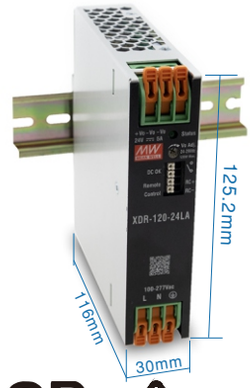
120W AC/DC High-End Ultra Slim Industrial DIN Rail Power XDR-120 series



LISTED Class I, Div. 2 | LISTED UL61010 | BS EN/EN62368-1, BS EN/EN61558-1, BS EN/EN61010 | IEC62368-1, IEC61558-1, IEC61010 | AS/NZS61558-1, AS/NZS62368-1

IS13252 (By request) | KC62368-1 (By request) | CNS15598-1 | GB4943.1 (Applying) | TPTC004

Automate | Industrial | Security | Network | Telecom

Features

- 85~305Vac input with PFC (277Vac available)
- Global certificates in multi-fields(ITE 62368-1,Industrial 61558-1/-2-16,61010) & Marine DNV,SEMI47,CID2 HazLoc approved
- 30mm ultra slim width
- High efficiency up to 94% and no load power dissipation 0.9W~1W by R.C.
- 200% peak power capability
- 600% pulse current capability
- Built-in constant current limiting circuit
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Fanless design, cooling by free air convection
- Over voltage category III (OVC III)
- -40~+85°C wide range operation temperature(>+60°C derating)
- Operating altitude up to 5000 meters
- Built-in remote ON/OFF control and DC OK relay contact
- Ultra low inrush current <6~15A
- Built-in ORing FET
- Tool free terminal block (LA Type)
- Conformal coating
- Can be installed on DIN rail TS-35/75 or15
- 5 years warranty

Applications

- Industrial control system
- Semiconductor fabrication equipment
- Factory automation
- Electro-mechanical apparatus

GTIN CODE

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

Description

The XDR-120 series is a 120W AC/DC high-end ultra slim industrial DIN rail power. Key features of this series include a narrow 30mm casing, optimizing system installation space, and an ultra-wide input range of 85~305Vac suitable for global use. It boasts a maximum efficiency of 94% and a low standby power consumption of 0.9W~1W for energy savings and carbon reduction. It provides constant current with up to 200% peak power, and can handle instantaneous peak current of 600%. It has a fanless design, ultra-wide operating temperature range of -40 to +85℃ (up to +60℃ at full load); OVCIII compliance; ultra-low inrush current of <6~15A, and includes DC OK and remote ON/OFF functions. It also has a built-in ORing FET, the internal PCB has a coating for basic moisture and dust protection, and it has multiple terminal blocks for selection. With comprehensive protection functions, complete safety certifications, and a 5-years warranty, the XDR-120 series is a compact, high-performance, and highly reliable DIN rail power supply.

Model Encoding

XDR - 120 - 24 ☐

- ☐ Output terminal type
- 24 Output voltage(12V/24V/36V/48V)
- 120 Output wattage
- XDR Series name

Terminal Type Options		Note
Blank	Screw Terminal	In stock
LA	Lever Actuated	In stock
PI	Push In	In stock

120W AC/DC High-End Ultra Slim Industrial DIN Rail Power XDR-120 series

SPECIFICATION	XDR-120-12□	XDR-120-24□	XDR-120-36□	XDR-120-48□
	□ =Blank, LA, PI			
OUTPUT				
DC VOLTAGE	12V	24V	36V	48V
LOAD CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 3.33A	0 ~ 2.5A
RATED POWER	120W	120W	119.88W	120W
PEAK CURRENT (5sec.)	20A	10A	6.66A	5A
PEAK POWER (5sec.)	240W	240W	239.76W	240W
RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	120mVp-p	120mVp-p
VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 29V	36 ~ 42V	48 ~ 56V
VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%
LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME	1500ms, 60ms/230Vac 3000ms, 60ms/115Vac at full load			
HOLD UP TIME (Typ.)	20ms/230Vac 20ms/115Vac at full load			
INPUT				
AC VOLTAGE RANGE	85 ~ 305Vac			
DC VOLTAGE RANGE	80 ~ 431Vdc (Derating 50% Load @80Vdc)			
NO LOAD CONSUMPTION(Typ.) Remote Power OFF	0.9W@115Vac & 230Vac	1W@115Vac & 230Vac		
NO LOAD CONSUMPTION(Typ.) Remote Power ON	2W@115Vac & 230Vac			
FREQUENCY RANGE	47 ~ 63Hz			
POWER FACTOR (Typ.)	PF>0.98/115Vac PF>0.95/230Vac PF>0.9/277Vac at full load			
EFFICIENCY (Typ.)	93.5%	94%	94%	94%
AC CURRENT (Typ.)	2.3A/115Vac 1.2A/230Vac			
INRUSH CURRENT (Typ.)	COLD START 6A/115Vac 10A/230Vac 15A/277Vac			
LEAKAGE CURRENT	<1mA / 240Vac <1.5mA / 277Vac			
PROTECTION				
OVERLOAD	105%~200% rated output power for more than 5 sec then constant current limiting at rate current without shutdown when Vo=30%~100% ; Hiccup mode when Vo<30% rated voltage			
OVER VOLTAGE	16 ~ 19V	30 ~ 34V	43 ~ 50V	57 ~ 65V
	Protection type : Shut down o/p voltage, re-power on to recover			
OVER TEMPERATURE	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down			
FUNCTION				
DC OK RELAY CONTACT	Relay Contact Ratings (max.):30Vdc/1A, 30Vac/0.5A resistive load			
REMOTE CONTROL	Power ON :RC + ~ RC- keep <0.8Vdc			
	Power OFF:RC + ~ RC- keep 3.3~5Vdc			
PULSE CURRENT CAPABLILTY	12V:600% rated current for 4ms; 24V/36V/48V:600% rated current for 10ms			
ENVIRONMENT				
WORKING TEMP.	-40 ~ +85℃ (Refer to "Derating Curve")			
WORKING HUMIDITY	20 ~ 95% RH non-condensing			
STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing			
TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃) on Load output			
VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			

120W AC/DC High-End Ultra Slim Industrial DIN Rail Power XDR-120 series

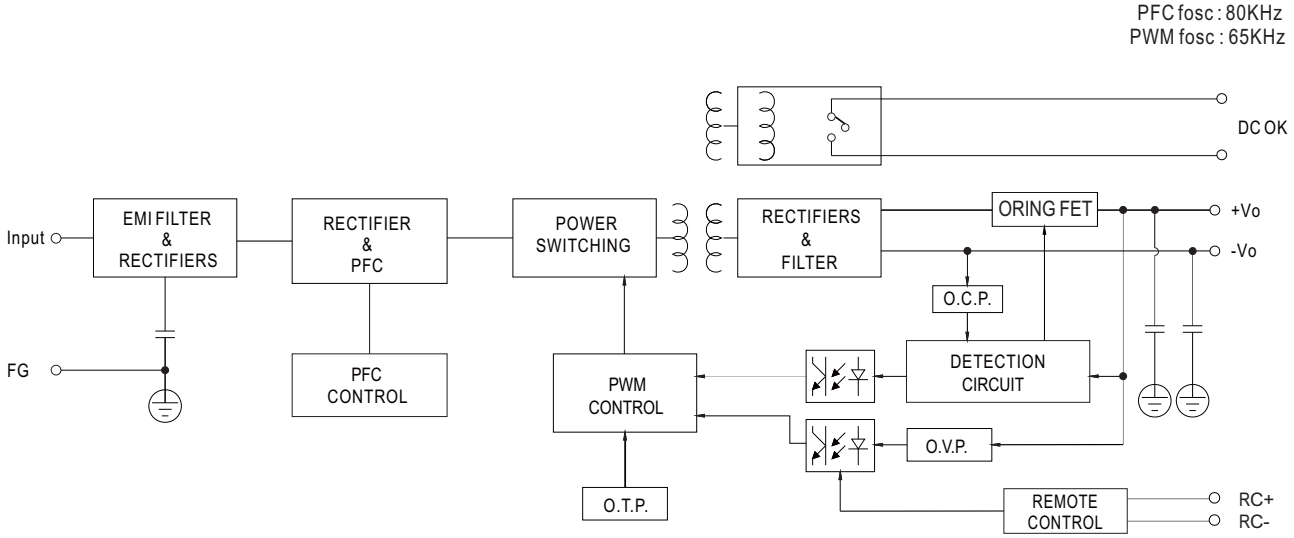
SPECIFICATION	XDR-120-12□	XDR-120-24□	XDR-120-36□	XDR-120-48□
	□ =Blank, LA, PI			
SAFETY & EMC Note.4				
SAFETY STANDARDS	CB IEC62368-1, IEC61558-1, IEC61010; DEKRA BS EN/EN62368-1,BS EN/EN61558-1/-2-16,BS EN/EN61010 UL UL121201/CSA C22.2 NO.213.17 Class I,DIV2 Group A,B,C,D Hazardous Locations T4;UL61010 RCM AS/NZS 62368-1, AS/NZS 61558-1/-2-16; CCC GB4943.1; BSMI CNS15598-1; EAC EAC TPTC004 approved; KC KC62368-1 and BIS IS13252 (Part 1):2010 certified, no stock ,contact sale for inquires			
OVER VOLTAGE CATEGORY Note.5	IEC/EN 61558-1/-2-16 (OVC Ⅲ, altitude up to 2000m) IEC/EN/UL 61010 (OVC Ⅱ, altitude up to 5000m) IEC/EN 62368-1 (OVC Ⅱ, altitude up to 5000m)			
SAFETY EXTRA-LOW VOLTAGE(SELV)	IEC/EN 61558-2-16 (SELV) IEC/EN/UL 61010-2-201 (SELV) IEC/EN 62368-1 (SELV / ES1)			
WITHSTAND VOLTAGE	I/P-O/P: 4KVac I/P-FG: 2KVac O/P-FG: 1.5KVac O/P-DC OK: 0.5KVac			
ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC/25℃/ 70%RH			
EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**	
	Conducted	BS EN/EN55032 (CISPR32) / BS EN/EN61204-3 / CNS15936	Class B	
	Radiated	BS EN/EN55032 (CISPR32) / BS EN/EN61204-3 / CNS15936	Class B	
	Harmonic Current	BS EN/EN61000-3-2	Class A	
	Voltage Flicker	BS EN/EN61000-3-3	-----	
EMC IMMUNITY	BS EN/EN55035 , BS EN/EN61204-3, BS EN/EN61000-6-2(BS EN/EN50082-2)			
	Parameter	**Standard**	**Test Level / Note**	
	ESD	BS EN/EN61000-4-2	Level 4, 15KV air ; Level 4, 8KV contact; criteria A	
	Radiated	BS EN/EN61000-4-3	Level 3, 10V/m ; criteria A	
	EFT / Burst	BS EN/EN61000-4-4	Level 4, 4KV ; criteria A	
	Surge	BS EN/EN61000-4-5	Level 4, 2KV/Line-Line ;Level 4, 4KV/Line-Line-Chassis ;criteria A	
	Conducted	BS EN/EN61000-4-6	Level 3, 10V ; criteria A	
	Magnetic Field	BS EN/EN61000-4-8	Level 4, 30A/m ; criteria A	
OTHERS				
MTBF	1550.7K hrs min. Telcordia SR-332 (Bellcore); 246.3K hrs min. MIL-HDBK-217F (25℃)			
DIMENSION	**30*125.2*116mm (W*H*D)**			
PACKING	0.595Kg; 20pcs/ 12.9Kg / 1.35CUFT			

NOTE

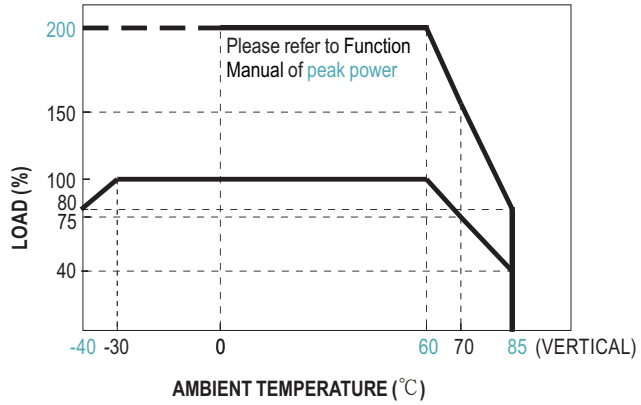
1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
5. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
6. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended.

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

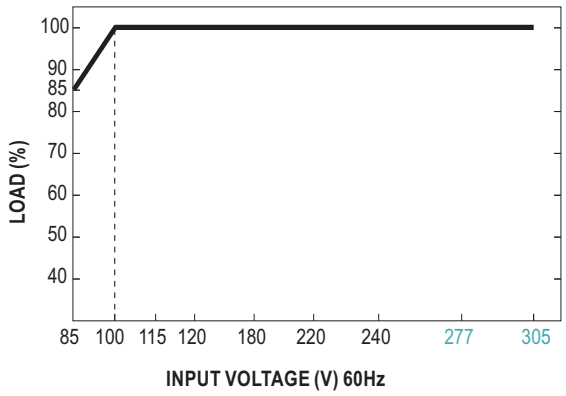
■ Block Diagram



■ Derating Curve



■ Output derating VS input voltage

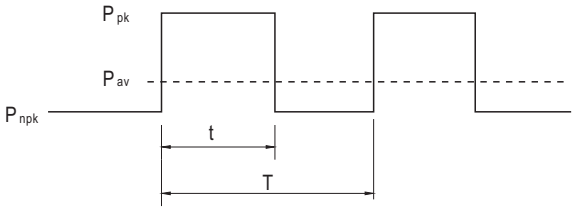


■ Peak Power

$$P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} \leqslant P_{rated}$$

$$Duty = \frac{t}{T} \times 100\% \leqslant 35\%$$

$t \leqslant 5$ sec



P_{av} : Average output power (W)

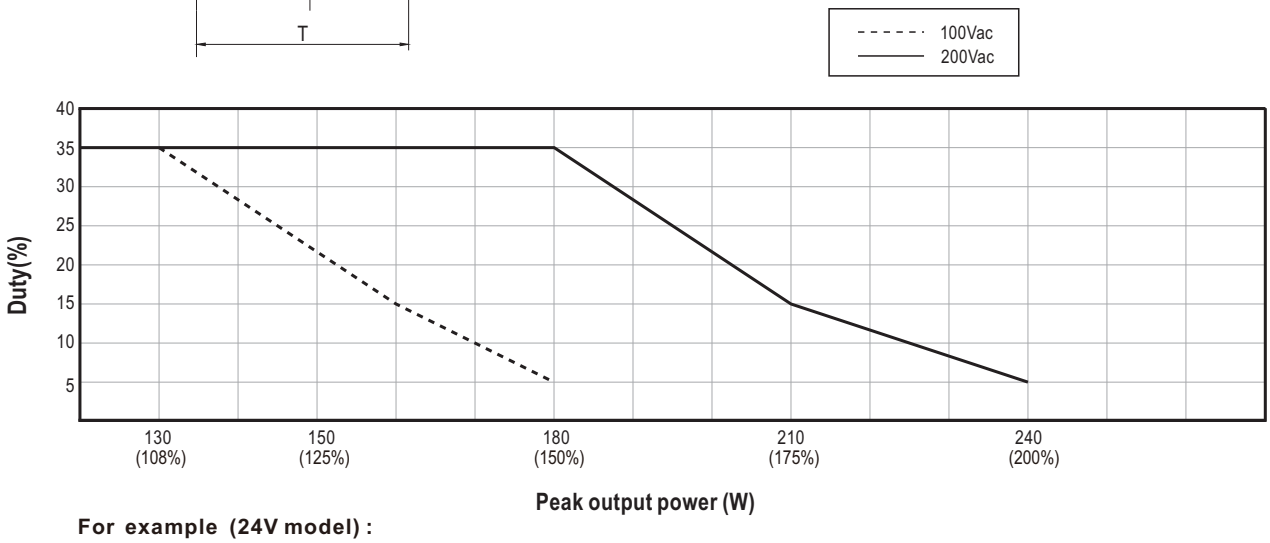
P_{pk} : Peak output power (W)

P_{npk} : Non-peak output power(W)

P_{rated} : Rated output power(W)

t : Peak power width(sec)

T : Period(sec)



For example (24V model) :

Vin = 200Vac Duty_max = 5%

$P_{av} = P_{rated} = 120W$

$P_{pk} = 240W$

$t \leqslant 5$ sec

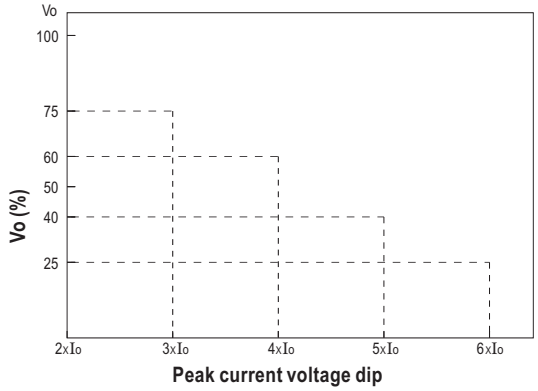
$$T \geqslant \frac{5\ sec}{5\%} \geqslant 100sec$$

$$P_{npk} \leqslant \frac{T P_{av} - t P_{pk}}{T-t}$$

$$P_{npk} \leqslant 113.7W$$

■ Transient peak current Capability

The device can deliver peak currents (up to several milliseconds) which are higher than the specified short term currents.

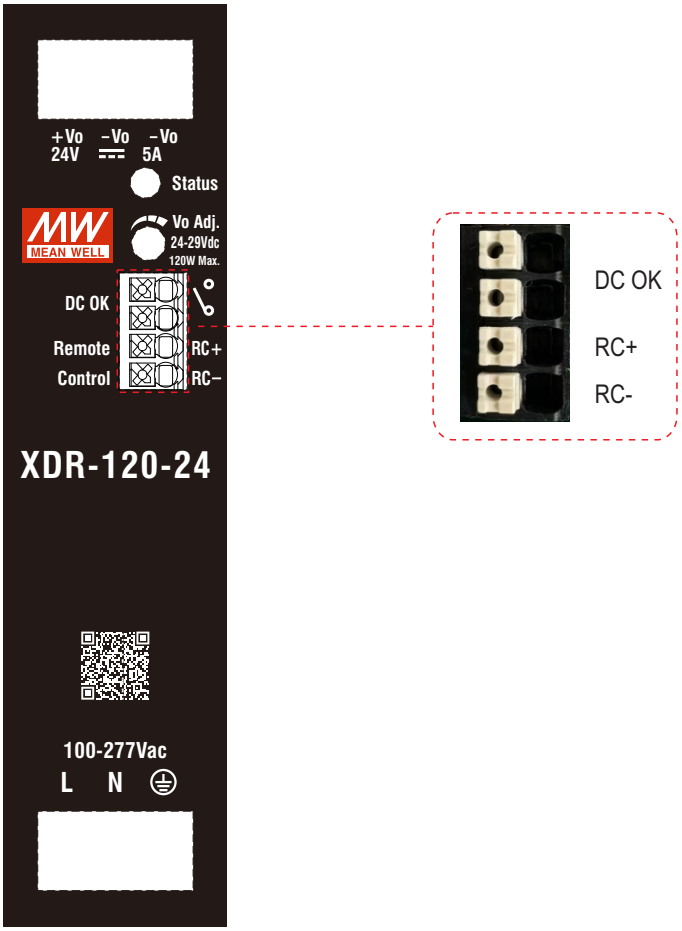


Load	Vo(%)	12V	24V/36V/48V
		Time	Time
3xIo	75	15ms	35ms
4xIo	60	8ms	17ms
5xIo	40	5ms	13ms
6xIo	25	4ms	10ms

Note:The 4ms~35ms in the table must be after AC mains is turned on.

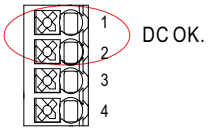
■ Function Manual

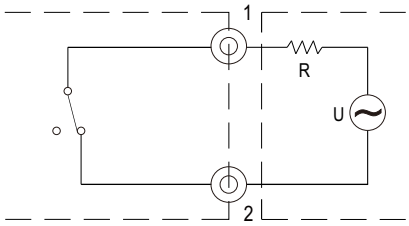
Pin No.	Function	Description
1,2	DC OK Relay Contact	Contact close : PSU turns ON/DC_OK ; Contact open : PSU turns OFF/DC_fail; Contact ratings (max.): 30Vdc/1A ,30Vac/0.5A resistive load.
3	RC+	Turns the output ON and OFF by electrical signal Remote power ON : Keep <0.8Vdc Remote power OFF: Keep 3.3~5Vdc
4	RC-	



1.DC OK Relay Contact

Contact Close	PSU turns ON / DC OK.
Contact Open	PSU turns OFF / DC Fail.
Contact Ratings (max.)	30Vdc/1A ,30Vac/0.5A resistive load.





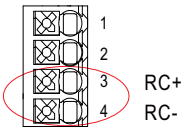
External voltage source (U) and resistor (R)
(The max. Sink is 30Vdc/1A ,30Vac/0.5A)

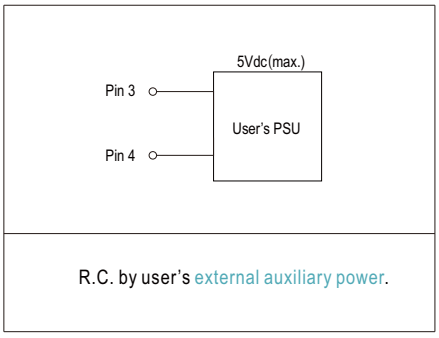
Internal circuit of DC_OK, via relay contact

2.Remote ON/OFF Control

The PSU can be turned ON/OFF by using the "Remote Control" function.

PSU Vo Status	Between RC+(Pin3) and RC-(Pin 4)
Remote power ON	Keep<0.5Vdc
Remote power OFF	Keep 4~5Vdc

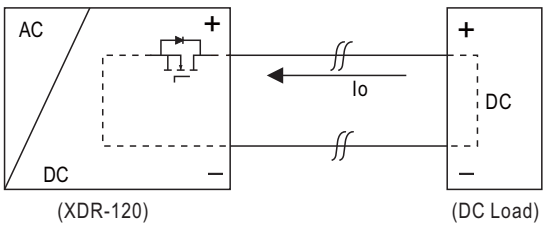




R.C. by user's external auxiliary power.

3.Protection Against Inverse Voltages From The Load

Prevent PSU damage from Back Electro magnetic Force during deceleration of motor or inductive load.



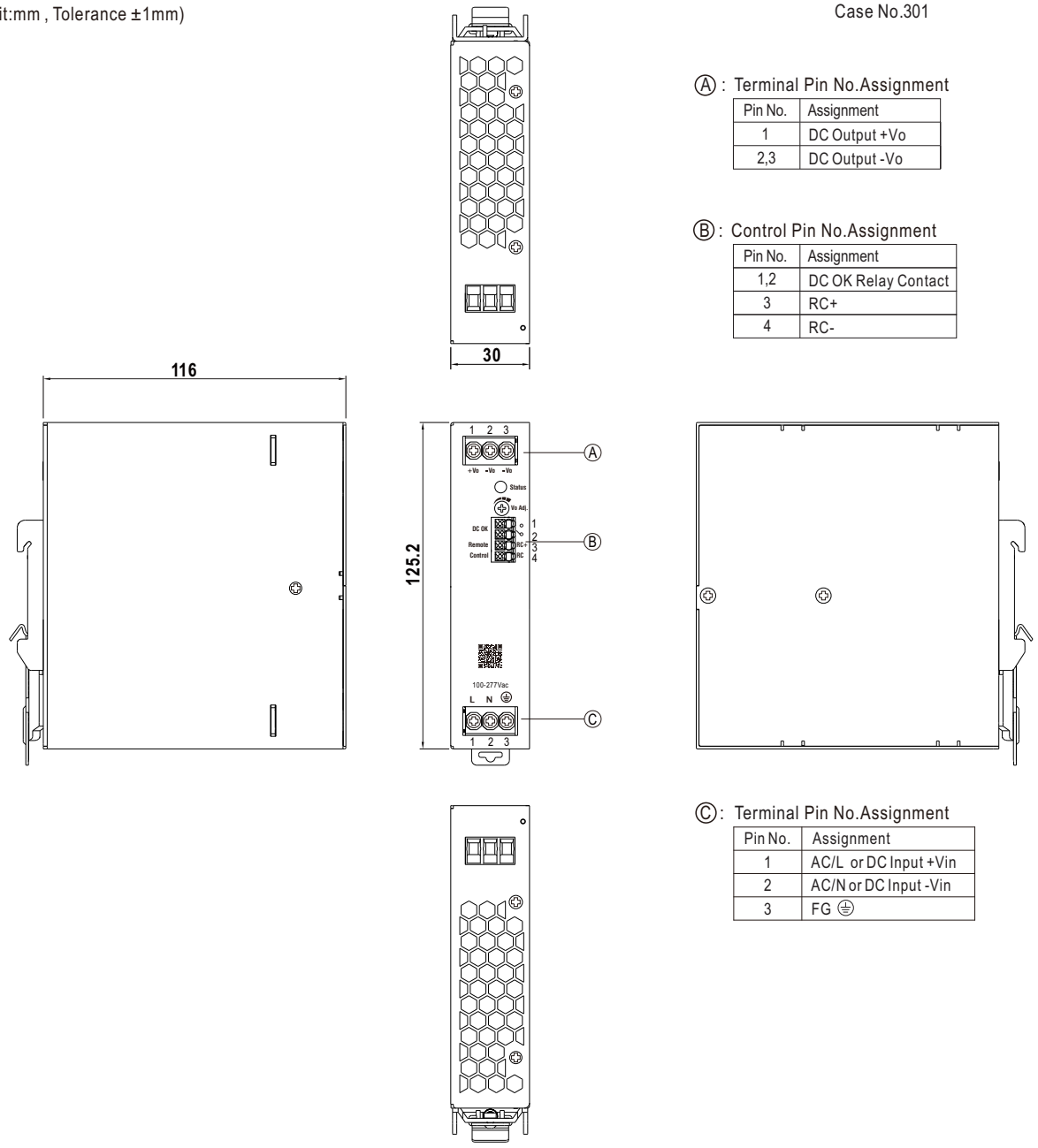
(XDR-120) (DC Load)

PSU'S ORing FET turn OFF voltage	
MODEL	Max. allowable reverse voltage
XDR-120-12	<16V
XDR-120-24	<35V
XDR-120-36	<50V
XDR-120-48	<63V

■ Mechanical Specification

(Unit:mm , Tolerance ±1mm)

Case No.301



Ⓐ: Terminal Pin No.Assignment

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

Ⓑ: Control Pin No.Assignment

Pin No.	Assignment
1,2	DC OK Relay Contact
3	RC+
4	RC-

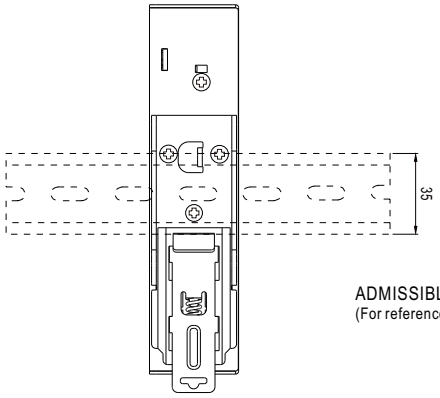
Ⓒ: Terminal Pin No.Assignment

Pin No.	Assignment
1	AC/L or DC Input +Vin
2	AC/N or DC Input -Vin
3	FG ⏚

■ Recommend Wiring

	AC Input T.B	DC Output T.B	Signal connector
Solid Wire	6mm^2 max.	6mm^2 max.	1.5mm^2 max.
A.W.G	22~10 AWG	22~10 AWG	24~16 AWG
Screw Terminal Torque	9 Lb-In	9 Lb-In	/

■ Installation Instruction



This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15
(For reference only. Not included with unit.)

■ Installation Manual

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