110 WA ΓTS

SINGLE/MULTI OUTPUT AC-DC

FEATURES:

- Compact 3" x 5" x 1.3" Size
- 2 Year Warranty
- Universal 85-264V Input
- One to Four Outputs
- High Efficiency
- 0-70°C Operating Temperature
- IEC 60601-1 3rd ed. Medical Cert.
 IEC 62368-1 2nd ed. ITE Certification
 IEC 60601-1-2 4th ed. EMC
- Class B Emissions per EN55011/32 RoHS Compliant
- Optional Chassis/Cover



	<u>C</u>	HASSIS/COV						
Underwriters Laboratories CRUUS File E137708/E140259				CIFICATIONS UL 62368-1:2014, 2 nd Edition CAN/CSA-C22.2 No. 62368-1-14, 2 nd Edition AAMI/ANSI ES60601-1:2005/(R) 2012(R)2021 CAN/CSA-C22.2 No. 60601-1:2014:2022				
		3 Reports/Certificates (including all IEC 62368-1:2014, 2nd Edition ational and Group Deviations) IEC 60601-1:2005/A1:2012						
	TU	V SUD America		EN 62368-1:2014, EN 60601-1:2006/				
CE	CE Low Voltage Directive RoHS Directive (Recast)			(2014/35/EU of February 2014) (2015/863/EU of March 2015)				
UK	Electrical Equipment (Safety) Regulations 2016 SI No. 1101							
				zardous Substances				
CA		12 SI No. 3032 + 2						
				-				
			MODEL	LISTING				
MODEL				2 ₍₂₁₎ OUTPUT 3	B(20) OUTPUT 4(20)			
REL-110-40)01	+3.3V/10A(22)	+5V/6A	+12V/2A	-12V/2A			
REL-110-40		+5V/10A(22)	+3.3V/6A	+12V/2A	-12V/2A			
REL-110-40	003	+5V/10A(22)	+3.3V/6A	+15V/2A	-15V/2A			
REL-110-40	004	+5V/10A(22)	-5V/6A	+12V/2A	-12V/2A			
REL-110-40)05	+5V/10A(22)	-5V/6A	+15V/2A	-15V/2A			
REL-110-40		+5V/10A(22)	+24V/2A	+12V/2A	-12V/2A			
REL-110-40		+5V/10A(22)	+24V/2A	+15V/2A	-15V/2A			
REL-110-40		+5V/10A(22)	+24V/2A	+7V/2.5A	-7V/2.5A			
REL-110-30		+5V/10A(22)	+12V/3A		-12V/3A			
REL-110-30		+5V/10A(22)	+15V/2A		-15V/2A			
REL-110-30		+8V/6A	-8V/1A	401//04	+30V/1A			
REL-110-30		+9V/3A	-24V/3A	+13V/2A				
REL-110-20 REL-110-20		+3.3V/10A ₍₂₂₎	+5V/6A +12V/5A					
REL-110-20		+5V/10A ₍₂₂₎ +5V/10A ₍₂₂₎	+12V/5A +24V/3A					
REL-110-20		+12V/5A	-12V/4A					
REL-110-20		+15V/4A	-15V/3A					
REL-110-20		+18V/4A	-18V/3A					
REL-110-10		2.5V/22A(23)						
REL-110-10		3.3V/22A ₍₂₃₎						
REL-110-10		5V/22A(23)						
REL-110-10	004	12V/9.2A						
REL-110-10		15V/7.3A						
REL-110-10		24V/4.6A						
REL-110-10		28V/3.9A						
REL-110-10	08	48V/2.3A						
				FORMATION				
Consult factory for alternate output configurations.								
Consult factory for positive negative or floating outputs								

Consult factory for positive, negative or floating outputs. Please specify the following optional features when ordering: CH - Chassis

I/O – Isolated Outputs TS – Terminal Strip

_-110 **OUTPUT SPECIFICATIONS** Total Output Power at 50°C(1) 80W Convection Cooled(16)(18) (See Derating Chart) 300LFM Forced-Air Cooled(15)(17)(19) 110W Output Voltage Centering Output 1: (All outputs $\pm 0.5\%$ Output 2: ± 5.0% at 50% load) Output 3: $\pm 5.0\%$ Output 4: ± 5.0% 95-105% Output Voltage Adjust Range Output 1:

Output 2: 5.0% (4001-5 Model) 8.0% (2001 Model) 6.0% Output 3: 5.0% Source Regulation Outputs 1 - 4: 0.5% Cross Regulation Outputs 1 - 4: 1.0% Tum on Overshoot None Transient Response Outputs 1 - 4: Voltage Deviation 5.0% Recovery Time 50% to 100% Output 0 Vervoltage Protection 100/6% rated Post, cycle on/off, auto recovery Hold Up Time 100% to 100% Output 0 Time 100-160% rated Post, cycle on/off, auto recovery Hold Up Time 100% to 100% Source Voltage 85 – 264 Volts AC Frequency Range 4 Protection Class 1 Source Voltage 85 – 264 Volts AC Frequency Range 47 – 63 Hz Peak Insuh Current 40A Efficiency 62% Typ., Full Power, 230V, varies by model Power Factor Power Factor 0.95 (Full Power, 230V, varies Colocitat Anbient Storage Temp. Range -40°C to - 48°C Emperature Range 0.02% MSL - Operating - Medicat 60601-1 12,192m ASL - Operating - Medicat 6061-1 <th></th> <th></th>					
(4001-5 Models) 8.0% (2001 Model) 6.0% Output 4: 5.0% Source Regulation Outputs 1 - 4: 0.5% Output 1: 1.0% 1.0% Dum on Overshoot None 1.0% Transient Response Outputs 1 - 4: 1.0% Unu on Overshoot None 1.0% Transient Response Outputs 1 - 4: 1.0% Uad Change 50% to 100% 0.00µU Output Overshoot Output 1: 110% to 150% Output Overoltage Protection Output 1: 110% to 150% Output Overoltage Protection Output 1: 10% to 150% Output Overoltage Protection 110-160% rated Pout, cycle on/off, auto recovery Hold Up Time 4 Seconds, 120V Input Start Up Time 4 Seconds, 120V Input Protection Class 1 Source Voltage 85 – 264 Volts AC Frequency Range 47 – 63 Hz Peak Inush Current 40A Emperature Rang Dearsting: See Power Rating Chart Ambient Operating	Load Regulation	Output 1: 0.5% (10-100% load change)			
(2001 Mode) 6.0% Output 3: 5.0% Source Regulation Outputs 1 - 4: 0.5% Cross Regulation Outputs 1 - 4: 1.0% Turn on Overshoot None Transient Response Outputs 1 - 4: Voltage Deviation 5.0% Source Regulation 5.0% Dutput Noise Outputs 1 - 4: 1.0% Transient Response Voltage Deviation 5.0% Recovery Time 500(), S Load Change 50% to 100% Output 0: Output 0: Output Overvoltage Protection Output 1: 110% to 150% Output 0: Start Up Time 4 Seconds, 120V Input Source Voltage 55 - 264 Volts AC Frequency Range 47 - 63 Hz Protection Class I Source Voltage 65 - 264 Volts AC Frequency Range Frequency Range Frequency Range 7 - 63 Hz Peak Innush Current 40A Elficiency 92% (Full Power, 230V) Frequency Range Protection 0.93 (Full Power, 230V, varies by model Power Factor 0.93 (Full Power, 230V, varies by model		Output 2: 5.0%			
Output 3: 5.0% Output 4: 5.0% Source Regulation Outputs 1 – 4: 0.5% Cross Regulation Outputs 1 – 4: 1.0% Tum on Overshoot None None Tum on Overshoot None Solve Tum on Overshoot None Solve Transient Response Outputs 1 – 4 1.0% Voltage Deviation 5.0% Recovery Time Solups Load Change 50% to 100% Output Overvoltage Protection 110-160% rated Pout, cycle on/6f, auto recovery Hold Up Time 4 Seconds, 120V Input Start Up Time 4 Seconds, 120V Input Protection Class 1 Source Voltage 85 – 264 Volts AC Frequency Range 47 – 63 Hz Peak Inush Current 40A Etail (Power, 230V, varies by model Power Factor 0.095 (Full Power, 230V, varies by model Power Factor 0.02%/0°C Temperature Range Derating: See Power Rating Chart Ambient Operating O°C to + 70°C <		(4001-5 Models) 8.0%			
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Protection Class I Source Voltage 85 – 264 Volts AC Frequency Range 47 – 63 Hz Peak Inush Current 40A Efficiency 82% Typ., Full Power, 230V, varies by model Power Factor 0.95 (Full Power, 230V) Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range - 40°C to + 85°C Temperature Coefficient Outputs 1 – 4: 0.02%/°C 3,000m ASL – Operating – Medical 60601-1 5,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Deparational Insulation(Consult factory for 1MOPP) Dielectric Strength(s.9) Reinforced Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground 2500V ASC Operating Leakage <300µA NC, <1000µA SFC	INP	UT SPECIFICATIONS			
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Frequency Range 47 - 63 Hz Peak Inrush Current 40A Efficiency 82% Typ., Full Power, 230V, varies by model Power Factor 0.95 (Full Power, 230V) ENVIRONMENTAL SPECIFICATIONS Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range -40°C to + 85°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C Ittude 5,000m ASL - Operating - Medical 60601-1 12,192m ASL - Non-Operating Medical 60601-1 12,192m ASL - Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Ground 1MOPP (Means of Patient Protection) Primary to Ground 1MOPP (Means of Patient Protection) Primary to Ground Norced Insulation 5656 VDC, Primary to Secondary Basic Insulation Operational Insulation 707 VDC, Secondary to Ground Operating History Leakage Current <anode a="" adble="" compensation="" losses<="" of="" output=""> Earth Leakage <300µA NC, <100µA SFC</anode>		85 – 264 Volts AC			
Peak Inrush Current 40A Efficiency 82% Typ., Full Power, 230V, varies by model Power Factor 0.95 (Full Power, 230V) EINVIRONMEINTAL SPECIFICATIONS Ambient Operating 0°C to + 70°C Temperature Range -40°C to + 85°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C Altitude 5,000m ASL – Operating – Medical 60601-1 12,192m ASL – Non-Operating Resonance of Protection Primary to Secondary PMOPP (Means of Patient Protection) Primary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strengthis.9 Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation Operational Insulation 707 VDC, Secondary to Ground Cerce Dever Fail Signal(14) Logic low with input power failure 10 ms minimum prior to Output 1 dropping 1% Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs.					
Efficiency 82% Typ., Full Power, 230V, varies by model Power Factor 0.95 (Full Power, 230V) EINVIRONMIENTAL SPECIFICATIONS Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range -40°C to + 85°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C 3.000m ASL - Operating - Medical 60601-1 Altitude 5.000m ASL - Operating - ITE/AV - 62368-1 12,192m ASL - Non-Operating Iteration - 12,192m ASL - Non-Operating Means of Protection Primary to Secondary Primary to Ground 2MOPP (Means of Patient Protection) Primary to Ground Operating Insulation (Consult factory for 1MOPP) Dielectric Strengthite.9) Reinforced Insulation Reinforced Insulation 5656 VDC, Primary to Secondary Degrational Insulation 707 VDC, Secondary to Ground Leakage <300µA NC, <1000µA SFC					
Power Factor 0.95 (Full Power, 230V) ENVIRONMENTAL SPECIFICATIONS Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range -40°C to + 85°C Temperature Coefficient Outputs 1 – 4: 0.02%/°C 3,000m ASL – Operating – Medical 60601-1 Attitude 5,000m ASL – Operating – Medical 60601-1 Attitude 5,000m ASL – Operating – Medical 60601-1 12,192m ASL – Non-Operating Best Strange CENERAL SPECIFICATIONS Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(8, 9) Reinforced Insulation 5656 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Operational Insulation Operational Insulation 707 VDC, Secondary to Ground Secondary Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame'1.28 Lbs. Chassis and Cover					
ENVIRONMENTAL SPECIFICATIONS Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range -40°C to + 85°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C Attitude 5,000m ASL – Operating – Medical 60601-1 3,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength _(8,9) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Devertainal Insulation 707 VDC, Secondary to Ground Leakage Current <300µA NC, <1000µA SFC					
ENVIRONMENTAL SPECIFICATIONS Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range -40°C to + 85°C Temperature Coefficient Outputs 1 - 4: 0.02%/°C Altitude 5,000m ASL – Operating – Medical 60601-1 Altitude 5,000m ASL – Operating – ITE/AV - 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 2MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(6.9) 5656 VDC, Primary to Secondary Reinforced Insulation 5656 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current <300µA NC, <1000µA SFC	Power Factor	0.95 (Full Power, 230V)			
Ambient Operating 0°C to + 70°C Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range - 40°C to + 85°C Temperature Coefficient Outputs 1 – 4: 0.02%/°C 3,000m ASL – Operating – Medical 60601-1 Attitude Attitude 5,000m ASL – Operating – ITE/AV – 62368-1 12.192m ASL – Non-Operating CENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 2MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(e.9) Reinforced Insulation Reinforced Insulation 5656 VDC, Primary to Secondary Derational Insulation 707 VDC, Secondary to Ground Operational Insulation 707 VDC, Secondary to Ground Dever Fail Signal ₍₁₄₎ Logic low with input power failure 10 ms minimum prior to Output 1 dropping 1% minimum prior to Output 1 dropping 1% Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover Electrical Fast Transients/B	FNVIRON				
Temperature Range Derating: See Power Rating Chart Ambient Storage Temp. Range - 40°C to + 85°C Temperature Coefficient Outputs 1 – 4: 0.02%/°C Altitude 3,000m ASL – Operating – Medical 60601-1 A,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(8.9) S656 VDC, Primary to Secondary to Ground Reinforced Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current <300µA NC, <1000µA SFC					
Ambient Storage Temp. Range -40°C to + 85°C Temperature Coefficient Outputs 1 – 4: 0.02%/°C 3,000m ASL – Operating – Medical 60601-1 12,192m ASL – Non-Operating Altitude 5,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation (Consult factory for 1MOPP) Dielectric Strength(e.9) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Deparational Insulation (Consult factory for 1MOPP) Dielectric Strength(e.9) Reinforced Insulation 707 VDC, Secondary to Ground Deakage Current Earth Leakage <300µA NC, <1000µA SFC					
Temperature Coefficient Outputs 1 – 4: 0.02%/°C 3,000m ASL – Operating – Medical 60601-1 5,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(a, s) Reinforced Insulation Reinforced Insulation 2121 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC					
3,000m ASL – Operating – Medical 60601-1 Altitude 5,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strengthie.9) Reinforced Insulation Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current style Earth Leakage <300µA NC, <1000µA SFC	Ambient Storage Temp. Range	- 40°C to + 85°C			
Altitude 5,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(s, 9) Reinforced Insulation Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current system: system: system:	Temperature Coefficient	Outputs 1 – 4: 0.02%/°C			
Altitude 5,000m ASL – Operating – ITE/AV – 62368-1 12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(s, 9) Reinforced Insulation Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current system: system: system:	•				
12,192m ASL – Non-Operating GENERAL SPECIFICATIONS Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Secondary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(s.9) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 211 VDC, Primary to Ground Operational Insulation Operational Insulation 707 VDC, Secondary to Ground Eakage Leakage Current system Earth Leakage <300µA NC, <1000µA SFC	Altitude				
GENERAL SPECIFICATIONS Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground Operational Insulation (Consult factory for 1MOPP) Dielectric Strength(s. 9) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation Operational Insulation 707 VDC, Secondary to Ground Earth Leakage Earth Leakage <300µA NC, <1000µA SFC	/ littldC	12 102m ASL Non Operating			
Means of Protection Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation (Consult factory for 1MOPP) Dielectric Strength(8.9) Reinforced Insulation Resinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC Touch Current <100µA NC, <500µA SFC Power Fail Signal(14) Logic low with input power failure 10 ms minimum prior to Output 1 dropping 1% Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-3 80MHz-2.7GHz, 10V/m, 80% AM Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz 2 Surge Immunity EN 61000-4-8 30A/m, 60 Hz. 100/240V A/					
Primary to Secondary 2MOPP (Means of Patient Protection) Primary to Ground Operational Insulation (Consult factory for 1MOPP) Dielectric Strength(a. 9) Reinforced Insulation Basic Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC					
Primary to Ground 1MOPP (Means of Patient Protection) Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(8.9) Reinforced Insulation Basic Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC					
Secondary to Ground Operational Insulation(Consult factory for 1MOPP) Dielectric Strength(8, 9) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 211 VDC, Primary to Ground Operational Insulation Operational Insulation 707 VDC, Secondary to Ground Operational Insulation Leakage Current Earth Leakage <300µA NC, <1000µA SFC	Means of Protection	RAL SPECIFICATIONS			
Dielectric Strength(e, s) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC	Means of Protection	RAL SPECIFICATIONS			
Dielectric Strength(e, s) Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC	Means of Protection Primary to Secondary	2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection)			
Reinforced Insulation 5656 VDC, Primary to Secondary Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current 300µA NC, <1000µA SFC	Means of Protection Primary to Secondary Primary to Ground	2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection)			
Basic Insulation 2121 VDC, Primary to Ground Operational Insulation 707 VDC, Secondary to Ground Leakage Current Earth Leakage Earth Leakage <300µA NC, <1000µA SFC	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground	2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection)			
Operational Insulation 707 VDC, Secondary to Ground Leakage Current <300µA NC, <1000µA SFC	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9)	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP)			
Leakage Current <300µA NC, <1000µA SFC	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary			
Earth Leakage <300µA NC, <1000µA SFC	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(6, 9) Reinforced Insulation Basic Insulation	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground			
Touch Current <100µA NC, <500µA SFC Power Fail Signal ₍₁₄₎ Logic low with input power failure 10 ms minimum prior to Output 1 dropping 1% Remote Sense (singles only) ₍₁₀₎ 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 Radiated Electromagnetic Field EN 61000-4-3 Surge Immunity EN 61000-4-4 Electrical Fast Transients/Bursts EN 61000-4-5 Surge Immunity EN 61000-4-6 Conducted Immunity EN 61000-4-8 Voltage Dips EN 61000-4-1 Voltage Interruptions EN 61000-4-1 Radiated Emissions EN 61000-4-1 Voltage Interruptions EN 61000-4-1 Voltage Interruptions EN 61000-4-1 Work UT, 10/12 cycles, 0° 100/240V B// Radiated Emissions EN 55011/32 Class B Conducted Emissions	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8,9) Reinforced Insulation Basic Insulation Operational Insulation	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground			
Power Fail Signal (14) Logic low with input power failure 10 ms minimum prior to Output 1 dropping 1% Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 Radiated Electromagnetic Field EN 61000-4-3 BoMHz-2.7GHz, 10V/m, 80% AM // Surge Immunity EN 61000-4-4 ±2 KV, 5KHz/100KHz Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM Magnetic Field Immunity EN 61000-4-1 0% Ur, 0.5 cycles, 0° 100/240V A/ Voltage Dips EN 61000-4-11 0% Ur, 1 cycles, 0° 100/240V A/ Voltage Interruptions EN 61000-4-11 0% Ur, 300 cycles, 0° 100/240V B/ Voltage Interruptions EN 61000-4-11 0% Ur, 300 cycles, 0° 100/240V B/ Radiated Emissions EN 55011/32 Class B	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8,9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground			
minimum prior to Output 1 dropping 1% Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 ±8KV contact / ±15KV air discharge Radiated Electromagnetic Field EN 61000-4-3 80MH2-2.7GHz, 10V/m, 80% AM ////////////////////////////////////	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
minimum prior to Output 1 dropping 1% Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 ±8KV contact / ±15KV air discharge Radiated Electromagnetic Field EN 61000-4-3 80MH2-2.7GHz, 10V/m, 80% AM ////////////////////////////////////	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Remote Sense (singles only)(10) 250mV compensation of output cable losses Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 Radiated Electromagnetic Field EN 61000-4-3 Surge Immunity EN 61000-4-3 Conducted Immunity EN 61000-4-3 Voltage Dips EN 61000-4-3 Surge Interruptions EN 61000-4-1 O% UT, 1 cycles, 0° 100/240V A/ 0% UT, 10/12 cycles, 0° 100/240V A/ 0% UT, 25/30 cycles, 0° 100/240V B/ 70% UT, 300 cycles, 0° 100/240V B/ 70% UT, 200 cycles, 0° 100/240V B/	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Mean-Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25° C, GB Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMCSPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 Radiated Electromagnetic Field EN 61000-4-3 Surge Immunity EN 61000-4-3 Conducted Immunity EN 61000-4-3 Voltage Dips EN 61000-4-8 Voltage Interruptions EN 61000-4-8 Surge Interruptions EN 61000-4-8 OW UT, 1 cycles, 0° 100/240V A// 0% UT, 1 cycles, 0° Voltage Interruptions EN 61000-4-11 OW UT, 25/30 cycles, 0° 100/240V B// 100/240V B// 70% UT, 300 cycles, 0° Voltage Interruptions EN 61000-4-11 EN 61000-4-11 0% UT, 300 cycles, 0° Orducted Emissions EN 55011/32 Class B EN 55011/32	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Weight 0.80 Lbs. Open Frame/ 1.28 Lbs. Chassis and Cover EMC SPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 ±8KV contact / ±15KV air discharge Radiated Electromagnetic Field EN 61000-4-3 80MHz-2.7GHz, 10V/m, 80% AM Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz Surge Immunity EN 61000-4-5 ±2 KV line to earth / ±1 KV line to line Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM Magnetic Field Immunity EN 61000-4-8 30A/m, 60 Hz. Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0.315° 100/240V A/ 00% UT, 1 cycles, 0° Voltage Interruptions EN 61000-4-11 0% UT, 20/210 cycles, 0° 100/240V B// 100/240V B// 70% UT, 25/30 cycles, 0° 100/240V B// 100/240V B// 70% UT, 200 cycles, 0° 100/240V B// 100/240V B// 70% UT, 200 cycles, 0° 100/240V B// 70% UT, 200 cycles, 0° Voltage Interruptions EN 61000-4-11 0% UT, 300 cycles, 0° 100/240V B// 70% UT, 200 cycles, 0° Radiated Emissions EN 55011/32 Class B EN 55011/32	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8,9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
EMC SPECIFICATIONS (IEC 60601-1-2:2014, 4 TH ed./IEC 61000-6-2:2005) Electrostatic Discharge EN 61000-4-2 ±8KV contact / ±15KV air discharge Radiated Electromagnetic Field EN 61000-4-3 80MHz-2.7GHz, 10V/m, 80% AM Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz Surge Immunity EN 61000-4-5 ±2 KV line to earth / ±1 KV line to line Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM Magnetic Field Immunity EN 61000-4-8 30A/m, 60 Hz. Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0-315° 100/240V A/ 0% UT, 1 cycles, 0° 100/240V A/ 0% UT, 25/30 cycles, 0° 100/240V B// Voltage Interruptions EN 61000-4-11 0% UT, 202 cycles, 0° 100/240V B// Voltage Interruptions EN 61000-4-11 0% UT, 202 cycles, 0° 100/240V B// Radiated Emissions EN 55011/32 Class B EN 55011/32 Class B	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8.9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Electrostatic Discharge EN 61000-4-2 ±8KV contact / ±15KV air discharge A Radiated Electromagnetic Field EN 61000-4-3 80MHz-2.7GHz, 10V/m, 80% AM A Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz A Surge Immunity EN 61000-4-5 ±2 KV line to earth / ±1 KV line to line A Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM A Magnetic Field Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM A Voltage Dips EN 61000-4-8 30A/m, 60 Hz. A Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0-315° 100/240V A/ 0% UT, 1 cycles, 0° 100/240V A/ 0% UT, 10/12 cycles, 0° 100/240V B/ Voltage Interruptions EN 61000-4-11 0% UT, 25/30 cycles, 0° 100/240V B/ Voltage Interruptions EN 61000-4-11 0% UT, 200 cycles, 0° 100/240V B/ Radiated Emissions EN 55011/32 Class B E	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8.9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Radiated Electromagnetic Field EN 61000-4-3 80MHz-2.7GHz, 10V/m, 80% AM // Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz // Surge Immunity EN 61000-4-5 ±2 KV line to earth / ±1 KV line to line // Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM // Magnetic Field Immunity EN 61000-4-8 30A/m, 60 Hz. // Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0-315° 100/240V A/. 0% UT, 1 cycles, 0° 100/240V A/. 0% UT, 10/12 cycles, 0° 100/240V B/. 70% UT, 25/30 cycles, 0° 100/240V B/. 70% UT, 25/30 cycles, 0° 100/240V B/. Voltage Interruptions EN 61000-4-11 0% UT, 25/30 cycles, 0° 100/240V B/. Radiated Emissions EN 55011/32 Class B Conducted Emissions EN 55011/32	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures Weight	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <100µA SFC			
Radiated Electromagnetic Field EN 61000-4-3 80MHz-2.7GHz, 10V/m, 80% AM // Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz // Surge Immunity EN 61000-4-5 ±2 KV line to earth / ±1 KV line to line // Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM // Magnetic Field Immunity EN 61000-4-8 30A/m, 60 Hz. // Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0-315° 100/240V A// 0% UT, 1 cycles, 0° 100/240V A// 0% UT, 10/12 cycles, 0° 100/240V B// Voltage Interruptions EN 61000-4-11 0% UT, 25/30 cycles, 0° 100/240V B// Voltage Interruptions EN 61000-4-11 0% UT, 25/30 cycles, 0° 100/240V B// Conducted Emissions EN 55011/32 Class B EN 55011/32 Class B	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures Weight EMCSPECIFICATION	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <100µA SFC			
Electrical Fast Transients/Bursts EN 61000-4-4 ±2 KV, 5KHz/100KHz J Surge Immunity EN 61000-4-5 ±2 KV line to earth / ±1 KV line to line J Conducted Immunity EN 61000-4-6 0.15 to 80MHz, 10V, 80% AM J Magnetic Field Immunity EN 61000-4-8 30A/m, 60 Hz. J Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0-315° 100/240V A/. 0% UT, 1 cycles, 0° 100/240V A/. 0% UT, 10/12 cycles, 0° 100/240V B/. 70% UT, 25/30 cycles, 0° 100/240V B/. 70% UT, 25/30 cycles, 0° 100/240V B/. Voltage Interruptions EN 61000-4-11 0% UT, 25/30 cycles, 0° 100/240V B/. Radiated Emissions EN 55011/32 Class B Conducted Emissions EN 55011/32	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures Weight EMCSPECIFICATION	RAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
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Magnetic Field Immunity EN 61000-4-8 30A/m, 60 Hz. Voltage Dips EN 61000-4-11 0% UT, 0.5 cycles, 0-315° 100/240V A/, 0% UT, 1 cycles, 0° Voltage Interruptions EN 61000-4-11 0% UT, 1 cycles, 0° 100/240V A/, 100/240V B/, 70% UT, 25/30 cycles, 0° Voltage Interruptions EN 61000-4-11 0% UT, 300 cycles, 0° 100/240V B/, 100/240V B/, 70% UT, 300 cycles, 0° Voltage Interruptions EN 61000-4-11 0% UT, 300 cycles, 0° 100/240V B/, 100/240V B/, 200 cycles, 0° Conducted Emissions EN 55011/32 Class B E	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
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0% UT, 1 cycles, 0° 100/240V A/ 40% UT, 10/12 cycles, 0° 100/240V B/ 70% UT, 25/30 cycles, 0° 100/240V B/ Voltage Interruptions EN 61000-4-11 0% UT, 300 cycles, 0° 100/240V B/ Radiated Emissions EN 55011/32 Class B Class B	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8.9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight EMCSPECIFICATION Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
0% UT, 1 cycles, 0° 100/240V A/ 40% UT, 10/12 cycles, 0° 100/240V B/ 70% UT, 25/30 cycles, 0° 100/240V B/ Voltage Interruptions EN 61000-4-11 0% UT, 300 cycles, 0° 100/240V B/ Radiated Emissions EN 55011/32 Class B 100/240V B/ Conducted Emissions EN 55011/32 Class B 100/240V B/	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8,9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
40% U _T , 10/12 cycles, 0° 100/240V B// 70% U _T , 25/30 cycles, 0° 100/240V B// Voltage Interruptions EN 61000-4-11 0% U _T , 300 cycles, 0° 100/240V B// Radiated Emissions EN 55011/32 Class B 100/240V B// Conducted Emissions EN 55011/32 Class B 100/240V B//	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8,9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
70% UT, 25/30 cycles, 0° 100/240V B// Voltage Interruptions EN 61000-4-11 0% UT, 300 cycles, 0° 100/240V B// Radiated Emissions EN 55011/32 Class B Class B Conducted Emissions EN 55011/32 Class B Class B	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8,9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
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Conducted Emissions EN 55011/32 Class B	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity Voltage Dips	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground 707 VDC, Secondary to Ground 707 VDC, Secondary to Ground 300µA NC, <100µA SFC			
	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity Voltage Interruptions	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 0perational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Hormonia Current Emissiona EN 61000 2.2 Class A	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Fouch Current Power Fail Signal ₍₁₄₎ Remote Sense (singles only) ₍₁₀₎ Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrostatic Discharge Radiated Electromagnetic Field Electrostatic Discharge Radiated Electromagnetic Field Electrostatic Discharge Radiated Electromagnetic Field Electrostatic Discharge Nagnetic Field Immunity Voltage Interruptions Radiated Emissions	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Harmonic Current Emissions EIN 0 1000-3-2 Class A	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity Voltage Dips	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			
Voltage Fluctuations/Flicker EN 61000-3-3 Compliant	Means of Protection Primary to Secondary Primary to Ground Secondary to Ground Dielectric Strength(8, 9) Reinforced Insulation Basic Insulation Operational Insulation Leakage Current Earth Leakage Touch Current Power Fail Signal(14) Remote Sense (singles only)(10) Mean-Time Between Failures Weight Electrostatic Discharge Radiated Electromagnetic Field Electrostatic Discharge Radiated Electromagnetic Field Electrical Fast Transients/Bursts Surge Immunity Conducted Immunity Magnetic Field Immunity Voltage Dips	ERAL SPECIFICATIONS 2MOPP (Means of Patient Protection) 1MOPP (Means of Patient Protection) Operational Insulation(Consult factory for 1MOPP) 5656 VDC, Primary to Secondary 2121 VDC, Primary to Ground 707 VDC, Secondary to Ground <300µA NC, <1000µA SFC			

All specifications are maximum at 25° C, 110W unless otherwise stated, may vary by model and are subject to change without notice.



CO – Cover

REL-110 SERIES MECHANICAL SPECIFICATIONS



ALL DIMENSIONS IN INCHES (mm)

APPLICATIONS INFORMATION

- Each output can deliver its rated current but Total Output Power must not exceed 110W, as determined by the cooling method.
- Generally, adequate cooling is provided when semiconductor case temperatures do not exceed 70°C rise and transformer temperature does not exceed 60°C rise at any specified ambient temperature.
- Sufficient area must be provided around power supply to allow natural movement of air to develop in convection-cooled applications.
- This product is intended for use as a professionally-installed component within information technology, industrial, and medical equipment and is not intended for stand-alone operation.
- A minimum load of 10% is required on Output 1 to ensure proper regulation of remaining outputs.
- This product includes only one fuse in the input circuit. In consideration of Clause 8.11.5 of IEC 60601-1:2005, a second fuse may be required in neutral conductor of the end product.
- Peak-to-Peak Output Ripple and Noise is measured directly at the output terminals of the power supply, without the use of the probe ground lead or retractable tip (tip-and-barrel method), 20 MHz bandwidth.
- 8. This product was type-tested and safety-certified using the dielectric strength test voltages listed in Table 6 of IEC 60601-1:2005. In consideration of Clause 8.8.3, care must be taken to insure that the voltage applied to a reinforced insulation does not overstress different types and levels of insulation. Primary and secondary-to-ground capacitors may need to be disconnected prior to performing a dielectric strength test on the power supply or the end product. It is highly recommended that the DC test voltages listed in DVB.1, Annex DVB of UL 60601-11 st Edition are not exceeded during a production-line dielectric strength test of the assembled end product. Please consult factory for further information.
- This power supply has been safety-approved and final-tested using a DC dielectric strength test. Please consult factory before performing an AC dielectric strength test.
- Remote-Sense terminals may be used to compensate for cable losses up to 250mV (single-output models only). The use of a twisted pair, decoupling capacitors and an appropriately-rated low-impedance capacitor connected across the load will increase noise immunity.
- Maximum screw penetration into bottom chassis mounting holes is 0.100 inches. Maximum screw penetration into side chassis mounting holes is 0.250 inches.
- To comply with emissions specifications, all four mounting hole pads must be electrically connected to a common metal chassis. Chassis/Cover option is recommended. Refer to Operating Instructions for additional information.
- Common RF shielding precautions may need to be taken to assure emissions compliance. Refer to Operating Instructions for additional information.
- 14. Power-Fail (AC-Good) feature provides a logic-low warning signal from an open collector transistor output 10ms prior to loss of output from AC failure, 5V/10mA.
- 300LFM minimum of airflow must be maintained one inch above all points of top-side components or cover when forced-air cooling is required.
- 16. Total power must not exceed 80W with convection cooling on open-frame models except where noted.
- 17. Total power must not exceed 110W with 300LFM forced-air cooling on open-frame models.
- 18. Total power must not exceed 65W with convection cooling and Chassis/Cover option.
- Total power must not exceed 110W with 300LFM forced-air cooling and Chassis/Cover option.
- 20. Total current from Outputs 3 & 4 must not exceed 3A with convection cooling.
- 21. Total current from Outputs 1 & 2 must not exceed 12A with convection cooling.
- Rated 8A maximum with convection cooling.
 Rated 16A maximum with convection cooling

MAXIMUM OUTPUT POWER vs. AMBIENT TEMPERATURE



CONNECTOR SPECIFICATIONS					
P1	AC Input	0.156 friction lock header mates with Tyco 640250-3 or equivalent crimp terminal housing with Tyco 3-640706-1 or equivalent crimp terminal.			
P2	DC Output (Single)	0.156 friction lock header mates with Tyco 770849-8 or equivalent crimp terminal housing with Tyco 3-640707-1 or equivalent crimp terminal.			
P2	DC Output (Multiple)	0.156 friction lock header mates with Tyco 1-770849-0 or equivalent crimp terminal housing with Tyco 3-640707-1 or equivalent crimp terminal.			
G	Ground	0.187 quick disconnect terminal.			
P3	P.F./Sense (Single)	0.100 breakaway header mates with Molex 50-57-9006 or equivalent crimp terminal housing with Molex type 71851 or equivalent crimp terminal.			
P3	P.F. (Multiple)	0.100 breakaway header mates with Molex 50-57-9002 or equivalent crimp terminal housing with Molex type 71851 or equivalent crimp terminal.			

