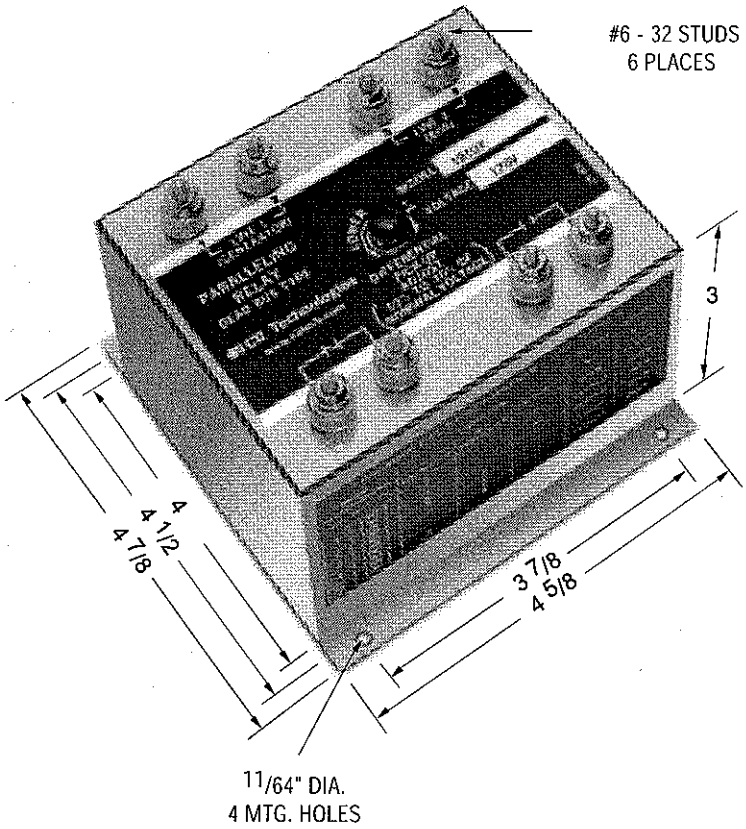
WILMAR™ Protective Relays – 1800 Series



Note: Dimensions in inches. Multiply values by 25.4 for dimensions in mm.

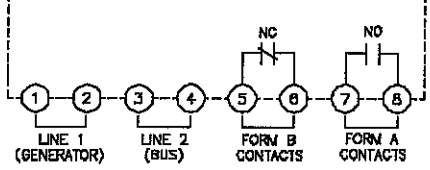
Function: 25

- ANSI/IEEE C37.90-1978
- UL file No. E58048
- CSA file No. LR61158

Application:

These relays are designed for automatic paralleling (synchronizing) of generators. The relays sense the phase angle displacement and the amplitude difference between two voltages and permit paralleling only when both voltages are equal and in phase. A short time delay is provided to assure that the frequencies are essentially the same at the moment of paralleling. The basic series is designed to parallel two or more energized AC generators. The "Dead Bus" type provides paralleling of AC generators to the main bus. They permit electrical connection of an energized generator to an un-energized line (Dead Bus). If the bus is energized, connection of the generator to the bus is permitted only when both are synchronized.

CONNECTIONS



PRODUCT SPECIFICATIONS	
Part Number	**1800 Series**
Sensing Voltage	120 V, 230 V, 277 V, 380 V, 460 V, 575 V, & 415 V
Line Frequency	50-500 Hz
Pick-Up Adjustment	External adjustment for field sensing of 10-30% of nominal input voltage. (Vertical voltage differential of 6 to 18 electrical degrees).
Time Delay	Fixed @ 60 milliseconds is provided to assure that the frequencies of both input lines are sufficiently close to permit paralleling within the preset window.
Output Contacts	One set N.O., one set N.C. 5 amp resistive at 120 VAC or 28 VDC

A. 3 Phase, 4 Wire System

Connect phase "A" of LINE 1 to terminal 1
Connect phase "A" of LINE 2 to terminal 3
Connect the neutrals to terminals 2 & 4

B. 3 Phase, 3 Wire or 1 Phase, 2 Wire System

Connect phase "A" of LINE 1 to terminal 1
Connect phase "B" of LINE 1 to terminal 2
Connect phase "A" of LINE 2 to terminal 3
Connect phase "B" of LINE 2 to terminal 4

Consult factory for additional models and options.

Selection Guide
(Typical Applications)

Sensing Voltage	Series 1800 Generator to Generator	Series 1800DB Generator to Bus	Series 1800DDB Bus to Bus
	Permits paralleling of two generators only when they are "on-line" and their voltages are equal and in phase (synchronized)	Normally used to permit paralleling of a generator to a bus when: (a) both line voltages are equal and in phase, or: (b) when the generator is "on-line" and the bus is "dead"	Permits paralleling of two power lines (buses) when: (a) both line voltages are equal and in phase, or: (b) when either bus is "hot" and the other bus is "dead"
120 Volts	1810X	1810DBX	1810DDBX
230 Volts	1820X	1820DBX	1820DDBX
380 Volts	1830X	1830DBX	1830DDBX
460 Volts	1840X	1840DBX	1840DDBX
575 Volts	1850X	1850DBX	1850DDBX
415 Volts	1860X	1860DBX	1860DDBX
277 Volts	1870X	1870DBX	1870DDBX

		Condition			Series 1800 Contacts		Series 1800DB Contacts		Series 1800DDB Contacts	
		Energized	Not Energized	Synch.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
1	Line 1	X			Open	Close	Open	Close	Open	Close
	Line 2	X		Yes						
2	Line 1	X		No	Close	Open	Close	Open	Close	Open
	Line 2	X		No						
3	Line 1	X			Close	Open	Open	Close	Open	Close
	Line 2		X							
4	Line 1		X		Close	Open	Close	Open	Close	Open
	Line 2		X							
5	Line 1		X		Close	Open	Close	Open	Open	Close
	Line 2	X								

Output Contact Options: 1. Two Form A. (Add -A to Model Number)
2. Two Form B. (Add -B to Model Number)