## **DATASHEET - STN2,0(\*/\*)**



Control transformer, 2 kVA, Rated input voltage 100 - 690  $\pm$  5 % V, Rated output voltage 12 - 250 V



Part no. STN2,0(\*/\*)
Catalog No. 204995
Alternate Catalog -

No

## **Delivery program**

| zonion, program      |     |                                       |
|----------------------|-----|---------------------------------------|
| Product range        |     | Single-phase control transformers ST  |
| Basic function       |     | Single-phase STN control transformers |
| Rated input voltage  | V   | $100 - 690 \pm 5 \%$                  |
| Rated output voltage | V   | 12 – 250                              |
| Rated power          | kVA | 2                                     |
| Short-time rating    | kVA | 5.75                                  |
| Cu factor 4,40       |     |                                       |

### Notes

- The STN transformers are suitable for use in control circuits to VDE 0113 or IEC/EN 60204.
- UL/CSA only up to primary and secondary 600 V (incl. tappings).
- . When ordering, the type reference must include the following details:

#### STN0,1(\*/\*)

1st wildcard ≙ Nominal input voltage

2nd wildcard ≙ Rated output voltage

#### Ordering example

- Desired part no.: STN0,1
- Desired rated input voltage 200 V
- Desired rated output voltage 18.5 V

The correct type reference is

### STN0,1(200/18,5)

Transformer-protective circuit-breaker  $\longrightarrow$ #088907

### **Technical data**

Short-circuit losses

### General

| Standards                  |      |   |
|----------------------------|------|---|
| Built and tested to        |      | IEC/EN 61558-2-2<br>VDE 0570 Part 2-2   |
| Suitable for use to        |      | IEC/EN 60204-1, ÖVE-EN 13<br>VDE 0113, VDE 0100 Part 410  |
| Ambient temperature        |      | -25 - 40  |
| Characteristics            |      |   |
| Terminations               |      | ● (< 115 A)   |
| Connection lugs            |      | ● (> 115 A)   |
| Insulation class           |      | В   |
| Rated frequency            | Hz   | 50 - 60   |
| Primary tapping            |      | ±5%   |
| Degree of Protection       |      | IP00  |
| Separate windings          |      | •   |
| Fully vacuum-impregnated   |      | •   |
| Rated duty factor          | % DF | 100   |
| Electrical characteristics |      |   |
| Note                       |      | The following applies for the no-load loss, short-circuit loss (copper losses), short-circuit voltage and efficiency values: all details relate to a temperature of 20 $^{\circ}\text{C}$ |
| Total weight               | kg   | 19.9  |
| No-load losses             | W    | 56  |

W

42

| Shortcircuit voltage | % | 2    |
|----------------------|---|------|
| Efficiency           |   | 0.95 |

# Design verification as per IEC/EN 61439

| booign vormoution do por 120/211 or 100  |                   |    |  |
|--|-------------------|----|--|
| Technical data for design verification   |                   |    |  |
| Rated operational current for specified heat dissipation   | In                | Α  | 0  |
| Heat dissipation per pole, current-dependent   | P <sub>vid</sub>  | W  | 0  |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub>  | W  | 0  |
| Static heat dissipation, non-current-dependent   | P <sub>vs</sub>   | W  | 98   |
| Heat dissipation capacity  | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature min.   |                   | °C | -25  |
| Operating ambient temperature max.   |                   | °C | 40   |
| IEC/EN 61439 design verification   |                   |    |  |
| 10.2 Strength of materials and parts   |                   |    |  |
| 10.2.2 Corrosion resistance  |                   |    | Meets the product standard's requirements.   |
| 10.2.3.1 Verification of thermal stability of enclosures   |                   |    | Meets the product standard's requirements.   |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |                   |    | Meets the product standard's requirements.   |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |                   |    | Meets the product standard's requirements.   |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |                   |    | Meets the product standard's requirements.   |
| 10.2.5 Lifting   |                   |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.6 Mechanical impact   |                   |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.7 Inscriptions  |                   |    | Meets the product standard's requirements.   |
| 10.3 Degree of protection of ASSEMBLIES  |                   |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.4 Clearances and creepage distances   |                   |    | Meets the product standard's requirements.   |
| 10.5 Protection against electric shock   |                   |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.6 Incorporation of switching devices and components   |                   |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.7 Internal electrical circuits and connections  |                   |    | Is the panel builder's responsibility.   |
| 10.8 Connections for external conductors   |                   |    | Is the panel builder's responsibility.   |
| 10.9 Insulation properties   |                   |    |  |
| 10.9.2 Power-frequency electric strength   |                   |    | Is the panel builder's responsibility.   |
| 10.9.3 Impulse withstand voltage   |                   |    | Is the panel builder's responsibility.   |
| 10.9.4 Testing of enclosures made of insulating material   |                   |    | Is the panel builder's responsibility.   |
| 10.10 Temperature rise   |                   |    | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating   |                   |    | Is the panel builder's responsibility. The specifications for the switch<br>gear must be observed. $\label{eq:constraint}$       |
| 10.12 Electromagnetic compatibility  |                   |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function  |                   |    | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
|  |                   |    |  |

## **Technical data ETIM 7.0**

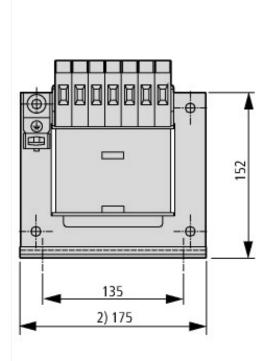
| Low-voltage industrial components (EG000017) / One-phase control transformer (E    | C002486)                     |   |
|--|------------------------------|---|
| Electric engineering, automation, process control engineering / Transformer, conve | erter, coil / Control transf | former / One-phase control transformer (ecl@ss10.0.1-27-03-13-02 [AAB620015]) |
| Built as safety transformer  |                              | No  |
| Built as isolating transformer   |                              | No  |
| Built as energy saving transformer   |                              | No  |
| Primary voltage 1  | V                            | 100 - 690   |
| Primary voltage 2  | V                            | 0 - 0   |
| Primary voltage 3  | V                            | 0 - 0   |
| Primary voltage 4  | V                            | 0 - 0   |
| Primary voltage 5  | V                            | 0 - 0   |
| Primary voltage 6  | V                            | 0 - 0   |
| Primary voltage 7  | V                            | 0 - 0   |
| Primary voltage 8  | V                            | 0 - 0   |
| Primary voltage 9  | V                            | 0 - 0   |

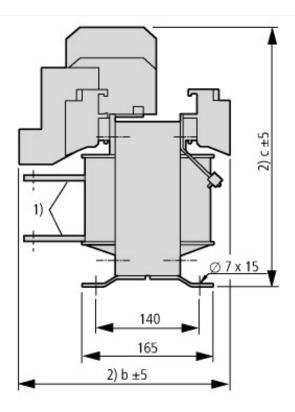
| Secondary voltage 1         V         12 - 250           Secondary voltage 2         V         0 - 0           Secondary voltage 3         V         0 - 0           Secondary voltage 4         V         0 - 0           Secondary voltage 5         V         0 - 0           Secondary voltage 6         V         0 - 0           Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         V         0 - 0           Retated apparent power         VA         2000           Type of insulation material acc. IEC 85         B         8           Relative short circuit voltage         V         0         0           Midth         mm         195           Height         mm         170           Beative short circuit voltage         mm         168           Width         mm         168           Height         mm         170           Beative short circuit voltage         mm         168           Beative short circuit voltage         mm         170           Beative short circuit voltage <t< th=""><th>Primary voltage 10</th><th>V</th><th>0 - 0</th></t<>  | Primary voltage 10                      | V  | 0 - 0    |
|--|---|----|----------|
| Secondary voltage 2         V         0 - 0           Secondary voltage 3         V         0 - 0           Secondary voltage 4         V         0 - 0           Secondary voltage 5         V         0 - 0           Secondary voltage 6         V         0 - 0           Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         V         0 - 0           Retad apparent power         V         0 - 0           Type of insulation material acc. IEC 85         Y         0 - 0           Short-circuit-proof         N         N           Relative short circuit voltage         M         2           Width         mm         195           Height         mm         170           Depth         mm         168           Degree of protection (IP)         mm         188           Ring core         N         190           Suitable for mounting on PCB         N         N           Modular version         N         N           In Company         N         N           In Comp  | , ,                                     |    |          |
| Secondary voltage 3         V         0 - 0           Secondary voltage 4         V         0 - 0           Secondary voltage 5         V         0 - 0           Secondary voltage 6         V         0 - 0           Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         V         0 - 0           Retact apparent power         V         0 - 0           Type of insulation material acc. IEC 85         W         200           Short-circuit-proof         No         No           Relative short circuit voltage         M         2           Width         m         155           Height         m         156           Depth         m         156           Degree of protection (IP)         m         168           Ring core         No         No           Suitable for mounting on PCB         No         No           Modular version         No         No  | Secondary voltage 1                     | V  | 12 - 250 |
| Secondary voltage 4         V         0 - 0           Secondary voltage 5         V         0 - 0           Secondary voltage 6         V         0 - 0           Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         V         0 - 0           Rated apparent power         VA         2000           Type of insulation material acc. IEC 85         B           Short-circuit-proof         No         2           Width         mm         195           Height         mm         170           Depth         mm         168           Degree of protection (IP)         mm         168           Bing core         No         No           Suitable for mounting on PCB         No         No           Modular version         No         No   | Secondary voltage 2                     | V  | 0 - 0    |
| Secondary voltage 5         V         0 - 0           Secondary voltage 6         V         0 - 0           Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         VA         2000           Rated apparent power         VA         2000           Type of insulation material acc. IEC 85         B           Short-circuit-proof         No         2           Relative short circuit voltage         Mm         195           Width         mm         170           Depth         mm         168           Degree of protection (IP)         IP00           Ring core         No         No           Suitable for mounting on PCB         No         No           Modular version         No         No   | Secondary voltage 3                     | V  | 0 - 0    |
| Secondary voltage 6         V         0 - 0           Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         VA         2000           Rated apparent power         VA         2000           Type of insulation material acc. IEC 85         B         No           Short-circuit-proof         No         2           Relative short circuit voltage         %         2           Width         mm         195           Height         mm         170           Degree of protection (IP)         mm         168           Degree of protection (IP)         IP00           Suitable for mounting on PCB         No         No           Modular version         No         No   | Secondary voltage 4                     | V  | 0 - 0    |
| Secondary voltage 7         V         0 - 0           Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         VA         2000           Rated apparent power         VA         2000           Type of insulation material acc. IEC 85         B         No           Short-circuit-proof         %         2           Relative short circuit voltage         %         2           Width         mm         195           Height         mm         170           Depth         mm         168           Degree of protection (IP)         IP00           Ring core         No         No           Suitable for mounting on PCB         No         No           Modular version         Image: Contract of the contract of   | Secondary voltage 5                     | V  | 0 - 0    |
| Secondary voltage 8         V         0 - 0           Secondary voltage 9         V         0 - 0           Secondary voltage 10         V         0 - 0           Rated apparent power         VA         2000           Type of insulation material acc. IEC 85         B           Short-circuit-proof         No         2           Relative short circuit voltage         %         2           Width         mm         195           Height         mm         168           Depth         mm         168           Degree of protection (IP)         mm         169           Ring core         No         No           Suitable for mounting on PCB         No         No           Modular version         No         No  | Secondary voltage 6                     | V  | 0 - 0    |
| Secondary voltage 9         V         0 - 0           Secondary voltage 10         V         0 - 0           Rated apparent power         VA         2000           Type of insulation material acc. IEC 85         B           Short-circuit-proof         No         No           Relative short circuit voltage         %         2           Width         mm         195           Height         mm         168           Depth         mm         168           Degree of protection (IP)         Pi00           Ring core         No         No           Suitable for mounting on PCB         No         No           Modular version         No         No   | Secondary voltage 7                     | V  | 0 - 0    |
| Secondary voltage 10 V 0 - 0 Rated apparent power VA 2000 Type of insulation material acc. IEC 85 Short-circuit-proof No Relative short circuit voltage No 195 Width Month Mon | Secondary voltage 8                     | V  | 0 - 0    |
| Rated apparent power Type of insulation material acc. IEC 85 Short-circuit-proof Relative short circuit voltage Width Meght Depth Depth Ring core Ring core Suitable for mounting on PCB Modular version  VA B B COOR B B B COOR B B B COOR B CO | Secondary voltage 9                     | V  | 0 - 0    |
| Type of insulation material acc. IEC 85 Short-circuit-proof Relative short circuit voltage Width mm 195 Height Depth Depth Degree of protection (IP) Ring core Suitable for mounting on PCB Modular version  B  B  Roo No N   | Secondary voltage 10                    | V  | 0 - 0    |
| Short-circuit-proof Relative short circuit voltage Width Height Depth Degree of protection (IP) Ring core Suitable for mounting on PCB Modular version  No  No  No  No  No  No  No  No  No   | Rated apparent power                    | VA | 2000     |
| Relative short circuit voltage  Width  Imm  Imm  Imm  Imm  Imm  Imm  Imm  I  | Type of insulation material acc. IEC 85 |    | В        |
| Width Height Depth Degree of protection (IP) Ring core Suitable for mounting on PCB Modular version  Midth M | Short-circuit-proof                     |    | No       |
| Height Depth Degree of protection (IP) Ring core Suitable for mounting on PCB Modular version    Modular version   Modul | Relative short circuit voltage          | %  | 2        |
| Depthmm168Degree of protection (IP)IP00Ring coreNoSuitable for mounting on PCBNoModular versionNo  | Width                                   | mm | 195      |
| Degree of protection (IP) Ring core Ring to re Suitable for mounting on PCB Modular version  IP00  No No No No   | Height                                  | mm | 170      |
| Ring core No Suitable for mounting on PCB No Modular version No  | Depth                                   | mm | 168      |
| Suitable for mounting on PCB No Modular version No   | Degree of protection (IP)               |    | IP00     |
| Modular version No   | Ring core                               |    | No       |
|  | Suitable for mounting on PCB            |    | No       |
| Conductor material Copper  | Modular version                         |    | No       |
|  | Conductor material                      |    | Copper   |

# Approvals

| Product Standards                    | UL 506; UL5085-1; UL 5085-2; CSA-C22.2 No. 66; CSA-C22.2 No. 66.1-06; CSA-C22.2 No. 66.2-06; IEC/EN 61558-2-2; CE marking |
|--------------------------------------|---|
| UL File No.                          | E167225   |
| UL Category Control No.              | XPTQ2, XPTQ8  |
| CSA File No.                         | UL report applies to both US and Canada   |
| CSA Class No.                        | -   |
| North America Certification          | UL recognized, certified by UL for use in Canada  |
| Specially designed for North America | No  |
| Suitable for                         | Branch circuits   |
| Max. Voltage Rating                  | 600 V AC  |
| Degree of Protection                 | IEC: IP00, UL/CSA Type: -   |

## **Dimensions**





|           | b   | с   |
|-----------|-----|-----|
| 12 V      | 213 | 170 |
| 24 V      | 168 | 216 |
| 42 V      | 178 | 169 |
| 110 V     | 168 | 157 |
| 200/230 V | 168 | 157 |

Connection lugs
 Maximum space requirement
 with STN0,06-02 ground connection at bottom