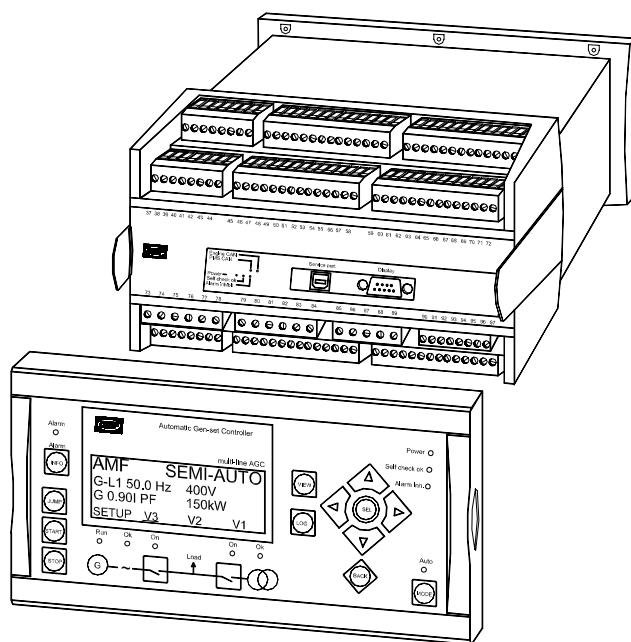


Description of options

Options E and F, Analogue controller and transducer outputs Multi-line 2

4189340439A

SW version 3.0X.X



- *Description of options*
- *Functional description*
- *Parameter list*



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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 options

ANSI numbers

Function	ANSI no.
Selectable +/-25mA or relay output for speed control (governor)	77
Selectable +/-25mA or relay output for voltage control (AVR)	77
1 x 0(4)-20mA outputs	77
2 x 0(4)-20mA outputs	77

Option E1

Option E1 is a hardware option, and therefore a separate PCB is installed in slot #4. The PCB will replace the standard-installed relay PCB in slot #4.

Terminal description

Term.	Function	Description
65	Not used	
66	+/-25mA out	Speed governor, AVR or transducer output 66
67	0	
68	Not used	
69	Not used	
70	+/-25mA out	Speed governor, AVR or transducer output 71
71	0	
72	Not used	



Transducer outputs are 0(4)-20mA outputs.



AVR control is option D1.

Option E2

Option E2 is a hardware option, and therefore a separate PCB is installed in slot #4. The PCB will replace the standard-installed relay PCB in slot #4.

Terminal description

The outputs are active outputs. This means that they use the controller unit's power supply, and therefore no external supply can be connected.

Term.	Function	Description
65	Not used	
66	0	Speed governor, AVR or transducer output 66
67	0-25 mA out	
68	Not used	
69	Not used	
70	0	Speed governor, AVR or transducer output 71
71	0-25 mA out	
72	Not used	



Transducer outputs are 0(4)-20mA outputs.



AVR control is option D1.

Option F1

Option F1 is a hardware option, and therefore a separate PCB is installed in slot #6 in addition to the standard-installed hardware.

Terminal description

The outputs are active outputs. This means that they use the controller unit's power supply, and therefore no external supply can be connected.

Term.	Function	Description
90	Not used	
91	0	Transducer output 91
92	0(4)-20mA out	
93	Not used	
94	Not used	
95	0	Transducer output 95
96	0(4)-20 mA out	
97	Not used	

Option EF2

Option EF2 is a hardware option, and therefore a separate PCB is installed in the slot #4. The PCB will replace the standard-installed relay PCB in slot #4.

Terminal description

Term.	Function	Description
65	Not used	
66	+/-25mA out	Speed governor, AVR or transducer output 66
67	0	
68	Not used	
69	Not used	
70	0-25mA	Speed governor, AVR or transducer output 71
71	0	
72	Not used	



Transducer outputs are 0(4)-20mA outputs.



AVR control is option D1.

Option EF4

Option EF4 is a hardware option, and therefore a separate PCB is installed in the slot #4. The PCB will replace the standard-installed relay PCB in slot #4.

Terminal description

Term.	Function	Description
65	Not used	
66	+/-25mA out	Speed governor, AVR or transducer output 66
67	0	
68	Not used	
69	Relay 69	Speed governor, AVR or configurable
70		
71	Relay 71	Speed governor, AVR or configurable
72		



Transducer outputs are 0(4)-20mA outputs.



AVR control is option D1.

3. Functional description

Analogue outputs

The analogue outputs are active and galvanically separated. No external supply can be connected.

The current outputs can be converted to any voltage in the range inside +/-10V DC by mounting a resistor across the terminals.

Example: A 200Ω resistor across the terminals of a +/-25mA output will supply a range of +/-5V DC.



The choice of resistor depends on the specific governor. Please refer to the DEIF documents 'Interfacing DEIF Equipment with Governors and AVR's' and 'General Guidelines for Commissioning' for detailed information.

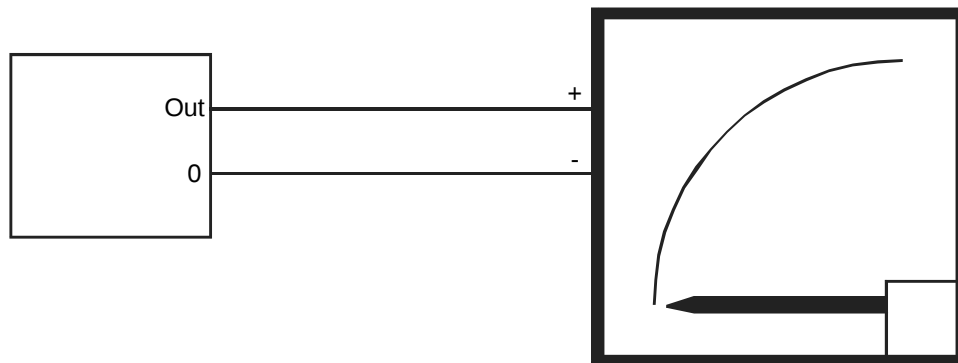


Place the resistor at the governor/AVR end to avoid the signal being disturbed by noise.

When used as transducer outputs, the signal can be connected directly to 4-20mA instruments as shown below.

Transducer output

4-20mA instrument or similar

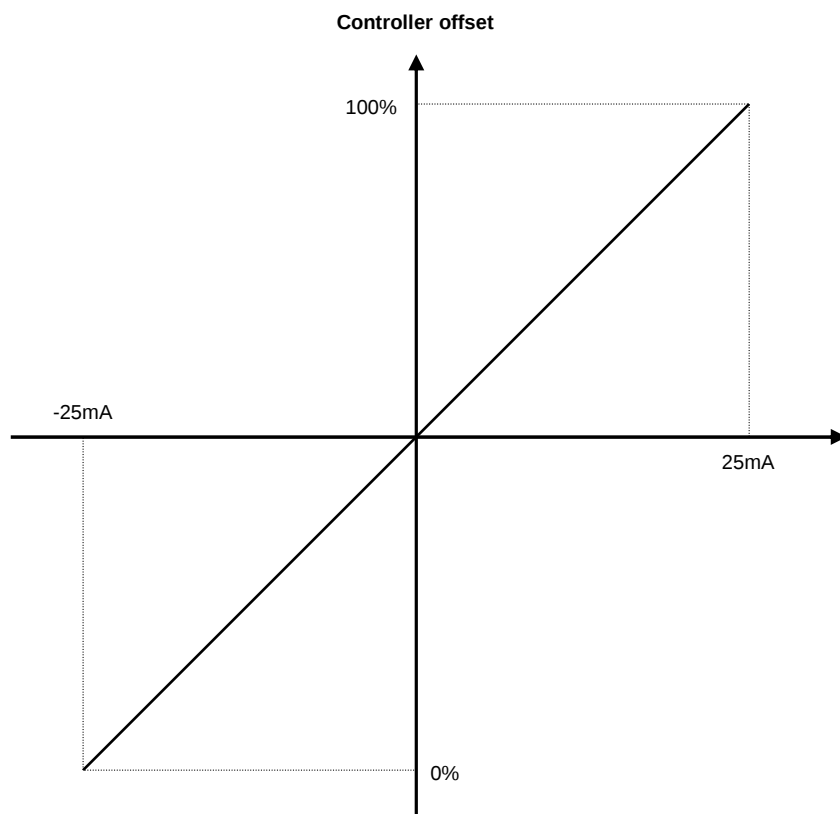


It is recommended to use instruments from the DQ-series of DEIF instruments. Please refer to www.deif.com for more information.

Analogue controller offset

In addition to the controller parameters, this additional setting can be used. The purpose of this setting is to give the analogue output an offset value, when powering up the unit. Furthermore, a digital input can be used to reset the output to the offset value. The offset value must be adjusted, so the gen-set will start up at the correct speed and voltage.

The following drawing is for the E1 option with the output limits set to $\pm 25\text{mA}$.



The offset always refers to the analogue output limits set in menus 5780 and 5790.



When the engine is stopped then the controller outputs are reset to the analogue offset value.



Typically the initial speed/voltage adjustment is made on the speed governor/AVR itself.

4. Parameter list

The setup of parameters is done via the display or the PC utility software (USW).

Regulator output

2550 Analogue GOV

No.	Setting		Min. setting	Max. setting	Factory setting
2551	Analogue GOV	Offset	0%	100%	50%

2670 Analogue AVR offset

No.	Setting		Min. setting	Max. setting	Factory setting
2671	Analogue AVR	Offset	0%	100%	50%



Menu 2670 is only available when option D1 is chosen.



After adjusting the analogue offset values, the controller unit must be reset (power off) in order to use the new adjustment.

Output limits

5780 AOut 66 limits

No.	Setting		Min. setting	Max. setting	Factory setting
5781	AOut 66 limits	Min.	0mA	10mA	0mA
5782	AOut 66 limits	Max.	10mA	25mA	20mA



Menu 5780 is not available with option F1.

5790 AOut 71 limits

No.	Setting		Min. setting	Max. setting	Factory setting
5791	AOut 71 limits	Min.	0mA	10mA	0mA
5792	AOut 71 limits	Max.	10mA	25mA	20mA



Menu 5790 is not available with option F1 and EF4.

5800 AOut 91 limits

No.	Setting		Min. setting	Max. setting	Factory setting
5801	AOut 91 limits	Min.	0mA	10mA	0mA
5802	AOut 91 limits	Max.	10mA	25mA	20mA

5810 AOut 95 limits

No.	Setting		Min. setting	Max. setting	Factory setting
5811	AOut 95 limits	Min.	0mA	10mA	0mA
5812	AOut 95 limits	Max.	10mA	25mA	20mA



Menu 5800 and 5810 are only available when option F1 is chosen.

Transducer outputs**5820 P output 1**

No.	Setting		Min. setting	Max. setting	Factory setting
5821	P output 1	Output A	Not used	Option dependent	Not used
5822	P output 1	Output B	Not used		Not used
5823	P output 1	Type	0-20mA	4-20mA	4-20mA
5824	P output 1	Max. value	0 kW	20000 kW	500 kW
5825	P output 1	Min. value	-9999 kW	20000 kW	0 kW

5830 P output 2

No.	Setting		Min. setting	Max. setting	Factory setting
5831	P output 2	Output A	Not used	Option dependent	Not used
5832	P output 2	Output B	Not used		Not used
5833	P output 2	Type	0-20mA	4-20mA	4-20mA
5834	P output 2	Max. value	0 kW	20000 kW	500 kW
5835	P output 2	Min. value	-9999 kW	20000 kW	0 kW

5840 P output 3

No.	Setting		Min. setting	Max. setting	Factory setting
5841	P output 3	Output A	Not used	Option dependent	Not used
5842	P output 3	Output B	Not used		Not used
5843	P output 3	Type	0-20mA	4-20mA	4-20mA
5844	P output 3	Max. value	0 kW	20000 kW	500 kW
5845	P output 3	Min. value	-9999 kW	20000 kW	0 kW

5850 S output

No.	Setting		Min. setting	Max. setting	Factory setting
5851	S output	Output A	Not used	Option dependent	Not used
5852	S output	Output B	Not used		Not used
5853	S output	Type	0-20mA	4-20mA	4-20mA
5854	S output	Max. value	0 kVA	20000 kVA	600 kVA
5855	S output	Min. value	-9999 kVA	20000 kVA	0 kVA

5860 Q output

No.	Setting		Min. setting	Max. setting	Factory setting
5861	Q output	Output A	Not used	Option dependent	Not used
5862	Q output	Output B	Not used		Not used
5863	Q output	Type	0-20mA	4-20mA	4-20mA
5864	Q output	Max. value	0 kvar	16000 kvar	400 kvar
5865	Q output	Min. value	-8000 kvar	16000 kvar	0 kvar

5870 PF output

No.	Setting		Min. setting	Max. setting	Factory setting
5871	PF output	Output A	Not used	Option dependent	Not used
5872	PF output	Output B	Not used		Not used
5873	PF output	Type	0-20mA	4-20mA	4-20mA
5874	PF output	Max. value	0.50	0.99	0.80
5875	PF output	Min. value	-0.99	-0.50	-0.80

5880 f output

No.	Setting		Min. setting	Max. setting	Factory setting
5881	f output	Output A	Not used	Option dependent	Not used
5882	f output	Output B	Not used		Not used
5883	f output	Type	0-20mA	4-20mA	4-20mA
5884	f output	Max. value	0.0Hz	70.0Hz	55.0Hz
5885	f output	Min. value	0.0Hz	70.0Hz	45.0Hz

5890 U output

No.	Setting		Min. setting	Max. setting	Factory setting
5891	U output	Output A	Not used	Option dependent	Not used
5892	U output	Output B	Not used		Not used
5893	U output	Type	0-20mA	4-20mA	4-20mA
5894	U output	Max. value	0 V	28000 V	500 V
5895	U output	Min. value	0 V	28000 V	0 V



The voltage output represents the L1-L2 voltage.

5900 I output

No.	Setting		Min. setting	Max. setting	Factory setting
5901	I output	Output A	Not used	Option dependent	Not used
5902	I output	Output B	Not used		Not used
5903	I output	Type	0-20mA	4-20mA	4-20mA
5904	I output	Max. value	0 A	9000 A	1000 A
5905	I output	Min. value	0 A	9000 A	0 A



The current output represents the L1 current.

5910 U BB (mains) output

No.	Setting		Min. setting	Max. setting	Factory setting
5911	U BB output	Output A	Not used	Option dependent	Not used
5912	U BB output	Output B	Not used		Not used
5913	U BB output	Type	0-20mA	4-20mA	4-20mA
5914	U BB output	Max. value	0 V	28000 V	500 V
5915	U BB output	Min. value	0 V	28000 V	0 V



The voltage output represents the L1-L2 voltage.

5920 f BB (mains) output

No.	Setting		Min. setting	Max. setting	Factory setting
5921	f BB output	Output A	Not used	Option dependent	Not used
5922	f BB output	Output B	Not used		Not used
5923	f BB output	Type	0-20mA	4-20mA	4-20mA
5924	f BB output	Max. value	0.0Hz	70.0Hz	55.0Hz
5925	f BB output	Min. value	0.0Hz	70.0Hz	45.0Hz

5930 Multi input 102

No.	Setting		Min. setting	Max. setting	Factory setting
5931	Multi input 102	Output A	Not used	Option dependent	Not used
5932	Multi input 102	Output B	Not used		Not used
5933	Multi input 102	Type	0-20mA	4-20mA	4-20mA
5934	Multi input 102	Max. value	0	28000	500
5935	Multi input 102	Min. value	0	28000	0

5940 Multi input 105

No.	Setting		Min. setting	Max. setting	Factory setting
5941	Multi input 105	Output A	Not used	Option dependent	Not used
5942	Multi input 105	Output B	Not used		Not used
5943	Multi input 105	Type	0-20mA	4-20mA	4-20mA
5944	Multi input 105	Max. value	0	28000	500
5945	Multi input 105	Min. value	0	28000	0

5950 Multi input 108

No.	Setting		Min. setting	Max. setting	Factory setting
5951	Multi input 108	Output A	Not used	Option dependent	Not used
5952	Multi input 108	Output B	Not used		Not used
5953	Multi input 108	Type	0-20mA	4-20mA	4-20mA
5954	Multi input 108	Max. value	0	28000	500
5955	Multi input 108	Min. value	0	28000	0

5960 P total consumed

No.	Setting		Min. setting	Max. setting	Factory setting
5961	P total consumed	Output A	Not used	Option dependent	Not used
5962	P total consumed	Output B	Not used		Not used
5963	P total consumed	Type	0-20mA	4-20mA	4-20mA
5964	P total consumed	Max. value	0kW	20000kW	500kW
5965	P total consumed	Min. value	-9999kW	20000kW	0kW

5970 P total available

No.	Setting		Min. setting	Max. setting	Factory setting
5971	P total available	Output A	Not used	Option dependent	Not used
5972	P total available	Output B	Not used		Not used
5973	P total available	Type	0-20mA	4-20mA	4-20mA
5974	P total available	Max. value	0kW	20000kW	500kW
5975	P total available	Min. value	-9999kW	20000kW	0kW

Regulator output selection

These menus are used to select which analogue output to use for governor and/or AVR control.

5980 Governor output

No.	Setting		1 st setting	2 nd setting	3 rd setting	Factory setting
5981	Governor output	Output A	Disabled	AO 66	AO 71	Disabled

5990 AVR output

No.	Setting		1 st setting	2 nd setting	3 rd setting	Factory setting
5991	AVR output	Output A	Disabled	AO 66	AO 71	Disabled



Menu 5990 is only available when option D1 is chosen.



Menu 5980 and 5990 are not available with option F1.

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