

# Isolating transformer DS0107

Three-phase isolating transformers for the supply of three-phase loads in medical locations



DS0107

## Device features

- Built-in temperature sensors acc. to DIN 44081 (120 °C)
- Screen winding with brought-out insulated connection terminal
- Insulated mounting angles
- Degree of protection IP 00 (construction type: open)
- Degree of protection IP 23 (incl. enclosure)
- Protection class I
- Protection class II (option: completely encapsulated version)
- Reinforced insulation
- Classification of insulation ta40/B
- Connections: screw terminals
- Noise level < 35 dB (A)(no-load and nominal load)
- Vector group: Yyn 0

## Application and description

The transformers of the DS0107 series have reinforced insulation and comply with the requirements of IEC 61558-1 / DIN EN 61558-1 (VDE 0570-1) and IEC 61558-2-15 DIN EN 61558-2-15 (VDE 0570-2-15).

In addition, the transformers comply with the requirements of IEC 60364-7-710 / DIN VDE 0100-710 (VDE 0100-710) for IT systems in medical locations. The windings are galvanically isolated. In order to minimize electrical interferences, an electrostatic screen is installed between the primary and secondary winding the lead out of which is connected to an insulated terminal for connection to the equipotential bonding.

The fixing angles are isolated from the transformer core in order to guarantee an isolated installation to comply with the requirements of DIN VDE 0100-710 (VDE 0100-710): 2002-11, para 710.512.1.6.2).

The transformers are available for horizontal and vertical installation. Protection against corrosion is guaranteed by a complete resin impregnation.

The transformers are designed for use in dry locations. Transformers of the SK2 series are completely encapsulated and fulfil the requirements of protection class II.

## Frequency / ratings

The transformers are designed for rated frequencies of 50...60 Hz. The values specified in the chapter "Technical data" refer to a maximum ambient temperature of 40 °C and a rated frequency of 50 Hz.

## Temperature rise

Free air circulation must be ensured. An ambient temperature exceeding 40 °C will reduce the rated power. For temperature monitoring, a PTC thermistor is placed on each transformer leg and the leads are connected to the terminals.

## Enclosure

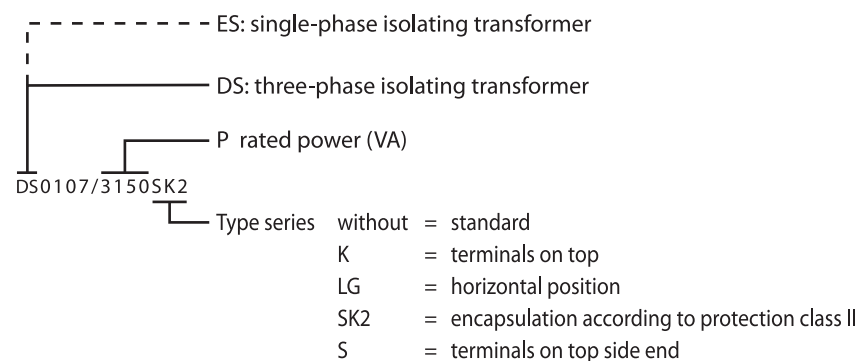
Appropriate steel sheet enclosures, degree of protection IP 23, are available for all standard types of isolating transformers.

## Standards

The DS0107 series complies with the requirements of the following standards and regulations for the erection of electrical equipment: IEC 61558-1, DIN EN 61558-1 (VDE 0570-1), IEC 61558-2-15 / DIN EN 61558-2-15 (VDE 0750-2-15), IEC 60364-7-710 / DIN VDE 0100-710 (VDE 0100-710).

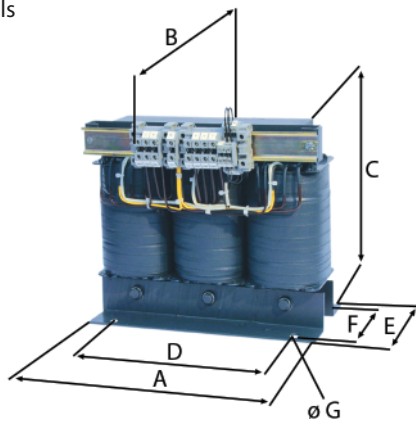
- Note:**
- According to DIN VDE 0100-710 (VDE 0100-710): 2002-11, para. 710.512.1.6.2, single-phase transformers shall be used for the erection of medical IT systems.
  - The transformers of the DS0107 series are not suitable for the erection and installation of medical IT systems.

## Nameplate

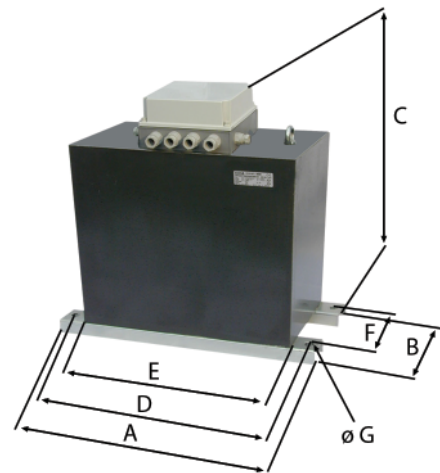


**Dimension diagram/type of construction**

Standard – Dimension B is the depth incl. terminals

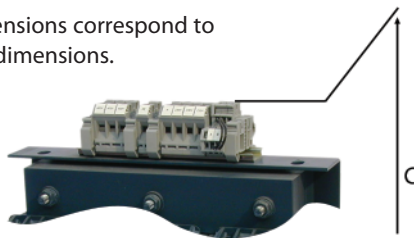


SK2 series

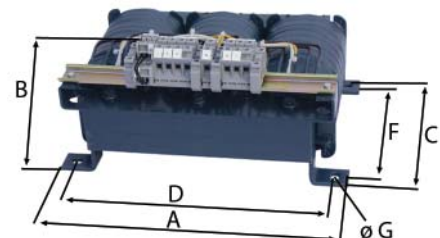


K series

All other dimensions correspond to the standard dimensions.



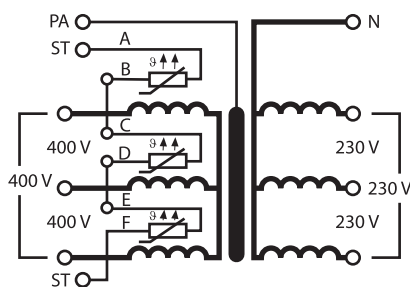
LG series



**Ordering information, dimensions, weights**

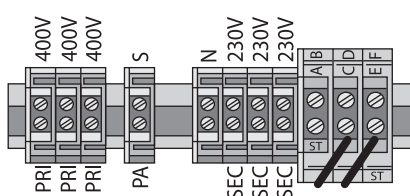
Type	A	B	C	D	E	F	G	Cu weight	Weight	Art. No.
DS107/2000	300 mm	200 mm	270 mm	240 mm	160 mm	130 mm	11 mm	16 kg	34 kg	B 924 694
DS107/3150	360 mm	210 mm	325 mm	310 mm	170 mm	135 mm	11 mm	28 kg	63 kg	B 924 106
DS107/4000	360 mm	225 mm	325 mm	310 mm	185 mm	150 mm	11 mm	29 kg	70 kg	B 924 121
DS107/5000	360 mm	240 mm	325 mm	310 mm	200 mm	165 mm	11 mm	31 kg	77 kg	B 924 112
DS107/6300	420 mm	230 mm	370 mm	370 mm	200 mm	160 mm	11 mm	48 kg	97 kg	B 924 107
DS107/8000	420 mm	245 mm	370 mm	370 mm	215 mm	175 mm	11 mm	51 kg	107 kg	B 924 628
DS107/10000	420 mm	260 mm	370 mm	370 mm	230 mm	190 mm	11 mm	59 kg	130 kg	B 924 672
DS107/2000K	300 mm		310 mm	240 mm	162 mm	130 mm	11 mm	16 kg	34 kg	B 924 687
DS107/3150K	360 mm		360 mm	310 mm	170 mm	135 mm	11 mm	28 kg	63 kg	B 924 688
DS107/4000K	360 mm		360 mm	310 mm	185 mm	150 mm	11 mm	29 kg	70 kg	B 924 689
DS107/5000K	360 mm		360 mm	310 mm	200 mm	165 mm	11 mm	31 kg	77 kg	B 924 690
DS107/6300K	420 mm		420 mm	370 mm	200 mm	160 mm	11 mm	48 kg	97 kg	B 924 691
DS107/8000K	420 mm		420 mm	370 mm	215 mm	175 mm	11 mm	51 kg	107 kg	B 924 692
DS107/10000K	420 mm		420 mm	370 mm	230 mm	190 mm	11 mm	59 kg	130 kg	B 924 693
DS107/2000LG	330 mm	195 mm	265 mm	298 mm		200 mm	7 mm	16 kg	34 kg	B 924 695
DS107/3150LG	394 mm	198 mm	310 mm	358 mm		240 mm	9 mm	28 kg	63 kg	B 924 658
DS107/4000LG	394 mm	214 mm	310 mm	358 mm		240 mm	9 mm	29 kg	70 kg	B 924 659
DS107/5000LG	394 mm	228 mm	310 mm	358 mm		240 mm	9 mm	31 kg	77 kg	B 924 660
DS107/6300LG	452 mm	212 mm	360 mm	408 mm		280 mm	12 mm	48 kg	97 kg	B 924 661
DS107/8000LG	452 mm	227 mm	360 mm	408 mm		280 mm	12 mm	51 kg	107 kg	B 924 662
DS107/10000LG	452 mm	250 mm	360 mm	408 mm		280 mm	12 mm	59 kg	130 kg	B 924 679
DS107/2000SK2	410 mm	190 mm	400 mm	380 mm	330 mm	125 mm	11 mm	16 kg	49 kg	B 924 696
DS107/3150SK2	520 mm	190 mm	450 mm	490 mm	390 mm	135 mm	11 mm	28 kg	75 kg	B 924 122
DS107/4000SK2	520 mm	190 mm	450 mm	490 mm	390 mm	135 mm	11 mm	29 kg	80 kg	B 924 123
DS107/5000SK2	520 mm	200 mm	450 mm	490 mm	390 mm	150 mm	11 mm	31 kg	86 kg	B 924 124
DS107/6300SK2	520 mm	200 mm	500 mm	490 mm	450 mm	150 mm	11 mm	48 kg	107 kg	B 924 125
DS107/8000SK2	520 mm	215 mm	500 mm	490 mm	450 mm	175 mm	11 mm	51 kg	130 kg	B 924 126
DS107/10000SK2	520 mm	230 mm	500 mm	490 mm	450 mm	175 mm	11 mm	59 kg	155 kg	B 924 678

**Wiring diagram**

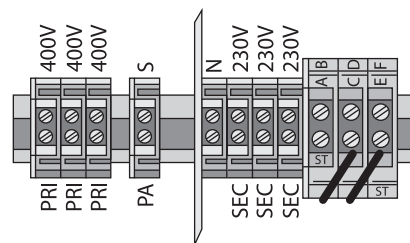


**Terminal diagram**

Standard,  
K series,  
LG series



SK2 series



**Cross sectional area of connecting cable**

Type	Input terminals flexible/rigid	Screen winding flexible/rigid	Control terminals flexible/rigid	Output terminals flexible/rigid
DS0107/2000	10/16 mm <sup>2</sup>	10/16 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	10/16 mm <sup>2</sup>
DS0107/3150	10/16 mm <sup>2</sup>	10/16 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	10/16 mm <sup>2</sup>
DS0107/4000	10/16 mm <sup>2</sup>	10/16 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	10/16 mm <sup>2</sup>
DS0107/5000	10/16 mm <sup>2</sup>	10/16 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	10/16 mm <sup>2</sup>
DS0107/6300	10/16 mm <sup>2</sup>	10/16 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	16/25 mm <sup>2</sup>
DS0107/8000	10/16 mm <sup>2</sup>	10/16 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	16/25 mm <sup>2</sup>
DS0107/10000	16/25 mm <sup>2</sup>	16/25 mm <sup>2</sup>	2.5/4 mm <sup>2</sup>	16/25 mm <sup>2</sup>

**Technical data isolating transformer DS0107**

Type	DS0107/2000	DS0107/3150	DS0107/4000	DS0107/5000	DS0107/6300	DS0107/8000	DS0107/10000
Insulation classification	t <sub>a</sub> 40/B	t <sub>a</sub> 40/B	t <sub>a</sub> 40/B	t <sub>a</sub> 40/B	t <sub>a</sub> 40/B	t <sub>a</sub> 40/B	t <sub>a</sub> 40/B
Degree of protection	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Protection class	I/II*	I/II*	I/II*	I/II*	I/II*	I/II*	I/II*

**Power/ voltages/ currents**

	DS0107/2000	DS0107/3150	DS0107/4000	DS0107/5000	DS0107/6300	DS0107/8000	DS0107/10000
Rated power	2000 VA	3150 VA	4000 VA	5000 VA	6300 VA	8000 VA	10000 VA
Rated frequency	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz
Rated input voltage	3AC 400 V	3AC 400 V	3AC 400 V	3AC 400 V	3AC 400 V	3AC 400 V	3AC 400 V
Rated input current	3 A	4.9 A	6.1 A	7.7 A	9.8 A	12.2 A	15.6 A
Rated output voltage	3NAC 230 V	3NAC 230 V	3NAC 230 V	3NAC 230 V	3NAC 230 V	3NAC 230 V	3NAC 230 V
Rated output current	5 A	7.9 A	10 A	12.6 A	15.8 A	20.1 A	25.2 A
Inrush current I <sub>ε</sub>	< 12 x I <sub>n</sub>	< 12 x I <sub>n</sub>	< 12 x I <sub>n</sub>	< 12 x I <sub>n</sub>	< 12 x I <sub>n</sub>	< 12 x I <sub>n</sub>	< 12 x I <sub>n</sub>
Leakage current	≤ 0.5 mA	≤ 0.5 mA	≤ 0.5 mA	≤ 0.5 mA	≤ 0.5 mA	≤ 0.5 mA	≤ 0.5 mA
No-load input current i <sub>0</sub>	≤ 3.0 %	≤ 3.0 %	≤ 3.0 %	≤ 3.0 %	≤ 3.0 %	≤ 3.0 %	≤ 3.0 %
No-load output voltage u <sub>0</sub>	≤ 232 V	≤ 235 V	≤ 234 V	≤ 236 V	≤ 236 V	≤ 235 V	≤ 235 V
Short-circuit voltage u <sub>k</sub>	≤ 2.9 %	≤ 2.9 %	≤ 2.8 %	≤ 3 %	≤ 2.8 %	≤ 2.8 %	≤ 2.5 %

**General data**

	DS0107/2000	DS0107/3150	DS0107/4000	DS0107/5000	DS0107/6300	DS0107/8000	DS0107/10000
Recommended fuse when used in accordance with DIN VDE 0100-710	10 A gL/gG	16 A gL/gG	20 A gL/gG	20 A gL/gG	25 A gL/gG	35 A gL/gG	35 A gL/gG
Induction	1.0 T	0.8 T	0.86 T	0.8 T	0.8 T	0.8 T	0.82 T
R <sub>primary</sub>	1.12 Ω	0.7 Ω	0.42 Ω	0.38 Ω	0.33 Ω	0.26 Ω	0.13 Ω
R <sub>secondary</sub>	0.27 Ω	0.17 Ω	0.13 Ω	0.12 Ω	0.07 Ω	0.055 Ω	0.05 Ω
FE loss (iron loss)	45 W	51 W	70 W	75 W	80 W	96 W	120 W
Cu loss (copper loss)	60 W	105 W	115 W	170 W	200 W	255 W	270 W
Efficiency	95 %	96 %	95 %	95 %	96 %	96 %	96 %
Ambient temperature	≤ 40 °C	≤ 40 °C	≤ 40 °C	≤ 40 °C	≤ 40 °C	≤ 40 °C	≤ 40 °C
No-load temperature rise	≤ 25 °C	≤ 21 °C	≤ 24 °C	≤ 28 °C	≤ 24 °C	≤ 27 °C	≤ 32 °C
Full-load temperature rise	≤ 50 °C	≤ 50 °C	≤ 53 °C	≤ 67 °C	≤ 60 °C	≤ 72 °C	≤ 75 °C
Noise level (no load and full load)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)

\* Option: completely encapsulated version

**ESDS0107-1**

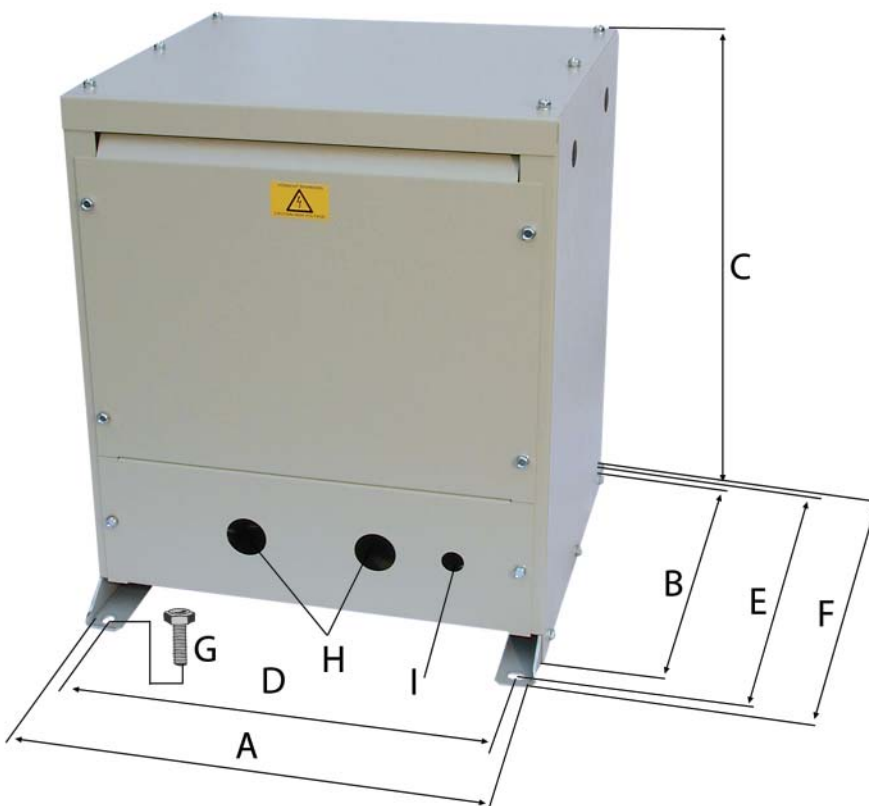
Sheet steel enclosure in vertical position for three-phase transformers DS0107/2000 to DS0107/5000.

**ESDS0107-2**

Sheet steel enclosure in vertical position for three-phase transformers DS0107/6300 to DS0107/10000.

**Enclosure**

- Sheet steel, varnished in RAL 7032
- Degree of protection IP 23
- Bore holes for cable entry
- The enclosures of our transformers (standard version), transformer sizes of 2...10 kVA, are provided with fixing holes intended for easy retrofitting at any time.



Ordering information, dimensions (in mm), weight											
	A	B	C	D	E	F	G	H	I	Weight	Art. No.
ESDS0107-1	430	380	490	385	420	450	M10	ø 29	ø 21	16 kg	B 924 673
ESDS0107-2	600	420	490	555	460	490	M10	ø 36	ø 16	23 kg	B 924 674