

DC CONFIGURATION GUIDE

How to size a Network Energy Source

Follow these three easy steps to select the Network Energy Source (NES) to securely power your 48V DC powered network equipment:

1. What is the total power requirement of your network equipment?

Add up the power ratings of all equipment that will be powered from the NES. Look at the rating labels on the back of the routers, servers and other equipment. Or refer to the manufacturer's specifications. The power is given in watts (W).

If you plan to add more equipment later then you may want to size your NES so that it can also supply this future requirement.

TIP: Nine items of equipment can be connected directly to each NES or contact your Intergy representative for details of extra sub-distributions.

Total equipment power rating = _____ watts (W)

2. What battery reserve time do you require?

If there is an AC power failure, how long do you want your network equipment to operate from the NES battery?

TIP: Recommended battery reserve times are between 60–180 minutes (1-3 hours).

Battery reserve time = _____ minutes

3. Select the NES model to suit your needs.

From the selection charts below use the equipment power rating (1) and the battery reserve time (2) to select the model of NES to suit your needs. Choose the correct chart according to your local AC supply (110V AC, 50/60Hz or 208/220/240V AC, 50/60Hz) and decide if you want a redundant rectifier*.

Note: A redundant rectifier is an additional (hot spare) rectifier for added security.

Selection Charts

TIP: If your combination of equipment power rating and battery reserve time is outside the range of the charts then contact your local Powerware DC representative for details of other options.

110V 110V AC, 50/60Hz AC, 50/60Hz																					
		Battery Reserve Time (minutes)																			
		5	10	15	20	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	300
Equipment Power Rating (W)	200	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	2+2
	400	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	2+2	2+2	2+2	2+2	3+2	3+2	3+2	3+2
	600	1+2	1+2	1+2	1+2	1+2	1+2	2+3	2+3	2+3	2+3	2+3	3+3	3+3	3+3	3+3	3+3	4+3	4+3	4+3	5+3
	800	1+3	1+3	1+3	1+3	1+3	2+3	2+3	2+3	2+3	3+3	3+3	3+3	4+3	4+3	4+3	4+3	5+3	5+3	5+3	6+3
	1000	1+3	1+3	1+3	1+3	1+3	2+3	2+3	2+3	3+3	3+3	4+3	4+3	4+3	5+4	5+4	5+4	6+4	6+4	6+4	8+4
	1200	1+3	1+3	1+3	1+3	2+3	2+3	3+4	3+4	3+4	4+4	4+4	5+4	5+4	5+4	6+4	6+4	7+4	7+4	7+4	9+4
	1400	1+4	1+4	1+4	1+4	2+4	2+4	3+4	3+4	4+4	4+4	5+4	5+4	6+4	6+4	7+4	7+4	8+4	8+4	9+4	10+4
	1600	1+4	1+4	1+4	2+4	2+4	3+4	3+4	4+4	4+4	5+4	5+4	6+4	7+4	7+4	8+4	8+4	9+4	9+4	10+4	12+4
	1800	1+4	1+4	2+4	2+4	2+4	3+4	4+4	4+4	5+4	5+4	6+4	7+4	8+4	8+4	9+4	9+4	10+4	10+4	11+4	
	2000	1+4	1+4	2+4	2+4	2+4	3+4	4+4	4+4	5+4	6+4	7+4	8+4	8+4	9+4	9+4					

1+2

= 1 battery tray, 2 rectifier modules

In these configurations the redundant rectifier module is required for battery recharge.

Order information for 110V AC models:

Key	Model description
1 + r	INES 115E with r x R748 rectifier modules
2 + r	INES 215E with r x R748 rectifier modules
3 + r	INES 315E with r x R748 rectifier modules
b + r	INES 315E with (b-3) x INES-BTE battery trays, (b-3) x INES-EBC battery extensions and r x R748 rectifier modules
where b > 3	

Order example:

4 + 3	INES 315E with 1 x INES-BTE battery trays, 1 x INES-EBC battery extensions and 3 x R748 rectifier modules
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		208/220/240V AC, 50/60Hz																			
		Required Battery Reserve Time (minutes)																			
		5	10	15	20	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	300
Equipment Power Rating (W)	200	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	2+2
	400	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	2+2	2+2	2+2	2+2	3+2	3+2	3+2	3+2
	600	1+2	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	2+2	2+2	3+2	3+2	3+2	3+2	3+2	4+2	4+2	4+2	5+2
	800	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	2+2	3+2	3+2	3+2	4+2	4+2	4+2	4+2	5+3	5+3	5+3	6+3
	1000	1+2	1+2	1+2	1+2	1+2	2+2	2+2	2+2	3+3	3+3	4+3	4+3	4+3	5+3	5+3	5+3	6+3	6+3	6+3	8+3
	1200	1+3	1+3	1+3	1+3	2+3	2+3	3+3	3+3	3+3	4+3	4+3	5+3	5+3	5+3	6+3	6+3	7+3	7+3	7+3	9+3
	1400	1+3	1+3	1+3	1+3	2+3	2+3	3+3	3+3	4+3	4+3	5+3	5+3	6+3	6+3	7+3	7+3	8+3	8+3	9+3	10+3
	1600	1+3	1+3	1+3	2+3	2+3	3+3	3+3	4+3	4+3	5+3	5+3	6+3	7+3	7+3	8+3	8+3	9+3	9+3	10+4	12+4
	1800	1+3	1+3	2+3	2+3	2+3	3+3	4+3	4+3	5+3	5+3	6+3	7+4	8+4	8+4	9+4	9+4	10+4	10+4	11+4	13+4
	2000	1+3	1+3	2+3	2+3	2+3	3+3	4+3	4+3	5+4	6+4	7+4	8+4	8+4	9+4	9+4	10+4	11+4	12+4	12+4	15+4
	2200	2+4	2+4	2+4	2+4	3+4	3+4	4+4	5+4	6+4	6+4	7+4	8+4	9+4	10+4	10+4	11+4	12+4	13+4	13+4	16+4
	2400	2+4	2+4	2+4	2+4	3+4	4+4	5+4	5+4	6+4	7+4	8+4	9+4	10+4	10+4	11+4	12+4	13+4	14+4	14+4	
	2600	2+4	2+4	2+4	2+4	3+4	4+4	5+4	6+4	6+4	7+4	9+4	10+4	11+4	11+4	12+4	13+4	14+4	15+4	16+4	
	2800	2+4	2+4	2+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4	10+4	11+4	12+4	13+4	14+4	15+4	16+4		
	3000	2+4	2+4	2+4	3+4	3+4	5+4	6+4	6+4	7+4	8+4	10+4	11+4	12+4	13+4	14+4	15+4	16+4			
	3200	2+4	2+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4	10+4	12+4	13+4	14+4	15+4	16+4				
	3400	2+4	2+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	10+4	11+4	12+4	14+4	15+4	16+4					

1+2 = 1 battery tray, 2 rectifier modules
In these configurations the redundant rectifier module is required for battery recharge.

Note: 5 rectifier systems: Contact your local Intergy representative for availability. The front panel display option is not available with 5 rectifier systems.

Order information for 208/220/240V AC models:

Key	Model description
1 + r	INES 125E with r x R1248 rectifier modules
2 + r	INES 225E with r x R1248 rectifier modules
3 + r	INES 325E with r x R1248 rectifier modules
b + r	INES 325E with (b-3) x INES-BTE battery trays, (b-3) x INES-EBC battery extensions and r x R1248 rectifier modules
where b > 3	

Order example:

4 + 3	INES 315E with 4 x INES-BTE battery trays, 1 x INES-EBC battery extensions and 3 x R1248 rectifier modules
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Sample Calculation 1

For a 110V, 50/60Hz AC supply

1 What is the total power requirement of your network equipment?

Equipment specifications

Average VoIP Port Load (with allowance for category 5 cable loss at 100m)	10 W
Switch Power	50 W
Mid span insertion hub power	25 W

Equipment Power Rating

	# Ports	# Switches	# Mid span Insertion Hubs	Total Power Required
Present	48	1	2	580 W
Future	48	1	2	580 W
Total				1160 W

Total equipment power rating = 1200 W

2 What battery reserve time do you require?

Battery reserve time = 60 minutes

3 Select the NES model to suit your needs.

From the 110V, 50/60Hz AC supply selection chart:

- Find the model corresponding to 60 minutes and 1200W. – **3+4**
- Use the Order Information table to find the corresponding NES model:
INES 315E with 4 x R748 rectifier modules + 3 x INES-BTE battery trays

Sample Calculation 2

For a 208/220/240V, 50/60Hz AC supply

1 What is the total power requirement of your network equipment?

Equipment specifications

Average VoIP Port Load (with allowance for category 5 cable loss at 100m)	10 W
Switch Power	50 W
Mid span insertion hub power	25 W

Equipment Power Rating

	# Ports	# Switches	# Mid span insertion hubs	Total Power Required
Present	192	4	8	1160 W
Future	96	2	4	1160 W
Total				2320 W

Total equipment power rating = 2400 W

2 What battery reserve time do you require?

Battery reserve time = 90 minutes

3 Select the NES model to suit your needs.

From the 208/220/240V, 50/60Hz AC supply selection chart:

- Find the model corresponding to 90 minutes and 2400W. – **6+4**
- Use the Order Information table to find the corresponding NES model:

INES 325E with 6 x INES-BTE battery trays, 3 x INES-EBC battery extensions and 4 x R1248 rectifier modules