

Features

- This trainer is designed to learn how to run, brake, and reverse rotation of DC motor and AC motor.
- The electrical motor used consists of DC compound, 1 phase capacitor motor, 3 phase squirrel cage motor, 3 phase slip ring motor, and 3 phase synchronous motor.
- This trainer is equipped with supporting modules to support experiments.
- This trainer is equipped with 30 mA current leak protector according to IEC 61008.
- The trainer uses the most genuine industrial machines in accordance with the IEC 60038 and Insulation F Classes.
- Completed with workbench that already equipped with galvanic isolated power supply.
- The workbench equipped with a cupboard to store the motors and other modules.
- The electrical machine can be attached from one to another with coupling system.
- The electrical system is equipped with emergency stop button.
- All inputs and outputs on each panel are equipped with safety socket and safety connecting cross 4-mm.
- Complete with comprehensive eksperimen manual book to guide student step by step conducting experiments.

Covered Topics

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| ▪ LE12001 | Starting DC Motor by Using Variabel Resistance System. |
| ▪ LE12002 | Starting 1 Phase Capacitor Motor or 3 Phase Squirrel Cage Motor by Autotrasmformer. |
| ▪ LE12003 | Starting 3 Phase Squirrel Cage Motor by Star-Delta System. |
| ▪ LE12004 | Starting 3 Phase Slip-Ring Motor by Using Variabel Resistance on the Rotor. |
| ▪ LE12005 | Starting the 3 Phase Synchronous Motor. |
| ▪ LE12006 | Dynamic Braking of The 3 Phase Squirrel Cage Motor. |
| ▪ LE12007 | Dynamic Braking of The DC Motor. |
| ▪ LE12008 | Plugging Braking of 3 Phase Squirrel Cage Motor. |
| ▪ LE12009 | Reversing The Motor Rotation of 3 Phase Squirrel Cage Motor. |
| ▪ LE12010 | Sequence Control Circuit of The 3 Phase Squirrel Cage Motor. |
| ▪ LE12011 | Control Motor with Two of Them is "On" and One of Them is "Off" |
| ▪ LE12012 | Measuring the Resistance Value of 3 Phase Squirrel Cage Motor After Started and Loaded. |

Electrical Machine Trainer

PT 040106



Specification

- **Bench Power Supply [PTE-046-01]**
 - Main supply 3 x 230V Current 4A.
 - Output voltage three phase 3 x (50 - 220 - 380)V.
 - Variable voltage AC one phase 0 - 240 V AC.
 - Variable voltage DC 0 - 200 V DC.
 - Equipped with indicator lights of L1, L2, L3 and emergency button.
- **Single Phase Capacitor Run AC Machine [PTE-046-04]**
 - Supply voltage 230 V AC, power 370 Watt, 2.9 A, Frequency 50 Hz, Speed 2750 RPM, Cos ϕ 0.72, Capacitor run 12.5 uF.
- **Three Phase Squirrel Cage AC Machine [PTE-046-05]**
 - Power 370 Watt, Supply voltage 230/400 V, current 1.56/ 0.9 A Y/ Δ , Cos ϕ 0.78, Speed 2840 RPM, 2 pole frequency 50 Hz.
- **Three Phase Slip-Ring AC Machine [PTE-046-07]**
 - Power 200 Watt, Supply Voltage 220/ 380 V Δ / Y , V rotor 220 V, Current 1.1-0.65 A, Speed 3000 RPM, frequency 50 Hz.
- **Three Phase Synchronous AC Machine [PTE-046-08]**
 - Power 250 Watt, Supply voltage 220/ 380 V Δ / Y , exitation voltage 200 V DC, Current 0.65/0.37 A, Exitation current 0.25 A, Speed 3000 RPM, frequency 50 Hz.
- **DC Compound Machine [PTE-046-09]**
 - Power 250 Watt, Supply voltage 220 V DC, Exitation voltage 200 V DC, Speed 3000 RPM.
- **Starter for DC machine [PTE-046-13]**
 - Rheostat for start motor DC.
 - Resistance : 100 Ω , Power 160 W.
- **Digital Power meter [PTE-046-28]**
 - Digital meter to measure power, current, and voltage. This meter can be used to measure 3 phase and 1 phase load.
 - Supply voltage 220 V AC/ 50 Hz, 4 digit display.

Training Panel System

>> Specification Continued

- **Supply Contactor [PTE-045-013]**
 - 3 (three) contact terminals and 5 control terminals, 2 (two) "NO" and 2 (two) "NC", current breaker of maximum load 25 A /380 V, nominal voltage 220 V AC/50 Hz.

- **Push-Button Change Switch [PTE-045-007]**
 - 2 (two) "push-button" contact units, 2 (two) "NC" terminals dan 2 (two) "NO" terminals, current breaker of maximum load 10 A/250 V AC.

- **Indicator Lamp [PTE-045-009]**
 - 3 (three) indicator lamps that consist of the red, yellow, and green lights, nominal voltage 220 V AC.

- **Thermo Relay [PTE-045-014]**
 - 3 (three) contact terminal equipped with over load breaker between 1 to 1.7 A, 2 (two) additional terminals, 1 (one) for "NC" and 1 (one) for "NO".

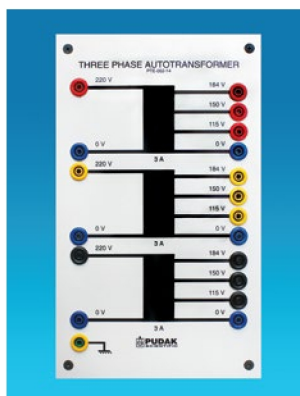
- **Three Phase Supply Unit with FCCB [PTE-052-01]**
 - Equipped with 4 poles of ON-OFF switch.
 - Protection for leak current of 30 mA.
 - Motor protection switch of 2.5 - 4 A.
 - 3 indicator lamps.

- **DC Variable Power Supply [PTE-052-13]**
 - Input 3 x 220 V L-N, output 0 -240 V DC. Max. 7.5 A.

- **Three Phase Autotransformer [PTE-052-14]**
 - Primary: 3 x (0 - 230) V, 50 Hz.
 - Secondary: 3 x (0 - 115 - 150 - 184) V, Current 3 A.

- **Timer Delay-ON [PTE-052-15]**
 - Working voltage 100 - 240 V AC/ 50 Hz.
 - 4 control contacts, 2 NO, 2 NC, time setting 0.05 s - 3000 hr.
 - Equipped with selecting switch for operation mode, time mode, and time limit.

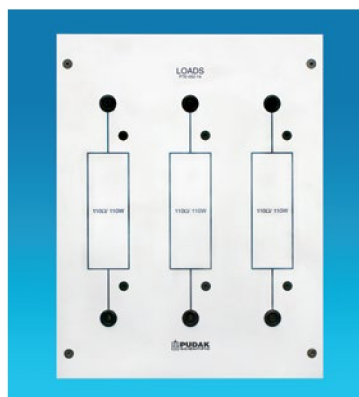
- **Load for Three Phase Slip-ring Machine [PTE-052-16]**
 - Three 110 ohm/ 110 Watt resistors to start the slip ring motor.



Three Phase Autotransformer
PTE-052-14



Timer
PTE-052-15



Loads
PTE-052-16

PT 040106 Electrical Machine Trainer consists of

Cat. No.	Description	Qty.	Cat. No.	Description	Qty.
PTE-046-01	Bench Power Supply	1 pc	PTE-052-15	Timer	3 pcs
PTE-046-04	Single Phase Capacitor AC Machine	1 pc	PTE-052-16	Loads	3 pcs
PTE-046-05	Three Phase Squirrel Cage AC Machine	3 pc	GSE 233 04	Safety connecting lead 100cm, red	20 pcs
PTE-046-07	Three Phase Slip-Ring AC Machine	1 pc	GSE 233 03	Safety connecting lead 100cm, Blue	10 pcs
PTE-046-08	Three Phase Synchronous AC Machine	1 pc	GSE 233 01	Safety connecting lead 100cm, Black	20 pc
PTE-046-09	DC Compound Machine	1 pc	GSE 233 05	Safety connecting lead 100cm, Yellow-green	20 pc
PTE-046-13	Starter for DC machine	1 pc	GSE 232 02	Safety connecting lead 50cm, Red	15 pcs
PTE-046-28	Digital Power meter	1 pc	GSE 232 01	Safety connecting lead 50cm, Black	15 pcs
PTE-045-013	Supply Contactor	6 pc	GSE 231 02	Safety connecting lead 30cm, Red	15 pcs
PTE-045-007	Push-Button Change Switches	1 pc	GSE 232101	Safety connecting lead 30cm, Black	15 pcs
PTE-045-009	Indicator Lamps	1 pcs	GSE 235	Safety connecting cross	40 pcs
PTE-045-014	Thermo Relay	3 pcs	GSN305	Coupling	2 pcs
PTE-052-01	Three Phase Supply Unit with FCCB	1 pcs	L12S-01E	Experiment Manual book	1 pc
PTE-052-13	DC Variabel Power Supply	1 pcs	GSN 245	TPS Frame 1200mm	1 pc
PTE-052-14	Three Phase Autotransformer	1 pcs			

Specifications and illustrations are subject to change without prior notice