MIRUS International Inc.
31 Sun Pac Blvd., Brampton, Ontario, Canada L6S 5P6

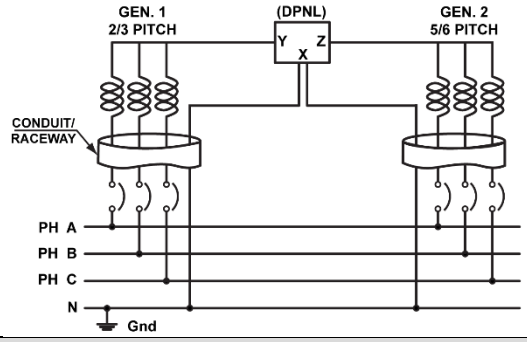
TECHNICAL DATA **DPNL™**

DISSIMILAR PITCH NEUTRAL LIMITING REACTOR

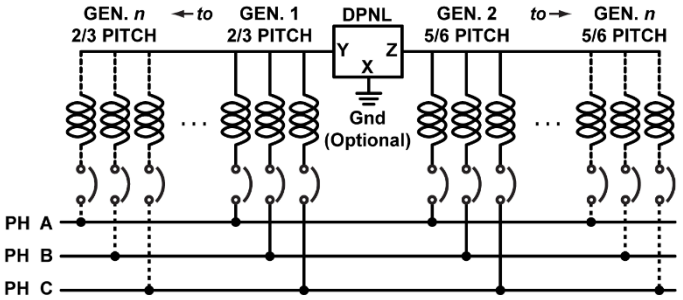
GENLINK™ Technical Data Sheet

GENERAL SPECIFICATIONS:			
VOLTAGES	208-240, 380-440, 460-480, 575-600, 660-690 / 3 or 4-wire, 60 or 50Hz	**INSULATING VARNISH IMPREGNATION**	Polyester Resin
OPERATING TEMPERATURE RISE	130°C (Max. Ambient of 40 deg C)	**AUDIBLE SOUND LEVEL**	As per NEMA ST-20 & CSA C9 Based on equivalent kVA
INSULATION CLASS	220°C	**VENTILATION**	Convection air cooled
EQUIV. EFFICIENCY AT FULL LOAD	> 99%	**WINDING MATERIAL**	Copper
SYSTEM CONNECTION	Series connected in the common neutral of generator groups with dissimilar winding pitches	**ENCLOSURE**	Type: NEMA-3R, ventilated Paint: Polyester powder coated Colour: ANSI 61 Grey
THROUGH IMPEDANCE (%Z) [6]	Y-Z Term: ~ 45% X-Y or X-Z Term: ~ 1% (saturated)	**TEMPERATURE SWITCHES**	170°C [200°C]
WINDING MATERIAL	Copper	**OVER-TEMPERATURE ALARM**	ALM2: Over-Temperature Alarm with horn and flashing light (requires separate power, supplied by customer)

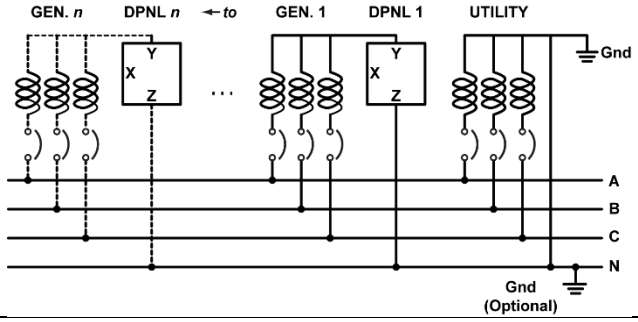
GENLINK™ 4-Wire, Grounded Neutral System



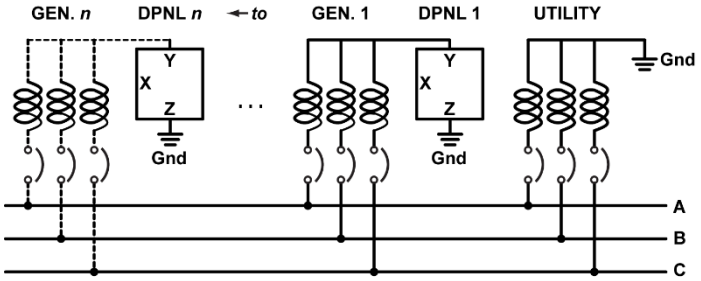
GENLINK™ 3-Wire System



GENLINK™ as NGI 4-Wire, Grounded Neutral System



GENLINK™ as NGI 3-Wire System



Product Code

Product Code:

Size [Return Neutral Amps]: 200, 500, 1000, 1500, 2000, 2500, 3000, 4000, 5000

Frequency [Hz]: 50, 60

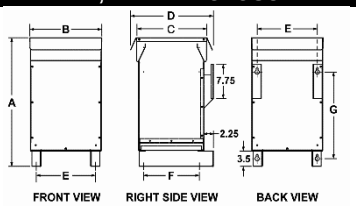
DPNL - AAA - VVV - Hz - En

Line Voltage: 240, 440, 480, 600, 690 VAC

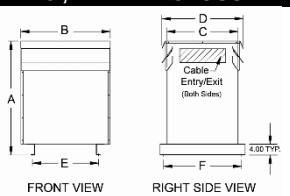
Enclosure:
- E0 = No Enclosure
- E1 = Standard Enclosure
- E1E = Type 3R Enhanced

Dimensions

'MT1', 'MT2' ENCLOSURE



'MT3', 'MT4' ENCLOSURE



CASE STYLE		ENCLOSURE DIMENSIONS - inches [mm]						
Standard	Enhanced	A	B	C	D	E	F	G
MT1	MT1-E	29.00 [737]	16.75 [425]	15.00 [381]	19.00 [483]	13.75 [349]	13.00 [330]	19.50 [495]
MT2	MT2-E	38.00 [965]	21.50 [546]	19.50 [495]	23.50 [597]	17.00 [432]	17.50 [445]	25.00 [635]
MT3	MT3-E	45.00 [1143]	26.00 [661]	21.00 [534]	25.00 [635]	21.50 [546]	19.00 [483]	
MT4	MT4-E	51.50 [1308]	32.00 [813]	25.50 [648]	29.50 [749]	23.50 [597]	23.50 [597]	

GENLINK™ 50Hz or 60Hz System Selection Table

4-Wire System - Sizes									Losses	Connections	
DPNL Rating (Amps) [3] [10]		Total Capacity of all Paralleled Sources kW [kVA] [2] [3]					Case Style	Weight lb [kg][1]	@ Full Load (Watts) [1]	Mechanical Lugs Provided	
Return Neutral	Circulating	208-240V	380-440V	460-480V	575-600V	660-690V				Y and Z Terminals	X Terminal
200	100	68 [85]	120 [150]	250 [312]	320 [400]	360 [450]	MT1	150 [68]	150	250MCM-#6	250MCM-#6
500	250	160 [200]	300 [375]	640 [800]	800 [1000]	900 [1120]	MT2	330 [150]	315	600MCM-#2	2x600MCM-#2
1000	500	335 [420]	620 [775]	1280 [1600]	1600 [2000]	1800 [2250]	MT2	408 [185]	515	2x350MCM-#6	4x350MCM-#6
1500	750	500 [625]	920 [1150]	1920 [2400]	2400 [3000]	2720 [3400]	MT3	500 [227]	765	Copper Pad	Copper Pad
2000	1000	675 [840]	1200 [1500]	2500 [3126]	3200 [4000]	3600 [4500]	MT3	560 [254]	800	Copper Pad	Copper Pad
2500	1250	840 [1050]	1540 [1930]	3200 [4000]	4000 [5000]	4500 [5625]	MT3	725 [329]	965	Copper Pad	Copper Pad
3000	1500	1000 [1250]	1840 [2300]	3800 [4750]	4800 [6000]	5475 [6843]	MT4	1169 [530]	1120	Copper Pad	Copper Pad
4000	2000	1350 [1690]	2475 [3095]	5090 [6370]	6370 [7960]	7300 [9130]	Consult Factory			Copper Pad	Copper Pad
5000	2500	1690 [2115]	3095 [3865]	6370 [7960]	7960 [9950]	9135 [11415]				Copper Pad	Copper Pad

3-Wire System or 4-Wire with <30% Ph-N Loads									Losses	Connections	
DPNL Rating (Amps) [3] [10]		Total Capacity of all Paralleled Sources kW [kVA] [3] [4]					Case Style	Weight lb [kg][1]	@ Full Load (Watts) [1]	Mechanical Lugs Provided	
Return Neutral	Circulating	208-240V	380-440V	460-480V	575-600V	660-690V				Y and Z Terminals	X Terminal
200	100	170 [215]	320 [400]	380 [475]	475 [595]	550 [685]	MT1	150 [68]	150	250MCM-#6	250MCM-#6
500	250	430 [540]	790 [990]	950 [1190]	1195 [1495]	1370 [1710]	MT2	330 [150]	315	600MCM-#2	2x600MCM-#2
1000	500	865 [1080]	1585 [1980]	1910 [2385]	2390 [2985]	2700 [3375]	MT2	408 [185]	515	2x350MCM-#6	4x350MCM-#6
1500	750	1295 [1620]	2370 [2960]	2870 [3585]	3584 [4480]	4110 [5140]	MT3	500 [227]	765	Copper Pad	Copper Pad
2000	1000	1730 [2160]	3155 [3945]	3820 [4775]	4775 [5970]	5490 [6860]	MT3	560 [254]	800	Copper Pad	Copper Pad
2500	1250	2160 [2700]	3945 [4930]	4775 [5970]	5970 [7465]	6855 [8570]	MT3	725 [329]	965	Copper Pad	Copper Pad
3000	1500	2590 [3240]	4735 [5920]	5735 [7170]	7170 [8960]	8235 [10295]	MT4	1169 [530]	1120	Copper Pad	Copper Pad
4000	2000	3460 [4325]	6305 [7880]	7650 [9560]	9560 [11950]	10970 [13715]	Consult Factory			Copper Pad	Copper Pad
5000	2500	4320 [5400]	7890 [9865]	9560 [11950]	11950 [14935]	13710 [17140]				Copper Pad	Copper Pad

DPNL as NGI 3- or 4- Wire Systems								Losses	Connections	
DPNL Rating (Amps) [3] [10]		Phase Current Ampacity of Generator or Transformer [Amps] [3][5]				Case Style	Weight lb [kg][1]	@ Full Load (Watts) [1]	Mechanical Lugs Provided	
Return Neutral	Circulating	4-Wire		3-Wire					Y and Z Terminals	X Terminal
		208-440V	460-690V	208-440V	460-690V					
200	100	100	200	300	300	MT1	150 [68]	150	250MCM-#6	250MCM-#6
500	250	250	500	750	750	MT2	330 [150]	315	600MCM-#2	2x600MCM-#2
1000	500	500	1000	1500	1500	MT2	408 [185]	515	2x350MCM-#6	4x350MCM-#6
1500	750	750	1500	2250	2250	MT3	500 [227]	765	Copper Pad	Copper Pad
2000	1000	1000	2000	3000	3000	MT3	560 [254]	800	Copper Pad	Copper Pad
2500	1250	1250	2500	3750	3750	MT3	725 [329]	965	Copper Pad	Copper Pad
3000	1500	1500	3000	4500	4500	MT4	1169 [530]	1120	Copper Pad	Copper Pad
4000	2000	2000	4000	6000	6000	Consult Factory			Copper Pad	Copper Pad
5000	2500	2500	5000	7500	7500				Copper Pad	Copper Pad

Notes:

1. Estimated values.
2. To size the DPNL for standard 4-wire applications, determine the total capacity in kW or kVA of all paralleled generators or other sources. Select the DPNL that corresponds to this value in the appropriate system voltage column. This will size the unit for a return neutral current rating that is at least 50% of the full current rating of the application. For 208-240V and 380-440V units, the return neutral rating will be at least 85% of the full current rating.
3. It is the Users responsibility to ensure that the actual return neutral current will not exceed the rating of the DPNL. If the return neutral current from all Ph-to-N loads in 4-wire applications is expected to exceed the recommended DPNL rating, then select a larger size DPNL or use a Mirus NCE-FAI to reduce neutral current (consult factory for sizing).
4. For 3-wire standard DPNL applications, determine the total capacity in kW or kVA of all paralleled sources and select the appropriate size from the table for a 3-wire system. The 3-wire table can also be used in 4-wire applications when it is known that there will be no Ph-to-N loads or very few of them.
5. When it is not possible to connect all generator and/or transformer neutrals at the DPNL, it can be connected as a neutral grounding inductor or NGI. To size the DPNL for a 4-wire NGI application, determine the phase current ampacity rating of the generator or transformer and select the DPNL that corresponds to this value in the appropriate system voltage column. This will size the unit for a return neutral current rating that is at least 50% of the full current rating of the generator or transformer. For 208-240V and 380-440V units, the return neutral rating will be at least 100% rated. For applications with 3-wire or 4-wire with few Ph-to-N loads, select the appropriate size from those columns in the table. This will size the DPNL to > 33 1/3% of the phase current rating. As per note 3, it is the Users responsibility to ensure that the actual return neutral current will not exceed the rating of the DPNL.
6. The high impedance between Y-Z terminals prevents the flow of circulating current (predominantly triplen frequency) between the dissimilarly pitched generator groups. X-Y and X-Z impedances are the values to be used for 1-phase fault level calculations and are with core saturated. The DPNL will have no effect on 3-phase fault level.
7. DPNL is inserted in the common neutral where two or more generators of dissimilar pitch are connected together (see Connection Diagrams) or where generators are paralleled with an alternate source, such as the Utility. The DPNL is inserted in the neutral between the dissimilar groups.
8. The neutral should be grounded in only one location. If grounded at the switchboard or any other location, DPNL terminal X should not be grounded.
9. For additional information refer to: Typical Specifications, Application Notes, Internal Layout, Connection Diagrams and GenLink Technical Guide.
10. End User is responsible for ensuring that the DPNL installation and wiring satisfies all applicable electrical and safety code requirements. For NEC, relevant sections for sizing neutral conductors include 250.184(A)(2) and 220.61(A).
11. Specifications are subject to change without notice.