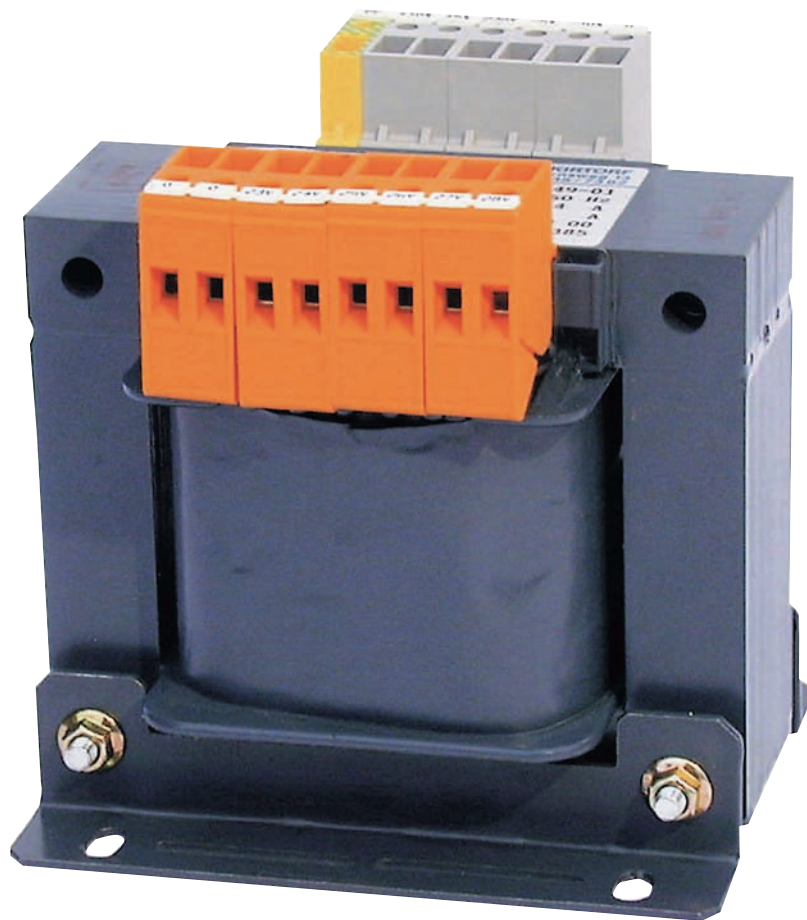


Operating theatre lights transformers ESL0107

Single-phase isolating transformers for the supply of operating theatre lights



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Device features

- The transformers comply with the requirements of: DIN EN 61558-1 (VDE 0570-1): 1998-07, IEC 61558-1: 1997, DIN EN 61558-2-6 (VDE 0570-2-6): 1998-07, IEC 61558-2-6: 1997
- Screen winding lead out for external connection
- Insulated mounting angles
- Degree of protection IP00 (construction type: open)
- Reinforced insulation
- Classification of insulation: t_a 40 / E
- Connections: screw terminals
- Vector group: liO

Application and description

The transformers of the ESL0107 series have reinforced insulation and comply with the requirements of DIN EN 61558-2-6 (VDE 0570-2-6): 1998-07, IEC 61558-2-6: 1997. The transformers are fitted with tapping points for fine-step voltage adaptation on the primary and secondary side and thus meet the requirements for power supplies of operating theatre lights in Group 2 rooms. 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 mounting angles are isolated from the transformer core in order to ensure isolated installation in accordance with the requirements of the respective standards. Protection against corrosion is guaranteed by a complete resin impregnation. The transformers are designed for use in dry locations.

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. The maximum permissible temperature in accordance with insulation class E is 120 °C.

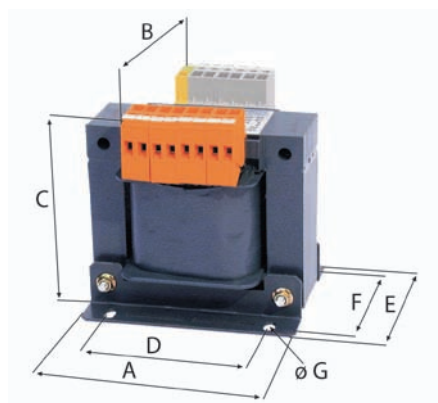
Enclosure

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

Standards

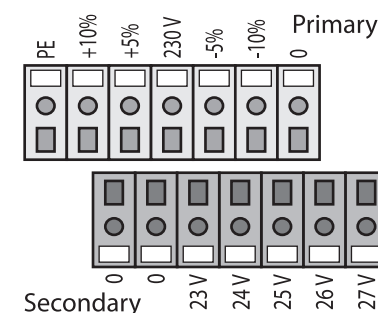
The ESL0107 series complies with the requirements of the following standards and regulations for the erection of electrical equipment DIN EN 61558-1 (VDE 0570-1): 1998-07, IEC 61558-1: 1997 and DIN EN 61558-2-6 (VDE 0570-2-6): 1998-07, IEC 61558-2-6: 1997.

Dimension diagram



Dimensions

Type	A	B	C	D	E	F	G	Cu weight	Weight
ESL0107 / 120	96 mm	96 mm	105 mm	84 mm	82 mm	65 mm	5.5 mm	0.5 kg	2.3 kg
ESL0107 / 160	96 mm	106 mm	105 mm	84 mm	92 mm	75 mm	5.5 mm	0.8 kg	2.8 kg
ESL0107 / 280	120 mm	102 mm	125 mm	90 mm	92 mm	74 mm	5.5 mm	1 kg	4 kg
ESL0107 / 400	120 mm	134 mm	125 mm	90 mm	128 mm	110 mm	5.5 mm	1.6 kg	6.7 kg
ESL0107 / 630	150 mm	135 mm	150 mm	122 mm	130 mm	108 mm	6.5 mm	3 kg	10.2 kg
ESL0107 / 1000	174 mm	145 mm	175 mm	135 mm	150 mm	120 mm	6.5 mm	5.8 kg	16.5 kg



Connection details / Terminal diagram

Type	Input terminals flexible / rigid	Screen winding flexible / rigid	Output terminals flexible / rigid
ESL0107 / 120	4 / 6 mm ²	4 / 6 mm ²	4 / 6 mm ²
ESL0107 / 160	4 / 6 mm ²	4 / 6 mm ²	4 / 6 mm ²
ESL0107 / 280	4 / 6 mm ²	4 / 6 mm ²	4 / 6 mm ²
ESL0107 / 400	4 / 6 mm ²	4 / 6 mm ²	4 / 6 mm ²
ESL0107 / 630	10 / 16 mm ²	4 / 6 mm ²	10 / 16 mm ²
ESL0107 / 1000	10 / 16 mm ²	4 / 6 mm ²	10 / 16 mm ²

Technical data operating theatre lights-transformers ESL0107

Type	ESL0107 / 120	ESL0107 / 160	ESL0107 / 280
Insulation classification	t _a 40 / E	t _a 40 / E	t _a 40 / E
Degree of protection / protection class	IP 00 / I	IP 00 / I	IP 00 / I
Power / voltages / currents			
Rated power	120 VA	160 VA	280 VA
Rated frequency	50...60 Hz	50...60 Hz	50...60 Hz
Rated input voltage	230 V	230 V	230 V
Rated input current	0.6 A	0.8 A	1.4 A
Rated output voltage	23...28 V	23...28 V	23...28 V
Rated output current	4.3 A	5.7 A	10 A
Inrush current I _e	< 15 x I _n	< 15 x I _n	< 15 x I _n
Leakage current	≤ 5 μA	≤ 5 μA	≤ 5 μA
No-load input current i ₀	≤ 95 mA	≤ 120 mA	≤ 140 mA
No-load output voltage u ₀	≤ 31.7 V	≤ 30.7 V	≤ 30.6 V
Short-circuit voltage u _k	≤ 11 %	≤ 8.8 %	≤ 7.9 %

General data

Recommended fuse when used in accordance with DIN VDE 0100-710	6 A gL / gG	6 A gL / gG	6 A gL / gG
Induction	1.23 T	1.17 T	1.14 T
R _{primary}	15.3 Ω	8.9 Ω	4.7 Ω
R _{secondary}	0.32 Ω	0.2 Ω	0.095 Ω
FE loss (iron loss)	5.5 W	6.3 W	9 W
Cu loss (copper loss)	15.8 W	16 W	25 W
Efficiency	85 %	88 %	89 %
Ambient temperature	40 °C	40 °C	40 °C
No-load temperature rise	≤ 17 °C	≤ 20 °C	≤ 18 °C
Nominal-load temperature rise	≤ 66 °C	≤ 64 °C	≤ 71 °C
Noise level (no load and nominal load)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)

Type	ESL0107 / 400	ESL0107 / 630	ESL0107 / 1000
Insulation classification	t _a 40 / E	t _a 40 / E	t _a 40 / E
Degree of protection / protection class	IP 00 / I	IP 00 / I	IP 00 / I

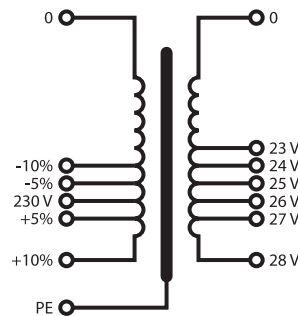
Power / voltages / currents

Rated power	400 VA	630 VA	1000 VA
Rated frequency	50...60 Hz	50...60 Hz	50...60 Hz
Rated input voltage	230 V	230 V	230 V
Rated input current	1.9 A	3 A	4.6 A
Rated output voltage	23...28 V	23...28 V	23...28 V
Rated output current	14.3 A	22.5 A	35.7 A
Inrush current I _e	< 15 x I _n	< 15 x I _n	< 15 x I _n
Leakage current	≤ 5 μA	≤ 5 μA	≤ 5 μA
No-load input current i ₀	≤ 237 mA	≤ 270 mA	≤ 320 mA
No-load output voltage u ₀	≤ 29.7 V	≤ 30 V	≤ 30 V
Short-circuit voltage u _k	≤ 5.3 %	≤ 5 %	≤ 4.3 %

General data

Recommended fuse when used in accordance with DIN VDE 0100-710	10 A gL / gG	16 A gL / gG	16 A gL / gG
Induction	1.14 T	1.06 T	1 T
R _{primary}	2 Ω	1.2 Ω	0.6 Ω
R _{secondary}	0.05 Ω	0.028 Ω	0.016 Ω
FE loss (iron loss)	15 W	18 W	26 W
Cu loss (copper loss)	23 W	33 W	44 W
Efficiency	91 %	92 %	94 %
Ambient temperature	40 °C	40 °C	40 °C
No-load temperature rise	≤ 26 °C	≤ 23 °C	≤ 26 °C
Nominal-load temperature rise	≤ 62 °C	≤ 64 °C	≤ 65 °C
Noise level (no load and nominal load)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)

Wiring diagram



Ordering information

Type	Art. No.
ESL0107 / 120	B 924 632
ESL0107 / 160	B 924 633
ESL0107 / 280	B 924 634
ESL0107 / 400	B 924 637
ESL0107 / 630	B 924 638
ESL0107 / 1000	B 924 639

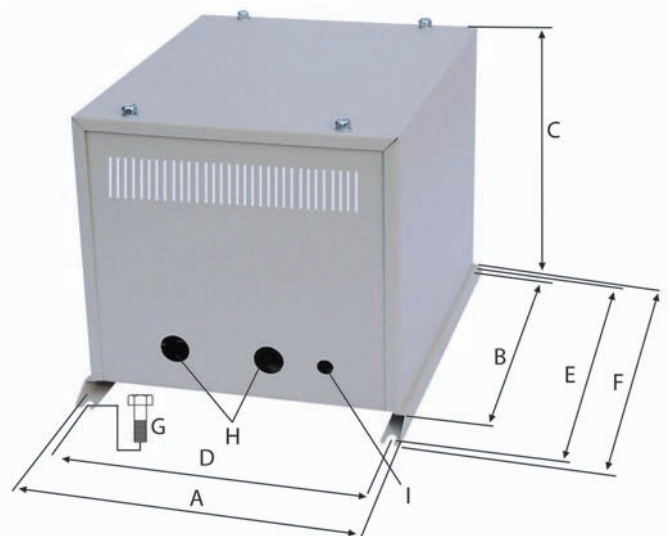
Isolating transformer enclosure

ESL0107-0

Sheet-steel enclosure for wall mounting for operating theatre lights transformers of the type ESL0107 / 120 to ESL0107 / 1000.

Enclosure

- Sheet steel, varnished in RAL 7032
- Degree of protection IP23
- Bore holes for cable entry
- Transformers of the sizes 120 bis 1000 VA are already provided with fixing holes and can easily be retrofitted to other systems at any time.



Dimensions of the enclosure in mm

	A	B	C	D	E	F	G	H	I	Weight	Art. No.
ESL0107-0	240	280	220	220	300	320	M6	ø 29	ø 21	3.5 kg	B 924 204



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Power in electrical safety

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