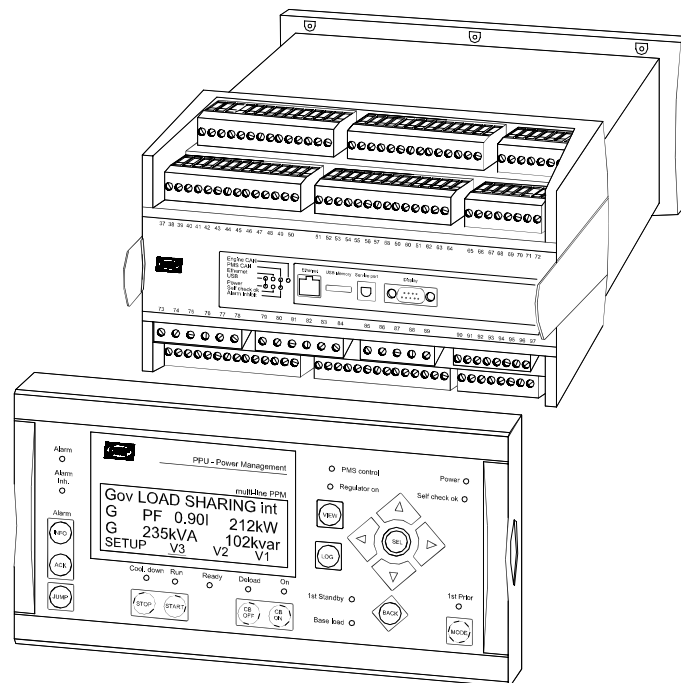


Description of options

Option D1, Voltage/VAr control PPU Power Management (PPM)

4189340413A

SW version 2.5X.X



- Description of option
- Functional description
- Parameter list

Table of contents

- 1. WARNINGS AND LEGAL INFORMATION 3**
 - LEGAL INFORMATION AND RESPONSIBILITY 3
 - ELECTROSTATIC DISCHARGE AWARENESS 3
 - SAFETY ISSUES 3
 - DEFINITIONS 3
- 2. DESCRIPTION OF OPTION 4**
 - D1 OPTION..... 4
- 3. FUNCTIONAL DESCRIPTION 5**
 - REGULATORS..... 5
 - SET POINTS 5
- 4. PARAMETER LIST 6**
 - CONTROLLER SETTINGS 6
 - REGULATION ALARM 6

1. Warnings and legal information

Legal information and responsibility

DEIF takes no responsibility for installation or operation of the generator set. If there is any doubt about how to install or operate the generator set controlled by the unit, the company responsible for the installation or the operation of the set must be contacted.

The units are not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.

Electrostatic discharge awareness

Sufficient care must be taken to protect the terminals against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.

Safety issues

Installing the unit implies work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.



Be aware of the hazardous live currents and voltages. Do not touch any AC measurement inputs as this could lead to injury or death.

Definitions

Throughout this document a number of notes and warnings will be presented. To ensure that these are noticed, they will be highlighted in order to separate them from the general text.

Notes



The notes provide general information which will be helpful for the reader to bear in mind.

Warning



The warnings indicate a potentially dangerous situation which could result in death, personal injury or damaged equipment, if certain guidelines are not followed.

2. Description of option

D1 option

Option D1 is a combined software and hardware option. The specific hardware selection depends on the required interfacing to the automatic voltage regulator.

Option D1 includes the following:

Function	ANSI no.
Voltage synchronisation matching	25, 90
Constant voltage control for stand-alone generator	90
Constant reactive power control for paralleling generator	90

3. Functional description

Regulators



The working principle of the PI regulator is described in the Designer's Reference Handbook.

The outputs for the AVR can be either analogue or digital. Please refer to the datasheet for further information about possible selections.

Set points

The set points for voltage and reactive power are normally set by the switchboard manufacturer during commissioning.

Voltage

No.	Setting	Min. setting	Max. setting	Factory setting	
6004	Nominal settings	Generator volt.	100 V	25000 V	400 V

4. Parameter list

Controller settings



The dead band adjustment is only available, if the AVR is controlled with relay outputs from the controller unit.

2560 Voltage controller

No.	Setting		Min. setting	Max. setting	Factory setting
2561	Voltage control	Dead band	0.0%	10.0%	2.0%
2562	Voltage control	U K_p	0	1000	1
2563	Voltage control	U K_i	0	1000	50

2570 VAR controller (option D1)

No.	Setting		Min. setting	Max. setting	Factory setting
2571	VAR control	Dead band	0.0%	10.0%	2.0%
2572	VAR control	Q K_p	0	1000	1
2573	VAR control	Q K_i	0	1000	50



The VAR controller is used for reactive power control and VAR sharing.

2600 Analogue AVR offset

No.	Setting		Min. setting	Max. setting	Factory setting
2601	Analogue AVR	Offset	-100%	100%	0%

Regulation alarm

2610 AVR regulation failure

No.	Setting		Min. setting	Max. setting	Factory setting
2611	AVR reg. failure	Reg. error	1.0%	100.0%	30.0%
2612	AVR reg. failure	Timer	10.0 s	300.0 s	60.0 s
2613	AVR reg. failure	Output A	R0 (none)	Option dependent	R0 (none)
2614	AVR reg. failure	Output B	R0 (none)		R0 (none)
2615	AVR reg. failure	Fail class	Warning	System fail.	Block

The alarm is activated, if the difference between the measured value and the set point is outside the setting 'Reg. error' for a longer time period than specified in the timer set point.

2630 Relay controls

No.	Setting		Min. setting	Max. setting	Factory setting
2631	Relay control	AVR ON time t_N	10 ms	3000 ms	100 ms
2632	Relay control	AVR per. time t_P	50 ms	15000 ms	500 ms



Please refer to the Designer's Reference Handbook for a complete description of the relay regulation.

DEIF A/S reserves the right to change any of the above