

**NEW GENERATION**

**MICRO CONTROLLER BASED**

**AUTOMATIC VOLTAGE REGULATING RELAY**

**MODEL : AVR - 102**



The **PES** make Automatic Voltage Regulating Relay Model AVR - 102 serves for the Automatic Regulating Transformers equipped with on-load-Tap changer. The user friendly Soft Key Programming enables precise setting of NVA, Band width, Initial time delay, control pulse ON / OFF duration, under / over voltage Trip & Restoration levels and control failure time delay settings. As a safety precaution, the upper and lower end of aforesaid parameters are freezed, so that even by oversight an abnormal / unrealistic value cannot be programmed into the Regulating system.

The AVR - 102 has been designed around a powerful single chip micro controller thereby reducing the component count and enhancing the reliability factor. Since the voltage levels and time delay settings are digitally computed, the regulating relay operates to the set parameter precisely without any hysteresis.

Provision of surge protecting devices and RF / EMI filters ensures trouble free operation even in highly electrified terrains. AVR - 102 comes with a powder coated metal enclosure and elegantly printed anodized aluminium facia with acrylic cover.

# TECHNICAL DATA

## SETTING RANGES

Voltage level (NVA)	:	99.0V ..... 121.0 Volts insteps of 0.1V.
Lower Relay setting (LRS)	:	100.5% ..... 105.0% of a NVA insteps of 0.1%.
Raise Relay setting (RRS)	:	99.5% ..... 95.0% of NVA insteps of 0.1%.
Initial time delay (td)	:	0.3 ..... 120.0 secs insteps of 0.1 secs.
Control pulse 'ON' time duration (tON)	:	0.2 ..... 0.8 secs insteps of 0.1 secs.
Control pulse 'OFF' time duration (tOFF)	:	3.0 ..... 10.0 secs insteps of 0.1 secs.
Under voltage and Restoring level	} (UVT/UVR)	: 69% ..... 89% of NVA insteps of 0.1%.
Over voltage & Restoration Level (OVT / OVR)	:	110% ..... 120% of NVA insteps of 0.1%.
Control failure delay (CFD)	:	0 ..... 900 secs insteps of 1 sec.

## IMPORTANT NOTES :

- 1. The lower and upper limit settings are freezed. In the event of operator trying to programme the setting either below or above the limits, the value that gets registered will be ONLY lower or upper limit respectively as specified above for each parameter.*
- 2. Automatic restoration of AVR Functions from control failure status after the PT Voltage crosses any one of the dead Band setting.*

FUNCTION KEYS	:	Five function keys viz., <b>SET</b> <b>INC</b> <b>ENT</b> <b>VIEW</b> <b>RESET</b> to set the above parameters as well as to VIEW the parameters and to RESET under CFD failure conditions.
OUTPUT RELAYS	:	Total number of relays : 3 Nos. One relay each for Lower and Raise control pulse, 1 Trip relay for under / over voltage and control failure status.
PT INPUT	:	110VAC from Secondary of suitable PT < 1 VA at 50 Hz.
AUX POWER SUPPLY	:	110V (+ 15%, - 30%) 50 Hz 12 VA.
PROTECTION	:	RF / EMI filters and fast acting fuses (200 mA) at PT input and AUX input lines.
ENCLOSURE	:	1.5 mm thick powder coated steel plate housing with screen printed anodized aluminium front and acrylic cover.
DIMENSIONS	:	Overall : 202 mm (H) x 156 mm (W) x 250 mm (D). Cutout : 188 mm (-0.00,+2.00) (H) x 138 mm (-0.00,+2.00) (W).
TEMPERATURE	:	- 5 °C ..... + 55 °C.

Manufactured by :

**P.E. SYSTEMS PVT. LTD.**

Regd. Office & Works. # 13 / 14,  
Begur Road 1st Cross, Bommanahalli,  
Bangalore - 560 068 INDIA

Ph : 080 - 2573 5091 Tele fax: 080 - 2573 5092

E-mail : [sales@pesystems.co.in](mailto:sales@pesystems.co.in)