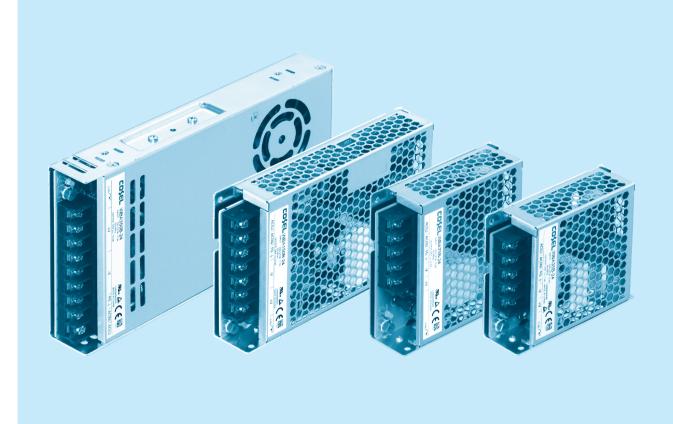
AC-DC Power Supplies Enclosed Type





WBA

# **WBA-series**



# Feature

Wide input 170 - 305VAC (Accepts 230/277VAC Nominal Inputs) Wide temperature range (-20°C to +70°C, Derating is required) Operating altitude up to 5000 meters 4kV isolation Low-profile Economical design Complies with SEMI F47 (See Instruction Manual)

## Safety agency approvals

UL62368-1, C-UL (CAN/CSA-C22.2 No.62368-1), EN62368-1

# CE marking

Low Voltage Directive RoHS Directive

# UKCA marking

Electrical Equipment Safety Regulations RoHS Regulations

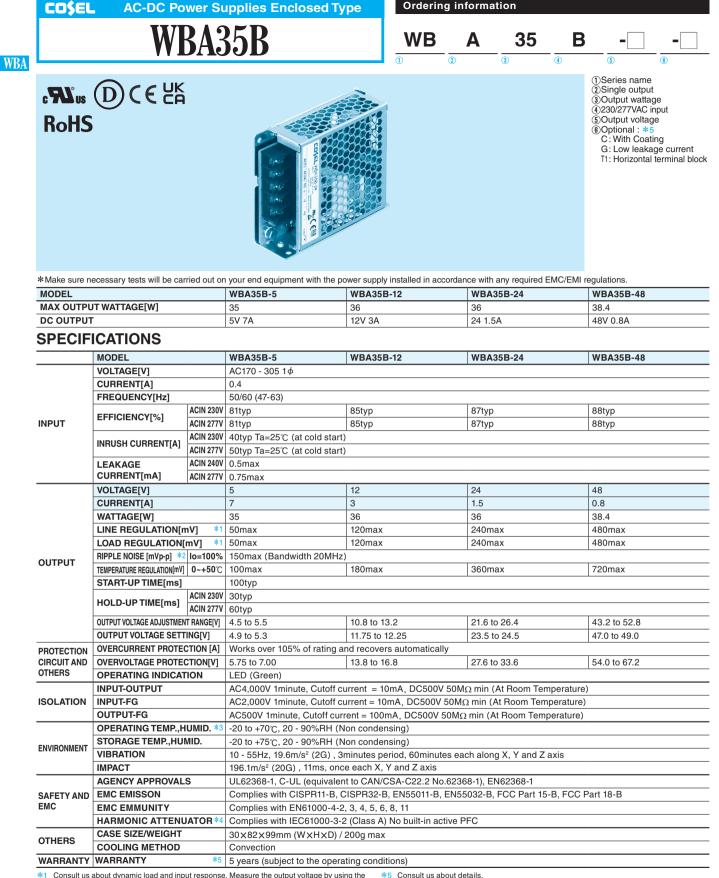
### **5-year warranty** (See Instruction Manual)

## EMI

Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part 15-B, FCC Part 18-B (WBA350B: Class A In radiated noise, it can meet class B by additional EMI/EMC filter.)

### EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-6 EN61000-4-8 EN61000-4-11



Consult us about dynamic load and input response. Measure the output voltage by using the

average mode of the tester to deal with the burst operation at low (Io=0~20%Atyp) load \*2 This is the result of measurement of the testing board with capacitors of 47µF and 0.1µF

placed at 150 mm from the output terminals by a 20MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-GikenRM104.

When the load factor is low (lo=0~20%Atyp), the switching power loss is reduced by burst operation, which will cause ripple noise to go beyond the specifications.

Output power derating is required. Refer to "Derating"

Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details

All parameters not specially mentioned are measured at ACIN 230V, rated load and 25°C of ambient temperature. Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.

The listed options may affect the published standard specifications. Please contact us for

Parallel operation is not possible with this model.

Acoustic noise may be heard from the power supply when used for pulse load

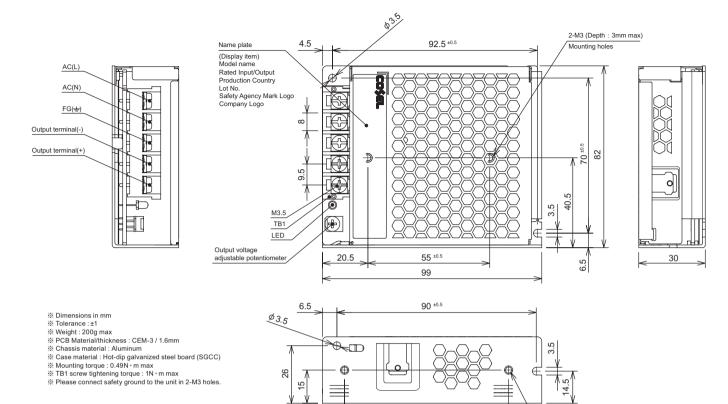
detailed product specifications and safety approvals.

# WBA35B | CO\$EL

2-M3 (Depth : 5mm max) Mounting holes

#### External view

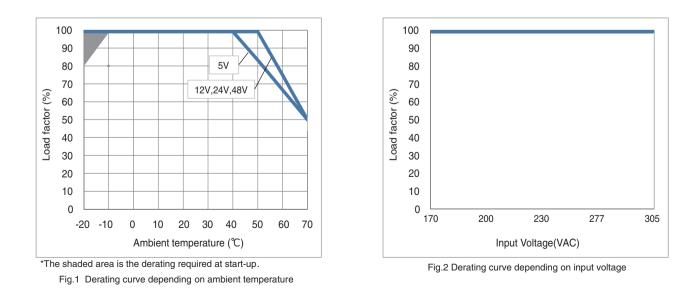
### WBA



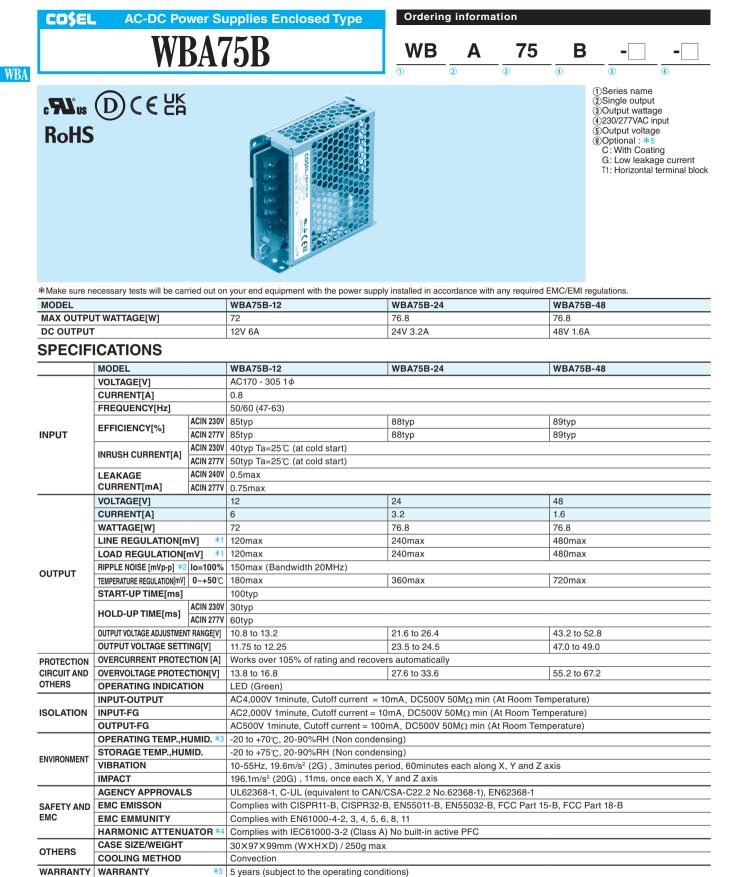
10

74 ±0.5

#### **Derating Curve**



The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.



\*1 Consult us about dynamic load and input response. Measure the output voltage by using the average mode of the tester to deal with the burst operation at low (lo=0~20%Atyp)

\*5 Consult us about details.

of ambient temperature.

 \*6 The listed options may affect the published standard specifications. Please contact us for detailed product specifications and safety approvals.
 \* All parameters not specially mentioned are measured at ACIN 230V, rated load and 25'c

Do not use the power supply in overcurrent conditions or in unspecified input voltage

Acoustic noise may be heard from the power supply when used for pulse load

ranges. Otherwise the internal components may be damaged.

Parallel operation is not possible with this model.

\*2 This is the result of measurement of the testing board with capacitors of 47μF and 0.1μF placed at 150 mm from the output terminals by a 20MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-GikenRM104. When the load factor is low (lo-0~20%Atyp), the switching power loss is reduced by burst

operation, which will cause ripple noise to go beyond the specifications. \*3 Output power derating is required. Refer to "Derating"

44 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

WBA-4

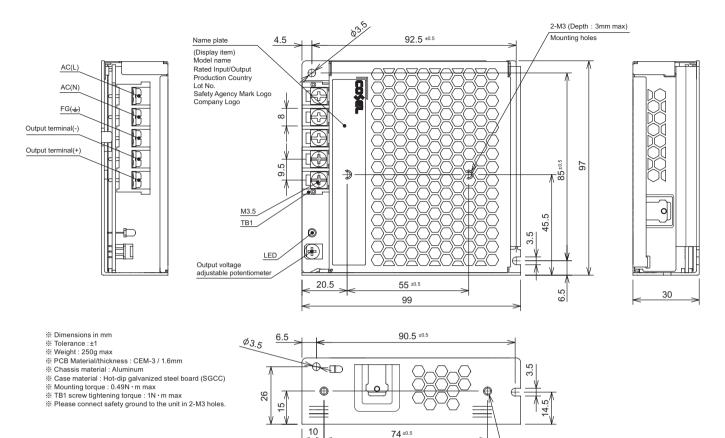
load.

# WBA75B | CO\$EL

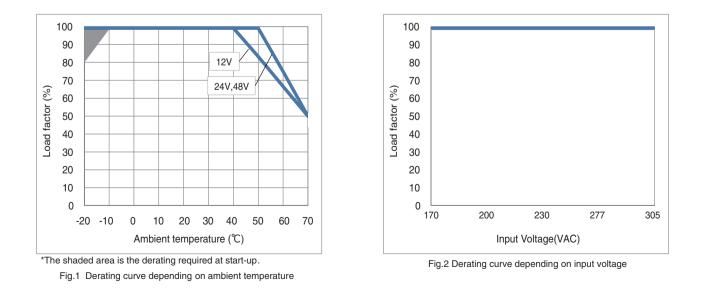
2-M3 (Depth : 5mm max) Mounting holes

#### External view

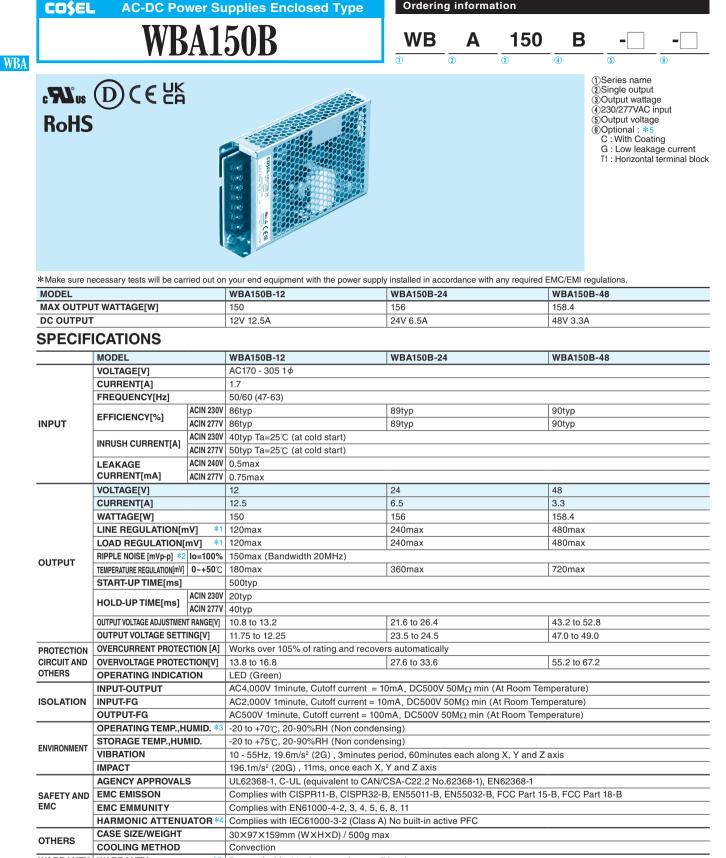




#### **Derating Curve**



The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.



WARRANTY WARRANTY \*5 5 years (subject to the operating conditions) Consult us about dynamic load and input response. Measure the output voltage by using the \*5 Consult us about details. The listed options may affect the published standard specifications. Please contact us for

average mode of the tester to deal with the burst operation at low (lo=0~20%Atyp) load

This is the result of measurement of the testing board with capacitors of  $47\mu$ F and  $0.1\mu$ F placed at 150 mm from the output terminals by a 20MHz oscilloscope or a ripple-noise \*2 meter equivalent to Keisoku-GikenRM104.

When the load factor is low (lo=0~20%Atyp), the switching power loss is reduced by burst operation, which will cause ripple noise to go beyond the specifications.

Output power derating is required. Refer to "Derating"

Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

of ambient temperature. Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged

All parameters not specially mentioned are measured at ACIN 230V, rated load and 25°C

Parallel operation is not possible with this model

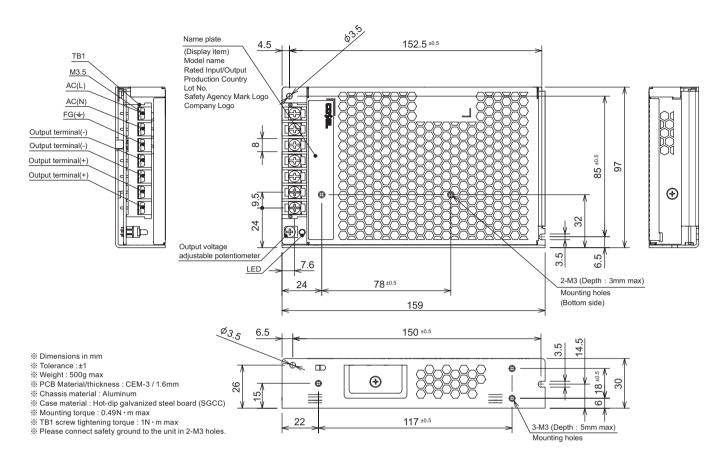
detailed product specifications and safety approvals.

Acoustic noise may be heard from the power supply when used for pulse load

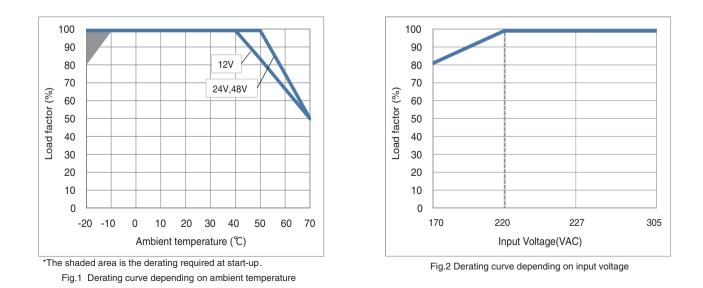
# WBA150B | COSEL

#### **External view**

WBA



#### **Derating Curve**



The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.



\*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations. \*Please note that the unit's internal components is damaged if the output is short-circuit.

MODEL	WBA350B-12	WBA350B-24	WBA350B-36	WBA350B-48	
MAX OUTPUT WATTAGE[W]	348	350.4	349.2	350.4	
DC OUTPUT	12V 29A	24V 14.6A	36V 9.7A	48V 7.3A	

#### **SPECIFICATIONS**

	MODEL		WBA350B-12	WBA350B-24	WBA350B-36	WBA350B-48		
	VOLTAGE[V]		AC170 - 305 1φ					
INPUT	CURRENT[A]		3.3					
	FREQUENCY[Hz]		50/60 (47-63)					
		ACIN 230V	86typ	88typ	89typ	89typ		
	EFFICIENCY[%]	ACIN 277V	86typ	88typ	89typ	89typ		
	INRUSH CURRENT[A]	ACIN 230V	40typ Ta=25°C (at cold start)					
		ACIN 277V	/ 50typ Ta=25°C (at cold start)					
	LEAKAGE ACIN 240V CURRENT[mA] ACIN 277V		/ 0.5max					
			0.75max					
	VOLTAGE[V]		12	24	36	48		
	CURRENT[A]		29	14.6	9.7	7.3		
	WATTAGE[W]		348	350.4	349.2	350.4		
	LINE REGULATION[m	וV] <mark>*1</mark>	120max	240max	360max	480max		
	LOAD REGULATION	mV] *1	120max	240max	360max	480max		
OUTPUT	RIPPLE NOISE [mVp-p] *2	lo=100%	150max (Bandwidth 20MHz)					
	TEMPERATURE REGULATION[mV]	0~+50℃	180max	360max	540max	720max		
	START-UP TIME[ms]		1300typ					
		ACIN 230V	/ 12typ					
	HOLD-UP TIME[ms]	ACIN 277V	20typ					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.8 to 13.2	21.6 to 26.4	32.4 to 39.6	43.2 to 52.8		
	OUTPUT VOLTAGE SETTING[V]		11.75 to 12.25	23.5 to 24.5	35.0 to 37.0	47.0 to 49.0		
ROTECTION	OVERCURRENT PROTEC	CTION [A]	Works over 105% of rating and recovers automatically					
IRCUIT AND	OVERVOLTAGE PROTECTION[V]		13.8 to 16.8	27.6 to 33.6	41.4 to 50.4	55.2 to 67.2		
THERS	OPERATING INDICAT	ION	LED (Green)					
	INPUT-OUTPUT		AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)					
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At Room Temperature)					
	OPERATING TEMP.,H	UMID. *3						
INVIRONMENT	STORAGE TEMP., HUN	MID.	-20 to +75°C, 20-90%RH (Non condensing)					
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G) , 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis					
	AGENCY APPROVALS		UL62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1					
SAFETY AND	EMC EMISSON		Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part 15-B, FCC Part 18-B *5					
	EMC EMMUNITY		Complies with EN61000-4-2, 3, 4, 5, 6, 8, 11					
OTHERS	CASE SIZE/WEIGHT		115×30×215mm (W×H×D) / 800g max					
UTTERS	COOLING METHOD		Forced cooling (internal far	)				
WARRANTY	WARRANTY	*4	5 years (subject to the operating conditions)					

Consult us about dynamic load and input response.

\*2 This is the result of measurement of the testing board with capacitors of 47µF and 0.1µF placed at 150 mm from the output terminals by a 20MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-GikenRM104.

\*3 Output power derating is required. Refer to "Derating"
\*4 Consult us about details.

\*5 Radiated noise can meet class B by additional EMI/EMC filter.

The listed options may affect the published standard specifications. Please contact us for detailed product specifications and safety approvals. \*6

All parameters not specially mentioned are measured at ACIN 230V, rated load and 25°C of ambient temperature.

Do not use the power supply in overcurrent conditions or in unspecified input voltage

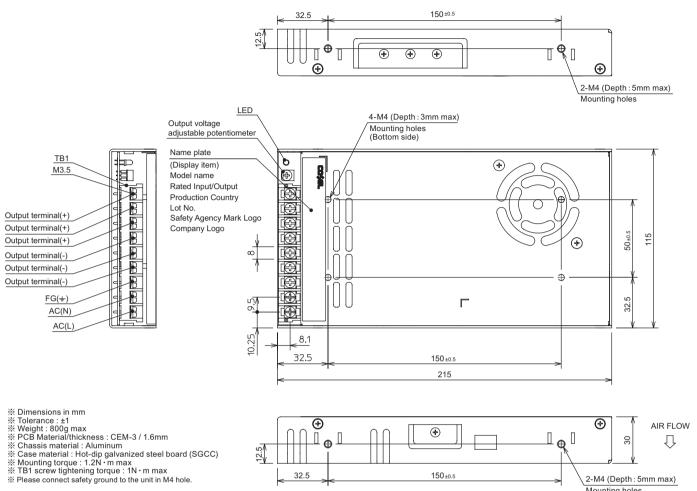
ranges. Otherwise the internal components may be damaged.

Parallel operation is not possible with this model. Acoustic noise may be heard from the power supply when used for pulse load.

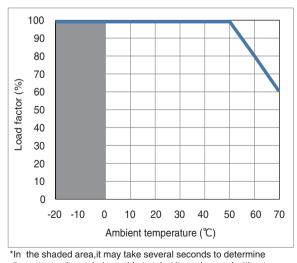
# WBA350B | COSEL

#### External view

### WBA



#### **Derating Curve**



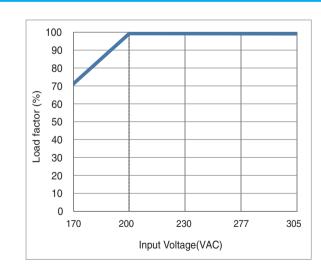


Fig.2 Derating curve depending on input voltage

the output voltage during cold start, but it can be used without any problems.

Fig.1 Derating curve depending on ambient temperature

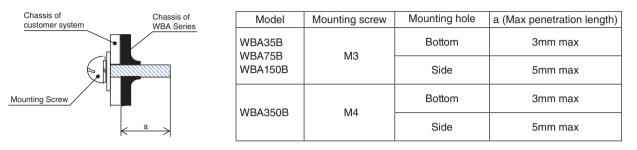
The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.

Mounting holes

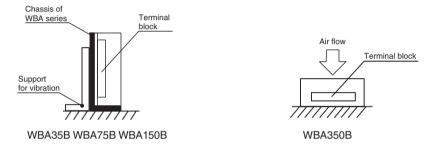
# **COŞEL** | WBA-series

#### **Assembling and Installation Method**

To keep enough isolation between screws and internal components, the length of the mounting screw should not exceed recommendation as shown in the figure.



In order to withstand vibrations and impact, support which is shown in the figure is necessary.



If you use two or more power supplies side by side, please keep a sufficient distance between them to allow enough air ventilation.

Ambient temperature around each power supply should not exceed the temperature range shown in the derating curve.

The unit has cooling fan. (WBA350B)

Ensure that the inlet and outlet vents are not blocked.

#### **Instruction Manual**

Please read the "Instruction Manual" and "Before using our product" before you use our product.

Instruction Manual Before using our product https://www.coselasia.com/product/index01#post-5-1643 https://en.cosel.co.jp/technical/caution/index.html



#### **Basic Characteristics Data**

Model	Circuit method Switching [kHz]	Input	Datad	Inrush	PCB/Pattern			Devallel	
			current [A]	Rated input fuse	current protection circuit	Material	Single sided	Double sided	Parallel operation
WBA35B	Flyback converter	50 to 120	0.4	300V 2.5A	Thermistor	CEM-3	Yes		No
WBA75B	Flyback converter	50 to 120	0.8	300V 2.5A	Thermistor	CEM-3	Yes		No
WBA150B	Flyback converter	50 to 120	1.7	300V 6.3A	Thermistor	CEM-3	Yes		No
WBA350B	Forwrad converter	65	3.3	300V 6.3A	Thermistor	CEM-3	Yes		No