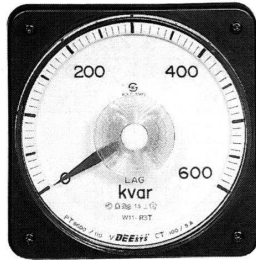


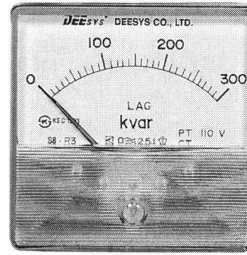
# PANEL BOARD VAR METER



"W" type



"S" type



## Specification

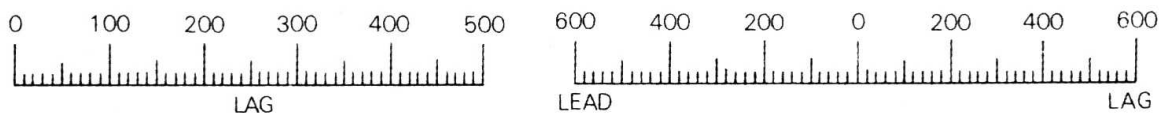
TYPE	Size	Circuit	Rated		Va		Remark		Hz	Class	Weight (kg)	REF
			V	A	V	A	V	A				
W8-R1	80X80mm	1P2W	110,220	5	0.5	0.5	-	-	60	1.0/1.5	0.65	EXT. T/D
W8-R2		1P3W	110	5	0.5	0.5	-	-	60	1.0/1.5	0.75	
W8-R3		3P3W	110,220	5	0.5	0.5	B	U	60	1.0/1.5	0.75	
W8-R4		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	B	U	60	1.0/1.5	0.85	
W8-R4U		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	U	U	60	1.0/1.5	0.90	
W11-R1	110X110mm	1P2W	110,220	5	0.5	0.5	-	-	60	1.0/1.5	0.70	EXT. T/D
W11-R2		1P3W	110	5	0.5	0.5	-	-	60	1.0/1.5	0.85	
W11-R3		3P3W	110,220	5	0.5	0.5	B	U	60	1.0/1.5	0.85	
W11-R4		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	B	U	60	1.0/1.5	0.95	INT. T/D
W11-R4U		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	U	U	60	1.0/1.5	1.00	
W11-R1T		1P2W	110,220	5	0.5	0.5	-	-	60	1.0/1.5	0.60	
W11-R2T		1P3W	110	5	0.5	0.5	-	-	60	1.0/1.5	0.85	EXT. T/D
W11-R3T		3P3W	110,220	5	0.5	0.5	B	U	60	1.0/1.5	0.85	
W11-R4T		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	B	U	60	1.0/1.5	0.90	
W11-R4UT	3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	U	U	60	1.5	0.90		
S8-R1	80X80mm	1P2W	110,220	5	0.5	0.5	-	-	60	2.5	0.55	EXT. T/D
S8-R2		1P3W	110	5	0.5	0.5	-	-	60	2.5	0.65	
S8-R3		3P3W	110,220	5	0.5	0.5	B	U	60	2.5	0.65	
S8-R4		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	B	U	60	2.5	0.75	
S8-R4U		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	U	U	60	2.5	0.85	
S10-R1	(wide angle) 100X84mm	1P2W	110,220	5	0.5	0.5	-	-	60	1.5	0.57	EXT. T/D
S10-R2		1P3W	110	5	0.5	0.5	-	-	60	1.5	0.67	
S10-R3		3P3W	110,220	5	0.5	0.5	B	U	60	1.5	0.67	
S10-R4		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	B	U	60	1.5	0.77	
S10-R4U		3P4W	$190/\sqrt{3}, 3,380/\sqrt{3}$	5	0.5	0.5	U	U	60	1.5	0.87	

※ U:Unbalance, T:Int. Transduce, R:VAR

※EXT.T/D:Installation the Transducer outside, INT.T/D:Installation the transducer inside

※ The specification of rating current 1A is based on order

### • example scale



※ The standard scale in lag scale

※ set the var meter to lead in left side and to lag in right side from point if the var meter in used for the power factor

## Standard full scale table(1/2 var meters)

Phase Wire	1P2W		1P3W		3P3W						3P3W					
P.T.ratio(V)	110	110	220	380 /110	440 /110	3300 /110	6600 /110	22000 /110	22900 /110	154KV /110	208√3	380√3 /190√3	380 /√3	11400√3 /190√3	22900√3 /190√3	
Calibrating watts C.T.ratio	0,3Kvar	0,5Kvar	1,0Kvar	0,579Kvar	0,5Kvar	0,5Kvar	0,5Kvar	0,5Kvar	0,480Kvar	0,5Kvar	1,0Kvar	1,0Kvar	2,0Kvar	0,833Kvar	0,833Kvar	
5/5	0,3	0,5	1	2	2	15	30	100	100	700	1	2	2	20	100	
10/5	0,6	1	2	4	4	30	60	200	200	1400	2	4	4	100	200	
15/5	0,9	1,5	3	6	6	45	90	300	300	2100	3	6	6	150	300	
20/5	1,2	2	4	8	8	60	120	400	400	2800	4	8	8	200	400	
25/5	1,5	2,5	5	10	10	75	150	500	500	3500	5	10	10	250	500	
30/5	1,8	3	6	12	12	90	180	600	600	4200	6	12	12	300	600	
40/5	2,4	4	8	16	16	120	240	800	800	5600	8	16	16	400	800	
50/5	3,0	5	10	20	20	150	300	1000	1000	7000	10	20	20	500	1000	
60/5	3,6	6	12	24	24	180	360	1200	1200	8000	12	24	24	600	1200	
75/5	4,5	7,5	15	30	30	225	450	1500	1500	10,5Mvar	15	30	30	750	1500	
80/5	4,8	8	16	32	32	240	480	1600	1600	11,2	16	32	32	800	1600	
100/5	6,0	10	20	40	40	300	600	2000	2000	14,0	20	40	40	1000	2000	
120/5	7,2	12	24	48	48	360	720	2400	2400	16,3	24	48	48	1200	2400	
150/5	9,0	15	30	60	60	450	900	3000	3000	21,0	30	60	60	1500	3000	
200/5	12,0	20	40	80	80	600	1200	4000	4000	28,0	40	80	80	2000	4000	
250/5	15,0	25	50	100	100	750	1500	5000	5000	35,0	50	100	100	2500	5000	
300/5	18,0	30	60	120	120	900	1800	6000	6000	42,0	60	120	120	3000	6000	
400/5	24,0	40	80	160	160	1200	2400	8000	8000	56,0	80	160	160	4000	8000	
500/5	30,0	50	100	200	200	1500	3000	10Mvar	10Mvar	70	100	200	200	5000	10Mvar	
600/5	36,0	60	120	240	240	1800	3600	12	12	84	120	240	240	6000	12	
750/5	45,0	75	150	300	300	2250	4500	15	15	105	150	300	300	7500	15	
800/5	48,0	80	160	320	320	2400	4800	16	16	112	160	320	320	8000	16	
1000/5	60,0	100	200	800	800	3000	6000	20	20	140	200	400	400	10Mvar	20	
1200/5	72,0	120	240	480	480	3600	7200	24	24	168	240	480	480	12	24	
1500/5	90,0	150	300	600	600	4500	9000	30	30	210	400	600	600	15	30	
2000/5	120,0	200	400	800	800	6000	12Mvar	40	40	280	400	800	800	20	40	
2500/5	150,0	250	500	1000	1000	7500	15	50	50	350	500	1000	1000	25	50	

## Characteristics

- Combine AC 110V P,T & AC 5A C.T in case of over rating value.
- Allowance of operating voltage is  $\pm 10\%$  of rating voltage.
- For max scale, refer to the above standard full scale table.
- Var meter Transducer is internal type and external type.

ex) 3P 3W

full scale varmeter : 300KW

P,T ratio : 3300V/110V

C,T ratio : 100A/5A

$$\text{calibrating watts} = \frac{300\text{Kvar}}{(3300/110) \times (100/5)} = 0,5\text{Kvar}$$

- In case of  $3\phi$  4W, the voltage in phase voltage ( $V_t / \sqrt{3}$ )
- Select 1/2 or 1/3 or 1/4 value of total load capacity for max scale.

$$7. \text{ Calibrating Watt} = \frac{\text{MAX. scale value}}{\text{PT ratio} \times \text{CT ratio}}$$

ex1) 3P 4W

full scale varmeter : 1000KW

$$\text{P,T ratio} : \frac{22900\text{V}}{\sqrt{3}} / \frac{190\text{V}}{\sqrt{3}}$$

C.T ratio : 50A/5A

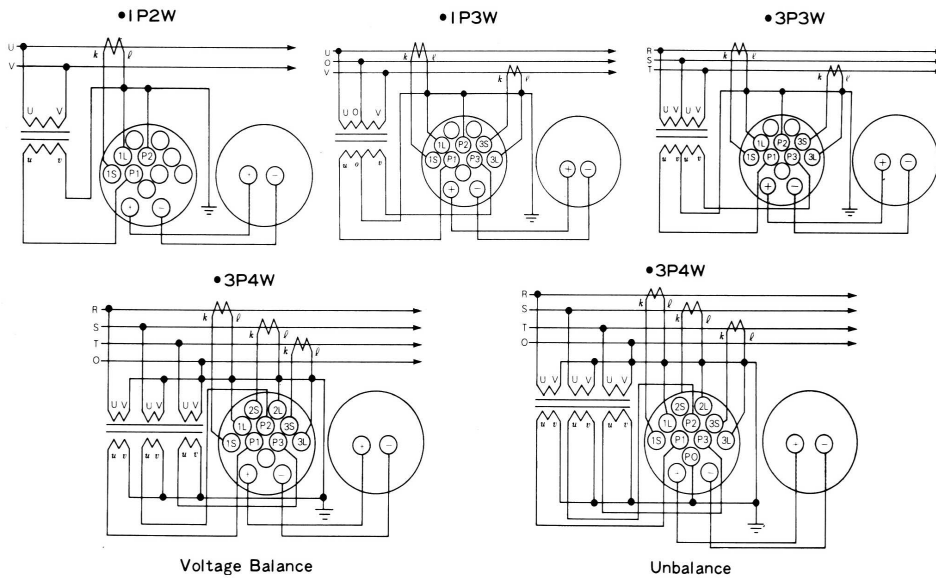
$$\text{calibrating var} = \frac{1000\text{KW}}{\left( \frac{22900\text{V}}{\sqrt{3}} / \frac{190\text{V}}{\sqrt{3}} \right) \times (50\text{A}/5\text{A})} = 0,833\text{KW}$$

# WATTMETER, VAR METER



## External connection diagram

UEXT. T/D type



UINT. T/D type

