MECWIN®

EMPOWERING FUTURE

MECWIN SOLAR PUMP MPPT CONTROLLER

Solar Pump Controller

A MECWIN Solar MPPT (Maximum Power Point Tracking) controller is a crucial component in a solar photovoltaic system.Its primary function is to optimize the power output from solar panels bycontinuously adjusting the operating voltage and the current to ensure the panels operate at their maximum power point (MPPT).

Feauters & Benefits

- MECWIN Solar Pump MPPT Controller is a high efficiency controller designed & Made in India.
- The controller available from 1HP to 10HP for DC/AC motor designed for solar application.
- The controller have in build MPPT to optimally use solar power for better Pump Perfomance.
- The controller incorporate smart protect for higher reliability and long opearational life.
- Thermal overload shut down to avoid damage to the controller.
- SPD and DC circuit breaker provide in the controller.
- Controller supports RS485 and MODBUS RTU interface.
- RMS ic capable of MQTT or HTTP data uplinks implementations.
- Extensive protection and monitoring of various parameters of operation.
- Tested as per MNRE and ICE requirements .
- IP67 Enclosure.

Advanced Motor Control :

- High efficiency with advanced hybrid motor control..
- Synchronous drive control.
- Minimal reactive power consumption resulting in higher efficiency.
- Higher efficiency across the range of motor speed and pump output head.

Better Pump Output Per Available Solar Watts

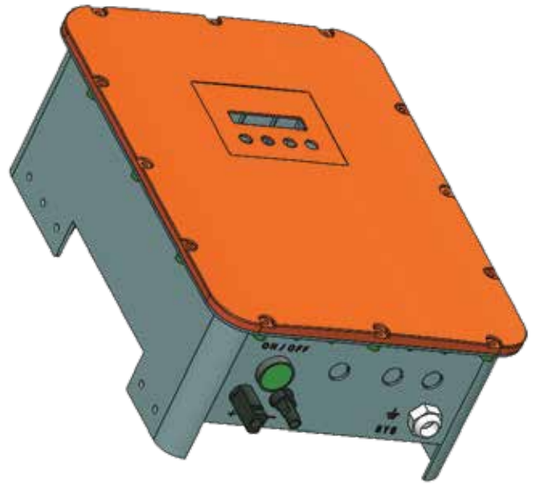
- Higher efficiency and better MPPT tracking..
- Higher motor RPM possible at a given available power compared to alternative drives.
- The pump starts earlier in the day and delivers longer.
- The drive help to run motor in cloudy condition .

Extensive Protection Prevent Catastrophic Failures Of The Motor/ Drives.

- The drives incorporate smart protection for higher relaibility and long operation life ..
- Short circuit / Inter- Phase fault of motor.
- Phase open / PV reverse / PV short.
- Dry run detection and stopping of motor.
- Pump clogging and high torque current drawn.
- High temprature auto back off.
- Tank full sensors connection..

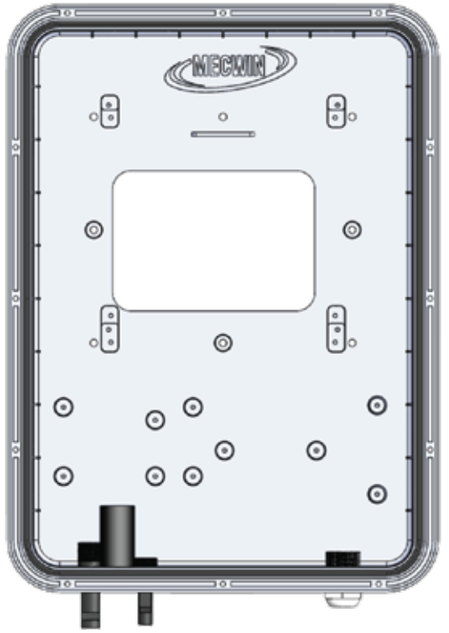
IP67 Enclosure With Housing For RMS And Other Accessories

- IP67 rated Plastic enclosure for drive. And long operation life.
- NO FAN Design : No moving parts - Longer Life
- Space for DC,MCB,SPD, and RMS in the enclosure.
- No need for additional enclosure to house various accessories..



Integrated Communication

- The drive support Modbus (Over RS485)
- Various Parameters can be monitored remotely..
- Possible to remotely access and control the device.
- Secure, enscrypted Firmware can be delivered to the device for
- Remote over the firmware upgrade.



Specification - Key Parameters :

Solar Pump MPPT Controller Selection				
Polycrystalline				
HP rating	Solar Panel Wattage	VOC	Motor Voltage	Motor Current
1HP Surface	800Wp	Less than 200V	72V	08A
1HP Submersible	1200Wp	Less than 200V	120V	07A
2HP	1800Wp	Less than 300V	160V	08A
3HP	3000Wp	Less than 450V	230V	09A
5HP	4800Wp	Less than 800V	380V	09A
7.5HP (2 Strings)	6750Wp	Less than 800V	250V	19A
10HP (2 Strings)	9000Wp	Less than 800V	380V	17A

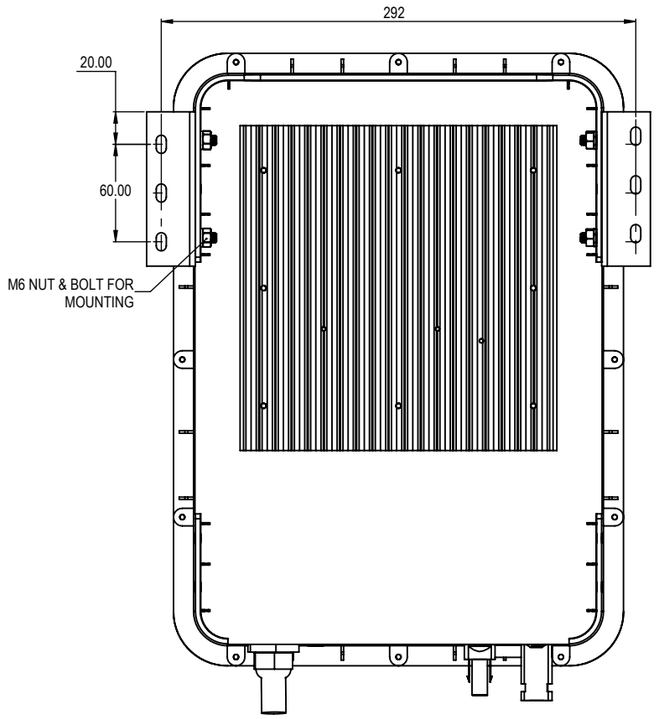
Solar Pump MPPT Controller Selection				
Monocrystalline				
HP rating	Solar Panel Wattage	VOC	Motor Voltage	Motor Current
1HP Surface	800Wp	Less than 200V	50V	12A
1HP Submersible	1200Wp	Less than 200V	72V	12A
1HP Surface	800Wp	Less than 225V	50V	12A
1HP Submersible	1200Wp	Less than 225V	50V	14A
2HP	1800Wp	Less than 300V	100V	13A
2HP	1800Wp	Less than 300V	100V	13A
3HP	3000Wp	Less than 450V	160V	14A
5HP	4800Wp	Less than 450V	230V	15A
5HP	4800Wp	Less than 500V	230V	15A
7.5HP	6750Wp	Less than 800V	380V	12A
7.5HP	6750Wp	Less than 900V	360V	14A
10HP	9000Wp	Less than 900V	380V	17A

Specification - Key Parameters :

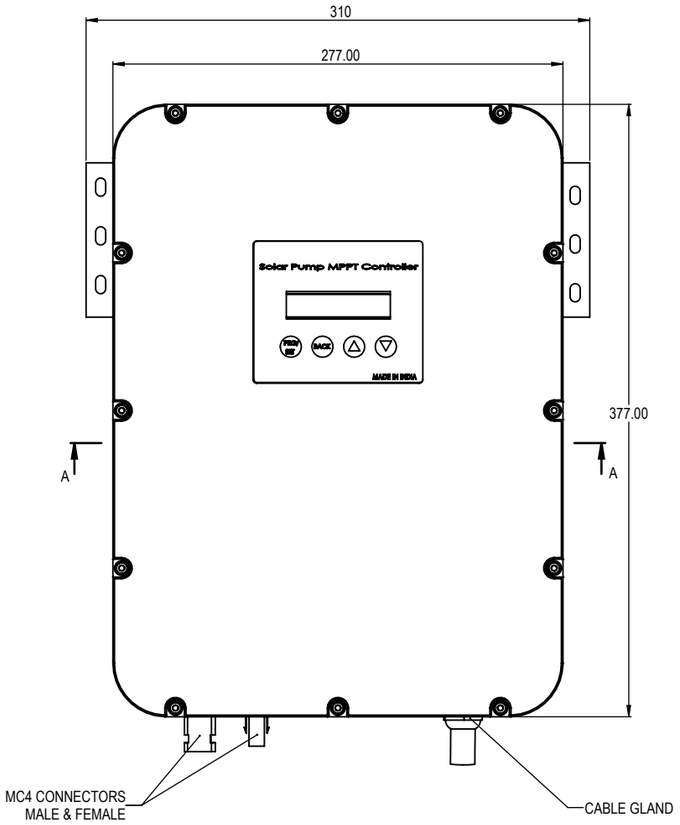
Feauters	Specification
Power input	From Solar PV Panels
Suggested PV Panel Configuration	4×505-550Wp for 2HP; 7×430-450Wp or 6×505-550Wp for 3HP; 9×535-550Wp for 5.00HP (VOC should not be more than absolute maximum DC Bus voltage)
Max. Output Current rating	15A
Overload	120% for one minute
Maximum Three Phase Output Voltage	300V
Applicable Pump ratings	2HP, 3HP and 5HP
Suggested Motor Voltage	110V for 2HP / 160V for 3HP / 260V for 5HP (Output voltage can be set from 100-300V)
Nominal AC Output Power	4800W
Output frequency	Variable from 0-300Hz
Control type	V/F Control for Induction Motor and Sensorless Vector Control for Permanent Magnet Synchronous Motor
Maximum Input Voltage	450V (in all conditions or VOC)
MPPT Voltage range	180-380V
Maximum PV Array short circuit current	15A (Isc)
Power input	5300W
Maximum Input Solar Power	5900Wp
MPPT Efficiency	more than 98%
Weight With Packing	4.7Kg, 5.5Kg, 6.2Kg
PV input Surge Protection (Optional)	40kA,585V DC PV T2 SPD as per EN 50539-112013
PV input MCB (inside the enclosure)	25A,500V DC
Protections	Output Short/open Circuit, Over Temperature, Over/Under Voltage, Thermal Overload, Dry Run, Unbalance in the output, Reverse Polarity
Local ON/OFF control	Push Button Switch, Bottom Side of the enclosure

Feauters	Specification
Power input	From Solar PV Panels
Suggested PV Panel Configuration	14×505-550Wp for 7.5HP (VOC should not be more than absolute maximum DC Bus voltage)
Max. Output Current rating	15A
Overload	150% for one minute
Maximum Three Phase Output Voltage	500V
Applicable Pump ratings	7.5HP
Suggested Motor Voltage	380V (Output voltage can be set from 300-500V)
Nominal AC Output Power	6900W
Output frequency	Variable from 0-300Hz
Control type	V/F Control for Induction Motor and Sensorless Vector Control for Permanent Magnet Synchronous Motor
Maximum Input Voltage	900V (in all conditions or VOC)
MPPT Voltage range	300-750V
Maximum PV Array short circuit current	15A (Isc)
Power input	7300W
Maximum Input Solar Power	9500Wp
MPPT Efficiency	more than 98%
Weight With Packing	7.0Kg
PV input Surge Protection (Optional)	40kA,970V DC PV T2 SPD as per EN 50539-112013
PV input MCB (inside the enclosure)	25A,1000V DC
Protections	Output Short/open Circuit, Over Temperature, Over/Under Voltage, Thermal Overload, Dry Run, Unbalance in the output, Reverse Polarity
Local ON/OFF control	Push Button Switch, Bottom Side of the enclosure

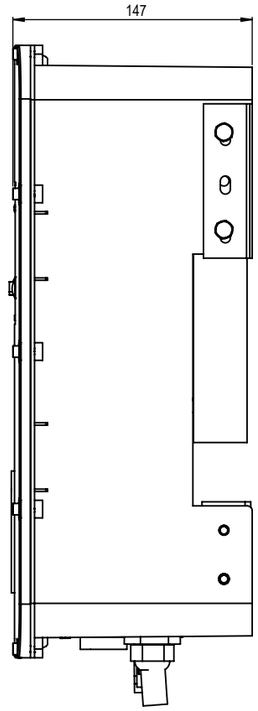
Mechanical Dimension



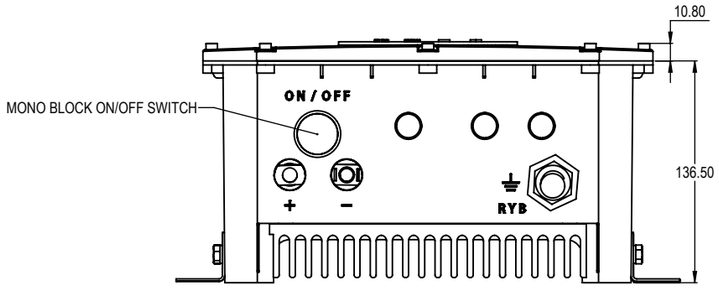
REAR VIEW



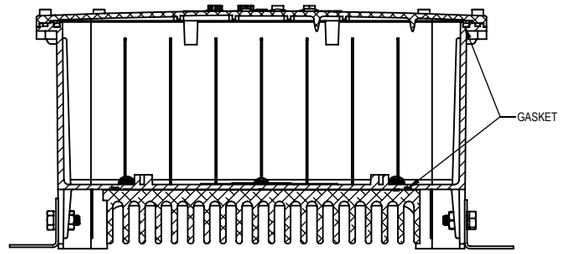
FRONT VIEW



RIGHT VIEW

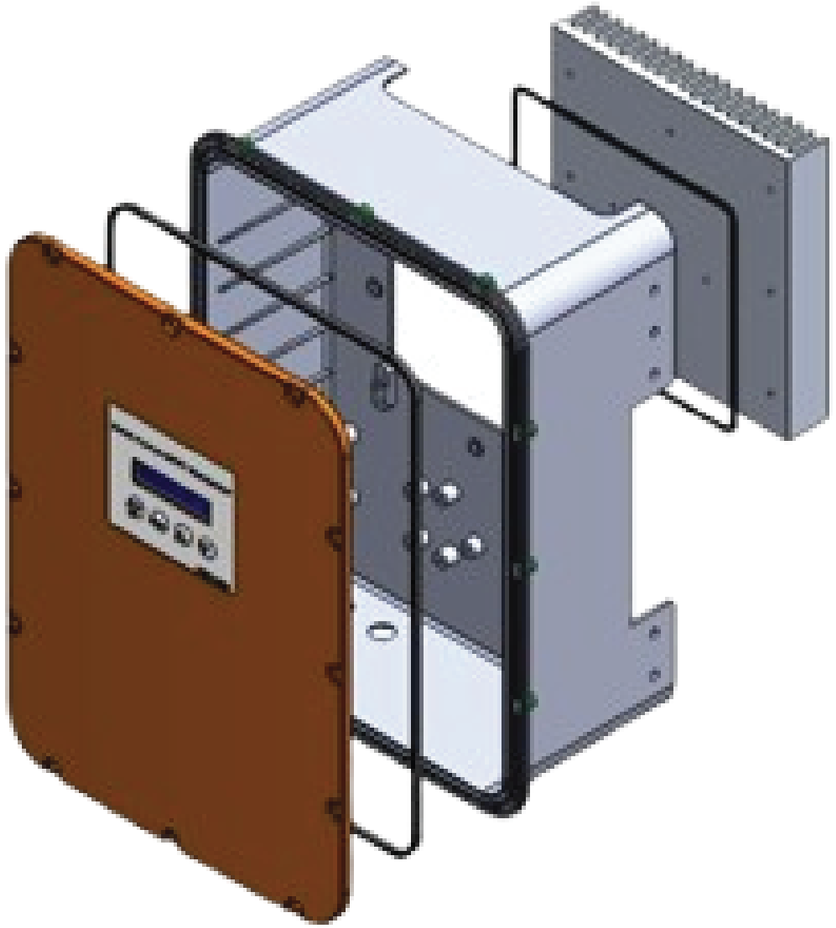


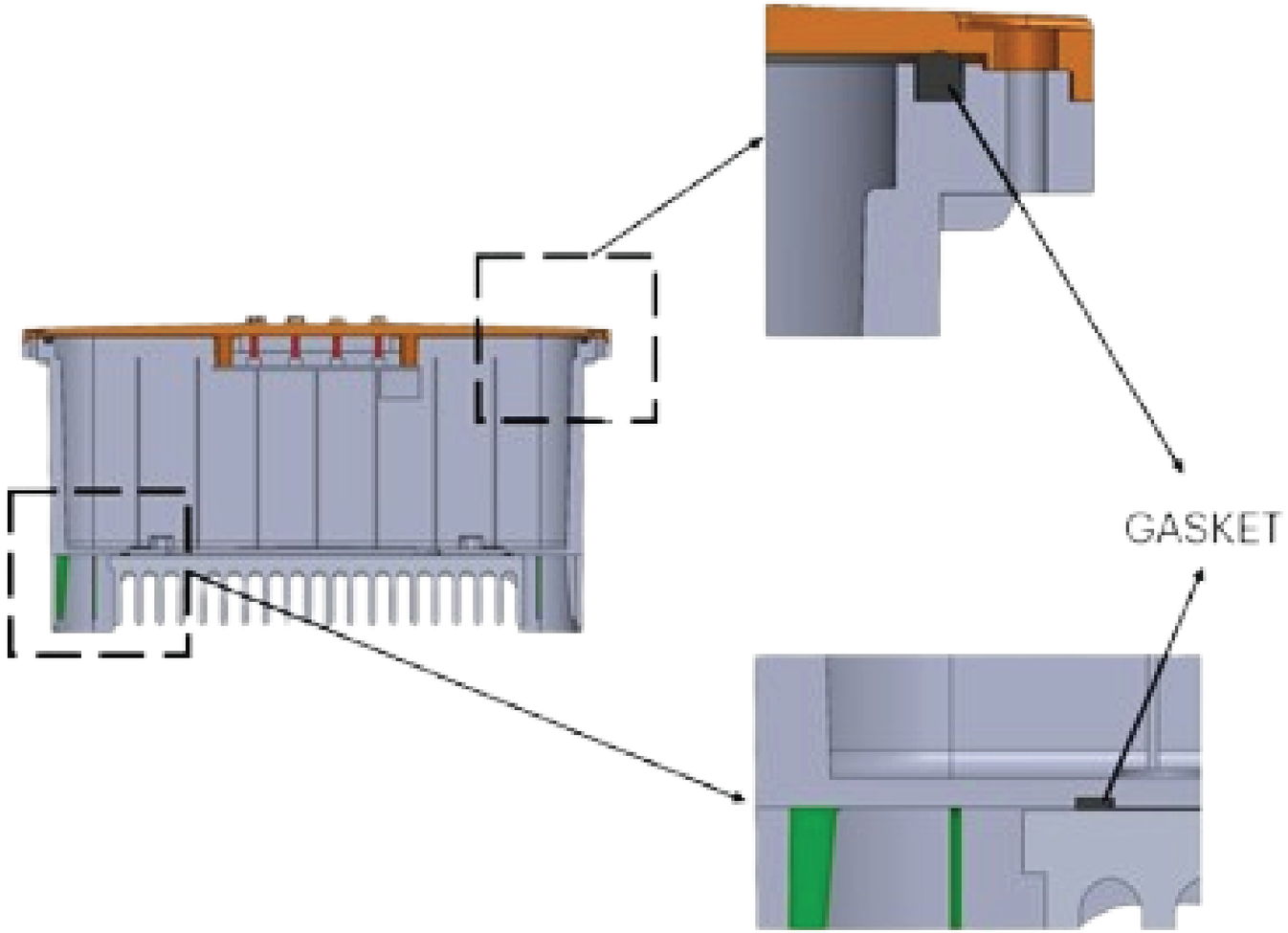
BOTTOM VIEW



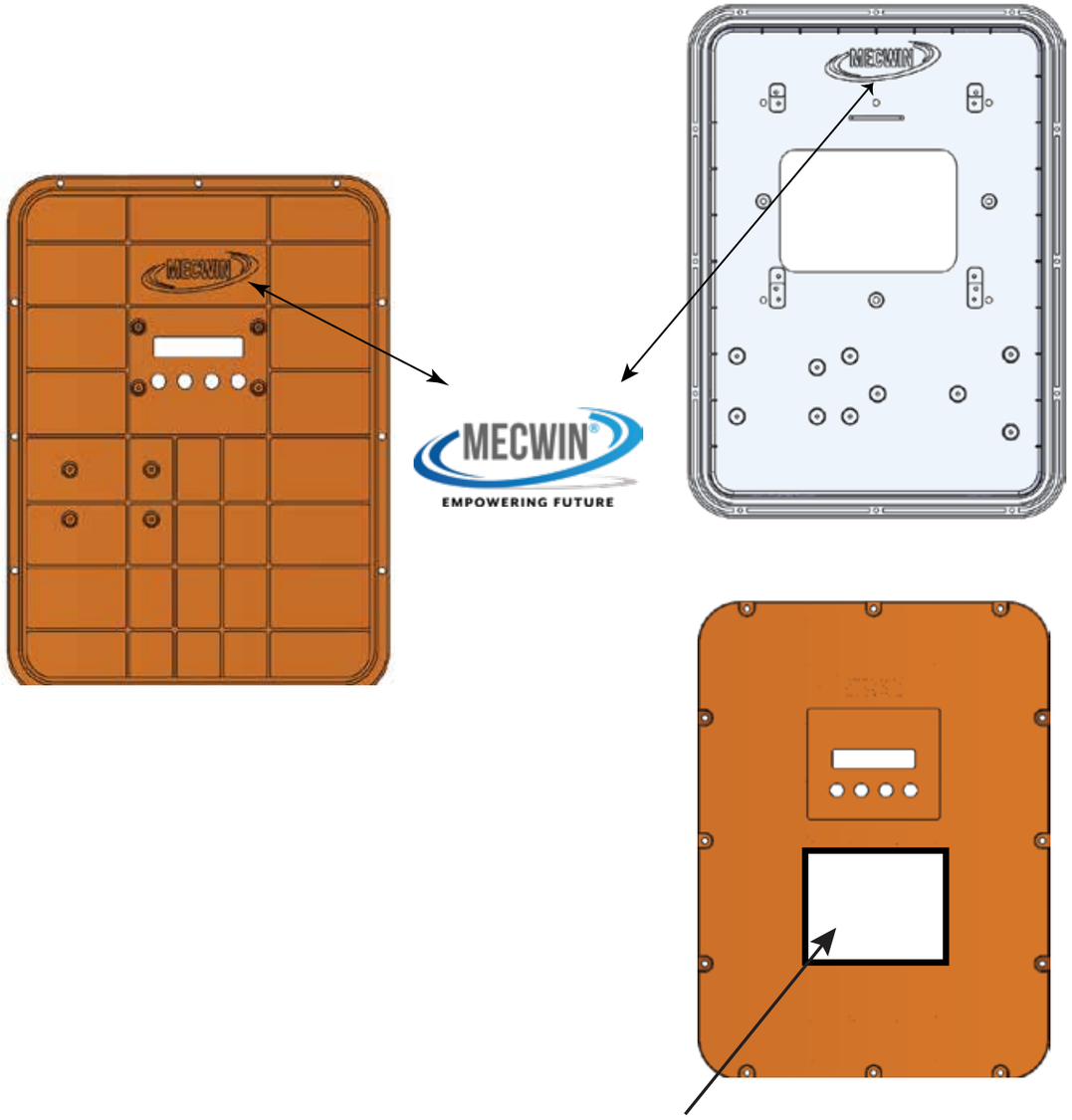
SECTION A-A

Detailed View: Enclosure Assembly and Gasket Seal





Customer Scope for Logo and Branding Placement



Contact

Mecwin Technologies India Pvt. Ltd.

{Solar Pump Manufacturing Plant }

65/3-1, opposite to Super Gas filling station,Industrial Suburb, Yeswanthpur,
Bengaluru, Karnataka – 560022, India

Customer Care: +91 97412 29797
Email: csr@mecwinindia.com
Website: www.mecwinindia.com