

LHR, LGR 4/5000 Series

10...30 Watt AC-DC Converters



Input voltage ranges 85...265 V AC
88...168 V DC
1 or 2 outputs up to 48 V DC
4300 V DC I/O electric strength test voltage



- Class II equipment (double insulation)
- Short circuit protection
- Compact, low cost solution

Selection chart

Output 1		Output 2		Input voltage U_i	Rated power $T_A = 50^\circ\text{C}$ $P_{o\text{ tot}}$ [W]	Type
$U_{o\text{ nom}}$ [V DC]	$I_{o\text{ nom}}$ [A]	$U_{o\text{ nom}}$ [V DC]	$I_{o\text{ nom}}$ [A]			
3.3	3	-	-	85...264 V AC (47...63 Hz) 88...168 V DC	10	LHR 4101-2
3.3	7	-	-		23	LGR 4101-2
5	2	-	-		10	LHR 4001-2
5	5	-	-		25	LGR 4001-2
12	1.2	-	-		14.4	LHR 4301-2
12	2.5	-	-		30	LGR 4301-2
15	1	-	-		15	LHR 4501-2
15	2	-	-		30	LGR 4501-2
24	0.6	-	-		14.4	LHR 4601-2
24	1.25	-	-		30	LGR 4601-2
3.3	1.5	+5	1		10	LHR 5101-2
3.3	2.5	+5	2.5		20.8	LGR 5101-2
+5	1.25	-5	1.25		12.5	LHR 5001-2
+5	2.5	-5	2.5		25	LGR 5001-2
+5	1	+12	0.5		11	LHR 5020-2
+5	2.5	+12	1.25		27.5	LGR 5020-2
+12	0.6	-12	0.6		14.4	LHR 5320-2
+12	1.25	-12	1.25		30	LGR 5320-2
+15	0.5	-15	0.5		15	LHR 5540-2
+15	1.0	-15	1.0		30	LGR 5540-2
+24	0.3	-24	0.3		15	LHR 5660-2
+24	0.625	-24	0.625		30	LGR 5660-2

Board Mountable

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Input

Input voltage	continuous range	85...264 V AC / 88...168 V DC
Input frequency		47...63 Hz

Output

Efficiency	230 V AC, $I_{o\ nom}$	up to 86%
Output voltage switching noise	$U_{i\ nom}$, $I_{o\ nom}$, 20 MHz bandwidth, peak-peak	<1%
Line and load regulation U_{o1}	$U_{i\ min}...U_{i\ max}$, (10...100%) • $I_{o\ nom}$	±1%
Line and load regulation U_{o2}	$U_{i\ min}...U_{i\ max}$, (10...100%) • $I_{o\ nom}$	±2%
Minimum load	not required on single output types recommended 0.1 $I_{o\ nom}$ on double output types	
Hold-up time	110/230 V AC, $I_{o\ nom}$	>10 ms

Protection

Output overload	hiccup mode on LHR types / rectangular on LGR types
Short circuit	
No load	

Control

Trim /R	±80...110% $U_{o\ nom}$
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Safety and EMC

Safety marks	UL, ULc, CE	
Electric strength test voltage	I/O	3000 V AC
Electrostatic discharge	IEC/EN 61000-4-2, level 4 (15 kV)	criterion A
Electromagnetic field	IEC/EN 61000-4-3, level 3 (10 V/m)	criterion A
Electr. fast transients/burst	IEC/EN 61000-4-4, level 3 (i, ±2 kV)	criterion A
Surge	IEC/EN 61000-4-5, level 3 (2 kV)	criterion A
Electromagnetic emissions	CISPR 22/EN 55022, conducted	class B
900 MHz Test	ENV50204, 3V/m	criterion A

Environmental

Ambient temperature	$U_{i\ nom}$, $I_{o\ nom}$, convection cooled	−10...50°C
Storage temperature	non operational	−40...100°C
Relative humidity	non condensing	5...95%
Shock	peak acceleration	20 g _n
Random vibration		2 g _{n rms}

Options

Trim pin not fitted	(single output units only)
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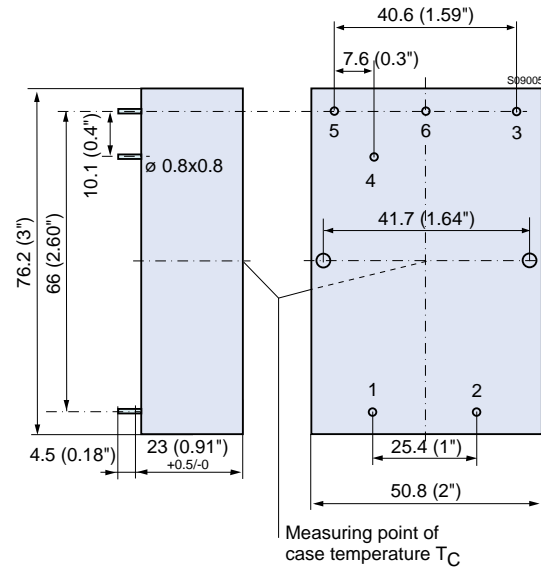
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Mechanical data

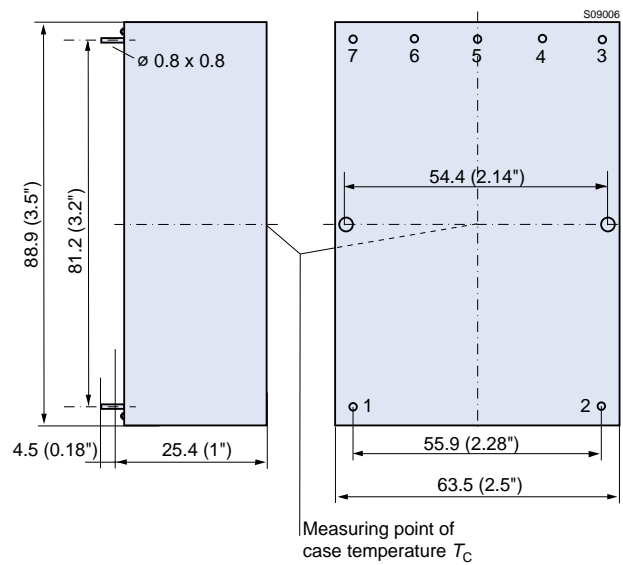
Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



LHR



LGR



Pin allocation LHR

Pin	Electrical determination	LHR 4/5000		Dual assym.
		Single	Dual	
1	Input voltage	L	L	L
2	Input voltage	N	N	N
3	Output positive	Vo+	Vo+	Vo1+
4	Control input Trim	.../Trim	.../Trim ¹	.../Trim ¹
5	Output negative	-	Vo -	-
	Output return potential	Vo-	-	Go
6	Output return potential or positive	n.c.	Go	Vo2+

¹ Pin not fitted with option K.

Pin allocation LGR

Pin	Electrical determination	LGR 4/5000		Dual assym.
		Single	Dual	
1	Input voltage	L	L	L
2	Input voltage	N	N	N
3	Output positive	Vo+	Vo+	Vo1+
4	Control input Trim	-	.../R ¹	.../R ¹
5	Output return potential	Vo -	Go	Go
6	not used	-	-	-
7	R input	.../R ¹	-	-
	Output negative or positive	-	Vo-	Vo2+

¹ Pin not fitted with option K.