

ARPA -5 Solar Pump Controller



- 5 hp solar pump controller
- Wide MPPT range
- IP-54 enclosure
- 5 year warranty
- Dry run protection
- Automatic start & stop depending on solar irradiation
- IEC 61683/IS 61683 & IEC 60068-2(1,2,14,30)

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1.0 Introduction

ARPA-5 is a three-phase 5 hP pump controller operating directly on photovoltaic (PV) string. The controller is suitable for outdoor applications and conforms to IP-54 enclosure standard. As an integral part of Renewable Energy system, the controller harnesses DC power from PV string using an efficient MPPT algorithm, and feeds three-phase AC power to the pump.

2.0 Applications

- Ground water extraction for Irrigation, Commercial and Household use
- Water Purification – RO System
- Suitable for both Open Well and Tube Well

3.0 Specification

Input Parameters	
Maximum DC input voltage	800 VDC
Operating DC Voltage Range	400 – 775 VDC
MPPT voltage range	530 VDC – 620 VDC
Maximum input current	< 9 A

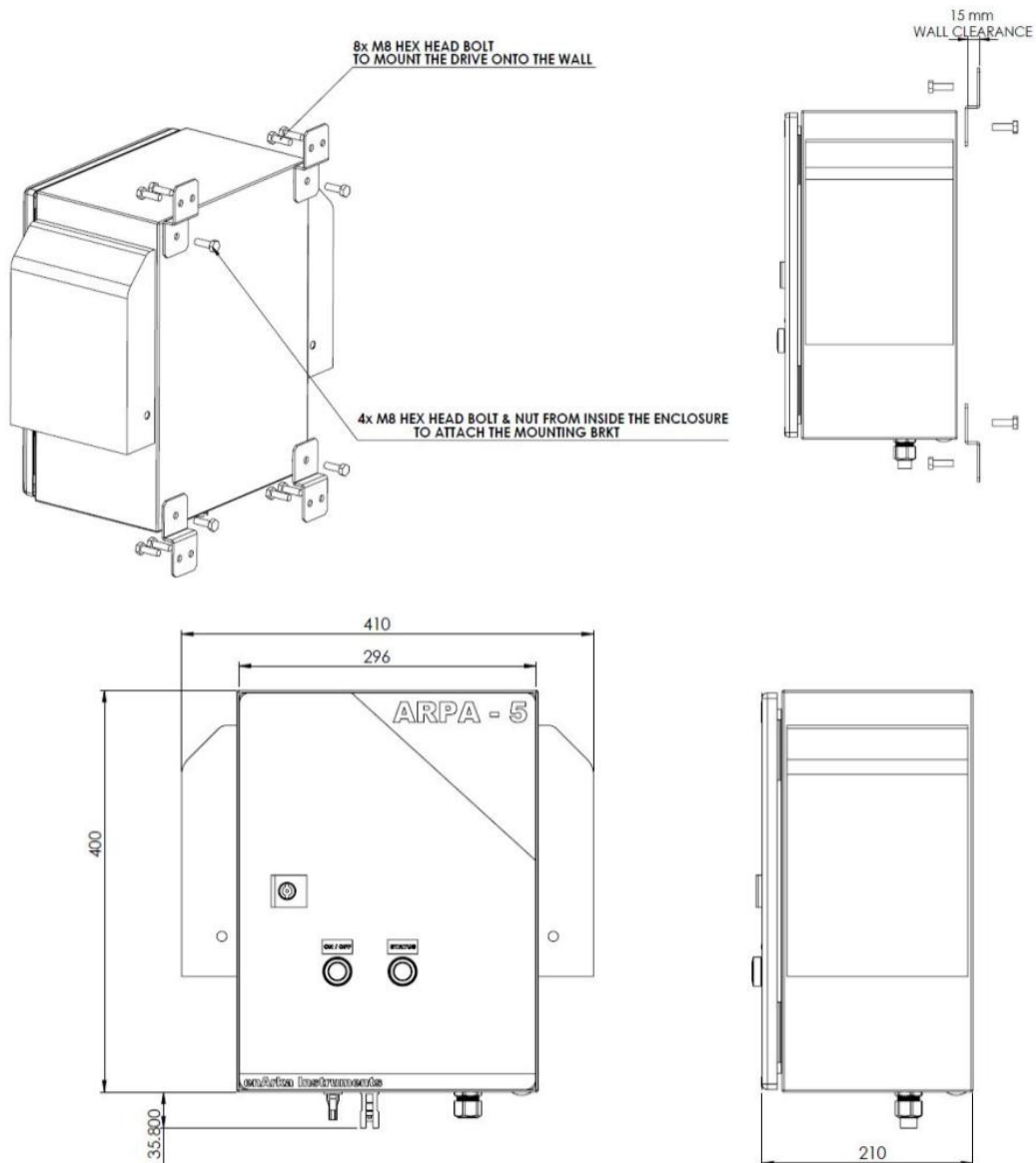
Output Parameters	
Number of phases	3 – Phase, 3 wire
Nominal AC Voltage	415 VAC rms
Operating frequency (Variable Frequency Drive)	20 Hz – 53 Hz
AC voltage range	380 VAC – 415 VAC
Maximum output Line current	< 9.6A

Protections, Indications & Controls	
Under voltage cutoff	390 VDC +/- 15 VDC
Over voltage cutoff	800 VDC
Output short circuit protection	Yes – Output trip
Output over current protection	Output trip – set @ 9.6 A
Output over load protection	Output trip – 150% of rated current for 1 minute
Over temperature protection	Output trip when internal ambient exceeds 100°C
Dry run protection (sensor-less dry run protection)	Yes – Output trip
Input reverse polarity protection	Yes
Indications & Switch controls	1. Output Off – Red light 2. Output On – Green light 3. Insufficient Input voltage – Red light 4. Output ON/OFF switch – Latch type

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Mechanical & Environmental Parameters	
Enclosure type	IP-54 enclosure
Cooling	Forced convection – air inlet through particulate filter from left and hot air exit through particulate filter from right
Operating temperature	0 – 50°C at full load
Storage temperature	-20 to 70°C
Operating humidity	30 - 90% RH (non-condensing)
Storage humidity	10-95% RH (non-condensing)
Altitude	Operating: 3000m (10000ft)
DC input connector	MC-4 Solarlok TE connectivity
AC output	IP-65 liquid tight Heyco cable gland
Dimensions (WxHxD)	W: 410mm, H: 400mm, D: 210mm (excluding connectors)
Weight	< 12 kg

4.0 Outline Drawing - Mounting details and Physical dimensions



Specifications are subject to change without notice