

KINGSINE

Specialize in Electric Power Testing

MERAZET

K30 series Protection Relay Test Set

Model: K3030i

7 Channels (4V + 3I) output. Each output channels are independent control of magnitude, phase angle & frequency values, can generate a variety of output waveforms such as: DC; sinewave; sinewave with percent harmonics at various phase angles etc.

Independent variable battery simulator (DC 15~350V, 140watts)

Anti-clipping detect; cabinet grounding, wrong wiring connect alarm and self-protect, overload and over heat protection.

Test high burden electromechanical relays, 6x10A continuously outputs.

Provide convenient and prompt precision calibration for amplitude and phase by software without open the cabinet.

Small, lightweight(19.5kg) all in one box solution, with optional energy meter modules, fully functions KRT software allow advance state sequence, ramping, overcurrent, distance, differential, power swing, synchronizer modules, etc.



Graphical test modules and templates for testing of various relays

Quick relay testing facility in Manual mode

Point & Click testing

RIO/XRIO import and export facility

Switch on to fault (SOTF)

Power system model for dynamic testing

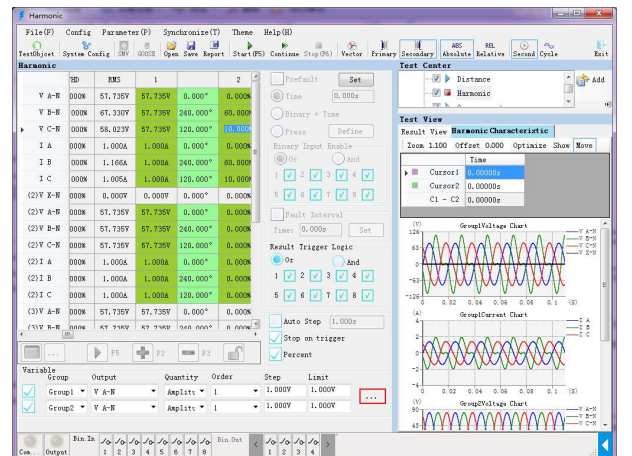
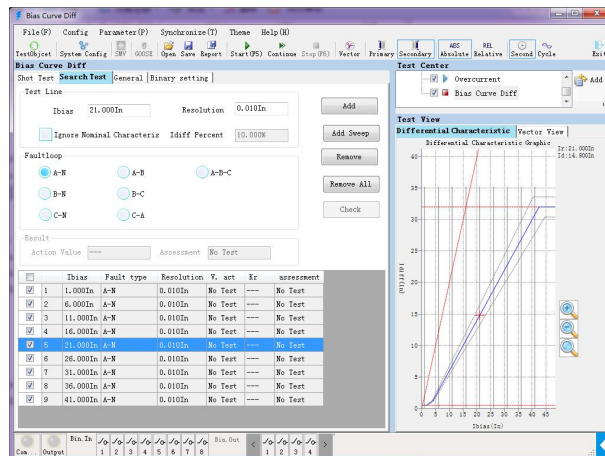
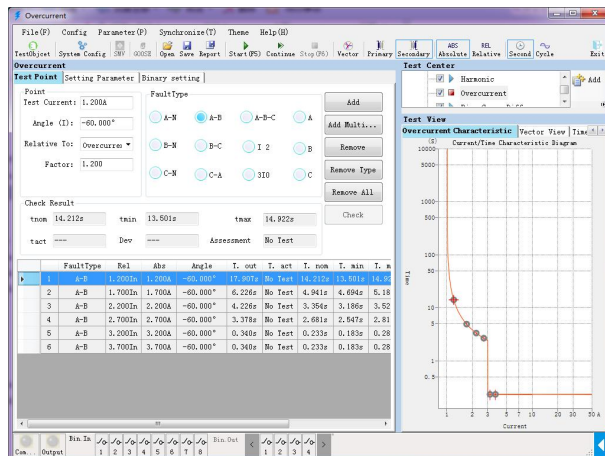
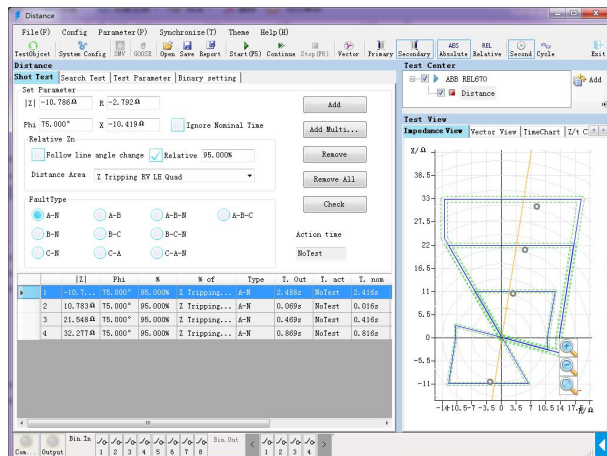
GPS sync end-to-end testing

Online vector display

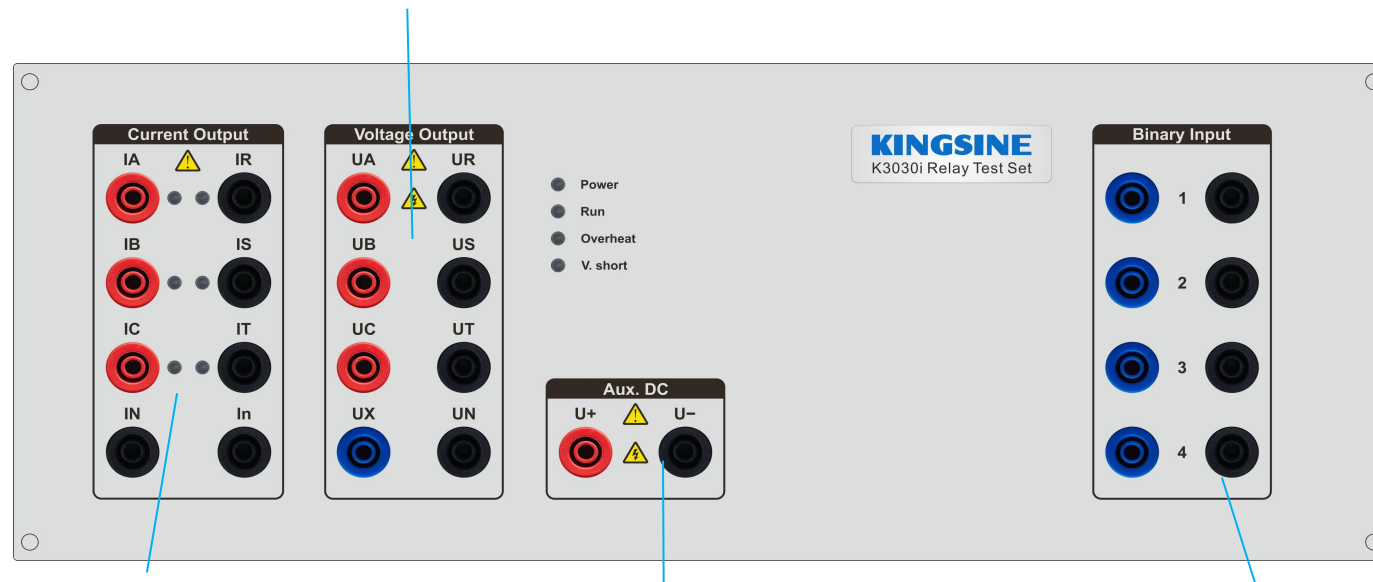
Automatic compare actual characteristic with expected characteristic

Comtrade file generate and playback

Automatic test report creation



4 voltage outputs:
4 x 310V / each 124VA



3 current outputs:
3 x 35A / each 450VA
1 x 100A / 1200VA

Independent Battery Simulator:
DC 15 ~ 350V / 140W

4 binary inputs (dry/wet)
No's: 1~4

4 binary outputs (relay type)



4 binary inputs (dry/wet)
No's: 5~8

4 fast binary outputs
and energy pulse I/O

Models reference for selection

Models	Configuration
K3063i	(6 x 35A / 3 x 70A, 4 x 310V)
K3066i	(6 x 35A / 3 x 70A, 7 x 310V)
K3030i	(3 x 35A, 4 x 310V)
8 Pairs Binary Inputs & 4 Pairs Binary Outputs DC 0~350V Battery Simulator Optional for Energy meter calibration	

Capable of what K30 series can test

Items	ANSI® No.	Items	ANSI® No.
Distance protection relay	21	DC overcurrent relays	76
Synchronising or synchronism-check relays	25	Phase-angle measuring or out-of-step protection relays	78
Undervoltage relays	27	Automatic reclosing devices	79
Directional Power relays	32	Frequency relays	81
Undercurrent or underpower relays	37	Motor overload protection relays	86
Negative sequence overcurrent relays	46	Differential protection relays	87
Overcurrent/ground fault relays	50	Directional voltage relays	91
Inverse time overcurrent/ground fault relays	51	Voltage and power directional relays	92
Power factor relays	55	Tripping relays	94
Overvoltage relays	59	Voltage regulating relays	
Voltage or current balance relays	60	Overimpedance relays, Z>	
Directional overcurrent relays	67	Underimpedance relays, Z	
Directional ground fault relays	67N	Time-delay relays	

Current Generators	
Current:	AC 3x35A @ 450VA
	AC 1x100A @ 1200VA
	DC 3x20A @ 300W
Current Accuracy	<0.02%rd+0.01%rg, Typ.@ 0.5~35Aac
	<0.05%rd + 0.02%rg, Guar.@ 0.5~35Aac
Range	Range I: 3A; Range II: 35A; Autoselection
Distortion	< 0.025% Typ. / <0.07% Guar.
Voltage Generators	
Voltage:	AC 4x310V L-N @ 124VA Max
	DC 3x350V @ 140W
Voltage Accuracy	<0.015%rd +0.005%rg. Typ.@ 2~310V
	<0.04%rd +0.01%rg. Guar.@ 2~310V
Range	Range I: 30V; Range II: 310V; Autoselection
Distortion	< 0.015% Typ. / <0.05% Guar.
Frequency & Phase angle	
Frequency range:	DC~1KHz, 3KHz transient
Frequency accuracy:	±0.5ppm
Freq. resolution:	0.001Hz
Phase angle:	-360~+360°
Phase accuracy:	<0.02°typ, <0.1°Guar, 50/60Hz
Phase resolution:	0.001°
Auxiliary DC (Battery simulator)	
Auxiliary DC:	0~350V @ 140W Max
	0.5% rg Guar.
Binary input	
Quantity:	8 pairs
Type:	wet/dry
Time resolution:	10us
Debounce time:	0~25ms (Software Controlled)
Sampling Rate:	10KHz
Time range:	Infinite
Time errors:	< ±1ms @ 0.001~1s, < ±0.1% @ >1s
Galvanic isolation:	4 isolated, 1/2/3/4~8
Input impedance:	600KΩ
Binary outputs (Relay type)	
Quantity:	4 pairs
Type:	Potential free relay contacts, software controlled
Break capacity AC	Vmax:400Vac / Imax:8A / Pmax:2500VA
Break capacity DC	Vmax: 300Vdc / Imax: 5A / Pmax: 150W

Binary outputs (Semiconductor)	
Quantity:	4 pairs semiconductor
Type:	Open-collector
Break capacity DC	5~15Vdc / 0.1A, 0.5A max
Response time:	<100us
Energy Meter Calibration (Optional)	
Sensor usage:	Mechanical meters / Electronic meters.
Sensor output:	Highlevel: ≥4.5V, Lowlevel: ≤0.2V.
Pulse input:	1 pulse input ports
Pulse range:	500KHz pulse input max.
Pulse output:	1 transistor outputs
Accuracy:	<0.2%
Others, Size & Weight	
PC connection:	1 x 10/100M Base-Tx RJ45 Ethernet
Synchronizer port:	GPS SMA Antenna
Others:	Phoenix socket for pulse I/O and Bi.output
Size:	360 x 450 x 140 mm
Weight:	<19.5kg
Power supply & Environment	
Nominal input voltage	100/220/230VAC Appointed
Permissible input	85~264Vac, 125~350VDC, auto-protective
Nominal frequency	50/60Hz
Permissible frequency	45~65Hz
Power Consumption	1500VA max.
Connection Type	IEC60320 Standard AC socket
Grounding Terminal	4mm banana socket
Temperature(operating)	-10℃ ~ 55℃
Temperature(Storage)	-20℃ ~ 70℃
Humidity	5%-95% RH, non-condensing

**MERAZET S.A.**

ul. J. Krauthofera 36,
60-203 Poznań
tel. +48 61 864 46 00
e-mail: poczta@merazet.pl