

Programmable Ratio AC Voltage Meters



Feature

True power system design complaints
ANSI-IEEE, IEC & VDE standards
High over capability to assure reliable operation
Ration programmable with field re-range ability
High accuracy of 0.2% fs
4-1/2 digits maximum of 19999 counts
Super rate display of 0.56"

Applied rules and standards

Measuring & conversion	IEC 688
Dielectric strength	IEC 688
Impulse & Surge test	ANSI C37.90.1/1989 IEC 255-3 (1989)
Adaptability-power system	IEC 0110
Measuring reliability	VDE 3540

Description

The model UMVF series, are designed under micro base, and it also specially designed to solve the complicated ratio problem in PT variables, directly accept a secondary signals from PT & scale to a primary reading display. The designed specifications of the units, truly a real power system design, compliant ANSI-IEEE & IEC, VDE those standards providing full protection for surge intrusion & unusual over input to assure reliable operation.

Specification

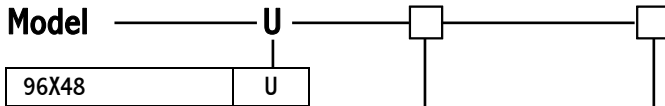
Accuracy (23±3°C)	0.2% fs
Stability	Temperature coefficient < 50 ppm per degree C. Long term draft < 0.2% per year
Digits / counts / display	Maximum 19999 counts of 4-1/2 digits. 0.56" super rate LED
Configuration	Ratio settable : PT ration for UMVF
Response time	Sample rate 1 of per sec typically
Input burden	0.25VA maximum
Input over	Voltage input : maximum continuous 750V or 3 x rated which ever great
Frequency	48 - 400 Hz
Dielectric strength	2.5KV rms / 1 minute, all terminals to reference ground (case) 2KV rms / 1 minute, input terminals to power terminals
Surge test	ANSI C37.90.1/1989, IEC 255-3 (1989)
Impulse voltage	Impulse voltage 1.2 x 50 us 4KV Oscillation wave 0.5us - 100KHz 3KV & 1MHz - 0.25ms 2.5KV
Operation condition	Temperature range -10 to 55°C, 0 to 99% RH non-condensed Storage -25 to 70°C, 20-99% RH non-condensed
Auxiliary power	AC / DC version < 3.5VA, DC option version ±20% < 5 watts

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Order from

Function	Model	Digits
PT ration programmable	UMVF	4-1/2

Frame (in mm)



Auxiliary power

AC / DC 30-250V	★	S
DC option 24V		1

★ : This segment was originally used in the circuit of traditional transformer, and new model uses switching power circuit where in the wide range power system

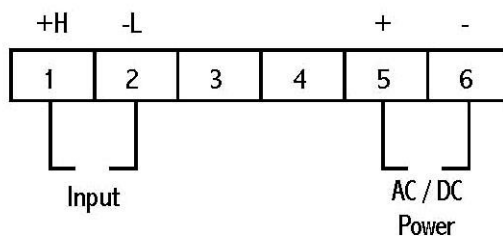
Input range

(Either standard calibration or customer calibration)

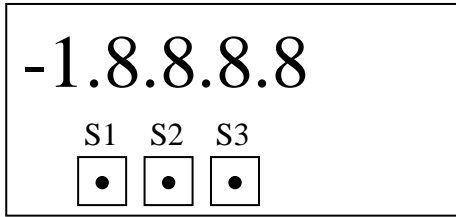
Standard calibration

PT ratio = P / S P : Primary S : Secondary				VS			
11KV / 110 P/S = 100							
Customer specified pre-calibration							
				$D = 1 / \sqrt{3}$			
3.30K / 110	3.45K / 115	3.60K / 120	AL	3.30K / 110D	3.45K / 115D	3.60K / 120D	AP
6.60K / 110	6.90K / 115	7.20K / 120	BL	6.60K / 110D	6.90K / 115D	7.20K / 120D	BP
11.0K / 110	11.5K / 115	12.0K / 120	CL	11.0K / 110D	11.5K / 115D	12.0K / 120D	CP
13.2K / 110	13.8K / 115	14.4K / 120	DL	13.2K / 110D	13.8K / 115D	14.4K / 120D	DP
22.0K / 110	23.0K / 115	24.0K / 120	EL	22.0K / 110D	23.0K / 115D	24.0K / 120D	EP
33.0K / 110	34.5K / 115	36.0K / 120	FL	33.0K / 110D	34.5K / 115D	36.0K / 120D	FP
66.0K / 110	69.0K / 115	72.0K / 120	GL	66.0K / 110D	69.0K / 115D	72.0K / 120D	GP
154K / 110	161K / 115	168K / 120	HL	154K / 110D	161K / 115D	168K / 120D	HP
330K / 110	345K / 115	360K / 120	IL	330K / 110D	345K / 115D	360K / 120D	IP
The other range			VY				

Terminal connection



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Function Key

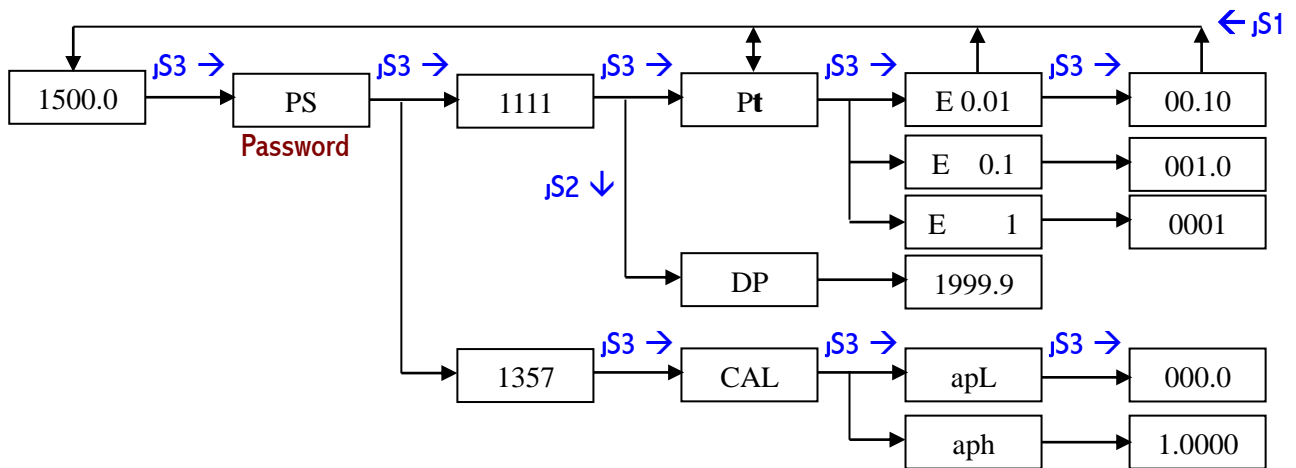
S1 : Exit the setting and return to mode of measurement

S2 : Increasing value or Select Type

S3 : Enter the setting or next figures

┘ : Keying Sx (S1 、 S2 、 S3)

UMVF function block :



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Function Setting 1 :

1. Enter Password

⌋S3 → → ⌋S3 →

2. Write Password (1111)

⌋S2 → ⌋S3 ⌋S2 → ⌋S3 ⌋S2 → ⌋S3 ⌋S2 → ⌋S3

3. PT ratio setting (Pt)

Example : Pt ratio = 1.0 → 1000.0

→ ⌋S3 → → ⌋S3 → → ⌋S2/⌋S3 → → ⌋S3 → Repeat

4. Decimal point setting (DP)

→ ⌋S3 → → ⌋S2 → → ⌋S2 → → ⌋S2 → → ⌋S2 → → ⌋S2 → Repeat

5. Escape Setting and Save

⌋S1

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Function Setting 2 :

1. Enter Password

⌵S3 → → ⌵S3 →

2. Write Password (1357)

⌵S2 → ⌵S3 ⌵S2 → ⌵S3 ⌵S2 → ⌵S3 ⌵S2 → ⌵S3

3. Calibration setting (Cal)

Zero calibration (APL)

⌵S3 → → ⌵S3 → → ⌵S3 →

Span calibration (APH)

⌵S3 → → ⌵S3 → → ⌵S2 → → ⌵S3 →

Example :

100% standard voltage = 300.0V, 10% standard voltage = 30.0V

100% meter read = 301.0V, 10% meter read = 30.1V

Zero set	10% meter read = 30.1V	<input type="text" value=""/>	.
	APL setting = -0.1V	<input type="text" value="-"/>	.
Span set	100% meter read = 301.0V	<input type="text" value=""/>	.
	APH setting = 0.9970	<input type="text" value="."/>	

$$\begin{aligned}
 \text{APH} &= \text{standard voltage} / (100\% \text{ meter read} - \text{APL}) \\
 &= 300.0\text{V} / (301.0 - 0.1) \\
 &= 0.9970
 \end{aligned}$$

4. Escape Setting and Save

⌵S1

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Dimension

U TYPE

