

# NUMERICAL OVER & UNDER VOLTAGE RELAY



# NUMERICAL OVER & UNDER VOLTAGE RELAY

**Prok dv's®**

An ISO 9001 : 2015 Company

**DIGITAL MICROCONTROLLER BASED NUMERICAL  
IDMT/DEFINITE TIME/ INSTANTANEOUS (LOW SET/HIGH SET)  
VOLTAGE (OV) UNDER VOLTAGE (UV) RELAY WITH  
NEGATIVE SEQUENCE PROTECTION-PNV NSP  
SERIES IEEE DEVICE CODE -27,59,71,86**

## Features

- IDMT & Definite time characteristics
- Negative phase sequence detection
- High Pickup/drop off ratio
- Modular Integrated draw out system
- Nonvolatile memory for data retention
- Wide range of system voltages
- High speed feature for under voltages and over voltages
- 2 line, 16 character back-lit LCD display and key pad.
- Very low burden on measurement and Aux circuits
- Accurate and reliable measurement of voltages
- Field selectable system voltages

## Applications

- Protection of motor and generators
- Main or backup protection
- For detection of OV& UV in power plants and distribution system
- Protection of transformer panel & Capacitor control panel

## Tripping Characteristics

- 1.0) IDMT: Over Voltage -  $t = k / \log (ovf)$  Sec  
Under voltage -  $t = k / \log (2-uvf)$  Sec  
 $K$  = time dial setting with range 0.1 to 1.0 Sec in steps of 0.1  
 $Ovf$  = (measured value/set value) x rated voltage  
 $Uvf$  = (measured value/ set value) x rated voltage

- 2.0) Definite Time: (0-300) Sec (time setting) in steps of 1 sec

## Description

Prok dv's Digital Microcontroller Based Numerical IDMT/Definite Time/Instantaneous (low set/High set) Over Voltage (OV) Under Voltage (UV) Relay with Negative Sequence Protection offer reliable and flexible solutions for the protection of plants and feeders. It incorporates IDMT characteristics, definite time characteristics and High speed features for Over Voltage (OV) and Under Voltage (UV) settings. User friendly selection features-for over Voltage (OV) and Under Voltage (UV) settings. An Alphanumeric 2 line 16-characters, LCD display with membrane key pads for entering and changing parameters by user. Over Voltage (OV), Under Voltage (UV) relay trip indications are provided using LEDs. The Aux. Supply is provided by switched mode power supply with input voltage either AC or DC with wide range from 85V-275 AC/DC. In case of AC the power supply is designed to operate from 45Hz to 65Hz.

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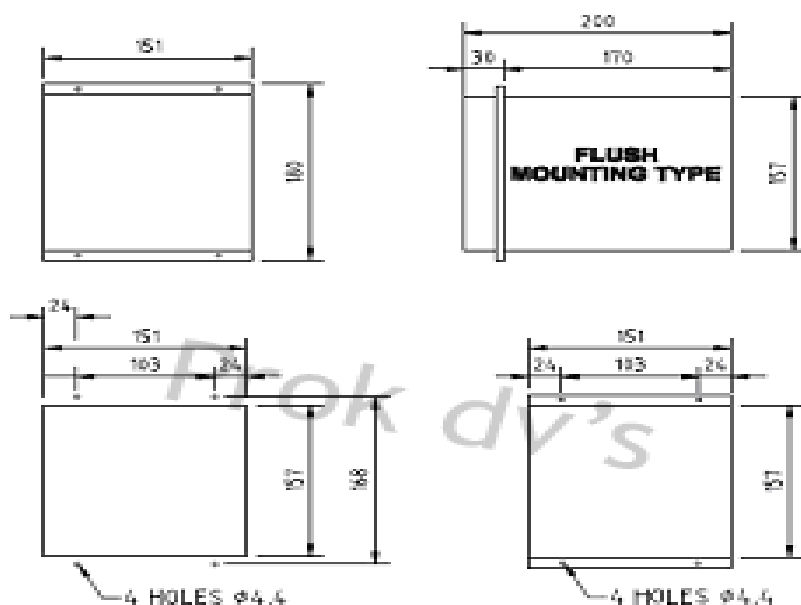
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## Specifications

Parameter	type : PNV NSP
SYSTEM VOLTAGE	380V,400V,415V & 433V- 3Ph 4W
FREQUENCY RANGE	45Hz to 65Hz.
PICK - UP	Over Voltage- 101% of set value Under Voltage-99% of set value
DROP- OUT	Over Voltage- 1% below pick- up voltage Under Voltage-1% above pick -up voltage
RESPONSE TIME	< 100ms
SETTING RANGE	Under Voltage: $U_v < 0.99$ to $0.50 U_n$ in steps of 0.01 $U_v < 0.99$ to $0.50 U_n$ in steps of 0.01(High set) Over Voltage: $O_v > 1.01$ to $1.30 U_n$ in steps of 0.01 $O_v > 1.01$ to $1.30 U_n$ in steps of 0.01(High set)
% OF NEGATIVE SEQUENCE	(1-25%) in steps of 1%
NEGATIVE SEQUENCE DEFINITE TIME	(0-300) in steps of 1sec
NEGATIVE SEQUENCE INSTANTANEOUS TIME (NS>>) FOR >25%	(0.0 -5.0 Sec) in steps of 0.1
TIME FOR HIGH SET (UV<< & OV>>)	(0.0 -5.0 Sec) in steps of 0.1

**Mechanical Dimension - DIGITAL MICROCONTROLLER  
BASED NUMERICAL IDMT/DEFINITE  
TIME/INSTANTANEOUS(LOW SET/HIGH SET) OVER  
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NEGATIVE SEQUENCE PROTECTION**



**NOTE: ALL DIMENSIONS ARE IN MM  
TOLERANCE:-  $\pm 1$ MM**

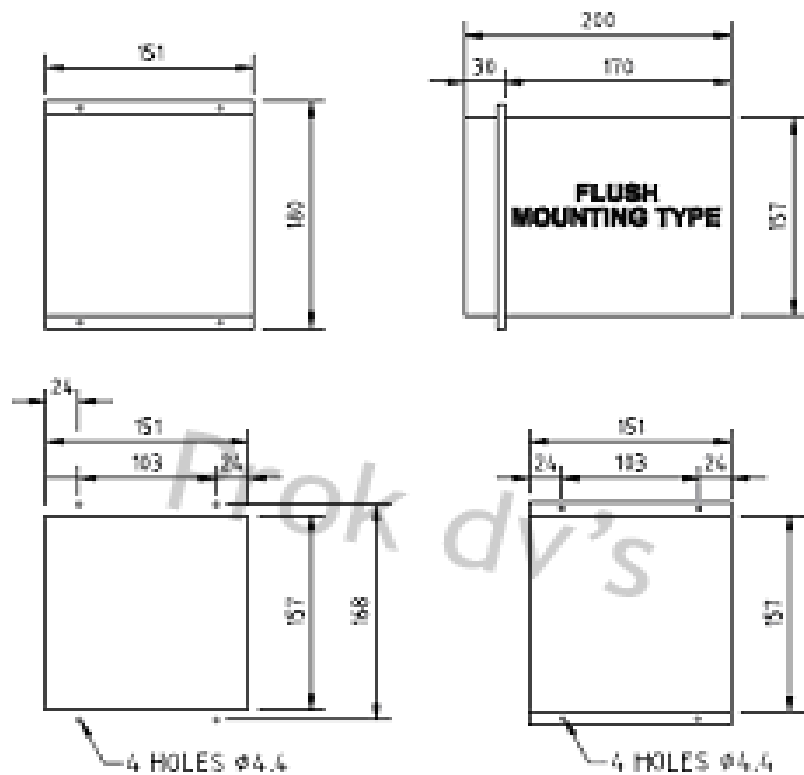
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Wiring Diagram - DIGITAL MICROCONTROLLER BASED  
NUMERICAL IDMT/DEFINITE  
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OVER VOLTAGE (OV) AND UNDER VOLTAGE (UV) RELAY  
WITH NEGATIVE SEQUENCE PROTECTION



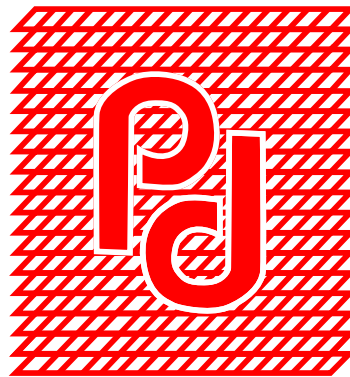
**NOTE: ALL DIMENSIONS ARE IN MM  
TOLERANCE:- ± 1MM**

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