

Transformer Analyzer

TEKON[®] 610

TEKON610 is a system designed for distribution (service) transformer, which not only measures electrical conditions such as turns ratio, excitation current, power, harmonics and inrush current, but also tests transformer's electrical characteristics.

It can comprehensively diagnose the electrical integrity of the transformer including risk of outage, presence of internal failure and the installed condition. It is a small-size portable device ideally suited to production, installation, post maintenance and R&D of distribution transformers.

The system allows you in the most effective and easiest manner to perform measurement, data storage, analysis and output via the 7" wide LCD screen, in addition a function of transferring measurement data to remote locations by using a mobile app. You can also print out measurement data via printer, save them to the meter's internal memory, or download to your PC.

Features

- Measures transformer's turns ratio and excitation voltage
- Measures the quality of three-phase power
- Testing of transformer: transformer ratio, polarity, phase angle, impedance, no load
- Verifies limiter settings: function to judge whether acceptable or non-acceptable
- Application of dockable wireless printer (bluetooth) (Optional)
- Measurements automatically saved to designated storage space in real time
- Automatic measurement and display of measurement result
- Output of measurement data in reports



General specifications

Power(battery)	7.2V/5.2Ah Li-ion, 12V/2.5A DC adaptor
Data storage	Micro SD card (8GB), 32GB max
Communication	USB Ver2.0, Bluetooth Ver2.1 + EDR Class2
LCD display	1024x600 pixels, 7.0-inch color TFT screen (touch panel)
Operating temp/humidity	0°C ~ 45°C, RH 85% max
Storage temp/humidity	-20°C ~ 60°C, RH 85% max
Compliant Standard	IEC 61010-1 CAT IV 300V, CAT III 600V Pollution Degree 2, IEC 61010-2-030, IEC 61010-031, IEC 61326, EN 50160
Dimension	270(L)×246(W)×124(H) mm
Weight	3.0kg
Case Color	Black, Yellow, Orange

Accessories

Standard	TTR Cable assembly, Test Lead, Flexible current sensor (dia. 200mm), 12V/2.5A adaptor, 7.2V/5.2Ah Li-ion battery, USB cable, Micro SD card (8GB), Portable bag, PC SW, User's manual
Optional	Rogowski Coil(dia. 100mm) AC 5A, 50A, 500A, 1000A Current Clamp



Test Lead



TTR Cable Assembly



Rogowski Coil (200A)



7.2V/5.2Ah Li-ion battery Pack



Electrical specifications

Measurement of turns ratio

Type	Single-phase	Three-phase (610B)
Range for turns ratio	5Vac 1~1,999(0.1%) 2,000~3,999(0.25%) 4,000~15,000(2%)	5Vac 1~1,999(0.1%) 2,000~3,999(0.25%) 4,000~15,000(2%)
	40Vac 1~1,999(0.1%) 2,000~3,999(0.25%) 4,000~15,000(1%)	40Vac 1~1,999(0.1%) 2,000~3,999(0.25%) 4,000~15,000(1%)
Excitation voltage	1V, 5V, 10V, 40V	1V, 5V, 10V, 40V
Excitation current	0~1A	0~1A
Phase angle	Range : 0~360degree Accuracy: ±0.2degree±2dgts	Range : 0~360degree Accuracy: ±0.2degree±2dgts
Polarity	Displayed on screen	Displayed on screen

Transformer Test Procedure (Optional)

Testing item	Description
Transformer ratio testing	- Measurable range : 1~15,000 - Excitation voltage: 1Vac, 5Vac, 10Vac, 40Vac - Type Single-phase (basic), 3-phase (610B)
Polarity testing	- Identifies additive polarity and subtractive polarity - Measures turns ratio
Angular displacement (phase shift) testing, phase rotation testing	- Measures phase-to-phase voltage and winding voltage - Vector analysis - Checks displacement via diagram - ACV (external reference meter)
Impedance testing	- Load loss: Power Quality Analyzer - Measurement of phase voltage: Power Quality Analyzer - Test results displayed - Rated current (external reference meter)
No-load testing	- No-load loss: Power Quality Analyzer - Excitation current: Power Quality Analyzer - Rated voltage (external reference meter)
Voltage fluctuation rate, efficiency	- Values resulting from measurement displayed

Power Quality Analyzer

Voltage input	AC+DC
Input channels	4
Voltage range(L-N)	Phase voltage (L-N) : 50 ~ 1000 VRMS Line voltage (L-L) : 50 ~ 1730 VRMS
Measurable range	10% ~ 150% of nominal voltage
Sampling	10.24k Samples/sec @ 50/60Hz
Frequency	40 ~ 70Hz ± 20 mHz
Current input	AC+DC
Input channels	4
Measurable range	(Rogowski Coil used) 3 ~ 5000ARMS ± 1.5% of mV (Current clamp-on used) 50m ~ 1000ARMS ± 0.5% of mV
Power wiring	1P2W, 1P3W, 3P3W, 3P4W
Measurement parameters	Voltage, Current, Frequency, Active power, Inactive power, Apparent power, Active power value, Inactive power value, Apparent power value, Power factor (cos θ), Neutral current, Harmonics (up to 50st harmonic), Power quality (swell / dip / cycle / transients / over voltage / inrush current / unbalanced rate), flicker

Measurement of waveforms

Channel	4
Bandwidth	DC to 100Hz

Temperature & Humidity (operating environment)

Measurement	Measurable range	Accuracy
Temperature	-40°C ~ 125°C	±0.3(10~60°C)
Humidity	0 ~ 100%RH	±2%(20~80%RH)

- Built-in temp/humidity sensor