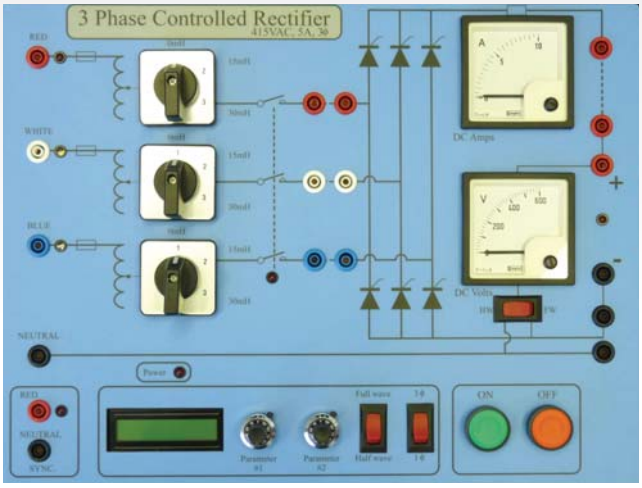
CREATIVE POWER TECHNOLOGIES

3 Phase Thyristor Test Set



The ULK-THY3 System is a 3-phase thyristor bridge rectifier designed specifically for a Power Electronics teaching environment. It provides both undergraduate and postgraduate students with an integrated, flexible, digitally controlled, 3.5kW thyristor rectifier platform.

Features

- 3 Phase Thyristor Rectifier
- Designed Specifically for Education
- User Configurable Topology
- User Selectable Operating Modes
- Selectable AC Input Inductance
- Built-in Protection
- Programmable for Custom Applications

Software

- Optimised for a Teaching Environment
- Supported Topologies: 1ϕ/3ϕ, Half/Full-Wave Rectification, Phase Control/Diode Mode
- Analog Thyristor Phase Angle Selection
- Built-in LCD Display
- Isolated USB Serial Interface
- Supplied with Pre-programmed Thyristor Software
- Custom Software Support Available

Creative Power can produce custom software variations to suit specific customer requirements.

Teaching

The ULK-THY3 and ULK-LOD1 platforms provide an extremely flexible and adaptable teaching and development tool for Power Electronic laboratories.

Comprehensive Thyristor Rectifier undergraduate power laboratory experiments are available to API Affiliated Universities at no additional cost. These laboratory experimental notes are based on the existing proven experiments used in the Electrical Engineering teaching program at RMIT University, Melbourne Australia.

The experimental notes are available at an additional cost for non-API affiliated Universities.

Flexibility

Each test set is readily reconfigurable allowing it to be easily used for experiments ranging from single device switching circuits to multiphase thyristor rectifier investigations.

The controller board has a Texas Instruments TMS320F2810 MCU core which can be custom programmed, integrating with standard library support structures (available separately) to provide a stable starting point for additional applications.

Safety

Safety within the undergraduate laboratory is a vital part of power electronics teaching.

The EPLTS range of products use 4mm shrouded safety sockets for all power connections. In addition, complete galvanic isolation is provided for all user control interfaces.

The microcontroller and control circuitry is powered independently from the power stage to provide additional protection. This enables thyristor switching from near zero voltages up to the bridge's maximum voltage rating.

Power Stage

Configuration	3 Phase Thyristor Rectifier
Input Voltage	0 - 415VAC single phase
DC Bus Voltage Range	0 - 650V maximum
Input Current	5A per phase (maximum)
Input Phase Inductance	0 / 15 / 30mH
Power	3.5kW
Bus Capacitance	External
Cooling	Fan Forced
Temperature	-5°C to 55°C

Control Supply

Controller	Independently isolated
Input Voltage	85-265V /50-60 Hz AC input

Control Interfaces

Communications	USB (Serial Port Compatible)
Programming	JTAG (IEEE 1149.1)
Buttons	Start (Green) / Stop (Red)
Potentiometer	Firing Angle / Spare

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RMIT UNIVERSITY

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