

# Steuer-, Sicherheits- und Trenntransformator ST Control, safety isolating and isolating transformer ST Range

► **Schraubanschlussklemmen**  
Screw type terminals

► **Kompakter Aufbau**  
Compact design

► **Universalbefestigung UB für Tragschienenbefestigung bis 250 VA (auf Anfrage)**  
Universal fixtures UB for mounting rails up to 250 VA (on request)

Einschaltstromarmer Steuer-, und Sicherheits-, bzw. Trenntransformator nach IEC 61558-2-2; 2-4; 2-6, DIN EN 61558-2-2; VDE 0570 Teil 2-2; 2-4; 2-6, UL 506

\*Sicherheitstransformator nach IEC 61558-2-6, DIN EN 61558-2-6, VDE 0570 Teil 2-6

\*\*Trenntransformator nach IEC 61558-2-4, DIN EN 61558-2-4, VDE 0570 Teil 2-4

Primärseitig ±5 % Anzapfungen zur Spannungsanpassung

Low inrush current control, safety isolating and isolating transformer to IEC 61558-2-2; 2-4; 2-6, DIN EN 61558-2-2; 2-4; 2-6, VDE 0570 part 2-2; 2-4; 2-6, UL 506

\*Safety isolating transformer to IEC 61558-2-6, DIN EN 61558-2-6, VDE 0570 part 2-6

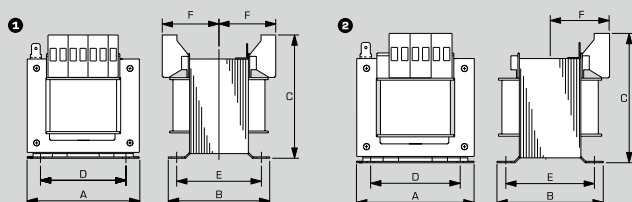
\*\*Isolating transformer to IEC 61558-2-4, DIN EN 61558-2-4, VDE 0570 part 2-4

±5 % primary tapings for the adaption of the voltage

ST 160/4/23



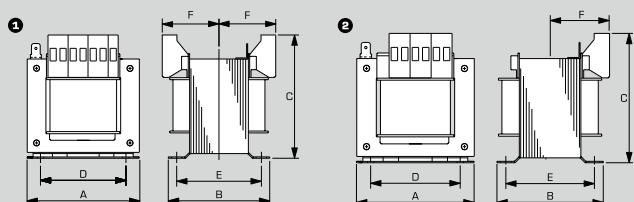
| Typ<br>Type                                                       | ST 20/23/12*                                                 | ST 20/23/24*                                                 | ST 20/23/23**                                                | ST 20/4/23**                                                 | ST 63/23/12                                                  | ST 63/23/24                                                  | ST 63/23/23                                                  | ST 63/4/24                                                   |
|-------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                          | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                     | 11 V                                                         | 11 V                                                         | 11 V                                                         | 20 V                                                         | 11 V                                                         | 11 V                                                         | 11 V                                                         | 20 V                                                         |
| Frequenzbereich<br>Frequency range                                | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                 | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                         | <b>12 V</b>                                                  | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>12 V</b>                                                  | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>24 V</b>                                                  |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor) | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br>Power VDE (DB cos phi=1)    | <b>20 VA</b>                                                 | <b>20 VA</b>                                                 | <b>20 VA</b>                                                 | <b>20 VA</b>                                                 | <b>63 VA</b>                                                 | <b>63 VA</b>                                                 | <b>63 VA</b>                                                 | <b>63 VA</b>                                                 |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)       | 42 VA                                                        | 42 VA                                                        | 42 VA                                                        | 42 VA                                                        | 110 VA                                                       | 110 VA                                                       | 110 VA                                                       | 110 VA                                                       |
| Leistung UL<br>Power UL                                           | 20 VA                                                        | 20 VA                                                        | 20 VA                                                        | 20 VA                                                        | 63 VA                                                        | 63 VA                                                        | 63 VA                                                        | 63 VA                                                        |
| Prüfzeichen<br>Approvals                                          | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                     | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)             | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                         | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.              | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                  | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                |
| Prüfspannung<br>Test voltage                                      | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                        | 81 %                                                         | 81 %                                                         | 81 %                                                         | 81 %                                                         | 84 %                                                         | 84 %                                                         | 84 %                                                         | 84 %                                                         |
| Bauart<br>Type                                                    | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                           | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                            | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                    | 66/56/81/50                                                  | 66/56/81/50                                                  | 66/56/81/50                                                  | 66/56/81/50                                                  | 78/60/89/56                                                  | 78/60/89/56                                                  | 78/60/89/56                                                  | 78/60/89/56                                                  |
| Maße in mm E/F<br>Dimensions in mm E/F                            | 44,5/42                                                      | 44,5/42                                                      | 44,5/42                                                      | 44,5/42                                                      | 48,5/44                                                      | 48,5/44                                                      | 48,5/44                                                      | 48,5/44                                                      |
| Maßbild<br>Dimension drawing                                      | 1                                                            | 1                                                            | 1                                                            | 1                                                            | 1                                                            | 1                                                            | 1                                                            | 1                                                            |
| Gewicht<br>Weight                                                 | 0,90 kg                                                      | 0,90 kg                                                      | 0,90 kg                                                      | 0,90 kg                                                      | 1,30 kg                                                      | 1,30 kg                                                      | 1,30 kg                                                      | 1,30 kg                                                      |
| <b>Bestellnummer</b><br>Order Number                              | <b>ST 20/23/12*</b>                                          | <b>ST 20/23/24*</b>                                          | <b>ST 20/23/23**</b>                                         | <b>ST 20/4/23**</b>                                          | <b>ST 63/23/12</b>                                           | <b>ST 63/23/24</b>                                           | <b>ST 63/23/23</b>                                           | <b>ST 63/4/24</b>                                            |





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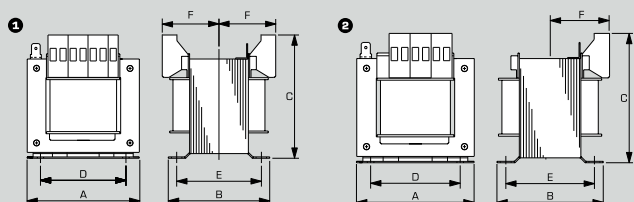
| Typ<br>Type                                                       | ST 63/4/42                                                   | ST 63/4/23                                                   | ST 63/44/23                                                  | ST 100/23/12                                                 | ST 100/23/24                                                 | ST 100/23/23                                                 | ST 100/4/24                                                  | ST 100/4/23                                                  |
|-------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                          | <b>400 V</b>                                                 | <b>400 V</b>                                                 | <b>440 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>400 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                     | 20 V                                                         | 20 V                                                         | 22 V                                                         | 11 V                                                         | 11 V                                                         | 11 V                                                         | 20 V                                                         | 20 V                                                         |
| Frequenzbereich<br>Frequency range                                | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                 | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                         | <b>42 V</b>                                                  | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>12 V</b>                                                  | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>24 V</b>                                                  | <b>230 V</b>                                                 |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor) | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br>Power VDE (DB cos phi=1)    | <b>63 VA</b>                                                 | <b>63 VA</b>                                                 | <b>63 VA</b>                                                 | <b>100 VA</b>                                                | <b>100 VA</b>                                                | <b>100 VA</b>                                                | <b>100 VA</b>                                                | <b>100 VA</b>                                                |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)       | 110 VA                                                       | 110 VA                                                       | 110 VA                                                       | 225 VA                                                       | 225 VA                                                       | 225 VA                                                       | 225 VA                                                       | 225 VA                                                       |
| Leistung UL<br>Power UL                                           | 63 VA                                                        | 63 VA                                                        | 63 VA                                                        | 100 VA                                                       | 100 VA                                                       | 100 VA                                                       | 100 VA                                                       | 100 VA                                                       |
| Prüfzeichen<br>Approvals                                          | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                     | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)             | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                         | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.              | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                  | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                |
| Prüfspannung<br>Test voltage                                      | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                        | 84 %                                                         | 84 %                                                         | 84 %                                                         | 86 %                                                         | 86 %                                                         | 86 %                                                         | 86 %                                                         | 86 %                                                         |
| Bauart<br>Type                                                    | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                           | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                            | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           | M4                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                    | 78/60/89/56                                                  | 78/60/89/56                                                  | 78/60/89/56                                                  | 84/76/95/64                                                  | 84/76/95/64                                                  | 84/76/95/64                                                  | 84/76/95/64                                                  | 84/76/95/64                                                  |
| Maße in mm E/F<br>Dimensions in mm E/F                            | 48,5/44                                                      | 48,5/44                                                      | 48,5/44                                                      | 63,5/53                                                      | 63,5/53                                                      | 63,5/53                                                      | 63,5/53                                                      | 63,5/53                                                      |
| Maßbild<br>Dimension drawing                                      | 1                                                            | 1                                                            | 1                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            |
| Gewicht<br>Weight                                                 | 1.30 kg                                                      | 1.30 kg                                                      | 1.30 kg                                                      | 2.20 kg                                                      | 2.20 kg                                                      | 2.20 kg                                                      | 2.20 kg                                                      | 2.20 kg                                                      |
| <b>Bestellnummer</b><br>Order Number                              | <b>ST 63/4/42</b>                                            | <b>ST 63/4/23</b>                                            | <b>ST 63/44/23</b>                                           | <b>ST 100/23/12</b>                                          | <b>ST 100/23/24</b>                                          | <b>ST 100/23/23</b>                                          | <b>ST 100/4/24</b>                                           | <b>ST 100/4/23</b>                                           |





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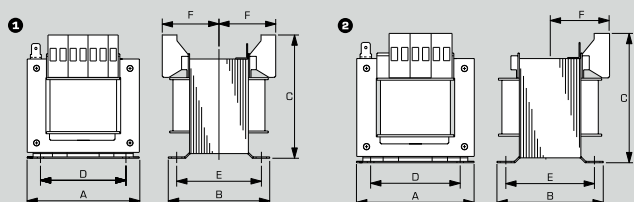
| Typ<br>Type                                                       | ST 130/23/24                                                 | ST 130/23/11                                                 | ST 130/4/23                                                  | ST 160/23/24                                                 | ST 160/23/23                                                 | ST 160/4/24                                                  | ST 160/4/23                                                  | ST 250/23/12                                                 |
|-------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                          | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>400 V</b>                                                 | <b>230 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                     | 11 V                                                         | 11 V                                                         | 20 V                                                         | 11 V                                                         | 11 V                                                         | 20 V                                                         | 20 V                                                         | 11 V                                                         |
| Frequenzbereich<br>Frequency range                                | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                 | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                         | <b>24 V</b>                                                  | <b>110 V</b>                                                 | <b>230 V</b>                                                 | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>12 V</b>                                                  |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor) | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.10                                                         | 1.09                                                         | 1.09                                                         | 1.09                                                         | 1.08                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br>Power VDE (DB cos phi=1)    | <b>130 VA</b>                                                | <b>130 VA</b>                                                | <b>130 VA</b>                                                | <b>160 VA</b>                                                | <b>160 VA</b>                                                | <b>160 VA</b>                                                | <b>160 VA</b>                                                | <b>250 VA</b>                                                |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)       | 300 VA                                                       | 300 VA                                                       | 300 VA                                                       | 390 VA                                                       | 390 VA                                                       | 390 VA                                                       | 390 VA                                                       | 555 VA                                                       |
| Leistung UL<br>Power UL                                           | 130 VA                                                       | 130 VA                                                       | 130 VA                                                       | 160 VA                                                       | 160 VA                                                       | 160 VA                                                       | 160 VA                                                       | 200 VA                                                       |
| Prüfzeichen<br>Approvals                                          | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                     | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)             | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                         | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.              | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                  | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                |
| Prüfspannung<br>Test voltage                                      | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                        | 86 %                                                         | 86 %                                                         | 86 %                                                         | 86 %                                                         | 87 %                                                         | 87 %                                                         | 87 %                                                         | 90 %                                                         |
| Bauart<br>Type                                                    | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                           | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                            | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                    | 96/78/105/84                                                 | 96/78/105/84                                                 | 96/78/105/84                                                 | 96/88/105/84                                                 | 96/88/105/84                                                 | 96/88/105/84                                                 | 96/88/105/84                                                 | 96/103/105/84                                                |
| Maße in mm E/F<br>Dimensions in mm E/F                            | 63,5/48                                                      | 63,5/48                                                      | 63,5/48                                                      | 73/53                                                        | 73/53                                                        | 73/53                                                        | 73/53                                                        | 86,5/61                                                      |
| Maßbild<br>Dimension drawing                                      | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            |
| Gewicht<br>Weight                                                 | 2,40 kg                                                      | 2,40 kg                                                      | 2,40 kg                                                      | 2,40 kg                                                      | 2,90 kg                                                      | 2,90 kg                                                      | 2,90 kg                                                      | 3,90 kg                                                      |
| <b>Bestellnummer</b><br>Order Number                              | <b>ST 130/23/24</b>                                          | <b>ST 130/23/11</b>                                          | <b>ST 130/4/23</b>                                           | <b>ST 160/23/24</b>                                          | <b>ST 160/23/23</b>                                          | <b>ST 160/4/24</b>                                           | <b>ST 160/4/23</b>                                           | <b>ST 250/23/12</b>                                          |





## Steuer-, Sicherheits- und Trenntransformator ST Control, safety isolating and isolating transformer ST Range

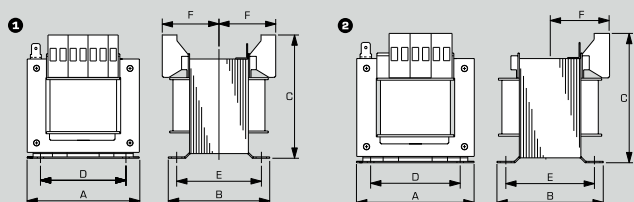
| Typ<br>Type                                                       | ST 250/23/24                                                 | ST 250/23/42                                                 | ST 250/23/23                                                 | ST 250/4/23                                                  | ST 250/44/23                                                 | ST 320/23/24                                                 | ST 320/23/23                                                 | ST 320/4/23                                                  |
|-------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                          | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>440 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                     | 11 V                                                         | 11 V                                                         | 11 V                                                         | 20 V                                                         | 22 V                                                         | 11 V                                                         | 11 V                                                         | 20 V                                                         |
| Frequenzbereich<br>Frequency range                                | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                 | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                         | <b>24 V</b>                                                  | <b>42 V</b>                                                  | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>230 V</b>                                                 |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor) | 1.08                                                         | 1.08                                                         | 1.08                                                         | 1.08                                                         | 1.08                                                         | 1.06                                                         | 1.06                                                         | 1.06                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br>Power VDE (DB cos phi=1)    | <b>250 VA</b>                                                | <b>250 VA</b>                                                | <b>250 VA</b>                                                | <b>250 VA</b>                                                | <b>250 VA</b>                                                | <b>320 VA</b>                                                | <b>320 VA</b>                                                | <b>320 VA</b>                                                |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)       | 555 VA                                                       | 555 VA                                                       | 555 VA                                                       | 555 VA                                                       | 555 VA                                                       | 810 VA                                                       | 810 VA                                                       | 810 VA                                                       |
| Leistung UL<br>Power UL                                           | 200 VA                                                       | 200 VA                                                       | 200 VA                                                       | 200 VA                                                       | 200 VA                                                       | 250 VA                                                       | 250 VA                                                       | 250 VA                                                       |
| Prüfzeichen<br>Approvals                                          | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                     | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)             | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                         | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.              | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                  | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                |
| Prüfspannung<br>Test voltage                                      | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                        | 90 %                                                         | 90 %                                                         | 90 %                                                         | 90 %                                                         | 90 %                                                         | 91 %                                                         | 91 %                                                         | 91 %                                                         |
| Bauart<br>Type                                                    | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                           | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                            | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                    | 96/103/105/84                                                | 96/103/105/84                                                | 96/103/105/84                                                | 96/103/105/84                                                | 96/103/105/84                                                | 105/103/114/80                                               | 105/103/114/80                                               | 105/103/114/80                                               |
| Maße in mm E/F<br>Dimensions in mm E/F                            | 86,5/61                                                      | 86,5/61                                                      | 86,5/61                                                      | 86,5/61                                                      | 86,5/61                                                      | 83/61                                                        | 83/61                                                        | 83/61                                                        |
| Maßbild<br>Dimension drawing                                      | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            |
| Gewicht<br>Weight                                                 | 3,90 kg                                                      | 3,90 kg                                                      | 3,90 kg                                                      | 3,90 kg                                                      | 3,90 kg                                                      | 4,60 kg                                                      | 4,60 kg                                                      | 4,60 kg                                                      |
| <b>Bestellnummer</b><br>Order Number                              | <b>ST 250/23/24</b>                                          | <b>ST 250/23/42</b>                                          | <b>ST 250/23/23</b>                                          | <b>ST 250/4/23</b>                                           | <b>ST 250/44/23</b>                                          | <b>ST 320/23/24</b>                                          | <b>ST 320/23/23</b>                                          | <b>ST 320/4/23</b>                                           |





## Steuer-, Sicherheits- und Trenntransformator ST Control, safety isolating and isolating transformer ST Range

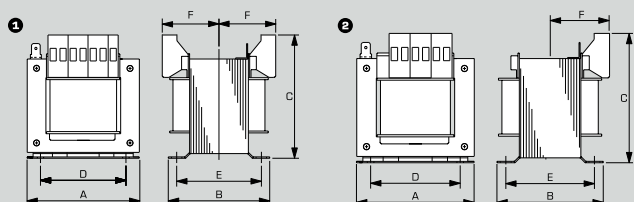
| Typ<br>Type                                                       | ST 400/23/24                                                 | ST 400/23/23                                                 | ST 400/4/24                                                  | ST 400/4/23                                                  | ST 500/23/23                                                 | ST 500/4/23                                                  | ST 500/44/23                                                 | ST 630/4/23                                                  |
|-------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                          | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>400 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>440 V</b>                                                 | <b>400 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                     | 11 V                                                         | 11 V                                                         | 20 V                                                         | 20 V                                                         | 11 V                                                         | 20 V                                                         | 22 V                                                         | 20 V                                                         |
| Frequenzbereich<br>Frequency range                                | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                 | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                         | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>24 V</b>                                                  | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor) | 1.06                                                         | 1.06                                                         | 1.06                                                         | 1.06                                                         | 1.05                                                         | 1.05                                                         | 1.05                                                         | 1.05                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br>Power VDE (DB cos phi=1)    | <b>400 VA</b>                                                | <b>400 VA</b>                                                | <b>400 VA</b>                                                | <b>400 VA</b>                                                | <b>500 VA</b>                                                | <b>500 VA</b>                                                | <b>500 VA</b>                                                | <b>630 VA</b>                                                |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)       | 1020 VA                                                      | 1020 VA                                                      | 1020 VA                                                      | 1020 VA                                                      | 1370 VA                                                      | 1370 VA                                                      | 1370 VA                                                      | 1540 VA                                                      |
| Leistung UL<br>Power UL                                           | 320 VA                                                       | 320 VA                                                       | 320 VA                                                       | 320 VA                                                       | 400 VA                                                       | 400 VA                                                       | 400 VA                                                       | 500 VA                                                       |
| Prüfzeichen<br>Approvals                                          | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                     | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)             | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                         | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.              | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                  | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                |
| Prüfspannung<br>Test voltage                                      | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                        | 91 %                                                         | 91 %                                                         | 91 %                                                         | 91 %                                                         | 91 %                                                         | 91 %                                                         | 91 %                                                         | 92 %                                                         |
| Bauart<br>Type                                                    | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                           | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                            | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M5                                                           | M6                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                    | 120/102/123/90                                               | 120/102/123/90                                               | 120/102/123/90                                               | 120/102/123/90                                               | 120/122/123/90                                               | 120/122/123/90                                               | 120/122/123/90                                               | 150/111/148/122                                              |
| Maße in mm E/F<br>Dimensions in mm E/F                            | 85/57                                                        | 85/57                                                        | 85/57                                                        | 85/57                                                        | 104/68                                                       | 104/68                                                       | 104/68                                                       | 90/56                                                        |
| Maßbild<br>Dimension drawing                                      | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            |
| Gewicht<br>Weight                                                 | 5.50 kg                                                      | 5.50 kg                                                      | 5.50 kg                                                      | 5.50 kg                                                      | 7.20 kg                                                      | 7.20 kg                                                      | 7.20 kg                                                      | 8.00 kg                                                      |
| <b>Bestellnummer</b><br>Order Number                              | <b>ST 400/23/24</b>                                          | <b>ST 400/23/23</b>                                          | <b>ST 400/4/24</b>                                           | <b>ST 400/4/23</b>                                           | <b>ST 500/23/23</b>                                          | <b>ST 500/4/23</b>                                           | <b>ST 500/44/23</b>                                          | <b>ST 630/4/23</b>                                           |





## Steuer-, Sicherheits- und Trenntransformator ST Control, safety isolating and isolating transformer ST Range

| Typ<br>Type                                                           | ST 800/23/23                                                 | ST 800/4/23                                                  | ST 800/44/23                                                 | ST 1000/23/23                                                | ST 1000/4/23                                                 | ST 1000/44/23                                                | ST 1000/5/23                                                 | ST 1600/4/23                                                 |
|-----------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                              | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>440 V</b>                                                 | <b>230 V</b>                                                 | <b>400 V</b>                                                 | <b>440 V</b>                                                 | <b>500 V</b>                                                 | <b>400 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                         | 11 V                                                         | 20 V                                                         | 22 V                                                         | 11 V                                                         | 20 V                                                         | 22 V                                                         | 25 V                                                         | 20 V                                                         |
| Frequenzbereich<br>Frequency range                                    | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                     | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                             | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 | <b>230 V</b>                                                 |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor)     | 1.04                                                         | 1.04                                                         | 1.04                                                         | 1.03                                                         | 1.03                                                         | 1.03                                                         | 1.03                                                         | 1.03                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br><b>Power VDE (DB cos phi=1)</b> | <b>800 VA</b>                                                | <b>800 VA</b>                                                | <b>800 VA</b>                                                | <b>1000 VA</b>                                               | <b>1000 VA</b>                                               | <b>1000 VA</b>                                               | <b>1000 VA</b>                                               | <b>1600 VA</b>                                               |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)           | 2000 VA                                                      | 2000 VA                                                      | 2000 VA                                                      | 3120 VA                                                      | 3120 VA                                                      | 3120 VA                                                      | 3120 VA                                                      | 4400 VA                                                      |
| Leistung UL<br>Power UL                                               | 630 VA                                                       | 630 VA                                                       | 630 VA                                                       | 800 VA                                                       | 800 VA                                                       | 800 VA                                                       | 800 VA                                                       | 1400 VA                                                      |
| Prüfzeichen<br>Approvals                                              | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                         | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)                 | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.                  | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                      | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=105                                                | VDE=B, UL=130                                                |
| Prüfspannung<br>Test voltage                                          | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                            | 92 %                                                         | 92 %                                                         | 92 %                                                         | 94 %                                                         | 94 %                                                         | 94 %                                                         | 94 %                                                         | 94 %                                                         |
| Bauart<br>Type                                                        | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                               | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                          | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                                | M6                                                           | M6                                                           | M6                                                           | M6                                                           | M6                                                           | M6                                                           | M6                                                           | M8                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                        | 150/128/148/122                                              | 150/128/148/122                                              | 150/128/148/122                                              | 150/154/148/122                                              | 150/154/148/122                                              | 150/154/148/122                                              | 150/154/148/122                                              | 192/146/182/156                                              |
| Maße in mm E/F<br>Dimensions in mm E/F                                | 106/63                                                       | 106/63                                                       | 106/63                                                       | 130/77                                                       | 130/77                                                       | 130/77                                                       | 130/77                                                       | 119/65                                                       |
| Maßbild<br>Dimension drawing                                          | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            | 2                                                            |
| Gewicht<br>Weight                                                     | 9.60 kg                                                      | 9.60 kg                                                      | 9.60 kg                                                      | 13.50 kg                                                     | 13.50 kg                                                     | 13.50 kg                                                     | 13.50 kg                                                     | 17.50 kg                                                     |
| <b>Bestellnummer</b><br><b>Order Number</b>                           | <b>ST 800/23/23</b>                                          | <b>ST 800/4/23</b>                                           | <b>ST 800/44/23</b>                                          | <b>ST 1000/23/23</b>                                         | <b>ST 1000/4/23</b>                                          | <b>ST 1000/44/23</b>                                         | <b>ST 1000/5/23</b>                                          | <b>ST 1600/4/23</b>                                          |





## Steuer-, Sicherheits- und Trenntransformator ST

### Control, safety isolating and isolating transformer ST Range

| Typ<br>Type                                                       | ST 2000/4/23                                                 | ST 2500/4/23                                                 |
|-------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Eingangsspannung</b><br>Input voltage                          | <b>400 V</b>                                                 | <b>400 V</b>                                                 |
| Anzapfungen Eingang (±)<br>Tappings Input (±)                     | 20 V                                                         | 20 V                                                         |
| Frequenzbereich<br>Frequency range                                | 50 - 60 Hz                                                   | 50 - 60 Hz                                                   |
| Leistung<br>Power                                                 | 20 VA - 2500 VA                                              | 20 VA - 2500 VA                                              |
| <b>Ausgangsspannung</b><br>Output voltage                         | <b>230 V</b>                                                 | <b>230 V</b>                                                 |
| Leerlaufspannung (ca. x Faktor)<br>No-load voltage (ca. x factor) | 1.03                                                         | 1.03                                                         |
| <b>Leistung VDE (DB cos phi=1)</b><br>Power VDE (DB cos phi=1)    | <b>2000 VA</b>                                               | <b>2500 VA</b>                                               |
| Leistung VDE (KB cos phi=0.5)<br>Power VDE (KB cos phi=0.5)       | 10900 VA                                                     | 12400 VA                                                     |
| Leistung UL<br>Power UL                                           | 1750 VA                                                      | 2180 VA                                                      |
| Prüfzeichen<br>Approvals                                          | C-UL-US, ENEC 10 (VDE)                                       | C-UL-US, ENEC 10 (VDE)                                       |
| Schutzart<br>Protection index                                     | IP 00                                                        | IP 00                                                        |
| Schutzklasse (vorbereitet)<br>Safety class (prepared)             | I                                                            | I                                                            |
| Kühlart<br>Cooling method                                         | Selbstkühlung<br>by self-cooling                             | Selbstkühlung<br>by self-cooling                             |
| Umgebungstemperatur max.<br>Ambient temperature max.              | 40 °C                                                        | 40 °C                                                        |
| Isolierstoffklasse<br>Class of Insulation System                  | VDE=B, UL=130                                                | VDE=B, UL=130                                                |
| Prüfspannung<br>Test voltage                                      | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    | mind. 2500 V, 50 Hz<br>min. 2500 V, 50 Hz                    |
| Wirkungsgrad<br>Efficiency                                        | 96 %                                                         | 96 %                                                         |
| Bauart<br>Type                                                    | offen<br>open type                                           | offen<br>open type                                           |
| Anschlüsse<br>Terminals                                           | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 | Schraubkl. PE 6,3x0,8<br>screw-type terminals,<br>PE 6,3x0,8 |
| Befestigung<br>Fixing method                                      | Fußplatte<br>base plate                                      | Fußplatte<br>base plate                                      |
| Befestigungsschrauben<br>Fixing screws                            | M8                                                           | M8                                                           |
| Maße in mm A/B/C/D<br>Dimensions in mm A/B/C/D                    | 192/162/182/156                                              | 192/184/182/156                                              |
| Maße in mm E/F<br>Dimensions in mm E/F                            | 135/73                                                       | 157/84                                                       |
| Maßbild<br>Dimension drawing                                      | 2                                                            | 2                                                            |
| Gewicht<br>Weight                                                 | 22.00 kg                                                     | 24.80 kg                                                     |
| <b>Bestellnummer</b><br>Order Number                              | <b>ST 2000/4/23</b>                                          | <b>ST 2500/4/23</b>                                          |

