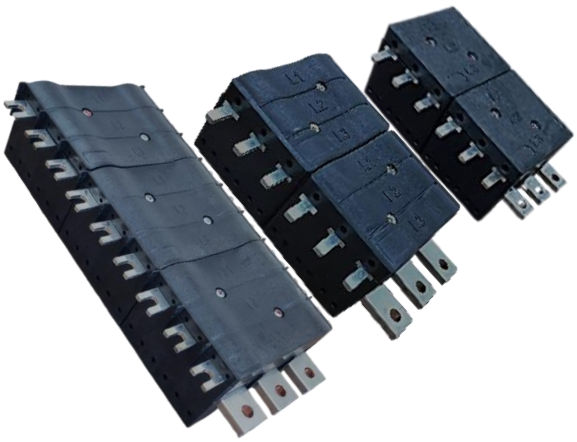
DES Low Voltage

Busbar Pan Assemblies

Certified solution for SMDBs and DBs



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DIGITAL ELECTRIC SYSTEMS


DIGITAL

Overview

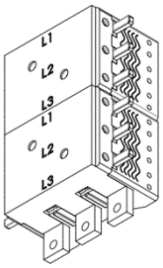
Digital Electric Systems offer standard Pre-assembled Busbar Pan Assemblies for Low Voltage SMDBs and DBs that are designed, manufactured and type tested as per the latest edition of IEC 61439 standards. The Pan Assemblies can be utilized by Panel builders to incorporate in their Distribution boards (SMDBs, DBs) or other Panel systems. This offers them a technically superior, at the same time a cost-effective solution to accommodate circuit breakers from various reputed manufacturers. It adopts a simplified, safe and sturdy construction concept that is modular, ensuring a busbar system that is quality tested and proven with decades of experience in the middle eastern market.

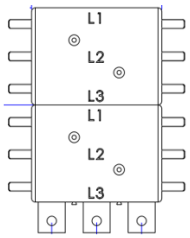
Key Features

- Type tested and certified to IEC 61439-1, 2 standards.
- Busbar system 125A to 800A, fully moulded, safe, encapsulated pan assembly.
- Busbars are type tested with short circuit withstand rating from 17kA for 0.25s upto 50kA for 3s
- Ratings tested and certified @50^{0}C ambient.
- Design of the Pan Assembly conforms to Form-2B as standard, certified as per IEC 61439 standards.

Ready to Install

- The Busbar Pan Assemblies are designed to be installed inside SMDB and DB enclosures.
- Ready to Install purpose fitted mounting brackets are provided as an option, to easily install Incoming devices (Isolators, RCCBs for DBs and MCCBs for SMDBs) and Outgoing devices (MCBs, RCBOs for DBs and MCCBs for SMDBs).
- This method of supplying ready to install SMDB and DB Pan Assemblies helps in retaining the configuration as type tested in accordance with IEC 61439-1, 2 ensuring safety of the operators and the equipment.





Reliability

- Designed to withstand Harsh Environments – use of Tin-plated copper busbars and the fully moulded casing for the busbar pan assembly ensures protection against corrosion, oxidization, etc.
- Interphase barriers between phases inside the busbar assembly limits the risk of internal arcing faults.

Type Tested & Certified

- DES busbar pan assemblies are fully type tested to the latest international standards, IEC 61439-1, -2, -3 with high performance parameters meeting the requirements of major consultants, end users, utilities, etc in the entire MEA region.

Comply with major Utilities

- DES busbar pan assemblies comply with the requirements of all major utilities in the region: ADQCC / ADDC, DEWA, SEWA, EWE… in Qatar: Kahramaa, in Bahrain: EWA, ..in Kuwait: MEW, in Oman: MHEW
- The versatile offer is compliant with all customer requirements for busbar assemblies to be used in SMDBs and DBs in the Gulf as well as the entire Middle East and Africa region.

Technical details

Busbars (Moulded Pan Assembly)

- Busbar type DBs are equipped with a Moulded and Encapsulated Pan Assembly structure, fully segregated from functional units and cable compartments.
- The Fully Moulded busbar system with inter-phase barriers prevents the possibility of internal circuit faults within the assembly.
- The top cover can be opened for easy inspection of joints and to perform Dielectric tests.
- Continuous operating temperature of Mould / Insulating material: 140°C
- Glow wire performance of the insulating material: 960°C
- Copper: Tin Plated, HDHC, 99.9% Purity, ETP Grade used for main busbar and interconnections.

Technical specification

Standards	IEC 61439-1, IEC 61439-2, IEC 61439-3	
Rated Current, In	125A, 250A (for DBs); 250A, 400A, 630A, 800A (for SMDBs)	
Rated Short Circuit Withstand current, Icw	17kA for 0.25s (for 125A DB) upto 50kA for 3s (for 800A SMDB)	
Rated Peak withstand current, Ipk	2.1 x Icw	
Rated Operating Voltage, Ue	400V / 415V	
Rated Insulation Voltage, Ui	690V (for main circuit / main busbars),	
Rated Impulse Withstand Voltage, Uimp	6kV	
Degree of Protection	IP20 protection (preventing access to live parts when doors of the DB/SMDB are opened)	
Number of Outgoing devices	Upto 18-way TP (54way SP)	
Design Ambient temperature	50^0C	
Continuous operating temperature of mould / insulating material	140^0C	
Glow wire performance of the insulating material	960^0C	
Raw Material and Coating	Moulded parts are made of Thermoset PC material with high temp withstand. Busbars are Tin-Plated Copper, HDHC, 99.9% purity, ETP-12 grade	
Form of Separation	Enables compliance to Form-2B as per IEC 61439-1, 2 (Standard) when installed in DBs, SMDBs or other Panel systems	
No. of Outgoing devices	Upto 18-Way TP (54way SP)	
Devices incorporated	The busbar pan assemblies adapts seamlessly, LV Products from all major manufacturers	
	DBs (Final Distribution) • MCBs or RCBOs (for outgoing) • RCCBs (for incoming) • Isolators (for incoming) • MCCB (incomer for 250A DB)	**SMDBs (Sub Main Distribution)** • MCCBs (incoming and outgoing devices)

Option-1 : with mounting plate

Option-2 : without mounting plate

Configuration of Supply

- The Busbar Pan Assemblies are supplied complete with Moulded Insulating material, Main Vertical Tin-plated Copper busbars, Branch / Outgoing Tin-plated Copper busbars with bolted connections.

- **Mounting arrangement:** The Pan Assemblies are supplied in 2 options
  - **Option-1:** With mounting plate (including brackets / fixing arrangement for Outgoing MCCBs), made of galvanized sheet steel of 1.5mm Thickness, epoxy powder coated to RAL 7035 texture finish, making the installation simple and easy for the panel builder.
  - **Option-2:** Without mounting plate (the installer / panel builder needs to install the Pan Assembly onto the mounting arrangement of his enclosure. Suitable non-metallic rivets will be supplied to fix the Pan Assembly. Brackets to mount outgoing devices (MCBs, MCCBs) will need to be done by the installer / panel builder).

Note: Busbar Pan Assemblies for DBs are always supplied without mounting plate

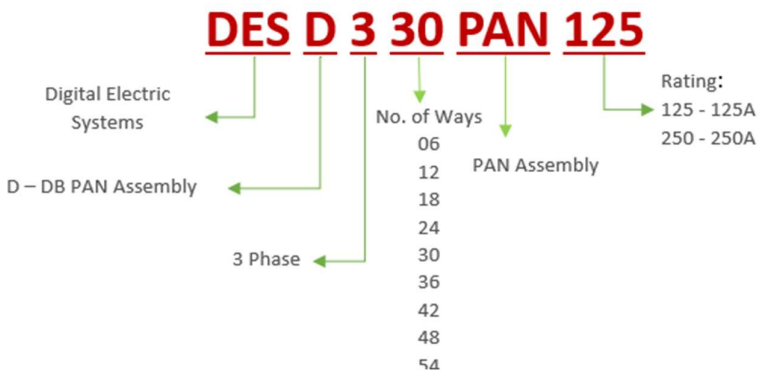
Order Code – Busbar Pan Assembly for DBs

Digital Electric Systems supplies the Busbar Pan Assemblies for DBs, complete with Moulded Insulating parts with Tin-Plated Copper busbars in a Ready To Install format (to be installed inside any enclosure selected by the installer or panel builder) ready to receive MCBs, RCBOs as outgoing devices. They are suitable to install MCBs of several manufacturers with 18mm width. The Busbar Pan Assemblies can be ordered using the below Order Code format.

Brief Technical details of Busbar Pan Assemblies for DBs

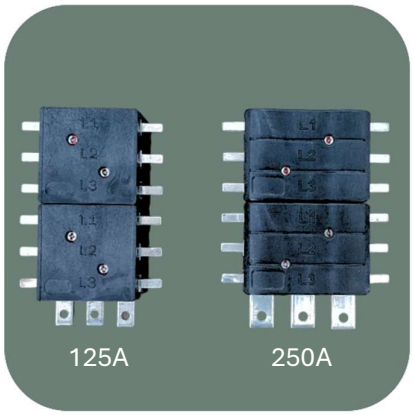
Rating	DB	
	125A	250A
Main Busbar size	10 x 5 mm	15 x 5 mm
Branch Busbar size	10 x 3 mm	10 x 3 mm
Busbar Short circuit withstand rating	Icw = 17kA 0.25s	Icw = 25kA 0.25s
Incomer Pitch	18mm	25mm
Outgoing Pitch	18mm	18mm

Order Codes:



References: Busbar Pan Assemblies for DBs

S.No	Description	Ordering Reference	
		125A	250A
1	DB PAN Assembly	DESD306PAN125	DESD306PAN250
2		DESD312PAN125	DESD312PAN250
3		DESD318PAN125	DESD318PAN250
4		DESD324PAN125	DESD324PAN250
5		DESD330PAN125	DESD330PAN250
6		DESD336PAN125	DESD336PAN250
7		DESD342PAN125	DESD342PAN250
8		DESD348PAN125	DESD348PAN250
9		DESD354PAN125	DESD354PAN250

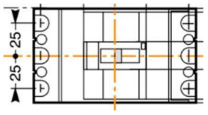


Order Code – Busbar Pan Assembly for SMDBs

Digital Electric Systems supplies Busbar Pan Assemblies for SMDBs, complete with Moulded Insulating parts and Tin-Plated Copper busbars in a Ready To Install format (to be installed inside any enclosure selected by the installer or panel builder) ready to receive MCCBs of various ratings upto 250A, as outgoing devices.

Brief Technical details of Busbar Pan Assemblies for SMDBs

Outgoing Pitch	25mm			35mm			
Rating	250A	400A	630	250A	400A	630A	800A
Main Busbar Option 1	1x 20 x 10 mm	1x 30 x 10 mm	2 x 20 x 10 mm	1x 20 x 10 mm	1x 30 x 10 mm	2 x 20 x 10 mm	2 x 30 x 10 mm
Main Busbar Option 2	2x 20 x 5 mm	2x 30 x 5 mm	(2 x 30 x 6) + (1 x 30 x 5) mm	2x 20 x 5 mm	2x 30 x 5 mm	(2 x 30 x 6) + (1 x 30 x 5) mm	4 x 30 x 5 mm
Branch Busbar	15 x 3 mm	15 x 3 mm	15 x 3 mm	20 x 4 mm	20 x 4 mm	20 x 4 mm	20 x 4 mm
Incomer Pitch	35mm	45mm	35mm	35mm	45mm	35mm	45mm
Outgoing Pitch	25mm	25mm	25mm	35mm	35mm	35mm	35mm
Short Circuit Withstand, Icw	36kA 1s 25kA 3s	42kA 1s 25kA 3s	50kA 1s 25kA 3s	36kA 1s 25kA 3s	42kA 1s 25kA 3s	50kA 1s 25kA 3s	50kA 3s



MCCB Pitch
25mm or 35mm
(center to center between poles)

DES S 25 08 35 MPL+X1

- DES – Digital Electric Systems
- S – SMDB PAN Assembly
- Rating: 25 – 250A; 40 – 400A; 63 – 630A; 80 – 800A
- No. of Ways: 02, 04, 06, 08, 10, 12, 14, 16, 18
- Outgoing Pitch: 25 – 25mm; 35 – 35mm
- MPL+X1

OPTION-1 (with Mounting plate)	MPL	Pan Assembly with Mounting Plate and Outgoing brackets suitable for MCCBs of 75mm & 105mm width (except ABB MCCBs)
	MPL+X1	Pan Assembly with Mounting Plate and Outgoing brackets suitable for MCCBs of 76.2mm width (ABB Tmax XT1, Formula A1 and other 76.2 width MCCBs)
	MPL+X3	Pan Assembly with Mounting Plate and Outgoing brackets suitable for ABB Tmax XT3 MCCBs
	MPL+X4	Pan Assembly with Mounting Plate and Outgoing brackets suitable for ABB Tmax XT4 MCCBs
OPTION-2 (WITHOUT Mounting plate)	PAN	Pan Assembly (WITHOUT Mounting Plate) suitable for MCCBs of 75mm & 105mm width (except ABB MCCBs)
	PAN+X1	Pan Assembly (WITHOUT Mounting Plate) suitable for MCCBs of 76.2mm width (ABB Tmax XT1, Formula A1 and other 76.2 width MCCBs)
	PAN+X3	Pan Assembly (WITHOUT Mounting Plate) suitable for ABB Tmax XT3 MCCBs
	PAN+X4	Pan Assembly (WITHOUT Mounting Plate) suitable for ABB Tmax XT4 MCCBs

PAN Assembly with Mounting Plate and Outgoing Brackets (MPL)
Suitable for NSX, EZC

PAN Assembly with Mounting Plate and Outgoing Brackets (MPL, MPL+X1, MPL+X3, MPL+X4)
Suitable for NSX, EZC, ABB – XT1, XT3, XT4, Dorman Smith, Himel, Chint, Eaton etc.,

PAN Assembly (PAN, PAN+X1/ X3 / X4)
Suitable for All Leading MCCB Brands with 25mm & 35mm Pitch Centers

LV Components

…. MCB, RCBO, MCCBs

DES Busbar Pan Assemblies are suitable for installing LV components for DBs and SMDBs with devices such as MCBs, RCBOs, MCCBs etc from several reputed manufacturers, some of which are shown below.

Devices for DB's (MCBs, RCBO,..)

ABB – System Pro M contact S200	Schneider Electric – Acti 9 & Easy 9	Eaton – xPole series
		

CHINT – NB1 series	Siemens – SENTRON series	Hager – NCN series
		

Note: DES Busbar Pan Assemblies for DBs are also suitable for other series of MCBs of 18mm width equipped with pin type bolt-on connection.

Devices for SMDB's (MCCBs,..)

ABB – Tmax XT, Formula	Schneider Electric – NSX, CVS, EZC	Eaton – NZM-2, EG, JG
 XT1 XT3, XT4  A1, A2	 NSX  CVS  EZC	 NZM-2  125A EG-Frame  250A JG-Frame

CHINT – NM1-63, NM1-250	Siemens – 3VA11, 3VA12	Hager – H3+
 NM1-63  NM1-250	 3VA11  3VA12	 H3+ P160  H3+ P250

Note: DES Busbar Pan Assemblies for SMDBs are also suitable for MCCBs from other manufacturers with 75mm width (25mm pitch), 76.2mm width (25mm pitch), 105mm width (35mm pitch)

Who we are

At Digital Electric Systems, our motivation is firmly rooted in the aspirations of our valued customers. Our ultimate objective is to consistently exceed their expectations by providing exceptional products and services, ensuring complete satisfaction of our customers.

Based within SAIF Zone, Sharjah, UAE, Digital Electric Systems FZE stands as a distinguished specialist in the field of Electrical Switchgear systems. With the backing of our principal manufacturing units located in the Far East, spanning more than 20,000 square meters, comprising of sheet metal manufacturing machinery using state-of-the-art CNC machines, fully automated powder coating lines, injection moulding machines for plastic parts, etc, we have the capacity and infrastructure to cater to the demanding needs of OEMs, Panel builders, etc across the Middle East and Africa regions.

Our association

EATON ..... and growing!

Stay connected all the time...Join us!

Write to us with your requirements for Low Voltage Switchgear solutions. We would 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 (ADQCC, ADDC, DEWA, SEWA, FEWA, KAHRAMAA, ASHGHAL, EWA/EDD Bahrain, MEW Kuwait, MEW Oman, etc.), Consultant specifications, etc.

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