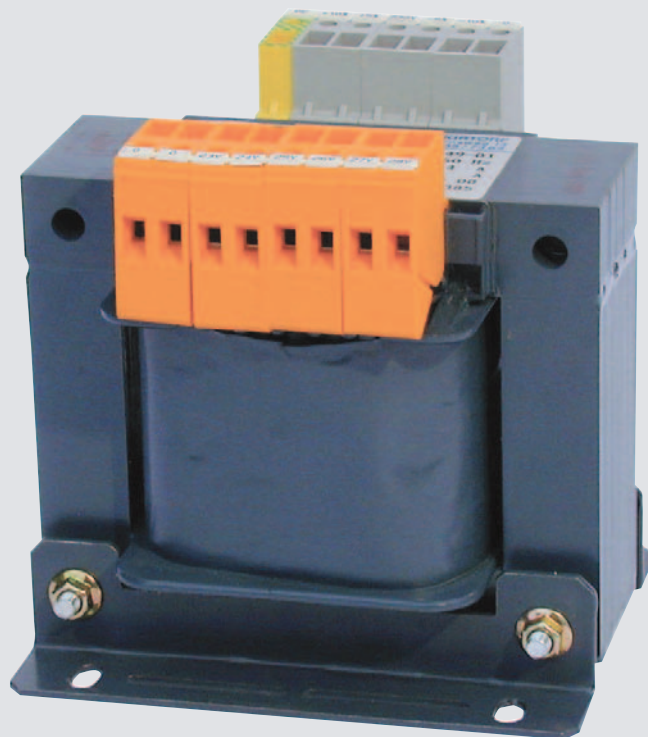


ESL0107 transformers for operating theatre lights

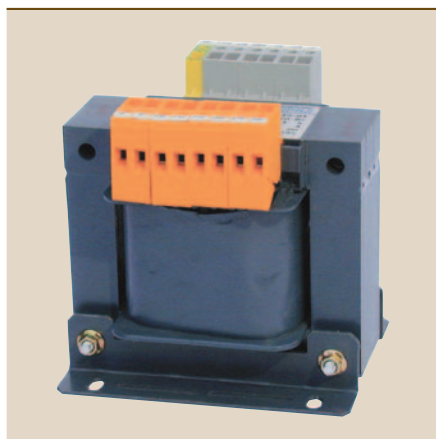
Single-phase isolating transformers for the supply
of operating theatre lights



ESL0107

transformers for operating theatre lights

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



ESL0107
(operating theatre luminaires transformers)

Device features

- Screen winding lead out for external connection
- Insulated mounting angles
- Degree of protection IP 00 (construction type: open)
- Reinforced insulation
- Classification of insulation ta 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 IEC 61558-2 -6 / DIN EN 61558-2-6 (VDE 0570-1). 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 luminaires 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 fixing 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.

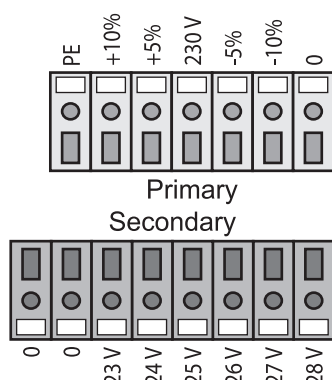
Standards

ESL0710 isolating transformers comply with the device standards and the regulations for installation: DIN EN 61558-1 (VDE 0570-1), IEC 61558-1 and DIN EN 61558-2-6 (VDE 0570-2-6), IEC 61558-2-6.

Ordering information

Dimensions (mm)							Cu weight (kg)	Weight (kg)	Type	Art. No.
A	B	C	D	E	F	G				
96	96	105	84	82	65	5.5	0.5	2.3	ESL0107/120	B 924 632
96	106	105	84	92	75	5.5	0.8	2.8	ESL0107/160	B 924 633
120	102	125	90	92	74	5.5	1	4	ESL0107/280	B 924 634
120	134	125	90	128	110	5.5	1.6	6.7	ESL0107/400	B 924 637
150	135	150	122	130	108	6.5	3	10.2	ESL0107/630	B 924 638
174	145	175	135	150	120	6.5	5.8	16.5	ESL0107/1000	B 924 639

Terminal diagram



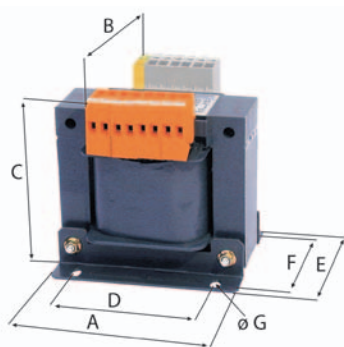
Connection properties

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

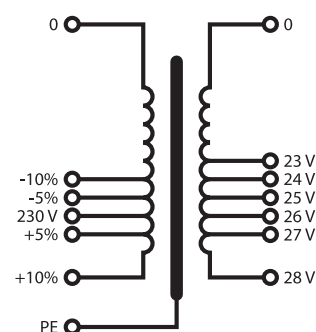
Technical data

Type	ESL0107/120	ESL0107/160	ESL0107/280	ESL0107/400	ESL0107/630	ESL0107/1000
Insulation classification	t_a 40/E	t_a 40/E	t_a 40/E	t_a 40/E	t_a 40/E	t_a 40/E
Degree of protection/protection class	IP00/I	IP00/I	IP00/I	IP00/I	IP00/I	IP00/I
Power/voltages/currents						
Rated power	120 VA	160 VA	280 VA	400 VA	630 VA	1000 VA
Rated frequency	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz
Rated input voltage	230 V	230 V	230 V	230 V	230 V	230 V
Rated input current	0.6 A	0.8 A	1.4 A	1.9 A	3 A	4.6 A
Rated output voltage	23...28 V	23...28 V	23...28 V	23...28 V	23...28 V	23...28 V
Rated output current	4.3 A	5.7 A	10 A	14.3 A	22.5 A	35.7 A
Inrush current I_E	$< 15 \times I_n$	$< 15 \times I_n$	$< 15 \times I_n$	$< 15 \times I_n$	$< 15 \times I_n$	$< 15 \times I_n$
Leakage current	$\leq 5 \mu A$	$\leq 5 \mu A$	$\leq 5 \mu A$	$\leq 5 \mu A$	$\leq 5 \mu A$	$\leq 5 \mu A$
No-load input current i_0	≤ 95 mA	≤ 120 mA	≤ 140 mA	≤ 237 mA	≤ 270 mA	≤ 320 mA
No-load output voltage u_0	≤ 31.7 V	≤ 30.7 V	≤ 30.6 V	≤ 29.7 V	≤ 30 V	≤ 30 V
Short-circuit voltage u_k	≤ 11 %	≤ 8.8 %	≤ 7.9 %	≤ 5.3 %	≤ 5 %	≤ 4.3 %
Environmental conditions						
Ambient temperature	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
No-load temperature rise	≤ 17 °C	≤ 20 °C	≤ 18 °C	≤ 26 °C	≤ 23 °C	≤ 26 °C
No-load temperature rise	≤ 66 °C	≤ 64 °C	≤ 71 °C	≤ 62 °C	≤ 64 °C	≤ 65 °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)
Other						
Recommended fuse when used in accordance with DIN VDE 0100-710	6 A gL/gG	6 A gL/gG	6 A gL/gG	10 A gL/gG	16 A gL/gG	16 A gL/gG
Induction	1.23 T	1.17 T	1.14 T	1.14 T	1.06 T	1 T
$R_{primary}$	15.3 Ω	8.9 Ω	4.7 Ω	2 Ω	1.2 Ω	0.6 Ω
$R_{secondary}$	0.32 Ω	0.2 Ω	0.095 Ω	0.05 Ω	0.028 Ω	0.016 Ω
FE loss (iron loss)	5.5 W	6.3 W	9 W	15 W	18 W	26 W
Cu loss (copper loss)	15.8 W	16 W	25 W	23 W	33 W	44 W
Efficiency	85 %	88 %	89 %	91 %	92 %	94 %

Dimension diagram



Wiring diagram



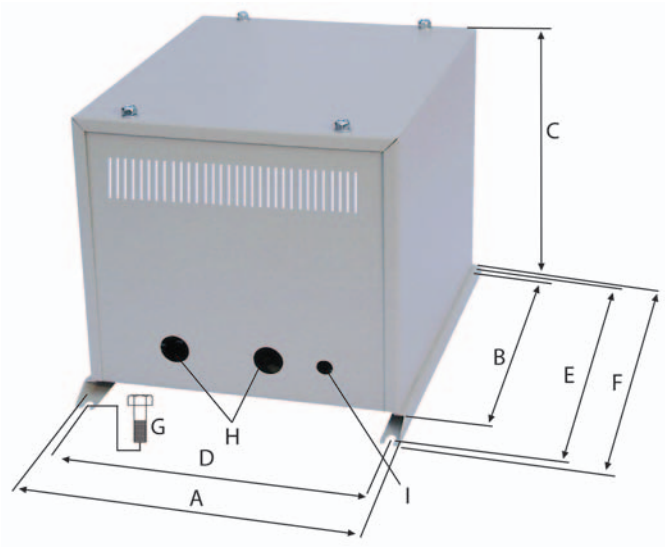
Isolating transformer enclosure

ESL0107-0

Sheet-steel enclosure for wall mounting for operating theatre
luminaires transformers ESL0107/120 to ESL0107/1000.

Enclosure

- Sheet steel, varnished in RAL 7032
- Degree of protection IP 23
- 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.



Ordering information enclosure

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



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