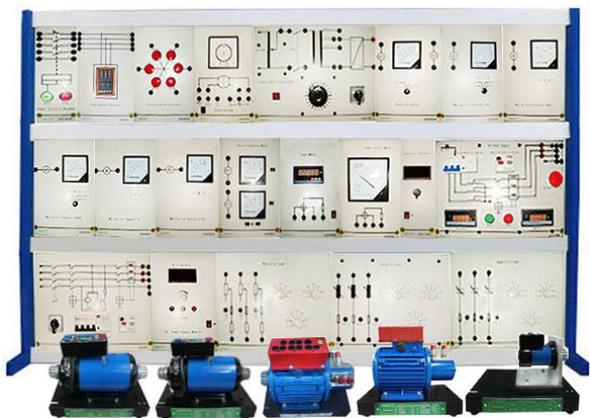


ALTERNATOR & PARALLEL OPERATION EXPERIMENT SYSTEM

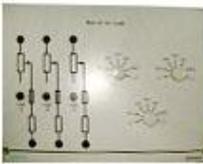
Model Number : GOTT-APOE-01



PRODUCT DESCRIPTION

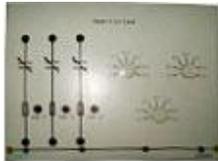
- The alternator will convert mechanical energy into electrical energy, by electro-magnetic induction
- This system provides a better understanding on the relations between the field excitation, rotor speed, the open circuit armature voltage and the short circuit current and also allows student to indicate whether two periodic motions are synchronous
- This module supports large numbers of alternators in parallel and additional alternators must be switched in when demand rises
- It is a very versatile and complete training system for performing various experiments in electrical parallel operation
- Various components and equipment are assembled to suit the training purpose.

PRODUCT MODULES

DOUBLE VOLTMETER Type: Moving Coil Mode: AC / DC Range: 0...250V, 0...500V 	CODE 190-001	MOVING COIL VOLTMETER Type: Moving Coil Mode: AC / DC Range: 0...15V, 0...30V 	CODE 190-002	MOVING IRON VOLTMETER Type: Moving Iron Mode: AC / DC Range: 0...600V 	CODE 190-003	MOVING COIL AMMETER Type: Moving Coil Mode: AC / DC Range: 0...100mA, 0...1000mA 	CODE 190-004
MOVING IRON AMMETER Type: Moving Iron Mode: AC / DC Range: 0...1A 	CODE 190-005	MOVING IRON AMMETER Type: Moving Iron Mode: AC / DC Range: 0...2.5A 	CODE 190-006	DOUBLE FREQUENCY METER Mode: AC / DC Rated Voltage: 240V & 415V Frequency Range: 45Hz...65Hz 	CODE 190-007	DIGITAL WATT METER Input: AC 240V, 50Hz 1-Phase 	CODE 190-008
POWER FACTOR METER Range: 0.5 (Lag)...1...0.5 (Lead) 	CODE 190-009	ELECTRONIC TACHOMETER RPM Range: 0...9999rpm Input: AC 240V, 50Hz 1-Phase 	CODE 190-010	RESISTIVE LOAD Resistance: 0Ω, 200Ω, 350Ω, 500Ω, 650Ω, 800Ω, 1kΩ No. of resistive load : 3 	CODE 190-014	INDUCTIVE LOAD Inductance: 0.15H, 0.3H, 0.45H, 0.6H, 0.75H, 0.9H, 1H No. of inductive load : 3 	CODE 190-015
VARIABLE DC POWER SUPPLY Output: 0...250VDC Input: AC 240V, 50Hz 1-Phase 	CODE 190-013	SYNCHRONIZATION INDICATOR Indicator Light 240VAC x 6 units Color: Red 	CODE 190-019	PHASE SEQUENCE INDICATOR To determine the phase sequence of three phase voltages 	CODE 190-020	POWER CIRCUIT BREAKER Contact: NO & NC Coil Voltage: 240VAC 	CODE 190-021

ALTERNATOR & PARALLEL OPERATION EXPERIMENT SYSTEM

Model Number : GOTT-APOE-01

<p>THREE PHASE AC POWER SUPPLY</p> <p>CODE 190-011</p> <p>Pilot Lamps L1 , L2 & L3 Fault Current Circuit Breaker 3 Poles Motor Protection Switch 25A Output: 0...240VAC x 3 units 0...415VAC Input: AC 415V, 50Hz 3-Phase</p> 		<p>THREE PHASE SUPPLY MODULE</p> <p>CODE 190-012</p> <p>Pilot Lamps L1, L2 & L3 Fault Current Circuit Breaker 3 Poles Motor Protection Switch 25A Output: L1-N, L2-N, L3-N 240VAC L1-L2, L2-L3, L1-L3 415VAC Input: AC 415V, 50Hz 3-Phase</p> 		<p>CAPACITIVE LOAD</p> <p>CODE 190-016</p> <p>Capacitance: 1μF, 2 μF, 4 μF, 8 μF, 12 μF, 14 μF, 16 μF No. of capacitive load : 3</p> 		<p>EXPERIMENT TRANSFORMER</p> <p>CODE 190-017</p> <p>Output: 0...42VAC/DC 0...24VAC/DC 0...12VAC/DC Input: AC 240V, 50Hz 1-Phase</p> 
<p>SYNCHRONSCOPE</p> <p>CODE 190-018</p> <p>To measure and display the frequency difference and phase angle between two power systems</p> 		<p>DC COMPOUND MOTOR</p> <p>CODE 159-001</p> <p>Power: 240W Voltage: 240VDC Current: 1A Speed: 1500rpm Excitation Voltage: 240VDC Excitation Current: 0.5A</p> 		<p>TACHO GENERATOR</p> <p>CODE 159-024</p> <p>Speed : 2000rpm Output : Max. 20VDC</p> 		<p>WOUND ROTOR INDUCTION MACHINE</p> <p>CODE 190-024</p> <p>Power: 100W Voltage: 415VAC Current: 0.55A Excitation Voltage: 12VDC Speed: 1400rpm Connection: Δ & Y</p> 
<p>THREE PHASE SYNCHRONOUS GENERATOR</p> <p>CODE 159-005</p> <p>Power: 170W Voltage: 415VAC Current: 0.43A Excitation Voltage: 12VDC Excitation Current: 1.4A Speed: 1500rpm Connection: Star</p> 		<p>DC SEPARATELY EXCITED MACHINE</p> <p>CODE 159-002</p> <p>Power: 240W Voltage: 240VDC Current: 1.0A Excitation Voltage: 240VDC Excitation Current: 1.0A Speed: 1500rpm</p> 		<p>ROTATE SPEED SENSOR</p> <p>CODE 159-018</p> <p>Used with DC Motor Control Unit/ Tachometer</p> 		<p>SAFETY CONNECTING LEAD</p> <p>CODE 237-001</p> <p>4mm connecting leads</p> 
				<p>VERTICAL FRAME</p> <p>CODE 297-000</p> <p>High Level: Din Standard A4 with two shelves Material: Aluminium Side Frame: T shape Size: 3-Layer 1450mm Length</p> 		<p>EXPERIMENT MANUAL</p> <p>CODE 190-025</p> 

EXPERIMENT TOPICS :

- Effective Resistance of an Alternator
- Mechanical & Iron Losses of a Synchronous Generator
- Synchronous Generator Parameters & Open Circuit
- Ohmic & Stray losses of a Synchronous Generator
- Synchronous Generator Parameters & Short Circuit
- Synchronous Reactance of Open & Short Circuit
- Conventional Efficiency of Open & Short Circuit
- Synchronize the Three-phase alternators by using lamp method & synchronous scope
- Response of the alternator on a constant voltage constant frequency system

ORDERING INFORMATION :

<p>ITEM</p> <p>ALTERNATOR & PARALLEL OPERATION EXPERIMENT SYSTEM</p>	<p>MODEL NUMBER</p> <p>GOTT-APOE-01</p>	<p>CODE</p> <p>190-000</p>
---	--	-----------------------------------

Manuals :

- (1) All manuals are written in English
- (2) Model Answer
- (3) Teaching Manuals

Warranty :

2 Years

General Terms :

- (1) Accessories will be provided where applicable
- (2) Manuals & Training will be provided where applicable
- (3) Designs & Specifications are subject to change without notice
- (4) We reserve the right to discontinue the manufacturing of any product

* Proposed design only, subject to changes without any notice.