



# Electrical Vehicle Motors and Drives Workbench

## Nvis 7089EV



Workbench has onboard diagrammatic representation of Machines for better understanding. Standard, BS-10 terminals and patch cords are provided for safety purpose. Built-in AC and DC Power Supplies are provided with suitable protection. Motors are provided with standard Mechanical Loading Arrangement, aluminum casted Brake Drum/Pulley with heat suppression facility.

### Technical Specifications:

#### Three Phase Drive

Input Voltage : Three phase, 415V  $\pm$ 10%, 50Hz

#### Three Phase Induction Motor

Three Phase Induction Motor Type : Squirrel Cage

Rating : 1HP

Voltage Rating : 415V  $\pm$  10%, 50Hz

Speed : 1440 RPM  $\pm$  5%

Insulation : Class B

Loading arrangement : Mechanical

Brake Drum/Pulley : Aluminum Casted

#### Power supply for BLDC Motor

O/P Voltage : 24V

Current Rating : 10Amp



### BLDC Motor

Rating	:	200W
Voltage Rating	:	24V
Current	:	8 A
Speed	:	2500 rpm $\pm 10\%$
Loading arrangement	:	Mechanical
Brake Drum/Pulley	:	Aluminum casted

### DC Power Supply for PMDC Motor

Fixed DC Output Voltage	:	220V $\pm 10\%$ , 2A
Variable Output DC Voltage	:	0-220V $\pm 10\%$ , 12A

### PMDC Motor

Rating	:	1HP
Speed	:	1500 RPM $\pm 5\%$
Insulation	:	Class B
Loading arrangement	:	Mechanical
Brake Drum/Pulley	:	Aluminum Casted
Drive for PMSM Motor	:	Inbuilt
Rating	:	1HP
Speed	:	1440 RPM $\pm 5\%$
Insulation	:	Class B
Loading arrangement	:	Mechanical
Brake Drum/Pulley	:	Aluminum Casted

### Digital Meters used

AC Voltmeter	:	450V
AC Ammeter	:	10A
DC Voltmeter	:	300V
DC Ammeter	:	20A
MCB (TPN)	:	10A

### Optional Accessories

10Amp, Three phase Variac



# Electrical Vehicle Motors and Drives Workbench

## Nvis 7089EV



**Nvis DAQ** offers three AC voltage channels, three AC current channels, two DC voltage channels, two DC current channels, speed and torque measurement through wireless. Additionally, it also provides the measurement of any 3-phase electrical system simultaneously without using individual meters. It is a compact table top unit. In this instrument we have provided a range of indicators and buzzers for AC/DC voltage, AC/DC current, speed and torque parameters. It also has a light indication for running channel. It includes signal processing required to perform Voltage, Current, Frequency, Active Power, Reactive Power, Apparent Power and Power Factor measurements.

This product is suitable to measure active, reactive, and apparent energy in various 3-phase configurations. It is compatible with 3-phase/4-wire systems. All the measured parameters are displayed on the PC software provided with this product.

*Note : DAQ is Compatible with AC Squirrel Cage Induction Motor and DC Shunt Motor Only.*

## Features

- **Singe Phase Parameters Measurement**
  - 3 AC Voltage channels
  - 3 AC Current channels
  - Corresponding Active power, Reactive power, Apparent power, Frequency, Power factor and Angle
  - 2 DC voltage channels
  - 2 DC current channels
- **Three Phase Parameters Measurement**
  - Line to Neutral Voltage
  - Line to Line Voltage
  - Line Current
  - Active Power
  - Reactive Power
  - Apparent Power
  - Frequency
  - Power Factor
- Curve can be plotted between any two parameters  
Store curve reading for further study
- Microcontroller based Accurate & Reliable design  
Wireless connectivity to PC
- CT is used as current transducer
- Fully isolated measurement
- Product Tutorial (CD)



Speed Measurement Unit (Optional)



# Electrical Vehicle Motors and Drives Workbench

## Nvis 7089EV

### Technical Specifications

AC Voltage Range	:	25-450Vrms, Accuracy $\pm 2\%$
AC Current Range	:	0.20-10Amp, Accuracy $\pm 2\%$
DC Voltage Range	:	25-300Vrms, Accuracy $\pm 2\%$
DC Current Range	:	0.20-10Amp, Accuracy $\pm 2\%$
Frequency	:	45-55Hz, Accuracy $\pm 1\text{Hz}$
Active power	:	50-3000Watts, Accuracy $\pm 5\%$
Reactive power	:	50-3000Watts, Accuracy $\pm 5\%$
Apparent power	:	50-3000Watts, Accuracy $\pm 5\%$
Power Factor	:	0.30 to 0.99 both Lead & Lag Accuracy $\pm 2^\circ$ Electrical
Speed	:	Up to 2500 RPM
Torque	:	0 - 25 N-m
Auxiliary Supply	:	230V AC $\pm 10\%$ , 50Hz
Dimension (mm)	:	358W x 148H x 260D



PC connectivity with module



Torque Measurement Unit (Optional)

Software Windows

