



Input Voltage up to 265 V AC
1 or 2 outputs up to 30 V DC
3000 V AC I/O Electric Strength Test Voltage



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

Model Selection

Output 1		Output 2		Input Voltage U_i	Rated Power $T_A = 50\text{ °C}$ $P_{o,tot}$ [W]	Type
$U_{o,nom}$ [V DC]	$I_{o,nom}$ [A]	$U_{o,nom}$ [V DC]	$I_{o,nom}$ [A]			
3.3	3	-	-	85 - 265 VAC 47 - 63 Hz	10	LHR 1101-2
3.3	7	-	-		23	LGR 1101-2
5	2	-	-		10	LHR 1001-2
5	5	-	-		25	LGR 1001-2
12	0.84	-	-		10	LHR 1301-2
12	2.1	-	-		25	LGR 1301-2
15	0.67	-	-		10	LHR 1501-2
15	1.7	-	-		25	LGR 1501-2
24	0.42	-	-		10	LHR 1601-2
24	1	-	-		24	LGR 1601-2
+5	2.5	+12	1		24	LGR 2020-2
+12	0.42	-12	-0.42		10	LHR 2320-2
+12	1	-12	-1		24	LGR 2320-2
+15	0.335	-15	-0.335		10	LHR 2540-2
+15	0.8	-15	-0.8		24	LGR 2540-2

Input

Input voltage	continuous range	85 - 265 V AC
Input frequency		47 - 63 Hz
Inrush current limitation	by thermistor, $U_i = 230$ V AC	< 40 A

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 to peak	< 1 %
Line regulation	$U_{i\ min} - U_{i\ max}$, $I_{o\ nom}$	± 1 %
Load regulation	$U_{i\ nom}$, 0 - $I_{o\ nom}$	± 2 %
Minimum load	single output models	0 %
	dual output models recommended	20 %
Hold-up time	230 V AC, $I_{o\ nom}$	> 10 ms

Protection

Output overload	Hic-cup characteristic	
No load and short-circuit		protected

Control

Trim for U_o	single output models only	± 10 %
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Safety and EMC

Safety marks	UL, CuL, LGA, 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 transient/burst	IEC/EN 61000-4-4, level 3 (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

Environmental

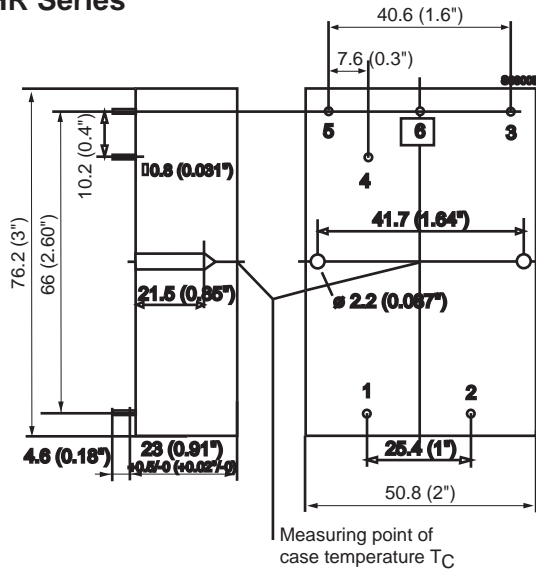
Ambient temperature	$U_{i\ nom}$, $I_{o\ nom}$, convection cooled	-10 to 50°C
Storage temperature	non operational	-40 to 100°C
Relative humidity	non condensing	5 - 95%
Shock	peak acceleration	20 g_n
Random vibration		2 $g_{n\ rms}$

Mechanical data

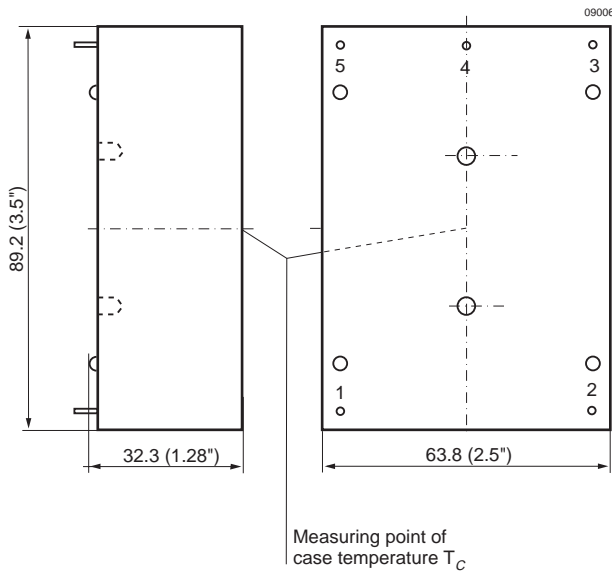
Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



LHR Series



LGR Series



Pin allocation

Pin no.	Electrical determination	LHR		Single	LGR	
		Single	Dual		Dual +/-	Dual +/+
1	Input voltage	L	L	L	L	L
2	Input voltage	N	N	N	N	N
3	Output voltage (positive)	Vo+	Vo+	Vo+	Vo+	Vo1+
4	Output voltage (negative)	-	-	Vo-	-	-
	Output voltage (common return)	-	-	-	Com	Com
	Control input Trim	Trim	-	-	-	-
5	Output voltage (negative or positive)	-	Vo-	-	Vo-	Vo2+
	Output voltage (negative)	Vo-	-	-	-	-
	Control input	-	-	Trim	-	-
6	Output voltage (common return)	n.c.	Com	-	-	-

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