경제형 Multifuntional-Power Total Meter (96×96mm)

- 3A, 3V, Watt, var, PF, COS, Hz, THD, ℃

본 제품은 종합적인 전력 상태를 표시하여주는 계기로 전압(V) ,전류(A), 유효전력(W), 무효전력(var), 역률(PF/ COS), 주파수(Hz), 고주파(THD), 온도(℃) 각종의 상태 감시가 가능한 통신 장착용 종합 계측 계기 입니다.

This product could be showed with comprehensive power condition (A, V, W, var, PF, COS, Hz, THD, ℃) and it is possible Multifuntional-Power Total Meter to observe each condition.

Specifications

ITEM		Total panel meter	
Type		WYTM-100	WYTM-100 C
Auxiliary supply voltage		wide range: 85~275Vac / 45~450Hz, 80~350 Vdc, 3VA	
Overvoltage cat. and pollution degree		III/2-in compliance with IEC EN61010-1	
VT	Rating	4~500Vac / 2.3~285Vac	
	Measurement accuracy	±1% 1digit	
	Input impedance	660㏀ (Li-N)	
	Connection	single phase / two phases / wye / delta / Aron configuration	
	Permanent overload	2 x (that is 1,000 / 570 V) IEC258	
	Surge overload	4 x for one second (that is 2,000 / 1,140V)	
Frequency		45~65Hz	
Frequency measurement accuracy		±0.02%	
CT	Rating	0.02~7 AAC (INOM = 5Aac)	
	Measurement accuracy	±1% 1digit	
	Input power	〈0.25VA (Ri 〈10mZ)	
	Input wiring	galvanically isolated	
	Permanent overload	14Aac	
	Surge overload	70Aac for one second	
Measured temperature		-25 to 60℃, ±3℃	
Communication port		RS-485 or RS-232, galvanically isolated, parameters see Parameter Setting	
Active power (accuracy) "Pnom=230* INOM W"		range limited by measurement voltage and current ranges (±2% 1digit)	
Reactive power (accuracy)"Qnom=230* INOM VA"		range limited by measurement voltage and current ranges (±2% 1digit)	
Power factor(accuracy)		0.00~1.00 (±2% 1digit)	
cos φ (accuracy)		10% Unom ,Inom)-1.00~+1.00 L,C (±2% 1digit)	
THD (accuracy)		up to 25th harmonic, 0 "I 200%, ("}2% "}1 digit, for U, I〉	
Operating environment		class C1 in compliance with IEC654-1	
Operating temperature		-25 to 60℃	
Storage temperature		-40 to 85℃	
Operating and storage humidity		〈 95% - noncondensation conditions	
EMC-emission		EN 50081-2; EN 55011, class A; EN 55022, class A(not forresidential environments)	
EMC-resistance		EN 61000-6-2	
Protection rating		IP 41 (IP54 with cover film), back panel: IP20	
Communication		-	RS-485(Modbus)
Dimensions		panel - 96x96mm	
Weight		0.3kg	

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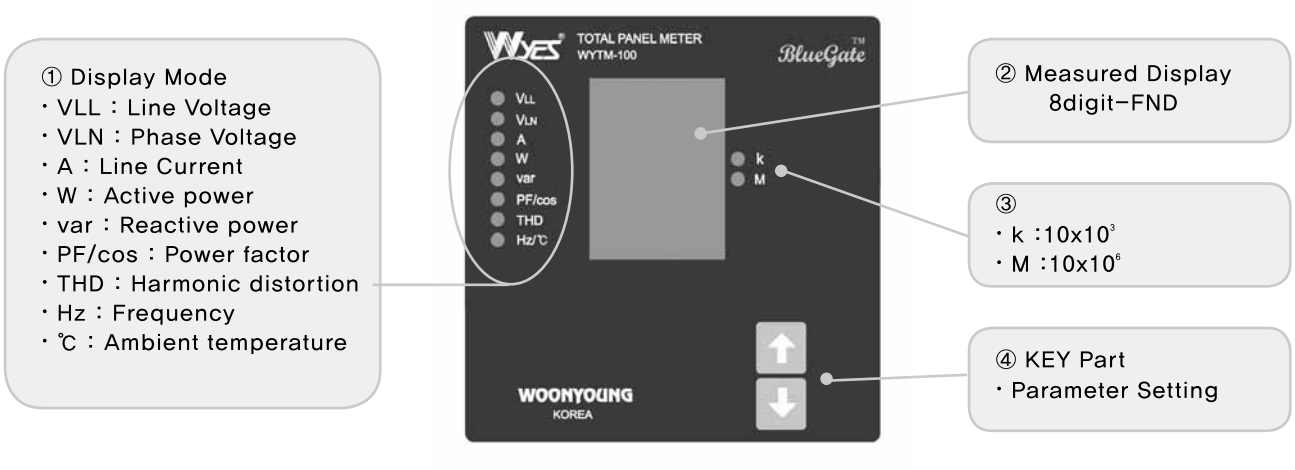
Front panel



Parameter Setting Table

#	field	description	setting range	default setting	comment
P.00	yyy	passcode	0/1	0	as described above
P.01	yyy	CT conversion-primary current	1A through 10kA	__	Preset values
	zzz	CT conversion-secondary current	__ / 1A 5A	__	__ = direct measuring
P.02	yyy	VT conversion-primary voltage	0.1kv through 400kv	__	Preset values
	zzz	VT conversion-secondary voltage	__ / 100V	__	__ = direct measuring
P.03	yyy	connection configuration	1/2 / 3-y / 3-d / A	3-y	as described above
P.04	yyy	display mode	0 / 1 / 2	1	as described above
	zzz	order of quantities 1 – line voltage U_{L-L} 2 – phase voltage U_{L-N} 3 – current I_L 4 – active phase power 5 – active three – phase power 6 – reactive phase power 7 – reactive three – phase power 8 – phase power factor 9 – three phase power factor 10 – cosφ (1stharmmonic DPF only) 11 – harmonic distortion U_{L-L} 12 – harmonic distortion U_{L-N} 13 – harmonic distortion I_L 14 – frequency 15 – instrument ambient temperature 16 – time window of analyses P_{MAX}	1through 15 / 16	2	1) if 3is selected display 1_{pen} current in next step and upper displays line shows _4_ 2) if 5, 7 or 9 is selected, upper display line shows _3_(_2_ with two-phase connection) abd data are shown in middle display line 3) if 10 or 15 is selected, relevant LED flashes 4) if 11through 13 is selected, THE LED as well as relevant quantity LED are on 5) 16 valid for only
P.05	yyy	order of quantity	1 through 15 /16	all enabled	
	zzz	quantity selected display enabled	0 /1		
P.06	yyy	mains frequency	A50 / A60	A50	only if L1 vdtage is out of range
P.07	yyy	communication protocd	0 / 1__ / 1_0 / 1_E	0	as described above
P.08	yyy	communication baud rate in kBd	2.4 to 38.4	9.6	preset values
	zzz	communication address	1 through 255	1	autorepeat
P.09	yyy	time window of analyses P_{MAX}	15 / 30 / 60	15	

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Parameter Setting

처음 제품에 전원을 인가하면 디스플레이 창에 "ini"을 표시하고 내부회로 점검을 합니다.
점검이 완료되면 아랫줄에 버전을 표시하거나 Err을 표시 합니다. 만약에 통신 라인이 설치되 있다면, PC를 사용하여 통신링크를 통해 값을 설정하거나 읽을 수 있습니다.
약 6초간 ▼ 버튼을 누르면 파라미터 편집 시작 하게됩니다. 디스플레이의 맨 윗줄에 "P.00~P.08= 페이지 표시하고 중간줄=value 1, 아랫줄=value 2 표시 합니다.

파라미터 편집시 점멸하는 숫자를 변경시에는 ▲ 버튼을 눌러 변경할 수 있으며 다음단계로 이동을 원할 경우 ▼버튼을 눌러 이동 합니다. 전체 파라미터 변경이 완료 되면 약 6초간 ▼ 버튼을 눌러서 종료 합니다. 만약, P.00의 pass code 1→0으로 변경할 때는 P.00 페이지에서 ▼▲버튼을 동시에 누르면 value2에 임의의 숫자가가 생성되는데 이때 숫자가 홀수일 때는▲버튼을 누르고 짝수일때는▼버튼을 눌러 파라미터 편집을 개시 합니다.

1. P.00 파라미터 편집기능을 0=변경가능, 1=변경 불가 상태로 만듭니다.

2. P.01 계측할 CT의 secondary, primary의 배율를 설정할수 있습니다.
   value2 : ---/1/5 A,
   value1 : ---/5/30/40/50/60/75/100/150/200/250/300/400/ 500/600/750/800/1k/1.2k/1.25k/1.5k/1.6k/2k/2.5k/3k/4kA

3. P.02 계측할 VT의 secondary, primary의 배율를 설정합니다.
   value2 : ---/100
   value1 : ---/3k/3.3k/3.5k/6k/6.6k/10k/11k/15k/22k/33k/35k/110k/220k/400kV

4. P.03 선로의 결선을 설정합니다.
   value2 : 1=1P2W, 2=2P2W, 3-Y=3P4W, 3-d=3P3W, A=3P-aron connection

5. P.04 디스플레이 모드를 설정 합니다.
   1 = ▲ ▼ 버튼으로 선택된 mode만 표기 합니다.
   2 = value1에 상시 계측할 mode 1~16까지 1개를 설정하면 ▲ ▼버튼으로 다른 page 확인시 약10초 후에 설정된 page로 이동 합니다.

6. P.05 디스플레이 mode를 설정 합니다.
   value2 : 0= 사용안함, 1=사용함
   value1 : 디스플레이 모드 1~16까지 설정

7. P.06 입력 주파수를 설정 합니다.
   value2 : A60= 60Hz, A50= 50Hz

8. P.07 통신방식 설정

On connecting power supply the display shows 'ini', test of internal circuitry is carried out and the display's bottom line shows the software version or 'Err'. Then the instrument starts showing the measured values in accordance with its settings. If the instrument has a communication line, it can be set and its measured values read via the communication link using a PC.

In order to display true values of voltages, currents, and other quantities measured, the instrument must be set. The instrument setting is determined using parameters, especially the current transformer [CT]
conversion, type of measurement voltage (direct measurement or via a voltage transformer [VT] and its conversion), and connection configuration (single-phase, two-phase, wye, delta, Aron).
By pressing the '▼' button for an extended time (about 6 seconds) you start the parameter edit mode. The display shows 'P.xx' / 'yyy' / 'zzz' where P.xx is the parameter being edited (display's upper line), yyy = value 1 (display's middle line), zzz = value 2 (display's lower line). A flashing value can be edited using the '▲' button and confirmed, then you proceed to another value using the '▼' button. The setting process is terminated by pressing the '▼' for an extended time again.

1. P.00 = edit mode on or off, yyy = '0' –edit enabled, yyy = '1' –edit disabled. If the edit mode is
disabled, you can only view parameters and scroll through them using the '▼' button. To enable the edit mode again, you need to enter the passcode. Default setting: edit enabled.
Edit enabling method: on simultaneous pressing of '▲' and '▼' the zzz section starts showing random generated numbers; if the
number is odd, press '▲', if it is even, press '▼'.

2. P.01 = metering current transformer (CT), yyy = primary current in A / kA, zzz = — / 1 / 5 A. Direct
measurement (no CT): yyy = zzz = '—'. Default setting: direct measurement.

3. P.02 = metering voltage transformer (VT), yyy = primary voltage in V / kV, zzz = — / 100 V. Direct measurement (no VT): yyy = zzz = '—'. Default setting: direct measurement.

4. P.03 = connection configuration, yyy = 1 –single-phase, yyy = 2–two-phase, yyy = 3-Y –threephase with neutral wire –wye connection, yyy = 3-D –three-phase without neutral wire – delta connection, yyy = A–three-phase Aron connection. Default setting: three-phase connection with neutral wire-wye configuration.

5. P.04 = display mode, yyy = 0 –values shown are switched every 3 seconds, yyy = 1–value last selected is shown, yyy = 2 –value selected in zzz is shown after 10 seconds of no button operation (see table 1, appropriate LED is on too). Default setting: last selected value shown.

6. P.05 = displayed quantities, yyy = order of value (see table 1, appropriate LED is on too), zzz = 0/1 –value Not Shown / Shown, respectively. Default setting: all quantities shown.

7. P.06 = mains frequency setting, yyy = A50/A60 –frequency is set automatically by measuring L1
input voltage if it is higher than 2 V at frequency from 45 to 64 Hz. If L1 voltage is outside these limits (input not connected, for example), 50/60 Hz frequency is applied.

8. P.07 = communication, yyy = 0–MB protocol, y = '1–' / '1-E' / '1-O' –Modbus protocol, no parity / even parity / odd parity. Default setting: Woonyoung protocol.

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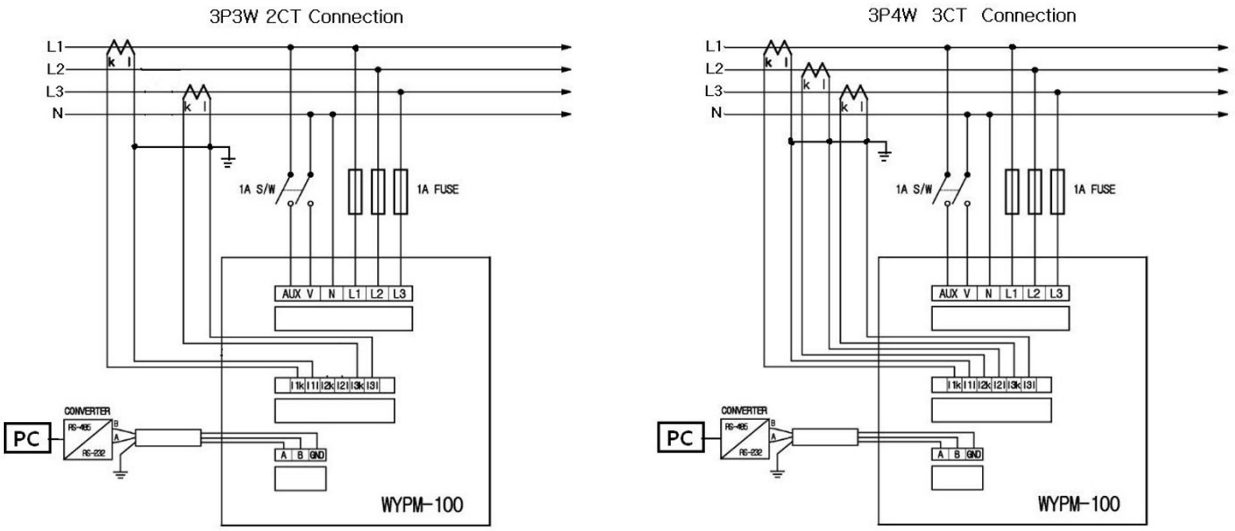
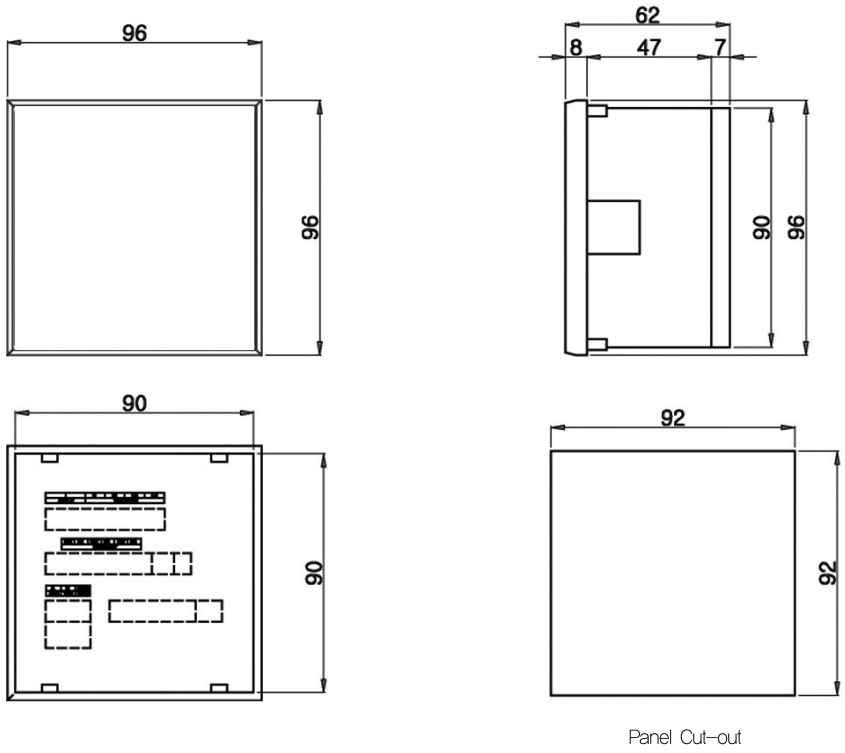
Connection Diagram



Dimensions



Panel Cut-out