

Safety isolating transformers



They are used to change the electrical voltage to the desired value at the input or output, where the use of safety voltage used for the operation of electrical appliances or the electrical network is prescribed.

**Type range:** TR 9402 to TR 9409, TR 9402/1 to TR 9409/1

We also produce **atypical** transformation ratios according to the customer's request.

| TYPE RANGE         | PRIMARY VOLTAGE<br>type designation |                 | POWER<br>[VA] | CORE TYPE<br>DIN | OUTPUT VOLTAGE AND CURRENT<br>[V / A] |            | NO-LOAD LOSSES<br>[W] |       | TOTAL LOSSES<br>[W] | EFFICIENCY<br>η [%] |
|--------------------|-------------------------------------|-----------------|---------------|------------------|---------------------------------------|------------|-----------------------|-------|---------------------|---------------------|
|                    | 230 V / 50 HZ                       | 400 V / 50 HZ   |               |                  | 24 V                                  | 12 V       | ΔP CU                 | ΔP FE |                     |                     |
| Safety transformer | TR 9402 -10                         | TR 9402/1 -10   | 10            | EI 48 / 20       | 24 / 0.41                             | 12 / 0.83  | 2                     | 2     | 4                   | 71                  |
| Safety transformer | TR 9402 -20                         | TR 9402/1 -20   | 20            | EI 60 / 25       | 24 / 0.83                             | 12 / 1.66  | 2.5                   | 3     | 5.5                 | 78                  |
| Safety transformer | TR 9402 -30                         | TR 9402/1 -30   | 30            | EI 75 / 20       | 24 / 1.25                             | 12 / 2.50  | 3.5                   | 4     | 7.5                 | 80                  |
| Safety transformer | TR 9402 -50                         | TR 9402/1 -50   | 50            | EI 75 / 25       | 24 / 2.08                             | 12 / 4.16  | 5.1                   | 5.1   | 10.2                | 83                  |
| Safety transformer | TR 9403 -80                         | TR 9403/1 -80   | 80            | EI 84 / 35       | 24 / 3.33                             | 12 / 6.66  | 7                     | 7.4   | 14.4                | 84                  |
| Safety transformer | TR 9401 -100                        | TR 9401/1 -100  | 100           | EI 84 / 40       | 24 / 4.16                             | 12 / 8.33  | 8.2                   | 8     | 16.2                | 86                  |
| Safety transformer | TR 9404 -125                        | TR 9404/1 -125  | 125           | EI 96 / 35       | 24 / 5.20                             | 12 / 10.41 | 10                    | 10    | 20                  | 86                  |
| Safety transformer | TR 9404 -160                        | TR 9404/1 -150  | 160           | EI 96 / 45       | 24 / 6.25                             | 12 / 12.50 | 10.4                  | 10.3  | 20.7                | 88                  |
| Safety transformer | TR 9405 -200                        | TR 9405/1 -200  | 200           | EI 96 / 50       | 24 / 8.33                             | 12 / 16.66 | 13.5                  | 12.5  | 26                  | 88                  |
| Safety transformer | TR 9409 -250                        | TR 9409/1 -250  | 250           | EI 120 / 40      | 24 / 10.41                            | 12 / 20.83 | 15.2                  | 15    | 30.2                | 89                  |
| Safety transformer | TR 9409 -315                        | TR 9409/1 -315  | 315           | EI 120 / 50      | 24 / 13.12                            | 12 / 26.25 | 16                    | 15.5  | 31.5                | 88                  |
| Safety transformer | TR 9409 -400                        | TR 9409/1 -400  | 400           | EI 120 / 70      | 24 / 16.66                            | 12 / 33.33 | 16.2                  | 18    | 34.2                | 88                  |
| Safety transformer | TR 9409 -500                        | TR 9409/1 -500  | 500           | EI 150 / 50      | 24 / 20.83                            | 12 / 41.66 | 19                    | 21    | 40                  | 90                  |
| Safety transformer | TR 9409 -800                        | TR 9409/1 -800  | 800           | EI 150 / 80      | 24 / 33.33                            | 12 / 66.60 | 24.8                  | 27    | 51.8                | 93                  |
| Safety transformer | TR 9409 -1000                       | TR 9409/1 -1000 | 1000          | EI 192 / 60      | 24 / 41.6                             | 12 / 83.30 | 26.2                  | 32    | 58.2                | 94                  |
| Safety transformer | TR 9409                             | TR 9409/1       | 1400          | EI 192 / 80      | 24 / 58.3                             | 12 / 116.6 | 31                    | 38.8  | 69.8                | 95                  |
| Safety transformer | TR 9409                             | TR 9409/1       | 1600          | EI 192 / 80      | 24 / 62.5                             | 12 / 125   | 34                    | 42    | 76                  | 95                  |
| Safety transformer | TR 9409                             | TR 9409/1       | 2000          | EI 192 / 100     | 24 / 83.3                             | 12 / 166.6 | 45                    | 44    | 89                  | 95                  |
| Safety transformer | TR 9409                             | TR 9409/1       | 2500          | EI 192 / 130     | 24 / 104.1                            | 12 / 208.3 | 58                    | 45    | 103                 | 96                  |

|                              |                             |
|------------------------------|-----------------------------|
| THERMAL CLASS:               | F155°C                      |
| VOLTAGE WITHSTAND:           | PRI/SEC/CORE 4,75kV 50Hz    |
| SHORT-CIRCUIT RESISTANCE:    | NOT SHORT-CIRCUIT RESISTANT |
| TEMPERATURE RISE (HEAT RUN): | max. 85°C                   |
| PROTECTION CLASS:            | I.                          |
| PROTECTION:                  | IP00                        |
| AMBIENT TEMPERATURE:         | ta40                        |