















- Compliance to BS EN/EN50155 and BS EN/EN45545-2 railway standard
- · Width only 32mm
- 2:1 wide input range
- -40~+70°C wide working temperature
- 150% peak load capability
- DC output adjustable
- Cooling by free air convection
- · Can be installed on DIN rail TS-35/7.5 or 15
- · Protections: Short circuit / Overload / Over voltage / Input reverse polarity / Input under voltage protection
- 4KVdc I/O isolation(Reinforced isolation)
- 3 years warranty











# Applications

- · Bus,tram,metro or railway system
- Industrial control system
- Semi-conductor fabrication equipment
- Factory automation
- · Electro-mechanical
- · Wireless network
- Telecom or datacom system

### GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

# Description

DDR-120 series is a 120W DIN Rail type DC-DC converter with main features including DIN rail-type easy installation, ultra slim width (32mm), 2:1 wide input voltage, fanless design, -40~+70°C wide operating temperature, 4KVdc I/O isolation, 150% peak load, adjustable output voltage and full protective functions.

This series of models has various input options:  $9\sim18V/16.8\sim33.6V/33.6\sim67.2V/67.2\sim154V$  and various output options: 12V / 24V / 48V and can be used for industrial & railway control, security control, communication system and other fields. Suitable applications include DC buck/boost regulator, increasing system insulation level and voltage drop compensation along cable...etc.

# Model Encoding





#### SPECIFICATION

		DDR-120A-12	DDR-120A-24	DDR-120A-48	DDR-120B-12	DDR-120B-24	DDR-120B-48		
	DC VOLTAGE	12V	24V	48V	12V	24V	48V		
	RATED CURRENT	8.3A	4.2A	2.1A	10A	5A	2.5A		
	CURRENT RANGE	0 ~ 8.3A	0 ~ 4.2A	0~2.1A	0 ~ 10A	0 ~ 5A	0 ~ 2.5A		
	RATED POWER	99.6W	100.8W	100.8W	120W	120W	120W		
	PEAK CURRENT	12.45A	6.3A	3.15A	15A	7.5A	3.75A		
	PEAK POWER Note.5	150W (3sec.)			180W (3sec.)				
OUTPUT	RIPPLE & NOISE (max.) Note.2	50mVp-p	50mVp-p	50mVp-p	50mVp-p	50mVp-p	50mVp-p		
	VOLTAGE ADJ. RANGE	9 ~ 14V	24 ~ 28V	48 ~ 56V	9 ~ 14V	24 ~ 28V	48 ~ 56V		
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%		
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%		
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%		
	SETUP, RISE TIME	500ms, 60ms @12Vdc			500ms, 60ms @24	1Vdc	-		
İ	HOLD UP TIME (Typ.)	Please refer to page	7 Hold up Time( Lo	ad de-rating curve )	•				
	VOLTAGE RANGE Note.4	9 ~ 18Vdc	9 ~ 18Vdc	9 ~ 18Vdc	16.8 ~ 33.6Vdc	16.8 ~ 33.6Vdc	16.8 ~ 33.6Vdc		
	EFFICIENCY (Typ.)	88.5%	88.5%	88.5%	89%	89.5%	91%		
NPUT	DC CURRENT (Typ.)	11.2A @12Vdc			5.6A @24Vdc				
01	INRUSH CURRENT (Typ.)	5A @12Vdc			5A @ 24Vdc				
	INTERRUPTION OF VOLTAGE SUPPLY		olv with S1 level			mply with S1 level			
			•	t power for more than	-	EN50155:2021-comply with S1 level 3 seconds and then constant current protection 105~135%			
	OVERLOAD	rated output power w		t power for more than		motant ourront protoot	.011 100 10070		
PROTECTION		14.4 ~ 16.8V	28.8 ~ 33.6V	57.6 ~ 67.2V	14.4 ~ 16.8V	28.8 ~ 33.6V	57.6 ~ 67.2V		
KOILCIION	OVER VOLTAGE			re-power on to recove		20.0 00.01	07.0 07.27		
	REVERSE POLARITY	71	1 0 7	<u> </u>	er fault condition removed				
	UNDER VOLTAGE LOCKOUT	12Vin (A - type) :Powe			24Vin (B - type) :Power ON ≥ 16.8V , OFF ≤ 16.5V				
	WORKING TEMP.	-40 ~ +70°C (Refer t			217111 (B 1350) 11 0	101 011 10.00 , 011	~ 10.0V		
	WORKING HUMIDITY	,	,						
ENVIRONMENT	STORAGE TEMP., HUMIDITY	5 ~ 95% RH non-condensing							
INVIRONMENT	TEMP. COEFFICIENT	-40 ~ +85°C, 5 ~ 95% RH non-condensing							
	VIBRATION	±0.03%/°C (0 ~ 55°C)  Component:10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC61373							
	OPERATING ALTITUDE	5000 meters	712, 30 1011111./1090	ie, ooiiiii. eacii along	X, I, Z axes, Mountin	g. Compliance to ILCo	71373		
	SAFETY STANDARDS		R68-1 FACTRICO	04, AS/NZS 62368.1 a	nnroved: Design refer	to III 508			
	WITHSTAND VOLTAGE	I/P-O/P:4KVdc I/P	· · · · · · · · · · · · · · · · · · ·	·	pproved, Design refer	10 02000			
	ISOLATION RESISTANCE			500Vdc / 25°C / 70% R	Н				
	TOOL/ TITOR TELEVISION THOSE	Parameter	1 0.5 100M OIIII37	Standard		evel / Note			
		Conducted		BS EN/EN55032	Class				
	EMC EMISSION	55.55							
	LEMC EMISSION			BS FN/FN55032	Class	R			
	EMC EMISSION			BS EN/EN55032	Class	В			
SAFETY &	EMC EMISSION	Voltage Flicker		BS EN/EN61000-3	3-3	В			
SAFETY &	EMC EMISSION	Voltage Flicker Harmonic Current	S EN/EN61000-6-2/	BS EN/EN61000-3		В			
EMC	EMC EMISSION	Voltage Flicker Harmonic Current BS EN/EN55035 , B	S EN/EN61000-6-2(	BS EN/EN61000-3	3-3				
	EMC EMISSION	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter	S EN/EN61000-6-2(	BS EN/EN61000-3  BS EN/EN50082-2) Standard	3-3  Test L	evel / Note	O contact: evitoria A		
EMC	EMC EMISSION	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD	S EN/EN61000-6-2(	BS EN/EN61000-3  BS EN/EN50082-2)  Standard  BS EN/EN61000-4	Test L	evel / Note 3, 8KV air ; Level 3, 6k	(V contact; criteria A		
EMC	EMC EMISSION	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated	S EN/EN61000-6-2(	BS EN/EN61000-3 BS EN/EN50082-2) Standard BS EN/EN61000-4 BS EN/EN61000-4	Test L Level: 4-3 Level:	<b>evel / Note</b> 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A	(V contact; criteria A		
EMC	EMC EMISSION  EMC IMMUNITY	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst	S EN/EN61000-6-2(	BS EN/EN61000-3  BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4	Test L 4-2 Level 3 4-4 Level 3	evel / Note 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A 3, 2KV ; criteria A	·		
EMC		Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge	S EN/EN61000-6-2(	BS EN/EN61000-3  BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4	Test L 4-2 Level 3 4-3 Level 3 4-4 Level 3 4-5 Level 3	evel / Note 3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A , 1KV/Line-Line ;Level 3,	·		
EMC		Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted	S EN/EN61000-6-2(	BS EN/EN61000-3 BS EN/EN50082-2) Standard BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4	Test L 4-2 Level 3 4-4 Level 3 4-5 Level 3 4-6 Level 3	evel / Note 3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A , 1KV/Line-Line ;Level 3, 3	(V contact; criteria A 2KV/Line-Line-FG ;criteria		
EMC -		Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field	,	BS EN/EN61000-3  Standard  BS EN/EN61000-3  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4	Test L  1-2 Level 3 1-4 Level 3 1-5 Level 3 1-6 Level 3 1-8 Level 3	evel / Note 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3 3, 10V ; criteria A 4, 30A/m ; criteria A	2KV/Line-Line-FG ;criteria		
EMC -		Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN	V/EN45545-2 for fire	BS EN/EN61000-3 BS EN/EN50082-2) Standard BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 protection; Meet BS EN	Test L  1-2 Level 3 1-4 Level 3 1-5 Level 3 1-6 Level 3 1-8 Level 3	evel / Note 3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A , 1KV/Line-Line ;Level 3, 3	2KV/Line-Line-FG ;criteria		
MC	EMC IMMUNITY	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN BS EN/EN50121-3-2	V/EN45545-2 for fire 2 for EMC (except fo	BS EN/EN61000-3  Standard  BS EN/EN61000-4	Test L  1-2 Level:  1-3 Level:  1-4 Level:  1-5 Level:  1-6 Level:  1-8 Level:  EN/EN50155 / IEC605	evel / Note 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3 3, 10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteria		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN BS EN/EN50121-3-2 1769.5K hrs min.	N/EN45545-2 for fire 2 for EMC (except fo Telcordia SR-332 (E	BS EN/EN61000-3 BS EN/EN50082-2) Standard BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 protection; Meet BS EN	Test L  1-2 Level:  1-3 Level:  1-4 Level:  1-5 Level:  1-6 Level:  1-8 Level:  EN/EN50155 / IEC605	evel / Note 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3 3, 10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteria		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN BS EN/EN50121-3-2 1769.5K hrs min. 32*125.2*102mm (W	N/EN45545-2 for fire 2 for EMC (except for Telcordia SR-332 (E /*H*D)	BS EN/EN61000-3  Standard  BS EN/EN61000-4	Test L  1-2 Level:  1-3 Level:  1-4 Level:  1-5 Level:  1-6 Level:  1-8 Level:  EN/EN50155 / IEC605	evel / Note 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3 3, 10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteria		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN BS EN/EN50121-3-2 1769.5K hrs min. 32*125.2*102mm (W 510g; 28pcs/15.3Kg/	N/EN45545-2 for fire 2 for EMC (except for Telcordia SR-332 (E /*H*D) /1.23CUFT	BS EN/EN61000-3  Standard  BS EN/EN61000-4  BS EN/EN61000-6  Protection; Meet BS En 9~18Vin)  stellcore); 214.5K hrs references	Test L  4-2	evel / Note 3, 8KV air ; Level 3, 6K 3, 10V/m ; criteria A 3, 2KV ; criteria A ,1KV/Line-Line ;Level 3, 3 ,10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteria		
EMC	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN BS EN/EN50121-3-2 1769.5K hrs min. 32*125.2*102mm (W 510g; 28pcs/15.3Kg/dially mentioned are ured at 20MHz of ba	N/EN45545-2 for fire 2 for EMC (except for Telcordia SR-332 (E/*H*D) (1.23CUFT measured at normandwidth by using	BS EN/EN61000-3  Standard  BS EN/EN61000-4  Protection; Meet BS En/EN61000	Test L  4-2	evel / Note 3, 8KV air; Level 3, 6K 3, 10V/m; criteria A 3, 2KV; criteria A 4, 1KV/Line-Line; Level 3, 3 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373 77 (25°C)	2KV/Line-Line-FG ;criteria for shock & vibration, ient temperature.		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measi	Voltage Flicker Harmonic Current BS EN/EN55035 , B: Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS EN BS EN/EN50121-3-2 1769.5K hrs min. 32*125.2*102mm (W 510g; 28pcs/15.3Kg/dially mentioned are ured at 20MHz of ball pt tolerance, line reg	N/EN45545-2 for fire 2 for EMC (except for Telcordia SR-332 (E/+H*D) 11.23CUFT measured at norm andwidth by using gulation and load r	BS EN/EN61000-3  Standard  BS EN/EN61000-4  Protection; Meet BS En/EN61000	Test L  4-2	evel / Note 3, 8KV air; Level 3, 6K 3, 10V/m; criteria A 3, 2KV; criteria A 4, 1KV/Line-Line; Level 3, 3 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373 77 (25°C)	2KV/Line-Line-FG ;criterion for shock & vibration,		

- 6. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI\_statement\_en.pdf)
- 7. The ambient temperature derating of  $3.5^{\circ}$ C/1000m with fanless models and of  $5^{\circ}$ C/1000m with fan models for operating altitude higher than 2000m(6500ft).
- ※ Product Liability Disclaimer: For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

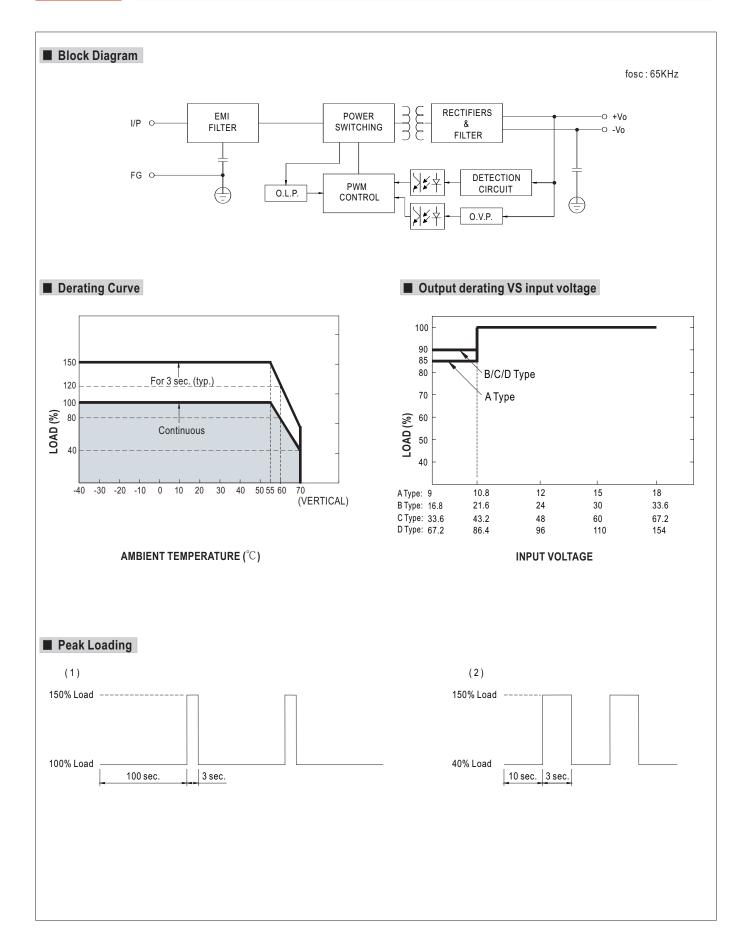


#### **SPECIFICATION**

		DDR-120C-12	DDR-120C-24	DDR-120C-48	DDR-120D-12	DDR-120D-24	DDR-120D-48		
	DC VOLTAGE	12V	24V	48V	12V	24V	48V		
	RATED CURRENT	10A	5A	2.5A	10A	5A	2.5A		
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A	0 ~ 10A	0 ~ 5A	0 ~ 2.5A		
	RATED POWER	120W	120W	120W	120W	120W	120W		
	PEAK CURRENT	15A	7.5A	3.75A	15A	7.5A	3.75A		
		180W (3sec.)							
ОИТРИТ	RIPPLE & NOISE (max.) Note.2	` ′	50mVp-p	50mVp-p	50mVp-p	50mVp-p	50mVp-p		
	VOLTAGE ADJ. RANGE	9 ~ 14V	24 ~ 28V	48 ~ 56V	9 ~ 14V	24 ~ 28V	48 ~ 56V		
	VOLTAGE TOLERANCE Note.3	-	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%		
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%		
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%		
	SETUP, RISE TIME	500ms, 60ms @48Vdc			500ms, 60ms @110Vdc				
	HOLD UP TIME (Typ.)	Please refer to pag							
	VOLTAGE RANGE Note.4		33.6 ~ 67.2Vdc	33.6 ~ 67.2Vdc	67.2 ~ 154Vdc	67.2 ~ 154Vdc	67.2 - 154\/do		
			91%		89.5%	91%	67.2 ~ 154Vdc 91.5%		
NDUT	EFFICIENCY (Typ.)	89.5%	9170	92%		91/0	91.5%		
NPUT	DC CURRENT (Typ.)	2.8A @48Vdc			1.3A @110Vdc				
	INRUSH CURRENT (Typ.)	5A @48Vdc	1 111 041		5A @110Vdc	1 11 041			
	INTERRUPTION OF VOLTAGE SUPPLY				EN50155:2021-co				
	OVERLOAD	,		t power for more than	3 seconds and then co	nstant current protect	ion 105~135%		
		rated output power							
PROTECTION	OVER VOLTAGE	14.4 ~ 16.8V	28.8 ~ 33.6V	57.6 ~ 67.2V	14.4 ~ 16.8V	28.8 ~ 33.6V	57.6 ~ 67.2V		
				re-power on to recove					
	REVERSE POLARITY	By internal MOSFE	T, no damage, recove	ers automatically after	fault condition remove	ed			
	UNDER VOLTAGE LOCKOUT	48Vin (C - type) :Pow	rer ON≥33.6V, OFF	≤33V	110Vin (D - type):Po	110Vin (D - type):Power ON ≥67.2V , OFF ≤65V			
	WORKING TEMP.	-40 ~ +70°C (Refer	to "Derating Curve")						
	WORKING HUMIDITY	5 ~ 95% RH non-co	ndensing						
ENVIRONMENT	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 5 ~ 95	% RH non-condensin	ıg					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 55	°C)						
	VIBRATION	Component:10 ~ 50	0Hz, 5G 10min./1cyc	cle, 60min. each along	X, Y, Z axes; Mounting	g: Compliance to IEC6	31373		
	OPERATING ALTITUDE	5000 meters							
	SAFETY STANDARDS	IEC 62368-1, UL 62368-1, EAC TP TC 004, AS/NZS 62368.1 approved; Design refer to UL508							
	WITHSTAND VOLTAGE	I/P-O/P:4KVdc I/P-FG:2.5KVdc O/P-FG:2.5KVdc							
	ISOLATION RESISTANCE	I/P-O/P. I/P-FG. O/I	P-FG:>100M Ohms / 5	500Vdc / 25°C / 70% R	H				
		Parameter Standard			Test Level / Note				
		Conducted BS EN/EN5		BS EN/EN55032	Class B				
	EMC EMISSION	Radiated BS EN/EN55032		Class B					
	EMC EMISSION								
	EMC EMISSION	Voltage Flicker		I DO EIN/EIND IUUU-3					
SAFETY &	EMC EMISSION	Voltage Flicker Harmonic Current							
EMC	EMC EMISSION	Harmonic Current	ks EN/EN61000-6-2/F						
EMC	EMC EMISSION	Harmonic Current BS EN/EN55035 , E	3S EN/EN61000-6-2(E	 BS EN/EN50082-2)		oval / Nata			
EMC	EMC EMISSION	Harmonic Current BS EN/EN55035 , E Parameter	3S EN/EN61000-6-2(b	BS EN/EN50082-2) Standard	Test L	evel / Note	O contact oritoria A		
EMC	EMC EMISSION	Harmonic Current BS EN/EN55035 , E Parameter ESD	3S EN/EN61000-6-2(I	======================================	Test L	3, 8KV air ; Level 3, 6k	(V contact; criteria A		
EMC	EMC EMISSION	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated	3S EN/EN61000-6-2(I	BS EN/EN50082-2) Standard BS EN/EN61000-4 BS EN/EN61000-4	Test L 1-2 Level 3 1-3 Level 3	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A	(V contact; criteria A		
EMC	EMC EMISSION	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst	3S EN/EN61000-6-2(I	BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4	Test L 1-2 Level 3 1-3 Level 3 1-4 Level 3	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A			
EMC		Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge	3S EN/EN61000-6-2(I	BS EN/EN61000-2  BS EN/EN61000-2  BS EN/EN61000-2  BS EN/EN61000-2	Test L 1-2 Level 3 1-3 Level 3 1-4 Level 3	3, 8KV air ; Level 3, 6k 8, 10V/m ; criteria A 8, 2KV ; criteria A 1KV/Line-Line ;Level 3,			
EMC		Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted	3S EN/EN61000-6-2(I	BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4	Test L Level 3 Level 3 Level 3 Level 3 Level 3 Level 3	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3, 10V ; criteria A			
EMC	EMC IMMUNITY	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field	,	BS EN/EN61000-4	Test L Level 3 Level 4 Level 6 Level 6 Level 6 Level 6 Level 6	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3, 10V ; criteria A 4, 30A/m ; criteria A	2KV/Line-Line-FG ;criteria		
EMC		Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E	:N/EN45545-2 for fire	BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4	Test L Level 3 Level 4 Level 6 Level 6 Level 6 Level 6 Level 6	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ;Level 3, 3, 10V ; criteria A 4, 30A/m ; criteria A	2KV/Line-Line-FG ;criteria		
EMC	EMC IMMUNITY  RAILWAY STANDARD	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3	N/EN45545-2 for fire -2 for EMC	BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  protection; Meet BS EN	Test L 1-2 Level 3 1-3 Level 3 1-4 Level 3 1-5 Level 3 1-6 Level 3 1-8 Level 4 N/EN50155 / IEC6057	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ; Level 3, 3, 10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteria		
:MC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min.	:N/EN45545-2 for fire -2 for EMC Telcordia SR-332 (B	BS EN/EN61000-4	Test L 1-2 Level 3 1-3 Level 3 1-4 Level 3 1-5 Level 3 1-6 Level 3 1-8 Level 4 N/EN50155 / IEC6057	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ; Level 3, 3, 10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteri		
MC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (*)	:N/EN45545-2 for fire -2 for EMC Telcordia SR-332 (B W*H*D)	BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  protection; Meet BS EN	Test L 1-2 Level 3 1-3 Level 3 1-4 Level 3 1-5 Level 3 1-6 Level 3 1-8 Level 4 N/EN50155 / IEC6057	3, 8KV air ; Level 3, 6k 3, 10V/m ; criteria A 3, 2KV ; criteria A 1KV/Line-Line ; Level 3, 3, 10V ; criteria A 4, 30A/m ; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteri		
MC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (') 510g; 28pcs/15.3Kg	N/EN45545-2 for fire -2 for EMC Telcordia SR-332 (B W*H*D) g/1.23CUFT	BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 BS EN/EN61000-4 Protection; Meet BS E	Test L 1-2 Level 3 1-3 Level 3 1-4 Level 3 1-5 Level 3 1-6 Level 3 1-8 Level 4 1-8 Level 4 1-8 N/EN50155 / IEC6057 1nin. MIL-HDBK-217	3, 8KV air; Level 3, 6k3, 10V/m; criteria A 3, 2KV; criteria A 1KV/Line-Line; Level 3, 3, 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373	2KV/Line-Line-FG ;criteria for shock & vibration,		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (' 510g; 28pcs/15.3Kgially mentioned are	N/EN45545-2 for fire -2 for EMC Telcordia SR-332 (B W*H*D) g/1.23CUFT e measured at norm	BS EN/EN61000-4 protection; Meet BS E	Test L  1-2	3, 8KV air; Level 3, 6k3, 10V/m; criteria A 3, 2KV; criteria A 1KV/Line-Line; Level 3, 3, 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373 FF (25°C)	2KV/Line-Line-FG ;criteria for shock & vibration, bient temperature.		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (' 510g; 28pcs/15.3Kgially mentioned are ured at 20MHz of by	EN/EN45545-2 for fire -2 for EMC Telcordia SR-332 (B W*H*D) g/1.23CUFT e measured at norm pandwidth by using	BS EN/EN61000-4 protection; Meet BS E dellcore); 214.5K hrs r	Test L  1-2	3, 8KV air; Level 3, 6k3, 10V/m; criteria A 3, 2KV; criteria A 1KV/Line-Line; Level 3, 3, 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373 FF (25°C)	2KV/Line-Line-FG ;criteri for shock & vibration, bient temperature.		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu 3. Tolerance: includes set u	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (V 510g; 28pcs/15.3Kg ially mentioned are ured at 20MHz of but pt tolerance, line re-	EN/EN45545-2 for fire -2 for EMC Telcordia SR-332 (B W*H*D) g/1.23CUFT e measured at norm pandwidth by using egulation and load re	BS EN/EN61000-4 protection; Meet BS E delicore); 214.5K hrs re and input (C:48Vdc, a 12" twisted pair-wegulation.	Test L 1-2	3, 8KV air; Level 3, 6k3, 10V/m; criteria A 3, 2KV; criteria A 1KV/Line-Line; Level 3, 3, 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373 FF (25°C)	2KV/Line-Line-FG ;criteriand for shock & vibration,		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu 3. Tolerance: includes set u 4. Derating may be needed	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (t) 510g; 28pcs/15.3Kgially mentioned are ured at 20MHz of but polerance, line reunder low input vocume to the complex of t	EN/EN45545-2 for fire -2 for EMC  Telcordia SR-332 (B W*H*D) g/1.23CUFT e measured at norm pandwidth by using regulation and load resistance.	BS EN/EN61000-4 protection; Meet BS E delicore); 214.5K hrs re and input (C:48Vdc, a 12" twisted pair-wegulation.	Test L 1-2	3, 8KV air; Level 3, 6k3, 10V/m; criteria A 3, 2KV; criteria A 1KV/Line-Line; Level 3, 3, 10V; criteria A 4, 30A/m; criteria A 71 including IEC61373 FF (25°C)	2KV/Line-Line-FG ;criteriant for shock & vibration,		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu 3. Tolerance: includes set u 4. Derating may be needed 5. 3 seconds max., please re	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (V) 510g; 28pcs/15.3Kgially mentioned are ured at 20MHz of but to be a conder low input voefer to peak loading	EN/EN45545-2 for fire -2 for EMC  Telcordia SR-332 (B W*H*D) g/1.23CUFT e measured at norm pandwidth by using regulation and load resistage. Please check g curves.	BS EN/EN61000-4 protection; Meet BS E delicore); 214.5K hrs re anal input (C:48Vdc, a 12" twisted pair-wegulation. k the derating curve	Test L 1-2	8, 8KV air ; Level 3, 6k 8, 10V/m ; criteria A 8, 2KV ; criteria A 1KV/Line-Line ;Level 3, 8, 10V ; criteria A 8, 30A/m ; criteria A 71 including IEC61373 FF (25°C) and and 25°C of ama a 0.1 $\mu$ F & 47 $\mu$ F p	2KV/Line-Line-FG ;criteria for shock & vibration, bient temperature. parallel capacitor.		
SAFETY & EMC (Note 6)  OTHERS	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu 3. Tolerance: includes set u 4. Derating may be needed 5. 3 seconds max., please r 6. The power supply is cons	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (t) 510g; 28pcs/15.3Kgially mentioned are ured at 20MHz of but to be a complete of the	EN/EN45545-2 for fire -2 for EMC  Telcordia SR-332 (B W*H*D) g/1.23CUFT e measured at norm pandwidth by using egulation and load re altage. Please check- g curves. pendent unit, but the	BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  protection; Meet BS Edellcore); 214.5K hrs resulting the state of the stat	Test L  1-2	8, 8KV air ; Level 3, 6k 8, 10V/m ; criteria A 8, 2KV ; criteria A 1KV/Line-Line ;Level 3, 8, 10V ; criteria A 8, 30A/m ; criteria A 71 including IEC61373 FF (25°C) and and 25°C of ama a 0.1 $\mu$ F & 47 $\mu$ F p that the whole systems	2KV/Line-Line-FG ; criteria  for shock & vibration,  bient temperature.  parallel capacitor.		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu 3. Tolerance: includes set u 4. Derating may be needed 5. 3 seconds max., please r 6. The power supply is consthe EMC directives. For g	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (V) 510g; 28pcs/15.3Kgially mentioned are ured at 20MHz of but to be compliance, line resunder low input vote fer to peak loading idered as an indeguidance on how to	EN/EN45545-2 for fire -2 for EMC  Telcordia SR-332 (B W*H*D) g/1.23CUFT  e measured at norm pandwidth by using egulation and load re oltage. Please check- g curves. pendent unit, but the p perform these EM	BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  protection; Meet BS Edellcore); 214.5K hrs resulting the control of the c	Test L  1-2	8, 8KV air ; Level 3, 6k 8, 10V/m ; criteria A 8, 2KV ; criteria A 1KV/Line-Line ;Level 3, 8, 10V ; criteria A 8, 30A/m ; criteria A 71 including IEC61373 FF (25°C) and and 25°C of ama a 0.1 $\mu$ F & 47 $\mu$ F p that the whole systems	2KV/Line-Line-FG ; criterion for shock & vibration, bient temperature. Parallel capacitor.		
EMC Note 6)	EMC IMMUNITY  RAILWAY STANDARD  MTBF  DIMENSION  PACKING  1. All parameters NOT spec 2. Ripple & noise are measu 3. Tolerance: includes set u 4. Derating may be needed 5. 3 seconds max., please r 6. The power supply is cons	Harmonic Current BS EN/EN55035 , E Parameter ESD Radiated EFT / Burst Surge Conducted Magnetic Field Compliance to BS E BS EN/EN50121-3 1769.5K hrs min. 32*125.2*102mm (' 510g; 28pcs/15.3Kg ially mentioned are under low input vo refer to peak loadin sidered as an indeg guidance on how to ww.meanwell.com//	EN/EN45545-2 for fire -2 for EMC  Telcordia SR-332 (B W*H*D) g/1.23CUFT	BS EN/EN50082-2)  Standard  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  BS EN/EN61000-4  protection; Meet BS Edellcore); 214.5K hrs mal input (C:48Vdc, a 12" twisted pair-wegulation.  k the derating curve efinal equipment stic C tests, please refetatement_en.pdf)	Test L Level 3 Level 4 Level 5 Level 5 Level 5 Level 5 Level 6 Level 6 Level 6 Level 6 Level 7 Level 7 Level 7 Level 8 Level 9	3, 8KV air; Level 3, 6k 3, 10V/m; criteria A 3, 2KV; criteria A 1KV/Line-Line; Level 3, 3, 10V; criteria A 4, 30A/m; criteria A 4, 30A/m; criteria A 71 including IEC61373 (F (25°C)) and and 25°C of ama a 0.1 μ F & 47 μ F p 4 that the whole systemponent power size	2KV/Line-Line-FG ;criteri  for shock & vibration,  bient temperature.  parallel capacitor.  tem complies with upplies."		

% Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx







### ■ Input Fuse

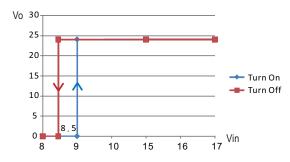
There is a fuse connected in series to the positive input line, which is used to protect against abnormal surge. Fuse specifications of each model are shown as below.

Туре	Fuse Type	Reference and Rating
Α	Time-Lag	Conquer MST, 10A, 250V *2
В	Time-Lag	Conquer MST, 8A, 250V *2
С	Time-Lag	Conquer MST, 8A, 250V *1
D	Time-Lag	Conquer MST, 4A, 250V *1

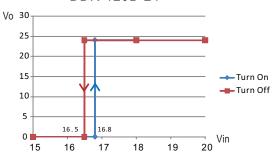
#### ■ Input Under-Voltage Protection

If input voltage drops below Vimin, the internal control IC shuts down and there is no output voltage. It recovers automatically when input voltage reaches above Vimin, please refer to the cruve below.

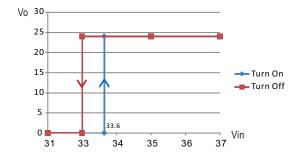
#### DDR-120A-24



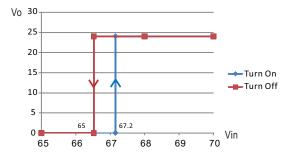
#### DDR-120B-24



#### DDR-120C-24



DDR-120D-24



# ■ Input Reverse Polarity Protection

There is a MOSFET connected in series to the negative input line. If the input polarity is connected reversely, the MOSFET opens and there will be no output to protect the unit.

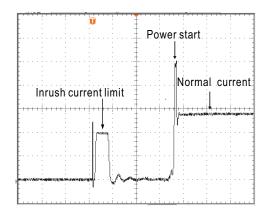
### ■ Input Range and Transient Ability

The series has a wide range input capability. With -30% / +40% of rated input voltage(except A Type), it can withstand that for 1 second.



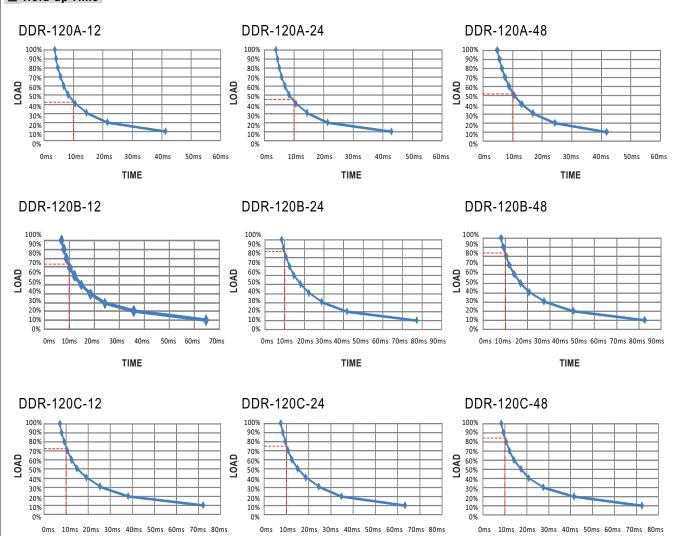
#### ■ Inrush Current

Inrush current is suppressed by a current limit circuit during the initial start-up, and then the circuit is bypassed by a MOSFET to reduce power consumption after accomplishing the start-up.



# ■ Hold-up Time

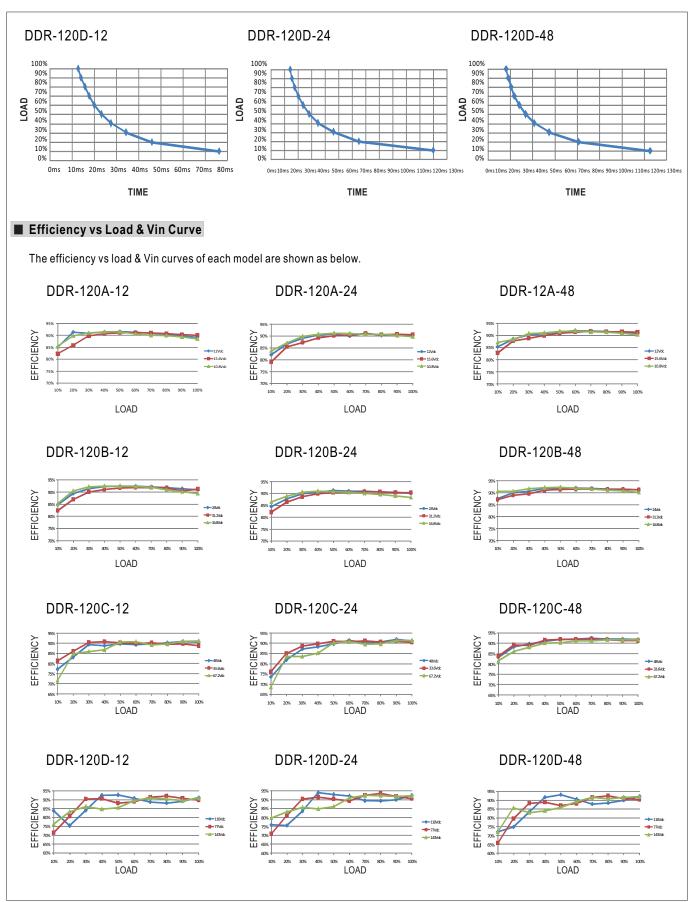
TIME



TIME

TIME





# ■ Immunity to Environmental Conditions

Test method	Standard	Test conditions	Status
Dry Heat Test	EN 50155 section 13.4.5	Temperature: 70°C / 85°C Duration: 6 hrs / 10min	PASS
Damp Heat Test, Cyclic	EN 50155 section 13.4.8	Temperature: 25°C~55°C Humidity: 90%~100% RH Duration: 48 hrs	PASS
Vibration Test	EN 50155 section 13.4.10	Temperature: 19°C Humidity: 65% Duration: 10 mins	PASS
Shock Test	EN 50155 section 13.4.10	Temperature: $21\pm3^{\circ}\text{C}$ Humidity: $65\pm5\%$ Duration: $30\text{ms*}18$	PASS
Low Temperature Storage Test	EN 50155 section 13.4.6	Temperature: -40°C Dwell Time: 16 hrs	PASS
Salt Mist Test	EN 50155 section 13.4.13	Temperature: 35°C ±2°C Duration: 96 hrs	PASS

# ■ EN45545-2 Fire Test Conditions

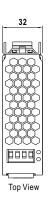
Test Items					Hazard Level		
Items		S	Standard	HL1	HL2	HL3	
РСВ	R22	Oxygen index test	EN 45545-2:2020 EN ISO 4589-2:2017	PASS	PASS	PASS	
		Smoke density test	EN 45545-2:2020 EN ISO 5659-2:2017	PASS	PASS	PASS	
		Smoke toxicity test	EN 45545-2:2020 EN 17084:2018	PASS	PASS	PASS	
	R24	Oxygen index test	EN 45545-2:2020 EN ISO 4589-2:2017	PASS	PASS	PASS	
	R25	Glow-wire test	EN 45545-2:2020 EN 60695-2-11:2014	PASS	PASS	PASS	
Potting	R24	Oxygen index test	EN 45545-2:2020 EN ISO 4589-2:2017	PASS	PASS	PASS	
Termina; block	R26	Vertical flame test	EN 45545-2:2020 EN 60695-11-10:2013	PASS	PASS	PASS	



# **■** Mechanical Specification

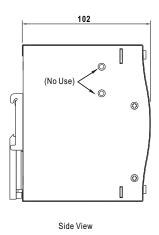
(Unit: mm , tolerance ± 1mm)



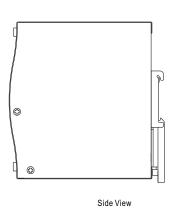


### Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC Output -Vo
3,4	DC Output +Vo

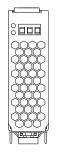








ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15



Bottom View

### Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG 🖶
2	DC Input -Vin
3	DC Input +Vin

# ■ Installation Manual

Please refer to: http://www.meanwell.com/manual.html