

# **HOKKIM** *giving you control*

## Control & Protection Relays

Model : **DPR-N1**

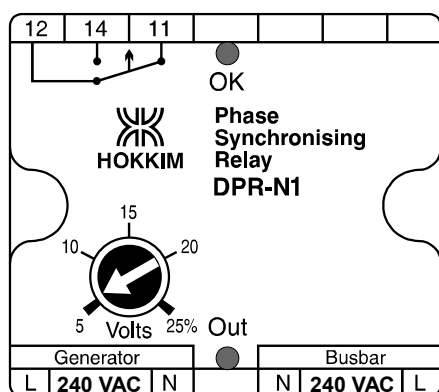
Function : Phase Synchronizing Relay for 1-Phase 2-Wire or 2-Phase 2-Wire Supply.

### Utilization:

The **DPR-N1** detects the phase angle between two supply sources. It ensures that the phase angle between the existing busbar mains supply and the generator supply is within acceptable limits before switching of generator supply on to the busbar. Thus the connection of the generator supply to the busbar can be done automatically without damage or disturbance to the system.

The volt-free contacts 11-14-12 of the **DPR-N1** is energized when the phase angle between the busbar and generator is below the set limit. The setting range is 5% to 25% of the nominal volts.

For two supplies whose phase to neutral voltages and frequencies are the same at 240V 50Hz, say; then, the angle and voltage between corresponding phases of the two supplies are given in the table



Busbar :	240V 50Hz Phase-Neutral	
Generator:	240V 50Hz Phase-Neutral	
Voltage and Phase Angle Corresponding Phases of Busbar & Generator		
Voltage (Volts)	Voltage (% of 240V)	Phase Angel (Degree)
12V	5%	2.9 <sup>0</sup>
24V	10%	5.7 <sup>0</sup>
36V	15%	8.6 <sup>0</sup>
38V	20%	11.5 <sup>0</sup>
60V	25%	14.4 <sup>0</sup>

### Technical Data

Supply Voltage	: □415V 2-Ph 2-Wire □200V 2-Ph 2-Wire □240V 1-Ph 2-Wire □115V 1-Ph 2-Wire
Frequency	: 50~60Hz
Consumption	: 3VA
ON-TRIP Response Time	: 200 msec.
Adjustment Voltage	: 5 - 25% nominal volts (3 <sub>o</sub> - 15 <sub>o</sub> phase angle)
Indication	: Green LED (OK) Red LED (Out)
Output Contacts	: 5A 240V 50Hz AC1 Relay ON 11-14 Close 11-12 Open Relay OFF 11-14 Open 11-12 Close

