

# MSDB 2.0

Multi Service Distribution Board

Improved and re-engineered

## Innovation. Excellence. Lucy Electric.

With over 100 people dedicated to research and innovation, across two international engineering centres of excellence, Lucy Electric is at the cutting edge of the switchgear industry.

We never stand still. We are always working toward the next breakthrough.



This commitment to progress makes us an international leader in switching, protection and automation solutions for electrical distribution systems. We are a specialist in secondary power distribution, engineering high performance medium voltage (MV) switchgear for utility, industrial and commercial applications, as well as overhead line equipment, and providing retrofit and automation solutions to customers internationally.

Our excellence, expertise, and experience mean we can deliver truly bespoke solutions to our customers, even when the requirements are highly demanding. We can manufacture units for any location, climate or situation and offer dedicated after-sales support through the product lifecycle.





## Improved and Re-Engineered

Building on the reputation of the original MSDB range that was launched over 15 years ago, the MSDB 2.0 represents a harmonisation of the vertical 'J' type fuse design such that all the cabinets now emanate from a single design, rather than the three that have co-evolved over that period.

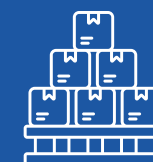
The DNA of the MSDB 2.0 resides in the fuse-ways and cable-ways; these successful elements have not been modified. The increased space around the fuse-ways facilitates easier cabling. This enhances the products safety by softening the bends in the conductors, reducing possible injury.

The MSDB 2.0 comes with a range of cabling accessories that enhance and improve the speed and ease in which an MSDB cabinet can be cabled up. These advancements now negate the need for bottom neutral variants. Resulting in less inventory and purchase management.

### MSDB 2.0 combines:



Safety  
enhancements



Promotes efficient  
stock management



Practical improvements  
for installers



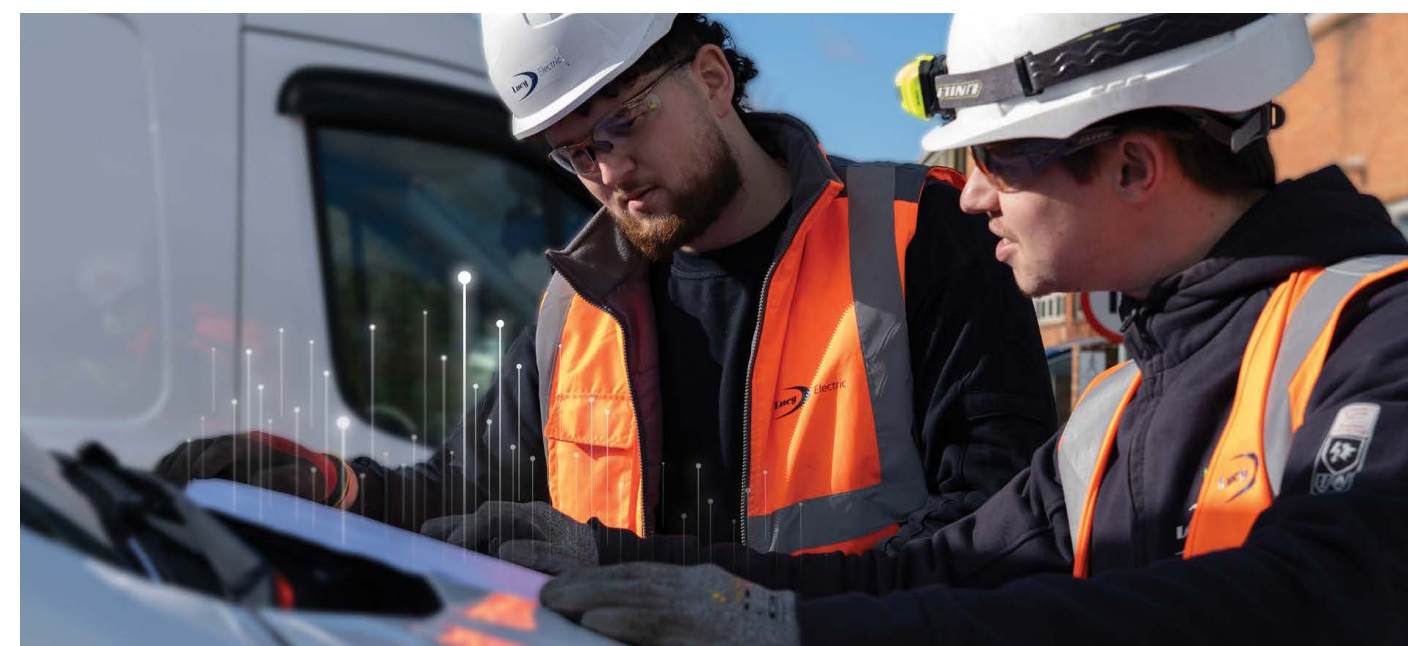
Easier  
cable up



Adherence to  
industry standards

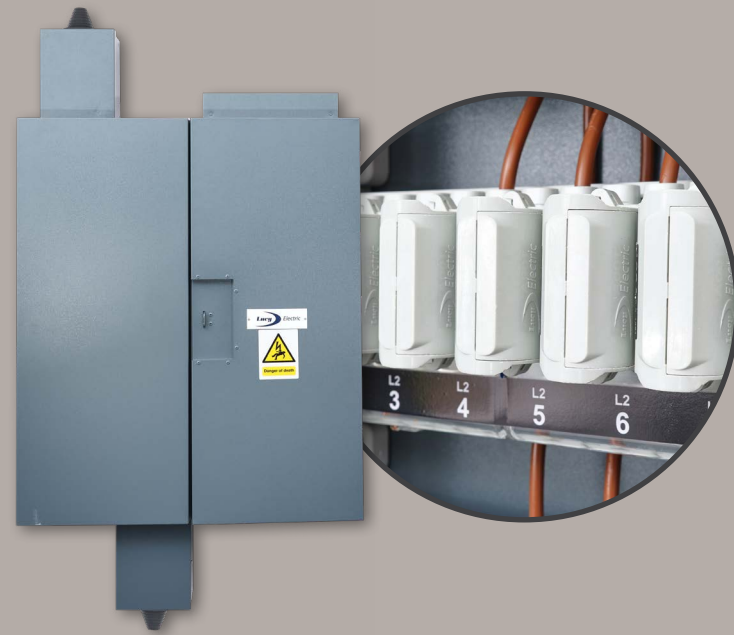


Design  
harmonisation



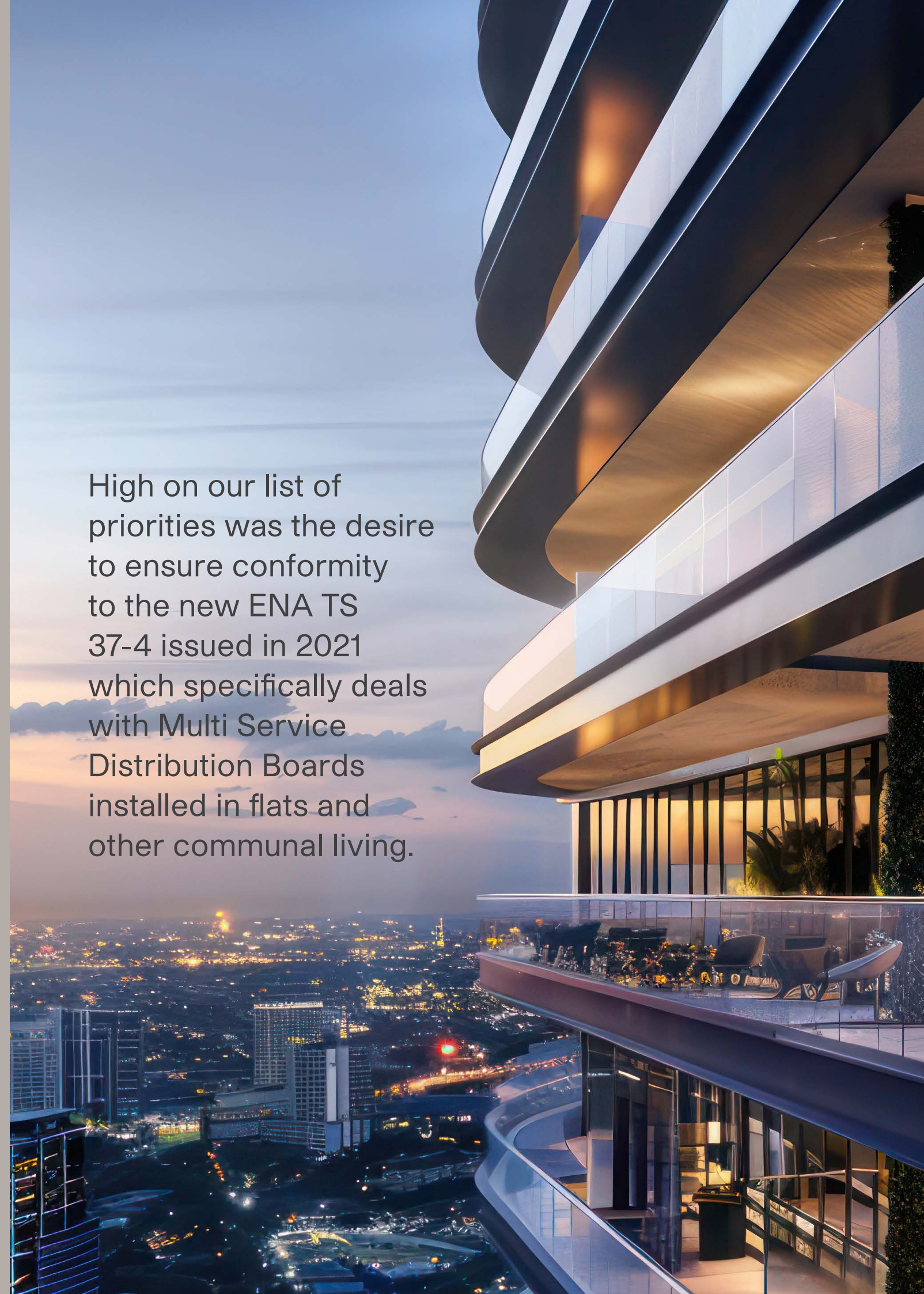


# Overview



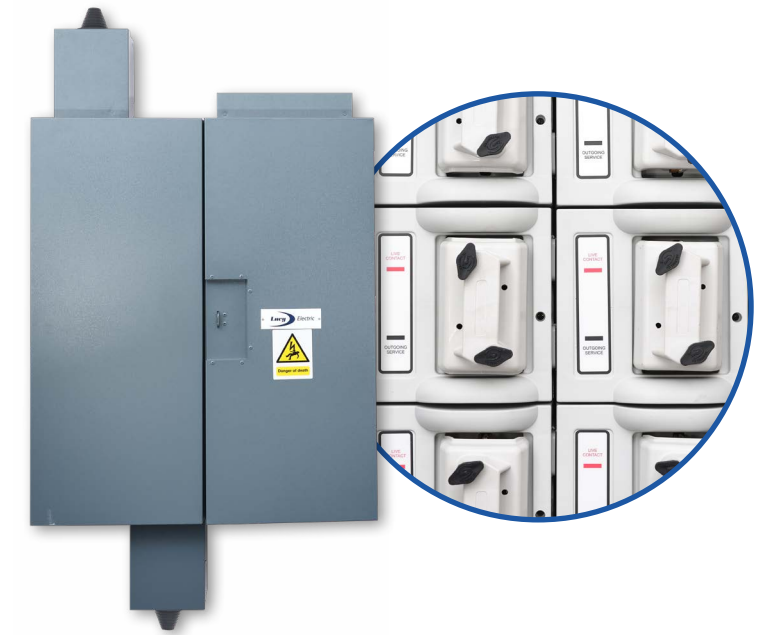
- 'J' type service fuses, 1J and 2J, 630A rated
- 15 way to 45 way outgoing fuses, 100A rated
- Powder coated mild steel wall mounted distribution boards
- Site configurable for CNE or SNE cable systems
- M12 fixings for incoming connections and internal busbar links
- Removable doors to facilitate fitment in shallow risers
- Accepts up to 300mm<sup>2</sup> 3 or 4 core Al or Cu conductors
- Incoming and outgoing cable spreader box options
- Two stage pad-lockable doors enabling independent access to outgoing 100A fuse ways or Distribution Network Operator (DNO) access to incoming J type fuses
- Overall 250mm depth enables installation in confined spaces

High on our list of priorities was the desire to ensure conformity to the new ENA TS 37-4 issued in 2021 which specifically deals with Multi Service Distribution Boards installed in flats and other communal living.





## Design Harmonisation



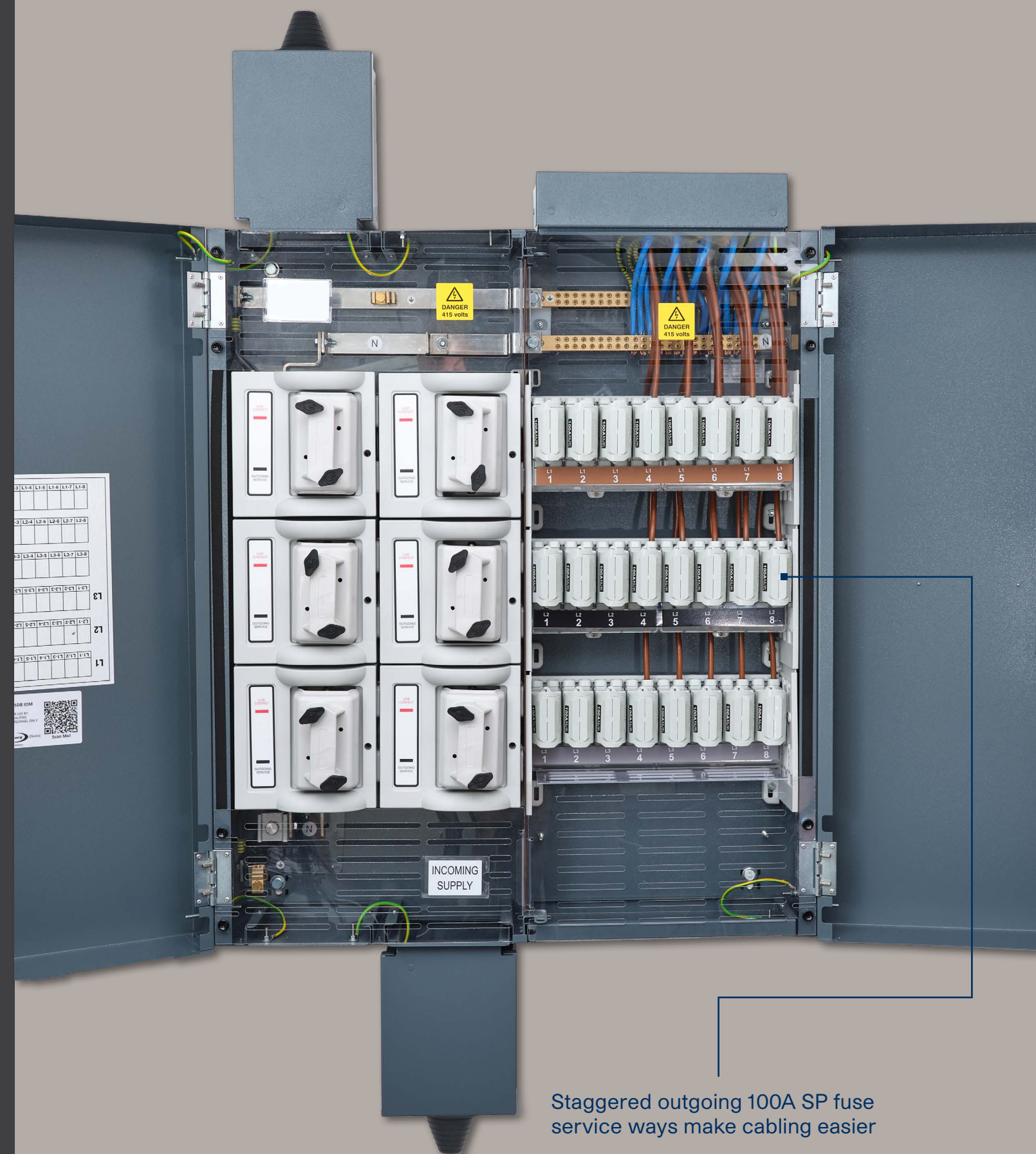
- The revised MSDB 2.0 builds upon the reputation of the original MSDB range, which was introduced over 15 years ago.
- Rationalisation of the vertical J-type cabinets into a single design.
- All cabinets now emanate from a common blueprint, enhancing consistency and ease of manufacturing.
- Colour coded outgoing fuse ways for L1, L2 & L3





# DNA Preservation

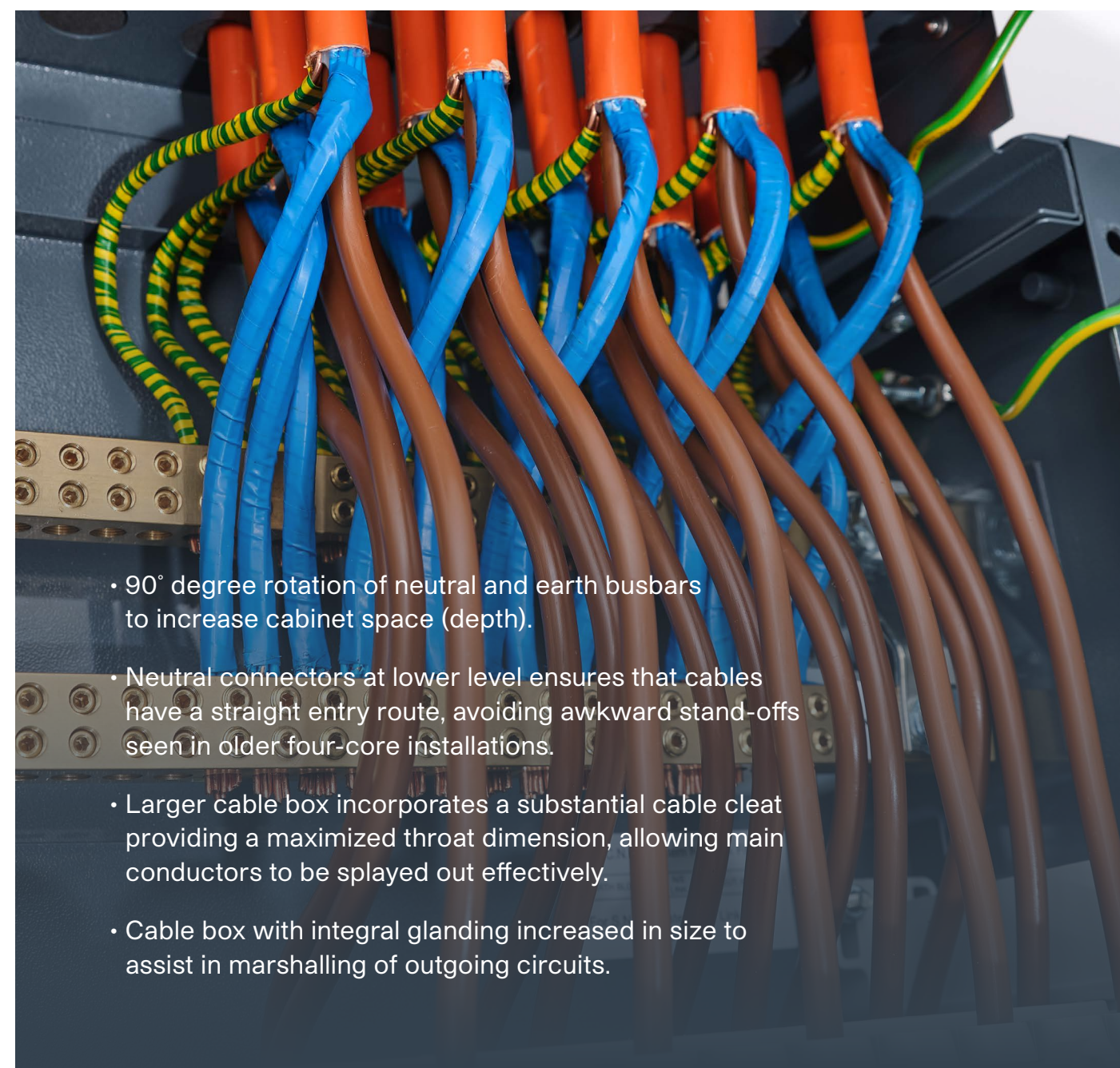
- Fuse ways and cable ways remain unchanged
- Space around fuse way softens bends in the conductors, ultimately enhancing product safety
- Interchangeable Cable Accessories
  - Unified range to support the entire MSDB 2.0 range
  - Incoming and outgoing cable marshalling and glanding boxes available.
  - Removes complexity of spare stock-holding



Staggered outgoing 100A SP fuse  
service ways make cabling easier



# Cabling Enhancements for Installers



- 90° degree rotation of neutral and earth busbars to increase cabinet space (depth).
- Neutral connectors at lower level ensures that cables have a straight entry route, avoiding awkward stand-offs seen in older four-core installations.
- Larger cable box incorporates a substantial cable cleat providing a maximized throat dimension, allowing main conductors to be splayed out effectively.
- Cable box with integral glanding increased in size to assist in marshalling of outgoing circuits.



Neutral and Earth bars are now flat against the back of the cabinet promoting more cabling space



The top-hat extension box promotes easier cabling

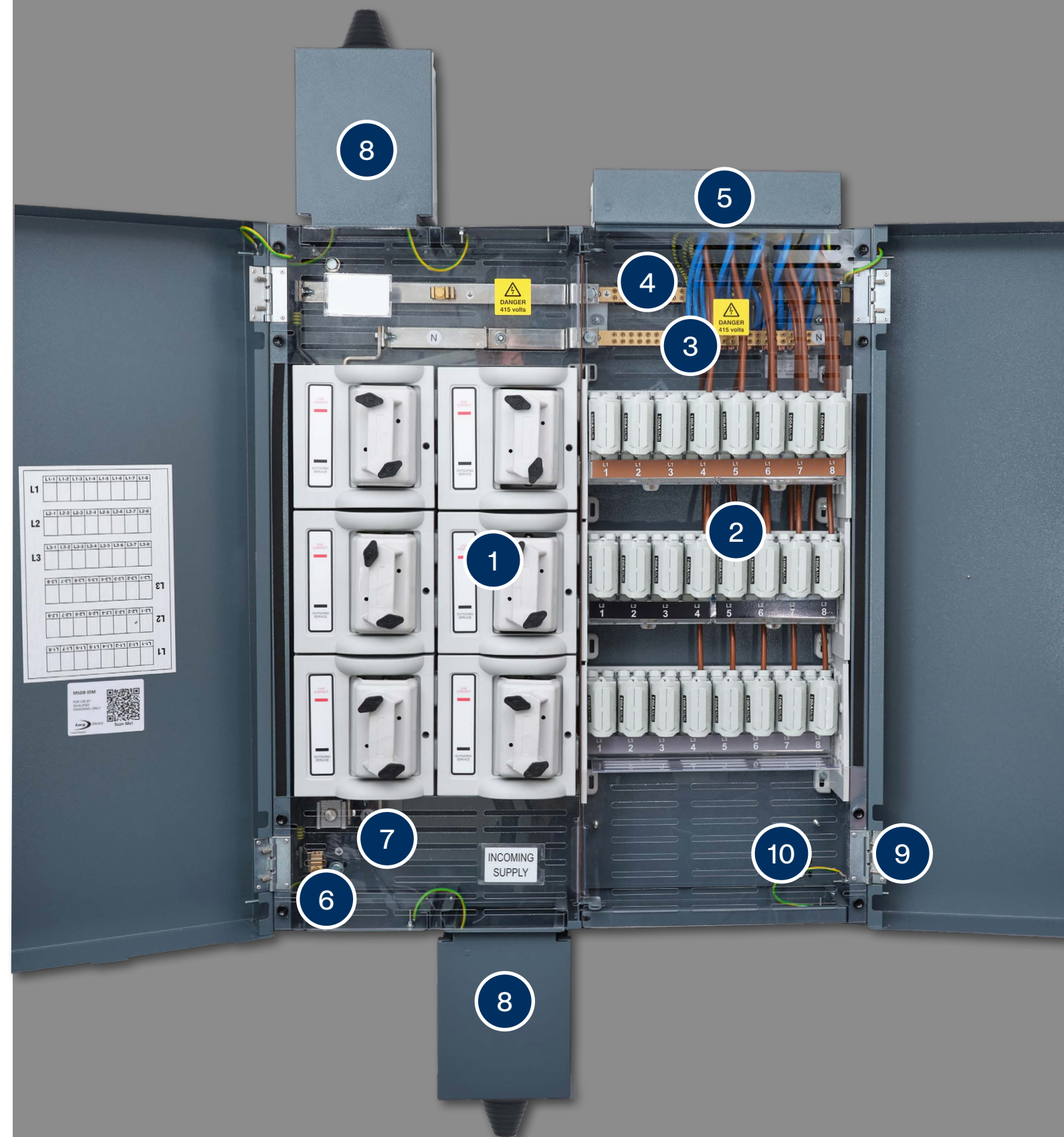


The main cable box features an integral cleat firmly securing incoming or outgoing main cables



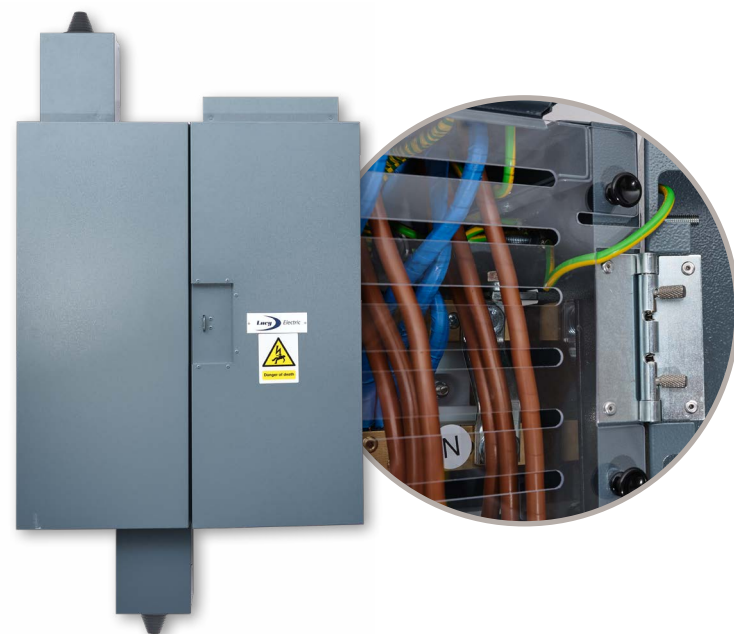
# Characteristics

- 1 Main service fuses ('J' Type)
- 2 Multi-tiered outgoing fuse ways (Cartridge Type)
- 3 Neutral terminal bar (for outgoing circuits)
- 4 Earth terminal bar (for outgoing circuits)
- 5 Top-hat extension
- 6 Earth termination
- 7 Neutral termination
- 8 Main cable box (flat plate also available)
- 9 Quick release hinges x 4
- 10 Fixing points at each corner





# Technical Data



## Internal Equipment

- Operator protection IP2XB (all screens, shrouds and fuse handles in place)
- Equipped with BS 7657 100A rated SP outgoing ways (BS 88 30 × 57mm cylindrical cartridge fuses, not supplied)
- Serrated cable bores in 100A outgoing ways accept up to 35mm<sup>2</sup> solid or stranded conductors
- Neutral and Earth bars fitted with twin hexagon drive M8 cable pinching screws per terminal
- Terminals will accept solid aluminium or stranded copper conductors, Waveform or SWA type cables (additional kit required for each SWA termination)
- BS 88 J type slotted tag fuses with 92mm fixing centres fitted on incoming phases
- Fully rated neutral and earth bars

## The revised MSDB 2.0 combines:

- Oven-cured epoxy powder coated finish with a minimum thickness of 50 microns
- Standard colour admiralty grey to BS 381c, shade no 632
- Two stage pad-lockable double doors enabling independent access to outgoing 100A fuse ways or Distribution Network Operator (DNO) access to incoming J type fuses
- Quick release spring loaded hinge pins permit rapid door removal for improved access
- Overall 250mm depth enables installation in confined spaces
- Two external M12 earth studs

## Construction

- Enclosure: epoxy painted zinc coated mild steel 1.2mm thick
- Busbars: electro tin plated copper
- Terminal blocks: brass
- Terminal shields: transparent polycarbonate
- J type fuse holders: glass reinforced polybutylene terephthalate
- J type fuse bases: glass reinforced polyamide 6



# General

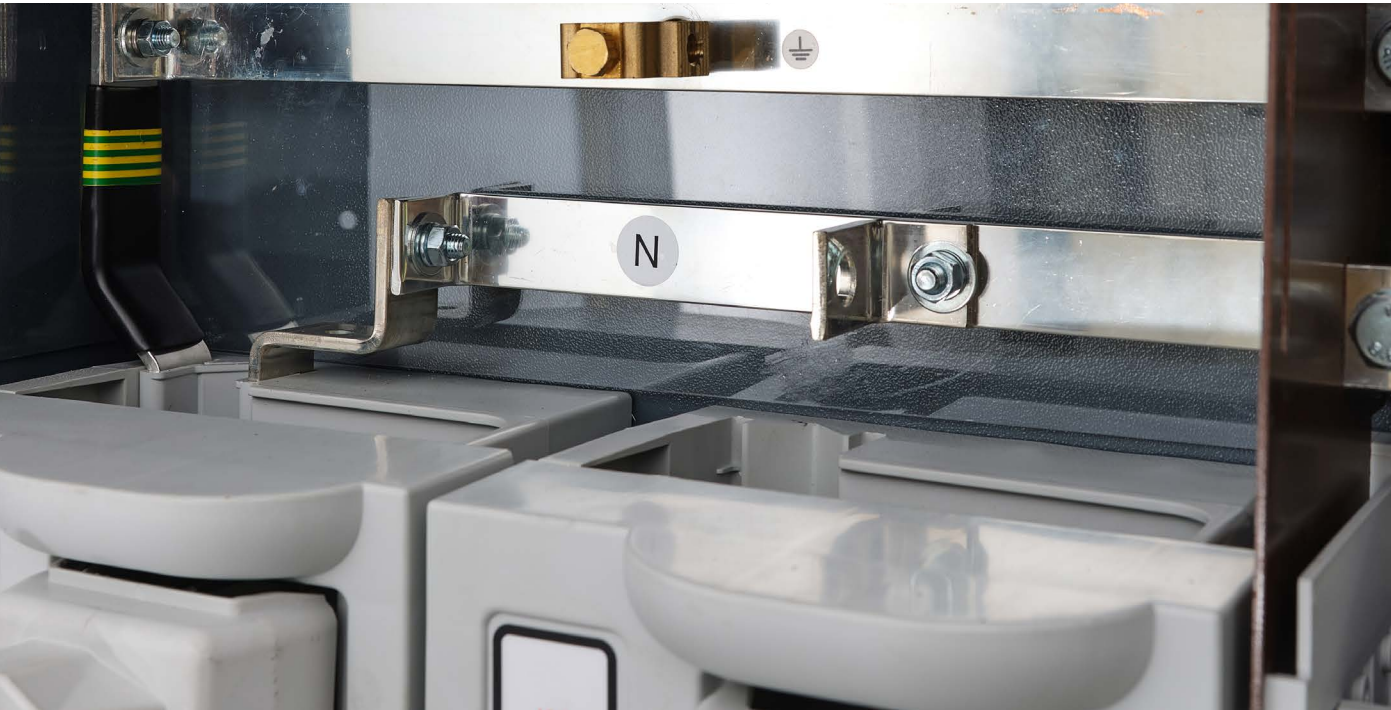
Incoming Supply	500A	
Busbar Rating	500A	
Supply Voltage	230/400V a.c.	
Frequency	50Hz	
Rated Insulation Voltage	690V a.c.	
Rated Impulse Withstand Voltage	6kV	
Rated Conditional Short Circuit (Icc)	35.5kA	
Incoming Fuse Handle rating	18kA for 1 second	
Operator Protection	Doors open, all shrouds in place	IPXXB
	Doors closed, operational condition	IP3X
Torque for Neutral and Earth Bar M8 Pinching Screws	3.5Nm	
Torque for Brass Earth Connector Body to Busbar	28Nm	
Torque for the ‘U’ link M12 bolt in 2 J cabinets	45Nm	
Incoming cable connectors	SICAME UT4 type shear off head with capacity of 95mm² to 300mm²	
Incoming Neutral earth connector	TYCO BTCNE 70mm² to 120mm²	
Incoming main cable type	3C or 4C Aluminium Waveform cable up to 300mm² csa	
Outgoing service cable	Aluminium or copper concentric or split concentric service cable, 25mm² or 35mm²	

# Applicable Standards

The Lucy MSDB 2.0 Vertical type complies with thefollowing standards:

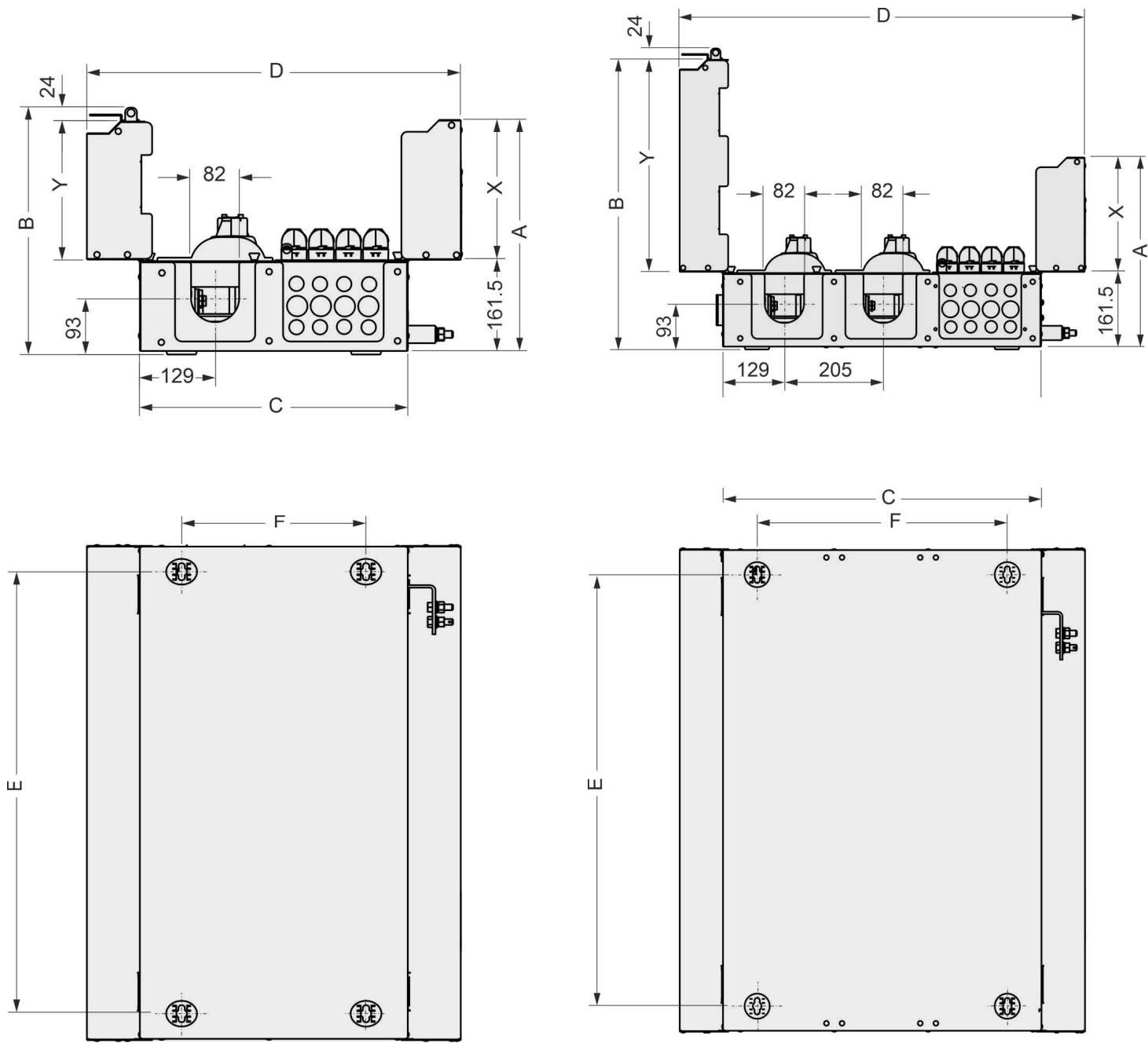
ENA Technical Specification	ENA TS 37-4 2021
Third party tested to	BS EN 61439-5
IP Rating	BS EN 60529
Incoming Fuses	BS88-2 J type
Outgoing Fuse Ways	BS7657:2022

Third party tests





# Dimensions & Weights



Dimensions in mm									Fixing Centres	Gross Weight (kg)	Stripped Down Weight (kg)
Configuration	X	Y	C	D	A	B	E	F			
12 - way 1J	239	235	457	639	401	397	900	314	42	25.6	
12 - way 2J	239	442	664	846	401	604	900	521	56	34.4	
15 - way 1J	285	235	503	685	447	397	900	361	44	26.5	
15 -way 2J	285	442	710	893	447	604	900	568	58	35	
18 - way 1J	331	235	550	732	493	397	900	407	46	27	
18 - way 2J	331	442	756	938	493	604	900	614	62	35.8	
24 - way 1J	424	235	642	825	586	397	900	500	53	31.2	
24 - way 2J	424	442	849	1032	586	604	900	707	69	40	
30 - way 1J	517	235	735	918	679	397	900	593	60	36.3	
30 - way 2J	517	442	942	1125	679	604	900	800	76	46	
36 - way 1J	610	235	828	1010	772	397	900	686	66	36	
36 - way 2J	610	442	1035	1217	772	604	900	893	82	44.8	
45 - way 1J	749	235	967	1150	911	397	900	825	74	48.3	

\*Doors, fuse handles, connectors, miscellaneous fixings, shrouds and covers have been removed as detailed in Section '6.1.1 Procedure to strip down the Lucy Electric MSDB 2.0 (before mounting to reduce the weight)' on page 14.

MSDB 2.0 available in right-hand and left-hand configurations.



## Details

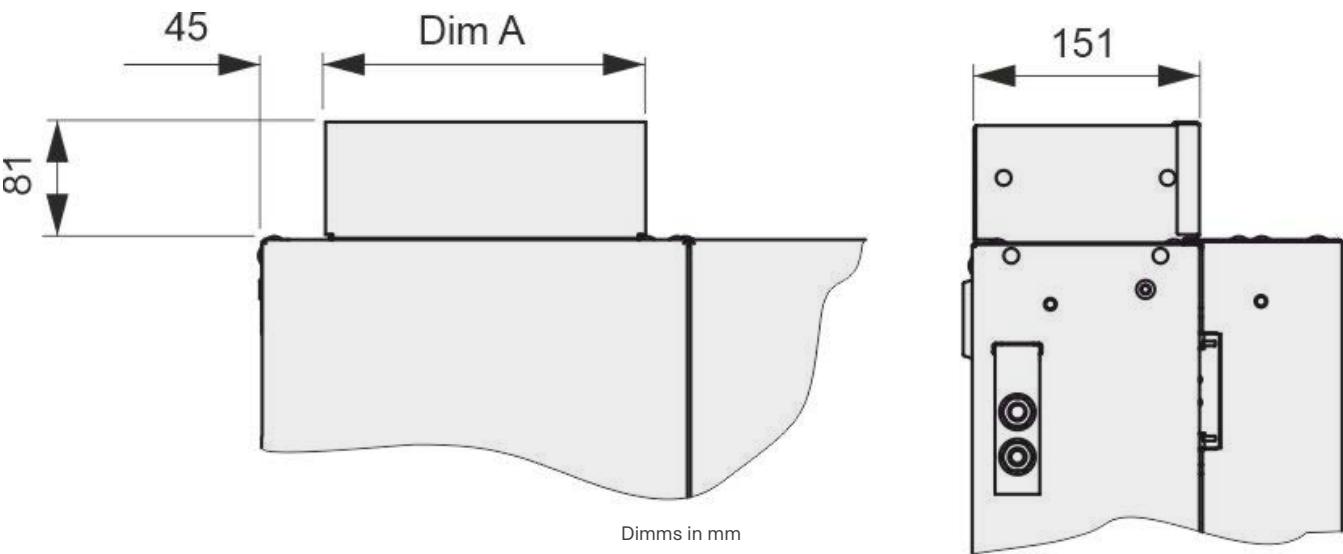
- All cabinets are the same height (1m)
- All cabinets are the same overall depth (250mm)
- All cabinets are steel with double, padlockable, doors
- All doors are the same depth (90mm)
- Cable box dimensions are identical throughout the range enabling interchangeability
- Cabinet vertical fixing centres are always 900mm apart. Differing widths are indicated on the tape measure inside the cabinet

## Weights

- Two weights are given:
- The as delivered gross weight
- The stripped-down weight which means all doors, gland plates, fuse handles, miscellaneous fixings, shrouds and covers removed ready for installation.

Note: To aid manual handling, a set of reusable lifting handles is available at extra cost under part number THM0083584. They are compatible with all Lucy vertical MSDB 2.0s, SMDBs and CTCOs.

## Service-way cable glanding box accessory



N° of ways	Dimensions A (mm)
12	168
15	215
18	261
24	354
30	446
36	539
45	678





100A B.S. 1361  
TYPE II b

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100A B.S. 1361  
TYPE II b

L1  
1

L1  
2

L1  
3

L1  
4

L1  
5

L1  
6

L1  
7

L1  
8



## Standards

ENA TS 37-4 2021

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BS EN 60529

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BS88-2 J type

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BS7657:2002

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BS EN 61439-1

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BS EN 61439-2

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BS EN 61439-5

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