

Transformer Series STA

Advantages using a control transformer

- Low voltage drop in switching inductive loads
- Flexible voltage adjustment by primary tapping ($\pm 5\%$)
- Control voltage to be standardized (same parts at switching device, stocking)
- Damping of conducted interference in main circuit
- Limitation of short-circuit current in control circuit
- Easier voltage resp. insulation test

Typical applications

- Control voltage circuits
- Functional extra-low voltage PELV
- Safety extra-low voltage SELV
- Protective separation (of circuits)

STAHL

The application of a control transformer is demanding EN 60 204-1 for control circuits (few exceptions).

The protection of transformers has to be primary with a Motor protection circuit-breaker in tripping class 10 or 10 A. Our circuit-breaker (Type 8523/8.) will be adjusted according the current rating of the transformer (see attached table). Secondary a miniature fuse or a MCB should be used.

The criterions are:

- Protective measures against direct or indirect contact (see also IEC 60364-4-43)
- Line protection
- Overload protection of switching devices (welding of contacts)
- All electrical settings of control circuit according to manufacturers' instructions

A minimum distance of 40 mm to all other components has to be kept.

Zones 1 & 2

Selection Table

| Version | Rated power kVA | Rated voltage | | Order number | Weight kg |
|----------------------------------|-----------------|-------------------|-------------------|---------------|--------------|
| | | Primary voltage | Secondary voltage | | |
| Transformer STA 0.1 / 100 VA | 0.1 | 230 V | 24 V | 105904 | 2.000 |
| | | 400 V | 230 V | 105905 | 2.000 |
| | | 50 ... 750 V * | 12 ... 750 V * | 105907 | 0.001 |
| Transformer STA 0.2 / 200 VA | 0.2 | 400 V | 230 V | 105906 | 3.000 |
| | | 50 ... 750 V * | 12 ... 750 V * | 105914 | 3.000 |
| Transformer STA 0.4 / 400 VA | 0.4 | 50 ... 750 V * | 12 ... 750 V * | 105908 | 5.200 |
| Transformer STA 0.5 / 500 VA | 0.5 | 50 ... 415 V * | 12 ... 750 V * | 105909 | 6.800 |
| | 0.45 | 440 V ... 750 V * | 12 ... 750 V * | | |
| Transformer STA 0.55 / 550 VA | 0.55 | 50 ... 750 V * | 12 ... 750 V * | 105910 | 7.700 |
| Transformer STA 0.75 / 750 VA | 0.75 | 50 ... 415 V * | 12 ... 750 V * | 105911 | 9.600 |
| | 0.65 | 440 V ... 750 V * | 12 ... 750 V * | | |
| Transformer STA 1.6 / 1600 VA | 1.2 | 50 ... 750 V * | 12 ... 750 V * | 105912 | 14.900 |
| Transformer STA 1.6 / 1600 VA | 1.6 | 50 ... 415 V * | 12 ... 750 V * | 105913 | 17.400 |
| | 1.44 | 440 V ... 750 V * | 12 ... 750 V * | | |

Order Number Supplement

* Primary and secondary voltage please specify on order:

possible primary voltages: 110 V, 115 V, 118 V, 120 V, 127 V, 220 V, 230 V, 240 V, 250 V, 254 V, 280 V, 380 V, 400 V, 415 V, 440 V, 460 V, 480 V, 500 V, 525 V, 600 V, 660 V

possible secondary voltages: 12 V, 20 V, 24 V, 25 V, 27 V, 28 V, 30 V, 32 V, 34 V, 36 V, 42 V, 48 V, 50 V, 55 V, 110 V, 115 V, 120 V, 220 V, 230 V, 240 V

Technical Data

Ex abbreviation: $\text{II 2 G EEx e II T4 (T}_{\text{amb}} = 40 \text{ }^{\circ}\text{C)}$

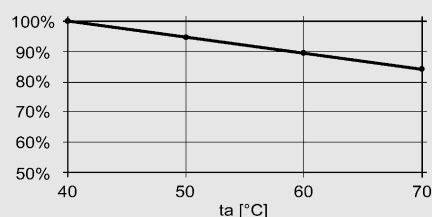
Certificates: TÜV-A 05ATEX0002U

Applicable standards: EN 60 079-7
IEC/EN 60204-1
VDE 0113
VDE 0100 Teil 410

Rated voltage
Primary voltage: 50 ... 750 V
Secondary voltage: 12 ... 750 V
Frequency: 50 / 60 Hz

Rated power and ambient temperature
Rated power: 0,1 - 1,6 kVA at - 25 ... 40 °C

The rated power depends on the ambient temperature



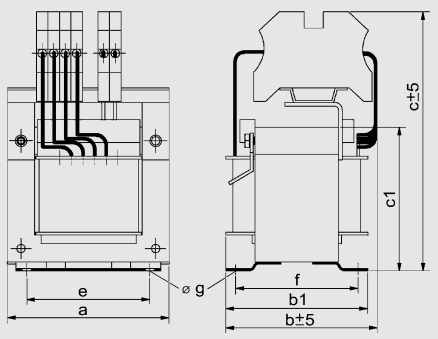
| T _a / °C | Insul. B |
|---------------------|----------|
| 40 | 100 % |
| 50 | 95 % |
| 60 | 85 % |
| 70 | 71 % |

10748E00

Technical Data

| Version | STA 0,1 | STA 0,2 | STA 0,4 | STA 0,5 | STA 0,55 | STA 0,75 | STA 1,2 | STA 1,6 |
|-----------------------|------------------|---------|---------|---------|----------|----------|---------|---------|
| No-load loss | 6 W | 10 W | 18 W | 21 W | 21 W | 24 W | 41 W | 19 W |
| Short-circuit loss | 11 W | 16 W | 22 W | 26 W | 25 W | 31 W | 37 W | 38 W |
| Short-circuit voltage | 7.5 % | 5.9 % | 4.1 % | 3.8 % | 3.6 % | 3.3 % | 2.5 % | 2.2 % |
| Efficiency | 0.86 | 0.89 | 0.91 | 0.91 | 0.92 | 0.93 | 0.94 | 0.97 |
| Winding | separate winding | | | | | | | |
| Insulation class | B | | | | | | | |
| Terminal connection | WDU | | | | | | | |

Dimensional Drawings (All Dimension in mm) - Subject to Alterations



| Type | c* (WDU 4) | c* (WDU 16) | a | b | e | f | ∅ g | b1 | c1 |
|----------|---------------|----------------|-----|-----|-----|-----|----------|-----|-----|
| STA 0,1 | 135 | | 85 | 80 | 64 | 61 | 4.8x10.3 | 74 | 75 |
| STA 0,2 | 153 | | 106 | 82 | 81 | 61 | 5.8x14.5 | 80 | 94 |
| STA 0,4 | 163 | | 121 | 100 | 90 | 80 | 5.8x14.5 | 98 | 106 |
| STA 0,5 | 163 | | 121 | 120 | 90 | 110 | 5.8x15 | 118 | 106 |
| STA 0,55 | 187 | 201 | 151 | 107 | 122 | 82 | 7x18.5 | 104 | 132 |
| STA 0,75 | 187 | 201 | 151 | 124 | 122 | 99 | 7x18.5 | 121 | 132 |
| STA 1,2 | 210 | 224 | 175 | 138 | 135 | 110 | 7x20.3 | 135 | 152 |
| STA 1,6 | 226 | 240 | 192 | 142 | 150 | 110 | 10x18 | 140 | 170 |

10749E00 * WDU 16 line-in terminals are used for a secondary rated current > 28 A.

Range of products for back-up fuse of transformers STA with circuit breaker 8523

Over current release has to be adjusted to rated current (see chart or type label)

| Rated voltage[V] Primary | STA0,1 0.1 kVA [A] | STA0,2 0.2 kVA [A] | STA0,4 0.4 kVA [A] | STA0,5 0.45 kVA [A] | STA0,5 0.5 kVA [A] | STA0,55 0.55 kVA [A] | STA0,75 0.65 kVA [A] | STA0,75 0.75 kVA [A] | STA1,2 1.2 kVA [A] | STA1,6 1.44 kVA [A] | STA1,6 1.6 kVA [A] |
|-----------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------------|---------------------------|--------------------------|
| 110 | 1.09 | 2.04 | 4.00 | | 5.43 | 5.00 | | 7.33 | 11.61 | | 15.00 |
| 115 | 1.01 | 1.95 | 3.82 | | 5.20 | 4.78 | | 7.01 | 11.10 | | 14.34 |
| 118 | 0.99 | 1.90 | 3.73 | | 5.07 | 4.66 | | 6.83 | 10.82 | | 13.98 |
| 120 | 0.97 | 1.87 | 3.66 | | 4.98 | 4.58 | | 6.72 | 10.64 | | 13.75 |
| 127 | 0.92 | 1.77 | 3.46 | | 4.71 | 4.33 | | 6.35 | 10.05 | | 12.99 |
| 220 | 0.53 | 1.02 | 2.00 | | 2.72 | 2.50 | | 3.67 | 5.80 | | 7.50 |
| 230 | 0.51 | 0.98 | 1.91 | | 2.60 | 2.39 | | 3.51 | 5.55 | | 7.17 |
| 240 | 0.48 | 0.94 | 1.83 | | 2.49 | 2.29 | | 3.36 | 5.32 | | 6.87 |
| 250 | 0.47 | 0.90 | 1.76 | | 2.38 | 2.20 | | 3.23 | 5.11 | | 6.60 |
| 254 | 0.46 | 0.88 | 1.73 | | 2.35 | 2.16 | | 3.18 | 5.03 | | 6.49 |
| 280 | 0.42 | 0.80 | 1.57 | | 2.14 | 1.96 | | 2.88 | 4.56 | | 5.89 |
| 380 | 0.31 | 0.59 | 1.16 | | 1.57 | 1.45 | | 2.12 | 3.36 | | 4.34 |
| 400 | 0.26 | 0.56 | 1.10 | | 1.49 | 1.37 | | 2.02 | 3.19 | | 4.12 |
| 415 | 0.28 | 0.54 | 1.06 | | 1.44 | 1.32 | | 1.94 | 3.08 | | 3.97 |
| 440 | 0.26 | 0.51 | 1.00 | 1.12 | 1.36 | | 1.59 | | 2.90 | 3.48 | |
| 460 | 0.25 | 0.49 | 0.96 | 1.08 | 1.30 | | 1.52 | | 2.78 | 3.33 | |
| 480 | 0.24 | 0.47 | 0.92 | 1.03 | 1.25 | | 1.46 | | 2.66 | 3.19 | |
| 500 | 0.23 | 0.45 | 0.88 | 0.99 | 1.20 | | 1.40 | | 2.55 | 3.06 | |
| 525 | 0.22 | 0.43 | 0.84 | 0.94 | 1.14 | | 1.33 | | 2.43 | 2.92 | |
| 600 | 0.19 | 0.37 | 0.73 | 0.82 | 1.00 | | 1.16 | | 2.13 | 2.55 | |
| 660 | 0.18 | 0.34 | 0.67 | 0.75 | 0.91 | | 1.06 | | 1.93 | 2.32 | |

| Rated voltage [V] Secondary | STA0,1 0.1 kVA [A] | STA0,2 0.2 kVA [A] | STA0,4 0.4 kVA [A] | STA0,5 0.45 kVA [A] | STA0,5 0,5 kVA [A] | STA0,55 0.55 kVA [A] | STA0,75 0.65 kVA [A] | STA0,75 0.75 kVA [A] | STA1,2 1.2 kVA [A] | STA1,6 1.44 kVA [A] | STA1,6 1.6 kVA [A] |
|--------------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------------|---------------------------|--------------------------|
| 12 | 8.33 | 16.67 | 33.33 | 37.50 | 41.87 | 45.83 | 54.17 | 62.50 | 100.00 | 120.00 | 133.33 |
| 20 | 5.00 | 10.00 | 20.00 | 22.50 | 25.00 | 27.50 | 32.50 | 37.50 | 60.00 | 72.00 | 80.0 |
| 24 | 4.17 | 8.33 | 16.67 | 18.75 | 20.83 | 22.92 | 27.08 | 31.25 | 50.00 | 60.00 | 66.67 |
| 25 | 4.00 | 8.00 | 16.00 | 18.00 | 20.00 | 22.00 | 26.00 | 30.00 | 48.00 | 57.60 | 64.00 |
| 27 | 3.70 | 7.41 | 14.81 | 16.67 | 18.52 | 20.37 | 27.07 | 27.78 | 44.44 | 53.33 | 59.26 |
| 28 | 3.57 | 7.14 | 14.29 | 16.07 | 17.86 | 19.64 | 23.21 | 26.79 | 42.86 | 51.43 | 57.14 |
| 30 | 3.33 | 6.67 | 13.33 | 15.00 | 16.67 | 18.33 | 21.67 | 25.00 | 40.00 | 48.00 | 53.33 |
| 32 | 3.13 | 6.25 | 12.50 | 14.06 | 15.63 | 17.19 | 20.31 | 23.44 | 37.50 | 45.00 | 50.00 |
| 34 | 2.94 | 5.88 | 11.76 | 13.24 | 14.71 | 16.18 | 19.12 | 22.06 | 35.26 | 42.35 | 47.06 |
| 36 | 2.78 | 5.56 | 11.11 | 12.50 | 13.89 | 15.28 | 18.06 | 20.83 | 33.33 | 40.00 | 44.44 |
| 42 | 2.38 | 4.76 | 9.52 | 10.71 | 11.90 | 13.10 | 15.45 | 17.86 | 28.57 | 34.29 | 38.10 |
| 48 | 2.08 | 4.17 | 8.33 | 9.38 | 10.42 | 11.46 | 13.54 | 15.63 | 25.00 | 30.00 | 33.33 |
| 50 | 2.00 | 4.00 | 8.00 | 9.00 | 10.00 | 11.00 | 13.00 | 15.00 | 24.00 | 28.80 | 32.00 |
| 55 | 1.82 | 3.64 | 7.27 | 8.18 | 9.09 | 10.00 | 11.82 | 13.64 | 21.82 | 26.18 | 29.09 |
| 110 | 0.91 | 1.82 | 3.64 | 4.09 | 4.55 | 5.00 | 5.91 | 6.82 | 10.91 | 13.09 | 14.55 |
| 115 | 0.87 | 1.75 | 3.48 | 3.91 | 4.35 | 4.78 | 5.65 | 6.52 | 10.43 | 12.52 | 13.91 |
| 120 | 0.83 | 1.67 | 3.33 | 3.75 | 4.17 | 4.58 | 5.42 | 6.25 | 10.00 | 12.00 | 13.33 |
| 220 | 0.45 | 0.91 | 1.83 | 2.05 | 2.27 | 2.50 | 2.95 | 3.41 | 5.45 | 6.55 | 7.27 |
| 230 | 0.43 | 0.87 | 1.74 | 1.96 | 2.17 | 2.39 | 2.83 | 3.26 | 5.22 | 6.26 | 6.96 |
| 240 | 0.42 | 0.83 | 1.67 | 1.88 | 2.08 | 2.29 | 2.71 | 3.13 | 5.00 | 6.00 | 6.67 |

Don't forget the line protection according to rated current of electric line and installation unit!

We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustrations cannot be considered binding.

