

DC to DC Converters

Distributed Power Supplies for Systems, Insulation Type

Full Brick Type iFA Series

Power supply systems for infrastructure devices used in communication networks primarily use brick-type DC to DC converters. Some parts of these devices require mid output voltage and power.

We have developed a lineup of full brick types to meet these requirements.



FEATURES

- Wide input voltage range (DC.36(Partial: 37V) to 75V or DC.18 to 36V)
- Our lineup includes products for outputs of 12V and 28V at 420W, 500W and 600W
- High efficiency: 90 to 91%
- The heat sink can be installed (Depend on an environmental condition).
- Remote ON-OFF function
- Output voltage external variable function
- Remote sensing function
- Parallel operation
- Various protective functions

PRODUCT IDENTIFICATION

iFA	48	042A	120V	-○○○
(1)	(2)	(3)	(4)	(5)

(1) Type name

iFA: Full brick type

(2) Rated input voltage

(3) Output current

(4) Output voltage

(5) Option code

000: Standard (13 pins for the "Power Good" signal,
Pin length: 3.68mm)

001: 13 pins for the "Power Good" signal,
Pin length: 2.79mm

002: 13 pins for the OVP signal,
Pin length: 3.68mm

003: 13 pins for the OVP signal,
Pin length: 2.79mm

PART NUMBERS AND RATINGS

Output voltage(V)	Current(A)	Part No.
12	42	iFA48042A120V
12	50	iFA48050A120V
28	18	iFA48018A280V
28	21	iFA48021A280V
28	15	iFA24015A280V

SPECIFICATIONS AND STANDARDS

Part No.		iFA48042A120V	iFA48050A120V	iFA24015A280V	iFA48018A280V	iFA48021A280V
Rated output voltage and current*1		12V • 42A	12V • 50A	28V • 15A	28V • 18A	28V • 21.4A
Maximum output power	W	504	600	420	504	600
Input conditions						
Input voltage E _{dc}	V	36 to 75 [Continuation]	37 to 75 [Continuation]	18 to 36 [Continuation]	36 to 75 [Continuation]	36 to 75 [Continuation]
Transient input voltage	V	100[100ms]	100[100ms]	50[100ms]	100[100ms]	100[100ms]
Input current	A	16max.	18max.	26.5max.	16max.	20max.
Inrush transient*2	A ² S	1max.	1max.	1max.	1max.	1max.
Efficiency	%	91typ.	90typ.	90typ.	91typ.	90.5typ.
Output characteristics						
Output voltage E _{dc}	V	12	12	28	28	28
Voltage adjustment range	%	-40 to +10	-40 to +10	-40 to +10	-40 to +10	-40 to +10
Maximum output current	A	42	50	15	18	21.4
Minimum output current	A	7.35	0.5	0.15	3.2	3.75
Output voltage initial setting	%	±1.8max.	±3max.	±3max.	±1.8max.	±1.8max.
Overvoltage protection	V	14.6typ.	13.8 to 15.2	31.9 to 35.5	34.2typ.	34.2typ.
Overcurrent protection	A	45typ.	55typ.	17typ.	20typ.	24typ.
Voltage stability	Line regulation	mV	24max.(12typ.)	24max.(12typ.)	56max.(28typ.)	56max.(28typ.)
	Load regulation	mV	24max.(12typ.)	24max.(12typ.)	56max.(28typ.)	56max.(28typ.)
	Temperature regulation	mV	100max.(50typ.)	100max.(50typ.)	300max.(100typ.)	300max.(100typ.)
	Dynamic response*3	mV	±450typ.	±650typ.	±500typ.	±450typ.
Ripple noise E _{p-p}	mV	150max.	200max.	300max.	250max.	250max.
Start up time	ms	40typ.	35typ.	55typ.	55typ.	55typ.
Auxiliary functions						
Overvoltage protection		Yes(Shut-down type)				
Overcurrent protection		Yes(Automatic recovery)				
Power good		Yes				
Over-temperature protection		Yes(Automatic recovery)				
Remote ON-OFF		Yes				
Remote sensing		Yes				
Parallel operation		Impossible				
Output voltage adjustment		Yes				
Master slave operation		No				
Standards						
Safety standards		UL60950 and VDE0805 approved. EN60950 approved.				
Constructions						
External dimensions	mm	12.7×61.0×116.8[H×W×L]				
Weight	g	250max.				
Mounting method		Mounted from the terminal side (soldered).				
Oscillating method		Fixed frequency				
Oscillating frequency	kHz	200typ.	350typ.	155typ.	175typ.	175typ.

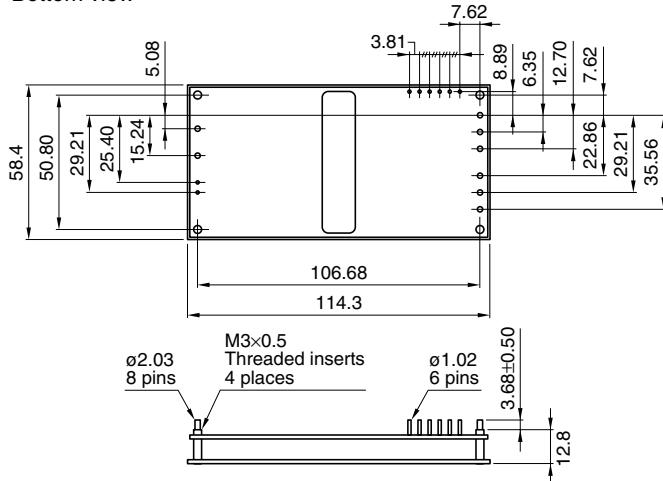
*1 Verify the rated current (maximum output current) because this involves derating.

*2 Applies only to the primary surge. The power supply does not have an input fuse, so make sure to install an external fuse when using this product.

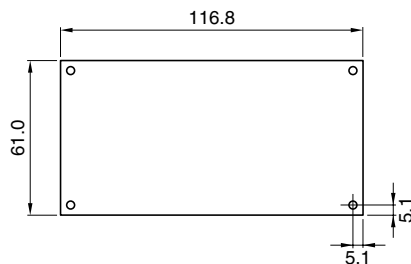
*3 Load step from 50 to 75% of I_o max. with at least one 10μF ceramic capacitor and one 470μF low ESR aluminum or tantalum capacitor across the output terminals.

SHAPES AND DIMENSIONS

Bottom view

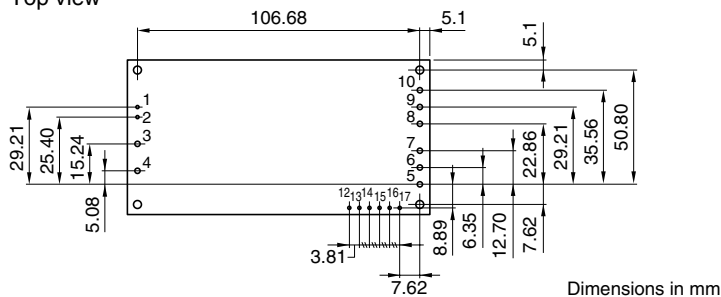


Top view



TERMINAL DESIGNATIONS AND FUNCTIONS

Top view



Dimensions in mm

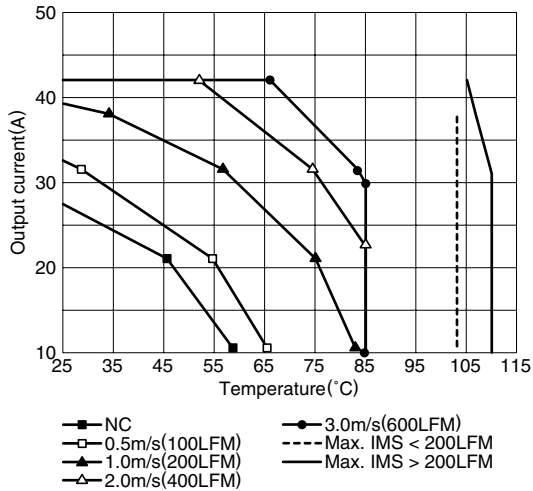
1	On/Off(+)	The output can be turned on/off externally.
2	On/Off(-)	The output can be turned on/off externally.
3	+Vin	DC input terminal (+)
4	-Vin	DC input terminal (-)
5	-Vout	DC output terminal (-)
6	-Vout	DC output terminal (-)
7	-Vout	DC output terminal (-)
8	+Vout	DC output terminal (+)
9	+Vout	DC output terminal (+)
10	+Vout	DC output terminal (+)
11	Not Present	Not present
12	AUX OUT	Auxiliary power terminal for external signal
13	PWR GOOD	Output for converter operation alarm
14	CB	Terminal for output current balancing
15	TRIM	The output voltage can be varied by an external resistor.
16	+SENSE	Remote sensing terminal (+)
17	-SENSE	Remote sensing terminal (-)

OUTPUT POWER-AMBIENT TEMPERATURE (DERATING)

MAXIMUM OUTPUT CURRENT vs. AMBIENT TEMPERATURE(Ta)

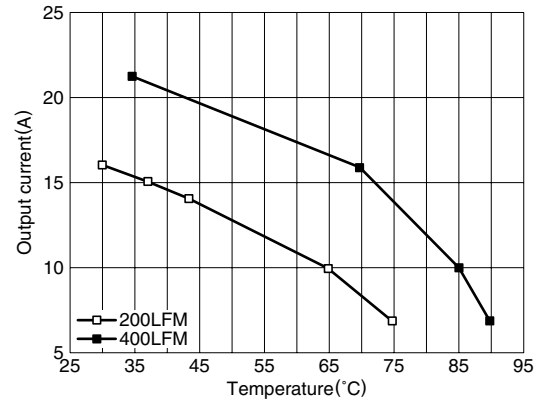
iFA48042A120V

Wind direction: Best orientation, Vin=48V



iFA48021A280V

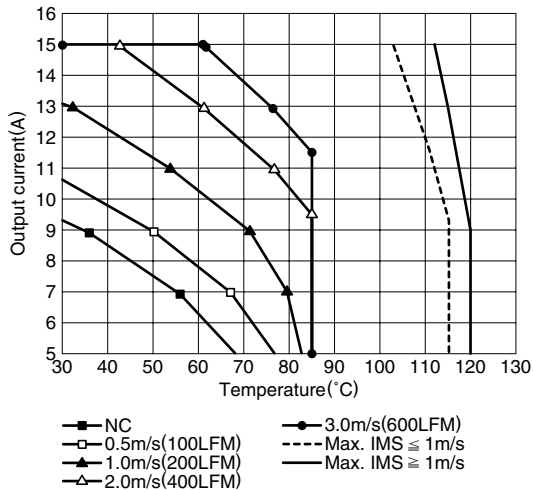
Wind direction: Best orientation, Vin=48V



(Please inquire for other models.)

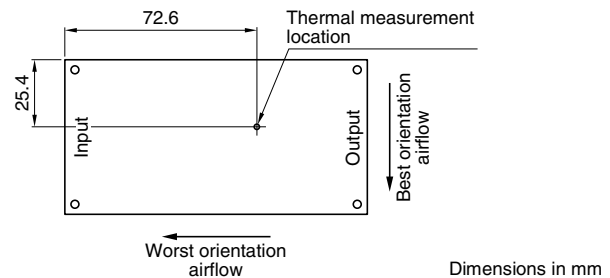
iFA24015A280V

Wind direction: Best orientation, Vin=24V



Tc TEMPERATURE MEASUREMENT POINT AND WIND DIRECTION

NC: Natural cooling=0.3m/s(60LFM)



COMMON SPECIFICATIONS

Temperature and humidity		
Temperature range	Operating(°C)	-40 to +110[Temperature at the measurement point in the above drawing]
	Storage(°C)	-55 to +125[Ambient temperature of the power supply]
Humidity range	Operating(%)RH	10 to 85[Without dewing]
	Storage(%)RH	
Vibration and shock		
Vibration	5 to 50Hz	Acceleration: 0.5G
	50 to 500Hz	Acceleration: 1.5G
Shock	Acceleration	50G[Half sine wave, 3 directions]
	Pulse duration	6ms
Withstand voltage		
Withstand voltage	Input terminal to output terminal	DC.1.5kV[1min, Normal temperature, normal humidity, cutout current 10mA]