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INSTALLATION MANUAL

SolarWrap S140 vertical solar tube

Circular pole-mounted PV module · read before installation · keep for maintenance



PACKED IN THE CARTON

Solar tube	2 halves (one module set)
Mounting brackets	2 sets, upper / lower
Set screws	M8 × 35
MC4 adapter	supplied per module
Allen key	M4
Manual	1 copy

TOOLS YOU NEED

Allen driver	M4 bit
Torque wrench	10–20 N·m
Tape measure	3 m
Spirit level	300 mm
Access	ladder or MEWP
Cable ties	UV-rated

Safety first. Work at height needs a trained crew, harness and an exclusion zone below. Isolate any AC supply to the luminaire before wiring. PV modules generate voltage in daylight — cover the tube or work before sunrise. Never lift the tube by its cable.

Suggested mounting height of the lower tube: 2 m above ground. The tube is clamped, not drilled — no holes in the pole below the clamp band.

STEP 1 — CHECK THE POLE, MOUNT THE TUBE

Before you drill anything

Check	Requirement for S140	If it fails
Pole diameter	80–170 mm outside diameter at clamp height	Choose the next tube size
Wall thickness	≥ 3 mm steel; ≥ 4 mm under the clamp band	Fit a reinforcing sleeve
Verticality	≤ 1° out of plumb over 1.04 m	Re-plumb or re-site
Surface	Clean, dry, no loose paint or rust scale	Wire-brush and treat
Cable route	Inside the pole, or UV-rated conduit with drip loop	Re-route before mounting

Bracket torque 12–15 N·m. **90° joint rule:** the two bracket halves must cross at 90° at the base joint — this is what keeps the tube concentric.

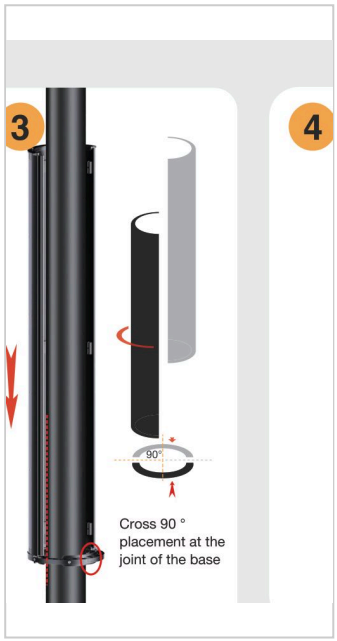
STEPS 01–04 — BRACKETS AND FIRST TUBE



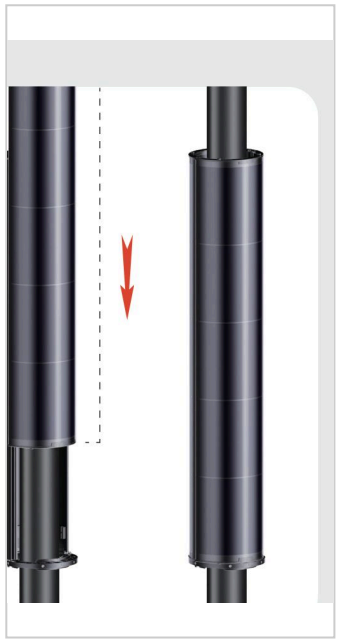
01 Put the lower bracket around the pole



02 Tighten the screws — base square to the pole



03 Fit the first tube on the bracket, 90° joint



04 Slide the second tube down the track

HEIGHT AND ORIENTATION

No orientation decision. A round tube presents the same face in every direction — set it at any rotation and the output is unchanged.

Leave the rear face clear. Do not clamp the tube flat against a wall or sign — the rear half needs air and reflected light.

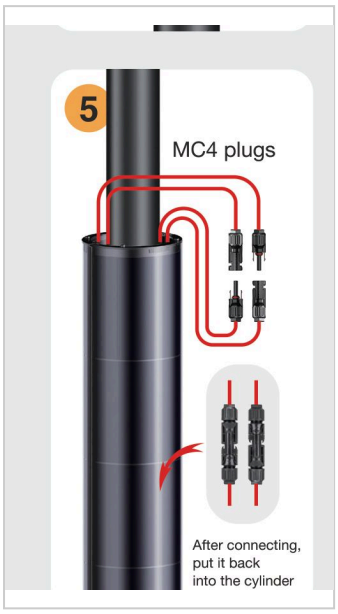
Mount the lower tube at 2 m. Below that the tube picks up splash and site damage; above it, access for cleaning gets harder.

Keep the joint dry. The 90° base joint is the water path; check both halves seat flush before tightening.

The tube slides, it does not clip. Feed the upper tube down the track of the lower one; forcing it will crack the glass edge and the joint will never sit flush again.

STEP 2 — SECOND TUBE AND WIRING

Connect, then bring the output down



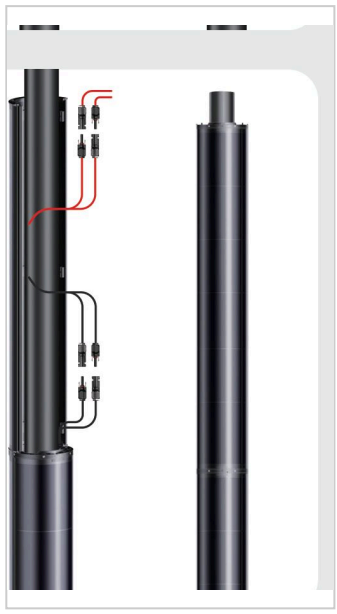
05 Connect the tubes with the red MC4 pair



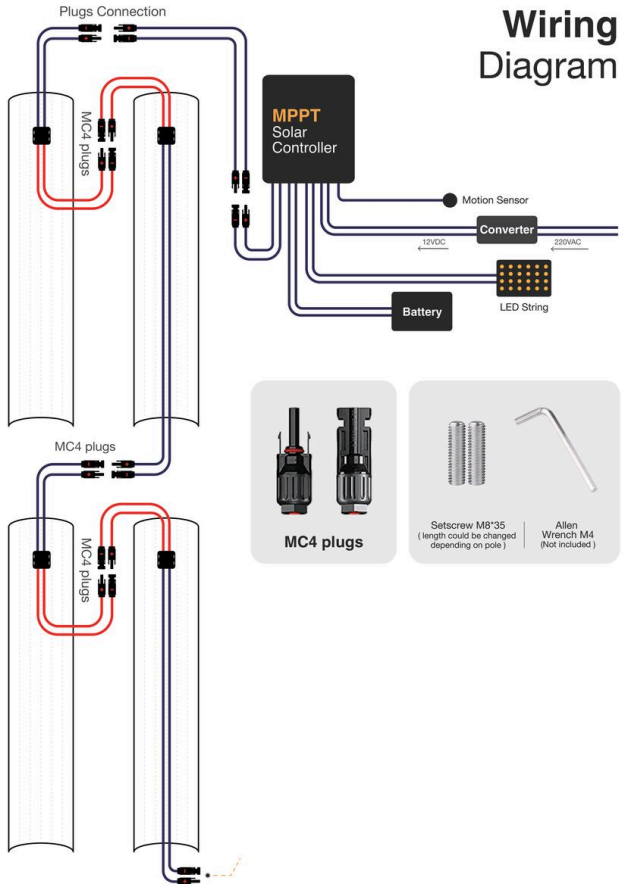
06 Run the black output lead out of the tube



07 Fit the upper bracket and tighten



08 Repeat for the second SolarWrap module



Factory wiring diagram — series connection, MPPT input

WIRING RULES

Polarity	Male MC4 = positive (A+ / B+); female = negative
Module joint	Red MC4 pair joins the two tubes; push it back inside the tube after connecting
Output	Black lead out of the tube, down the pole to the controller
Controller	MPPT only — PWM significantly cuts yield
Last module	Leave the final MC4 pair open or cut it off
String	Two tubes in series give 18 V class

S140 is a 9 V module: a single tube will not charge a 12.8 V battery. Plan two tubes in series minimum (18 V class), and check the controller PV window before ordering.

STEP 3 — COMMISSION AND HAND OVER

Set it up, then sign it off

COMMISSIONING

Item	Setting / check
Array profile	Enter the installed array voltage and current — never leave a factory default
Battery type	LiFePO4, voltage window matched to the battery pack datasheet
Dimming profile	Match to the site's operating hours
Dusk / dawn	Photocell switches within 10 minutes of sunset
Output check	Measure Voc and Isc at midday; both within 5% of nameplate

TROUBLESHOOTING

Symptom	Likely cause	Action
No output at midday	Open MC4, reversed polarity, covered tube	Check each joint; confirm male = positive
Output below nameplate	Shading, dirty tube, second tube not connected	Clean, re-seat adapter, re-measure
Light dies before dawn	Single tube on a 12 V battery, or profile too aggressive	Add the second tube, re-profile
Tube loose on pole	Set screws not re-tightened after settling	Re-torque to 12–15 N·m

MAINTENANCE

Every 6 months — check clamps and screws; re-torque if the pole has settled.

Every 12 months — clean the glass with water only; check the gland.

After a storm — check alignment and glass for impact damage.

Never — drill the tube, or stand on it.

HANDOVER RECORD

Site / project		Install date	
Module serial no.		Quantity	
Pole diameter		Clamp height	
Measured Voc		Measured Isc	
Controller model		Profile set	
Installer		Signature	

SolarWrap S140 carries a **3-year** warranty against manufacturing defects in materials and workmanship from the shipment date, covering the tube and its brackets. It excludes damage from incorrect installation, unauthorised modification, lightning, storm loads above the tested wind class and normal glass soiling. Claims need the serial number, site photographs and a measured output record.