	
<b>4AT36 1</b>	5	48	36.7	27.9	22.6	19	16.5	14.6	13.1	12	11.2	5.9	4	4.1	
<b>4AT36 3</b>	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	
<b>4AT39 1</b>	8	70	53.6	43	36	31.1	27.5	24.8	22.6	21	20.4	4.6	3.2	3.3	
<b>4AT39 3</b>	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	
<b>4AT43 0</b>	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	
<b>4AT43 1</b>	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	
<b>4AT43 2</b>	14	111	90	75.9	66	58.7	53.1	48.8	45.5	43.2	44.2	3.3	2.3	2.5	
<b>4AT45 0</b>	16	187	140	112	94	81.2	71.7	64.5	59	54.7	53.4	3.1	2.1	2.2	

<sup>1)</sup>  $P_{\text{shortt.}}$  applies to up to 300 contactor operations per hour. The specified rating is the typical maximum short-time rating.



# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AM**  
 safety, mains and control transformers

### Overview

- According to EN 61558-2-6, -2-1, -2-2
- **cRAus**
- $t_a = 40 \text{ °C/B}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54
- For more products see Industry Mall and Interactive Catalog CA 01 or [www.mdexx.com](http://www.mdexx.com).



SIRIUS 4AM single-phase transformer with screw terminals/flat connectors



### Selection and ordering data

#### With one input voltage

Rated input voltage  $U_{1N} 230 \text{ V} \pm 5 \%$ ,  
 rated output voltages  $U_{2N} 24 \text{ V}$  or  $42 \text{ V}$



PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 104

Rated power $P_n$	Short-time rating $P_{short.}^{1)}$	DT <sup>2)</sup> $U_{2N} 24 \text{ V}$			Cu DT <sup>2)</sup> $U_{2N} 42 \text{ V}$				
		Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx. kg	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx. kg
<b>Degree of protection IP00, standard version<sup>3)</sup></b>									
0.063	0.19	▶	4AM32 42-4TN00-0EA0	0.240	▶	4AM32 42-4TV00-0EA0	0.240		
0.1	0.31	▶	4AM34 42-4TN00-0EA0	0.260	▶	4AM34 42-4TV00-0EA0	0.260		
0.16	0.49	▶	4AM38 42-4TN00-0EA0	0.320	▶	4AM38 42-4TV00-0EA0	0.320		
0.25	0.85	▶	4AM40 42-4TN00-0EA0	0.590	▶	4AM40 42-4TV00-0EA0	0.590		
0.315	1.12	▶	4AM43 42-4TN00-0EA0	0.670	B	4AM43 42-4TV00-0EA0	0.670		
0.4	1.44	▶	4AM46 42-4TN00-0EA0	1.100	B	4AM46 42-4TV00-0EA0	1.100		
0.5	2	▶	4AM48 42-4TN00-0EA0	1.100	B	4AM48 42-4TV00-0EA0	1.100		
0.63	2.35	▶	4AM52 42-4TN00-0EA0	1.700	B	4AM52 42-4TV00-0EA0	1.700		
0.8	3.4	▶	4AM55 42-4TN00-0EA0	1.900	C	4AM55 42-4TV00-0EA0	1.900		
1	5	▶	4AM57 42-4TN00-0EA0	2.000	B	4AM57 42-4TV00-0EA0	2.000		
<b>Degree of protection IP00, standard rail mounting<sup>3)</sup></b>									
0.063	0.19	▶	4AM32 42-4TN00-0EA0	0.240	▶	4AM32 42-4TV00-0EA0	0.240		
0.1	0.31	▶	4AM34 42-4TN00-0EA0	0.260	▶	4AM34 42-4TV00-0EA0	0.260		
0.16	0.49	▶	4AM38 42-4TN00-0EA0	0.320	▶	4AM38 42-4TV00-0EA0	0.320		
0.25	0.85	▶	4AM40 42-4TN00-0EA0	0.590	▶	4AM40 42-4TV00-0EA0	0.590		
0.315	1.12	B	4AM43 42-4TN00-0EBO	0.670	B	4AM43 42-4TV00-0EBO	0.670		
0.4	1.44	B	4AM46 42-4TN00-0EBO	1.100	B	4AM46 42-4TV00-0EBO	1.100		
0.5	2	B	4AM48 42-4TN00-0EBO	1.100	C	4AM48 42-4TV00-0EBO	1.100		
<b>Degree of protection IP23</b>									
0.057	0.19	B	4AM32 42-4TN00-0EC0	0.240	D	4AM32 42-4TV00-0EC0	0.240		
0.09	0.31	B	4AM34 42-4TN00-0EC0	0.260	D	4AM34 42-4TV00-0EC0	0.260		
0.145	0.49	B	4AM38 42-4TN00-0EC0	0.320	B	4AM38 42-4TV00-0EC0	0.320		
0.225	0.85	B	4AM40 42-4TN00-0EC0	0.590	B	4AM40 42-4TV00-0EC0	0.590		
0.268	1.12	B	4AM43 42-4TN00-0EC0	0.670	B	4AM43 42-4TV00-0EC0	0.670		
0.34	1.44	B	4AM46 42-4TN00-0EC0	1.100	B	4AM46 42-4TV00-0EC0	1.100		
0.425	2	B	4AM48 42-4TN00-0EC0	1.100	B	4AM48 42-4TV00-0EC0	1.100		
0.535	2.35	B	4AM52 42-4TN00-0EC0	1.820	B	4AM52 42-4TV00-0EC0	1.700		
0.68	3.4	B	4AM55 42-4TN00-0EC0	1.900	D	4AM55 42-4TV00-0EC0	1.900		
0.85	5	B	4AM57 42-4TN00-0EC0	2.000	B	4AM57 42-4TV00-0EC0	2.000		
<b>Degree of protection IP54</b>									
0.05	0.19	B	4AM32 42-4TN00-0ED0	0.240	D	4AM32 42-4TV00-0ED0	0.240		
0.08	0.31	C	4AM34 42-4TN00-0ED0	0.260	C	4AM34 42-4TV00-0ED0	0.260		
0.128	0.49	B	4AM38 42-4TN00-0ED0	0.320	D	4AM38 42-4TV00-0ED0	0.320		
0.2	0.85	B	4AM40 42-4TN00-0ED0	0.590	B	4AM40 42-4TV00-0ED0	0.590		
0.236	1.12	B	4AM43 42-4TN00-0ED0	0.670	B	4AM43 42-4TV00-0ED0	0.670		
0.3	1.44	B	4AM46 42-4TN00-0ED0	1.100	B	4AM46 42-4TV00-0ED0	1.100		
0.375	2	B	4AM48 42-4TN00-0ED0	1.100	B	4AM48 42-4TV00-0ED0	1.100		
0.475	2.35	B	4AM52 42-4TN00-0ED0	1.700	B	4AM52 42-4TV00-0ED0	1.700		
0.6	3.4	B	4AM55 42-4TN00-0ED0	1.900	D	4AM55 42-4TV00-0ED0	1.900		
0.75	5	B	4AM57 42-4TN00-0ED0	2.000	B	4AM57 42-4TV00-0ED0	2.000		

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

<sup>2)</sup> The delivery time class depends on the quantity, see page 11/5 "Options".

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



# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

### SIRIUS 4AM safety and mains transformers

#### Overview

- According to EN 61558-2-6, -2-1
- **cRAus**
- $t_a = 40\text{ °C/B}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54
- For more products see Industry Mall and Interactive Catalog CA 01 or [www.mdexx.com](http://www.mdexx.com).



SIRIUS 4AM single-phase transformer with screw terminals/flat connectors



#### Selection and ordering data

##### With one input voltage

Rated input voltage  $U_{1N} 230\text{ V} \pm 5\%$ ,  
rated output voltages  $U_{2N} 24\text{ V}$  or  $42\text{ V}$



PU (UNIT, SET, M) = 1  
PS\* = 1 unit  
PG = 104

Rated power $P_n$	Short-time rating $P_{short.}$	DT <sup>1)</sup>	$U_{2N} 24\text{ V}$			$U_{2N} 42\text{ V}$		
			Order No.	Price per PU	Cu weight per PU approx. kg	Order No.	Price per PU	Cu weight per PU approx. kg
<b>Degree of protection IP00, standard version</b>								
0.025	--	▶	4AM23 42-4TN00-0EA0		0.110 C	4AM23 42-4TV00-0EA0		0.110
0.04	--	▶	4AM26 42-4TN00-0EA0		0.150 C	4AM26 42-4TV00-0EA0		0.150
<b>Degree of protection IP00, standard rail mounting</b>								
0.025	--	C	4AM23 42-4TN00-0EB0		0.110 D	4AM23 42-4TV00-0EB0		0.110
0.04	--	C	4AM26 42-4TN00-0EB0		0.150 D	4AM26 42-4TV00-0EB0		0.150
<b>Degree of protection IP23</b>								
0.023	--	D	4AM23 42-4TN00-0EC0		0.110 D	4AM23 42-4TV00-0EC0		0.110
0.036	--	D	4AM26 42-4TN00-0EC0		0.150 D	4AM26 42-4TV00-0EC0		0.150
<b>Degree of protection IP54</b>								
0.02	--	C	4AM23 42-4TN00-0ED0		0.110 D	4AM23 42-4TV00-0ED0		0.110
0.03	--	D	4AM26 42-4TN00-0ED0		0.150 D	4AM26 42-4TV00-0ED0		0.150

<sup>1)</sup> The delivery time class depends on the quantity, see page 11/5 "Options".

##### With one input voltage

Rated input voltage  $U_{1N} 400\text{ V} \pm 5\%$ ,  
rated output voltages  $U_{2N} 24\text{ V}$  or  $42\text{ V}$



PU (UNIT, SET, M) = 1  
PS\* = 1 unit  
PG = 104

Rated power $P_n$	Short-time rating $P_{short.}$	DT <sup>1)</sup>	$U_{2N} 24\text{ V}$			$U_{2N} 42\text{ V}$		
			Order No.	Price per PU	Cu weight per PU approx. kg	Order No.	Price per PU	Cu weight per PU approx. kg
<b>Degree of protection IP00, standard version</b>								
0.025	--	▶	4AM23 42-5AN00-0EA0		0.110 C	4AM23 42-5AV00-0EA0		0.110
0.04	--	▶	4AM26 42-5AN00-0EA0		0.150 C	4AM26 42-5AV00-0EA0		0.150
<b>Degree of protection IP00, standard rail mounting</b>								
0.025	--	C	4AM23 42-5AN00-0EB0		0.110 C	4AM23 42-5AV00-0EB0		0.110
0.04	--	C	4AM26 42-5AN00-0EB0		0.150 D	4AM26 42-5AV00-0EB0		0.150
<b>Degree of protection IP23</b>								
0.023	--	C	4AM23 42-5AN00-0EC0		0.110 D	4AM23 42-5AV00-0EC0		0.110
0.036	--	D	4AM26 42-5AN00-0EC0		0.150 D	4AM26 42-5AV00-0EC0		0.150
<b>Degree of protection IP54</b>								
0.02	--	D	4AM23 42-5AN00-0ED0		0.110 D	4AM23 42-5AV00-0ED0		0.110
0.03	--	C	4AM26 42-5AN00-0ED0		0.150 D	4AM26 42-5AV00-0ED0		0.150

<sup>1)</sup> The delivery time class depends on the quantity, see page 11/5 "Options".

# Single-Phase Transformers

## Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AM, 4AT**  
isolating, control and mains transformers

### Overview

- According to EN 61558-2-4, -2-2, -2-1
- **CE** **ULus**<sup>1)</sup>
- 4AM:  $t_a = 40\text{ °C/B}$ , 4AT:  $t_a = 55\text{ °C/H}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54
- For more products see Industry Mall and Interactive Catalog CA 01 or [www.mdexx.com](http://www.mdexx.com).



SIRIUS 4AM single-phase transformer with screw terminals/flat connectors (left) and SIRIUS 4AT single-phase transformer with screw terminals (right)



<sup>1)</sup> **CE** **ULus** approvals for voltages  $\leq 600\text{ V}$  (excluding tappings).

### Selection and ordering data

#### With one input voltage

**Rated input voltage  $U_{1N}$  230 V  $\pm$  5 %,**  
**rated output voltages  $U_{2N}$  110 V or 230 V,**  
**degree of protection IP00**



PU (UNIT, SET, M) = 1  
PS\* = 1 unit  
PG = 104

Rated power $P_n$	Short-time rating $P_{short.1)$	DT <sup>2)</sup> $U_{2N}$ 110 V			DT <sup>2)</sup> $U_{2N}$ 230 V				
		Screw terminals <sup>3)/</sup> flat connectors <sup>3)</sup>	Order No.	Price per PU	Cu weight per PU approx.	Screw terminals <sup>3)/</sup> flat connectors <sup>3)</sup>	Order No.	Price per PU	Cu weight per PU approx.
kVA	kVA								
<b>Degree of protection IP00, standard version<sup>4)</sup></b>									
0.063	0.19	▶▶	4AM32 42-4TJ10-0FA0	0.240	▶▶	4AM32 42-4TT10-0FA0	0.240		
0.1	0.31	▶▶	4AM34 42-4TJ10-0FA0	0.260	▶▶	4AM34 42-4TT10-0FA0	0.260		
0.16	0.49	▶▶	4AM38 42-4TJ10-0FA0	0.320	▶▶	4AM38 42-4TT10-0FA0	0.320		
0.25	0.85	▶▶	4AM40 42-4TJ10-0FA0	0.590	▶▶	4AM40 42-4TT10-0FA0	0.590		
0.315	1.12	▶▶	4AM43 42-4TJ10-0FA0	0.670	▶▶	4AM43 42-4TT10-0FA0	0.670		
0.4	1.44	▶▶	4AM46 42-4TJ10-0FA0	1.100	▶▶	4AM46 42-4TT10-0FA0	1.100		
0.5	2	▶▶	4AM48 42-4TJ10-0FA0	1.100	▶▶	4AM48 42-4TT10-0FA0	1.100		
0.63	2.35	▶▶	4AM52 42-4TJ10-0FA0	1.700	▶▶	4AM52 42-4TT10-0FA0	1.700		
0.8	3.4	▶▶	4AM55 42-4TJ10-0FA0	1.900	▶▶	4AM55 42-4TT10-0FA0	1.900		
1	5	▶▶	4AM57 42-4TJ10-0FA0	2.000	▶▶	4AM57 42-4TT10-0FA0	2.000		
1.6	7.3	C	4AM61 42-4TJ10-0FA0	4.100	▶▶	4AM61 42-4TT10-0FA0	4.100		
2	9.7	C	4AM64 42-4TJ10-0FA0	4.700	▶▶	4AM64 42-4TT10-0FA0	4.700		
2.5	13.3	C	4AM65 42-4TJ10-0FA0	6.400	▶▶	4AM65 42-4TT10-0FA0	6.400		
4	16	C	4AT30 32-4TJ10-0FA0	9.900	C	4AT30 32-4TT10-0FA0	9.900		
5	18.5	C	4AT36 12-4TJ10-0FA0	6.900	C	4AT36 12-4TT10-0FA0	6.900		
6.3	22.5	C	4AT36 32-4TJ10-0FA0	11.300	C	4AT36 32-4TT10-0FA0	11.300		
8	28.5	C	4AT39 12-4TJ10-0FA0	12.800	C	4AT39 12-4TT10-0FA0	12.800		
10	30	C	4AT39 32-4TJ10-0FA0	22.100	C	4AT39 32-4TT10-0FA0	22.100		
<b>Degree of protection IP00, standard rail mounting<sup>4)</sup></b>									
0.063	0.19	▶▶	4AM32 42-4TJ10-0FA0	0.240	▶▶	4AM32 42-4TT10-0FA0	0.240		
0.1	0.31	▶▶	4AM34 42-4TJ10-0FA0	0.260	▶▶	4AM34 42-4TT10-0FA0	0.260		
0.16	0.49	▶▶	4AM38 42-4TJ10-0FA0	0.320	▶▶	4AM38 42-4TT10-0FA0	0.320		
0.25	0.85	▶▶	4AM40 42-4TJ10-0FA0	0.590	▶▶	4AM40 42-4TT10-0FA0	0.590		
0.315	1.12	B	4AM43 42-4TJ10-0FB0	0.670	B	4AM43 42-4TT10-0FB0	0.670		
0.4	1.44	B	4AM46 42-4TJ10-0FB0	1.100	B	4AM46 42-4TT10-0FB0	1.100		
0.5	2	B	4AM48 42-4TJ10-0FB0	1.100	B	4AM48 42-4TT10-0FB0	1.100		

For degrees of protection IP23 and IP54 see page 11/20.

- <sup>1)</sup> For p.f. = 0.5 and  $U_2 = 0.95 \times U_{2N}$ .
- <sup>2)</sup> The delivery time class depends on the quantity, see page 11/5 "Options".
- <sup>3)</sup> The 4AT types are only supplied with screw terminals.
- <sup>4)</sup> For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

# Single-Phase Transformers



## Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AM, 4AT**  
**isolating, control and mains transformers**

With one input voltage  
 Rated input voltage  $U_{1N}$  400 V  $\pm$  5 %,  
 rated output voltages  $U_{2N}$  110 V or 230 V



PU (UNIT, SET, M) = 1  
 PS\* = 1 unit  
 PG = 104

Rated power $P_n$	Short-time rating $P_{short.1)}$	DT <sup>2)</sup>	$U_{2N}$ 110 V			$U_{2N}$ 230 V		
			Screw terminals <sup>3)/</sup> flat connectors <sup>3)</sup>		Cu weight per PU approx.	Screw terminals <sup>3)/</sup> flat connectors <sup>3)</sup>		Cu weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	Order No.	Price per PU	kg
<b>Degree of protection IP00, standard version<sup>4)</sup></b>								
0.063	0.19		4AM32 42-5AJ10-0FA0		0.240	4AM32 42-5AT10-0FA0		0.240
0.1	0.31		4AM34 42-5AJ10-0FA0		0.260	4AM34 42-5AT10-0FA0		0.260
0.16	0.49		4AM38 42-5AJ10-0FA0		0.320	4AM38 42-5AT10-0FA0		0.320
0.25	0.85		4AM40 42-5AJ10-0FA0		0.590	4AM40 42-5AT10-0FA0		0.590
0.315	1.12		4AM43 42-5AJ10-0FA0		0.670	4AM43 42-5AT10-0FA0		0.670
0.4	1.44		4AM46 42-5AJ10-0FA0		1.100	4AM46 42-5AT10-0FA0		1.100
0.5	2		4AM48 42-5AJ10-0FA0		1.100	4AM48 42-5AT10-0FA0		1.100
0.63	2.35		4AM52 42-5AJ10-0FA0		1.700	4AM52 42-5AT10-0FA0		1.700
0.8	3.4		4AM55 42-5AJ10-0FA0		1.900	4AM55 42-5AT10-0FA0		1.900
1	5		4AM57 42-5AJ10-0FA0		2.000	4AM57 42-5AT10-0FA0		2.000
1.6	7.3		4AM61 42-5AJ10-0FA0		4.100	4AM61 42-5AT10-0FA0		4.100
2	9.7	C	4AM64 42-5AJ10-0FA0		4.700	4AM64 42-5AT10-0FA0		4.700
2.5	13.3		4AM65 42-5AJ10-0FA0		6.400	4AM65 42-5AT10-0FA0		6.400
4	16	C	4AT30 32-5AJ10-0FA0		9.900	4AT30 32-5AT10-0FA0		9.900
5	18.5	C	4AT36 12-5AJ10-0FA0		6.900	4AT36 12-5AT10-0FA0		6.850
6.3	22.5	C	4AT36 32-5AJ10-0FA0		11.300	4AT36 32-5AT10-0FA0		11.300
8	28.5	C	4AT39 12-5AJ10-0FA0		12.800	4AT39 12-5AT10-0FA0		12.800
10	30	C	4AT39 32-5AJ10-0FA0		22.100	4AT39 32-5AT10-0FA0		22.100
<b>Degree of protection IP00, standard rail mounting<sup>4)</sup></b>								
0.063	0.19		4AM32 42-5AJ10-0FA0		0.240	4AM32 42-5AT10-0FA0		0.240
0.1	0.31		4AM34 42-5AJ10-0FA0		0.260	4AM34 42-5AT10-0FA0		0.260
0.16	0.49		4AM38 42-5AJ10-0FA0		0.320	4AM38 42-5AT10-0FA0		0.320
0.25	0.85		4AM40 42-5AJ10-0FA0		0.590	4AM40 42-5AT10-0FA0		0.590
0.315	1.12	B	4AM43 42-5AJ10-0FB0		0.670	4AM43 42-5AT10-0FB0		0.670
0.4	1.44	B	4AM46 42-5AJ10-0FB0		1.100	4AM46 42-5AT10-0FB0		1.100
0.5	2	C	4AM48 42-5AJ10-0FB0		1.100	4AM48 42-5AT10-0FB0		1.100
<b>Degree of protection IP23</b>								
0.057	0.19	C	4AM32 42-5AJ10-0FC0		0.240	4AM32 42-5AT10-0FC0		0.240
0.09	0.31	D	4AM34 42-5AJ10-0FC0		0.260	4AM34 42-5AT10-0FC0		0.260
0.145	0.49	B	4AM38 42-5AJ10-0FC0		0.320	4AM38 42-5AT10-0FC0		0.320
0.225	0.85	B	4AM40 42-5AJ10-0FC0		0.590	4AM40 42-5AT10-0FC0		0.590
0.268	1.12	B	4AM43 42-5AJ10-0FC0		0.670	4AM43 42-5AT10-0FC0		0.670
0.34	1.44	B	4AM46 42-5AJ10-0FC0		1.100	4AM46 42-5AT10-0FC0		1.100
0.425	2	B	4AM48 42-5AJ10-0FC0		1.100	4AM48 42-5AT10-0FC0		1.100
0.535	2.35	B	4AM52 42-5AJ10-0FC0		1.700	4AM52 42-5AT10-0FC0		1.700
0.68	3.4	D	4AM55 42-5AJ10-0FC0		1.900	4AM55 42-5AT10-0FC0		1.900
0.85	5	D	4AM57 42-5AJ10-0FC0		2.000	4AM57 42-5AT10-0FC0		2.000
1.36	7.3	C	4AM61 42-5AJ10-0FC0		4.100	4AM61 42-5AT10-0FC0		4.100
1.7	9.7	D	4AM64 42-5AJ10-0FC0		4.700	4AM64 42-5AT10-0FC0		4.700
2.13	13.3	D	4AM65 42-5AJ10-0FC0		6.400	4AM65 42-5AT10-0FC0		6.400
3.6	16	C	4AT30 32-5AJ10-0FC0		9.900	4AT30 32-5AT10-0FC0		9.900
4.5	18.5	D	4AT36 12-5AJ10-0FC0		6.900	4AT36 12-5AT10-0FC0		6.900
5.6	22.5	D	4AT36 32-5AJ10-0FC0		11.300	4AT36 32-5AT10-0FC0		11.300
7.1	28.5	C	4AT39 12-5AJ10-0FC0		12.800	4AT39 12-5AT10-0FC0		12.800
9	30	D	4AT39 32-5AJ10-0FC0		22.100	4AT39 32-5AT10-0FC0		22.100
<b>Degree of protection IP54</b>								
0.05	0.19	C	4AM32 42-5AJ10-0FD0		0.240	4AM32 42-5AT10-0FD0		0.240
0.08	0.31	D	4AM34 42-5AJ10-0FD0		0.260	4AM34 42-5AT10-0FD0		0.260
0.128	0.49	B	4AM38 42-5AJ10-0FD0		0.320	4AM38 42-5AT10-0FD0		0.320
0.2	0.85	B	4AM40 42-5AJ10-0FD0		0.590	4AM40 42-5AT10-0FD0		0.590
0.236	1.12	B	4AM43 42-5AJ10-0FD0		0.670	4AM43 42-5AT10-0FD0		0.670
0.3	1.44	B	4AM46 42-5AJ10-0FD0		1.100	4AM46 42-5AT10-0FD0		1.100
0.375	2	B	4AM48 42-5AJ10-0FD0		1.100	4AM48 42-5AT10-0FD0		1.100
0.475	2.35	B	4AM52 42-5AJ10-0FD0		1.700	4AM52 42-5AT10-0FD0		1.700
0.6	3.4	D	4AM55 42-5AJ10-0FD0		1.900	4AM55 42-5AT10-0FD0		1.900
0.75	5	C	4AM57 42-5AJ10-0FD0		2.000	4AM57 42-5AT10-0FD0		2.000
1.2	7.3	D	4AM61 42-5AJ10-0FD0		4.100	4AM61 42-5AT10-0FD0		4.100
1.5	9.7	D	4AM64 42-5AJ10-0FD0		4.700	4AM64 42-5AT10-0FD0		4.700
1.875	13.3	D	4AM65 42-5AJ10-0FD0		6.400	4AM65 42-5AT10-0FD0		6.400
3.15	16	C	4AT30 32-5AJ10-0FD0		9.900	4AT30 32-5AT10-0FD0		9.900
4	18.5	C	4AT36 12-5AJ10-0FD0		6.900	4AT36 12-5AT10-0FD0		6.900
5	22.5	D	4AT36 32-5AJ10-0FD0		11.300	4AT36 32-5AT10-0FD0		11.300
6.3	28.5	D	4AT39 12-5AJ10-0FD0		12.800	4AT39 12-5AT10-0FD0		12.800
8	30	D	4AT39 32-5AJ10-0FD0		22.100	4AT39 32-5AT10-0FD0		22.100

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

2) The delivery time class depends on the quantity, see page 11/5 "Options".

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

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