

VME 602X – Series

Service Manual

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The only purpose of this manual is a description of the product. It must not be interpreted a declaration of conformity for this product including the product and software.

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UEP 6000 Power Supply Configuration and Test Software

The MUH6000 program is a software for Windows based PC's to test and set-up the configuration and calibration of WIENER power supplies of the UEP 6000 series. The communication is via RS232 using the WIENER UEP 6000 adapter cable.

WIENER Plein & Baus Corp. / GmbH is not responsible for any damage of the power supply and / or crate or of any module inside the crate caused by changing the factory prepared configuration and calibration of the power supply. The test and diagnostic box and MUH 6000 software has to be used by authorized and qualified personnel only!

To protect the UEP 6000 power supply for unauthorized access there is a hardware write protection. This write protection prevents unauthorized users from changing the nominal voltages, calibration values, and current limits. To override this protection you most have the Flash6.exe program.

!!!!! DANGER - HIGH VOLTAGE !!!!!

For authorized, qualified service personnel only

This power supply uses high voltage up to 400V inside. Unauthorized persons are not allowed to open the UEP 6000 power supply or to connect them to AC mains or use them without completely closed chassis. Do not open while connected to AC mains, unplug first from the wall outlet. After opening the power supply discharge first all capacitors of primary side (AC input module and 3-pin primary distribution cables/connectors) as well as of the MUH AUX power supply with a load resistor.

In case of questions please contact:

W-IE-NE-R Plein & Baus Ltd., Dr. A. Ruben 300 East Auburn Ave. Springfield, Ohio 45505 Phone : (937) 324 2420 E-mail: sales.us@wiener-d.com

FAX : (937) 324 2425 URL : http://www.wiener-d.com

1) MUH 6000 installation and start

Please copy the RS232.DLL as well as the WIENER.INI configuration file to the Windows directory of your computer. <u>Before starting the program make sure that the power supply is not connected to the AC-line</u>. Connect the UEP 6000 power supply to the serial port of the PC via the WIENER adapter cable. **DO NOT CHANGE THIS CONNECTION WHILE THE POWER SUPPLY IS CONNECTED TO AC MAINS!!!**

Change the COM setting to fit your setup the WIENER.INI file by changing COM2 to the correct COM port of the used serial port.

Connect the power supply to the AC mains line.

During program start the software automatically detects and connects to the power supply if the RS232 connection is available through the selected COM port. The main window displays the power supply setting and status as shown in the following example. In case of any communication problem (wrong COM port, cable connection not ok, ...) the "RS232 connection is interrupted" error message is shown. The main window shows further the power supply ID (serial number or part number).

🧮 UEP6000 (Period 413	5 ,Messag	es: 2498	9 sent, 24	4989 rece	eived)			- 🗆 ×
File Options Configuration	Help							
Power Supply Version	UEP600)0 2.16						
Power Supply ID	209412	1						
CAN Version:	CAN 1.0)5						
Channel Name:	+5¥0	+12V	_	+3¥3	_	-12V	_	_
Calibration (I-Monitor):	15096	5033	0	15384	0	4960	0	0
Calibration (Kovp):	15534	8134	0	15534	0	8134	0	0
Calibration (U-Monitor):	757	1880	0	756	0	1882	0	0
Calibration (Ku):	21024	10211	0	20980	0	10211	0	0
Calibration (Kf):	850	808	0	847	0	806	0	0
Configuration Flags	00 00 0	080						
Output Voltage [V]:	5.00	12.00	0.00	3.30	0.00	12.00	0.00	0.00
Current Limit [A]:	115.00	23.00	0.00	115.00	0.00	23.00	0.00	0.00
Monitoring:Umin [V]:	4.75	11.40	0.00	3.13	0.00	11.40	0.00	0.00
Monitoring:Umax [V]:	5.25	12.60	0.00	3.47	0.00	12.60	0.00	0.00
Monitoring:Imin [A]:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monitoring:Ima× [A]:	115.00	23.00	0.00	115.00	0.00	23.00	0.00	0.00
0VP [V]:	6.25	15.00	0.00	4.50	0.00	15.00	0.00	0.00
Temperature Limit:	127	127	127	127	127	127	127	127
Voltage fine adjust:	0	0	0	0	0	0	0	0
PS Temperature (max.)	127	127	127	127	127	127	127	127
Power-On Delay [ms]	0	0	0	0	0	0	0	0
Operating Time	284 mir	nutes (O d	iays, 4 h	ours, 44	minutes)			
Status	OK	OK	OK	OK	OK	OK	OK	OK
POWER ON								
AC OK								
TRIP OFF ENABLED								
Temperature	-	-	-	-	-	-	-	-
Voltage [V]	4.98	12.02	0.00	3.29	0.00	12.01	0.00	0.00
Current [A]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The UEP 6000 power supply can be switched on or off by mouse clicking on the POWER ON / POWER OFF line or by selecting the menu item. After switching on all power supply channels should show an "OK" status.

2) Power supply operation and configuration file

Please save the present configuration of the connected power supply as a file to hard or floppy disk before changing any item. It is recommended to keep all configuration files to allow an easy restore of the configuration

🗮 UEP4020 (Measurement 2	230)						_ 🗆 ×
<u>File</u> <u>Options</u>	Configuration H	elp						
Power Supp	ly ID	0383.9004	4					
Channel		+ 5 V	+ 12 V	+ 15 V	+ 24 V	- 5 V	- 12 V	- 15 V
Calibration	(l-Monitor)	6449	5571	2157	3374	1620	5479	2115
Modulڂurr	ent [A]	450.00	45.00	11.25	22.50	112.50	45.00	11.25
Modul Cyrr	ent Limit [A]	460.00	46.00	11.50	23.00	115.00	46.00	11.50
Modul 0	(DAC)	234	186	233	50	243	186	233
Modul Unc	Save As							? × 1
min. Voltaj	F 3		E-1	J				
max. Volta	File <u>n</u> ame:			ders:			OK	[5
max. Curre	*.psd		c:\	service/m	uh	- E	Cl	5
	2102009.psd	1	- 6	l c:\			Lancel	
	2104181.psd	!		service				13
Temperatu	2104453.psc			🔄 muh				i.
Poti (0-255	2104331.pst			🧕 6000se	e~1			. 7
limit (0-25							<u>R</u> ead or	ly 7
Status			_			∇		IK.
POWER 0								
AC OK	Save file as <u>t</u>	уре:	Drig	ves:				
TRIP OFF	Power-Suppl	y Definition	7 6	D c:		-		
	,							
-								

data at a later time.

3) Power supply set-up and calibration

To access any (available) parameter point the cursor on it and click with the left mouse button.

If you do not see the parameters mentioned below, click on the "**Configuration**" menu. This will bring up a window that allows you to choose which parameters are shown.

WIENER Plein & Baus Corp. / GmbH is not responsible for any damage of the power supply, VME crate or of any module inside the crate caused by changing the factory prepared configuration and calibration of the power supply. To protect the UEP 602X power supply for unauthorized access there is software write protection. All parameters that are gray are write protected.

💰 Flash	: Connected with	ı "UE	P60	00	2.16	5"										-	– ×
<u>F</u> ile <u>F</u> lash	Configuration He	lp															
Protecte externa	d Write: SRAM:	EN. use	ABL :d	ED													
Working	j Code:	Fla	sh I	d:0()02,	Softwa	are	''UE	P600	0 2.1	6''						
Alternat	e Flash:	Fla	sh I	d:0()01,	Softwa	are	''UE	P600	0 2.1	3''						
Boot Co	de:	"UE	EP6(000	R 2.	13''											
Silicon I	D:	0XI	E 4														
DumpO	xdata:0X0000	FF	FF	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump1	xdata:0X0000	FF	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump2	xdata:0X0000	FF	FF	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump3	xdata:0X0000	\mathbf{FF}	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump4	xdata:0X0000	\mathbf{FF}	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump5	xdata:0X0000	\mathbf{FF}	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump6	xdata:0X0000	\mathbf{FF}	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump7	xdata:0X0000	\mathbf{FF}	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump8	xdata:0X0000	\mathbf{FF}	\mathbf{FF}	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00
Dump9	×data:0X0000	FF	FF	00	50	43	20	43	6F	6E	74	72	6F	6C	00	00	00

To enable "WRITE ,, you must use the WIENER flash6.exe program. This is available only to authorized personnel. Please contact WIENER for more information.

Software Parameter Descriptions:

CHANNEL

Module definition

define channel name set voltage and current range setting (digits) *Example:* **STBY: 31V** / **Ampere XXXX.** / **Volt XX.**

Note: Wrong range settings can result in a wrong current and voltage display on the UEL 6020 display even in case of correct output values.

Channel Definition		×
✓ Modul exists Channel Name + ▼ 5 ▼ ¥ ▼ 0 ▼	Voltage Range CXXX. Volt CXX. Volt CXX. Volt CXX.X Volt CXX.X Volt	Current Range CXXXX. Ampere CXXX. Ampere CXXX Ampere CXXX Ampere
OK		

Voltage CalibrationVoltage Calibration

With the UEP6000.EXE software, the lines "Calibration (Kovp)", "Calibration (Ku)" and "Calibration (Kf)" are available. This values describe the module ovp voltage divider, the module sense voltage divider, and the relation between the module coarse and fine DAC.

Typical values for different modules:

Module-Data

MRP

	R5[k]	a pha	Kf
Version .B2 and below	75	0 8131	7533
Version .B3 and above	750	09744	860

Modules

Module Type	R4,R12 [k0hm]	MRP Ku	:B2 Poti[mV]	MRP Ku	:B3 Poti[mV]	Umax [V]	R9,R10 [k0hm]	Коур	OVPmax F [V]	R5/8
5V-MEH, <= Index A5	13.3	34729	4.34	28978	0.59	5.92	27.4	24492	6.82	
5V-MEH, >= Index A6	22.1	25208	5.98	21034	0.82	8.15	43.2	15534	10.76	
MEH10	33.2	18731	8.04	15630	1.10	10.97	56.2	11941	14.00	2.2
MEH12, <= Index A1	61.9	11254	13.39	9391	1.83	18.26	82.5	8134	20.54	2.2
MEH12, ≻= Index A2	56.2	12223	12.33	10 199	1.69	16.82	82.5	8134	20.54	2.2
MDL12/24, (MEH24)	110	6743	22.34	5627	3.06	30.48	133	5046	33.12	
MEH48	221	3503	43.01	2923	5.88	58.67	27.4	2449	68.23	4.7

To find the correct calibration values for a specific module, click in the UEP6000.EXE to the Ku value. Then the following window is displayed:

Voltage Calibrati	on, Channel O			×
	D	anger!		
During calibrati Continue only of your electro	ion the output volt if you realy know mics and think ab	tage will rise o what you are out active bac	over the normal lin doing. Disconnect kplane termination	nits. t all ns.
ucal	755			
Ku	21042	DACu (Cali	bration) 255	
Kf	828	measured	Voltage	
ОК	CANCEL	(CALIBRATE	

Set the Ku and Kf values to the table values of the module that is used, click OK, and click to the Ku value again. Then click on the CALIBRATE button. An automatic calibration is started. Now enter the real output voltage (measured with a voltmeter) into the "measured Voltage" field. Hit the ENTER Key or click on the CALIBRATE button again. Ready.

Now you have the calibrated values for Ku and Kf. By comparing the Ku value with the table above, you could see which module you have got.

Click to the Kovp value and change it to the table value.

Now the calibration is ready, and you should set the Output Voltage and OVP levels.

Default values

	Value	Maximum
Output Voltage [V]	The voltage the customer wants	Umax (module table)
OVP[V]	125% of the Output Voltage	OVPmax (module table)

REMARKS

In some cases, the MUH6 voltage measurement range is lower than the maximum module output voltage. (e.g., if you connect a 24V module to U0, which could measure max. 7.5V).

During calibration, the DACu value of 255 is used by default. (This will give the best accuracy). But if the module output voltage exceeds the MUH6 measurement range, the calibration will fail. In that case, you should reduce the DACu value before pushing the "CALIBRATE" button.

Cal I-Monitor Current Calibration

Calibration (I-Monitor):, Cha×					
24882					
measured Currer	nt 2.50				
CALIBRATE					
ОК	CANCEL				

The current calibration should be done for a current limit close to full load (90%) for each voltage channel. Connect the power supply output to a load and measure the actual current. The calibration factor is automatically calculated if writing the data for the measured current and monitor voltage to the computer and pressing "CALIBRATE". If the calibration factor is known it can be typed in directly. To store the new calibration setting for the channel press "OK".

After a current calibration the correct current monitoring should be checked for lower loads ($\frac{1}{2}$ and $\frac{1}{4}$ of nominal current value).

Channel O, Output V	oltage [V]: 🛛 🗙
Value	5.00
minimum Value	0.00
maximum Value	8.15
Exponent	-2
ОК	CANCEL

Output Voltage Define Nominal Voltage

Value is the nominal voltage of the voltage channel.Minimum Value is the minimum allowed value for the nominal voltage.Maximum Value is the maximum allowed value for the nominal voltage.Exponent gives the number of digits after the decimal.

Current Limit

output current limit (Secondary programmable current limit) Standard setting: Hardware Limit

This Current Limit is the maximum current value that the module is permitted to produce. When this current limit is reached the module will enter into a constant current mode by lowering the voltage until it reaches the minimum allowed voltage. By default this value is set to the hardware limit of the module.

Monitoring:Umin

Software minimum voltage limit

Standard settings: 97.5% of nominal voltage Unom

The minimum voltage limit is the minimum allowed voltage for a given channel. If the voltage of that channel ever reaches or drop below the minimum value, the power supply will turn off with an "Undervoltage " error.

Channel O, Monitoring:Umin [V]: 🔀					
Value	4.75				
minimum Value	0.00				
ma×imum Value	327.67				
Exponent	-2				
ОК	CANCEL				

Value is the minimum allowed voltage for the channel.Minimum Value is the minimum allowed value.Maximum Value is the maximum allowed value.Exponent gives the number of digits after the decimal.

Monitoring:UmaxSoftware maximum voltage limitStandard settings: 105% of nominal voltage Unom

The maximum voltage limit is the maximum allowed voltage for a given channel. If the voltage of that channel ever reaches or exceeds the maximum value, the power supply will turn off with an "Overvoltage " error.

Channel O, Monitoring:Umax [V]: 🔀					
Value minimum Value ma×imum Value	5.25 0.00 327.67				
Exponent	-2				
ОК	CANCEL				

Value is the maximum allowed voltage for the channel.Minimum Value is the minimum allowed value.Maximum Value is the maximum allowed value.Exponent gives the number of digits after the decimal.

Monitoring:Imin Software minimum current limit Standard settings: No minimum (0)

The minimum current limit is the minimum allowed current for a given channel. If the current for that channel ever reaches or drop below the minimum value, the power supply will turn off with an "Undercurrent " error.

Channel O, Monitoring:Imin [A]: 🛛 🔀							
Value minimum Value maximum Value	0.00 0.00 0.00						
Exponent	-2						
ОК	CANCEL	-					

Value is the minimum allowed current for the channel.Minimum Value is the minimum allowed value.Maximum Value is the maximum allowed value.Exponent gives the number of digits after the decimal.

Monitoring:Umax

Software maximum cuurent limit Standard settings: 100% of Hardware Limits

The maximum cuurent limit is the maximum allowed current for a given channel. If the cuurent of that channel ever reaches or exceeds the maximum value, the power supply will turn off with an "Overcurrent" error.

Channel O, Monitoring:Imax [A]: 🗴								
Value	115.00							
minimum Value	0.00							
maximum Value	115.00							
Exponent	-2							
ОК	CANCEL							

Value is the maximum allowed voltage for the channel.Minimum Value is the minimum allowed value.Maximum Value is the maximum allowed value.Exponent gives the number of digits after the decimal.

OVP OVP setting

Standard settings: 125% of Unom

OVP is a secondary voltage protection. It sets the maximum voltage that a module may produce. If the module ever detects a value greater than OVP it will turn off the power supply with an "Overvoltage" error.

Channel 0, OVP [V]:	×
Value minimum Value maximum Value Exponent	6.25 0.00 10.76 -2
ОК	CANCEL

Value is the maximum allowed voltage for the module.Minimum Value is the minimum allowed value.Maximum Value is the maximum allowed value.Exponent gives the number of digits after the decimal.

Temperature Limit *Temperature Limit settings*

Standard settings: 127

Temperature Limit settings sets the maximum internal temperature of the power supply module before turning off the power supply. The default settings allow the module to run to the maximum temperature.

Power-on Delay *Delay between power-on and ramp* Standard settings: 0

To allow flexibility of the voltage ramp, it is possible to set channels to begin their voltage ramp at different times. This is done by delaying the start of the ramp by some time in steps of ms.

Power-On Delay [ms], Channel 0 🗙
0	
ОК	CANCEL
ОК	CANCEL

Temperature	OK or Fail
Status	OK
Power	ON - OFF by software (mouse click or <p></p>)
AC	OK - Fail (status of AC mains)
Trip off	Enable - Disable (temperature and OVP control enabled - disabled)

WARNING

Disable TRIP OFF only if necessary, don't leave the power supply with TRIP OFF disabled! The power supply and crate or modules in the crate can be damaged in case of error conditions without enabled automatic trip off protection.

Complete Test Instruction for UEP 6000

1. Visual test

Power Supply surface ok? Final set-up ok? Cable mounting ok?

2. HV-Test

2.4kVDC: AC-mains - PE

Short circuit test @ 50V DC: Output - PE.

- since 1998 sticker: HIGH VOLTAGE TESTED
- high voltage test has to be repeated if there are changes of the power configuration or set-up

3. Put into Operation (with complete function control)

Configuration, calibration (trimmer), current measurement adjustment (*I-Mon*) Measurement of current limit (*short circuit current*)

- since 1998 sticker CALIBRATED
- sequence of test steps according to test procedure

4. Burn In

Long time test with full load and multiple on / off

(

- since 1998 sticker LONG TIME TESTED
- Attention: do not exceed the maximum total power (mains fuse!)
- in case of parallel working AC inputs take care for equal load for both
- power supply levels

5. Mechanical Set-up

- a) Mounting screws OK?
- b) Power terminal contacts OK?
- c) Mount missing mechanical parts and check all screws
- d) test fitting of power supply into VME bin

6. End check

to be done with protocol

- *since 19*98 sticker END CONTROLLED
- sequence of test steps as for 3. Put into Operation
- write protection enabled?
- visual check for stickers and device label

Test Procedure Sequence UEP6000

1. Test AC input switch AUTO/FIX for Power Supplies with auto range AC inputs

- AUTO : feed 3V DC in AC mains cable, measure current (typically 0,08mA)
- switch to 115V (current typically 0,52mA).
- prepare for delivery with switch position to AUTO with locking and sticker

2. Start Power Supply Operation:

- disable Write protection (jumper), connect power supply to IBM-PC (RS 232)
- feed AC mains in power supply
- start software *UEP 6000*, create or copy configuration file

- if the fan tray unit is connected to the power supply the write protection jumper has to be disabled during start for power supply software version MUH 1.00

3. General behavior / settings

Main configuration OK ? RS 232 OK ? Channel? Module-current/limit? Module OVP? Module Unom? min/max Voltage?

4.Test each Voltage Channel

Check adjustment Master-Slave Imon and CV. Coding for slave U-nom under full Load : fine tuning ? display OK ? Noise and Ripple OK ?

I-nom	Full load	Half Load	No Load
Display Fan tray	?	?	?
Signal I-nom	?	?	?

Current calibration for 3 load values (full, half, no load):

At this time proof static regulation (U) (Sense wiring)

T-Hold after AC-Fail, U-Dynamic, T-Recovery have been checked within power module test

7. Adjustments

Voltage Error adjusted? Current Error checked with different current values? Reference Table for Test and Adjustment of UEP 6000

CHANNEL	Module selected	Are all installed voltage channels present? Example: STBY: 31V / Ampere XXXX. / Volt XX.
Cal I-Monitor	Calibration	measure current Enter measured current and hit "CALIBRATE"
Output Voltage	output voltage	Nominal voltage for the channel
Current Limit	maximum current	The max current allowed for that channel (constant current)
Monitor U-min	minimum voltage	90% of nominal voltage
Monitor U-max	maximum voltage	112.5% of nominal voltage
Monitor I-min	minimum current	Generally 0
Monitor I-max	maximum current	112.5% of nominal expected current ("Overcurrent" error)
Module OVP	maximum voltage	125% of nominal voltage
Power on Delay	ramp Delay	Delay, in ms, between power-on and start of voltage ramp
Temperature		OK or Fail
Status		OK
Power		ON - OFF by software (mouse click or <p></p>)
AC		OK - Fail (Status of AC mains at Elko)
Trip off		Enable - Disable

UEP 6000 Module Replacement Instructions

In troubleshooting WIENER crates it is very useful to substitute Fan trays and power supplies from working crates into the crate which is problematic, this is often the best way to determine which component (fan tray, power supply, or crate) is causing the failure. It is also useful to place the power supply on a bench top and use the UEP6000 software to troubleshoot power supplies.

MNPFC-16

The MNPFC-16 is the primary rectifier for the UEP6000 power supply. Common symptoms of a power supply with a faulty are MNPFC are:

- No indication that the power supply is operating.
- The green LED on the board is not lit. (Visible with case closed).
- No "click" when power supply is plugged in.
- No internal primary DC voltage from MNPFC-16 (385VDC)

If the MNPFC is found to be the problem, the following steps should be taken to replace it:

- Disconnect A/C power and remove power supply from the VME crate.
- Remove the top cover from the power supply and discharge capacitors
- Remove the side panel on which the MNPFC is mounted, including the nuts with which the module is mounted.
- Disconnect the A/C wires (Brown & Blue) as well as the flat ribbon cable and DC connector from the module.
- Installation is the reverse of removal.
- After replacing the cover, connect the A/C input and ensure that functionality is OK.

MEH/MDH

The MEH/MDH modules are the secondary rectifier modules that produce the voltages used by the VME crate. Common symptoms of a faulty MEH/MDH module are:

- An over/under voltage error for a certain channel (On UEL display or via UEP6000 software).
- The power supply will start up but turn itself off quickly.

If an MDH/MEH module is found to faulty the following steps should be taken to replace it (valid only for standalone modules):

- Disconnect A/C power and remove power supply from the VME crate.
- Remove the top cover from the power supply and discharge capacitors
- Determine which power module is faulty. This is done by locating the right channel along the top of the MUH board and following the control cable to the correct module.
- Disconnect the power cables and the flat control cable(s) from the module.
- Remove the screw that holds the module to the case.
- Slide the module forward and remove the module.
- Installation is the reverse of removal.
- Calibrate the voltage and current measurements
- After replacing the cover, connect the A/C input and ensure that functionality is OK.

<u>MUH</u>

The MUH module is the microprocessor control board for the power supply. Common symptoms of a faulty MUH module are:

- No function although internal operating voltage is present (385VDC).
- Under/over voltage error for 1 or more voltage channel.
- No remote interface (errors when connected to UEP6000 software).

If an MUH module is thought to be faulty the following steps should be taken to replace it:

- Disconnect A/C power and remove power supply from the VME crate.
- Remove the top cover from the power supply and discharge capacitors
- Remove the side panel next to the MUH module.
- Disconnect the flat ribbon control cables, recording where they were plugged in.
- Disconnect the sense, CAN, DC, and control cables.
- Remove the 25-pin D-sub connector to gain access to the screws holding the MUH board to the chassis.
- Remove the module from the crate.
- Remove the EEPROM from the module and place it into the new MUH module. This will transfer the channel calibration information.
- Installation is the reverse of removal.
- Once power supply cover is replaced, check that the current and voltage calibrations are correct.

UEP 6000 Channel Calibration

Voltage Calibration

Voltage calibration values vary depends on what kind of module you are calibrating and which nominal voltage you wish that channel to have. To calibrate a power supply channel:

- Connect the power supply to a PC and start the UEP6000 software
- Start Flash6.exe and turn off "write disabled"
- Click on "Voltage OVP" and enter the value specified in the table below.
- Turn the power supply on and measure the channel voltage.

Current Calibration

Correct current calibration ensures that the power supply reports the correct current readings. To calibrate the current values for a given channel, the following steps should be taken:

- Connect the power supply to a PC on which the UEP600 software is installed via a appropriate adapter cable.
- Connect a current sink to the channel that you wish to calibrate.
- Connect A/C power and ramp the current up to 90% of the channel maximum.
- Click on "Calibration [I-monitor]" and enter the measured current.
- The UEP6000 will calibrate the current monitor and should now report the same value as the measured current.

The calibration procedure above only works for master modules. If you have two or more modules running in co-operation with each other, you will have to do a master-slave calibration. Please contact a WIENER representative for guidance with this task.

Module-Data

MRP

Resistor DAC[k]	12		
R6[k]	20		
	R5[k]	alpha	Kf
Version .B2 and below	75	0,81308	7533
Version .B3 and above	750	0,97442	860

Modules

Uref(U) [10mV]	510
Uref(OVP) [10mV]	250
MRP: R13, R14 [k]	10
MRP: R17, R18 [k]	20
MRP: R4, R12 [k]	10

Module Type	R4,R12	MRP	:B2	MRP	:B3	Umax	R9,R10	Kovp	OVPmax	R5/8	R6/7	GND -floating
	[kOhm]	Ku	Poti[mV]	Ku	Poti[mV]	[V]	[kOhm]		[V]			[V]
5V-MEH, <= Index A5	13,3	34729	4,34	28978	0,59	5,92	27,4	24492	6,82	1	0	12,0
5V-MEH, >= Index A6	22,1	25208	5,98	21034	0,82	8,15	43,2	15534	10,76	1	0	12,0
MEH10	33,2	18731	8,04	15630	1,10	10,97	56,2	11941	14,00	2,21	2,21	24,0
MEH12, <= Index A1	61,9	11254	13,39	9391	1,83	18,26	82,5	8134	20,54	2,21	2,21	24,0
MEH12, >= Index A2	56,2	12223	12,33	10199	1,69	16,82	82,5	8134	20,54	2,21	4,75	37,8
MDH7-15, >= Index A0	56,2	12223	12,33	10199	1,69	16,82	82,5	8134	20,54			
MDL12/24, (MEH24)	110	6743	22,34	5627	3,06	30,48	133	5046	33,12	1	0	12,0
MEH48	221	3503	43,01	2923	5,88	58,67	274	2449	68,23	4,75	30	87,8

DACovp = U[V]*Kovp/655.36

alte Module

Connection of a Personal Computer to the Power Supply UEP6021

This connection is intended to service functions only. Because of the direct connection between the PC and the power supply, the ripple and noise of the outputs will increase!

The needed stuff is an PC running Windows, the control program UEP6 and a simple adapter ("Dongle"). The power supply is connected to the COM port of the PC. For more details, view the document *00461.A0.



PL6021 Connection Diagram



Pin 10,11,13...18: Pin 1...9+12: Polarity: + positive 6mm, 120A max. 8mm, 240A max. - negativ

U0 to U7 = standard pinning only!

	SENSE/SIGNAL CONNECTOR D-SUB 37								
		19	TEMP RETURN						
37	TEMP 0	18	TEMP 1						
36	TEMP 2	17	TEMP 3						
35	TEMP 4	16	TEMP 5						
34	TEMP 6	15	TEMP 7						
33	BIN EEPROM: IIC SDA	14	BIN EEPROM: IIC SCL						
32	BIN EEPROM:+5V	13	VME LOGIC: SYSRESET						
31	BIN EEPROM: GND	12	VME LOGIC: ACFAIL						
30	VME LOGIC GND	11	VME LOGIC: SYSFAIL						
29	U0 SENSE -	10	U0 SENSE + (VME: +5V)						
28	VW SENSE (reserved)	9	VW SENSE (reserved)						
27	VX SENSE (reserved)	8	VX SENSE (reserved)						
26	U4 SENSE +	7	U4 SENSE -						
25	U7 SENSE +	6	U7 SENSE -						
24	U2 SENSE -	5	U2 SENSE + (VME: 48V)						
23	U6 SENSE +	4	U6 SENSE -						
22	U1 SENSE -	3	U1 SENSE + (VME: +12V)						
21	U5 SENSE +	2	U5 SENSE - (VME: -12V)						
20	U3 SENSE -	1	U3 SENSE + (VME: +3.3V)						
	FAN/CONTROL CO	NNE	CTOR D-SUB 9						
		5	CAN_H						
9	CAN_L	4	CAN GND						
8	RXD	3	TXD						
7	+15V (for fan only)	2	+15V (for fan only)						
6	-15V (for fan only)	1	-15V (for fan only)						

WIENER VME Crate Temperature Sensors



VME 6000 Series Bin EEPROM configuration

WARNING!!! Changing the BIN EEPROM setting could damage modules in the VME crate.

WIENER 6000 series VME crates contain an EEPROM which contains data about what power supplies to accept. This prevents users from accidentally plugging in power supplies that could damage modules within the crate. If the crates function is changed and the EEPROM needs to be reprogrammed, it can be done by following the steps below.

- 1. Remove the fantray from the crate. This will give you access to a subD 9 pin connector. Plug one end of a WIENER power supply adapter into the connector, connect the other a computer.
- 2. Insert a jumper on the write protect pins for the EEPROM. The pin locations are shown below.



3. Open the UEP6000 program. The current bin settings should now be visible as highlighted below.

🚟 UEP6000 (Period 22	0,Message	s: 1290 s	ent, 128	8 receiv	ed)					- 🗆 ×
File Options Configuration	Help									
BIN Configuration	FE FE									
BIN Pin Assignment:	1	6	9	3	0	7	0	0		
BIN min. Voltage [V]: BIN max. Voltage [V]:	4.50	12.60	46.08	2.56	0.00	12.60	0.00	0.00		
BIN OVP Voltage [V]: BIN nom. Voltage [V]:	5.12 5.00	12.80 12.00	58.88 48.00	2.56 3.30	0.00 0.00	12.80 12.00	0.00 0.00	0.00 0.00		

4. If screen does not show BIN configuration, select configuration and highlight these lines:

Display Configuration			×
	Visible Channels—		
		Channe	:I
			E 4
	C <u>E</u> xisting	☑ 1	<u>▼ 5</u>
	C <u>U</u> ser-Defined	<u>Z</u>	<u> </u>
		<u> 3</u>	ΠZ
	Visible Items:		
	Configuration Flags		-
	Pin Assignment:		
·	BIN Configuration BIN Pin Assignment		
ОК	BIN min. Voltage [V]:		
	BIN max. Voltage [V]:		
	BIN OVP Voltage [V]:		
CANCEL	BIN nom. Voltage [V]: Output Voltage [V]:		•
	ouput ronugo [r].		

5. Select bin parameter to be changed and enter new value

BIN nom. Voltage [V]:	, Channel 0 🔀
5.00	
ОК	CANCEL
	CANCEL

6. Changes are saved automatically when you hit OK

UEL6000 Ethernet Firmware-Update

The UEL6000 Firmware is stored in a FLASH ROM and can be updated via the RS232 connector.

Necessary equipment:

- Computer with RS232 interface, running Microsoft Windows (98 or above)
- A patch cable to connect the UEL6000 with this computer
- This software

Installation Steps:

- 1. Unzip the UEL6402.zip to your had disk.
- 2. Connect the computers COM port to the UEL6000
- 3. Switch the UEL6000 into "Load Update" mode

The "Load Update" mode is a submenu of the "RS232 Configure" menu of the configuration menu.

You will use the following switches of the fan tray:

- P▲ Push "Power" switch up(ON)
- P▼ Push "Power" switch down (OFF)
- M▲ Push "Mode Select" switch up
- M▼ Push "Mode Select" switch down

Steps to get into the "Load Update" mode:

Description	Switch	Display
switch the crate off	P▼	
enter configuration menu	$M \blacktriangle$ (push and hold), $P \blacktriangle$	Config: Wait
	hold both switches up	Config: Wait
	after 4 seconds you can	Config: Ready !
	release the switches	+5V0 0.01V 0A
Now select the "RS232 Configure" menu	M▲ or M▼ (until right menu is displayed)	RS232 Configure
Enter this menu	P▲	Baudrate: 115.2k
Select submenu "Firmware"	M▲ or M▼ (until right menu	UEL6000 Firmware
	is displayed)	UEL6000 4.02
Enter submenu	P▲	Load Update: <mark>No</mark>
Change to yes	M	Load Update: <mark>Yes</mark>
Accept settings and enter update mode	P▲	Scanning RS232

4. Run the upload software on the computer

Open a command window, change to the folder of the unzipped file. At the prompt enter the command

C:UEL6402> F28xxConsole.exe -v -p com1 -i UEL6E.4.02.out

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1 UEL6000E Firmware Update, 15 Jun 2004

Replace "com1" with the COM port which you are using.

The software now connects to the UEL6000, the following is displayed:

```
Installed output message callback
```

Loading F2810SerialFlash.out Entry point 0x003f8000 Section Address = 0x003f8000, Number of words = 3235.... Section Address = 0x003f8ca3, Number of words = 4. Section Address = 0x003f8ca7, Number of words = 84.. Section Address = 0x00000792, Number of words = 67.. .Boot code loaded Connected to \.\COM1 at 5 baud Target is programmed with "UEL6000 4.01" Erase the flash ?(y/n) y

This is the last chance to interrupt the update. If you say 'y' here, the UEL6000 flash is erased. Next messages are:

Erase the flash. Program the flash ?(y/n) y

You should say 'y', too. If not, you have got an empty flash which can only be reprogrammed at the factory.

```
Program UEL6E.4.02.out
Section Address = 0x003e8000, Number of words = 3676
Section Address = 0x003e8e5c, Number of words = 253
Section Address = 0x003e8f59, Number of words = 21
Section Address = 0x003e8f6e, Number of words = 629
Section ".stack" IGNORED (vaddr=0x8200 out of flash area)
Section Address = 0 \times 003 = 91 = 3, Number of words = 3
Section ".args" IGNORED (vaddr=0x1fc out of flash area)
Section "" IGNORED (vaddr=0x340 out of flash area)
Section ".trace" IGNORED (vaddr=0x47c out of flash area)
Section Address = 0x003e91e6, Number of words = 256
Section Address = 0x003e92e6, Number of words = 32
Section Address = 0x003f7ff6, Number of words = 2
Section Address = 0x003f7ff8, Number of words = 8
Section Address = 0x003f7f80, Number of words = 118
Section Address = 0x003e9306, Number of words = 23754
Section Address = 0x003eefd0, Number of words = 3628
Section Address = 0 \times 003 f7 f70, Number of words = 16
Section Address = 0x003efdfc, Number of words = 30
Section Address = 0x003efela, Number of words = 12
Section Address = 0x003efe26, Number of words = 1539
Verify UEL6E.4.02.out
Section Address = 0x003e8000, Number of words = 3676
Section Address = 0 \times 003 = 8 = 52, Number of words = 253
Section Address = 0 \times 003 = 859, Number of words = 21
Section Address = 0x003e8f6e, Number of words = 629
Section ".stack" IGNORED (vaddr=0x8200 out of flash area)
Section Address = 0 \times 003 = 91 = 3, Number of words = 3
Section ".args" IGNORED (vaddr=0x1fc out of flash area)
Section "" IGNORED (vaddr=0x340 out of flash area)
Section ".trace" IGNORED (vaddr=0x47c out of flash area)
Section Address = 0x003e91e6, Number of words = 256
Section Address = 0x003e92e6, Number of words = 32
Section Address = 0x003f7ff6, Number of words = 2
Section Address = 0x003f7ff8, Number of words = 8
```

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2 UEL6000E Firmware Update, 15 Jun 2004

```
Section Address = 0x003f7f80, Number of words = 118
Section Address = 0x003e9306, Number of words = 23754
Section Address = 0x003eefd0, Number of words = 3628
Section Address = 0x003f7f70, Number of words = 16
Section Address = 0x003efdfc, Number of words = 30
Section Address = 0x003efela, Number of words = 12
Section Address = 0x003efela, Number of words = 1539
```

Press [Enter] key to exit

OK, the update is ready. Now restart the crate by removing the mains cord. If there are new data items in the EEPROM, after the restart they will be initialized. You have to acknowledge the "CHECKSUM xxxx" messages by pushing the "SYSRES" button at the fan tray.

UEL6 Ethernet Pin Description

1. CAN-Bus (X1, X2)

	RJ45	Pin	Signal	Comment
		1	CAN-H	
		2	CAN-L	
		3	GND	
		4	n.c.	
		5	n.c.	
	8 1	6	reserved	
• •	• •	7	GND	
		8	nc	

This is the standard CIA pinning. Both connectors are wired in parallel, so it's easy to connect many crates in a daisy-chain.

2. RS232 (X2)

RJ45	Pin	Signal	Comment
	1	n.c.	
	2	n.c.	
	3	n.c.	
	4	GND	
	5	RXD	Output
8 1	6	TXD	Input
• •	7	CTS	Output
	8	RTS	Input

This is the standard RS232D DCE pinning. Connection to DTE (e.g. computer) with a 1:1-cable.

3. Ethernet (X4)

RJ45	Pin	Signal	Comment
	1	TX+	
	2	TX-	
	3	RX+	
	4	GND 1	75 Ohm
	5	GND 1	
8 1	6	RX-	
	7	GND 2	75 Ohm
	8	GND 2	

This is the standard NIC configuration. You need a 1:1-cable to connect a to a HUB, or a cross-over cable to connect to another NIC (e.g. a computer)



VME6023 9U Plenum Bin

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VME6023 9U Plenum Bin



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