



Al Ittihad Elect
Switchgear Ind L.L.C



**Al Ittihad Elect.
Switchgear Ind. L.L.C.**



شركة الاتحاد
لصناعة اللوحات الكهربائية ذ.م.م.

INTRODUCTION

We are pleased to introduce **Al Ittihad Electrical Switchgear Industries L.L.C.** as one of the leading LV switchgear manufacture and supplier serving since the last **23 years** in the U.A.E. and the gulf region. Our main office and modern manufacturing facility is based in industrial area 11 , Sharjah , U.A.E. **Al Ittihad** is a successful industrial partner throughout the U.A.E. providing after sales customer service facility.

Al Ittihad has a separate designing and manufacturing department equipped with professional and experienced technicians who have the capacity to assemble **ASTA Certified** panels like MDB, SMDB and final DBs. In addition to all types of power quality and control panels like ATS , VFDs , STAR-DELTA , DOL panels and Capacitor banks as per the standards specified by the local authorities such as SEWA , DEWA, FEWA and honorable consultants.

We are using switchgear components like ABB, Schneider, Dorman Smith , Siemens , Legrand , Hager and Himel from recognized suppliers assembled according to the standards of ASTA with proper testing for various parameters like the flash test, primary and secondary injection test , Megger testing ...etc. Our motto is to maintain high quality standard in the market which will enable us to meet and satisfy our clients requirements.

Also we can supply AHU,FHU,RTU, chiller water, pump starter panel, HVAC control & retrofits control panels pump starter panel and air handling units control.

We hope the above information is sufficient for your satisfaction and analyzing to our credibility, and we are willing to render our services to your valuable organization.

Looking forward to receive your inquiries and valuable order soon.

Best Regards,

**ENG. EYAD LUTFI (MANAGING DIRECTOR
AL ITTIHAD ELEC. SWITCHGEAR IND. L.L.C.**



INDEX

- 1. License & Certifications**
- 2. List of Employees & Organizational Chart**
- 3. Testing of LV switchgear**
- 4. Testing equipment & Calibration Certificates**
- 5. List of Prestigious Projects**
- 6. HVAC Control panel**
- 7. Our Suppliers**
- 8. Visit us**

1. LISENCE & CERTIFICATIONS

No. C 1001586856



Contract place / مكان العقد

X Renew / تجديد New / جديد

الشارقة

For Commercial, industrial or free professions purposes

لغابات ممارسة نشاط تجاري أو صناعي أو ممارسة المهن الحرة

Details of Lessee	بيانات المستأجر	Details of Lessor	بيانات المؤجر
License number:	رقم الرخصة: 506477	Lessor card number:	رقم بطاقة المؤجر:
License Name:	اسم التجاري: شركة الاتحاد لصناعة اللوحات الكهربائية ذ م م	Name:	اسم: محمد خلفان أحمد الرومي
Designation:	الاسم: المستأجر	Designation:	الصفة: المالك
Nationality:	الجنسية: الإمارات	Nationality:	الجنسية: الإمارات
Profession:	المهنة:	Profession:	المهنة:
ID No.:	رقم بطاقة الهوية: الشارقة	ID No.:	رقم بطاقة الهوية: الشارقة
Address:	العنوان: الشارقة	Address:	العنوان: الشارقة

Telephone:	هاتف: 065557000	Telephone:	هاتف: 065557000
Fax:	هاتف: 0505372144	Fax:	براق: 065557222
P.O. Box:	ص.ب: 28206 / الشارقة	P.C. Box:	ص.ب: 117 / الشارقة
E-mail:	البريد الإلكتروني:	E-mail:	البريد الإلكتروني:

Details of Rent	تفاصيل الإيجار	Leased Premises	العين المؤجرة
Purpose of rent:	تجاري	City:	الشارقة
Rent duration:	سنة واحدة	Plot No.:	الصناعية رقم 11
Starting date:	2024/07/01 م	Plot type:	ملك
Expiry date:	2025/06/30 م	Plot No.:	10177
Rent: (monthly, annual, full time)	75,000/- درهم سنويا	Plot No.:	2016/09/29 م

Total amount in characters:	القيمة الإجمالية بالأحرف: خمسة وسبعون ألف درهم سنويا	Plot No.:	رقم القطعة:
Payment method:	طريقة السداد: 4 دفعات	Plot No.:	اسم المبنى:
		Plot No.:	رقم المبنى:
		Plot No.:	اسم ورقم الشارع: شجرة

Description:	وصفها: شجرة	Plot No.:	رقم العين المؤجرة:
Area:	مساحتها:	Plot No.:	وصفها:
Property No. / Sheet:	رقم العين / الحقل: شجرة رقم	Plot No.:	مساحتها:

Any scratch or change or deletion invalidates the contract.

أي كشط أو حذف أو تعديل يفسد العقد.

General Conditions

شروط عامة

- Both parties agreed upon Law No. (2) of the year 2007 regarding relationship organization between lessor and lessee and the executive regulations and decisions implemented in the emirate of Sharjah.
- Ratify tenancy contract within fifteen (15) days from the date of signing according to article (3), Law No. (2) of the year 2007.
- Both parties have to notify the Municipality of any amendments made in address or chosen residence.
- Municipality collects due fees at contract attestation.
- Tenant has no right to waive or sublease property for investment, unless authorized by the Department of Economic Development in the emirate and with a written approval of the lessor.

- أقر طرفا العقد بأنهما امتلعا على القانون رقم (٢) لسنة ٢٠٠٧م بشأن تنظيم العلاقة بين المؤجر والمستأجر في إمارة الشارقة ولائحته التنفيذية والقرارات المنفذة له.
- يجب تصديق عقد الإيجار خلال مدة (١٥) خمسة عشر يوماً من تاريخ توقيعه وذلك طبقاً لأحكام المادة (٢) من القانون رقم (٢) لسنة ٢٠٠٧م المشار إليه.
- يجب على طرفي العقد إخطار البلدية بأي تعديل يطرأ على عنوانها أو مقر إقامتهما المختار.
- تتحمل البلدية الرسوم والعمومات المستحقة عند تصديق العقد.
- لا يجوز للمستأجر التنازل عن الإيجار أو التأجير من الباطن إلا إذا كان مرخصاً له بذلك من دائرة التنمية الاقتصادية بالإمارة وبإذن كتابي من المؤجر.

Special Conditions

شروط خاصة

1. Tenant's responsibility to inform about the apartment
 2. Apartment is for residential use only
 3. Tenant is responsible for all repairs and maintenance
 4. Tenant is responsible for all utilities and services
 5. Tenant is responsible for all taxes and fees
 6. Tenant is responsible for all damages and losses
 7. Tenant is responsible for all security and safety
 8. Tenant is responsible for all compliance with laws and regulations

1. مسؤولية المستأجر في إخطار البلدية بالتعديل
 2. العقار السكني فقط
 3. المستأجر مسؤول عن جميع الإصلاحات والصيانة
 4. المستأجر مسؤول عن جميع المرافق والخدمات
 5. المستأجر مسؤول عن جميع الضرائب والرسوم
 6. المستأجر مسؤول عن جميع الأضرار والخسائر
 7. المستأجر مسؤول عن جميع الأمن والسلامة
 8. المستأجر مسؤول عن جميع الامتثال للقوانين واللوائح

- Both parties agreed upon the information herein.
- This contract with conditions stated in signed on.

أقر الطرفان بصحة المعلومات الواردة بهذا العقد.

تم التوقيع على هذا العقد بالشروط الواردة بتاريخ:

Lessee code 2005025 رمز المستأجر

Lessor code رمز المؤجر

Lessee
Al Itihad
 Elect. Switch Gear
 Ind. L. L. C.
 شركة الاتحاد
 أنظمة كهربائية
 شركة مساهمة

Lessor
 المؤجر
 [Signature]

For Official Use

للاستعمال الرسمي

Contract number: 5153783 رقم العقد
 Date: 04-10-2024 تاريخه
 Fees received by receipt no: 908257966 استوفيت الرسوم بموجب إيصال رقمه
 Date: 04-10-2024 بتاريخه
 Amount: 3900 المبلغ
 Officer: M325 الموظف المختص

Electricity Account No. المرجع
 Reference



رخصة صناعية
Industrial License



506477

License Details

تفاصيل الرخصة

Issue Date	11-07-1999	تاريخ الإصدار	License No.	506477	رقم الرخصة
Expiry Date	08-07-2025	تاريخ الانتهاء	Registration No.	63390	رقم السجل
شركة الاتحاد لصناعة اللوحات الكهربائية - ذ. م. م. شركة الشخص الواحد					الاسم التجاري
Trade Name	AL LTTIHAD ELECTRICAL SWITCHGEAR IND LLC.SOLE PROPRIETORSHIP				
Legal status	Individual Company L.L.C	شركة ذات مسؤولية محدودة - الشخص الواحد (ذ م م)			الشكل القانوني

License Members

أطراف الرخصة

الحصص	الصفة	رقم الهوية / الجواز	الجنسية	اسم المستثمر	رقم المستثمر
Shares	Type	ID \ Passport No	Nationality	Investor Name	Investor No
100.0 %	المالك Owner	784196757259195	أمريكا United States	اياد نايف طه لطفى EUAD NAYEF	70518

المدير اياد نايف طه لطفى

أنشطة الرخصة تجميع لوحات التوزيع الكهربائية

العنوان الشارقة-صناعية رقم 11/الشارقة-شارع المليحة شجرة رقم 3 ملك خلفان محمد الرومي

الهاتف المتحرك: 0505372144

صندوق البريد: 28206 الشارقة

البريد الإلكتروني: eyadlutfi@yahoo.com



User Name 10000019

رقم المستخدم

Printing Date

17-10-2024

تاريخ الطباعة

- This document is official. It doesn't need to be stamped or signed.
To view license details please visit SEDD web site: www.sedd.ae

- هذه الوثيقة رسمية ولا تحتاج لشم أو توقيع.
للتأكد من صحة البيانات يرجى زيارة موقع الدائرة: www.sedd.ae

- It is prohibited to distribute advertisements in public places and residential areas.

- يمنع توزيع الإعلانات في الأماكن العامة والأحياء السكنية.

www.sedd.ae 80080000

تتهادة لتسجيل العضوية لعام
Membership Registration Certificate For Year

()

2024
إن جرفة تجارة وصناعة الشارقة بناء على قانونها رقم (9) لعام 2018م
Sharjah Chamber of Commerce and Industry according to the law no. (9) 2018

شركة الاتحاد لصناعة لوحات الكهرباء - ذ.م.م. شركة الشخص الواحد
AL LTTIHAD ELECTRICAL SWITCHGEAR IND LLC.SOLE PROPRIETORSHIP

قد سجلت
:Company Name

رقم الترخيص :
506477
:License NO

رقم العضوية :
045355
:Membership Number

رقم السجل التجاري :
63390
: Commercial
Registration NO

الجنسية :
الإمارات
:Nationality

الفئة :
المعتزلة ب
: Category

الشكل القانوني :
شركة الشخص الواحد / ذات
مسئولية محدودة (ذ م م)
: Legal Form

جنسية الشركاء :
الولايات المتحدة
: Partners Nationality

العنوان :
الشارقة الصناعية رقم 11 /شارقة شارع الملححة شيرة رقم 3 ملك خلفان محمد الرومي
: Address

لممارسة نشاط :
تجميع لوحات التوزيع الكهربائية
: Activity
, Electrical Distribution Boards Assembling

ملاحظات :
: Remarks

SEDD

تاريخ الانتهاء
8/7/2025



تاريخ الإصدار
21/6/1999



M 313212



شهادة سجل صناعية
Industrial Register Certificate



License Details

تفاصيل الرخصة

Issue Date	11-07-1999	تاريخ الإصدار	License No.	506477	رقم الرخصة
Expiry Date	08-07-2025	تاريخ الإنتهاء	Registration No.	63390	رقم السجل
			Capital	300000	رأس المال
			شركة الاتحاد لصناعة اللوحات الكهربائية - ذ. م. م. شركة الشخص الواحد		الاسم التجاري
Trade Name	AL LTTIHAD ELECTRICAL SWITCHGEAR IND LLC.SOLE PROPRIETORSHIP				
Legal status	Individual Company L.L.C	شركة ذات مسؤولية محدودة - الشخص الواحد (ذ م م)			الشكل القانوني

المدير ابراد نايف طه لطفى

أنشطة الرخصة جميع لوحات التوزيع الكهربائية

العنوان الشارقة-صناعية رقم 11/الشارقة-شارع المليحة شيرة رقم 3 ملك خلفان محمد الرومي



User Name 10000019 رقم المستخدم Printing Date 17-10-2024 التاريخ الطباعة

- This document is official. It doesn't need to be stamped or signed.
To view license details please visit SEDD web site: www.sedd.ae

- هذه الوثيقة رسمية ولا تحتاج لخطم أو توقيع.
للتأكد من صحة البيانات يرجى زيارة موقع الدائرة: www.sedd.ae
- It is prohibited to distribute advertisements in public places and residential areas.
- يمنع توزيع الإعلانات في الأماكن العامة والأحياء السكنية.



سجل المستفيد الحقيقي
Real Beneficiary



Real Beneficiary For Investor Inside License

المستفيد الحقيقي طرف داخل الرخصة

Investor Number	70518	رمز المستثمر
Arabic Name	أياد نايف طه لطفي	الاسم العربي
English Name	أياد نايف طه لطفي	الاسم الانجليزي
Unified Number	5539476	الرقم الموحد
Emirates Id	784196757259195	رقم الهوية
Civic ID		خلاصة القيد
Passport No	483709074	رقم جواز السفر
Birth Date	10-06-1967	تاريخ الميلاد
Address	الشارقة-غير محدد-اماره الشارقة	العنوان
Work Address		عنوان جهة العمل
Mobile	00971506467734	رقم الهاتف



User Name 10000019 رقم المستخدم

Printing Date 18-10-2023 تاريخ الطباعة

- This document is official. It doesn't need to be stamped or signed.
- To view license details please visit EDD website: www.edd.ae

- هذه الوثيقة رسمية ولا تحتاج لختم أو توقيع
للتأكد من صحة البيانات يرجى زيارة موقع الدائرة: www.edd.ae
- يمنع توزيع الاعلانات في الأماكن العامة والأحياء السكنية.

- It is prohibited to distribute advertisements in public places and residential areas.



رقم القيد : 2133

تاريخ القيد : 31/10/2000

رخصة إنتاج صناعي

الجنسية
الأمارات العربية المتحدة
الولايات المتحدة الأمريكية

أصحاب الترخيص :
الاسم
خليل داود محمد داود دراع
أباد نايف طه لطفي

الإسم التجاري: شركة الاتحاد لصناعة اللوحات الكهربائية (ذ . م . م

النشاط: تجميع معانج التشغيل الكهربائية
تجميع لوحات التوزيع الكهربائية

هاتف : 0505372144

العنوان : ص.ب : 28206

المنطقة : (الصناعية) 11

المدينة : مدينة الشارقة

الإمارة : الشارقة

تاريخ الاصدار: 1/2/2021

تاريخ الانتهاء: 31/1/2022

رقم الاتصال: 10324051581843881336

إدارة التراخيص الصناعية





شهادة تسجيل لضريبة القيمة المضافة في الامارات العربية المتحدة
Certificate of Registration for Value Added Tax in the United Arab Emirates

The Federal Tax Authority certifies that the entity below is a registered person for Value Added Tax in the UAE

تشهد الهيئة الاتحادية للضرائب أن الجهة التالية مسجلة لضريبة القيمة المضافة في الامارات العربية المتحدة

Full Arabic legal name	شركة الاتحاد لصناعة اللوحات الكهربائية ذ م م	الاسم القانوني الكامل باللغة العربية
Full English legal name	Al Ittihad Electrical Switchgear IND LLC	الاسم القانوني الكامل باللغة الانجليزية
Registered address	شيرة رقم 3, الملحة, صناعة رقم 11, الشارقة, الشارقة, الإمارات العربية المتحدة, 28206, 971505372144+	العنوان المسجل
Tax Registration Number	100330767300003	رقم التسجيل الضريبي
Effective Registration Date	01/01/2018	تاريخ التسجيل الفعلي
First VAT Return Period	1 Jan 2018 – 30 April 2018 and quarterly thereafter	فترة أول إقرار لضريبة القيمة المضافة تاريخ
VAT Return due date	28th day following the end of the VAT return period	استحقاق إقرار ضريبة القيمة المضافة
Start and end dates of Tax periods:	1 Feb to 30 Apr, 1 May to 31 July, 1 Aug to 31 Oct, 1 Nov to 31 Jan	بداية ونهاية الفترات الضريبية

يرجى التأكد من صحة تفاصيل الشهادة. يجب إبلاغ الهيئة الاتحادية للضرائب في حال تغيير الاسس التي حصلت فيها على رقم التسجيل الضريبي الخاص بك.

Please check that the details on this certificate are correct. You must inform the Federal Tax Authority of any change on the basis of which you obtained your Tax Registration Number.



Issuing Date:

17/01/2018

تاريخ الإصدار



شهادة تسجيل
Certificate of Registration

Certificate Number:	OEM-SA4-LV-REG0067	رقم الشهادة:
Certificate Issued To:	Al Ittihad Elec. Switchgear Ind. L.L.C	أصدرت الشهادة إلى:
Approved Activity:	LV Switchgear Panel Assembler (Grade-4)	النشاط المعتمد:
Date of Issuance:	03-04-2023	تاريخ الإصدار:
Date of Expiry:	02-04-2024	تاريخ الانتهاء:



*Licensee shall approach SEWA Registration Section for renewal two months prior to the certificate expiry date.

*For the details regarding the approved grade/activities of service providers and the approved products of manufacturers, refer to conformity document.



Certificate Of Registration

Awarded to

AL LTTIHAD ELECT. SWITCHGEAR IND. LLC

at

P.O.BOX NO: 28206, SHED NO:3, MALIHA ROAD, INDUSTRIAL AREA 11, SHARJAH, UAE

Quality Registrar Systems certify that the management system of the above organization has been audited and found to be in compliance with the QRS & ISO standard requirements for registration of the management system standard detailed below:

ISO 9001:2015

Quality Management Systems

Scope of work

ASSEMBLING ALL TYPES OF LOW VOLTAGE DISTRIBUTION BOARDS AND CONTROL PANELS

IAF 19

Certificate No: ASU-1398

Originally Registered: 09 JAN 2024

Latest Issue: 09 JAN 2024

Valid up-to: 08 JAN 2027

Quality Registrar Systems



QUALITY REGISTRAR SYSTEMS

P.O Box :26826
United Arab Emirates

Tel: +971-2-6714302
Tel: +971-2-3096166
www.qrsyst.com

WORLDWIDE CERTIFICATION

This certificate is the property of Quality Registrar Systems and remains valid subject to satisfactory annual surveillance audit. This certificate is only valid when confirmed by the Register listed in Quality Registrar Systems (qrsyst.com)

ASTA CERTIFICATION SERVICES

(Incorporated in the year 1938)

ASTA House, Chestnut Field, Rugby, CV21 2TL, England

Laboratory Ref. No. 6993-01

CERTIFICATE OF SHORT CIRCUIT RATING

APPARATUS: Three Phase and Separate Neutral Extendable Horizontal Busbars with Incoming Air Circuit-breaker Circuit Enclosed in a Three Section Switchgear and Controlgear Assembly.
Ratings:- Rated Voltages 415/690V (U_n/U_i) Rated Frequency 50Hz.

DESIGNATION: 2500A Main Distribution Board.

MANUFACTURER: **Al Ittihad Switchgear Industries L.L.C.**
PO Box 28206 Sharjah, United Arab Emirates.

TESTED BY: **Falcon Testing Laboratory Limited**, Loughborough, Leics., LE11 1HR.

DATE(S) OF TESTS: 11th, 12th and 26th September 2000.

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this certificate has been subjected to the series of proving tests in accordance with

BS EN 60439-1:1999, EN 60439-1:1999 and IEC 60439-1:1999
Clauses 8.2.1, 8.2.3 and 8.2.4, Sub-clauses 8.2.3.2.3 b), 8.2.3.2.3 d) and 8.2.4.2 only.

The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above Standard(s) and to justify the ratings assigned by the manufacturer as stated below.

For ratings assigned by the manufacturer and proved by test see page Number 1.

The Record of Proving Tests applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designations with that tested rests with the Manufacturer.

This Certificate comprises 11 pages, 2 diagrams, 5 oscillograms, 13 photographs, 7 drawings and no other sheets as detailed on page 2.

Only integral reproduction of this Certificate, or reproductions of this page accompanied by any page(s) on which are stated the assigned rated characteristics of the apparatus tested, are permitted without written permission from ASTA Certification Services, ASTA House, Chestnut Field, Rugby, CV21 2TL England. (see overleaf)



Registration
Number
010.

The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 010.

Glyn Barnett ASTA Observer
G.H. Barnett
M. J. Swan
Director
19th JANUARY 2001 Date



RECORD OF PROVING TESTS

Certificate No
Page No. 1 of 11

Laboratory Reference No. 6993-01

Date of Test 11.09.00
and 12.09.00

Ratings Assigned by the Manufacturer and Proved by Test.

Rated short-time (I_{cw}) and peak withstand current (I_{pk}).

Three phase	: 50kA for 3 seconds, 105kA peak.
Phase to neutral	: 31.5kA for 3 seconds, 66.2kA peak.
Protective circuit	: 31.5kA for 3 seconds, 66.2kA peak.
Horizontal busbars	
Three phase	: 2 off 100mm x 10mm tin plated hdhc copper bar per phase.
Neutral	: 2 off 100mm x 10mm tin plated hdhc copper bar.
Incoming air circuit-breaker circuit	
Three phase	: 2 off 100mm x 10mm tin plated hdhc copper bar per phase.
Protective circuit	
Protective conductor	: 1 off 100mm x 10mm tin plated hdhc copper bar.

Rated Current (I_n)

Horizontal busbars	: 2500A
Incoming air circuit breaker circuit	: 2500A

G. P. Barnett
...ASTA Observer

ASTA

ASTA CERTIFICATION SERVICES

(Incorporated in the year 1938)

ASTA House, Chestnut Field, Rugby, CV21 2TL, England

Laboratory Ref. No. 6993-02

CERTIFICATE OF SHORT CIRCUIT RATING

APPARATUS: Three phase and separate neutral non extendable busbars enclosed in a single cubicle switchgear and controlgear assembly.
Ratings:- Rated Voltages 415/690V (U_n/U_i) Rated Frequency 50Hz.

DESIGNATION: 800A Sub-Main Distribution Board.

MANUFACTURER: **Al Ittihad Switchgear Industries L.L.C.**
PO BOX 28206, Sharjah, United Arab Emirates.

TESTED BY: **Falcon Testing Laboratory Limited**, Loughborough, Leics., LE11 1HR.

DATE(S) OF TESTS: 12th September 2000.

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this certificate has been subjected to the series of proving tests in accordance with

BS EN 60439-1:1999, EN 60439-1:1999 and IEC 60439-1:1999
Clause 8.2.3, Sub-clauses 8.2.3.2.3 b) and d) only.

The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above Standard(s) and to justify the ratings assigned by the manufacturer as stated below.

Rated short-time (I_{cw}) and peak withstand current (I_{pk})

Three phase : 50kA rms for 1 second, 105kA peak.
Busbars (RYB) section per phase : 1 x 50mm x 10mm hdhc tin plated copper bar.

Single phase : 31.5kA rms for 1 second, 66.2kA peak.
Neutral busbar and nearest phase busbar
Section (N) : 1 x 50mm x 10mm hdhc tin plated copper bar.

The Record of Proving Tests applies only to the apparatus tested. The responsibility for conformity of any apparatus having the same designations with that tested rests with the Manufacturer.

This Certificate comprises 5 pages, 1 diagram, 2 oscillograms, 2 photographs, 3 drawings and no other sheets as detailed on page 1.

Only integral reproduction of this Certificate, or reproductions of this page accompanied by any page(s) on which are stated the assigned rated characteristics of the apparatus tested, are permitted without written permission from ASTA Certification Services, ASTA House, Chestnut Field, Rugby, CV21 2TL England. (see overleaf)



Registration
Number
010.

The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 010.

Glyn Barnett ASTA Observer
G.H. Barnett
M. J. Swan
DIRECTOR
9th JANUARY 2001 Date



Al Ittihad Electrical

Sharjah, United Arab Emirates

M/s Al Ittihad Electrical Switchgear Industry L.L.C is a Loyal Panel Builder using ABB Automation Products as given below in their switchboards:

- ACB's, MCCB's
- Din Rail Components
(MCB, RCCB's Isolators & Contactors)
- Isolators
- Control Gear Products
(Subject to agreed terms and conditions)

N. Mohan
Sales & Marketing Manager
LV Products - Channel Partner
Gulf region

Tarek El Gani
AP Local Division Manager
Gulf region

Dated: January 2009

ABB
Automation Products Division



دورمان سميٹ سويٹيش جيرش.ذ.م.م.
Dorman Smith Switchgear L.L.C.
P.O. Box 12872, Dubai
United Arab Emirates
Tel: (9714) 3470226, Fax : (9714) 3470002
e-mail: dsdubai@dormansmith.co.uk
Website: www.dormansmithswitchgear.com

Date: 1st January 2021

ATTN: Mr. Eyad Lutfi
General Manager
M/s Al Itihad Switchgear Ind. L.L.C.
Sharjah, U.A.E.

Subject: Authorized Panel Assembler

We hereby confirm that M/s Al Itihad Switchgear Ind. L.L.C., P.O. Box 28206, Sharjah, U.A.E. is an Authorized Panel Assembler for Dorman Smith Components in the U.A.E.

They are authorized to use Dorman Smith Switchgear, Control Gear and Power Quality Correction Components such as ACBs, MCCBs, MCBs, RCCBs, Load Break Switches, Contactors, Overload Relays, Timers, Capacitors, Reactors, Regulators etc. in their Low Voltage Switchgear and Control Gear Assemblies.

All genuine Dorman Smith components are covered by our standard warranty for Loose Gear components, provided they are chosen as per the relevant product instruction leaflets and installed as per the applicable Electrical regulations. Any warranty or guarantee shall be in line with Dorman Smith's General Terms and Conditions of Sale 2021.

M/s Al Itihad Switchgear Ind. L.L.C. shall be responsible for the design, assembly and quality control of the LV Switchgear and Control gear assemblies supplied by them.

This letter is valid for one year from the date of issue and supersedes any other authorization letters issued previously.

Yours Faithfully
Krishnan P.R.



Deputy General Manager, Sales & Marketing
Dorman Smith Switchgear
Middle East Regional Office,
Dubai, UAE



Head Office: Dorman Smith Switchgear Limited
1 Nile Close, Nelson Court Business Centre, Preston, Lancashire, PR2 2XU-UK Tel: +44 (0) 1772 325388



From: Mathieu Leboulanger Date: 27th Jul 2020
Tel: +86 (0)21 6056 7888 Ext: 7949
Mobile: (+86)186 1688 5250
Email: mathieu.leboulanger@delixi-electric.com

Ref: HML/2020/51
Page: 1/1

TO WHOMSOEVER IT MAY CONCERN

HIMEL LOYAL PANEL BUILDER

We are glad to inform that **M/s Al Ittihad Electrical Switchgear Industry LLC**, PO Box: 28206, Sharjah, UAE is a loyal panel builder for Himel and are using our low voltage and industrial automation components in their panel boards for various projects.

Himel provides all the training and technical support to panel builders for the right selection, installation and maintenance of our components and we have no objection for **M/s Al Ittihad Electrical Switchgear Industry LLC** to use them in their panel boards.

Himel products purchased from our authorized distributors are covered under the standard warranty term, provided they are selected, installed and commissioned as per the relevant electrical regulations and Himel user manual. As a panel builder **M/s Al Ittihad Electrical Switchgear Industry LLC** is responsible for the design and quality of the final product.

We wish **M/s Al Ittihad Electrical Switchgear Industry LLC** all the success for the projects.

This letter is valid this 31st December 2020

Best regards

Signed:

Name: Mathieu Leboulanger
Title: International Marketing & Service Director
Duly authorized to sign this Authorization on behalf of:

HIMEL HONGKONG LIMITED

Dated on 27th July 2020

Certificate of Appreciation

We hereby certify

AL ITTIHAD ELEC.SWITCHGEAR IND L.L.C

For Outstanding Performance and Support during Schneider Electric Sharjah Festival Promotion
2020



Alper VARGEL
Marketing VP Gulf



Revanand ANDHALE
VP -Commercial



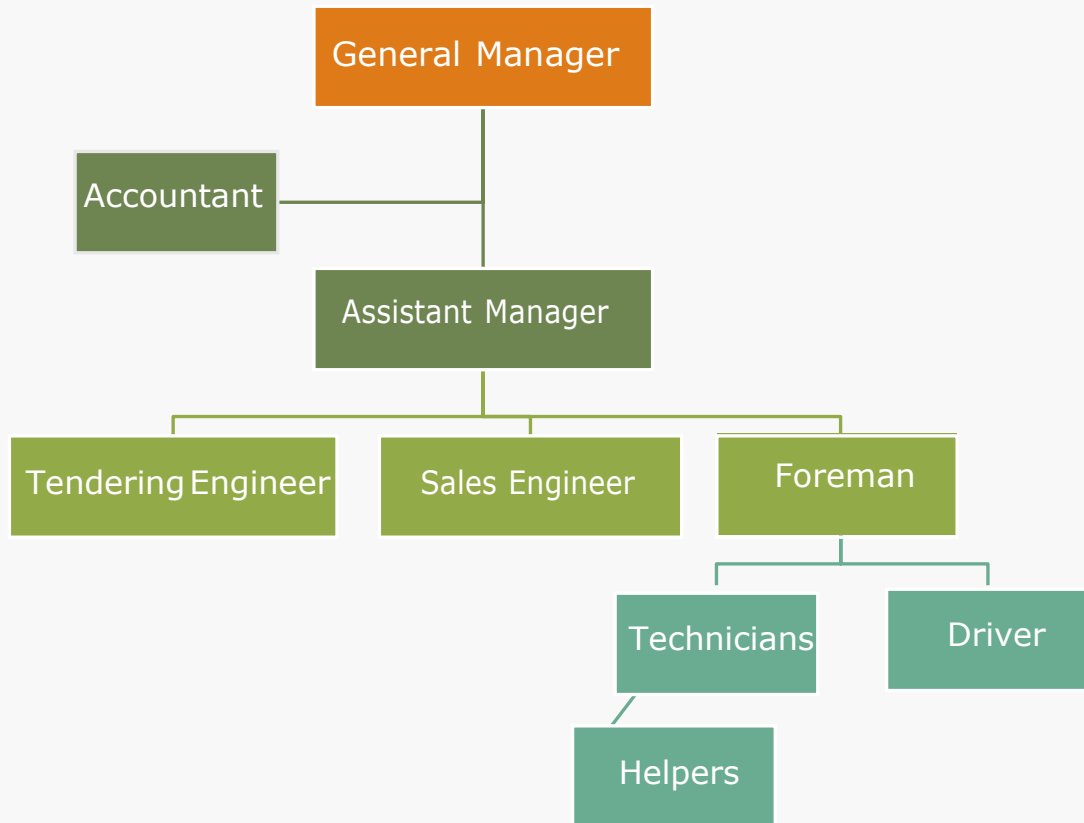
Babar MUJTABA
Distributor Sales Director UAE

2. LIST OF EMPLOYEES & ORGANIZATIONAL CHART

LIST OF EMPLOYEES

<i>Serial Number</i>	<i>Name</i>	<i>Nationality</i>	<i>Designation</i>
1	<i>Eyad Naief Lutfi</i>	U.S.A	Electrical Engineer
2	<i>Abdulla Eyad Lutfi</i>	U.S.A	Electrical Engineer
3	<i>Ahamed Safiulla Batcha</i>	India	Electrical Engineer
4	<i>Mohamed Montasir Babiker</i>	Sudan	Electrical Engineer
5	<i>Ahmad Eyad Lutfi</i>	U.S.A	Industrial Engineer
6	<i>Zahir Rahman Hidayat Ur Rahman</i>	Pakistan	Electrical work shop Engineer
7	<i>Mohamed Marzouki</i>	Tunis	Accountant
8	<i>Bhaji Dev Polassery Gopalm</i>	India	control wiring electrician
9	<i>Sree Litan Chandra Gosh</i>	Bangladesh	control wiring electrician
10	<i>Sumun Haider Ali</i>	Bangladesh	control wiring electrician
11	<i>Zia Rahman Hidayat Ur Rahman</i>	Pakistan	Electrician
12	<i>Shams Amin Khan</i>	Pakistan	Electrician
13	<i>Mohammed Summon Talukdar</i>	Bangladesh	Electrician
14	<i>Mohammad Iskandar Rahman</i>	Bangladesh	Electrician
15	<i>Parabhat Nripendra Ghosh</i>	Bangladesh	Helper/Wiring electrician
16	<i>FARHAN AHMAD ALLAH WASAYA</i>	Pakistan	Helper/Wiring electrician
17	Mohammad mahin uddin	Bangladesh	control wiring electrician

Organization Chart



Engineers:

- Eyad Lutfi
- Abdulla Lutfi
- Ahmad Lutfi
- Ahamed safiulla
- Mohammed montasir
- Zahir Rahman

Accountant :

- Mohamed Marzouki

Foreman:

- Sumun HAIDER ali

Technicians:

- Bhaji Dev
- Sumun Haider Ali
- Laton
- Shams khan
- Mohammad Iskandar
- Parabhat Ghosh
- Mohammed Summon
- Mohammad mahin uddin

Helpers:

- Farhan Wasaya

3. TESTING OF LV SWITCHGEAR

TESTING OF LV SWITCHGEAR

In line with providing the best quality LV switchgear panels & accessories to our clients , it is of utmost necessity to perform quality inspections and test all panels before delivery. The purpose of this document is to summarize the tests that are done in our factory on the low voltage electrical switchboards before being delivered to the site.

These include 6 tests, they are:

1. Visual Inspection
2. Functional and Operational Test.
3. Torque Test
4. Continuity Test
5. High Voltage Injection Test
6. Insulation Test
7. Primary Injection Test

1. Visual Inspection

Visual inspection with customer will be carried out on the LV switchboard to:

- Check the layout of fitted components
- Check the overall dimension of switchboard, size of busbars, cables and earthing conductors and location of feeder entry point.
- Check and verify the brand, model, and circuit identification of components installed such as breakers, current transformers, fuses, ammeters, voltmeters, power meters and protection relays etc.
- Check the rating of the components match the approved drawings.
- Check overall paint work, door locking device, door gasket, door hinges, door cut-out holes
- Check the busbar and cable tightening, the marking, busbar clearance, base angle bar and plinth
- Check the labels, name plate and phase identification

2. Functional and Operational Test

Make sure the entire switchgear device in open position. Check the incoming voltage and phase sequence. Energize the switch board power circuit one by one. Check the measuring instrument showing the correct readings. Ensure pad locks are in position. Check the operation of the breaker.

3. Torque Test:

Tightness of the bolts will be tested with torque wrench to ensure proper tightness.

4. Continuity Test:

Continuity testing is the act of testing the resistance between two points. If there is very low resistance (less than a few Ω s), the two points are connected electrically, and a tone is emitted. If there is more than a few Ω s of resistance, then the circuit is open, and no tone is emitted. This test helps ensure that connections are made correctly between two points. More specifically, it helps detecting any broken conductor, damaged components (breakers) or excessive resistance.

5. High Voltage Injection Test:

With all breakers in 'ON' position, apply 2.5kV AC voltage between each stressed phase and all other phase connected to exposed conductive parts for 60 seconds and measure the leakage current. This test will help to test the insulation.

6. Insulation Test.

Carry out 1000V meggar test for phase to earth, neutral to earth, phase to neutral and phase to phase to measure the insulation resistance with all breakers in 'ON' positions.

7. Primary Injection Test




Primary current injection testing is utilized in high current/high voltage scenarios found at large electrical installations such as substations. A large current (between 100A and 20,000A depending on system specifications and test requirements) is injected directly on the primary side of the electrical system such as a circuit breaker. The objective of the test is to identify how the panel operates under various levels of current load. Primary injection testing is suitable for testing over-current trip relays attached to a circuit breaker. By injecting the current into the panel, we can measure if the breaker will trip or fail, and how long the current is live before the circuit is broken. Circuit breakers can go long periods of time without activation, and failure at the moment of activation can cause catastrophic damage to the electrical system. Circuit breaker testing with primary current injection on a breaker that has not triggered in some time is the best way to recreate the real operating conditions of a current spike.

FACTORY ACCEPTANCE TEST CHECKLIST

PROJECT NAME:		DATE		
CLIENT		AREA		
CONSULTANT		PLOT NO.		
MEP CONTRACTOR		FILE No		
ITEM		QTY		
VISUAL INSPECTION	<ul style="list-style-type: none"> • Panel matching approved SLD Yes No • Torque Test on allbolts <input type="checkbox"/> <input type="checkbox"/> • Functional Test <input type="checkbox"/> <input type="checkbox"/> • Bus bar Clearance inspection <input type="checkbox"/> <input type="checkbox"/> 			
CONTINUITY TEST (BY MULTIMETER)				
PRIMARY INJECTION TEST				
MEGGER TEST (TO CHECK INSULATION STRENGTH USING 1000V MEGGER)	R-Y ph		R-Eph	
	R-B ph		Y-Eph	
	Y-B ph		B-Eph	
	R-N ph		N-E	
	Y-N ph			
	B-N ph			
HIGH VOLTAGE TEST (TO CHECK THE DIELECTRIC STRENGTH) 2.5KV FOR 1 MIN	R-Y ph		R-Eph	
	R-B ph		Y-Eph	
	Y-B ph		B-Eph	
	R-N ph		N-E	
	Y-N ph			
	B-N ph			

4. TESTING EQUIPMENT & CALIBRATION CERTIFICATES

TESTING EQUIPMENTS & CALIBRATION CERTIFICATES

SERIAL NO.	EQUIPMENT DESCRIPTION	EQUIPMENT PICTURES
1	<p style="text-align: center;">DIGITAL INSULATION & CONTINUITY TESTER</p> <p>Make: KYORITSU Model: 3005 A Serial No: E8123121</p>	
2	<p style="text-align: center;">HIGH VOLTAGE TEST SET</p> <p>Make: AE Model: BDT Serial No: HVA1314</p>	
3	<p style="text-align: center;">PRIMARY & SECONDARY INJECTION KIT</p> <p>Make: ELECTRO-VISION Model: - Serial No: SCI-01</p>	
4	<p style="text-align: center;">TORQUE WRENCH</p> <p>Make: TOCHNICH Model: QL100N Serial No: 024484 W</p>	

CERTIFICATE OF CALIBRATION

Certificate No : 01-C461199 -Rev.0 WO.No : WA88604-JAN-23 Date Received : 19 January 2023
 Issue Date : 20 January 2023 Lab Location : Industrial Area 13, Sharjah, UAE Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC Area :
 Address : Sharjah, United Arab Emirates

Instrument Details :

Description : Insulation-Continuity Tester Model/Repair Item : 3005A
 Manufacturer : KYORITSU Range : 1 kV
 Accuracy : Refer Calibration Results Part No : - Serial/ Repair Ser No. : E8123121
 RO/Tag No : - Resolution/Graduation : Refer Calibration Results

Environmental Conditions :

Temperature : 21.5 ± 0.4 °C Atm - Pressure: - Relative Humidity : 51.2 ± 3.0 %RH

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guideline/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. This certificate is issued in compliance with the laboratory accreditation requirements of Emirates International Accreditation Centre (EIAC). It provides traceability of measurement to the SI system of units and or/to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval.

The uncertainty limits quoted refers to the measured values only, with no account being taken of the instruments ability to maintain its calibration. Uncertainty of measurement is accounted in the decision rule for stating conformity. The reported expanded uncertainty is based upon a standard uncertainty multiplied by a coverage factor k=2, providing a confidence level of approximately 95%. The uncertainty evaluation has been derived from EA-4/02 "Evaluation of the Uncertainty of Measurement in Calibration". Conformity statements are based on simple acceptance rule (ILAC-08:09/2019) where, Acceptance Limit (AL) equals Tolerance Limit (TL). Provided that the Tolerance Uncertainty Ratio (TUR) >= 1:1. Statement of conformity provided in this certificate is valid only for the measurement points where the Tolerance Uncertainty Ratio (TUR) >= 1:1.

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)


Reference Procedure : CI/01/12 Rev.7 Based on SANAS TG-02-01
 As Received Condition: Satisfactory

Total Pages:3
 As Left Condition:Calibrated

Comments :

NIL

Note: Reference equipment used for this calibration is listed in page 2

Calibration Date : 20 January 2023 Due Date (as per customer request) : 19 January 2024
 Calibrated By : Rocky(Calibration Technician) Approved Signatory: 
 Signature : 





TEST/INSPECTION CERTIFICATE

Certificate No : 01-T461384 -Rev.0 WO.No : WA88604-JAN-23 Date Received : 19 January 2023
 Issue Date : 23 January 2023 Lab Location : Industrial Area 13, Sharjah, UAE Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC Area :
 Address : Sharjah, United Arab Emirates

Instrument Details :

Description : ELCB TEST SET Model/Repair Item : -
 Manufacturer : ELECTROVISION Range : Different
 Accuracy : - Part No : - Serial/ Repair Ser No. : 060408
 RC/Tag No : - Resolution/Graduation : Refer Calibration Results

Environmental Conditions :

Temperature : 23.3 ± 0.4 °C Atm - Pressure: - Relative Humidity : 48.8 ± 3.0 %RH

Arabcal certifies that the above instrument has been tested as per manufacturer's or Arabcal procedures and the results are given below. Arabcal's Quality Management System complies with the requirements of ISO 9001:2015 standards. This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of ArabCal.

Arabcal's primary and secondary standards' calibration is traceable through NIST, NPL, DCL or other International/National Standards Institutes to the International system of units (SI) or to accepted intrinsic standards of measurement or whose accuracy has been determined by ratio-type calibration techniques.

Arabcal's Quality Management system complies with the requirements of ISO 9001 and ISO/IEC 17025 standards.

Reference Procedure : CI/01/M1 Rev.9
 As Received Condition: Operational

Total Pages:2
 Action Taken:Operational Verification

Comments :
 NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
Digi. Multi Meter	SF 2582	M 240A	14 February 2023	CM1/01-C445155

Test Date : 23 January 2023 Due Date (as per customer request) : 22 January 2024
 Tested by : Rocky(Calibration Technician) Certified by : MUHSINA Team Leader
 Signature : *Rocky* Signature : *Muhsina*



CERTIFICATE OF CALIBRATION

Certificate No : 06-C461022-Rev.0	WO.No : WA88604-JAN-23	Date Received : 19 January 2023
Issue Date : 22 January 2023	Lab Location : Industrial Area 13, Sharjah, UAE	Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC	Area :
Address : Sharjah, United Arab Emirates	

Instrument Details :

Description : TORQUE WRENCH	Model/Repair Item : 606/20
Manufacturer : DINABETA	Range : 40 to 200 Nm
Accuracy : ±4% of setting	Part No : -
RO/Tag No : -	Serial/ Repair Ser No. : 10203464
	Resolution/Graduation : 2 Nm

Environmental Conditions :

Temperature : 21.7 ± 0.3 °C	Atm - Pressure : -	Relative Humidity : 55 ± 2.5 %RH
-----------------------------	--------------------	----------------------------------

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guideline/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. This certificate is issued in compliance with the laboratory accreditation requirements of Emirates International Accreditation Centre (EIAC). It provides traceability of measurement to the SI system of units and/or to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval.

The uncertainty limits quoted refers to the measured values only, with no account being taken of the instruments ability to maintain its calibration. Uncertainty of measurement is accounted in the decision rule for stating conformity. The reported expanded uncertainty is based upon a standard uncertainty multiplied by a coverage factor k=2, providing a confidence level of approximately 95%. The uncertainty evaluation has been derived from EA-4/02 "Evaluation of the Uncertainty of Measurement in Calibration". Conformity statements are based on simple acceptance rule [ILAC-G8:09/2019] where, Acceptance Limit (AL) equals Tolerance Limit (TL). Provided that the Tolerance Uncertainty Ratio (TUR) ≥ 1:1. Statement of conformity provided in this certificate is valid only for the measurement points where the Tolerance Uncertainty Ratio (TUR) ≥ 1:1.

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)

Reference Procedure :CA/06/Y1 Rev.13 based on ISO 6789:2017 Part1 & 2
 As Received Condition: Satisfactory

Total Pages:2
 As Left Condition:Calibrated


Comments :

Accuracy: As specified by ISO 6789:2017, Cl.5.1.5, Table 3 & Table 4
Instrument Type: Type II, Class: A, Drive size: ½"


Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
Torque Transducer	0321112-8400-4	TTC 400-4	25 May 2023	NIST/11162020-0321112-8400-4-1

Calibration Date : 22 January 2023 Due Date (as per customer request) : 21 January 2024

Calibrated By : Vishnu(Calibration Technician) Approved Signatory : 

Signature : 

Signature:  RAHEEM P.B. Team Leader

Page : 1

Authorized Repair & Calibration facility

FAFL Sharjah

+971 6 5345747, +971 6 53457





الشركة العربية لتصليح اجهزة قياس الضغط ذ.م.م.
Arabian Calibration Dev. Rep. Co. LLC

P.O. Box 24650 Sharjah, UAE, Tel +971 6 5345747 Fax +971 6 5345727



E-mail: cs@arabcal.com www.arabcal.com

AC/057/222

Issue Date: 1 June 2021

Rev.01

CERTIFICATE OF CALIBRATION

Certificate No : 13-C461390 -Rev.0	WO.No : WA88604-JAN-23	Date Received : 19 January 2023
Issue Date : 24 January 2023	Lab Location : Industrial Area 13, Sharjah, UAE	Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC	Area :
Address : Sharjah, United Arab Emirates	

Instrument Details :

Description : PRIMARY CURRENT INJECTION	Model/Repair Item : PRI.CURR.INJ.SET
Manufacturer : DESWETCH ENGINEERS	Range : 2500 A
Accuracy : $\pm 2.5\%$ of rdg	Part No : -
RO/Tag No : -	Serial/ Repair Ser No. : DS/0706/388
	Resolution/Graduation : Refer Calibration Results

Environmental Conditions :

Temperature : 21.5 ± 0.4 °C	Atm - Pressure: -	Relative Humidity : 51.2 ± 3.0 %RH
---------------------------------	-------------------	--

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guide/Inc/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. It provides traceability of measurement to the SI system of units and/or to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval. Arabcal Quality Management System complies with the requirements of ISO 9001:2015 and ISO/IEC 17025:2017 standard.

The uncertainty evaluation has been carried out in accordance with EA-4/02: Guide to the Expression of the Uncertainty of Measurement in Calibration, requirements. Reported expanded uncertainty is based on a combined uncertainty multiplied by a coverage factor $k=2$, providing the level of confidence of approximately 95 % (This statement is only applicable if the calibration results contain uncertainty estimation).

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (result of calibration: PASS)

Reference Procedure : Q/01/PIT1 Rev.0

Total Pages:2

As Received Condition: Satisfactory

As Left Condition: Calibrated

Comments :

NIL

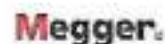
Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
AC/DC Clamp Meter	170114552	CM 4373	26 April 2023	NPL/01-C151631

Calibration Date : 24 January 2023	Exp Date (as per customer request) : 23 January 2024
Calibrated By : Rocky(Calibration Technician)	Signature:
Signature :	Signature:



MUHSINA
Team Leader





TEST/INSPECTION CERTIFICATE

Certificate No : 01-T461460 -Rev.0 WO.No : WA88604-JAN-23 Date Received : 19 January 2023
 Issue Date : 24 January 2023 Lab Location : Industrial Area 13, Sharjah, UAE Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC Area :
 Address : Sharjah, United Arab Emirates

Instrument Details :

Description : TEST KIT Model/Repair Item : 33594
 Manufacturer : Merlin Gerin Range : Different
 Accuracy : - Part No : - Serial/ Repair Ser No. : 0132433594
 RO/Tag No : - Resolution/Graduation : -

Environmental Conditions :

Temperature : 23.3 ± 0.4 °C Atm - Pressure: - Relative Humidity : 45.8 ± 3.0 %RH

Arabcal certifies that the above instrument has been tested as per manufacturer's or Arabcal procedures and the results are given below. Arabcal's Quality Management System complies with the requirements of ISO 9001:2015 standards. This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of ArabCal.

Arabcal's primary and secondary standards' calibration is traceable through NIST, NPL, DCL or other International/National Standards Institutes to the International system of units (SI) or to accepted intrinsic standards of measurement or whose accuracy has been determined by ratio-type calibration techniques.

Arabcal's Quality Management system complies with the requirements of ISO 9001 and ISO/IEC 17025 standards.

Reference Procedure : C/01/M1 Rev.9
 As Received Condition: Operational

Total Pages:1
 Action Taken:Operational Verification

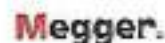
Comments :

NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
Digi. Multi Meter	SF 2582	M 240A	14 February 2023	CMI/01-C445155

Test Date : 24 January 2023 Due Date (as per customer request) : 23 January 2024
 Tested by : Rocky(Calibration Technician) Checked By : MUHSINA Team Leader
 Signature : *Rocky* Signature : *Muhsina*





الشركة العربية لتصليح اجهزة قياس الضغط ذ.م.م.
Arabian Calibration Dev. Rep. Co. LLC
 PO Box 24650 Sharjah, UAE, Tel +971 6 5345747, Fax +971 6 5345727



E-mail: cs@arabcal.com www.arabcal.com

Rev.04

Issue Date: 1 June 2021

AC/05/022

CERTIFICATE OF CALIBRATION

Certificate No : **13-C461387-Rev.0** WO.No : WA88604-JAN-23 Date Received : 19 January 2023
 Issue Date : 24 January 2023 Lab Location : Industrial Area 13, Sharjah, UAE Job Location : Lab

Customer Details :

Name : **Al Ittihad Elect.Switchgear Ind LLC** Area :
 Address : **Sharjah, United Arab Emirates**

Instrument Details :

Description : **SECONDARY CURRENT INJECTION TEST SET** Model/Repair Item : -
 Manufacturer : **ELECTROVISION** Range : **0 to 5 A AC**
 Accuracy : **±1% of rdg** Part No : - Serial/ Repair Ser No. : **SCI-01**
 Resolution/Graduation : **Refer Calibration Results**
 RG/Tag No : -

Environmental Conditions :

Temperature : **23.3 ± 0.4 °C** Atm - Pressure : - Relative Humidity : **48.8 ± 3.0 %RH**

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guide/ing/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. It provides traceability of measurement to the SI system of units and/or to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval. Arabcal Quality Management System complies with the requirements of ISO 9001:2015 and ISO/IEC 17025:2017 standard.

The uncertainty evaluation has been carried out in accordance with EA-4/02: Guide to the Expression of the Uncertainty of Measurement in Calibration, requirements. Reported expanded uncertainty is based on a combined uncertainty multiplied by a coverage factor k=2, providing the level of confidence of approximately 95 % (This statement is only applicable if the calibration results contain uncertainty estimation).

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)

Reference Procedure : **CI/01/PIT1 Rev.0**
 As Received Condition: **Satisfactory**

Total Pages: 2
 As Left Condition: **Calibrated**

Comments :

NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
Digi. Multi Meter	SF 2582	M 200A	14 February 2023	CM/01-0445155

Calibration Date : 24 January 2023 Due Date (as per customer request) : 23 January 2024

Calibrated By : **Rocky (Calibration Technician)**
 Signature : *Rocky*

Approved Signatory :
Arabian Calibration
 Signature : *Muhina*

MUHINA
 Team Leader

Snap-on

Anritsu

FAFL

HIOKI

Megger

Page : 1
 Approved Signatory & Calibration Facility



CERTIFICATE OF CALIBRATION

Certificate No : 13-C461385 -Rev.0	WO.No : WA88604-JAN-23	Date Received : 19 January 2023
Issue Date : 24 January 2023	Lab Location : Industrial Area 13, Sharjah, UAE	Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC	Area :
Address : Sharjah, United Arab Emirates	

Instrument Details :

Description : HIGH VOLTAGE TEST SET	Model/Repair Item : B.D.T
Manufacturer : Automatic Electric Ltd	Range : 0 to 2.5 kV/0 to 5 kV
Accuracy : $\pm 2\%$ of rdg	Part No : -
RO/Tag No : -	Serial/ Repair Ser No. : HVA1314
	Resolution/Graduation : -

Environmental Conditions :

Temperature : 23.3 ± 0.4 °C	Atm - Pressure: -	Relative Humidity : 48.8 ± 3.0 %RH
---------------------------------	-------------------	--

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guideline/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. It provides traceability of measurement to the SI system of units and or/to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval. Arabcal Quality Management System complies with the requirements of ISO 9001:2015 and ISO/IEC 17025:2017 standard.

The uncertainty evaluation has been carried out in accordance with EA-4/02; Guide to the Expression of the Uncertainty of Measurement in Calibration, requirements. Reported expanded uncertainty is based on a combined uncertainty multiplied by a coverage factor k=2, providing the level of confidence of approximately 95 % (This statement is only applicable if the calibration results contain uncertainty estimation).

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)

Reference Procedure : CI/01/IV/1 Rev.1
 As Received Condition: Satisfactory

Total Pages:2
 As Left Condition:Calibrated

Comments :

NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
Digit. Multi Meter	SF 2582	M 240A	14 February 2023	CM/01-C445155
High Voltage Probe	4111A-10085	54111A	05 June 2023	NIST/13-C456082

Calibration Date : 24 January 2023	Due Date (as per customer request) : 23 January 2024
Calibrated By : Rocky(Calibration Technician)	Approved Signature
Signature :	Signature :



MUHSINA
Team Leader





CERTIFICATE OF CALIBRATION

Certificate No : 01-C461382-Rev.0 WO.No : WA88604-JAN-23 Date Received : 19 January 2023
 Issue Date : 23 January 2023 Lab Location : Industrial Area 13, Sharjah, UAE Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC Area :
 Address : Sharjah, United Arab Emirates

Instrument Details :

Description : MILLI VOLT DROP TEST SET Model/Repair Item : -
 Manufacturer : RE Range : Different
 Accuracy : $\pm 5\%$ of rdg Part No : - Serial/ Repair Ser No. : 6950-246 (E) /05-06
 RO/Tag No : - Resolution/Graduation : Refer Calibration Results

Environmental Conditions :

Temperature : 23.3 ± 0.4 °C Atm - Pressure: - Relative Humidity : 46.8 ± 3.0 %RH

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guideline/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. It provides traceability of measurement to the SI system of units and or/to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval. Arabcal Quality Management System complies with the requirements of ISO 9001:2015 and ISO/IEC 17025:2017 standard.

The uncertainty evaluation has been carried out in accordance with EA-4/02; Guide to the Expression of the Uncertainty of Measurement in Calibration, requirements. Reported expanded uncertainty is based on a combined uncertainty multiplied by a coverage factor k=2, providing the level of confidence of approximately 95 % (This statement is only applicable if the calibration results contain uncertainty estimation).

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)

Reference Procedure : CI/D1/M1 Rev.8
 As Received Condition: Satisfactory

Total Pages:2
 As Left Condition:Calibrated

Comments :

NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
AC/DC Clamp Meter	170114552	CM 4373	26 April 2023	NPL/01-C451631
Digi. Multi Meter	SF 2582	M 2404	14 February 2023	CM/01-C445155

Calibration Date : 23 January 2023 Date Date (as per customer request) : 22 January 2024
 Calibrated By : Fazil(Junior Technician) Approved Signatory :
 Signature : Signature :





CERTIFICATE OF CALIBRATION

Certificate No : 13-C461389 -Rev.0	WO.No : WA88604-JAN-23	Date Received : 19 January 2023
Issue Date : 23 January 2023	Lab Location : Industrial Area 13, Sharjah, UAE	Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC	Area :
Address : Sharjah, United Arab Emirates	

Instrument Details :

Description : CT POLARITY TEST SET	Model/Repair Item : -
Manufacturer : ELECTROVISION	Range : 0 to 200 A
Accuracy : -	Part No : -
RO/Tag No : -	Serial/ Repair Ser No. : 060403
	Resolution/Graduation : -

Environmental Conditions :

Temperature : 23.3 ± 0.4 °C	Atm - Pressure: -	Relative Humidity : 48.8 ± 3.0 %RH
-----------------------------	-------------------	------------------------------------

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guideline/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. It provides traceability of measurement to the SI system of units and/or to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval. Arabcal Quality Management System complies with the requirements of ISO 9001:2015 and ISO/IEC 17025:2017 standard.

The uncertainty evaluation has been carried out in accordance with EA-4/02: Guide to the Expression of the Uncertainty of Measurement in Calibration, requirements. Reported expanded uncertainty is based on a combined uncertainty multiplied by a coverage factor k=2, providing the level of confidence of approximately 95 % (This statement is only applicable if the calibration results contain uncertainty estimation).

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)

Reference Procedure :CI/01/CT1 Rev.1
 As Received Condition: Satisfactory

Total Pages:2
 As Left Condition:Calibrated

Comments :

NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
AC/DC Clamp Meter	170114552	CM 4373	26 April 2023	NPL/01-C431693

Calibration Date : 23 January 2023	Exp Date (as per customer request) : 22 January 2024
Calibrated By : Rocky(Calibration Technician)	Approved Signature :
Signature :	





CERTIFICATE OF CALIBRATION

Certificate No : 13-C461389 -Rev.0	WO.No : WA88604-JAN-23	Date Received : 19 January 2023
Issue Date : 23 January 2023	Lab Location : Industrial Area 13, Sharjah, UAE	Job Location : Lab

Customer Details :

Name : Al Ittihad Elect.Switchgear Ind LLC	Area :
Address : Sharjah, United Arab Emirates	

Instrument Details :

Description : CT POLARITY TEST SET	Model/Repair Item : -
Manufacturer : ELECTROVISION	Range : 0 to 200 A
Accuracy : -	Serial/ Repair Ser No. : 060403
RO/Tag No : -	Resolution/Graduation : -
Part No : -	

Environmental Conditions :

Temperature : 23.3 ± 0.4 °C	Atm - Pressure: -	Relative Humidity : 48.8 ± 3.0 %RH
-----------------------------	-------------------	------------------------------------

Arabcal certifies that the measured points meet the specification, as stated in the referenced calibration procedure/Guideline/International standard or as stated by the manufacturer/customer. Calibration of the above-mentioned equipment has been carried out in accordance with the requirements specified in ISO/IEC 17025:2017 standard. It provides traceability of measurement to the SI system of units and/or to units of measurement realized at the Emirates Metrology Institute or other recognized national metrology institutes (NPL, NIST etc.). This report applies only to the instrument identified above and it shall not be reproduced other than in full except with specific written approval of Arabcal. The reported results are valid only at the time of calibration and it provides no guarantee that the unit will remain accurate between the calibration interval. Arabcal Quality Management System complies with the requirements of ISO 9001:2015 and ISO/IEC 17025:2017 standard.

The uncertainty evaluation has been carried out in accordance with EA-4/02: Guide to the Expression of the Uncertainty of Measurement in Calibration, requirements. Reported expanded uncertainty is based on a combined uncertainty multiplied by a coverage factor k=2, providing the level of confidence of approximately 95 % (This statement is only applicable if the calibration results contain uncertainty estimation).

Statement of conformity is based on Manufacturer specification. Issuance of this certificate indicates successful calibration (Result of calibration: PASS)

Reference Procedure :CI/01/CT1 Rev.1
 As Received Condition: Satisfactory

Total Pages:2
 As Left Condition:Calibrated

Comments :

NIL

Main Master equipment used

Description	Serial Number	Model/Part No	Calibration Due	Traceability
AC/DC Clamp Meter	170114552	CM 4373	26 April 2023	NPL/01-C431693

Calibration Date : 23 January 2023	Exp Date (as per customer request) : 22 January 2024
Calibrated By : Rocky(Calibration Technician)	Approved Signature :
Signature :	



5. LIST OF PRESTIGIOUS PROJECTS

LIST OF PRESTIGUOS PROJECTS

AL JADA SALES CENTER



CLIENT: ARADA DEVELOPER L.L.C.

AREA/PLOT NUMBER: MUWAILEH , SHARJAH , U.A.E.

ELECTRICAL CONTRACTOR: AKKA ELECTROMECHANICAL CONTRACTING L.L.C.

CONSULTANT: ARCADIA MIDDLE EAST ENGINEERING

NASMA (954 VILLAS)



CLIENT: ARADA DEVELOPER L.L.C.

AREA/PLOT NUMBER: AL TAY, SHARJAH, UAE / 1365

ELECTRICAL CONTRACTOR: INTERMASS ENG. CONT. CO. L.L.C.

CONSULTANT: ARCADIA MIDDLE EAST ENGINEERING

AREEJ 1-4 & 5-7 BUILDINGS



CLIENT: ARADA DEVELOPER L.L.C.

AREA/PLOT NUMBER: 3/3288 , MUWAILAH , SHARJAH, U.A.E.

ELECTRICAL CONTRACTOR: LIMITLESS ENGINEERING L.L.C.

CONSULTANT: ARIF & BINTOAK CONSULATING ARCHITECTS & ENGINEER

NASMA COMMUNITY CENTER



CLIENT: ARADA DEVELOPER L.L.C.

AREA/PLOT NUMBER: SHARJAH , U.A. E

ELECTRICAL CONTRACTOR: UTEC

CONSULTANT: ARCADIA MIDDLE EAST ENGINEERING

SARAB VILLAS (101 VILLAS)



CLIENT: ARADA DEVELOPER L.L.C.
AREA/PLOT NUMBER: AL JADA - SHARJAH , U.A.E.
ELECTRICAL CONTRACTOR: UTEC
CONSULTANT: ARIF & BINTOAK

BINGHATTI GATEWAY (B+ G+ M+ 2P+ 14TYP + ROOF)



CLIENT: BINGHATTI HOLDING LIMITED
AREA / PLOT NUMBER: AL JADDAF DUBAI
CONSULTANT: GRANADA EUROPE

BINGHATTI AVENUE (B+ G+ M+ 2P+ 14TYP + ROOF) BLDG



CLIENT: BINGHATTI HOLDING LIMITED

AREA/PLOT NUMBER: 6868+WH9 Near Marriot Hotel-al jaddaf.

CONSULTANT: GRANADA EUROPE

BINGHATTI CREEK



CLIENT: BINGHATTI HOLDING LIMITED

AREA/PLOT NUMBER: AL JADDAF-DUBAI

CONSULTANT: GRANADA EUROPE

Millennium Bingham Residence



CLIENT: BINGHATTI HOLDING LIMITED

AREA/PLOT NUMBER: Marasi Dr – Business Bay-Dubai

CONSULTANT: GRANADA EUROPE

BINGHATTI POINT



CLIENT: BINGHATTI HOLDING LIMITED
AREA/PLOT NUMBER: QASIS – INDUSTRIAL AREA-DUBAI
CONSULTANT: GRANADA EUROPE

BINGHATTI SALCON



CLIENT: BINGHATTI HOLDING LIMITED
AREA / PLOT NUMBER: AL QUSAIS INDUSTRIAL AREA .
CONSULTANT: GRANADA EUROPE

6.HVAC CONTROL PANEL



HeatControls

Company Profile

www.heatcontrols.co

UAE | GCC | JORDAN

heatcontrols

HeatControls Overview

- More than 12 years of experience in H
- Established Products, Consulting and HVAC Spare parts with a strong focus on customer satisfaction.
- Heat Controls has a strong workforce, of a team of engineer and technicians on its rolls.
- Known for enabling superior execution and long-term client partnerships.
- Regional reach in GCC & Jordan.
- Serving Fortune of many large and growing companies, in the region.
- Experienced professionals in HVAC, HVAC Controls & retrofits, all types of control panels and sourcing the required spare parts.



Consulting &
Technical Support



Products



Spare Parts



HeatControls Footprint



100+
Product
Implementations



12+
Years
of Experience



25+
Products



High International
Standards



Licensed tools &
Software



100+
Happy Clients



7
Countries
Operation



www.heatcontrols.co

CAPABILITY & OFFERINGS



CONSULTING

- HVAC&R Sequence of operations.
- Industrial Process sequence of operation.
- Solution for remote & local monitoring systems.
- Solutions for energy management.
- Optimum retrofit solutions
- IoT Solutions.

PRODUCTS

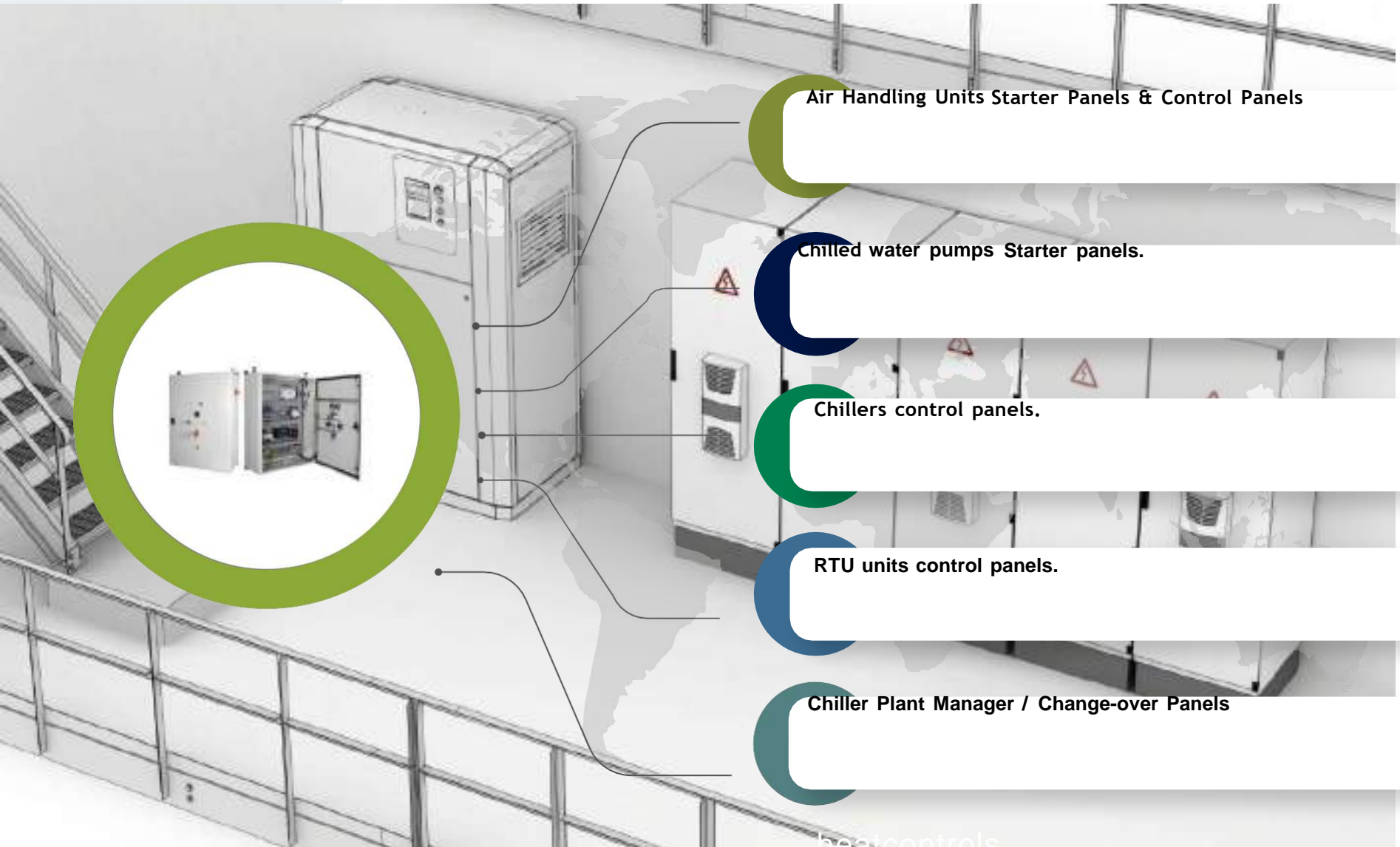
- HVAC Control Panels:
 - ▶ Air Handling Units Starter Panels.
 - ▶ Chilled water pumps Starter panels.
 - ▶ Chillers control panels.
 - ▶ Air Handling Units control panels.
 - ▶ RTU units control panels.
 - ▶ Chiller Plant Mangers.
 - ▶ Change-over & sequencing control panels
- Industrial process control panels.
- HVAC Microprocessor Controllers Programming.
- HVAC Equipment Wifi Integration.
- Remote/ Local monitoring Systems.
- Local Work Stations.

SPARE PARTS

- Microprocessor Controllers & IO expansion boards.
- Valves drivers.
- Sensors & transducers.
- HMIs & Thermostats.
- VFDs & Soft-starters.
- Valves & Actuators.

Products

HVAC Control Panels



Air Handling Units Starter Panels & Control Panels

Chilled water pumps Starter panels.

Chillers control panels.

RTU units control panels.

Chiller Plant Manager / Change-over Panels



Products

HVAC Microprocessor Controllers Programming



MCS Magnum



SIEMENS Climatix



SIEMENS PXC



CAREL PCO/ CPCO



Eaton EasyE4

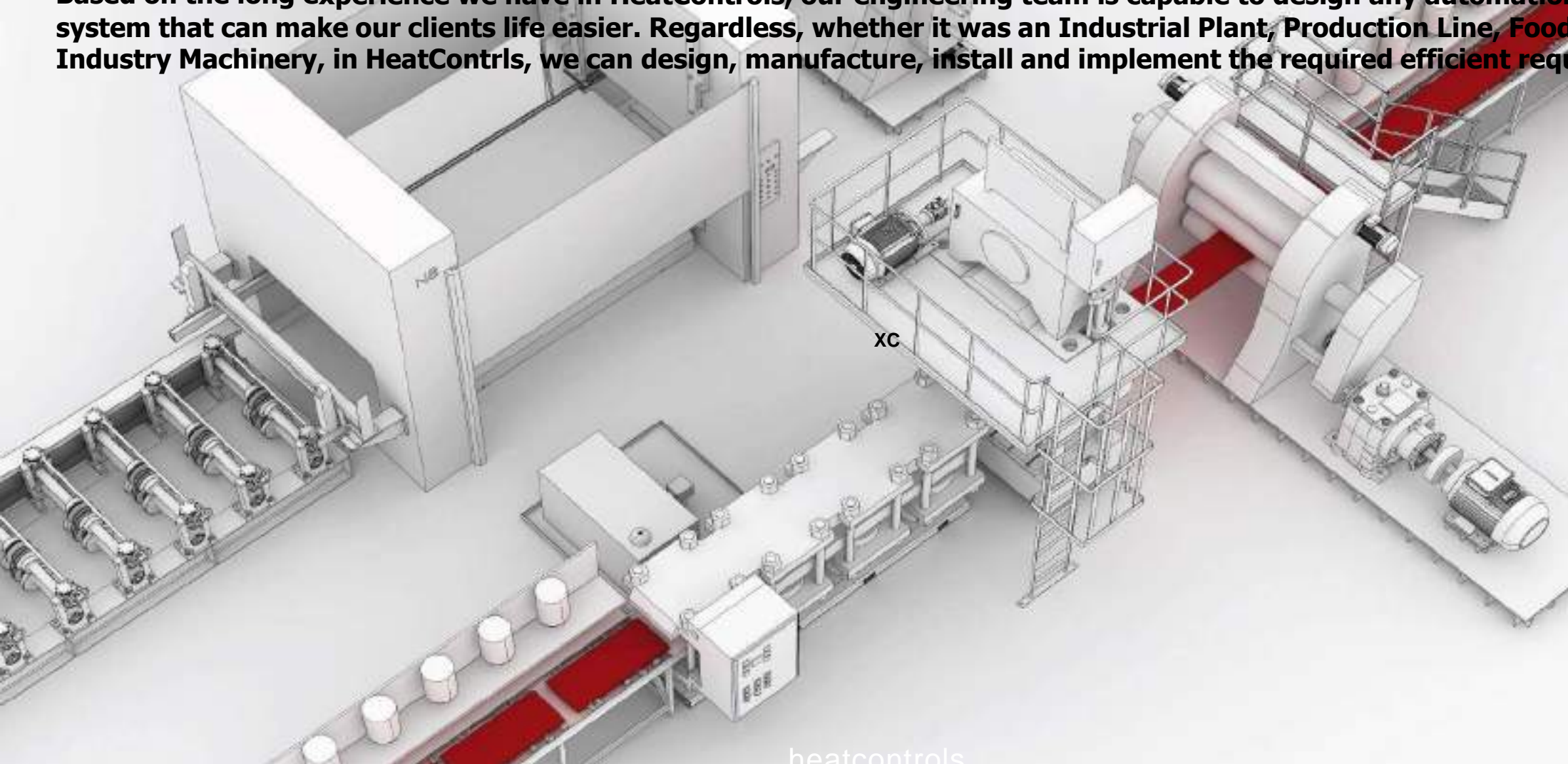


We are capable of programming major microprocessor-based controllers, used in HVAC industries, in order to comply the client optimum sequence of operation. We have a professional engineering team, well-trained and licensed with the required programming tools, to fulfill the required logic in a perfect way.

Products

Industrial Process Automation & Control Panels

Based on the long experience we have in HeatControls, our engineering team is capable to design any automation system that can make our clients life easier. Regardless, whether it was an Industrial Plant, Production Line, Food Industry Machinery, in HeatControls, we can design, manufacture, install and implement the required efficient required system.



heatcontrols

Products

Local & Remote monitoring Systems



In HeatControls, and using the latest technologies in DDC industries, we make it possible to possible to connect and control all your assets and machines in the facility from one end-point:

Local Monitoring & Control System - Work Station

Remote Monitoring & Control System - with cloud-based services.

Spare Parts

We in HeatControls are capable to provide our clients with all the required spare parts, for durable operation of their equipments. These Spare Parts includes the following materials:



Microprocessor Controllers along with its programming

SIEMENS
Ingenuity for life

ROCCA Copeland

RefComp

Valves & Actuators

ABB

EATON
Powering Business Worldwide

HANBELL

SPORLAN

Sensors & Transducers

CAREL

EMERSON

ANDELI

CHNT

VFDs & Softstarters

Danfoss

MICRO CONTROL SYSTEMS

NICOTRA Gebhardt

HMI's & Thermostats

Honeywell

Nidec

Compressor, Motors & Fans

Technical Description

FLUX

Introduction

- ❖ With the excessive need for energy, the limited power resources became the main problem that pushed scientists to work hard on finding solutions for energy saving, and many engineering institutes, labs, and research agencies are working hard in the same direction as well.
- ❖ As known, all electrical equipment that operates with ac current consumes two types of power:
 - First:* Active Power measured by KW
 - Second:* Reactive Power measured by KVAR
- ❖ In the eighties of the last century, we knew the Power Factor Correction panels (PFC).

The function of the PFC is based on adding capacitors relative to the load requirements and adding a reactive current supplied by the source, which leads to an increase in the consumed active power.
- ❖ The client then profits from not paying penalties over the reactive power but pays more for the consumed active power.

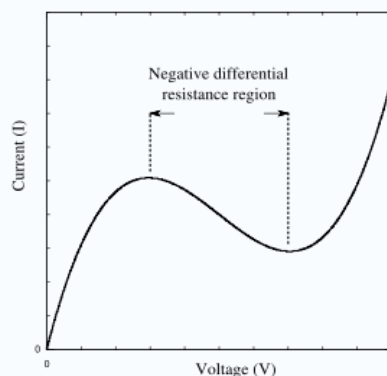
S.N.	Networks' Common Problems	FLUX solutions
1	The amount of the monthly electricity invoices	FLUX saves 15 – 25 % over the consumed active power without affecting the load, therefore saving the same percentage over the electrical invoices amounts
2	The insufficient efficiency of the Power Factor Correction panels	FLUX achieves the best power factor relative to the load
3	The increase in power consumption in the peak intervals	FLUX minimizes the increase of power consumption in peak intervals by achieving more savings proportional to the load demands as it brings more phases into operation automatically.
4	The increase in the different types of losses (Thermal...)	FLUX decreases the consumed current from the source (without decreasing the load current) which leads to the loss decrease in the network.
5	Voltage drops	FLUX acts to a certain extent as a voltage stabilizer.
6	The presence of Harmonics adds losses and causes troubles in the network	FLUX treats in most of the applications the harmonics without adding more components to the network.
7	The unbalance of the loads lead to the increase of the current that goes through the neutral cable	FLUX balances the network loads, therefore minimizing the current going through the neutral cable.
8	The repetition of the troubles due to the different problems of the network	FLUX improves network efficiency and leads to having a clean, clear, and stable network.
9	The obligation of buying additional electrical power when the network is saturated and there is a need for adding more loads	FLUX allows the client to use the saved energy for load increase within the saved range without adding more devices or buying more power from the electricity Authority.

FLUX SYSTEM

Concept Of Operation

The (**FLUX**) capacitor unit had ionic treatment with a combination of special materials creates super-conductivity with a negative resistance which acts as a current source in the network that allows us to add the current component in the direction of the active current and another one in the direction of the reactive current, therefore, we reduce the power consumed (KW) from the source without affecting the load.

Negative resistance



A VI curve with a negative differential resistance region

- **Negative resistance** or **negative differential resistance** (NDR) is a property of **electrical circuit** elements composed of certain materials in which, over certain **voltage** ranges, the **current** is a decreasing function of voltage. This range of voltages is known as a negative resistance region.
- Some writers prefer to reserve the term **negative resistance** for situations in which the negatively sloping portion of the load line passes through the origin so that a positive **absolute** value of voltage is associated with a negative **absolute** value of current. Such a circuit must contain an energy source and can be used as a form of amplifier. However, the use of the term **negative resistance** to encompass negative **differential** resistance is more common.
- Absolute negative resistances without an external energy source cannot exist as they would violate the law of **conservation of energy**.
- The basic idea behind negative resistance

The negative resistance phenomenon is a process of injecting an additional excessive power into an existing power source proportionally to some disturbance. A negative resistor acts as a proportional additional power source.

*The Advantages of the **FLUX** System:*

- Achieves savings from (15 – 25) % over the consumed active power for networks that are supplied through transformers.
- Achieves savings from (15 – 25) % over the fuel consumption for networks that are supplied through generators.
- Power factor improvement that reaches up to 0.99-1,00 which makes the client benefit from avoiding paying penalties over the reactive power.
- The network resistance is reduced due to the energy exchange between the **FLUX** unit and the different loads; therefore, the consumed current from the source is reduced.
- **The FLUX** unit works on minimizing the network losses and acts as a voltage stabilizer to a certain extent which leads to reducing the consumed current from the source.
- **FLUX** unit can handle each phase separately which leads to balancing the load of the network; therefore, it minimizes the current flow through the neutral cable of the network.
- **FLUX** unit minimizes, in some applications, the harmonics in the network (3rd, 5th, 7th, 9th, 11th & 13th).
- **FLUX** unit is a tailor-made panel that is designed according to the network conditions, the capacity of each unit can vary between 100 KVA to 1500 KVA.
- To achieve the required saving in the big networks, we can use several **FLUX** panels.
- **FLUX** panels are of suitable size and do not need any additional facilities.
- **FLUX** panels can be designed to work in any environment.
- With the use of the **FLUX** panels, the client saves the location and expenses of new equipment and additional devices he might have spent to increase his network capacity without using **FLUX** panels.
- **AL ITTIHAD ELECT SWITCHGEAR** provides monthly check-ups and preventive maintenance by a highly qualified technical team for the projects and Trains qualified technical staff on-site for projects abroad.
- **FLUX** panels can be easily installed and dismantled only by **AL ITTIHAD ELECT SWITCHGEAR** Team, or by any team certified by **AL ITTIHAD ELECT SWITCHGEAR**
- The return on investment is achieved within **12-18** operating months.

General Definitions for Product (FLUX)

FLUX achieves the following:

Saves over the supplied AC that appears in the existing type of energy in the network as follows: **First: The Active Power** $P=VI \cos \emptyset$

The active power is measured by KW and is measured in the consumption by KW.hr.

The active power is what the load needs to operate either if it is a motor – lighting-equipment- etc...

Second: The Reactive Power $Q= VI \sin \emptyset$

The reactive power is measured by KVAR and exists in the electric networks due to load characteristics.

The reactive power represents part of the consumed apparent power in the network as:

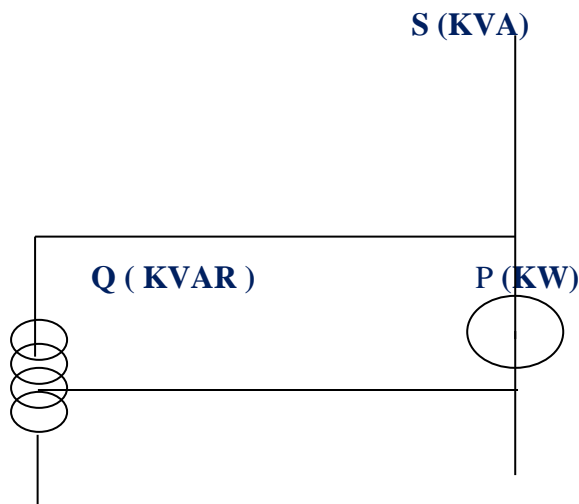
$$S = \sqrt{P^2 + Q^2}$$

S: Apparent Power

P: Active Power

Q: Reactive Power

i.e.: the apparent power S (KVA) is the resultant of the active power P (KW) and the reactive power (KVAR). The following example will explain the concept of operation of FLUX.



An electric engine consumes a certain active power **P** and a certain reactive power **Q** from the source. The apparent power **S (KVA)** is the result of the two vectors.

As $P = S \cos \emptyset$

As much as the power factor is closer to unity as much as the benefit is greater for the consumer and the electricity Distribution Authority and as much as we can reduce the reactive power as much as the apparent power gets closer to the active power and this is one of the panels' advantages.

*We have been interested in the development of the **Flux** system for the following.*

To decrease the cost of the consumed electric power of the network by keeping the reactive power at a lower level than the contractual value with the electricity company (by avoiding the payment of penalties and by improving the network efficiency).

*Technical and economic advantages of **FLUX***

AL ITTIHAD ELECT SWITCHGEAR is interested in improving the power factor, and network efficiency to enable the client to use cables of less cross-sectional area and transformers and equipment of less rating in addition to the minimizations of losses and voltage stabilization which all benefits economically and technically to the consumer and the energy supplier.

Minimize the cable losses.

The cable losses are proportional to the square of the current value (this squared value is added to the counters readings of the KW. hr), i.e.: reducing the consumed current by 20% significantly reduces the cable losses.

To maximize the available power

With the use of the **FLUX** system, a saving of (15-25) % of the consumed active power from the source is achieved, which allows the client to increase his loads within the saving range without any problems or expenses whatsoever.

***FLUX** application for general compensation*

General compensation could be applied for a group of loads or a complete network by installing the system on the main feeders' busbars if the network is stable.

***FLUX** Application for diverting loads*

This application is recommended when loads of the network are not stable or are allocated away from each other.

AL ITTIHAD ELECT SWITCHGEAR carries out a site inspection and loads studies then recommends the best solution to the client.



Flux: Technical Description

Summary

Certified capacitor units undergo a lengthy process of ionic treatment with chemical materials using our proprietary technology which creates super-conductivity with a negative resistance that acts as a current source in the network. This allows us to add the current component in the direction of the active and reactive currents. Therefore, the capacitors achieve a reduction in the consumed power (KWh) from the source without affecting the load.

Details

After installing the capacitors that has been treated with our technology and connecting them to the power supply, each capacitor functions to generate a varying magnetic field in response to changes in the circuit's potential energy. This magnetic field produces circular magnetic waves in the form of electrons, which are then absorbed and transformed into an electrical energy source. This process involves the use of negative resistance and a stable voltage differential between the capacitors and the electrical line. As a result, it leads to enhanced conductivity, better efficiency, elimination of harmonic distortions, and a decrease in static electricity.

7.OUR SUPPLIERS

OUR SUPPLIERS



SIEMENS

Ingenuity for life



8.VIST US

VISIT US



Al Ittihad Electrical Switchgear Industry L.L.C.



Industrial Area 11 , Sharjah , U.A.E.



050-5372144



eyadlutfi@yahoo.com



<https://www.facebook.com/alittihad99>

