

HDR-15/30/60/100/150

ULTRA SLIM STEP
SHAPE DIN RAIL



HDR-15 SERIES

ULTRA SLIM STEP SHAPE DIN RAIL

Technical parameter

Type		Technical indicators				
MODEL		HDR-15-5	HDR-15-12	HDR-15-15	HDR-15-24	HDR-15-48
Output	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	2.4A	1.25A	1A	0.63A	0.32A
	CURRENT RANGE	0 ~ 2.4A	0 ~ 1.25A	0 ~ 1A	0 ~ 0.63A	0 ~ 0.32A
	RATED POWER	12W	15W	15W	15.2W	15.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	10.8 ~ 13.8V	13.5 ~ 18V	21.6 ~ 29V	43.2 ~ 55.2V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	2000ms, 80ms/230VAC 2000ms, 80ms/115VAC at full load				
HOLD UP TIME (TYP.)	30ms/230VAC 12ms/115VAC at full load					
Input	VOLTAGE RANGE	85 ~ 264VAC (277VAC operational) 120 ~ 370VDC (390VDC operational)				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (TYP.)	80%	85%	85,5%	86%	87%
	AC CURRENT (TYP.)	0.5A/115VAC 0.25A/230VAC				
	INRUSH CURRENT (TYP.)	COLD START 25A/115VAC 45A/230VAC				
Protection	OVERLOAD	110 ~ 145% rated output power				
		Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% ~ 100% rated output voltage, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V
Protection type : Shut off/p voltage, clamping by zener diode						
Environment	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C) RH non-condensing				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along x,Y, Z axes; Mounting: Compliance to IEC60068-2-6				
	OPERATING ALTITUDE	2000 meters				
	OVER VOLTAGE CATEGORY	III; According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters				
Safety	WITHSTAND VOLTAGE	I/P-O/P:4kVAC				
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH				
Other	MTBF	3724.3k hrs min. Telcordia SR-332 (Bellcore) ; 1166.1k hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	17.5*90*54.5mm (W*H*D)				
	PACKING	74g;160pcs/12.9kg/1.09CUFT				
Notes	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft) .</p>					

HDR-30 SERIES

ULTRA SLIM STEP SHAPE DIN RAIL



Technical parameter

Type		Technical indicators				
MODEL		HDR-30-5	HDR-30-12	HDR-30-15	HDR-30-24	HDR-30-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	3A	2A	2A	1.5A	0.75A
	CURRENT RANGE	0 ~ 3A	0 ~ 2A	0 ~ 2A	0 ~ 1.5A	0 ~ 0.75A
	RATED POWER	15W	24W	30W	36W	36W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	10.8 ~ 13.8V	13.5 ~ 18V	21.6 ~ 29V	43.2 ~ 55.2V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME	500ms, 50ms/230VAC 500ms, 50ms/115VAC at full load					
HOLDUP TIME (TYP.)	30ms/230VAC 12ms/115VAC at full load					
INPUT	VOLTAGE RANGE	85 ~ 264VAC (277VAC operational)		120 ~ 370VDC (390VDC operational)		
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (TYP.)	82%	88%	89%	89%	90%
	AC CURRENT (TYP.)	0.88A/115VAC 0.48A/230VAC				
	INRUSH CURRENT (TYP.)	COLD START 25A/115VAC 45A/230VAC				
PROTECTION	OVERLOAD	105 ~ 160% rated output power				
		Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% ~ 100% rated output voltage, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 7.5V	15 ~ 18V	18.8 ~ 22.5V	30 ~ 36V	57.6 ~ 67.2V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C) RH non-condensing				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along x,Y, Z axes; Mounting: Compliance to IEC60068-2-6				
	OPERATING ALTITUDE	2000 meters				
	OVER VOLTAGE CATEGORY	III; According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters				
SAFETY	WITHSTAND VOLTAGE	I/P-O/P:4kVAC				
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH				
OTHERS	MTBF	3670.4k hrs min. Telcordia SR-332 (Bellcore) ; 968.1k hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	35*90*54.5mm (W*H*D)				
	PACKING	0.13kg;96pcs/14.2kg/1.04CUFT				
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p>					

HDR-60 SERIES

ULTRA SLIM STEP SHAPE DIN RAIL



Technical parameter

Type		Technical indicators				
MODEL		HDR-60-5	HDR-60-12	HDR-60-15	HDR-60-24	HDR-60-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	6.5A	4.5A	4A	2.5A	1.25A
	CURRENT RANGE	0 ~ 6.5A	0 ~ 4.5A	0 ~ 4A	0 ~ 2.5A	0 ~ 1.25A
	RATED POWER	32.5W	54W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	5.0 ~ 5.5V	10.8 ~ 13.8V	13.5 ~ 18V	21.6 ~ 29V	43.2 ~ 55.2V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME	500ms, 50ms/230VAC 500ms, 50ms/115VAC at full load					
HOLD UP TIME (TYP.)	30ms/230VAC 12ms/115VAC at full load					
INPUT	VOLTAGE RANGE	85 ~ 264VAC (277VAC operational) 120 ~ 370VDC (390VDC operational)				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (TYP.)	85%	88%	89%	90%	91%
	AC CURRENT (TYP.)	1.2A/115VAC 0.8A/230VAC				
	INRUSH CURRENT (TYP.)	COLD START 30A/115VAC 60A/230VAC				
PROTECTION	OVERLOAD	105 ~ 160% rated output power Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% ~ 100% rated output voltage, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V
		Protection type : Shutdown o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C) RH non-condensing				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along x,Y, Z axes; Mounting: Compliance to IEC60068-2-6				
	OPERATING ALTITUDE	2000 meters				
SAFETY	OVER VOLTAGE CATEGORY	III; According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters				
	WITHSTAND VOLTAGE	I/P-O/P:4kVAC				
OTHERS	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH				
	MTBF	3524.8k hrs min. Telcordia SR-332 (Bellcore) ; 927.6k hrs min. MIL-HDBk-217F (25°C)				
	DIMENSION	52.5*90*54.5mm (W*H*D)				
	PACKING	190g;60pcs/13kg/0.91CUFT				
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p>					

HDR-100 SERIES

ULTRA SLIM STEP SHAPE DIN RAIL



Technical parameter

Type		Technical indicators			
MODEL		HDR-100-12	HDR-100-15	HDR-100-24	HDR-100-48
OUTPUT	DC VOLTAGE	12V	15V	24V	48V
	RATED CURRENT	7.1A	6.13A	3.83A	1.92A
	CURRENT RANGE	0 ~ 7.1A	0 ~ 6.13A	0 ~ 3.83A	0 ~ 1.92A
	RATED POWER	85.2W	92W	92W	92.2W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p	240mVp-p
	VOLTAGE ADJ.RANGE	12 ~ 13V	15 ~ 17V	24 ~ 25.5V	48 ~ 48.7V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	500ms, 60ms/230VAC 500ms, 60ms/115VAC at full load			
HOLD UP TIME (TYP.)	30ms/230VAC 12ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC (277VAC operational)		120 ~ 370VDC (390VDC operational)	
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (TYP.)	88%	89%	90%	90%
	AC CURRENT (TYP.)	3A/115VAC		1.6A/230VAC	
	INRUSH CURRENT (TYP.)	COLD START 35A/115VAC 70A/230VAC			
PROTECTION	OVERLOAD	HDR-100 : 102 ~ 110% rated output power ; HDR-100-XXN : 105 ~ 150% rated output power Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% ~100% rated output voltage, recovers automatically after fault condition is removed			
	OVER VOLTAGE	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing			
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C) RH non-condensing			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along x,Y, Z axes; Mounting: Compliance to IEC60068-2-6			
	OPERATING ALTITUDE	2000 meters			
	OVER VOLTAGE CATEGORY	III; According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters			
SAFETY	WITHSTAND VOLTAGE	I/P-O/P:4kVAC			
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH			
OTHERS	MTBF	3271.9k hrs min. Telcordia SR-332 (Bellcore) ; 856.5k hrs min. MIL-HDBk-217F (25°C)			
	DIMENSION	70*90*54.5mm (W*H*D)			
	PACKING	0.27kg; 48pcs/13.74kg/0.96CUFT			
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Harmonic current test at 90% load for HDR-100-XXN.</p> <p>5. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p>				

HDR-150 SERIES

ULTRA SLIM STEP SHAPE DIN RAIL



Technical parameter

Type		Technical indicators				
MODEL		HDR-150-12	HDR-150-15	HDR-150-24	HDR-150-48	
INPUT	DC VOLTAGE	12V	15V	24V	48V	
	RATED CURRENT	115VAC	10.2A	8.55A	5.31A	2.72A
		230VAC	11.3A	9.5A	6.25A	3.2A
	RATED POWER	115VAC	122.4W	128.3W	127.4W	130.6W
		230VAC	135.6W	142.5W	150W	153.6W
RIPPLE & NOISE (max.) Note.2		100mVp-p	120mVp-p	150mVp-p	200mVp-p	
OUTPUT	VOLTAGE ADJ. RANGE	10.8~13.8V	13.5 ~ 18V	21.6 ~ 29V	43.2 ~ 55.2V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	
	SETUP, RISE TIME	500ms, 60ms/230VAC 500ms, 60ms/115VAC at full load				
	HOLD UP TIME (Typ.)	30ms/230VAC 12ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC (277VAC operational)		120 ~ 370VDC (390VDC operational)		
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	89%	89,5%	90,5%	90,5%	
	AC CURRENT (Typ.)	3A/115VAC 1.6A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 35A/115VAC 70A/230VAC				
PROTECTION	OVERLOAD	105 ~ 135% rated output power				
		Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% ~100% rated output voltage, recovers automatically after fault condition is removed				
	OVER VOLTAGE	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V	
		Protection type : Shutdown o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 45°C) RH non-condensing				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X,Y, Z axes; Mounting: Compliance to IEC60068-2-6				
	OPERATING ALTITUDE	2000 meters (Note 4)				
	OVER VOLTAGE CATEGORY	III;According to EN62368 ,EN61558 , EN50178 ,EN60664- 1 , EN62477- 1;altitude up to 2000 meters				
	SAFETY STANDARDS	IEC62368-1, UL62368-1, UL61010, TUV BS EN/EN61558-2-16, BS EN/EN61558-1, EACTPTC 004 approved; Design refer to BS EN/EN50178, TUV BS EN/EN62368-1				
SAFETY	WITHSTAND VOLTAGE	I/P-O/P:4KVAC				
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH				
OTHERS	MTBF	3046.3K hrs min. Telcordia SR-332 (Bellcore) ; 535.9K hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	105*90*54.5mm (W*H*D)				
	PACKING	0.31Kg; 32pcs/11Kg/1.0CUFT				
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000 (6500ft).</p> <p>5. when the input voltage is 230VAC,delivers EMI Class B for radiated emission for the power supply; when the input voltage is 110VAC, delivers EMI Class A for radiated emission for the power supply.</p> <p>6. Harmonic current test at 70% load.</p>					