

WELCOME  
TO



C O U R S E  
POWER & CONTROLS

COURSE POWER & CONTROLS  
Pune



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POWER & CONTROLS

# COURSE POWER & CONTROLS

Works:-First Floor, Unit No 7, S.No 82/1  
Pandurang Industries, Dangat Patil Nager, Shivane,  
Pune - 411023, Maharashtra.

[www.coursepower.in](http://www.coursepower.in)

# FACILITY

- ❖ Three decades of experience & expertise in designing Thyristor Controller.
- ❖ Manufacturing facility is located at Sinhagad Road,Pune
- ❖ The factory is complete with facilities for design, manufacture, assembly and testing of Thyristor Power Controller & LT panels

# PRODUCTS

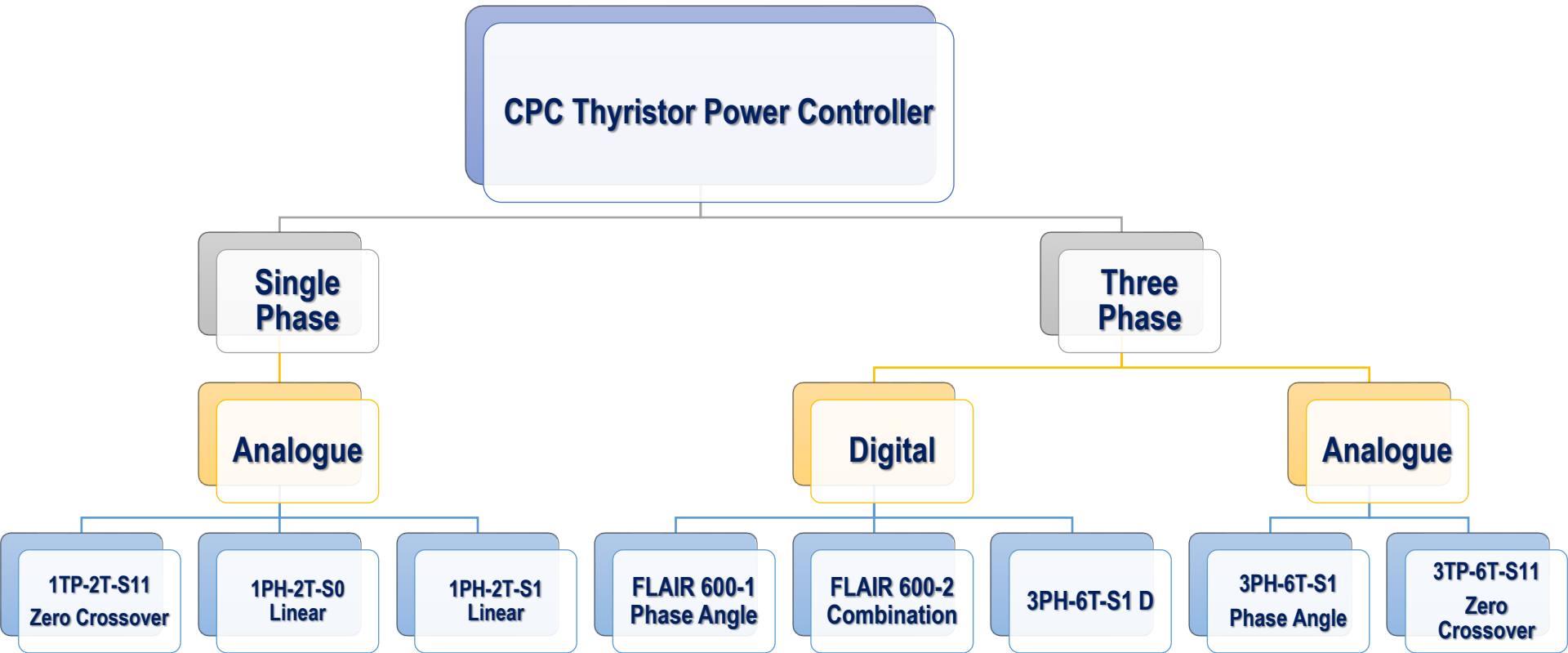
- ❑ Single Phase & Three Phase Thyristor Power Controller from medium to higher capacity in-
  - Analog
  - Digital
  
- ❑ Control Panels for-
  - Total Furnace Control with Thyristor,
  - PLC based systems,
  - Synchronization panels,
  - Environment Controls,
  - Material Handling systems ,
  - Electro-pneumatic controls ,
  - MCC & Power Distribution Panels.

# BASICS

- ❑ Thyristor can be described shortly as a Silicon Control Rectifier (SCR)
- ❑ Thyristor has ability with very quick switching time.
- ❑ Thyristor are becoming very popular as a electrical switching systems against conventional electromechanical switching system.
  
- ❑ Advantages of Thyristor over Electromechanical switching system.
  - ✓ It is very compact & it has noiseless operations.
  - ✓ It is very high efficiency.
  - ✓ Long life as no wear and tear is involved.
  - ✓ Very accurate control is possible.
  - ✓ Can handle large power capacity.
  - ✓ It draws very less power

Electro-mechanical switches generate heat due to its resistance of the internal coil, also its switching time of it is very high. This leads to the some power losses. Whereas Thyristor is solid state device with no moving parts. Also very finite & desired control of output can be achieved using Thyristor. Thus there is very few power consumed by the Thyristor when compared with a Electro-mechanical switch.

# CPC THYRISTOR POWER CONTROLLER



# MODE OF OPERATION OF THYRISTOR CONTROLLER



# CPC THYRISTOR POWER CONTROLLER

## Three Phase Digital & Analogue



## Single Phase Phase Angle & Burst Firing





# FLAIR CPC- 600 SERIES

## TECH.SPECIFICATIONS



FLAIR CPC-600 Digital Thyristor Controller has been developed with the advent of SMART technology of digitization. In the FLAIR series CPC 600-1 & CPC 600-2 models are available 600-1 is Phase Angle control while CPC 600-2 is combination.

CPC 600-2 has unique features of selection of control mode on field as mentioned below.

- ✓ Phase Angle Control - CPC 600-1
- ✓ Combination- CPC 600-2

### Tech Specifications-

- Rating-12 Amps-600 Amps,380-440 VAC & 47-60 Hz frequency.
- Operative Temp- 45 degree centigrade.
- Mounting- Inside panel wall mounting.
- Cooling-In built forced fan cooling.
- Environment Required- Normal dry.
- Power Connection- Copper plated Busbar.
- Control Terminals-Suitable for 0.5-1.5 sq.mm (Phoenix Male & Female type connector)
- Auxiliary Supply-Either 230 V or 110 V AC. (To be confirmed during ordering)
- EMC Test Approved.

# FLAIR CPC-600 -2 COMBINATION

**COMBINATION FIRING CONTROL:** CPC has developed a combination Thyristor Controller. Which works with both Burst Firing control and Phase Angle Control with external potential free NO contact.

## **Advantages –**

- ☐ In Time Cycle control power factor is always unity so power saving is appreciable when it is running on state board electrical supply, However, it draws more power when it operates on DG set.
- ☐ Phase Angle control draw comparatively less power on DG set. So when DG set is switched on, with external potential free contact, Thyristor controller can operate on phase angle mode.
- ☐ Built in Soft Starter facility is available.
- ☐ Inbuilt Semiconductor fuse.
- ☐ Over current trip & current limiting facility is available.
- ☐ User-friendly interference digital display for parameter setting & status checking.
- ☐ Energy saving features.

# ANALOGUE THYRISTOR POWER CONTROLLER

## 3PH-6T-S1 Phase Angle model



## FEATURES

- Compact Design.
- Inbuilt Soft Start.
- Inbuilt Semiconductor Fuse.
- 6 Leg Control.
- Load Connection- Delta or Star with Neutral OR without Neutral.
- Current Limit & Over Load Current facility.
- Design is tested & approved for EMC test by ETDC & Harmonics study test.

# ANALOGUE THYRISTOR POWER CONTROLLER

**3TP-6T-S11**

**Zero Cross over model**



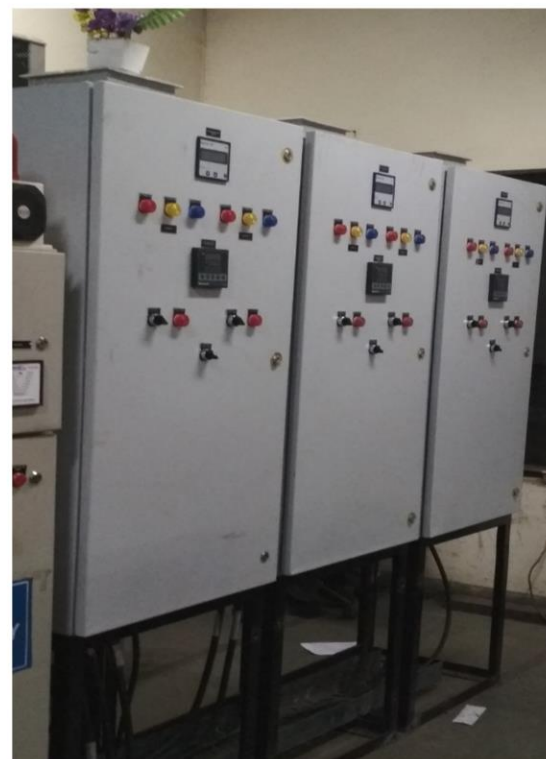
## FEATURES

- Compact Design.
- Built-in semiconductor fuses.
- Over Current limit adjustable.
- Energy-saving features.
- 6 Leg control.
- Load Connection-Delta or Star with Neutral OR without Neutral.
- Harmonics Study test.
- Generation of RFI is almost zero.

# CPC ELE./PLC CONTROL PANEL WITH THYRISTOR CONTROLLER



# CPC Thyristor Control Panel in Ammonia Cracker Unit



**CPC Thyristor Panels at Tata Steel Ltd. (BSL) &  
Uttam Galva Ltd. Khopoli for Ammonia Cracker Furnace Unit.**



# CPC OTHER PRODUCTS RANGE

| <u>S.No</u> | <u>Product</u>                                  | <u>Capacity</u> |
|-------------|---|-----------------|
| 1           | MCC Panel                                       | 200 KV          |
| 2           | Distribution Panel                              | 3000 A ACB      |
| 3           | SCADA /PLC Panel                                | 200 I/O         |
| 4           | VFD Panel                                       | 100 KW          |
| 5           | Furnace Panel                                   | 360 KW          |
| 6           | Synchronizing Panel                             | 500kVA          |
| 7           | Thyristor Switches for Capacitors (APFC panels) |                 |
| 8           | Thyristor Switches for Heaters                  |                 |

# CPC Thyristor Power Controllers

## Valuable Customers



Indian Oil Corporation Limited



HINDUSTAN PETROLEUM CORPN. LTD.

**TATA** STEEL BSL



**ISMT** LIMITED

**MODISON**  
THE SILVER PEOPLE



**FURN-TECK**  
**ENGINEERS**



**ME** MALHOTRA  
ENGINEERS  
MANUFACTURERS & FURNACE CONSULTANTS



# CPC Thyristor Power Controllers

## Valuable Customers



Power Grid HVAC



# LISTS OF SOME OF OUR PRESTIGIOUS CLIENTS

| <u>Name of Company</u>                        | <u>Items Supplied</u>                      |
|---|--|
| TATA Steel Ltd ,Khopoli                       | Thyristor Panels for Ammonia Cracker Units |
| Uttam Galva Ltd,Khopoli                       | Thyristor Panels for Ammonia Cracker Units |
| Malhotra Engineers Pvt Ltd Pune               | Furnace Panels & Thyristor Controller      |
| F.A.T.I.General Equipments Pvt.Ltd.           | Thyristor Panels                           |
| Specialty Sintered Products Pvt. Ltd.         | Distribution Panels                        |
| Comfort HVAC Systems,Numbai                   | MCC Panels                                 |
| Suvidha Engineers India Pvt.Ltd.Pune          | Thyristor Controller                       |
| Pentagon El-Mech Solution , Mumbai            | Thyristor Controller                       |
| Kamran Engineers,Pune                         | Furnace Panels & Thyristor Controller      |
| JK Files Ltd. Chiplun                         | Distribution Panels & Thyristor Panels     |
| Modison Metals Pvt Ltd ,Mumbai,Silvasa & Vapi | Thyristor Panels                           |
| Bharat Forge Ltd Pune                         | Thyristor Controller                       |
| GKN Sinter Ltd,A'Nager                        | Thyristor Panel & Synchronizing Panel      |

| <b><u>Name of Company</u></b>                   | <b><u>Items Supplied</u></b>                                   |
|---|--|
| Vanaz Ltd.Pune                                  | Thyristor Controller   |
| Kalyani Enterprises Pvt Ltd,Pune                | Thyristor Panel  |
| Hindustan Petroleum Corporation Ltd. UP         | Thyristor Panel  |
| Indian Oil Corporation Ltd. UP                  | Thyristor Panel  |
| Mithsagar Electronicss Systems Pvt Ltd          | Thyristor Controller   |
| Heat Shield Technologies, Kolhapur              | Thyristor Controller   |
| Menon Bearing Ltd,Kolhapur                      | Thyristor Controller   |
| Mayura Steels Pvt Ltd,Kolhapur & Belgaum        | Furnace Panels & Thyristor Controller                          |
| Jaya-Hind Industries Ltd.Pune                   | PLC Panel for Fuel Automation system for DG set & Oil Furnaces |
| Diotech Electronics India Pvt.Ltd. Saswad,Pune. | PLC panel with HMI for machine & Vacuum Soldering oven         |
| Daspass Systems New Delhi                       | Thyristor Controller   |
| Furn-teck Engineers,Pune                        | Thyristor Controller & control panels                          |



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THANK  
YOU

