

# Automatic Voltage Regulating Relay : EE-302



EE-302

Emco's Automatic Voltage Regulating Relay type EE-302 is a modular Microcontroller based relay used for regulating the secondary voltage of Power Transformers used with On-Load Tap Changer. The parameter settings are made through the front panel keyboard. Independent Time Delay settings for first control pulse and subsequent pulses, allows selection of continuous or pulse operation. Voltage can be displayed in volts, KV or % deviation. Load shedding switch connections are provided on the rear panel for reducing the Nominal Value by 3, 6 or 9%.

## Features

- ❖ Microcontroller based architecture with A/D converter
- ❖ Keyboard entry for parameter settings
- ❖ Linear or Inverse Time response
- ❖ Two independent timers for first and subsequent pulses
- ❖ Single pulse or continuous pulse operation
- ❖ Readout of Pri. & Sec. voltages in V, KV and % Deviation
- ❖ Independent Lower & Raise settings in % of Nominal value
- ❖ Linear or Inverse Time response
- ❖ Auto / Manual mode of operation
- ❖ High speed return for Overvoltage condition

## Technical Specifications

Auxiliary Supply	: 110/230V AC $\pm$ 15%, 50Hz, 15VA	Control operation	: Control pulse with approx. 2 sec. ON time
PT Supply	: 110V AC, 50Hz, 1.5VA	Panel Cutout	: 274.5 x 125 x (HxW) mm
Nominal Setting (NS)	: 85 to 140V in steps of 0.1 V	Overall Dimensions	: 318 x 165 x 340 (HxWxD) mm
Lower Setting (LS)	: +0.5 to +9% of NS in steps of 0.1%	Operating Temp.	: 0°C - 50oC
Raise Setting (RS)	: -0.5 to -9% of NS in steps of 0.1%	Weight	: 5Kgs. (approx.)
Time delay (T1) betn. deviation & 1st pulse	: 10 to 180 sec, Linear or Inverse response	IP Class	: Not Applicable
Time delay (T2) betn. consecutive pulse	: 0 to 11 sec, where 0 is continuous operation; 11 - T2 = T1	Options	: 1.Line Drop Compensator with resistive and reactive compensation of either polarity upto 20% and suitable for operation with 1A, 5VA CT
UV Blocking	: 60 to 95% of NS in steps of 0.1%		2.Normally closed Auxiliary Supply Fail Relay contacts
OV detection	: 105 to 130% of NS in steps of 0.1% with high speed return (2 sec ON / 2 sec OFF Control pulse)		3.Built-in Tap Position Indicator upto maximum 35 Taps with 1K $\Omega$ step resistance
Primary Voltage (KV)	: 0-999.9 KV corresponding to NS in steps of 0.1KV		4.Overcurrent Blocking @ 150% of rated current with a pair of NO contacts
Control Fail Delay:	5 minutes fixed internally		
Load shedding	: Nominal value reduced in steps of 3%, 6%, or 9% through external switch		
Control Relays	: One pair of NO contacts of rating 5A at 240V AC or 24V DC resistive load for each Lower, Raise, Control Fail, Undervoltage & Overvoltage Relays		

Product specifications are subject to change without notice.

## EMCO ELECTRONICS

**Mumbai Office** : 302, Vasan Udyog Bhavan, Senapati Bapat Marg, Opp. Phoenix Mill, Lower Parel (W), Mumbai 400013. Tel.: +91-22-2490 2283, 2491 4638. Fax : +91-22-2495 1024. [Email : office@emcoelectronics.org](mailto:office@emcoelectronics.org)

**Factory** : Unit No. 13, Kedarnath Tungareashwar Industrial Complex No. 1, Sativali, Vasai (E), Dist. Palghar - 401 208. Tel.: +91-250-648 1782 / 1801 / 0114. Fax : +91-250-248 1087  
[Email : mumbai@emcoelectronics.org](mailto:mumbai@emcoelectronics.org), [sales.emcoelectronics@gmail.com](mailto:sales.emcoelectronics@gmail.com)

**Bangalore Office** : 15, Wood Street, (1st Floor) Richmond Road, Bangalore - 560 025  
Tel.: +91-80-2557 0215. Telefax : +91-80-25 666 06  
[Email : emcoblr@emcoelectronics.org](mailto:emcoblr@emcoelectronics.org), [emcosalesbangalore@gmail.com](mailto:emcosalesbangalore@gmail.com)



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