

Application Note

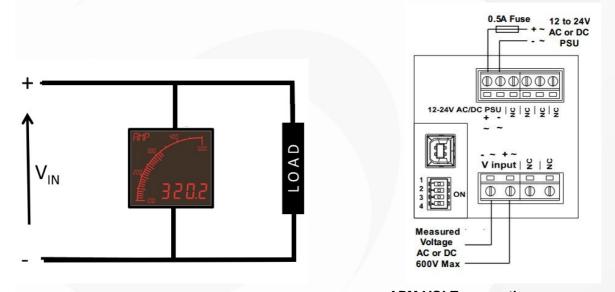
Title:Voltage measuring with an APM-VOLT meterDate:22nd April 2016Revision:2nd

1. Introduction:

The APM-VOLT meter can measure both AC and DC voltages. The APM-VOLT meter performs automatic AC/DC detection. All AC Voltages are automatically converted to true RMS. The following sections discuss each configuration in more detail.

2. AC & DC Measurement

The APM-VOLT meter is connected in parallel with the voltage to be measured as shown below.



APM-VOLT connections NOTE: The APM-VOLT meter is rated for a maximum input voltage of 600V AC/DC <u>Note. Exceeding the rated voltage will cause damage to the APM</u> Make sure that the switches on the back of the APM-VOLT meter are all switched off (i.e. switched to the left)

The APM-VOLT can be set to auto range or to a user defined scale with the free APM Configurator software. You can also set the advanced features such as the backlight colour and the output alarms in this way also

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ile	APM	About					
nput	Sig	nal		Alarm 1 Alarm 2 Backlig	ght Response	e	
	Oisplay Range O Auto ranging Fixed		Display Scalar • x1 • User	Analogue Output		Alarm 1	
				Alam Mode			
	Min 0 Max 600		Scale 1 Offset 0	4 mA current is equal to displayed value of 0 VOLT			
	Display Peak Bar		20 mA current is equ				
		Peak Hold	Display Zero				
			Display Zero if below this		0.0		
		threshold value 0 VOLT	Switch Output 1		When the displayed value is		
				Off	Above Below 450		
		Limit Decimal Places	Change Backlight	O Off	O Below		
				(a) Flash	Red	Between	
			③ 3 (0.000)	Steady	Green	Outside	
			2 (0.00)	100 C	🔘 White	Hysterisis	
			1 (0.0)			-0	
				Show Message		0% [1%] 20%	
Dine 1		Manager	TTOT	AL 1		176	
Displayed Message		i message	VOLT				
				NUTE For Backlight an	d Messages, O	utput 2 has priority over Output 1	

3. Setup using the scalar function

The APM-VOLT has the ability to both scale the display and also to apply a voltage offset to the measured voltage.

Input Signal		Alarm 1 Alarm 2 Backlig	ht Response	8	
Display Range	Display Scalar	 Analogue Output Alarm Mode 		Alarm 1	
 Auto ranging Fixed 	© x1 ⊚ User				
Min 0 Max 600	Scale 10 Offset 5	4 mA current is equ	al to displayed	value of 0 VOL	
Display Peak Bar	Display Zero	20 mA current is equ	value of 600 VOI		
	Display Zero if below this	Switch Output 1	On	When the displayed value	
	threshold value 0 VOLT		O Off	Above	
	Limit Decimal Places	Change Backlight	O Off	Below 450	
		(i) Flash	Red	Between	
	 3 (0.000) 2 (0.00) 	🔘 Steady	🕐 Green	Outside	
	© 1 (0.0)		🔘 White	Hysterisis	
	© 0 (0)	Show Message		0% 1% 20%	
Displayed Message	VOLT	AL 1			
		NOTE For Backlight and	d Messages, O	utput 2 has priority over Outp	

Example

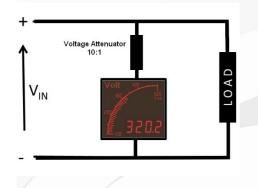
In the setup above the Scale is multiplied by ten x10 and the offset is set at five 5V



Therefor if we applied 10v the display would read 100V - 5V = Reading 95V

4. Using a voltage divider to read voltages greater than 600V

Wiring



Software Setup Set Scale = 10 Offset = 0

nout Signal		Alarm 1 Alarm 2 Backlight	Response	
Display Range	Display Scalar	 Analogue Output Alarm Mode 	Alarm 1	
 Fixed Min Display Peak Bar Peak Hold 	© User Scale 10 Offset 0 Display Zero	4 mA current is equal to displayed value of 0 VOLT 20 mA current is equal to displayed value of 600 VOLT		
	Display Zero if below this threshold value 0 VOLT		 On When the displayed value is Off Above Above 	
	Limit Decimal Places		O Off Below 450	
	 3 (0.000) 2 (0.00) 	0	Red Outside Green	
	 ○ 1 (0.0) ○ 0 (0) 	Show Message	White Hysterisis 0% 1% 20%	
Displayed Message	VOLT	AL 1	lessages, Output 2 has priority over Output	