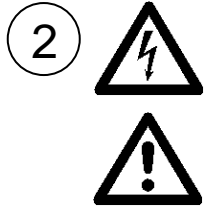




This Quick installation guide provides a brief overview of a basic stand-alone installation of the Mass Combi. However; please review the entire user's manual for parallel connection, additional features and connections and to ensure best performance and years of trouble-free service.

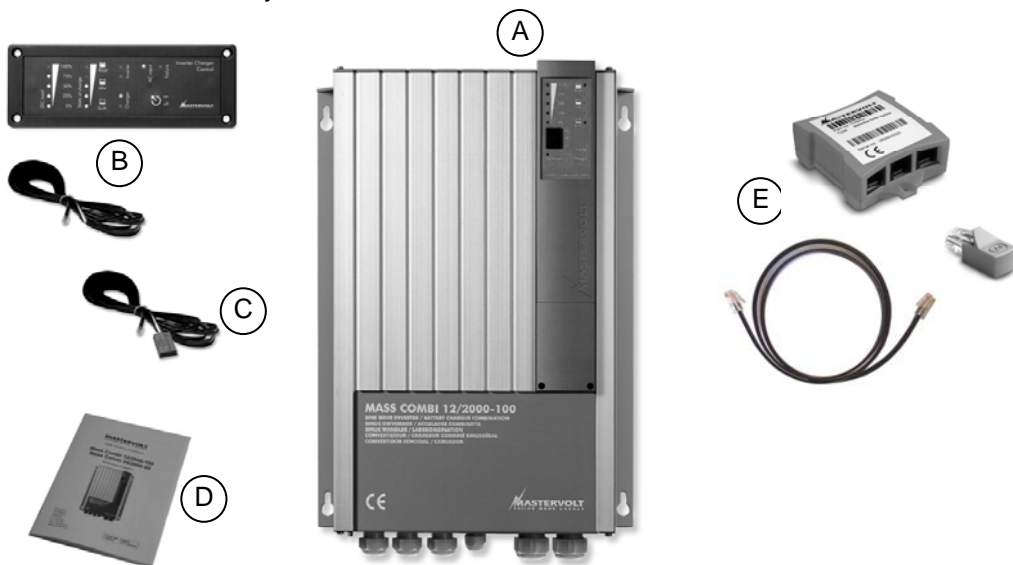


All electrical systems (DC and AC) must be disconnected from any power source during the entire installation! Use isolated tools!

Read safety instructions (chapter 2 of the user's manual).



Check the contents of the delivery

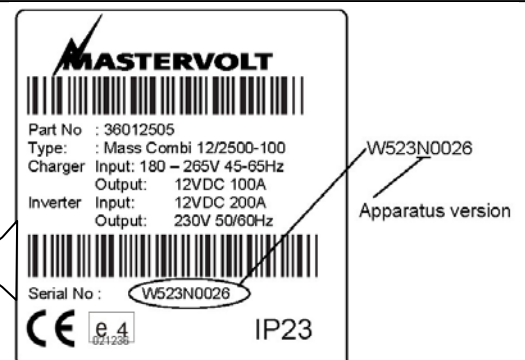


- A. Mass Combi
- B. Inverter Charger Control (ICC) with mounting box and Communication cable (6m)  
(only included with the models 12/2000, 12/4000, 24/2000 and 24/4000)
- C. Battery temperature sensor
- D. User- and installation manuals
- E. MasterBus – Serial interface + serial communication cable (60cm / 24 inch) + MasterBus terminator  
(only included with models 12/2500 and 24/2500)

Contact your supplier if one of the items is missing. Do not use the Mass Combi if it is damaged.

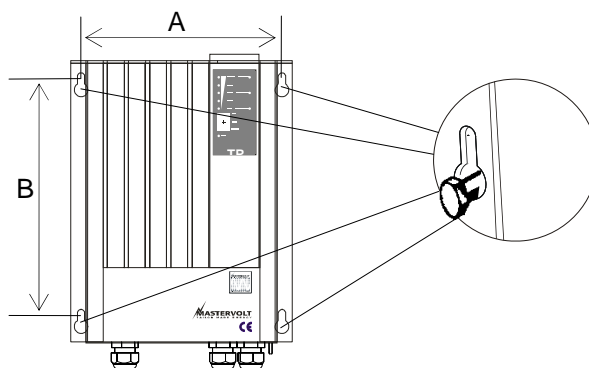


Check from the identification label whether the battery voltage is the same as the DC-input voltage of the Mass Combi (e.g. 12V battery set for a 12V battery voltage). Also be sure that the AC output voltage and output power of the Mass Combi satisfies loading requirements.



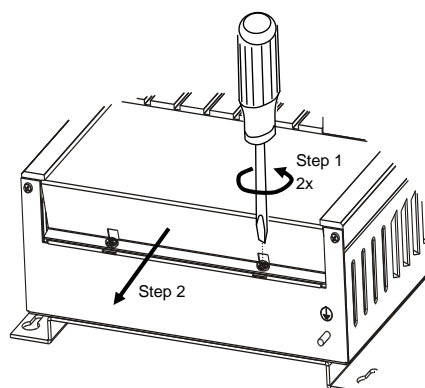
- 5** Use four M6 bolts (not included) to mount the inverter vertically on a solid wall. Allow at least 10 cm / 4 inch space around the apparatus!

	Combi 1200	Combi 2000 Combi 2500 Combi 4000
A	300mm / 11.8 inch	300mm / 11.8 inch
B	316.5mm / 15.5 inch	405.5mm / 16 inch



- 6** Open the connection compartment; Steps:

- 1 Loosen the two Philips screws that secure the front cover plate for two turns;
- 2 Slide the front cover plate from the cabinet.



- 7** Select the appropriate wiring and fuses from the tables below

### AC WIRING AND FUSES

AC-Current	Minimum cross section: in mm <sup>2</sup>
6-12 Amp	1.5 mm <sup>2</sup>
12-20 Amp	2.5 mm <sup>2</sup>
20-32 Amp	4 mm <sup>2</sup>
32-48 Amp	6 mm <sup>2</sup>
48-80 Amp	10 mm <sup>2</sup>

The maximum current passing the Mass Combi must be limited. Therefore the AC-input must be protected by a fuse, as specified below.

Model Mass Combi	Maximum rating of the AC input fuse
All models	50A

Recommended wire colours (refer to local rules):

Wire color	Meaning	Must be connected to:
Brown or black	Phase	L1
Blue	Neutral	N
Green/Yellow	Earth	PE / GND

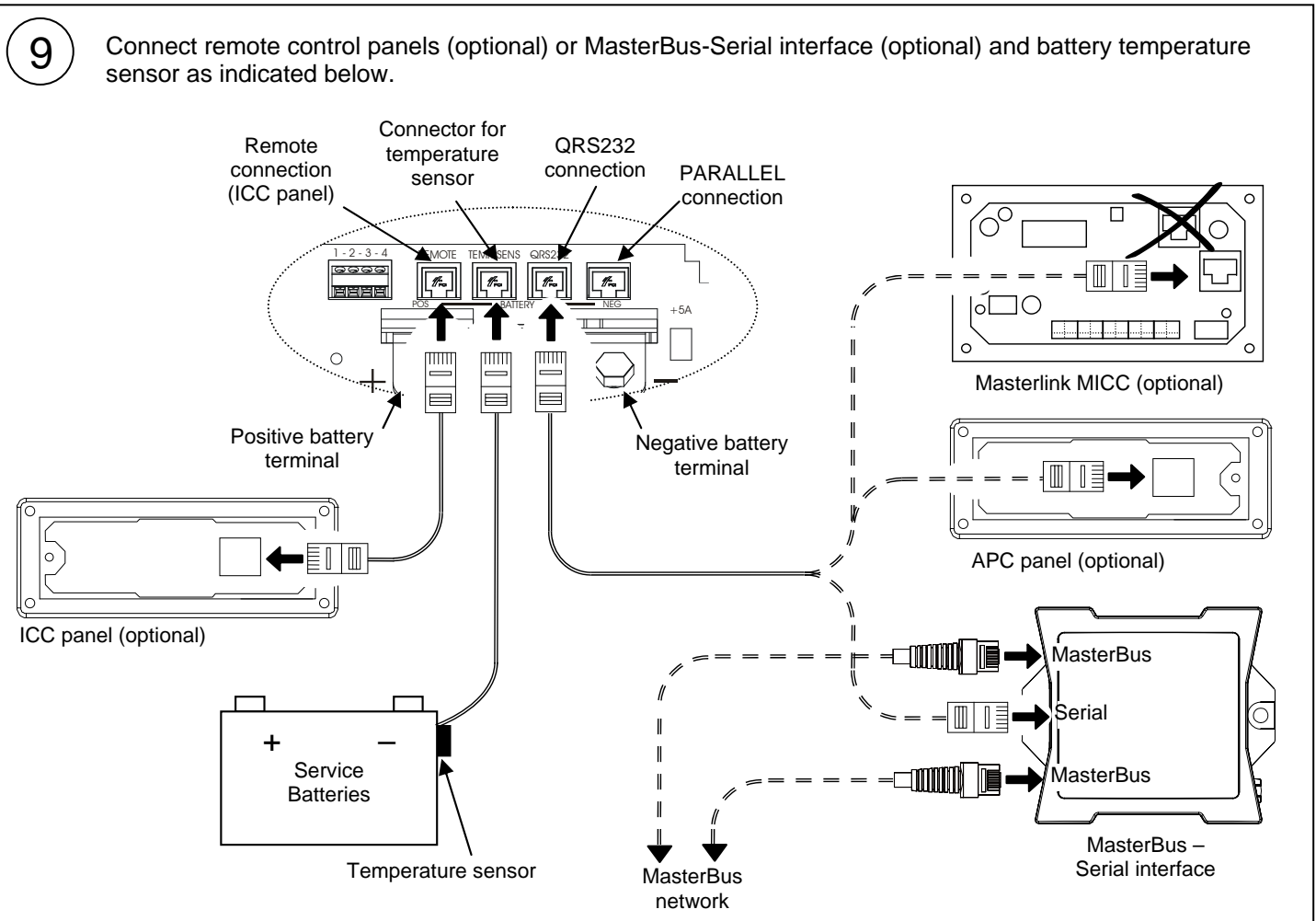
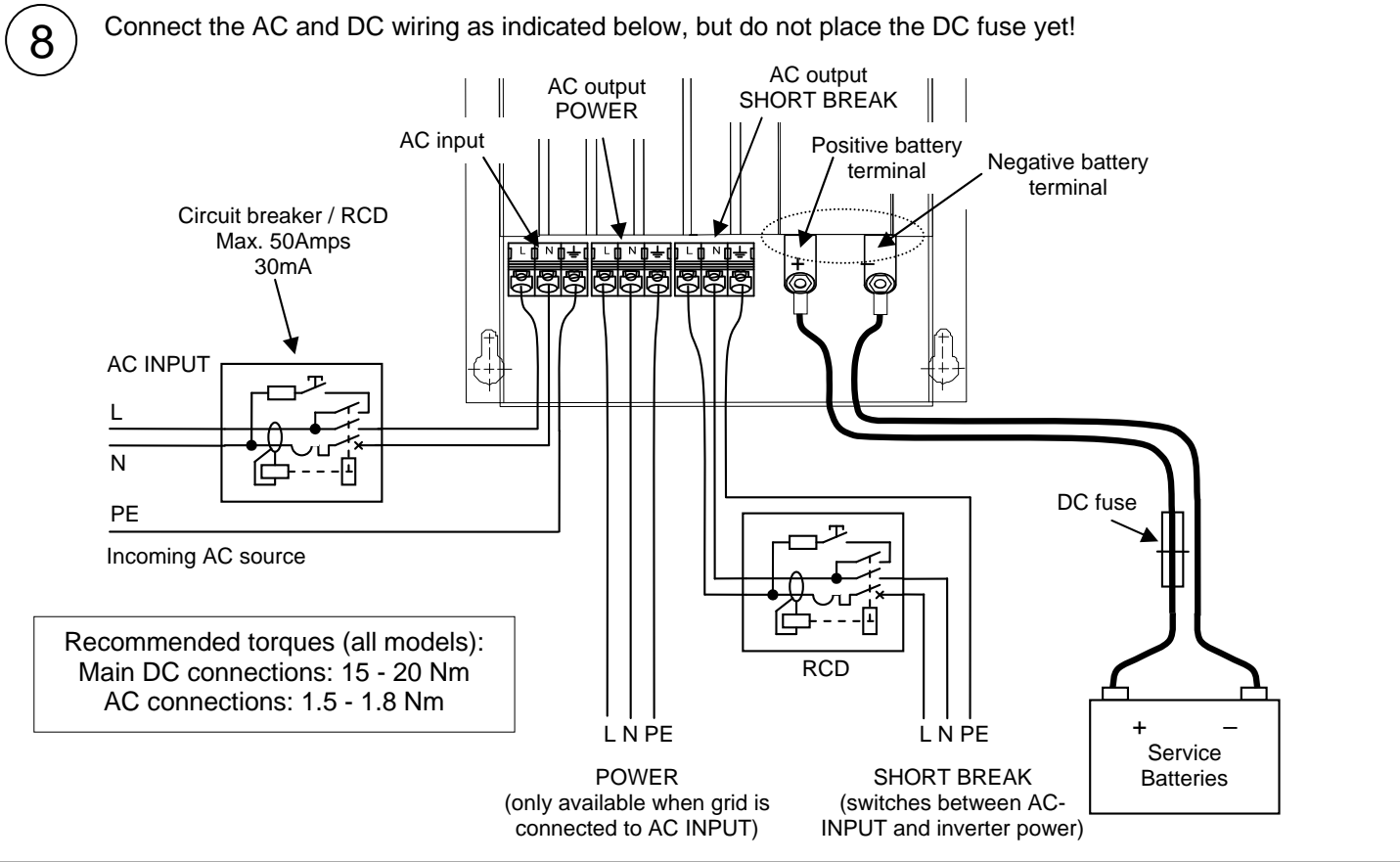
### DC WIRING AND FUSES

Model Mass Combi	DC Cable cross section:
12/1200-60	2x 50mm <sup>2</sup>
12/2000-100	2x 70mm <sup>2</sup>
12/2500-100	2x 70mm <sup>2</sup>
12/4000-200	4x 70mm <sup>2</sup>
24/1200-35	2x 35mm <sup>2</sup>
24/2000-60	2x 50mm <sup>2</sup>
24/2500-60	2x 50mm <sup>2</sup>
24/4000-120	2x 70mm <sup>2</sup>

Model Mass Combi	Recommended DC fuse
12/1200-60	160A
12/2000-100	250A
12/2500-100	250A
12/4000-200	2 x 250A
24/1200-35	80A
24/2000-60	125A
24/2500-60	125A
24/4000-120	250A

Recommended wire colours (refer to local rules):

Wire color	Meaning	Must be connected to:
Red	Positive	+ (POS)
Black	Negative	- (NEG)

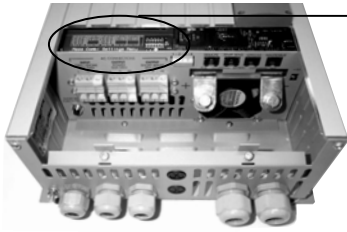


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### DIP switch settings.

See chapter 6 of User's manual for detailed description of the DIP switch settings.

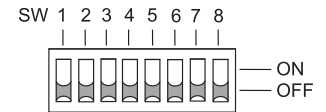


SW1	SW2	Setting	SW3	Setting	SW4	SW5	Setting	SW6	SW7	Setting	SW8	Setting
OFF	OFF	P0 single	OFF	50Hz	OFF	OFF	High power	OFF	OFF	Standard	OFF	Disabled
ON	OFF	P1 mode	ON	60 Hz	ON	OFF	Idle 40VA	ON	OFF	GEL - AGM	ON	Enabled
OFF	ON	P2 mode			OFF	ON	Idle 150VA	OFF	ON	Traction		
ON	ON	P3 mode			ON	ON	Econ. 208V	ON	ON	Forced float		
Parallel mode			Inverter Freq.			Energy mode			Battery type			Ground relay

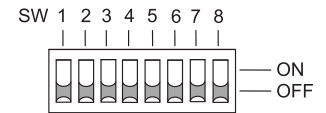
### Mass Combi Settings Menu

SW1	SW2	SW3	Setting	SW4	Setting	SW5	Setting	SW6	Setting	SW7	Setting	SW8
OFF	OFF	OFF	25 AMPS	OFF	Disabled	OFF	Disabled	OFF	High	OFF	Combi	Equalize Mode Starts With On-Off Pulse
ON	OFF	OFF	16 AMPS	ON	Enabled	ON	Enabled	ON	Low	ON	Inverter	
OFF	ON	OFF	10 AMPS									Equalize
ON	ON	OFF	6 AMPS									
*	*	ON	OFF	Power support		Generator mains supp.		Power quality		Combi / Inv. control		
Power sharing												

### DIP switch bank A.



### DIP switch bank B.



Recommended DIP-switch settings:

#### DIP Switch Bank A:

- Single Inverter System: SW1 - OFF, SW2 - OFF.
- Output frequency 50Hz: SW3 - OFF.
- High power mode (energy saving modes disabled): SW4 - OFF, SW-5 - OFF.
- Battery type. Standard Lead acid: SW6 - OFF, SW7 - OFF; Gel or AGM: SW6 - ON, SW7 - OFF.
- Ground relay: SW8- ON. During inverter operation of the Mass Combi, the Neutral wire (N) of the inverter output will be internally connected to the Safety Ground (PE / GND)

#### DIP Switch Bank B:

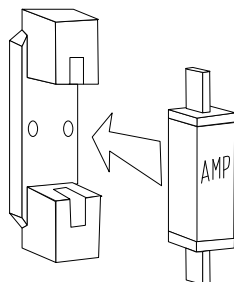
- Power Sharing, set to maximum is SW1- OFF, SW2- OFF, SW3 ON. If Remote APC, Masterlink MICC or MasterBus interface is used with adjustable settings, set to this setting and it can be adjusted down on the remote panel.
- If Power support is used (boosting power with inverter on Short break output), SW4- ON. If this is used, SW5 must be OFF.
- If Generator and Main power boosting is selected, SW-5- ON. Please note this mode is not always allowed as two power sources are mixed. If this mode is still going to be used, SW4- must be OFF.
- Power Quality. Normal setting is SW6- OFF. This allows unit to operate on power from 45-65 Hz. SW6- ON opens this frequency window to 35- 65 Hz for poorly synchronized generators.
- For operation with remote panels, with the main switch on the Mass Combi to ON.
  - SW7- OFF: the remote On-Off switch turns off or on both the charger and inverter remotely.
  - SW7- ON: the remote On-Off switch only turns off or on the inverter section only. Battery charger always operates when external AC power is available.
- SW8- OFF. See chapter 6 of User's manual for equalize charges.

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### Check all wiring.

If the wiring is OK:

- Tighten the cable glands;
- Close the connection compartment;
- Place the DC fuse (when placing this fuse, a spark can occur!);
- Switch on the DC source;
- Switch on the AC source.



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Switch on the Mass Combi. The LED-indicators will blink several times

After a few seconds the Mass Combi starts operating.

If not, immediately switch off the DC power supply and AC power supply. Investigate the cause of the malfunctioning. See Trouble shooting chapter of the user's manual.

