

**Conquering Challenges. Pioneering Solutions.
Empowering Smart LV Switchgear Excellence.**



**Unleash the Power of Smart LV Switchgear:
Safety, Reliability, Sustainability, Efficiency!**



desystems.org

DIGITAL
ELECTRIC SYSTEMS

WHO WE ARE

Digital Electric Systems FZE: Your Premier Destination for Cutting-Edge LV Switchgear Solutions. Strategically located in Sharjah Airport International Free Zone (SAIF Zone), Sharjah, UAE, our company stands as a pioneering force in the industry.

Digital Electric Systems FZE has expanded its operations, now offering a comprehensive range of LV Switchgear solutions. Our products are meticulously designed and type-tested to comply with the latest international standards, including IEC 61439, BSEN 61439, IEC 61641, and more. To further ensure the quality and reliability of our solutions, our products are certified by DEKRA Netherlands, an internationally accredited certification body.

With a strong foundation in manufacturing electrical switchgear components, busbar assembly units, wiring accessories, and more, we bring over two decades of expertise to the Middle East region. Our commitment to excellence has earned us a trusted reputation as a supplier of core switchgear components to the manufacturing fraternity.

At Digital Electric Systems, we have redefined excellence, delivering top-notch LV switchgear solutions that prioritize safety, reliability, sustainability, and efficiency. Our unwavering dedication to quality and innovation solidifies our position as an industry leader.

As your trusted partner, we are committed to surpassing expectations and delivering tailored solutions that address your unique requirements. Through strategic collaborations with renowned suppliers and advanced manufacturing techniques, we ensure that our products meet the highest standards of performance and reliability.

MISSION

Provide turnkey solutions in the LV electrical switchgear industry in the Middle East with strong focus on delivering the best, cost-effective products and solutions catering to the needs of our customers.



VISION

Become one of the leading supplier and solutions provider for LV switchgear systems in the Middle East.

OUR INDUSTRIAL SETUP



Digital Electric Systems FZE: A Visionary in LV Switchgear Solutions. Our company has emerged as a dynamic player in the industry, driven by a passion for excellence and innovation.

Nestled within the vibrant landscape of SAIF Zone, our establishment boasts a state-of-the-art facility spanning 600 square meters. Our compact yet highly efficient workspace has been meticulously designed to accommodate our growing operations and ensure optimal productivity.

With a firm focus on delivering exceptional LV switchgear solutions, we continuously strive to redefine industry standards. Our unwavering commitment to quality, safety, reliability, and efficiency sets us apart as a trusted partner in the electrical industry.

As we embark on this exciting journey, we envision a future of endless possibilities. With strategic planning and a steadfast commitment to growth, we are dedicated to expanding our capabilities and exploring new horizons in LV switchgear technology.

Stay tuned as we unveil our upcoming advancements, including cutting-edge manufacturing processes and innovative techniques that will enhance our product offerings. By harnessing the latest advancements, we aim to solidify our position as a leader in the field, delivering excellence to our valued customers.

QUALITY MANAGEMENT SYSTEM

Digital Electric Systems FZE is committed to quality, both of our products and in our workplace. We aim for the safe and efficient production of our products by adhering to strict Good Manufacturing Practices such as 5S program to safeguard quality and supply of our products. We have a Quality Management System in place that accredited to ISO 9001, ISO 14001, and OHSAS ISO 45001 certification. To ensure that we meet our responsibilities and obligations to our customers, our people, our partners, our suppliers and to our shareholders we are committed to the quality objectives defined in our Quality Policy.



OFFER PORTFOLIO

Digital Electric Systems FZE offer portfolio includes complete LV Switchgear from PAN Assemblies to Sub main distribution board that are suited for multi-user Market segments – Buildings (C&R), Infrastructure (Airports, STP, DCP), Industries, Utilities, etc. Each of the solutions are designed per latest international standards, particularly IEC 61439. Solutions up to 2500A have already undergone type tests as per IEC 61439-1 & 2. Some of the solutions included in our portfolio are as listed below:

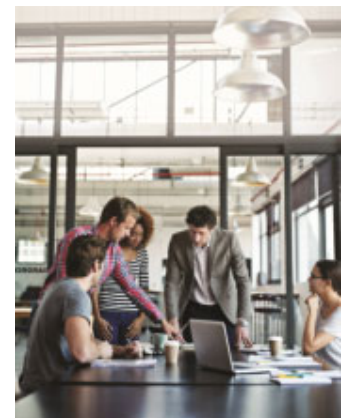
<ul style="list-style-type: none"> Final Distribution Boards (DBs) 125A, 250A 	➔	Form-2B, IP41, Icw=25kA 0.5s, Ue=400V, Ui=500V, Uimp=6kV, Compliant to IEC 61439-1,-2,
<ul style="list-style-type: none"> Sub Main Distribution Boards (SMDBs) upto 800A 	➔	Form-2B, IP54, Icw=50kA 1s, upto 690V, Compliant to IEC 61439-1,-2,
<ul style="list-style-type: none"> PAN Assembly Solutions (DBs & SMDBs) upto 800A 	➔	Icw=17kA 0.25s for 125A, Icw=25kA 0.5s for 250A DB, Icw=36kA 1s for 250A, Icw=42kA 1s for 400A, Icw=50kA 1s for 630A, Icw=50kA 1s for 800A, Compliant to IEC 61439-1,-2,
<ul style="list-style-type: none"> Metal Enclosures (Wall Mounting, Wall Mounting SS, Floor Standing, Ex - Enclosures) 	➔	IP55 for Wall Mounting, Floor Standing, Ex-Enclosures, IP66 for Wall Mounting SS, Compliant to IEC 61439-1,-2,



In addition to complete LV Switchgear solutions, **Digital Electric Systems FZE** also offers Standard Pre-assembled Busbar Pan Assemblies for SMDBs and DBs that are type tested as per IEC 61439 standards. Such Pan assemblies can be utilized by Panel builders to incorporate in their panel systems that offers them a technically superior and cost-effective solution that accommodate MCBs / MCCBs from various reputed manufacturers.

DESIGN CAPABILITIES

Digital Electric Systems FZE is equipped with a qualified and experienced Design team who are abreast with international standards, local utility regulations (ADDC, DEWA, SEWA, FEWA, Kahramaa, EDD Bahrain, MEW Oman, MEW Kuwait, etc) and emerging technological trends. By staying at the forefront of industry developments, our Design team delivers tailored LV switchgear solutions that meet evolving customer needs. With cutting-edge tools and unwavering innovation, we set the industry standard for design excellence.



- Estimation & Design of LV Switchgear upto 800A
- Drawings – GA, SLD, Schematics as per Type tested configurations, local regulations, IEC standards, project specifications, etc
- Compliance statements, Technical Submittals
- Technical Support to customers
- Standardization of Assembly Methods
- Standardization of Busbar fabrication, Wiring harness
- Installation, Operation & Maintenance documentation
- Feasibility & Design for Onsite modifications, Upgrades, Extensions, etc.



LEAN MANUFACTURING CONCEPT – 5S

In pursuit of its journey towards continuous improvement, **Digital Electric Systems FZE** has adopted the **5S** Lean Manufacturing concept with an organizational approach that is simple and visual, based on tidiness and clearness in order to maintain a clean and high-performance workplace.

The **5S** stages applied are: **S**ort → **S**et in Order → **S**hine → **S**tandardize → **S**ustain

MANUFACTURING AND ASSEMBLY

At **Digital Electric Systems FZE**, we are equipped with advanced machinery that ensures precision in busbar fabrication, including cutting, punching, and bending processes. Our state-of-the-art facilities also facilitate sheet metal punching for various components, such as meters and pilot assemblies.

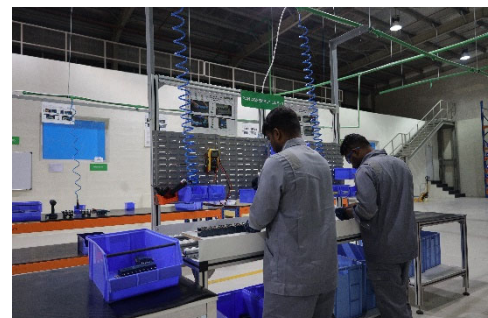
With our cutting-edge facilities and expertise, we strive to set new industry standards for excellence. Our advanced machinery enables us to meet the highest levels of quality, safety, and reliability in our products. From busbar fabrication to sheet metal punching, we utilize innovative technologies to ensure that our solutions meet and exceed the expectations of our valued customers. At **Digital Electric Systems FZE**, we are dedicated to providing top-quality LV switchgear solutions that empower our customers and drive their success.



Digital Electric Systems FZE is one of the few LV Switchgear manufacturers in the region equipped with a dedicated **ASSEMBLY LINE** to assemble Busbar Pan Assemblies for SMDBs and DBs and for complete assembly of DB's. The Assembly line incorporates Pneumatic pre-torqued tools to ensure each step of the assembly process is carried out with precision and

QUALITY CONTROL, INSPECTION AND TESTING

Digital Electric Systems FZE adopts strict Quality Control procedures to ensure each LV Switchgear assembly is in line with the type tested configuration. Routine Tests are carried out on every assembly in accordance with IEC 61439-1, 2 standards, local utility regulations and project specifications.



Routine verification is intended to detect faults in materials and workmanship and to ascertain proper functioning of the manufactured ASSEMBLY. The adjacent Table lists the Routine Tests as specified in IEC 61439-1 that are carried out on every ASSEMBLY.

Some of the calibrated test equipment used by Digital Electric Systems FZE:

- HV Test Kit – upto 5kV
- Megger
- Insulation Tester
- Torque Wrench
- Paint thickness gauge



S.No	Clause	Description	Details / verification to be done																								
1	11.2	Degree of protection of enclosures	Visual inspection																								
2	11.3	Clearances & Creepage distances	<p>The Clearance and Creepage distances shall be verified to be minimum as specified in the tables below:</p> <p>Visual inspection – Clearance</p> <table border="1"> <thead> <tr> <th>Panel</th> <th>Impulse Withstand Voltage, Uimp</th> <th>Minimum Clearance</th> </tr> </thead> <tbody> <tr> <td>MDB</td> <td>12 kV</td> <td>14.0 mm</td> </tr> <tr> <td>SMDB, MCC</td> <td>8 kV</td> <td>8.0 mm</td> </tr> <tr> <td>DB</td> <td>6 kV</td> <td>5.5 mm</td> </tr> </tbody> </table> <p>Visual inspection – Creepage (Pollution degree 3, Material Group IIIa)</p> <table border="1"> <thead> <tr> <th>Panel</th> <th>Insulation Voltage, Ui</th> <th>Minimum Creepage</th> </tr> </thead> <tbody> <tr> <td>MDB</td> <td>1000 V</td> <td>16.0 mm</td> </tr> <tr> <td>SMDB, MCC</td> <td>690 V</td> <td>10.0 mm</td> </tr> <tr> <td>DB</td> <td>690 V</td> <td>10.0 mm</td> </tr> </tbody> </table>	Panel	Impulse Withstand Voltage, Uimp	Minimum Clearance	MDB	12 kV	14.0 mm	SMDB, MCC	8 kV	8.0 mm	DB	6 kV	5.5 mm	Panel	Insulation Voltage, Ui	Minimum Creepage	MDB	1000 V	16.0 mm	SMDB, MCC	690 V	10.0 mm	DB	690 V	10.0 mm
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3	11.4	Protection against electric shock and integrity of protective circuits	Visual Inspection																								
4	11.5	Incorporation of built-in components	Visual Inspection The installation and identification of built-in components shall be in accordance with manufacturer's instructions.																								
5	11.6	Internal electrical circuits and connections	The connections especially screwed and bolted connections, shall be checked for correct tightness on a random basis.																								
6	11.7	Terminals for external conductors	The number, type and identification of terminals shall be checked in accordance with manufacturing instructions.																								
7	11.8	Mechanical Operation	The effectiveness of mechanical actuating elements, interlocks and locks including those associated with removable parts shall be checked.																								
8	11.9	Dielectric Properties	Power Frequency Withstand Test (H.V. Test) Main Circuits – 2.2kV for 1s ... Ph-Ph, Ph-N, Ph-E, N-E Megger Test using a Measuring device at a Voltage of 500V DC. Minimum req for Insulation resistance is 1000 Ohm per Volt. With a 500V DC test kit, Min IR value = 0.5 Mega Ohms																								
9	11.1	Wiring, Operational Performance and Function	Function Test at Rated Operational Voltage																								

TYPE TESTED SOLUTIONS

Digital Electric Systems FZE's entire range of LV Switchgear solutions are suitable with all major LV Switchgear components manufacturers, and are designed as per latest international standards IEC 61439-1, -2, BSEN 61439-1, -2. All Type tests were carried out at 50degC ambient and were tested & certified by DEKRA.

DB

- Type tested as per IEC 61439-1, -2 -3,
- 250A Busbar with MCCB Incomer, Icw=25kA 0.5s
- 125A Split Busbar, Single Vertical Busbar, Icw=17kA 0.25s
- 100A Single Phase Busbar, 10kA rated
- Form-2B, IP41, 50degC, RAL 7035 (other colors available upon request)
- 1.2mm thick EGI sheet steel enclosure
- Tin Plated, HDHC, 99.9% purity, ETP grade Copper





ROW DB

- Designed as per IEC 61439-1, -2.
- Ingress Protection: IP41 (Type Test IP42, available upon request)
- No. of Module: 16 & 24.
- No. of Rows: 1, 2, 3, 4, 5 & 6.
- 1.2mm thick EGI sheet steel enclosure, RAL 7035 Matt
- Removable Front Cover.
- Knockouts provided on top and bottom sides of enclosure.

SMDB



- Type tested as per IEC 61439-1, -2,
- Ratings: 250A, 400A, 630A, 800A
- Short circuit withstand, upto 50kA for 1s
- Form-2B, IP54, 50degC
- 1.5mm thick EGI sheet steel enclosure
- Tin Plated, HDHC, 99.9% purity, ETP grade Copper
- Fully encapsulated/moulded busbar system enhancing safety and performance
- Polyester Powder Coated: RAL 7035 (other colors available upon request)

TYPE TESTED BUSBAR PAN ASSEMBLIES

Digital Electric Systems FZE takes pride in our busbar pan assemblies from 125A to 800A, designed and type tested as per the rigorous IEC 61439-1, -2, -3 standards. These fully encapsulated assemblies provide complete protection against faults, enhancing safety for operators and installations. Compared to conventional busbar systems, our assemblies offer key advantages such as increased safety, compactness, cost-effectiveness, and faster installation.

Our busbar pan assemblies are uniquely designed to accommodate circuit breakers from renowned manufacturers. With their superior safety features, compatibility, and innovative design, our busbar pan assemblies are the ideal choice for reliable and efficient LV switchgear solutions. Contact us to validate the suitability of the circuit breaker for your requirements.

At Digital Electric Systems FZE, we prioritize delivering exceptional quality and performance in our busbar pan assemblies. We strive to exceed industry standards, ensuring that our products meet the safety requirements and flexibility needed for diverse electrical infrastructure projects.

DB PAN ASSEMBLIES (SUITABLE FOR MCBs / RCBO's)

Busbar Pan Assemblies to be installed in DBs are available in 125A and 250A ratings. Busbars are Tin-plated, HDHC, 99.9% purity, ETP grade Copper. Outgoing links with 18mm Pole Pitch are suitable to accommodate MCBs or RCBOs from any reputed manufacturer. They are available to accommodate upto 18way TP (54way SP) outgoing MCBs/RCBOs. The Pan Assemblies have been type tested as per IEC 61439-1, -3 at 50degC with the following performance.

Short circuit withstand rating,

I_{cs} = 17kA 0.25s for 125A

I_{cs} = 25kA 0.25s for 250A



SMDB PAN ASSEMBLIES (SUITABLE FOR MCCB OUTGOING)

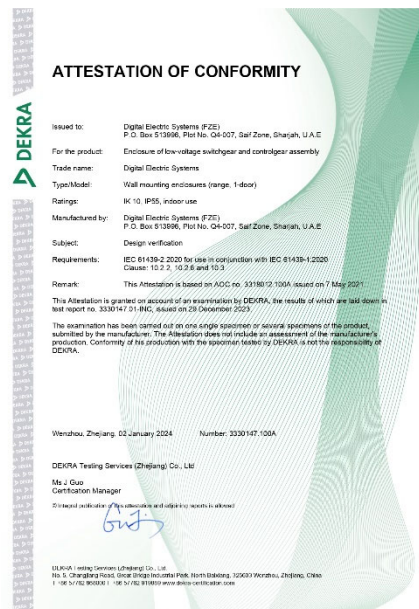
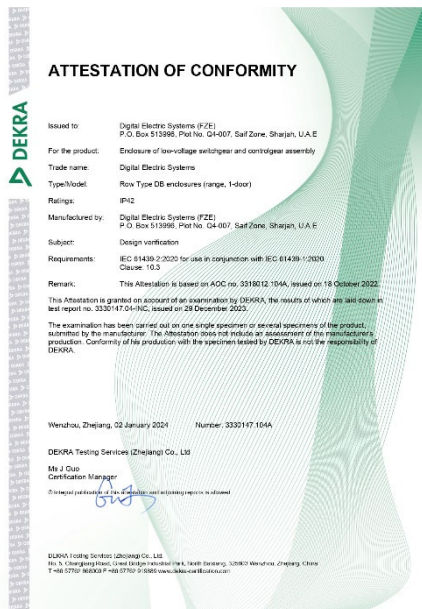


Busbar Pan Assemblies to be installed in SMDBs / MCCs are available from 250A to 800A. Busbars are Tin-plated, HDHC, 99.9% purity, ETP grade Copper. Each rating is available with Options to install outgoing MCCBs with various pole pitch variants – 25mm, 35mm providing the flexibility to accommodate MCCBs from different manufacturers as shown.

Characteristics	250A	400A	630A	800A
Short circuit rating, I _{cw} (Type tested, IEC 61439-1)	36kA 1s	42kA 1s	50kA 1s	50kA 1s
Pole Pitch available for suitable Outgoing MCCBs	25mm 35mm	25mm 35mm	25mm 35mm	25mm 35mm

METAL ENCLOSURES

- Designed as per IEC 61439-2.
- Ingress Protection: IP55 for Metal Enclosures / IP66 for Wall Mounting SS
- Mechanical Impact Protection: IK10
- Made of high quality electro-galvanized (EG) Sheet steel enclosure
- Ranging from Floor Standing, Wall Mounting, Wall Mounting – SS, Extendable Enclosures
- Polyester powder coated light grey color: RAL 7035, other colors available upon request.





Our Association



..... and growing!

Stay connected all the time...Join us!

Write to us for your requirements for LV Switchgear solutions. We would also be pleased to assist you on any of your technical queries on LV Switchgear particularly on compliance / type testing to IEC 61439, IEC 61641 standards, Utility regulations (ADDC, DEWA, SEWA, FEWA, Kahramaa, EDD Bahrain, MEW Kuwait, MEW Oman, etc), project specifications, etc.

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