Powering Innovation

JVS
ELECTRONICS
ISO 9001 COMPANY

PROTECTION + AUTOMATION + CONTROL

NUMERICAL CHECK SYNCHRONIZING RELAY

JNF 060

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NUMERICAL CHECK SYNCHRONIZING RELAY
JNF 060

FEATURES

- Programmable bus voltages
- Programmable bus frequencies
- Programmable phase angle difference between two buses
- Dead bus Active/Inhibit feature
- History of 5 latest relay closing details
- Self Supervision facility

Application

JNF 060 is used in power systems in order to prevent interconnection of badly synchronized supplies. Synchro check relay is used in series with a breaker closing circuit and automates the operation of synchronizing two buses.

PRINCIPLE OF OPERATION

JNF 060 monitors voltage, frequency and phase angle difference of both the buses. If "dead bus" feature is Inhibit and If the voltage, frequency and the phase angle differences are within the pre-set limits, then the N /0 contacts of the relay operates indicating synchronization of the buses else the relay does not operate.

If "dead bus" feature is Active and if the status of one of the buses (bus-1) is programmed as "dead bus" and the other (bus-2) is considered normal, then, the relay operates if the voltage on bus-2 is greater than 80% of the rated voltage and the voltage on bus-1 is lesser than a programmable value (30%-80% of the rated voltage).

Output relay can be operated either in continuous mode or in pulse mode. In continuous mode, the relay N/O contacts operate after a programmable delay and will remain in that condition until either a synchro check fails or h/w or power on reset occurs. In the pulse mode, the relay N/O contacts operate for a short while and gets released after a fixed delay of 150msec.

TECHNICAL DATA

RATINGS

Voltage rating (Un)	:	110V AC
		63.5V AC
Frequency rating	:	50 Hz
Auxiliary Supply	:	20 to 60V DC
		75 to 150V AC / DC
		175 to 300V DC
		185 to 250V AC

SETTINGS

Min voltage 1	:	10 to 100% of Un in steps of 1%
Min voltage 2	:	10 to 100% of Un in steps of 1%
Voltage Diff.	:	2 to 70% of Un in steps of 1%
Frequency Diff.	:	0.02 to 0.2 Hz in steps of 0.01Hz
Phase angle Diff	:	5° to 75° in steps of 1°
Dead Bus Voltage	:	30 to 80% of Un in steps of 1%
Time Delay	:	0.2 to 1.0 sec in steps of 0.1sec
DB/DL closing delay	:	2 to 20 sec in steps of 1 sec

OVER LOAD RATINGS

Voltage 1 & Voltage 2	:	200% of rated voltage (continuous) to both V1 & V2

BURDEN

AC input voltage	:	Less than 0.1VA at Un
	:	Less than 4W (Non operated)
Aux. Supply	:	Less than 8W (Operated)

ACCURACY

Voltage	:	±5%
Frequency	:	±0.02Hz
PhaseAngle	:	±2%
Operating time	:	±5%

CONTACT RATINGS

Trip / Alarm	:	10A at 24V DC / 230V AC

CONTACT DURABILITY

Loaded contact	:	10,000 operations min.
Unloaded contact	:	100,000 operations min.

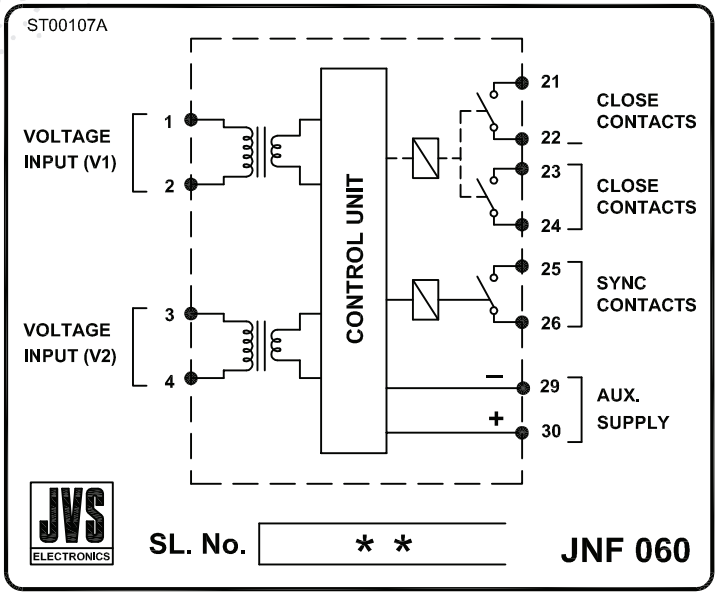
MECHANICAL DESIGN

Weight	:	5000 gms. (approx)
Case Size	:	152X296 sq mm, depth 250mm
Installation	:	Flush mounting
Panel cutout	:	146 x 264 mm

STANDARD COMPLIANCE

Accuracy Test	:	IEC 60255-3
Insulation Test	:	IEC 60255-5

TERMINAL DIAGRAM



ORDERING INFORMATION

Relay	:	JNF 060
Voltage rating	:	110V or 63.5V AC
Aux. Supply	:	20 to 60V DC or 75 to 150V AC/DC or 175 to 300V DC / 185 to 250V AC.