E-AblePower Technology

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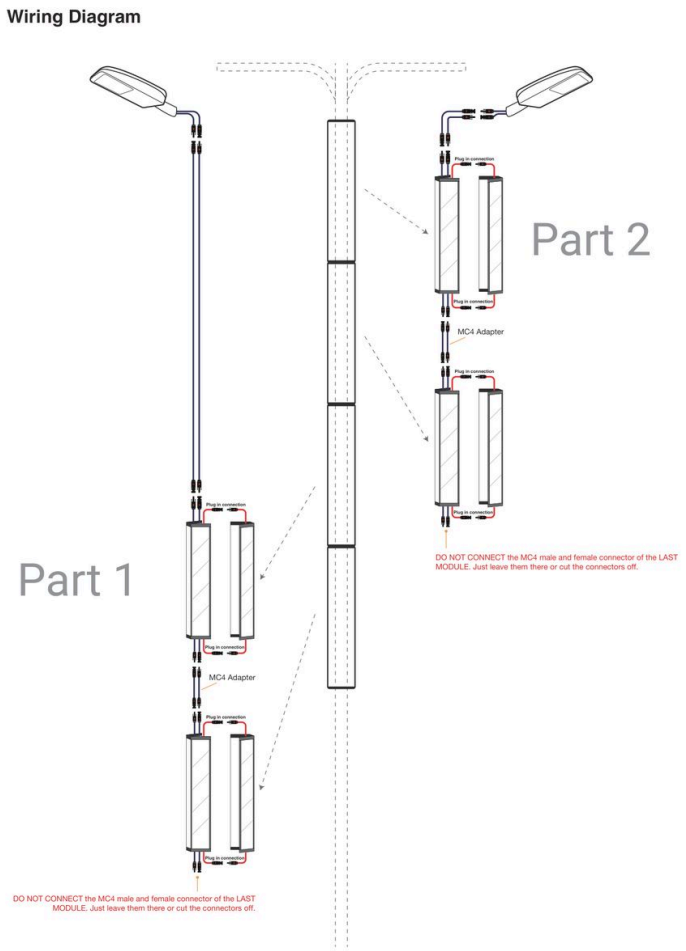
SOLARWRAP / WIRING GUIDE

String wiring
one rule, no exceptions.

Series connection of vertical modules on one pole · MC4 · built-in battery in the luminaire



Two modules per section, sections in series, head with built-in battery

THE RULE

Do not connect the MC4 pair of the last module.
Leave the male and female of the final module open, or cut the connectors off. Closing the loop shorts the string and destroys the modules at first light.

CONNECTING A SECTION

1	Plug the two modules of a section together face to face on the pole.
2	Run an MC4 adapter from the free pair of the section to the next section.
3	Keep the adapter the same length at every joint — mismatched cable adds resistance to one section.
4	Route the leads inside the pole through the gland; leave a drip loop.

POLARITY AND COUNTING

Male MC4	Positive (+)
Female MC4	Negative (−)
Series	Voltages add, current stays
Parallel	Currents add, voltage stays

2 sections of 2 modules	4 × 18 V = 72 V Voc 86.4 V
3 sections of 2 modules	6 × 18 V = 108 V Voc 129.6 V
Maximum	Stay under the controller input limit minus 10% for cold-weather Voc rise

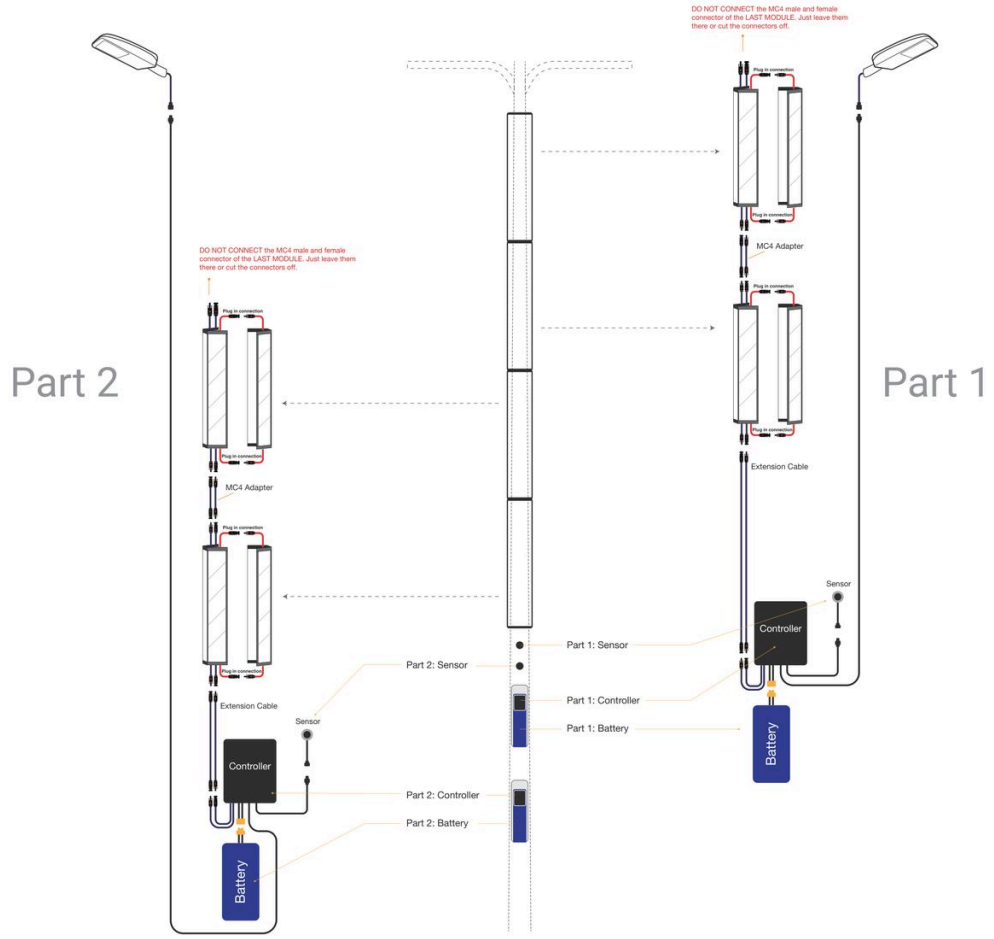
FOUR FAULTS WE SEE ON SITE

Fault	Cause	Fix
String dead from day one	The last pair was closed, shorting the string	Open the pair; test each section separately
One section reads low	A module in that section is shaded by the head arm or a tree	Rotate the section or trim the obstruction
Controller resets at dawn	Voc above the controller maximum when the pack is cold and empty	Remove one section from the string
Water in the pole	Gland facing up, or no drip loop	Re-seat the gland downwards and re-form the loop

FULL SYSTEM

Modules, controller, sensor, battery

Wiring Diagram



Two-luminaire pole: modules, controller, sensor and external battery

Controller	Inside the pole below the lowest module; keep 200 mm clear above the battery
Sensor	On the head or the pole face away from the luminaire light
Battery	Below the controller, on the pole axis, cable as short as possible

Cable section	2.5 mm² module leads; increase for runs over 10 m
Gland	IP68, downward facing, drip loop below
Earthing	Bond the pole and the module frame to the site earth

COMMISSIONING CHECK

Check	Expected	If not
Open-circuit voltage at midday	Within 5% of the string Voc on the label	Check each section joint
Short-circuit current, single section	Within 5% of Isc on the label	Shadow or soiling on the face
Controller reading	Same voltage as the meter, within 1 V	Re-seat the controller terminals
Last module pair	Open, taped, not connected	Separate immediately

Live DC. Modules generate voltage whenever there is daylight. Cover the faces before working on the string and never short the leads to test.