



MAXBAR+

Complementary Technical Guide



clipsal.com/MAX9

Life Is On | **Schneider**
Electric

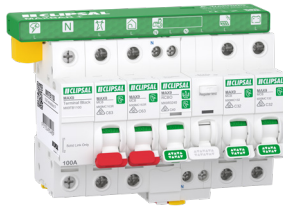


General Contents

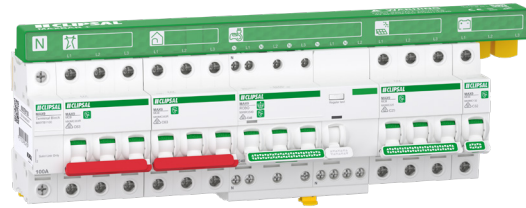
MAXBAR+

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MAXBAR+ Introduction



MAXBAR+ kit for single phase applications



MAXBAR+ kit for 3-phase applications

Ensuring electrical safety in the age of solar installations and electrification is a new challenge.

As the world embraces a greener future, solar installations are gaining popularity, allowing homeowners to harness clean energy. Despite advancements making installations safer, it's crucial for electricians and homeowners to adapt to mass electrification for ensuring home electrical safety.

Here are the reasons why:

- **Growing electrification:** The rapid growth of home electrification, fueled by the rising use of electric vehicles, heat pumps, and energy-intensive appliances in the transition from fossil fuels, places a heavier load on electrical systems. This demands careful consideration to avoid overload and related risks..
- **Existing switchboard challenges:** Older homes may have electrical switchboards unequipped for the added load from solar production and home electrification, potentially causing overheating, damage, and fire hazards. Upgrading switchboards or using load management strategies may be essential to reduce these risks.
- **Multiple energy sources:** As solar and battery systems become more popular in Australian homes, electricians now need to assess the overall electrical system capacity and ensure circuit protection can handle extreme demand scenarios due to the integration of multiple energy sources.

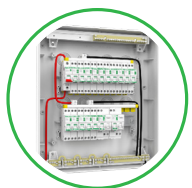
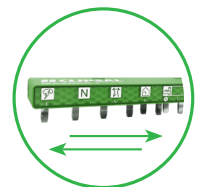
Features and Benefits

MAX Protection: MAXBAR+ busbar helps protect switchboards against overloading from bi-directional and multiple energy sources whilst also preventing potential hazards and hot joints associated from large feeding cables required for solar, battery, and EV charging.



MAX Future-ready: MAXBAR+ ensures dedicated space in switchboard for solar, battery, and EV charging.

MAX Speed: Faster installation by using a busbar instead of traditional cabling method.



MAX Professionalism: Busbars enable installations to be neat and tidy by reducing feeding cables and providing more professional looking switchboards.

MAX Ease: Easy to understand pictograms help to ensure correct placement of protection devices.



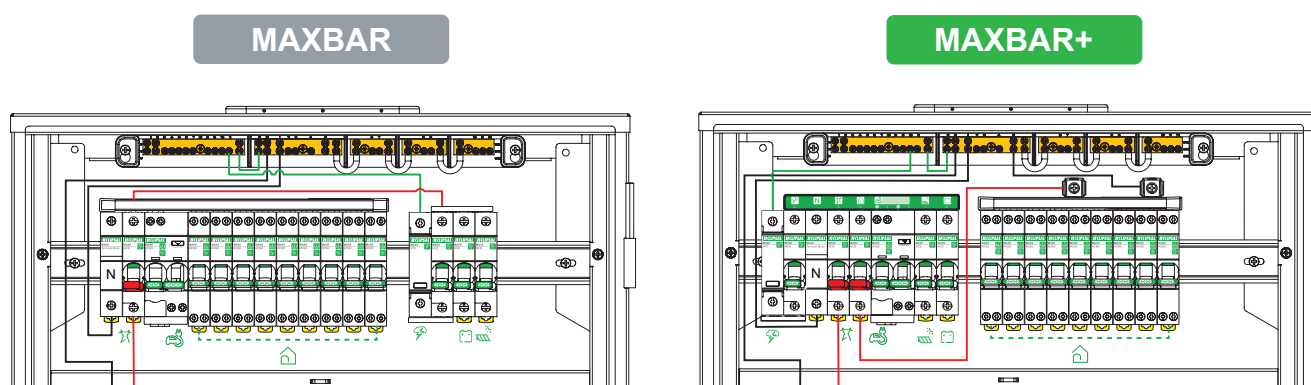
MAXBAR+ Technical Data

Main characteristics	
Rated current (for busbar)	100 A at 40 °C
Rated voltage	240/415 V
Rated insulation voltage	500 V

MAXBAR+ Kit Breakdown

Kit reference	Description	Commercial reference	Component short description	Quantity	Application
MX9K108PP	MAXBAR+ kit 1P	–	MAXBAR+ Busbar 1P 8 Mod	1	Distribution of energy sources
		MX9TB1100	MAX9 NTB	1	Neutral connection
		MX9MC163R	MAX9 1P MCB 63A Red Toggle	2	Grid supply and home circuits
		MX9R3240	MAX9 2 Mod RCBO 40A	1	EV charging circuit
		MX9MC132	MAX9 1P MCB 32A	2	Solar and battery circuits
		–	Busbar tooth cover	2	To be used when SPD or battery MCB not required.
		–	Sticker label sheet	1	To be used to identify MAXBAR+ circuits on enclosure cover. Option to replace battery circuit with either sub board or second solar circuit
MX9K318PP	MAXBAR+ kit 3P	–	MAXBAR+ 3P 18 Mod	1	Distribution of energy sources
		MX9TB1100	MAX9 NTB	1	Neutral connection
		MX9MC363R	MAX9 3P MCB 63A Red Toggle	2	Grid supply and home circuits
		MX9R3540	MAX9 5 Mod RCBO 40A	1	EV charging circuit
		MX9MC325	MAX9 3P MCB 25A	1	Solar circuit
		MX9MC132	MAX9 1P MCB 32A	1	Battery circuit
		–	Busbar tooth cover	3	To be used when battery MCB not required
		–	Sticker label sheet	1	To be used to identify MAXBAR+ circuits on enclosure cover. Option to replace battery circuit with either sub board or second solar circuit

MAXBAR vs MAXBAR+



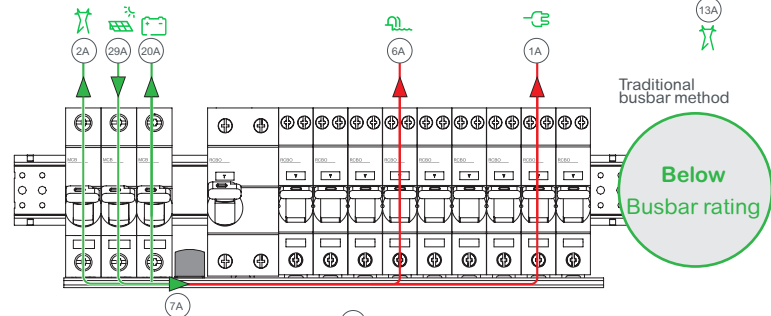
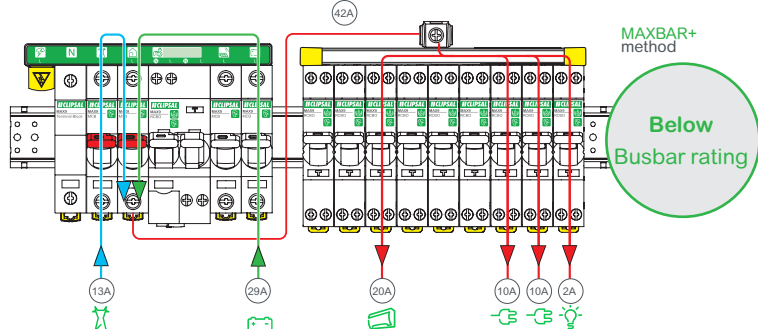
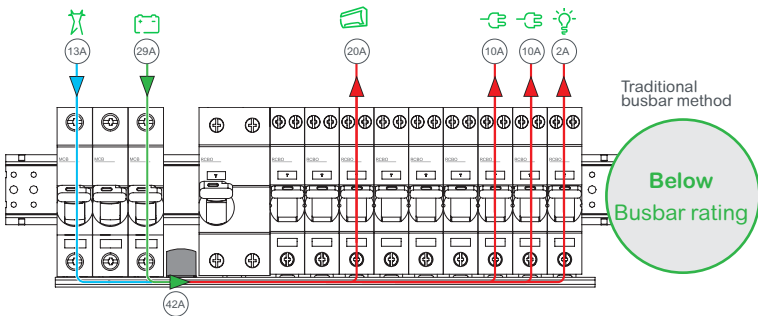
How MAXBAR+ Works

With multiple energy sources entering a switchboard in electrified homes, current flow inside the board will vary depending on time of day.



8 AM

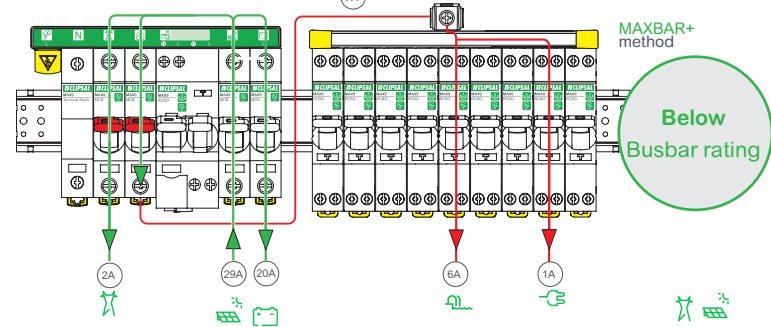
From using battery power in the morning to reduce peak energy tariffs whilst the household gets ready for the day*





11 AM

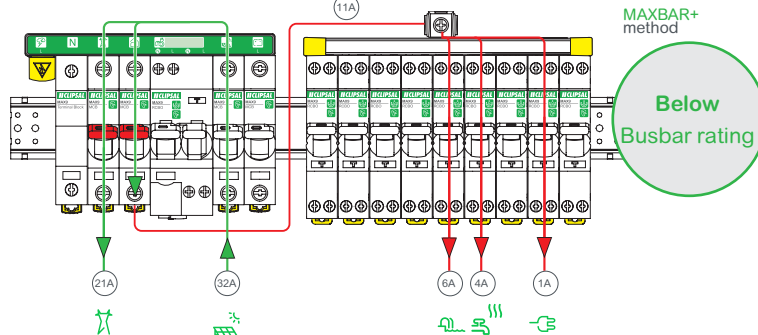
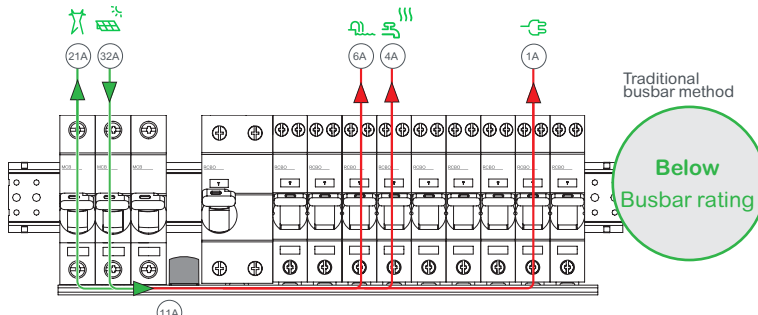
To recharge the battery & powering appliances like pool pumps & fridges with solar production in the mid-morning*

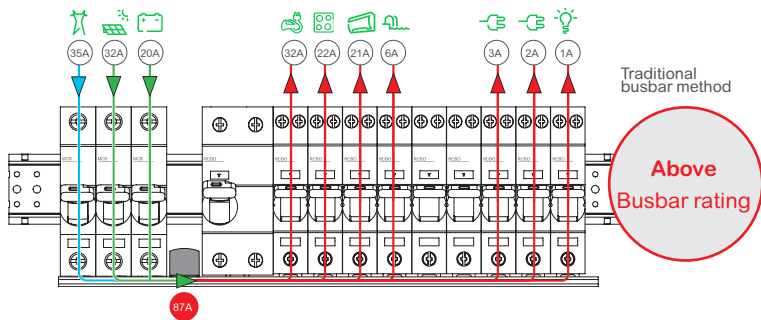




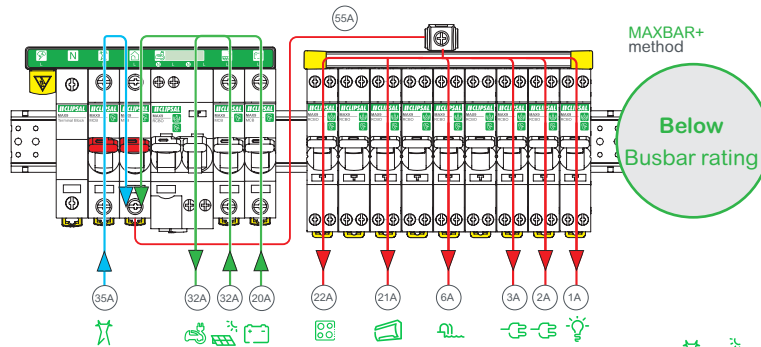
1 PM

to export excess power back to the grid in the afternooday*

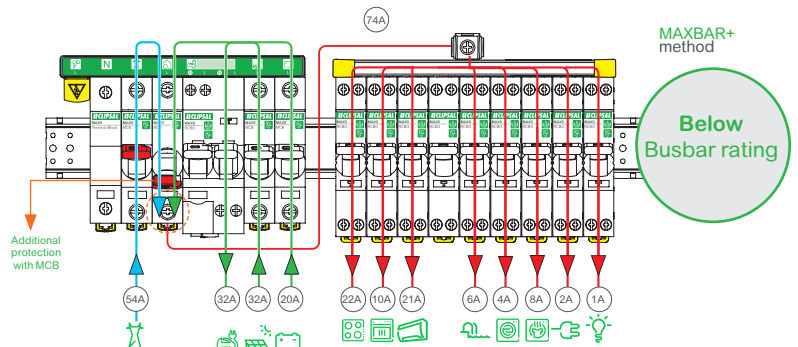
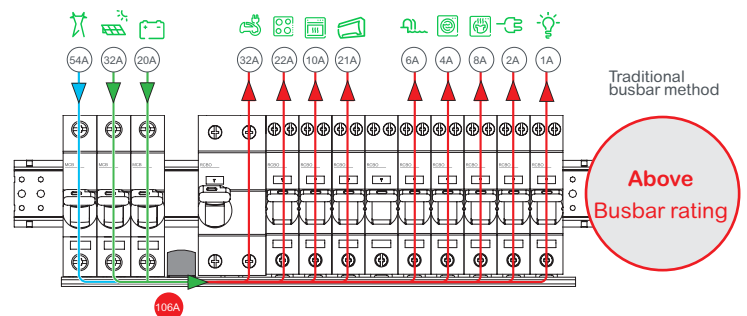




As power demand rises in the household, MAXBAR+ steps up. It continues to supply the home with safely distributed power, preventing overload that standard busbars can be exposed to.*



And at extreme levels of power demand, MAXBAR+ provides added protection with an addition of miniature circuit breaker for general loads.*



The pictograms on the front of MAXBAR+ are crucial for correctly placing circuits along the busbar. This ensures that grid supply and alternate energy sources are positioned at opposite ends of the busbar, while the home's general loads are placed in the middle. By doing so, MAXBAR+ helps to keep current flow within busbar rating, even during peak power demands.

MAXBAR+, ensuring residential switchboards are ready for the new energy transition.

Pictogram legend

Grid supply	Solar supply	Battery supply	Electric Vehicle charging	Stove	Oven	Air conditioning	Pool pump	Washing machine	Dryer	General power outlets	Lighting

Power flow legend

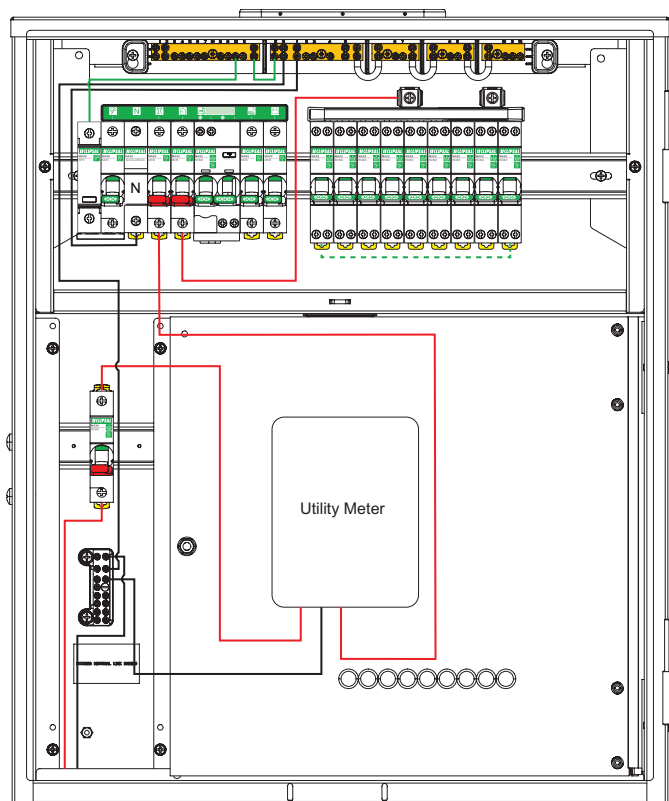
	Power consumed by loads
	Power supplied by grid
	Power supplied by renewable sources

* Current flow scenarios for indicative purposes only

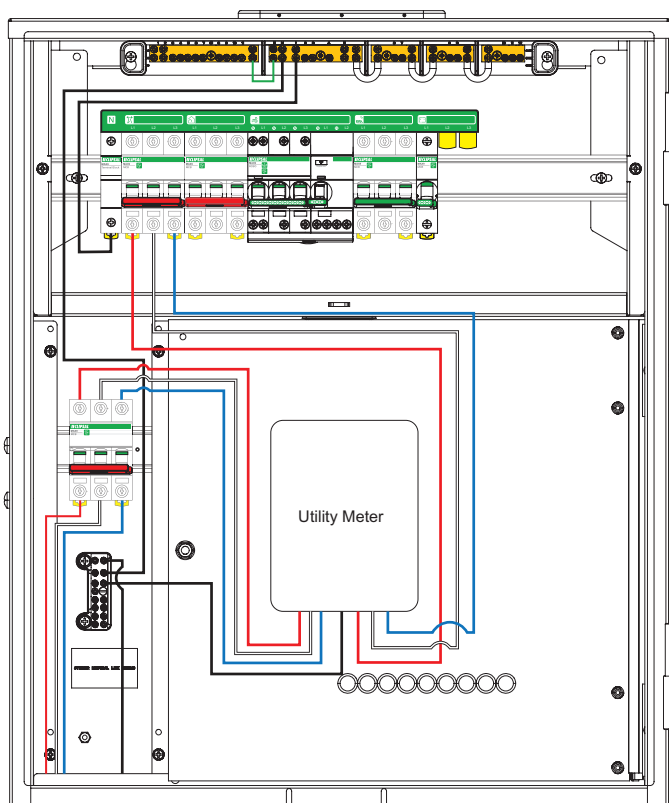
Application illustrations

MAXBAR+ in Meterbox

MAXBAR+ 1P



MAXBAR+ 3P

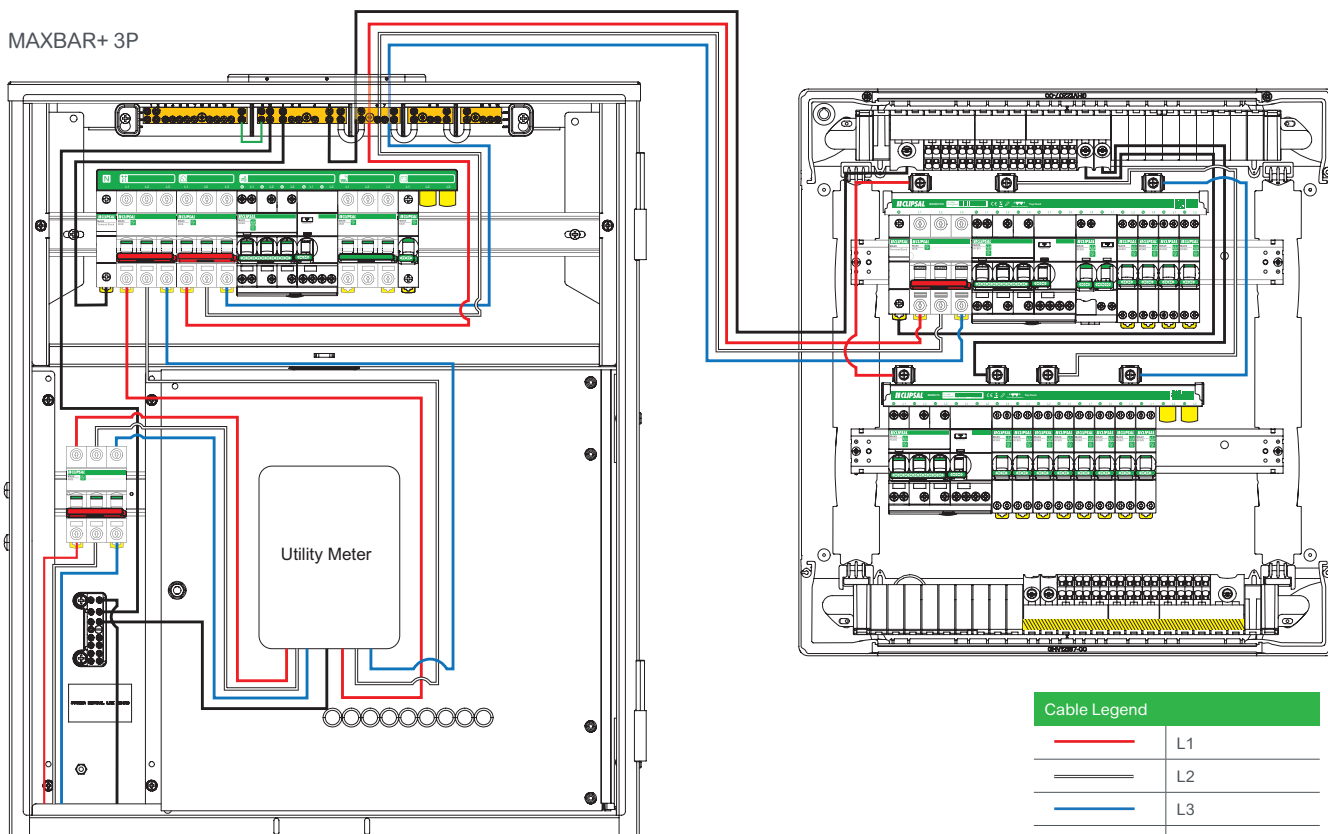
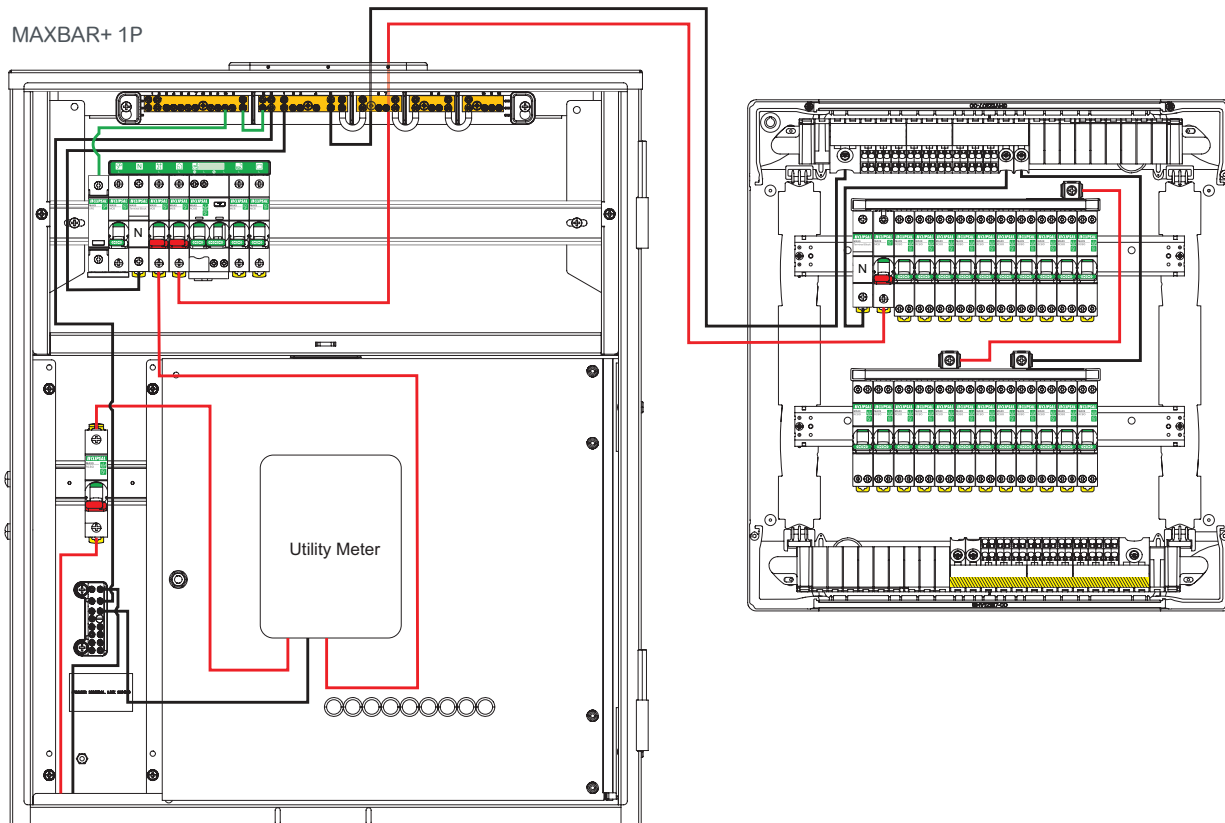


Cable Legend	
—	L1
—	L2
—	L3
—	Neutral
—	Earth/MEN link

Notes:

- Wiring diagram used for illustration purposes only. Refer to AS/NZS 3000 "Wiring Rules".
- 230DRAS1MI meter box shown for illustration purposes.
- MAX9 Type 3 Enclosure (MX9E3****) shown for illustration purposes due to being the most suitable enclosure for MAXBAR+ systems.

MAXBAR+ in Meterbox and Sub Board

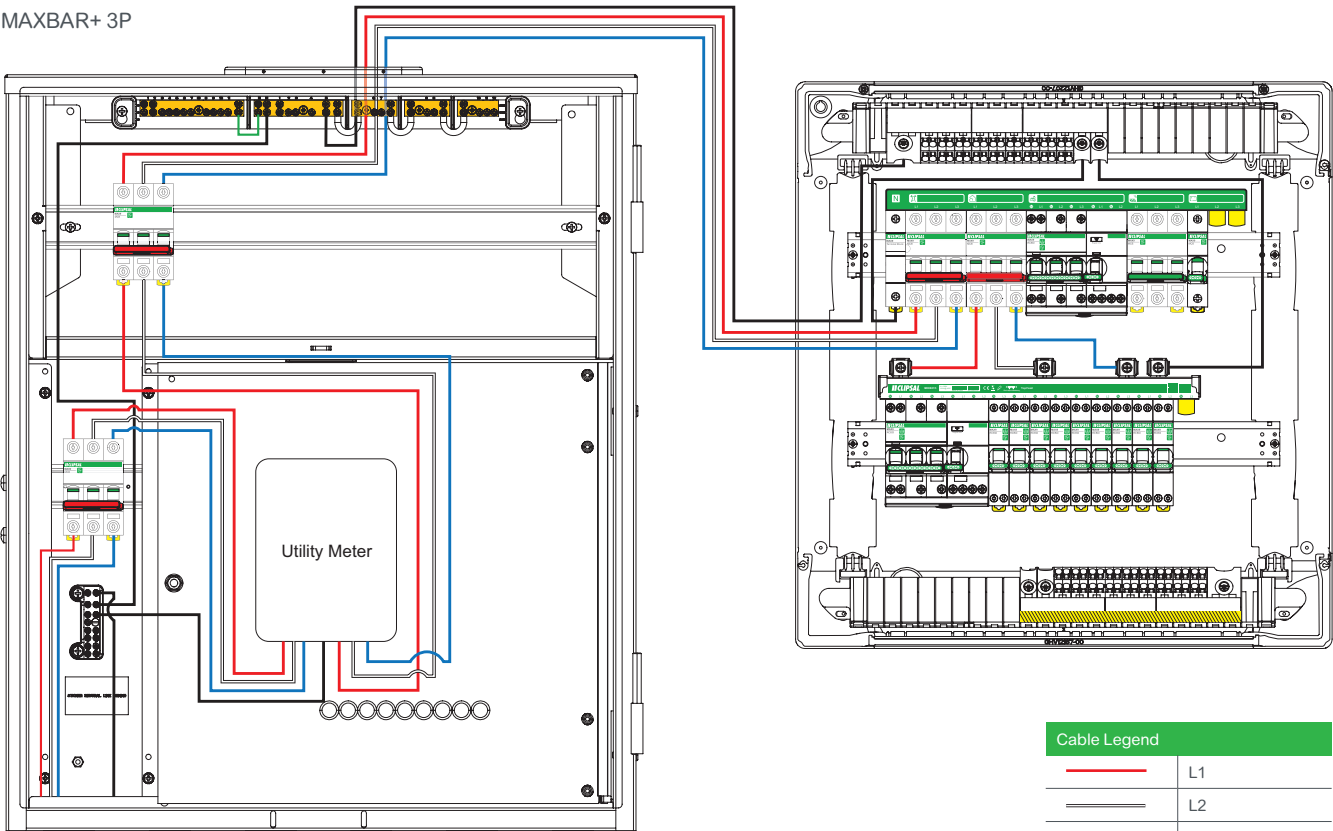
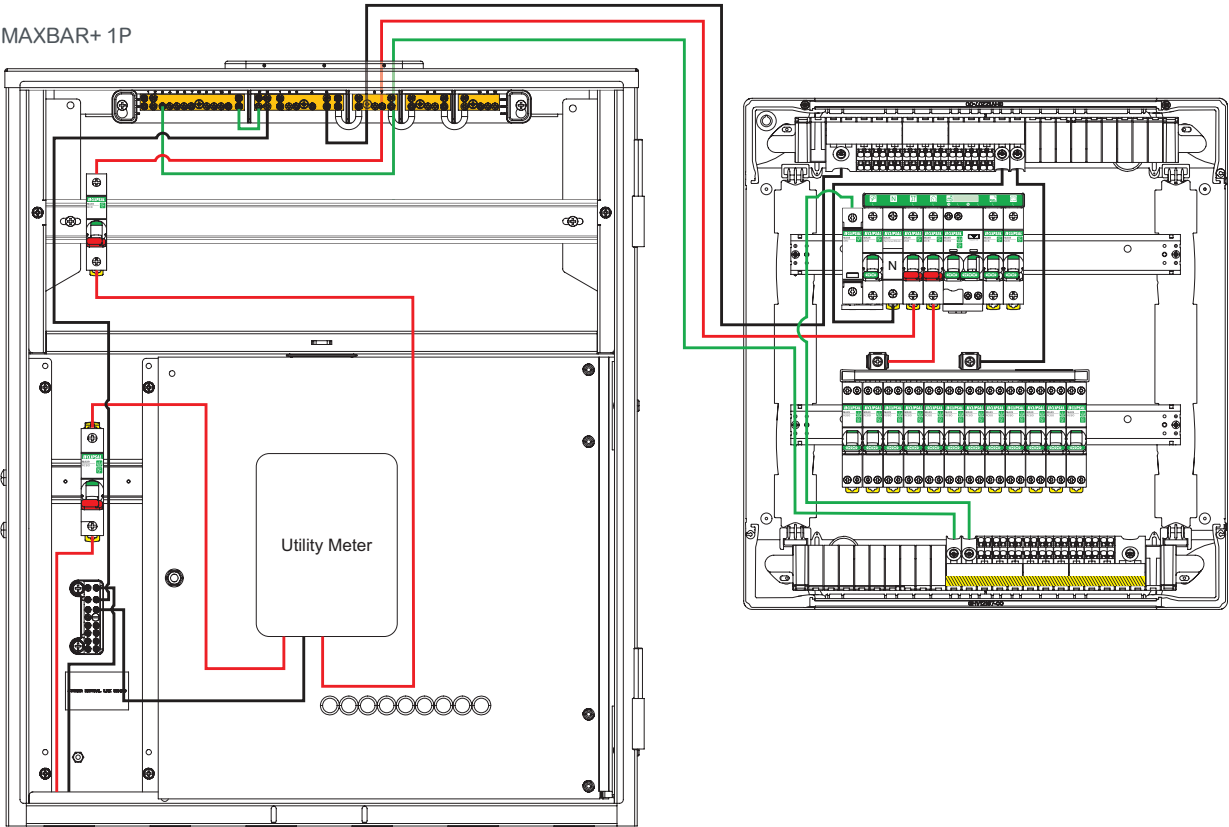


Cable Legend	
—	L1
—	L2
—	L3
—	Neutral
—	Earth/MEN link

Notes:

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MAXBAR+ in Sub Board



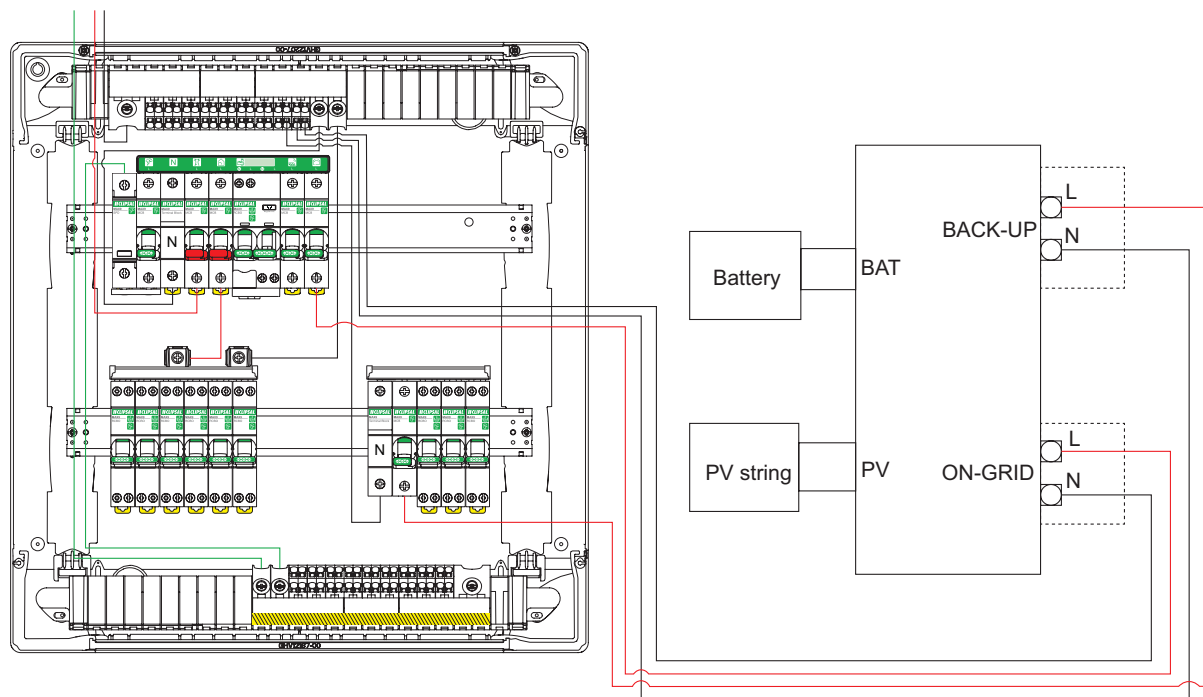
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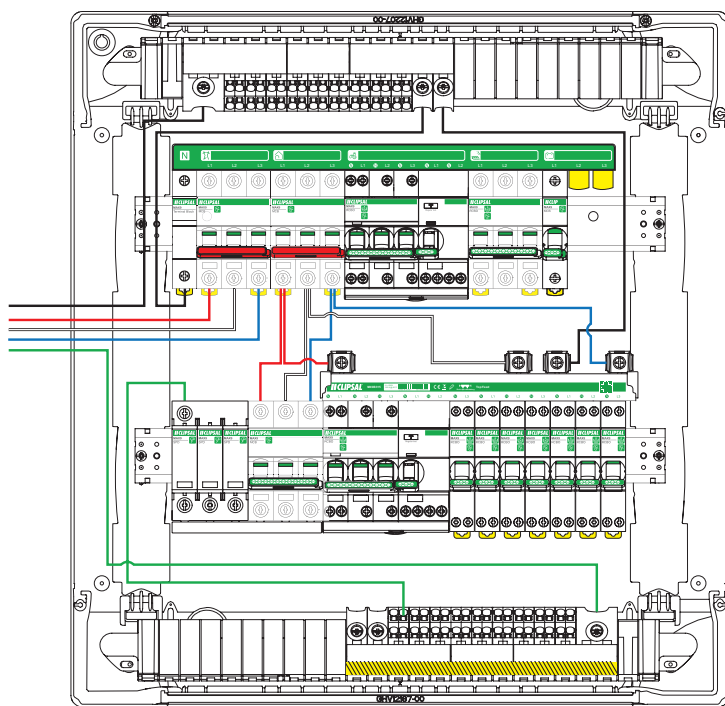
Cable Legend	
—	L1
—	L2
—	L3
—	Neutral
—	Earth/MEN link

MAXBAR+ with Battery Storage Systems

Hybrid and Battery Inverter with Essential Backup Port



3P MAXBAR+ with Surge Protection



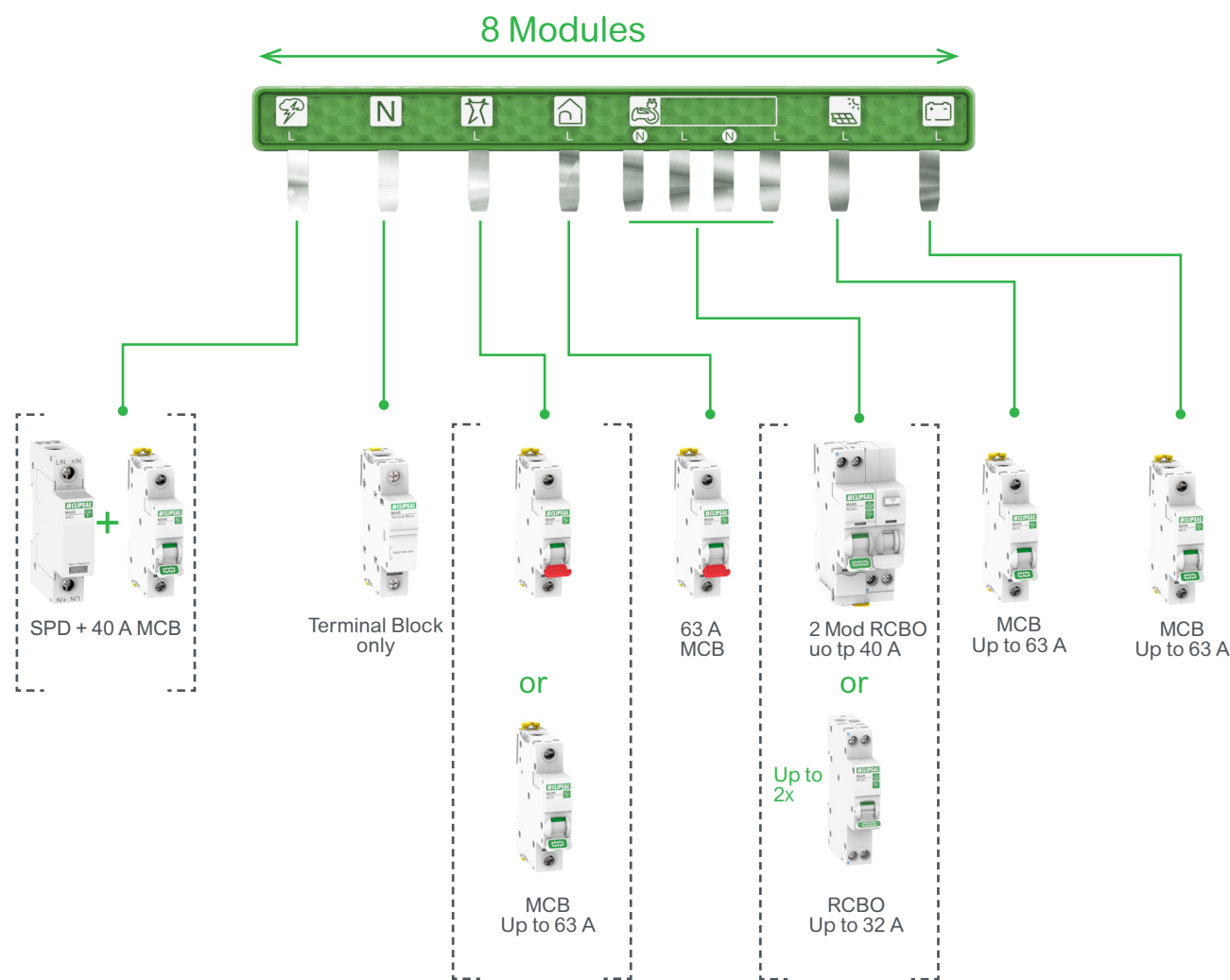
Cable Legend

—	L1
—	L2
—	L3
—	Neutral
—	Earth/MEN link

Notes:

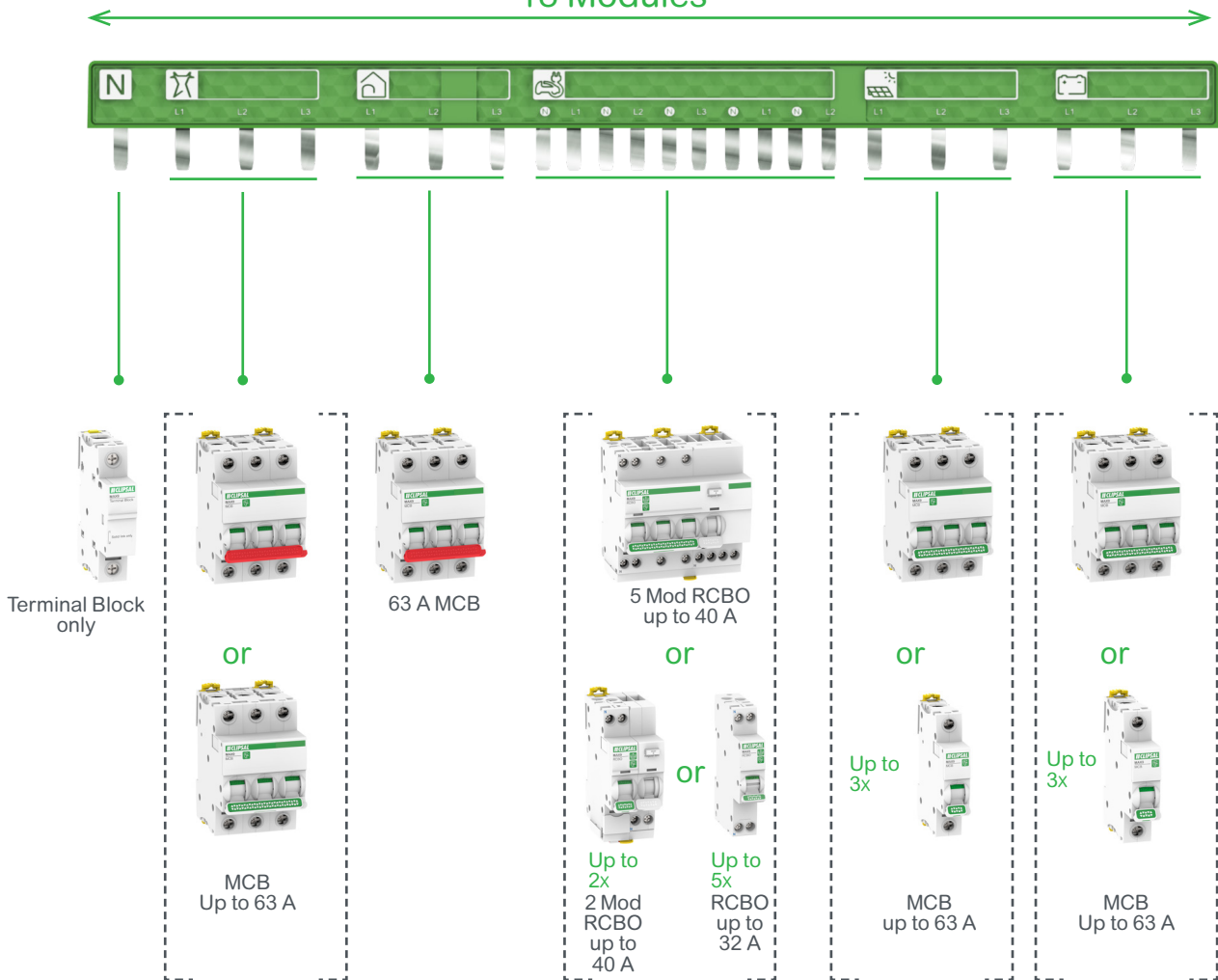
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Device Compatibility



Surge Protection	Neutral Connection	Grid MCB	House MCB	Electric Vehicle 2 Mod RCBO	Solar MCB	Battery MCB
MX9SP140	MX9TB1100	MX9MC132	MX9MC163R	MX9R3216	MX9MC120	MX9MC120
+		MX9MC140		MX9R3220	MX9MC125	MX9MC125
MX9MC140		MX9MC150		MX9R3232	MX9MC132	MX9MC132
		MX9MC163		MX9R3240	MX9MC140	MX9MC140
		MX9MC163R		Or	MX9MC150	MX9MC150
		MX9MS1100			MX9MC163	MX9MC163
				1 Mod RCBO (Up to 2x)		
				MX9R3116		
				MX9R3120		
				MX9R3125		
				MX9R3132		

18 Modules



Neutral Connection	Grid MCB	House MCB	Electric Vehicle 5 Mod RCBO	Solar MCB	Battery MCB
MX9TB1100	MX9MC332	MX9MC363R	MX9R3516	MX9MC320	MX9MC320
	MX9MC340		MX9R3520	MX9MC325	MX9MC325
	MX9MC350		MX9R3525	MX9MC332	MX9MC332
	MX9MC363		MX9R3532	MX9MC340	MX9MC340
	MX9MC363R		MX9R3540	MX9MC350	MX9MC350
	MX9MS3100			MX9MC363	MX9MC363

Or

Or

Or

2 Mod RCBO (Up to 2x)	1 Mod RCBO (Up to 5x)	1 Mod RCBO (Up to 3x)	1 Mod RCBO (Up to 3x)
MX9R3216	Or	MX9R3116	MX9MC120
MX9R3220		MX9R3120	MX9MC125
MX9R3225		MX9R3125	MX9MC132
MX9R3232		MX9R3132	MX9MC140
MX9R3240			MX9MC150
			MX9MC163

Enclosure Compatibility

		ResiMAX 125mm space between din rails					MAX9 Type 1 135mm space between din rails					MAX9 Type 2 135mm space between din rails					MAX9 Type 3 150mm space between din rails	MAX9 Weatherproof 135mm space between din rails	
		RMXE108*	RMXE112*	RMXE118*	RMXE212*	RMXE312*	MX9E1106S	MX9E1111*	MX9E1117*	MX9E1212S	MX9E1312S	MX9E2115*	MX9E2215*	MX9E2315*	MX9E2415*	MX9E3218*	MX9E3318*	MX9EW212S	MX9EW312S
Single Phase Applications	Without PowerTag	✓	✓	✓	x	x	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	With PowerTag	✓	✓	✓	x	x	x	✓	✓	x	x	x	x	x	x	✓	✓	✓	✓
Three Phase Applications	Without PowerTag	x	x	✓	x	x	x	x	x	x	x	x	x	x	x	✓	✓	x	x
	With PowerTag	x	x	✓	x	x	x	x	x	x	x	x	x	x	x	✓	✓	x	x

FAQ's

■ How is MAXBAR+ different to other busbars?

MAXBAR+ is specifically designed to help protect switchboards against overloading from multiple energy sources including grid, solar, battery, and in the future EV to grid.

MAXBAR+ groups all energy sources on to one busbar then distributes outgoing energy via the dedicated home circuit.

MAXBAR+ comes with predefined positions for circuit protection devices to ensure that current flowing on the busbar does not accumulate from multiple energy sources and therefore protect against overloading.

■ Can solar and battery MCB's from New Energy Protection kits be replaced for different current ratings?

Yes, solar and battery MCB's can be replaced for higher or lower current ratings as long as the potential current flowing from sources to load in any one direction does not exceed 100 A.

■ Can EV charging RCBO be replaced with different current rating?

Yes, EV charging RCBO can be replaced with lower current rating if required.

Clipsal recommends 40 A circuits with appropriately sized cable to avoid any potential nuisance tripping.

■ What is the most suitable enclosure for MAXBAR+?

The most suitable enclosure for MAXBAR+ busbars are Clipsal MAX9 Type 3 plastic enclosures due to 150 mm spacing between din rails.

For comprehensive list of suitable Clipsal enclosures, refer to ["Enclosure Compatibility", page 14](#).

■ Is MAXBAR+ cuttable?

No, MAXBAR+ is specifically designed not to be cut. MAXBAR+ is intended to future-proof switch boards for new energy sources like solar, battery, and EV to grid.

Where space in existing switch boards is limited, Clipsal recommends the addition of a sub board.

■ Is MAXBAR+ bottom feed?

No, MAXBAR+ is designed to be fitted to top side of Clipsal MAX9 circuit protection devices.

■ Can circuit protection devices in New Energy Protection Kits be repositioned on MAXBAR+ busbar?

MAXBAR+ comes with predefined positions for circuit protection devices to ensure that current flowing on the busbar does not accumulate from multiple energy sources and therefore protect against overloading, aided by pictograms.

MAXBAR+ is intended to future-proof switch boards for new energy sources like solar, battery, and EV to grid.

■ How do I connect a hybrid inverter to MAXBAR+?

Where there is a hybrid inverter with DC coupled battery, connect AC circuit to solar position on MAXBAR+.

In this instance, the battery position on MAXBAR+ can be used for either second solar system or sub board.

Please ensure to affix the appropriate spare sticker to MAXBAR+ and enclosure provided in New Energy Protection Kit.

■ How do I connect two solar inverters to MAXBAR+?

Where there are two solar inverters, connect second solar inverter to battery position on MAXBAR+.

Please ensure to affix spare solar sticker to MAXBAR+ and enclosure provided in New Energy Protection Kit.

■ Can I connect a second sub board to MAXBAR+?

Where there is just one inverter, then a second sub board can be connected to battery position on MAXBAR+.

Please ensure to affix spare sub board sticker to MAXBAR+ and enclosure provided in New Energy Protection Kit.

■ Is MAXBAR+ compatible with AC coupled battery systems?

MAXBAR+ is compatible with most AC coupled battery systems currently on the market, however some systems use a separate backup interface or gateway which may have built in metering.

Using MAXBAR+ in these instances could cause issues with the battery systems app as the metering could be bypassed.

■ Can I connect an SPD directly to MAXBAR+?

Clipsal recommends the use of 40 A MCB (MX9SP*40) to ensure the continuity of service in the event of lightning strike or power surge.

For more information about MAX9 and other Clipsal products, contact your local Clipsal and Schneider Electric Partner Business Representative, electrical wholesaler, or visit: clipsal.com/MAX9

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CM910001

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Life Is On

