

PW460

Protective Relay Test Kit



Specifications

Voltage generators

Setting range

4-phase ac(L-N)	4×0~300V
1-phase ac(L-L)	1×0~600V
dc (L-N)	4×±0~300V
dc (L-L)	1×±0~600V

Power

4-phase ac(L-N)	4×75VA typ., at 300V 4×50VA guar., at 300V
3-phase ac(L-N)	3×100VA typ., at 300V 3×85VA guar., at 300V
1-phase ac(L-L)	1×200VA typ., at 600V 1×170VA guar., at 600V

dc (L-N) 4×100W at 300 V

Accuracy error < 0.08% rd.+0.02% rg. guar.
error < 0.02% rd.+0.01% rg. typ.

Ranges 300V

Resolution 10mV for 300Vac

Distortion < 0.05 % typ.
(< 0.1 % guar.)

Current generators

Setting range

6-phase ac(L-N)	6×0~15A
3-phase ac(2L-N)	3×0~30A
1-phase ac(6L-N)	1×0~90A
dc (L-N)	6×±0~10A
dc (6L-N)	1×±0~60A

Power

6-phase ac(L-N)	6×150VA at 15A
3-phase ac(2L-N)	3×240VA at 30A
1-phase ac(6L-N)	1×450VA at 90A
1-phase ac(L-L)	1×450VA at 30A

Max compliance

voltage(L-N)(L-L)	15Vpk/30Vpk
dc (L-N)	6×100W at 10A
dc (6L-N)	1×540W at 60A

Accuracy

error < 0.08% rd.+0.02% rg. guar.
error < 0.02% rd.+0.01% rg. typ.

Ranges

15A or 30A

Resolution

1mA

Distortion

< 0.05 % typ. (< 0.1 % guar.)

General

Frequency

Sine signal DC, 0.001Hz~1000Hz

Transient signal DC~10.0 kHz

Accuracy ±0.3ppm

Resolution 0.001Hz

Phase

Angle range -360°~+360°

Accuracy <0.05° typ., <0.1° guar.at 50/60Hz

Resolution ±0.001°

Auxiliary dc supply

Voltage range 0~300V

Power 88W at 110V, 176W at 220V, 120W at 300V

Accuracy error < 0.1% rg. typ. (<0.5% rg. guar.)

Power supply

Nominal input voltage 110~240Vac

Permissible input voltage 90~260Vac

Nominal frequency 50/60Hz

Permissible frequency 45~65Hz

Binary inputs group1

Number 8

Input characteristics 0~400Vdc/ac peak threshold
or potential free

Sample rate 20kHz

Time resolution 50μs

Max. measuring time Infinite

Debounce/Deglitch time 0~25ms

Counting function < 3kHz at pulse width>150μs

Galvanic isolation 8 galvanically isolated

Binary inputs group2

Number	4
Input characteristics	0~+5Vdc or dry contact
Sample rate	25kHz
Time resolution	40μs
Max. measuring time	Infinite
Debounce/Deglitch time	0~25ms
Max. counting frequency	25kHz
Pulse width	>3μs
Threshold voltage	2V
Voltage hysteresis	0.8V
Max. input voltage	+5V
Galvanic isolation	1 galvanically isolated

Binary outputs, relay

Number	4 (front side)
Type	Potential free relay contacts, software controlled
Break capacity ac	Vmax: 300Vac /Imax: 8A /Pmax: 2000VA
Break capacity dc	Vmax: 300Vdc /Imax:8A /Pmax: 150W

Binary outputs, semiconductor

Number	4 (rear side)
Type	semiconductor
Break capacity dc	Vmax: 300Vdc /Imax:0.5A /Pmax: 150W
Update rate	100μs
Imax	0.5A

DC voltage measuring input

Measuring range	0~±10V
Accuracy	error <0.02% rg. typ. (<0.05% rg. guar.)
Input impedance	100KΩ

DC current measuring input

Measuring range	0~±20mA
Accuracy	error <0.02% rg. typ. (<0.05% rg. guar.)
Input impedance	50Ω

In-built monitoring and recording

Monitoring	currents and voltage outputs
Recording	analog outputs, binary inputs/outputs status
Mode	real time monitoring, no external wiring is required
Recording length	16s

Low level outputs

Setting range	12×0~10Vpk
Max. output current	1mA
Accuracy	error < 0.025 % typ. (< 0.07 % guar.) at 1~10Vpk
Resolution	250μV
Distortion(THD+N)	< 0.05 % typ. (< 0.1 % guar.)
Connection	19 pin combination socket (rear side)

IEC61850 Goose function(Optional)

Interpretation hardware is in-built. Please contact the supplier for options to activate the IEC61850 software support Goose function

Environmental conditions

Operation temperature	0~+50°C
Storage temperature	-25~+70°C
Relative humidity	5~95% non-condensing
EMC(E&I)	EN/IEC 61326-1 EN/IEC 61000-3-2/3 EN/IEC61000-4-2/3/4/5/6/8/11/18
Environment	EN/IEC 60068-2-1/2/3/6/27
Safety	EN/IEC 61010-1/1-12/2-030 EN/IEC 60255-25/27
Others	FCC Part 15:Sub B ECS-001:2006 LVD EU

Others

PC connection	Ethernet,10M/100M
External amplifier interface	Circular connector
Current booster interface	Circular connector
GPS interface	DB9/TTL
Ground Socket(earth)	4mm banana socket, front side
Weight	20kg
Dimensions (W x H x D)	360mm ×157mm×367mm

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