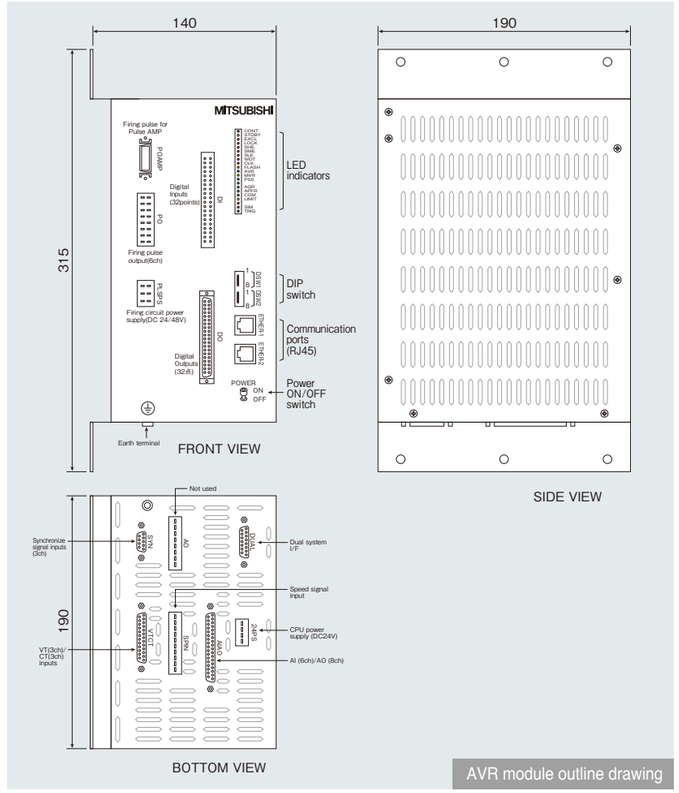
Digital Automatic Voltage Regulator
(MEC700 D-AVR)

General Spec.

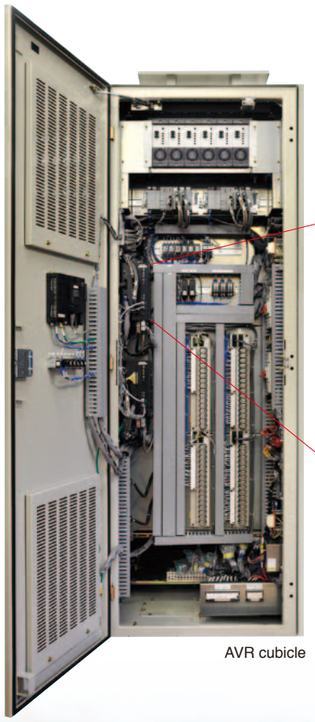
Item		Spec.	Remarks
Ambient conditions	Ambient temperature (under operation)	−10~40℃	To be installed in air-conditioned room. No condensation
	Ambient temperature (under storage)	−10~50℃	No condensation
	Humidity	30~90%RH	No condensation
	Altitude	Less than 1000m	
Withstand voltage	Withstand voltage	Commercial frequency, AC2000V 1min.	
	Impulse withstand voltage	In compliance with JEC210, IEEE472	

Advantage of MEC700AVR

- Realize 5msec sampling time with 32-bit RISC processor.
- Better space factor in a cubicle by downsizing to be an integrated unit.
- Dual system configuration using duplex cable connections of 2 units.
- Correction by Q axis reactance for ⊿f-PSS and standard equipment of torsional frequency removal filter. (⊿ωsignal is optional)
- All interfaces is cable and installed front or bottom side. All connector has different shape for preventing from wrong connection.



AVR module outline drawing



AVR cubicle

MEC700
AVR Module

eco Changes **for a greener tomorrow**

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
http://Global.MitsubishiElectric.com

Safety Precautions

Improper use of products can cause severe injury or death and may result in damage to product and other property.
Please read instruction manual before installing or using product.

SE-D916-A(1103-0.5) Printed in Japan (MDOC)

New Publication, effective Mar.2011
Specifications subject to change without notice.

MITSUBISHI ELECTRIC

Changes for the Better

Digital Automatic Voltage Regulator
(MEC700 D-AVR)

for a greener tomorrow

The digital automatic voltage regulator (D-AVR) is indispensible for operations. It regulates synchronous generator voltage, and is therefore required to have superior reliability, easy operation and maintenance. D-AVR MEC700 is developed and produced which achieve easier maintenance and environmental load-reducing.

Advantage

High reliability・High functionality・High-performance control

- High speed computation using a 32-bit high-speed RISC processor.
- Superior control accuracy using a 16-bit analog-digital conversion.
- ⊿P type and⊿f type PSS are equipped as power grid stabilizing functions.
  Applicable to ⊿ω system PSS with an optional card.
- Reboot function permits automatic recover from a transient fault.

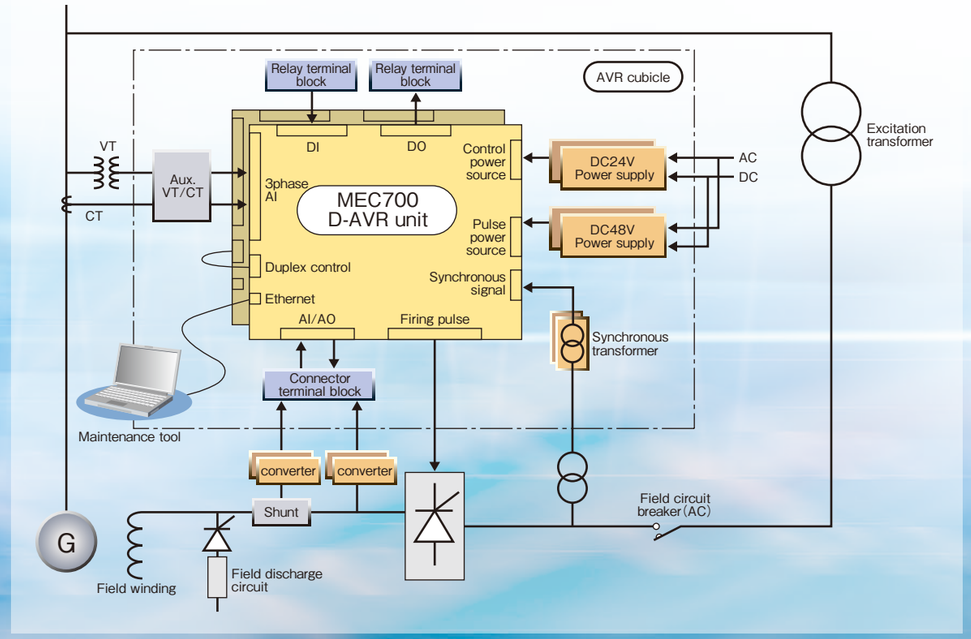
Operation・Maintenance

- Maintenance tool can monitor, operate, parameter set and trend graph display at fault condition.
- Allows quick detection of faulty positions with LED display, maintenance tool alarm system and CPU fault information display.
- High density functions are realized by using box-type module and functional software.
- When dual system is consisted, On-line replacing is applicable. Moreover interface connectors are selected different shape to prevent wrong connection.
- High space efficiency and easier maintenance with high-density and downsizing by use of functional software.
- In order to support periodical inspections, Software and a maintenance tool for tests are provided.

Environmental load-reducing

- Environmental load- reducing by downsizing and less power.

System configuration (dual, thyristor excitation system)



Performance

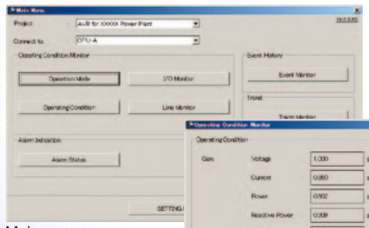
Item	Spec.		Remarks
Auto. Voltage setting range (90R)	At generator no-load 10~110% of rated voltage At generator on-load 95~105% of rated voltage		
Manual voltage setting range (70E)	10% of rated voltage at generator no-load to 120% of field voltage at generator rated load		
Voltage offset error	1% or less		
Voltage detection accuracy	0.5% or less		
CPU sampling time	5msec		240MHz 32bit RISC processor
Power source	For control DC24V±5%, 35W or less For firing pulse DC24V/48V±5%		
Interface	DI : 32 points DO : 32 points		
	AI : 6 points AO : 8 points		±10V
	3 phase input : VT : 3 phase CT : 3 phase or single phase		
	Firing pulse output : 6 points 4parallels thyristor are available (around 5000A)		Max. 10 parallels with connecting pulse amplifier units. (Optional)
	Speed input (Electromagnetic pick up, for ⊿ω-PSS)		Optional card is necessary.
	Ethernet : 2 channels		
Trend function	Analog 16points, digital 16points ±10sec. from a trigger, 5times reservable.		Display in a maintenance tool CSV data is available
Event history	4096 cases		Display in a maintenance tool
Self-diagnosis functions	Basic hardware and software	WDT, Clock loss	
	Analog input	VT/CT zero phase・unbalance detection Maximum and minimum input detection	
	Firing pulse control	Synchronous signal loss, loss of pulse	

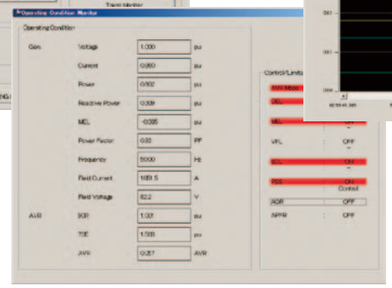
Control function

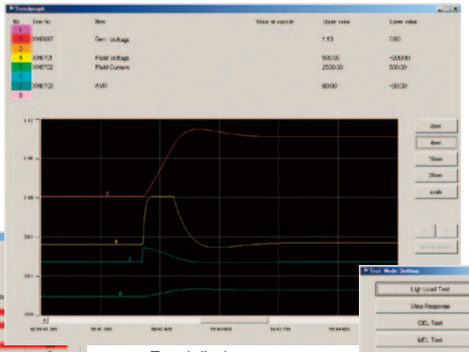
Function			Details
Standard function	AVR	Constant voltage control	
	MVR	Constant field control	
	MEL/UEL	Minimum/Under excitation limit	
	OEL	Over-excitation limit	
Additional functions	PSS	Power system stabilizer ⊿P-PSS	
		⊿f-PSS (with Q-axis reactance compensate)	with torsional filter
		⊿ω-PSS (optional card is necessary)	with torsional filter
	AQR	Reactive power regulation	
	APFR	Power factor regulation	
	VFL	V/Hz limit control	
	SCL	Stator current limit	
	CCC	Cross current compensation	
	LDC/RDC	Line (reactance, resistance) voltage drop compensation	
	Others	SFC, Electric brake field control, Line charge	

Maintenance tool

- Windows® PC base
- Monitor, control, parameter conditioning
- Trend display
- Event log display
- Conditioning test assist


Main screen


Operation status monitor screen


Trend display screen


Test mode selection screen