UNIGEN Plus
M109/M114

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Procedure A51 Z1 8 0005 B-En

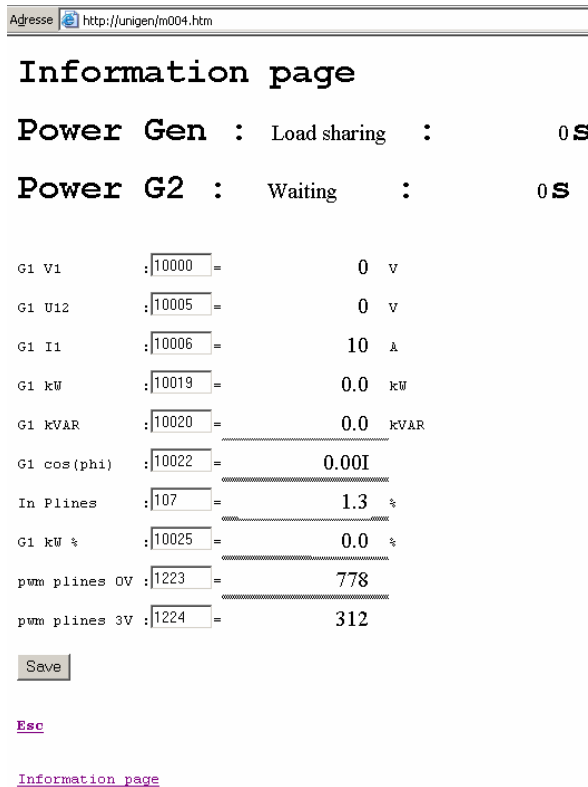# *Calibration of paralleling lines.*

A51 Z1 8 0005 B-En.doc

Introduction

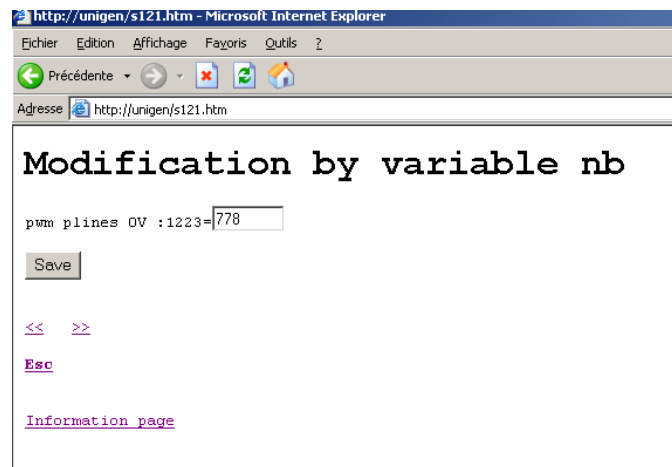This procedure will describe the way to calibrate paralleling lines.

Procedure

With a Unigen Plus A51Z1-A51M109, you need to do the following action to have a good calibration of the paralleling lines.

1. Flash of the new software.
   - Put the boot strap on the Unigen Plus.
   - Connect the Unigen Plus to the PC with the serial cable RS232.
   - Put the power supply of the Unigen Plus.
   - Start the software Flash-IT.
     - i. Tab 'option':
       Select enable on the user-serial-number generation;
       Put the address 0x001800;
       Put the prefix and number like that:
       Ex: serial number = 0106A001 prefix= 0106A number = 001.
     - ii. Tab 'config':
       Select 'autodetect';
       Select 'sector-erase'.
     - iii. Tab 'file:
       Select '*.h86' on the bottom of the window;
       Select the file A51fullV1_02M114.h86 (provide in the e-mail);
       Select 'Analysis+download'.
     - iv. At the end:
       The status window is green;
       Stop the software 'Flash it';
       Stop the power of the Unigen Plus;
       Remove the boot strap of the Unigen;
       Put the power of the Unigen Plus.

2. Connection TCP-IP with the Unigen Plus
   - Establish the TCP-IP connection with the Unigen Plus;
   - Start the web browser (Internet Explorer, Netscape,….);
   - In the "location" or "address" field of the web browser, enter the URL of the Unigen Plus: **http://unigen;**
   - The Unigen password page should appear in the browser window. Enter your password.

3. Calibration of the 0V of the paralleling lines.
   - In the 'Information Page', put in boxes variables 'E01223', 'E01224', 'E00107' and 'E10025' and push 'Save'.
   - Put 0V in the 'Breaker input' in terminal 5 or close the breaker of the genset and see the value of the variable 'E00107', if you have 0% it's ok if you have more of 0% you need to increase the value of the variable 'E01123' if you have less of 0% you need to decrease the value of the variable 'E01223'.
   The good value of the variable 'E01223' is between 775 and 790.
   - To change the value of a parameter. When you are in the 'information Page', click esc / configuration / modification by variable nb / put the number of the variable you want to change the value (ex: 1223) / Save /modify the value(ex:778) / save / Information page.

Information page

Power Gen : Load sharing : 0 **S**

Power G2 : Waiting : 0 **S**

G1 V1	:10000	=	0 V
G1 U12	:10005	=	0 V
G1 I1	:10006	=	10 A
G1 kW	:10019	=	0.0 kW
G1 kVAR	:10020	=	0.0 kVAR
G1 cos(phi)	:10022	=	0.00I
In Plines	:107	=	1.3 %
G1 kW %	:10025	=	0.0 %
pwm plines 0V	:1223	=	778
pwm plines 3V	:1224	=	312

Save

Esc

Information page

Variable you need to see in the information page. (Here the calibration of the 0V is bad).

Modification by variable nb

pwm plines 0V :1223= 778

Save

<<   >>

Esc

Information page

To modify the value of a variable.

4. Calibration of the 3V of the paralleling lines.
   - Put 0V in the 'Breaker input' in terminal 5 or close the breaker of the genset, put 100% of load and adjust single turn potentiometer of kW nominal to have exactly the value of 100.0% in the parameter 'E10025' and see the value of the variable 'E00107', if you have 100.0% it's ok if you have more of 100.0% you need to increase the value of the variable 'E01124' if you have less of 100.0% you need to decrease the value of 'E01224'.
   The good value of the variable 'E01224' is between 310 and 320.
   - To change the value of a parameter. When you are in the 'information Page', click esc / configuration / modification by variable nb / put the number of the variable you want to change the value (ex: 1224) / Save /modify the value(ex:312) / save / Information page.

5. Saving of the calibration of paralleling lines.
- When the breaker is closed and you have 0% of load and you can see 0% in the variable E00107 , it's OK for the calibration of the 0v of the paralleling lines.
- When the breaker is closed and you have 100% of load and you can see 100% in the variable E00107, it's OK for the calibration of the 3V of the paralleling lines.
- Save the calibration of paralleling lines: when you are in the 'information Page', open the breaker of the genset, click esc / system / save all parameters / Flash it.

Main variable involved in the calibration of the paralleling lines:

Variable number	Label	Description	Default value
V01223	PWM plines 0V	Calibration of the v of the paralleling lines	778
V01224	PWM plines 3V	Calibration of the v of the paralleling lines	312
V00107	In Pines	Input of the paralleling lines	
V10025	G1 kW%	Geenrator global KW in percent of Nominal	