



الشركة الهندسية
الامريكيه
لتكنولوجيا الطاقة



AMERICAN
POWER
TECHNOLOGY
ENGINEERING THE FUTURE



AMERICAN POWER TECHNOLOGY

ENGINEERING THE FUTURE



**AMERICAN POWER TECHNOLOGY
SERVICES ARE PART OF THE ELECTRICAL SYSTEM**

ELECTRICAL TESTING
ELECTRICAL COMMISSIONING
MAINTENANCE PROGRAMS
ELECTRICAL POWER STUDIES
THERMO-GRAPHIC SURVEY
POWER QUALITY MONITORING
INSTRUMENT CALIBRATION
AS-BUILT UPDATES
SINGLE LINE DIAGRAM

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ENGINEERING THE FUTURE



Overview

American Power Technology (APT) is a leading electrical engineering joint stock company Specializing in the electrical power commissioning, testing , inspection and maintenance services .

APT provides clients with the highest quality electrical engineering services that exceed industry standards. Our single focus is the clients' needs. APT Is knowledgeable in critical systems in spection, testing and maintenance.

Goal

APT's goal is to provide clients with the satisfaction of solving problematic issues by utilizing modern testing instrumentation implemented by our professional engineers and thus insuring a high quality service at a minimum cost

Safety

APT maintains an OSHA compliant safety policy. Our employees are trained and required to follow all safety guidelines as dictated by our company safety manual. These guidelines are used to maintain and assure all of our safe work practices.

Services

APT provides engineering services for existing and new electrical power and distribution systems. The service covers a wide range of facilities and different firm types including but not limited to:

- Power Distribution Facilities
- Oil & Gas refinery
- Chemical & Petro Chemical Plants
- I Cement Factory Plants
- Process Factory Plants
- Steel Manufacturing Plants
- Hospitals
- Universities
- Hotels & Resorts
- Financial Institutions
- Smart Centers

Engineering Task:

- Thermo-graphic Survey
- Electrical Testing
- Electrical Commissioning
- Maintenance Programs
- Electrical Power Studies
- Power Quality Monitoring
- Instrument Calibration
- As-Built Updates
- Single Line Diagram





1- Electrical Testing

APT testing team is led by qualified and knowledgeable engineers with many years of testing experience. The team is supported with state of the art testing equipment. APT's rigorous training criteria follow a well established practice applied worldwide in compliance with high quality measurements resulting in satisfaction.

APT follows the International Electrical Testing Association (NETA) electrical testing standards developed for and used by professional electrical testing organizations. NETA is recognized by the American National Standards Institute (ANSI) as an accredited standards developer and is an independent, third party electrical testing association dedicated to setting worldwide standards in electrical maintenance and acceptance testing.

APT is affiliated with NETA.

System Test Application:

- System Test Application:
- Substations
- UPS Systems
- Power Distribution Units
- Generator Systems
- Static Transfer Switches
- Automatic Transfer Switches
- Main Switchgear
- Metal Enclosed Busways
- Power Factor Corrections

Sub System Test Application:

- Cables
- Dry Type Transformers
- Liquid Filled, Transformers
- Circuit breaker
- Switches
- Relays
- Batteries

2-Commissioning

Commissioning new system or retrofit project is a systematic process of ensuring that all building systems perform interactively according to the design intent, basis of design, contract documents and system operational needs. This is achieved by beginning in the design phase, documenting design intent and continuing through construction, building acceptance and the warranty period with actual verification of performance.

APT Commissioning department is headed by high qualified engineers and technicians capable to provide full guarantee of success operation and full support to the client vendors insuring full satisfaction to the clients. APT provides commissioning services that follow a systematic process of ensuring all electrical systems perform interactively according to the design intent and the Owner's operational needs.



3- Maintenance / Preventive Maintenance

Electrical preventive maintenance is a program of planned inspection, testing, cleaning, drying, monitoring, adjusting, corrective modification and minor repair of electrical equipment on a regular schedule to minimize or forestall future equipment operating problems or failures and intended to extend the useful life of an electrical system and reduce the need for major repairs.

APT follows the recommended maintenance methods and frequencies developed by professional international organizations such as NETA. Our team is trained and has full understanding of the international safety and security measurements to insure safe and reliable operation.

4- Electrical Power Studies

APT electrical power studies team is headed by high qualified engineers that have extensive experience in these studies and in solving problems related to these studies to insure safe, reliable and cost efficient operation. This study is performed by using special computer hardware and software to perform the analysis of power system studies. The computer model enables us to readily perform complex calculations and to evaluate the performance of the system by simulation the overall client power system.

APT has the expert engineers to perform the following studies:

Short Circuit Studies

- Determine the short-circuit current available at each component of the electrical system and the ability of the component to withstand and/or interrupt the current

Coordination Studies

- Determine protective device characteristics, settings, or sizes which provide a balance between equipment protection and selective device operation that is optimum for the electrical system.

Load Flow & Power Factor Studies

- Determine active and reactive power, voltage, current, and power factor throughout the electrical system. Provide an analysis of all possible operating scenarios which will be or have been influenced by the proposed or completed additions or changes to the subject system.

Arc Flash Hazard Analysis

- Electrical arc flash and shock hazards have been recognized as particularly dangerous and fairly frequent occurrences that put the lives and health of electrical workers at significant risk.
- Arc Flash is the result of a rapid release of energy due to an arcing fault between phase to phase, or phase to ground. The air is working as a conductor during the arc. The arc flash study determines the worst case arc-flash hazards and associated incident energy conditions.



5- Thermo-graphic Survey

APT Thermographic survey engineers are highly qualified and trained of using the IR camera to identify the problems accurately and in timely manner.

APT use state of the art none intrusive IR camera in that helps detect problems before they occur and reduce cost for repair and process down time.

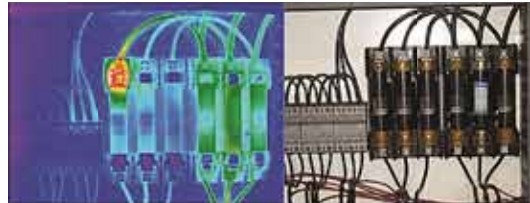
One of the main advantages of the IR survey is the test performed while the facility is in operation and under load. APT provides a detail report describes the problem, problem location, visual picture of the problem, IR picture of the problem, problem priority, and repair recommendations.

Scans can be performed on a variety of applications...

- Distribution Panels
- Circuit Breakers
- Bus Bars
- Motor Control Centers
- Main Switchgear
- Transformers
- UPS Systems
- Motors
- Splices
- Transfer Switches

In addition, Infrared Testing will.

- Reduce Downtime
- Prevent Electrical Failures
- Prolong Life of Equipment
- Decrease Risk of Fire



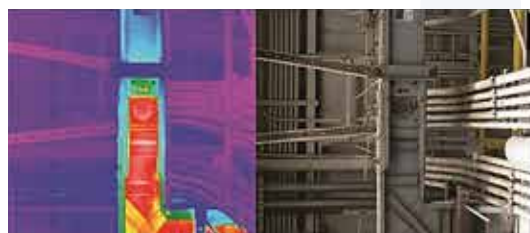
IR problem sample (i fuse clip)



IR problem sample (wire termination)



IR problem sample (Bus termination)

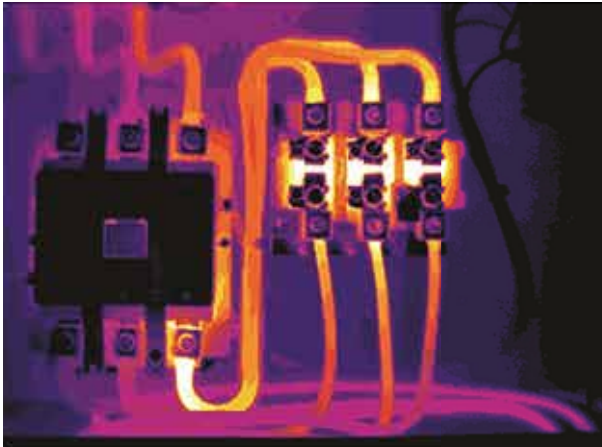


IR problem sample (Bus duct)

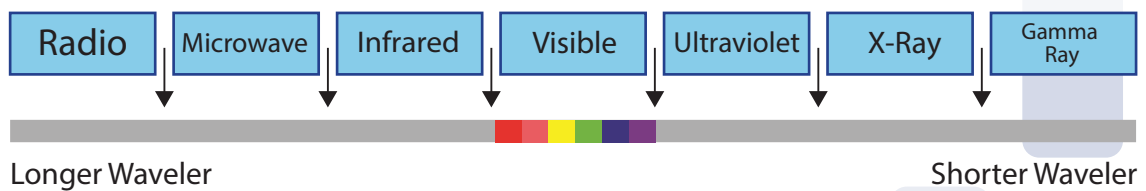


*IR problem sample (Internat
contact of a circuit breake)*

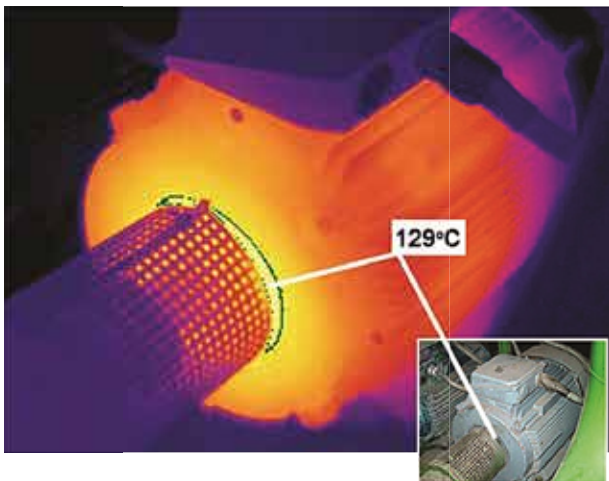
What Is The Infra-red Radiation (IR)?



Infra-red radiation (IR): is electromagnetic radiation emitted from a material due to the heat of the material, the characteristics of which depend on its temperature with a wavelength between 0.7 and 300 micrometers, which equates to a frequency range between approximately 1 and 430THz. **Its wavelength** is longer (and the frequency lower) than that of visible light, but the wavelength is shorter (and the frequency higher) than that of terahertz radiation microwaves.



What Is The Thermography?



Thermography: is an infra-red radiation which can be used to remotely determine the temperature of objects using IR cameras. Thermography is a proven scientific method for the detection of impending failures. Since their introduction in the early 1970s, infra-red surveys have given facilities managers the power to predict and prevent failures-to actually see problems before they happen.

Nearly everything that uses or transmits power gets hot before it fails. Cost effective power management is critical to maintaining the reliability of your electrical systems. And

thermography is one of the most effective proven predictive maintenance (PM) technology available to quickly, accurately and safely locate problems prior to failure.

Finding and fixing a poor electrical connection before a component fails can save you the much greater costs associated with manufacturing downtime, production losses, power outages, fires and catastrophic failures.



What Is The IR Camera ?

IR camera detects radiation in the infra-red range of the electromagnetic spectrum and produce images of that radiation. The amount of radiation emitted by an object increases with temperature; therefore Thermography allows one to see variations in temperature.

The IR camera detects the emitted thermal heat energy from wires and electrical equipments which is an indication that there is a problem in the system.

APT is using the FLIR Thermacam T360 which is one of the latest editions of FLIR cameras. **The followings are some of the camera features:**



- Field of view: 25° x19°
- Thermal sensitivity :< 0.06°C (< 0.14°F) @ +30°C(+86°F)
- Spectral range: 7.5 to 13 μ m
- Spot size ratio (with 15° lens):1.4 mRad
- Temperature range: 0°C to 350°C (32°F to 662°F),
- Accuracy: $\pm 2^{\circ}\text{C}$ ($\pm 3.6^{\circ}\text{F}$) or $\pm 2\%$ of reading
- Measurement modes : Spotmeters, Box areas, Isotherm, Difference temperature function
- Measurement corrections: Reflected ambient temperature correction

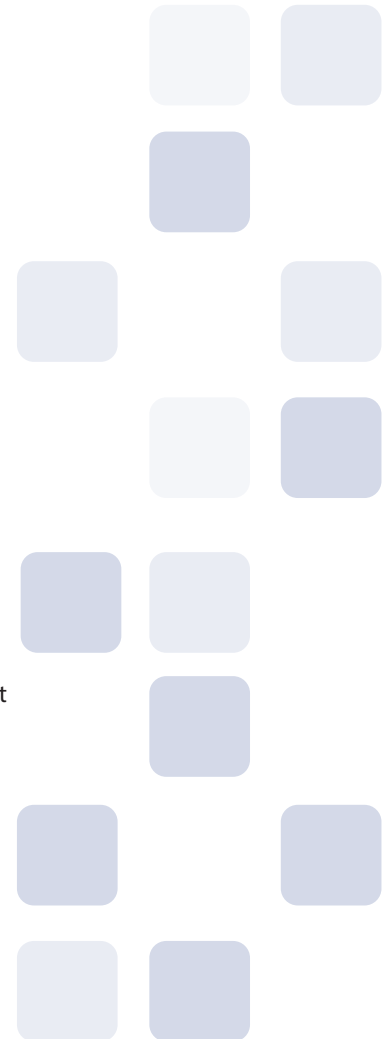


What Are The Advantages of IR scanning?

- Nondestructive technique this means there is no need to interrupt production or plan for costly shutdowns as in regular maintenance.
- Quickly pinpointing problems.
- Preventing catastrophic failures.
- Establishing repair priorities.
- Improving maintenance efficiency.
- Reduce equipment damage.
- Thousands of points can be inspected in a single day .
- Safe inspection since its non-contact survey.
- Produces an image of the problem not only data.
- Reduce unscheduled outages and losses.
- Reduce electrical energy costs by increasing energy efficiency.
- Detect faulty connections/overloaded circuits

What can we scan ?

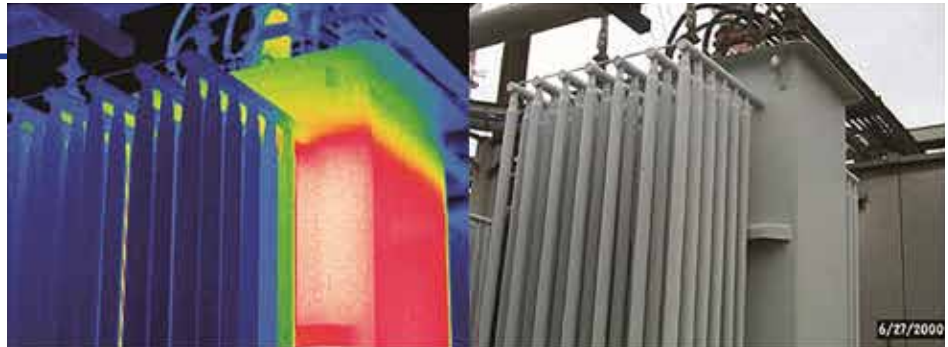
- Transformers
- Bushings
- Switchgear
- Capacitors
- Bus ducts
- Main breakers
- UPS systems
- Motor controllers
- Fuses
- Power panels
- Lighting panels
- AC & DC drives
- Splices
- Breakers
- Contactors
- Motors
- Generators
- Transfer switches
- Disconnects
- Automatic Transfer Switch
- All other electrical equipment



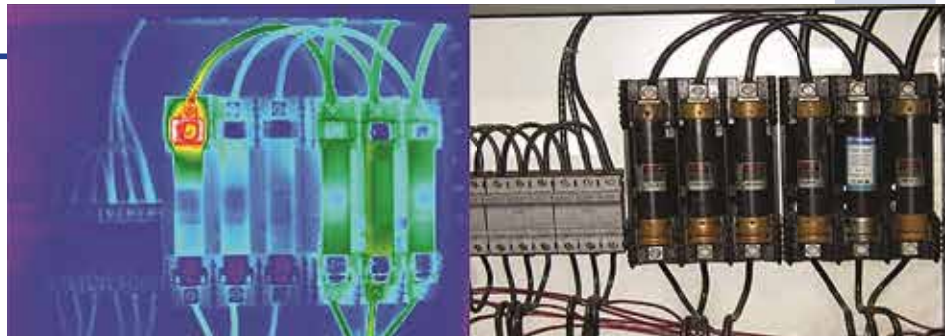


Sample of infra-Red problems :

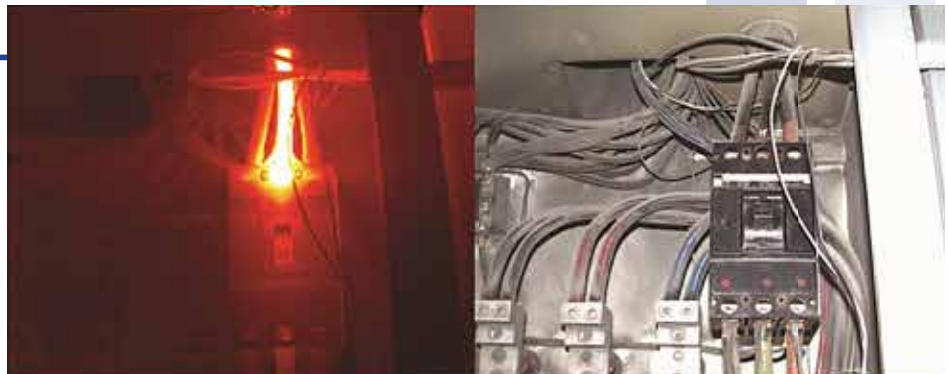
Transformer :



Fuse Clip :



Wire Termination:

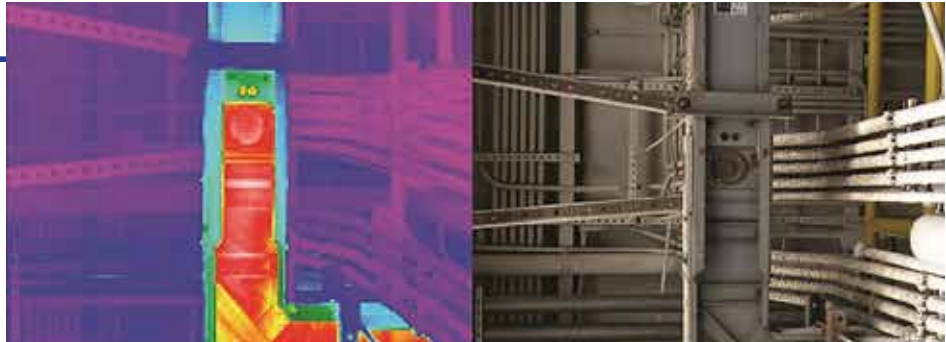




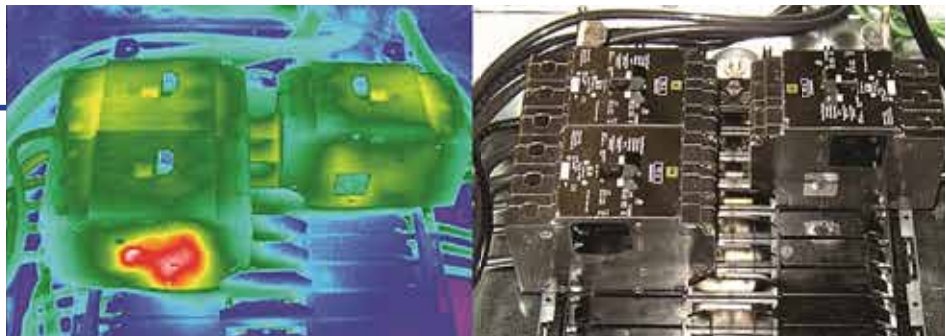
Bus Termination:



Buss Duct:



Internal circuit breaker problem:





6- POWER QUALITY MONITORING

Power monitors provide data for benchmarking the power infrastructure and then sense analyze, and report disturbances continually. With our latest power quality meters we can view voltage and current waveforms, view time sags swells and study harmonic distortion.

Acting promptly, but thoughtfully, to solve power disturbances will save money in downtime, equipment repair cost, and load analysis. Remember, power distribution systems are only reliable when closely monitored and properly maintained.

The primary purpose of power monitoring is to determine the quality of power being provided to the facility and the effects of equipment loads on the building distribution system.

While disturbances may be expected, the source of the disturbance is not always predictable. APT by using the state-of-art equipment can determine whether the power quality event occurred on the utility or facility side, and then pinpoint the cause of disturbances.

American Power Technology is using the latest technology and methods for the power quality monitoring and analysis to determine and discover the following parameters and **power quality issues:**

- RMS Voltage
- Voltage Sags
- RMS Current
- Frequency Variation
- Frequency
- Voltage Unbalance
- Power Factor
- Voltage Harmonics
- Phase Sequence
- Current Harmonics
- Energy Demand
- Total Harmonics Distortion
- Voltage Swell

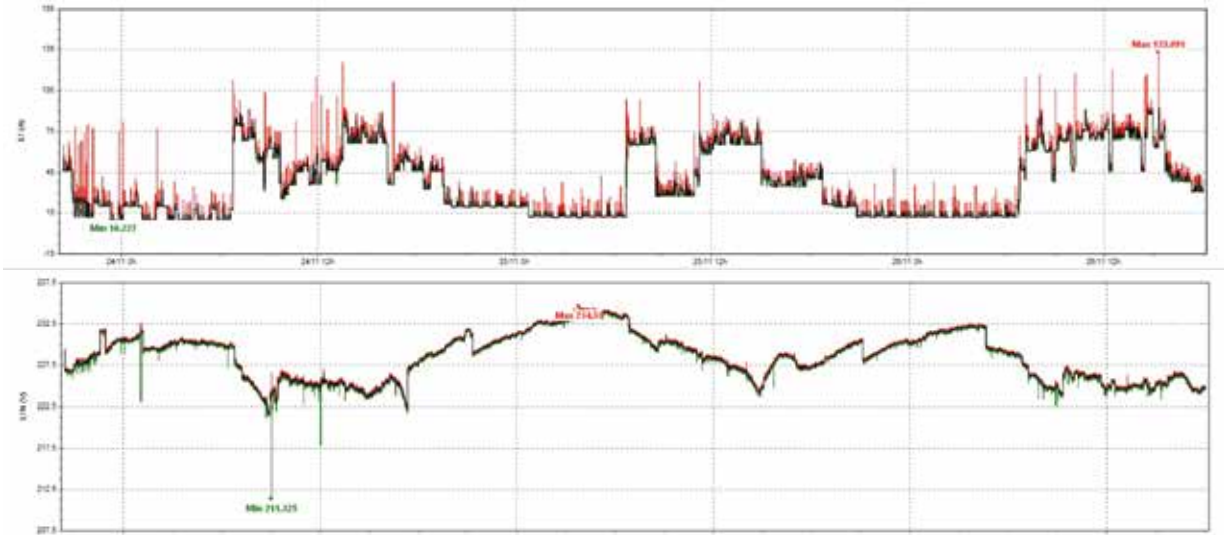
The followings are examples of the text and the graph parts on our report

EXAMPLE OF TEXT FILE

Date	Time	L1 Voltage (v)	L1 Voltage (A)	L1 Activr Power (kwa)	L1 V-THD (%)	L1 A-THD (%)
11/10/2010	16:01:41 0ms	218.15	29.973	4608	3.3	3.8
11/10/2010	16:06:41 0ms	218.375	75.191	13065	4	37
11/10/2010	16:11:41 0ms	218.975	76.077	13065	4.7	40.5
11/10/2010	16:16:41 0ms	218.775	3.464	492	3.6	17.5
11/10/2010	16:21:41 0ms	218.425	3.368	438	3.2	1.5
11/10/2010	16:26:41 0ms	218.825	3.614	495	3.2	1.5
11/10/2010	16:31:41 0ms	218.475	3.545	489	3.2	1.4
11/10/2010	16:36:41 0ms	218.325	74.632	13089	3.9	31.5
11/10/2010	16:41:41 0ms	218.125	74.127	13128	4.2	34.7
11/10/2010	16:46:41 0ms	218.525	74.168	13101	4.7	35.2
11/10/2010	16:51:41 0ms	218.575	30.082	4632	4.3	4.3
11/10/2010	16:56:41 0ms	218.825	3.668	453	4.3	1.7
11/10/2010	17:01:41 0ms	218.8	3.627	492	3.8	1.3
11/10/2010	17:06:41 0ms	218.6	3.573	477	3.5	17.3

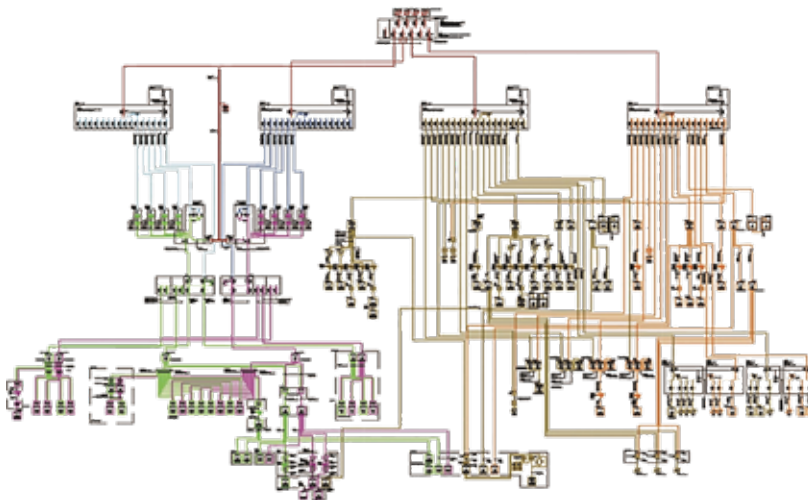


EXAMPLE OF GRAPH FILE



7- As Built Update/ Single Line Diagram

APT engineers are qualified and trained to draw the as built drawings and to develop single line diagram for the electrical power systems. Our experienced engineers follow any electrical power system new or existing visually and also by using the most up-to-date equipment and tracers to draw the as built single line accurately. Finally draw the single line using AutoCAD with the use of the international electrical symbols. APT engineers are experts of developing single line to develop the electrical power system to insure safe, reliable and cost efficient operation.





8 - Electrical Contracting

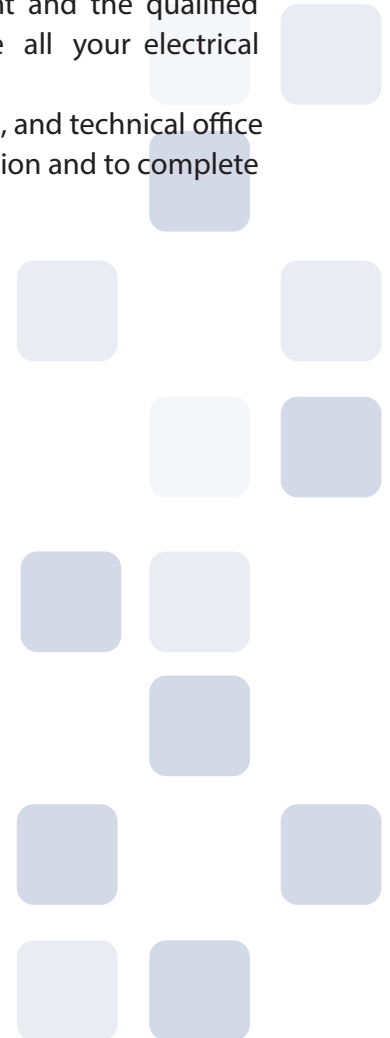
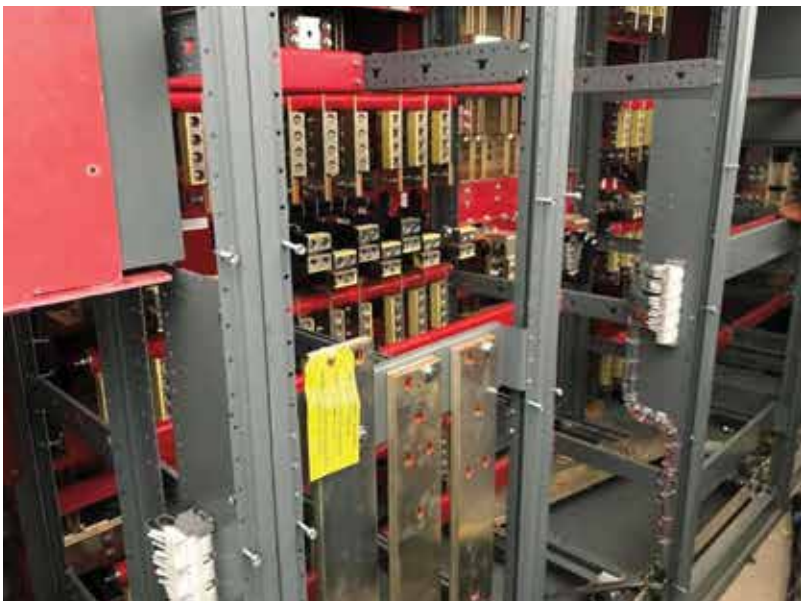
APT Contracting has been in the field of the electrical contracting since 2010 ; our area of expertise covers the new electrical installation and renovation at the commercial, industrial, military, and institutional projects. We have built a great reputation of excellence in the electrical installation and renovation services through our customers' satisfaction with the product/service. We are confident in our ability to meet and exceed all of our customer expectations.

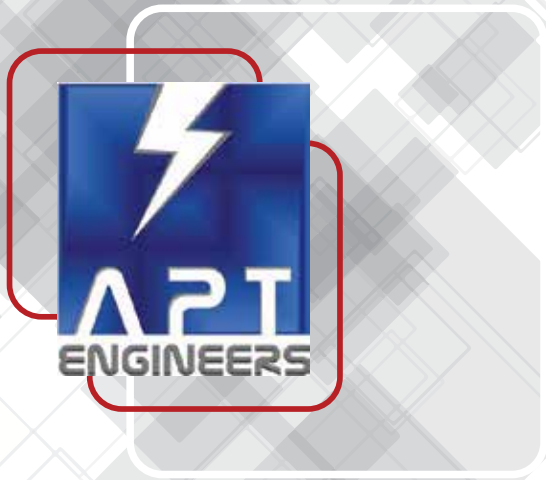
Our team consists of a professional engineer, with field electricians trained to perform the work professionally as per the required standards and safety procedures to meet the highest quality and customer satisfaction. By using the state of art testing equipment and the qualified engineers and electricians we can safely and quickly identify and solve all your electrical problems .

APT Contracting team is backed up with a strong expert management team, and technical office to provide the best installation procedures to meet our customer satisfaction and to complete the project in a timely manner .

APT CONTRACTING GOALS ARE:

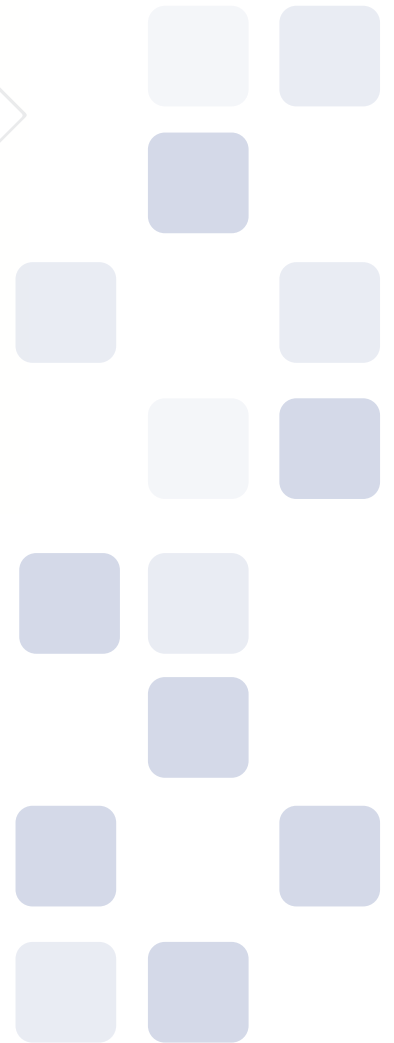
QUALITY .. SAFETY .. CUSTOMER SATISFACTION





A AMERICAN **POWER** **TECHNOLOGY**

ELECTRICAL EQUIPMENT





FLIR T360 INFRARED CAMERA

What does it do?

The Infrared camera is used as a preventive maintenance tool which detects problems before they occur

Why we use it?

- Preventive maintenance on load- no need to disconnect the load
- Quick to find all the un-seen issues which can cause issues and cost more money in repair.
- **Application:** Distribution Panel, Circuit Breakers, Bus-Bars, Main Switchgear, MCC, Transformers, Generators, UPSs, etc..



CUSTOMERS



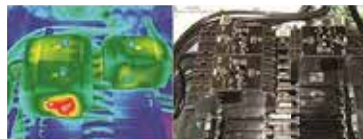
(الفيوزات)



(البارة الوسطى)



(الكابيل الأوسط)



(مكونات المفتاح الداخلية)

- FOUR SEASONS HOTEL
- ARAB BANK
- USA EMBASSY
- CIB
- EFG HERMESS
- SHIRATON MONTAZA
- EASTREN COMPANY
- ARMY HOSPITAL



FLUKE 1735 **THREE-PHASE POWER LOGGER**

What does it do?

The Fluke 1735 Three-Phase Power Logger is the ideal tool for conducting energy studies and basic power quality logging .

Why we use it?

- **Load studies** – verify electrical system capacity before adding Loads
- **Energy assessments** _ quantify energy consumption before, and after improvements , to justify energy saving devices .
- **Harmonics measurements** – uncover harmonic issues that can damage or disrupt critical equipment
- **Voltage event capture** – monitor for dips and swells that cause spurious resets or nuisance circuit breaker tripping



Conduct load studies for up to 45 days and view saved data on-screen or on a computer .



DLRO DIGITAL MICHROHMMETER

What does it do?

Testing the contact resistance for bus-bars, breakers and all connection .

Why we use it?

- To protect the internal Breakers connections
- to verify that no leakage will occur during operation
- **to minimize the heat prevent any arc if the contact not well closed**

MEGGER DLRO 10X



MEGGER PA9PLUS POWER QUALITY ANALYZER

What does it do?

The Megger PA9 Plus is designed to record and monitor the electrical has a recording sample rate of 256 samples/cycle .



Why we use it?

- Trends voltage , current , imbalance , power, events , flicker (PST / PLT) ,THD ,TDD , individual harmonics , and Frequency
- **Real - time** : graphical display of the harmonic content, power and source direction .



MEGGER TTR-20 **TRANSFORMER TURNS RATIO**

What does it do?

The Megger **TTR-20** is used to measure the turns ratio, excitation current and polarity of windings in single - and three - phase distribution and power transformers (tested phase by phase), potential & current transformers, and tapped transformers .



Why we use it?

- To ensure continued proper operation, transformers are tested to verify that their electrical properties have not changed from design specifications.
- It is used to determine the no-load accuracy of CTs and PTs

FLUKE 1630-2 **EARTH GROUND CLAMP METER**

What does it do?

The FLUKE 1630-2 is designed to measure the earth ground loop resistance without breaking the circuit .

Why we use it?

- The clamp-on ground testing technique simplifies ground loop testing and enables non-intrusive leakage current measurement. Easy to use in small places and harsh environments. The earth ground loop testing and continuity testing can be completed without breaking the circuit.





KYORITSU 4105A DIGITAL EARTH TESTER

What does it do?

The Kyoritsu 4105 A is designed to measure the earth resistance using earth spikes 2-3 metres .

Why we use it?

- The digital earth tester is used to test the individual earth pits either new or existing one for maintenance .



EXTECH 480400 PHASE SEQUENCE TESTER

What does it do?

The EXTECH 480400 is designed to measure the phase rotation/sequence from 40V - 960V .

Why we use it?

- **Check** the phase sequence / rotation to confirm the correct rotation of the motors.





FLUKE 1587 **INSULATION MULTIMETER**



What does it do?

The **FLUKE 1587** is designed to measure the insulation resistance up to 1000VDC, and measure all the voltage and current parameters .

Why we use it?

- The Fluke 1587 Insulation Multimeters combine a digital insulation tester with a full-featured , true-rms digital multimeter in a single compact, handheld unit

UNI-T UT513 **INSULATION TESTER**

What does it do?

The UNI-T UT513 is designed to measure the insulation resistance up to 5000VDC .

Why we use it?

- To measure the insulation resistance of equipment and cables up to 5000VDC





KEWTECH KT64DL FIXED INSTALLATION TESTER

What does it do?

The KEWTECH KT64DL is designed for the fixed installation testing standards .

Why we use it?

- **Continuity**
- **Insulation Resistance**
- **Loop Impedance**
- **PSC (L-N/L-L) – PFC (L-PE)**
- **RCD TESTING**



IDEAL SURE TRACE CIRCUIT TRACER



What does it do?

The IDEAL SURE TRACE is designed to trace live and dead circuits. It contains of transmitter and receiver with very-high frequency .

Why we use it?

- To find out the location of any receptacles in the panel without closing the breakers
- Used to minimize the risk to shut-off critical breakers .



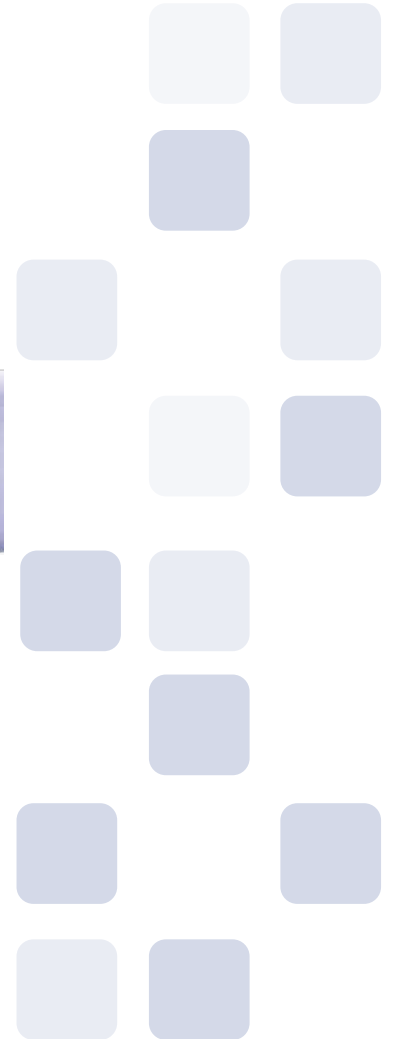
CATU DT-300 **Earth & Ground Resistance Tester**

What does it do?

Testing the integrity of the earth circuit at the local socket (continuity $< 2 \Omega$), correct polarity (position of the phase and the neutral is indicated).

Why we use it?

- To check the presence and the ohm reading of the earth at the socket .
- Verify the correct polarity of the installed wires (L,N,E) without removing the socket .





FLUKE 6200 **APPLIANCES TESTER**

What does it do?

The Fluke 6200 PAT testers verify the electrical safety and operation of portable appliances in accordance with relevant guidelines and regulations.

Why we use it?

- **Earth Bond Test (Rpe) , Insulation Test (Riso), Touch Current Test , Substitute Leakage Current Test , Load / Leakage Test : Load Power , Load / Leakage Test: Leakage Current.**



AMPROBE TIC 300 PRO **Non-Contact High Voltage Detector**

What does it do?

The Amprobe TIC 300 PRO high voltage detector is a non-contact voltage detector for detecting alternating current (AC) on transmission lines, power distribution equipment (30-122kVAC) .

Why we use it?

- **Test the presence of electricity as a safety procedures for Low, Medium, and High Voltage**





MEGGER FOSTER SCITS 100 SECONDARY INJECTION TEST SET

What does it do?

The Megger Foster SCITS 100 is a secondary injection test set injecting current up to 100A used to test mains power supply protective devices, such as relays, overload coils, and circuit breakers.



Why we use it?

- **To test** the protective relays to confirm that the proper functionality or each protective settings .
- **To test** the circuit breakers to ensure the proper tripping timing and current



HV DIAGNOSTICS HVA-45-TD **VLF 45KV HIPOT WITH TAN DELTA**

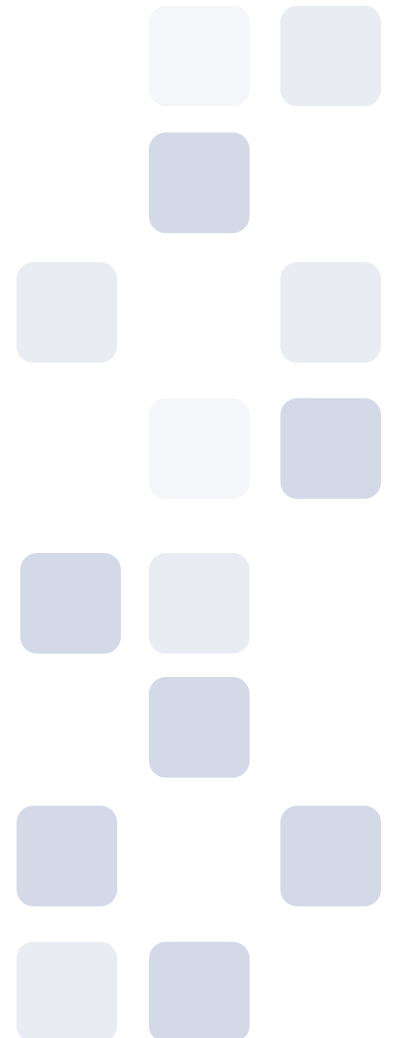
What does it do?

The HV DIAGNOSTICS is a 45KV VLF HIPOT with Tan Delta Test Set designed for performing diagnostic testing for up to 35kV rated cables and full acceptance testing of cables 25kV and lower .



Why we use it?

- **To test the MV** cables insulation as a new installation or for a routine maintenance procedures
- To test cable Tan delta (Tan δ , TD) testing, also called dissipation factor or loss angle, is used for measuring the degree of deterioration of shielded MV/HV cable insulation. The results reveal how contaminated damaged, or water tree strewn the insulation has become .





المقاومات الكهربائية

الشركة الهندسية الأمريكية لتكنولوجيا الطاقة تعمل في مجال المقاومات الكهربائية منذ عام 2010 بخبرة عالية تغطي المشروعات من حيث التركيبات الكهربائية الجديدة و أعمال التجديدات في المنشآت الإدارية و الصناعية و العلمية و السكنية و العسكرية لقد صنعنا مع عملائنا سمعة ومكانة من الامتياز في أعمال التركيبات الكهربائية و التجديدات من خلال تقديرهم للمنتج النهائي عند الاستلام. نحن نتق في كفاءة اعمالنا و التي دائما تنال رضا العملاء بل و تفوق توقعاتهم

فريق العمل لدينا يتكون من مهندسين وفنيين ذوي خبرة و كفاءة عالية في هذا المجال مدربين لتنفيذ الأعمال حسب المواصفات الفنية بكفاءة عالية و حسب معدلات السلامة و الأمان في التركيبات لضمان اعلى جودة و لارضاء العميل. يمكننا ايجاد معظم المشاكل سريعا باستخدام اجهزتنا التي تعد من أحدث الأجهزة في مجال الأختبارات مما يضمن استلام مشروعاتنا بالكفاءة و السرعة المطلوبة

فريق المقاومات الكهربائية لدينا مدعوم بادارة ذات خبرة عالية في هذا المجال و مكتب فنى قوى لدعم المشروعات لاجاد افضل الطرق في التركيبات و المشتريات لأنهاء المشروعات في وقت قياسي و لارضاء عملائنا

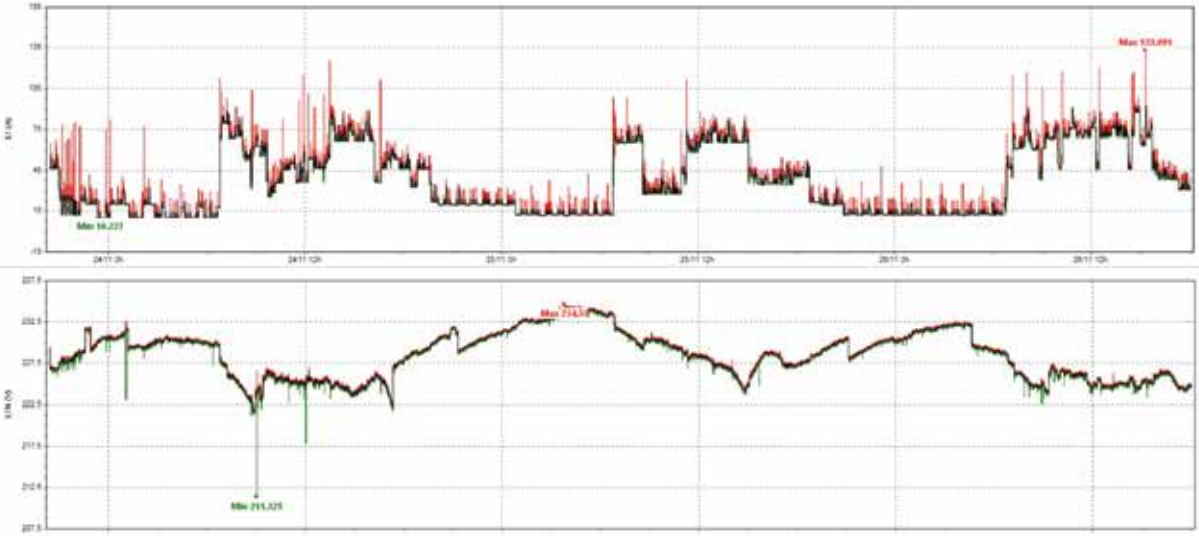
اهدافنا هي :

الجودة .. السلامة .. ارضاء العميل



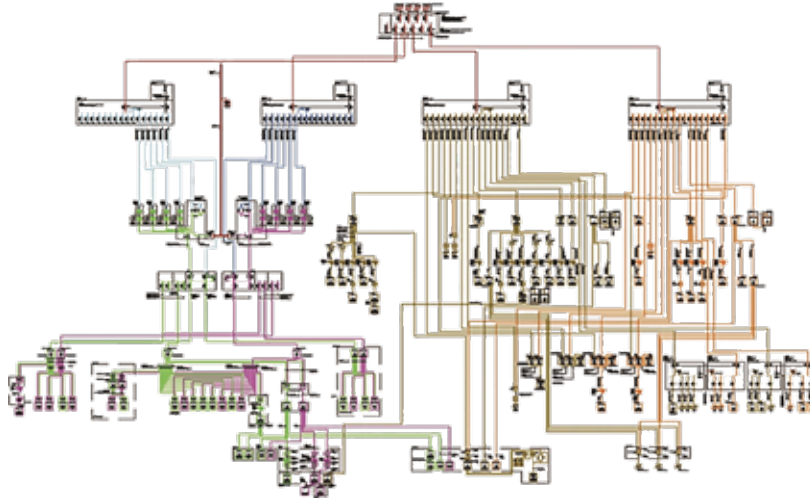
EXAMPLE OF GRAPH FILE

باستخدام احدث اجهزه تسجيل الكهرباء تقوم الشركة بتسجيل الكهرباء عند أي نقطه خلال مده معينه تصل إلى 60 يوم مع تقديم تقرير شامل بكل القراءات التاليه خلال وقت التسجيل



الرسومات الهندسية للمنشآت

تقوم الشركة بعمل رسم هندسي شامل للنظام الكهربائي داخل المنشاه وذلك عن طريق مهندسين ذو خبره عاليه في عمل تتبع للنظام الكهربائي بدأ من المصدر الكهربائي للمنشأه وحتى آخر مخرج لها، وعن طريق مهندسين متخصصين في مجال الرسم الهندسي باستخدام ال Auto CAD يتم عمل رسم هندسي دقيق لكل المنشأه مما يمكن المنشأه من القيام بعمل الصيانه الدوريه الخاصه بها بدقه وبسرعه متناهيه وايضا يمكنها من سرعه التعامل مع المشاكل التي قد تظهر بشكل مفاجئ





تسجيل الكهرباء بواسطة ال Power Quality Meter

■ باستخدام احدث اجهزه تسجيل الكهرباء تقوم الشركة بتسجيل الكهرباء عند أي نقطه خلال مده معينه تصل إلى 60 يوم مع تقديم تقرير شامل بكل القراءات التاليه خلال وقت التسجيل

Current	التيار	Voltage	فرق الجهد
Active Power	القدره	Frequency	التردد
Apparent Power	القدرة الظاهرية	Reactive Power	القدرة التفاعليه
Power Factor	معامل القدره	Distortion Power	القدرة المشوهة
Active Energy	الطقه	Reactive Energy	الطاقة التفاعليه
Harmonics (THDV)	شوائب فرق الجهد	Harmonics (THDI)	شوائب التيار

■ يتم تقديم القراءات التي تم تسجيلها لكل فتره زمنية (كل 30 ثانيه مثلا) في صورتين؛ أولا أرقام (sheet excel) وثانيا كل الرسومات لكل قراءه (graph).

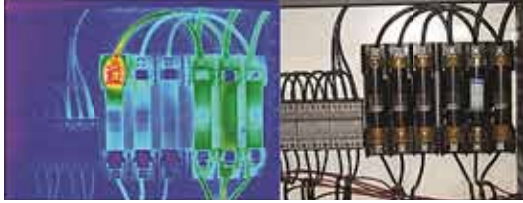
■ تقوم الشركة بمعرفة جودة الكهرباء التي تزود بها المنشأه مع معرفة تأثير الاحمال الموجوده داخل المنشأه على جودة الكهرباء والذي قد يؤدي بشكل من الاشكال إلى وجود اضطرابات في الكهرباء والتي تؤثر بدورها على الاجهزه والمعدات الموجوده داخل المنشأه وعلى استهلاكية الكهرباء الخاصه بالمنشأه وغيرها من المشاكل التي تعاني منها اغلب المنشآت، هذه الاضطرابات في العادي لايمكن التكهن بمصدرها ... ولكن باستخدام احدث الاساليب والطرق في التحليل تقوم الشركة بتتبع هذه الاضطرابات ومعرفة مصدرها مع القيام بتقديم افضل الحلول والطرق والوسائل للتغلب عليها.

■ مثال لشكل ال excl sheet و graph الذي يقدم في التقرير الذي تقوم به الشركة

TEXT FILE

SWBD A											
TIME	WATT	VA	CURRENT								
			A			B			C		
			MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX
14:46:01	273485.3	347168.5	414.759	424.831	441.311	390.954	399.194	413.844	437.649	448.638	463.285
14:46:02	274143.4	342482.8	413.844	419.337	423.915	390.954	394.616	398.279	439.48	443.142	446.805
14:46:03	273049.8	340247.8	406.519	416.59	422.999	381.798	391.87	395.532	429.409	440.398	444.973
14:46:04	272158.2	331366.1	401.941	404.688	411.097	379.967	381.798	388.207	423.915	428.493	437.649
14:46:05	271679.2	331157.7	401.025	404.688	407.435	380.883	381.798	384.545	424.831	427.577	430.324
14:46:06	271810.1	331456.2	401.941	404.688	408.35	379.967	381.798	385.461	424.831	427.577	430.324
14:46:07	271166.6	330850.1	400.11	403.772	409.266	379.051	380.883	384.545	423.915	426.662	433.071
14:46:08	270999.1	330653.2	400.11	403.772	408.35	378.136	380.883	384.545	423.915	426.662	430.324
14:46:09	270986.3	330581.1	401.025	402.857	408.35	378.136	381.798	385.461	422.999	425.746	430.324
14:46:10	270921.2	330277.9	400.11	402.857	406.519	379.967	381.798	387.292	422.999	425.746	432.155
14:46:11	270029.1	329393.3	399.11	401.941	405.603	378.136	380.883	384.545	422.999	424.831	427.577
14:46:12	270475	330015.9	400.11	401.941	405.603	379.051	381.798	385.461	422.999	424.831	428.493

المسح الحراري



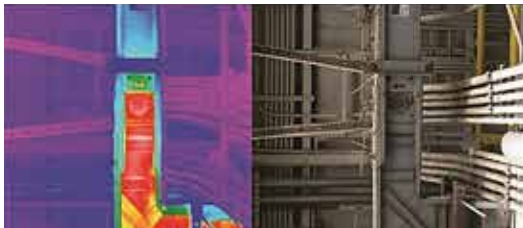
(الفيوزات)



(الكابل الأوسط)



(البارة الوسطى)



(باسبار)



(مكونات المفتاح الداخلية)

لأن كل مشكله في الأجزاء الكهربيه ينتج عنها زياده في درجة حرارة الجزء الذي به المشكله ، ولان تلك الزياده في درجة الحرارة لا يمكن رؤيتها ... تظهر هنا أهمية استخدام المسح الحراري باستخدام الأشعه تحت الحمراء كوسيله اساسيه وضروريه في أعمال الصيانه الكهربيه اذ إنها تمكننا من رؤية تلك الزياده في درجة الحرارة ومعرفة مكان المشكله بدقه عاليه وبالتالي فهي تمكننا من معالجتها قبل أن تتطور تلك المشكله بحيث تصبح تكلفة اصلاحها ومعالجة اثارها عاليه جدا والتي قد لا تكون فقط ماديه .

لقد تم تدريب مهندسين الشركه بواسطه خبراء في المسح الحراري للقيام باستخدام الكاميرا الحراريه لتحديد المشكله بدقه عاليه وفي اقل وقت .

- واحده من اهم ما يميز استخدام المسح الحراري في أعمال الصيانه هي عدم الاحتياج لفصل التيار الكهربيه أثناء عملية المسح .

تقوم الشركه بتقديم تقرير بعد القيام بعملية المسح يحتوي على صورتان للمشكله أحدهما عاديه والاخري حراريه، مع تحديد المشكله ومكان المشكله ودرجة خطورة المشكله والتوصيات المتعلقة بمعالجة المشكله .

يتم عمل المسح الحراري للأجزاء الكهربيه الاتيه :

- اللوحات الرئيسيه : لوحات التوزيع
- القواطع
- الباسبارات
- التوصيلات
- التحولات
- أنظمة ال UPS
- المواتير- لوحات تحكم المواتير
- أنظمة التحويل الاوتوماتيكي

يجب ملاحظة أن باستخدام المسح الحراري نحن نعمل على:

- تقليل الوقت المفقود أثناء الاعطال المفاجئه
- و منع انقطاع التيار
- و اطالة عمر المعده الكهربيه
- تقليل مخاطر الحريق



توصيف الأعمال التي تقوم بها الشركة :

- الاختبارات الكهربيه المختلفه للموزعات والدوائر الكهربيه .
- الاختبارات النهائية عند تسليم المشروعات .
- دراسة القوى الكهربيه والأعمال المطلوبه للمشروعات القائمه و كذلك الجديده .
- إصدار التقارير المختلفه و الخاصه بجوده الطاقه وإستمرار عمله .
- تنفيذ أعمال مسح إشعاعي لإظهار الأماكن ذات الانبعاث الحراري العالي و توضيح السبب و تقديم الحلول المتكامله .
- تنفيذ أعمال الرسومات الهندسيه للدوائر الكهربيه ودوائر التحكم للمصانع والشركات والمشروعات المقامه . منذ زمن وترغب في عمل ملفات هندسيه لها .
- أعمال الصيانه الدوريه ووضع برامج وقائيه للحصول على أعلى مستوى للأمان و حماية الأفراد و الماكينات والمنشآت.



الشركة الهندسية الأمريكية لتكنولوجيا الطاقة

الشركة الهندسية الأمريكية لتكنولوجيا الطاقة هي من الشركات الرائدة في مجالات هندسة الكهرباء المتخصصة في اختبارات وتسليم المشروعات الكهربائية وكذلك أعمال وخدمات الفحص الهندسي .
تحرص الشركة ان يتمتع العملاء بأعلى مستوى للخدمات الهندسية للأعمال الكهربائية والتي ترقى الى آفاق المستويات القياسية ل لصنائه تركيزا في تغطية إحتياجات العميل ، خاصة في أعمال التفتيش والإختيار الهندسي للأنظمة والبرامج ذات حساسية عالية وحرجه ، بالإضافة لأعمال الصيانه الإعتيادية .

اهداف الشركة :

تحقيق إشباع العملاء بالحلول المتكامله السريعه للمشاكل التي قد تنشأ وكذلك تقديم التقارير والحلول المتكامله باستخدام الكفاءات العاليه من صفة المهندسين المدربين على احدث الأجهزة ذات التكنولوجيا العاليه والتي تقودنا للإظهار المبكر للمشاكل المستقبلية والحالية وكذلك توضيح الحلول في اسرع وقت وبأمان كامل و بأقل التكاليف.

معدلات الأمان :

تقوم الشركة بتطبيق أعلى مستوى للأمان طبقا لمنظمة **OSHA** العالميه - حيث يتم تدريب وتأهيل فريق العمل لإتباع الطرق السليمة والأمنة طبقا لمنظمة السلامة بالشركة.

الخدمات التي تقدمها الشركة :

تقدم الشركة الاستشارات الهندسيه للأنظمة الكهربيه بالشركات والمصانع التي تعمل هذا بالإضافة للمشروعات الصناعيه في مختلف المجالات التي تحت الإنشاء وأثناء التنفيذ و ذلك في تغطية مجال الجهد العالي والمتوسط والجهد المنخفض ، هذا بالإضافة إلى دوائر الكنترول المختلفه لجميع الأنظمة حيث تغطي الخدمة نطاق واسع من الصناعات على سبيل المثال لا الحصر الآتي :

- محطات توليد وتوزيع القوى
- المشروعات البترولية والغازيه
- المشروعات البتروكيماويه و مصانع الكيماويات
- مصانع الأسمنت
- مصانع الأسمده .
- مصانع الانتاج في المجالات المختلفه
- مصانع الحديد والصلب
- المراكز والقرى الذكيه .
- البنوك والمؤسسات الماليه
- المستشفيات والمراكز الصحيه .
- الجامعات والمؤسسات العلميه .
- الفنادق والقرى السياحيه والمطارات .
- وسائل النقل البحري والسكك الحديديه والمترو.
- شركات تداول الأوراق الماليه.



خدمات الشركة الهندسية الأمريكية

هي جزء من المنظمة الكهربائية في أي منشأة لضمان الاستمرارية

اعمال المسح الحراري
الاختبارات الهندسية
استلام المشاريع الكهربائية
الصيانة الاعتيادية
الصيانة الوقائية
الدراسات الكهربائية
تسجيل و تحليل كفاءة الطاقة
الرسومات الهندسية

٢٦ شارع عبد الحميد الديب . ثروت ، الدور الثالث مكتب ٣.٣ ، الإسكندرية . مصر
موبايل : ٠٠٢٠١٢٨٤٠٤٠٠٩٠٠ تليفون : ٠٠٢٠٣٥٨٤٧٤٨٠
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