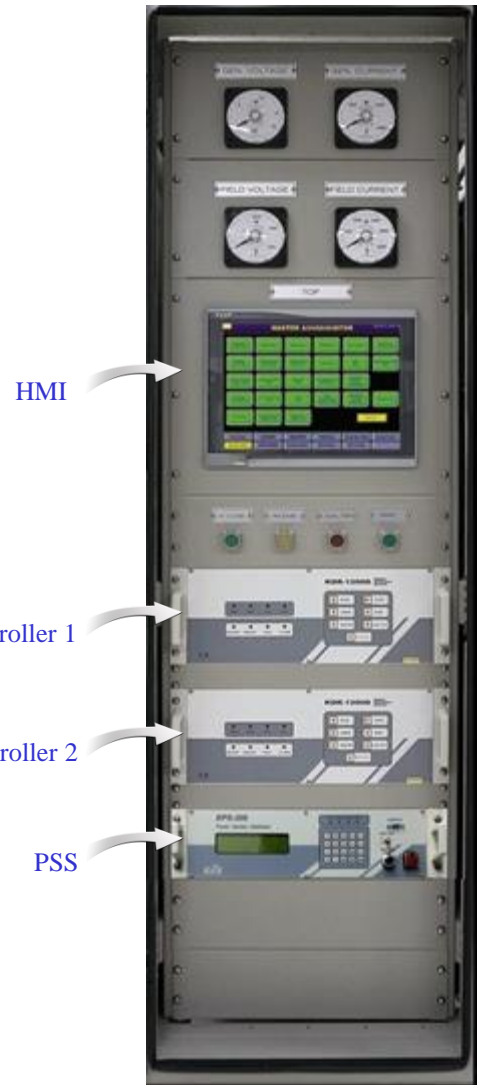


# **KDR-1200D Digital Excitation System**



## □ KDR-1200D Features

- Real time metering
- 32-bit microprocessor
- 0.25% voltage regulation (AVR mode)
- Generator voltage soft start
- Adjustable under frequency threshold
- rms voltage sensing, single or three phase voltage sensing
- Reactive droop current compensation
- Under and over excitation limiting
- Var or power factor control
- Auto tracking of all operating modes
- Dual modes of controller
- Reference adjuster for remote raise/lower control
- Control via a contact input, front panel switches
- Output annunciation via general alarm contacts
- Watchdog timer alarm output contact
- Protection including :
  - Generator under and over voltage
  - Generator under frequency
  - Field over voltage
  - Field over current
  - Loss of voltage sensing
- Input/Output : 74 Points (AI:18, AO:8, DI:32, DO:16)
- Data logging and event recording

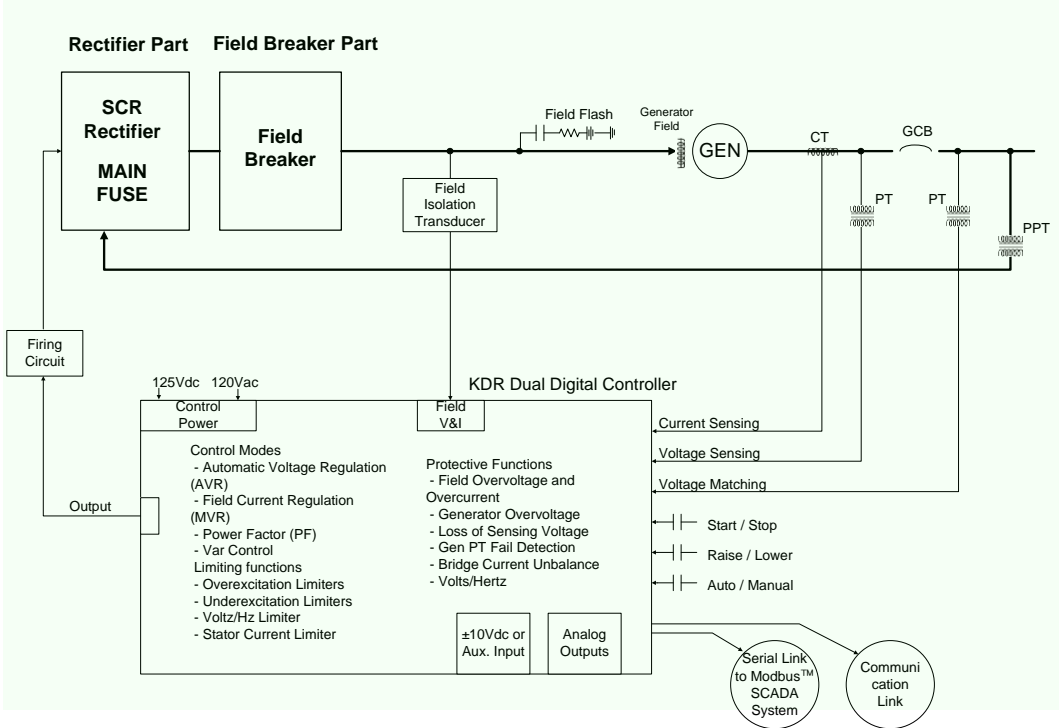


<Control Panel>

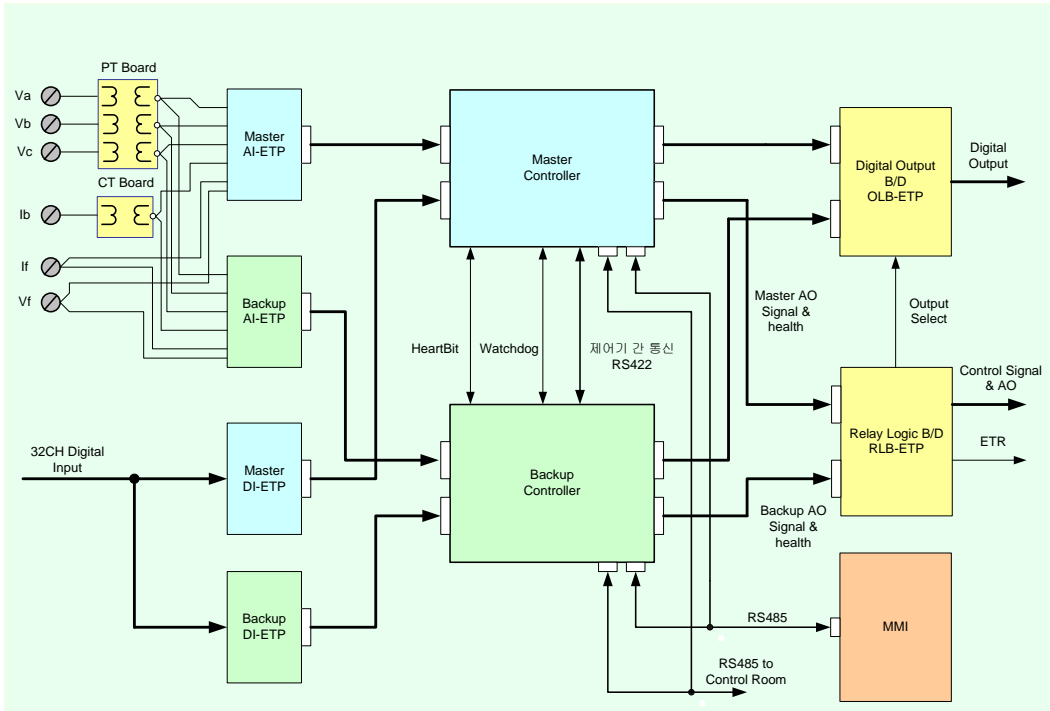


<Dual Controller with I/O Board>

**KDR-1200 Single Line Diagram**



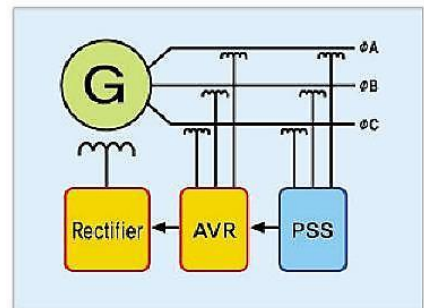
**KDR-1200 Configuration**





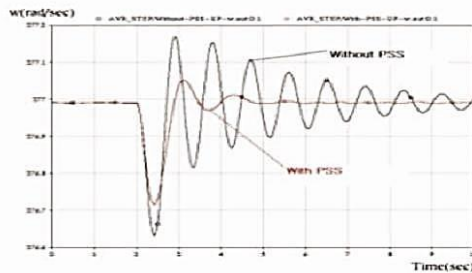
❑ **PSS(Power system stabilizer) EPS-200**

- Digital control by DSP
- Implement PSS2A model that is standard control algorithm of IEEE
- Zero-Lock function
- Self-diagnosis & protection function
- Event logging function
- Modbus communication
- signal processing by low-pass & anti-aliasing Filter
- Calculation of instantaneous active & reactive powers
- Stability Margin

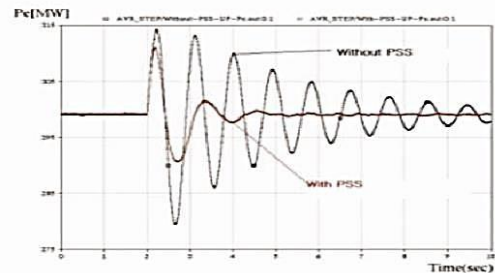


[ Schematic diagram ]

[ Results of PSS performance test in case of stepping up terminal voltage of AVR step test by 5% ]

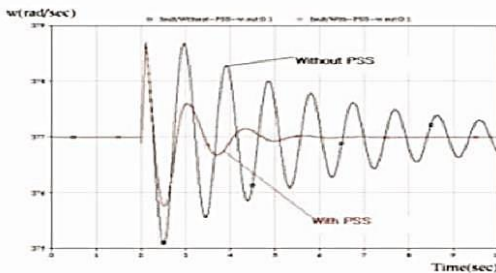


Change of frequency( $\omega$ )

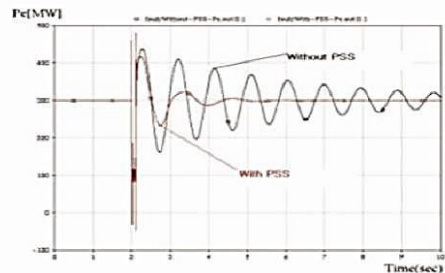


Change of active power( $P_e$ )

[ Results of simulation test of 3-phase short circuit ]



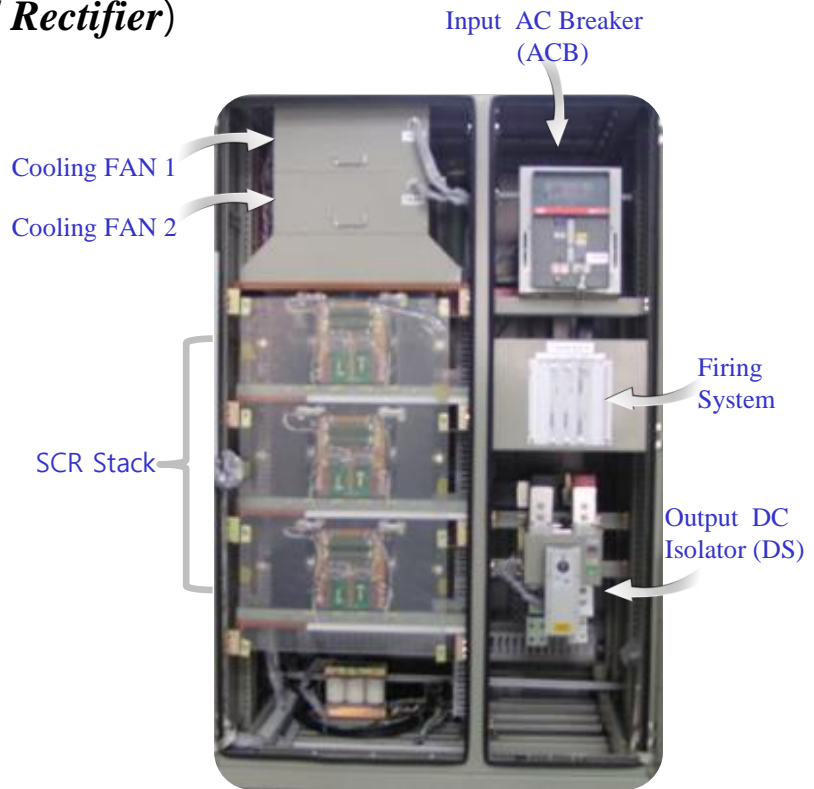
Change of frequency( $\omega$ )



Change of active power( $P_e$ )

❑ **PCR (Phase Controlled Rectifier)**

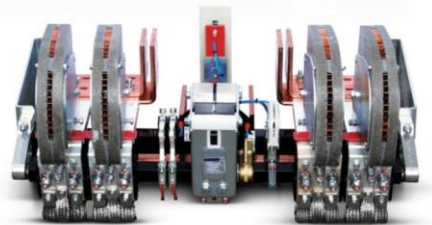
- 3 Phase Full Bridge Rectifier
- Dual Parallel Bridge
- Input AC Breaker
- Output DC Isolator
- Bridge Active Balance Current Control
- Dual Fan Air cooling
- Firing Control Circuit
- Mimic Display Board
- Field Forcing
- On-Line Maintenance



PCR(Phase Controlled Rectifier)

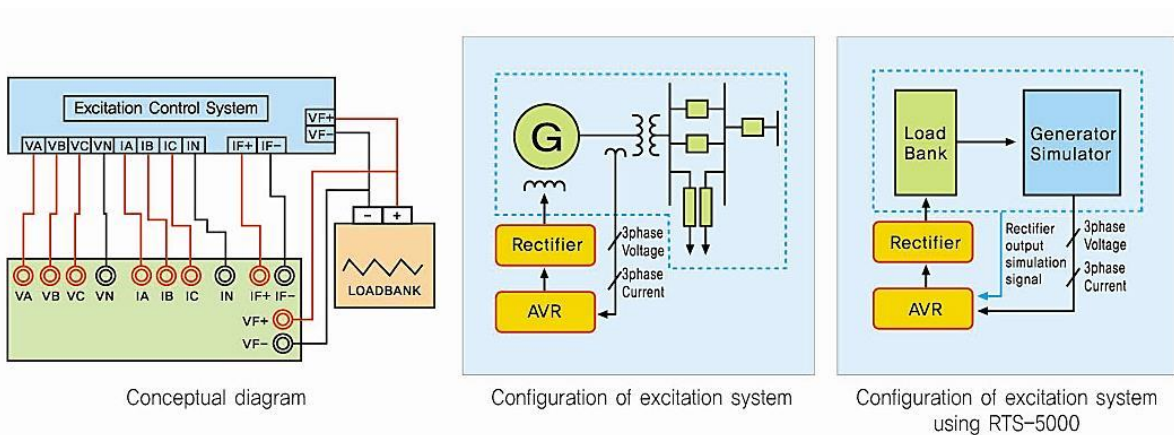
❑ **Field Breaker**

- Field Breaker (ANSI 37.14 & ANSI 37.16)
- Field Discharge Resistor (ANSI/IEEE C 37.18)
- De-excitation Circuit
- AC/DC Initial Flashing
- AC/DC Filter



## Excitation System Test Simulator RTS-5000

- Breakdown diagnosis & adjustment of excitation system
- Function of freely-manipulating output of simulation signal
- Total test and examination of functional performance of automatic voltage regulator of generator
- MVR operation test
- AVR operation test
- AVR PT loss test
- Generator over voltage test
- V/Hz limit test
- AVR step response test
- Under Excitation Limit test
- PSS test





- ▶ Would you like to do replacement of the aging equipment?
- ▶ Would you like to do reliable equipment than the current equipment ?

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**Address : #401 SKn Technopark Biz-center 190-1**

**Sangdaewon-dong, Jungwon-gu, Sungnam-si, Gyunggi-do, Korea**

**Tel. : +82-31-776-0913~5      Fax. : +82-31-776-0916**

**E-mail : [gloryenc@hanmail.net](mailto:gloryenc@hanmail.net) / [nylee320@hanmail.net](mailto:nylee320@hanmail.net)**

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