

**NIM BIN**  
**NIM POWER SUPPLY**  
**TYPE 7022 – 7033**

**FAST Communication Technology GmbH, Grünwalder Weg 28a, D- 82041 Oberhaching/ Germany**  
**Tel. ++49-89-66 51 80 50, Fax ++49-89-66 51 80 40**  
**e-mail: [info@fastcomtec.com](mailto:info@fastcomtec.com)**  
**website: [www.fastcomtec.com](http://www.fastcomtec.com)**

## **Introduction**

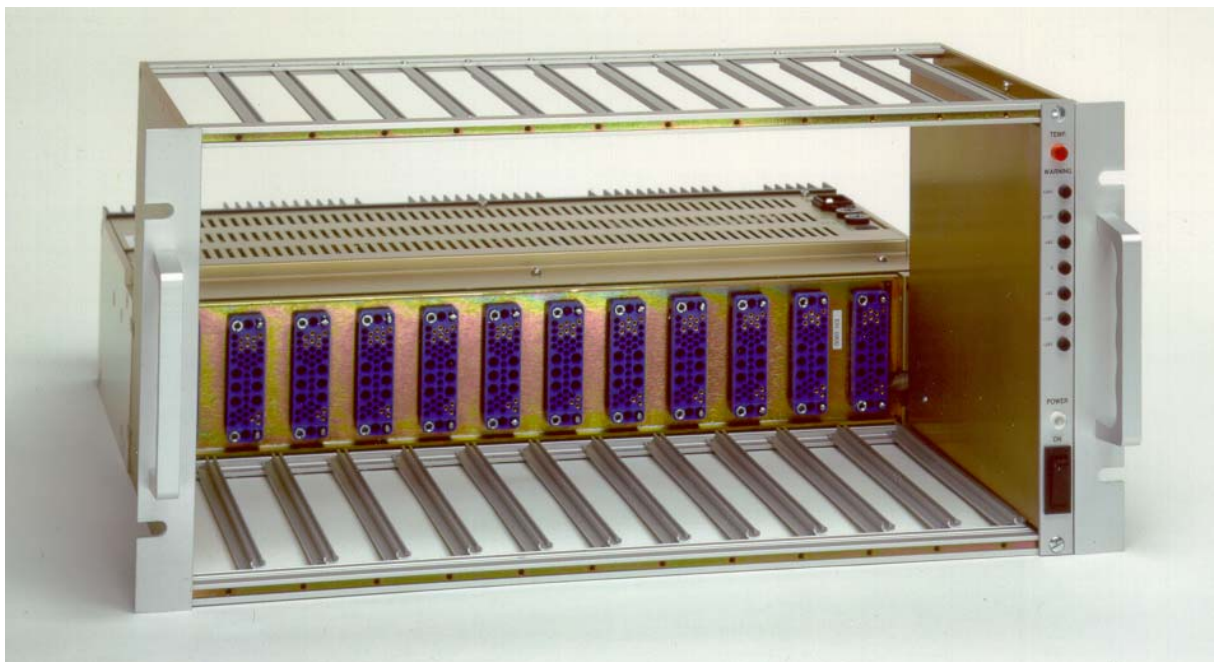
Thank you for purchasing one of the Series 70XX NIM-BIN/ Powersupplies - a line of proven devices with outstanding quality and reliability to power Nuclear Instrument Modules.

We are sure they will be of service to you for many years without requiring any maintenance. They carry a full one year warranty. During the warranty period defective parts will be replaced or repaired at no cost to the customer. This warranty does not cover physical damage, damages caused by operation at a different line voltage than indicated on the powersupply etc. Full details on our warranty conditions are listed on the back page of our order acknowledgements. Should you require additional copies, please feel free to contact us.

## **Unpacking and using your NIM-BIN/Powersupply**

Please carefully inspect the shipping carton for physical damage during transport. Then unpack and also inspect the NIM-BIN/ Powersupply for possible mechanical damage. Any such transport damage must be reported immediately to the insurance company which has covered the transportation risk.

Please send a copy to us to keep us informed.

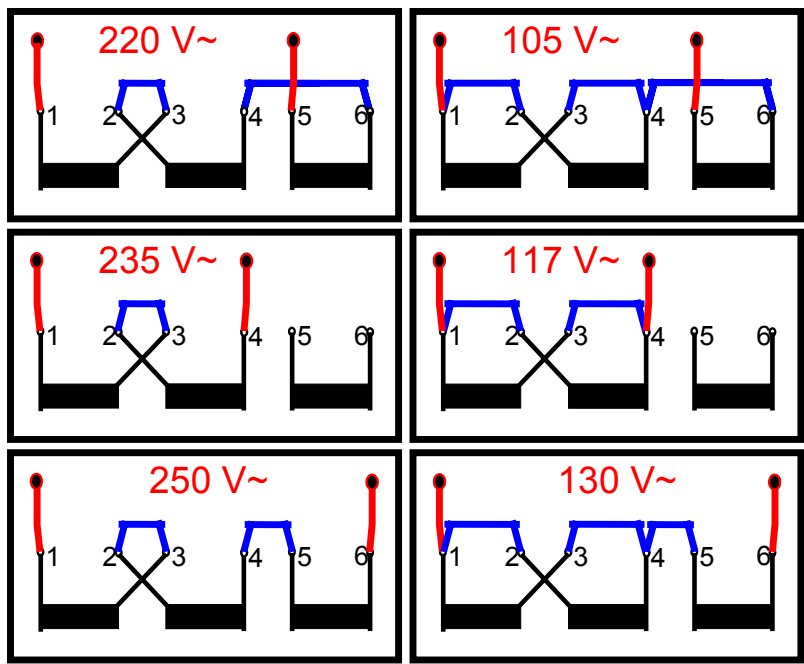


**Model 7025 NIM-BIN/Powersupply**

Now check if the line voltage indicated on the powersupply is identical with your line power. If this is the case you can now connect your NIM-BIN/ Powersupply to your power outlet. After switch-on the power indicator will be illuminated.

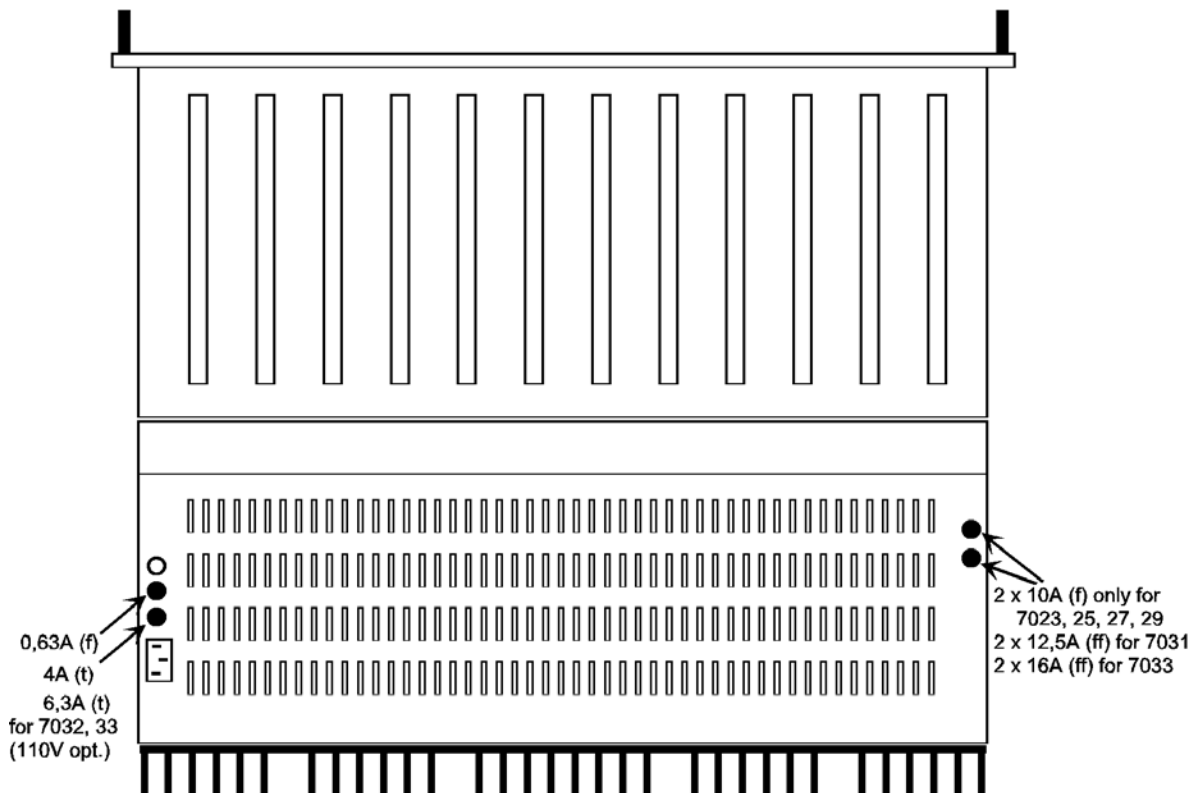
Should the power indication be different from your line voltage correct the wiring on the transformers solder bar to the correct setting – see the connection diagram on the next page.

A connection diagram for wiring the transformer to the correct line voltage is also attached to the transformer itself.



For Model 7032 and 7033 only: Should there be any significant change in the voltage setting please make sure the correct fuses are inserted.

Location of fuses



In the unlikely event of an electrical failure please contact us for a RMA number before returning any equipment to us.

## **SPECIFICATIONS**

### **Line voltage 7022-7033**

( 88...110% ) 105, 117, 130, 220, 235, 250V / 50...60Hz  
( internal wiring change )

### **Output voltage and current**

<b>7022</b>	+6V      5A +12V     2A +24V     1A DC Output rating	-6V      5A -12V     2A -24V     1A 140 W		117VAC    0.5A
<b>7023</b>	+6V      5A +12V     2A +24V     1A DC Output rating	-6V      5A -12V     2A -24V     1A 140 W		Overvoltage protection +/-6V 117VAC    0.5A
<b>7024</b>	+6V      5A +12V     3A +24V     2A DC Output rating	-6V      5A -12V     3A -24V     2A 160 W		117VAC    0.5A
<b>7025</b>	+6V      5A +12V     3A +24V     2A DC-Output rating	-6V      5A -12V     3A -24V     2A 160 W		Overvoltage protection +/-6V 117VAC    0.5A
<b>7030</b>	+6V      10A +12V     3A +24V     2A DC Output rating	-6V      10A -12V     3A -24V     2A 200 W		117VAC    0.5A
<b>7031</b>	+6V      10A +12V     3A -24V     2A DC Output rating	-6V      10A -12V     3A -24V     2A 200W		Overvoltage protection +/-6V 117VAC    0.5A
<b>7032</b>	+6V      12,5A +12V     4A -24V     2,5A DC Output rating	-6V      12,5A -12V     4A -24V     2,5A 300W		117VAC    0.5A
<b>7033</b>	+6V      12,5A +12V     4A -24V     2,5A DC Output rating	-6V      12,5A -12V     4A -24V     2,5A 300W		Overvoltage protection +/-6V 117VAC    0.5A

## **DC OUTPUT SPECIFICATION**

Regulation at 0...100% load and 88...110% line voltage	+/-0.1% (at 6V +/-0.2%)
Tk between 0...50°C	+/-0.02% /°C
Noise and ripple (DC to 50 MHz)	max. 0.3 mVpp
Output impedance (up to 100 kHz)	max. 0.3 Ohm
Recovery time between 10...100% load variation	+/-0.1% within 100µs (+/-1% at +/-6V output voltage )
Current limiting	at 120% of nominal current (foldback type )
Thermal protection	red pilot lamp at 85°C chassis temperature, cut-off switch at 125°C heat sink temperature
Ambient temperature range	0...50°C. Operation possible from 50...60°C with 3%/°C derating of output current

## **CIRCUIT DESCRIPTION**

### **Positive output voltages**

The secondary line power transformer voltage is filtered after rectification. The unregulated DC voltage passes a current sensing resistor to the collector of a homotaxial npn-power transistor. This transistor is driven by an emitter follower transistor which base current is controlled by an integrated voltage regulator. The DC output voltage is divided by an adjustable resistor divider and compared with an internal temperature compensated reference voltage.

Any deviation from nominal output voltage causes an amplified error signal to the driver transistor base.

The voltage drop across the current sensing resistor drives the current limiting transistor. The base is biased by a constant current source which is controlled by a fraction of the output voltage to achieve foldback current limiting.

### **Negative output voltages**

The rectified and filtered unregulated DC voltages is fed to the emitter of a homotaxial npn-power transistor which base is driven by a complementary pnp-power transistor.

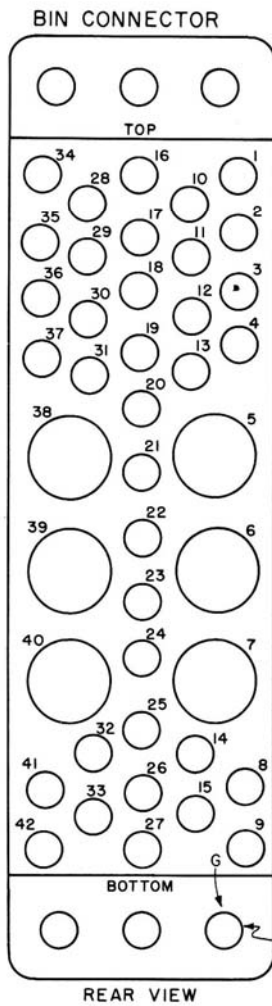
An integrated voltage regulator gives the necessary error signal to the driver transistor base. The function of the integrated voltage regulator is described in the previous section. For optimum operating conditions of the error amplifier a zener diode is used for level shifting.

The negative regulated output voltage flows through a current sensing resistor at the collector of the output power transistor. The voltage drop is added to an auxiliary +5V voltage and a fraction of the output voltage. The voltage of the matrix point driver a current limiter transistor which reduces the base current of the driver transistor in case of excessive load current.

## **MAINTENANCE**

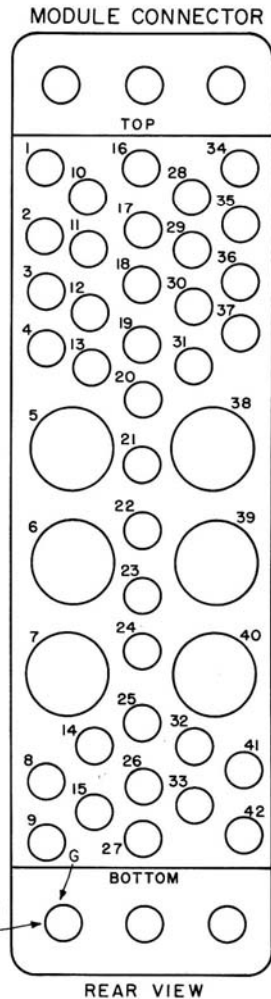
For re-adjustment of output voltages and currents remove upper cover of the power supply. The corresponding potentiometers for voltage and current adjustments are marked with U and I at the top of the regulation board. Maximum current shall not be adjusted above 120% of nominal value. To verify exact voltage measurements a separate bin connector and probe cable must be used for load and measuring to avoid any voltage drop error.

For removal of the power supply chassis from the bin remove the two screws on the left and right side of the chassis just behind the bin.



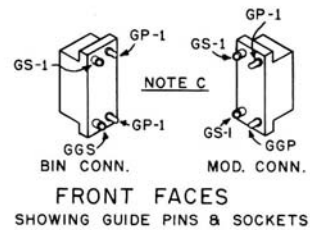
PIN	FUNCTION
1	+ 3 VOLTS
2	- 3 VOLTS
3	SPARE
4	RESERVED
5	COAXIAL
6	COAXIAL
7	COAXIAL
8	+ 200 VOLTS D.C.
9	SPARE
10	+ 6 VOLTS
11	- 6 VOLTS
12	RESERVED
13	CARRY NO. 1
14	SPARE
15	RESERVED
16	+ 12 VOLTS
17	- 12 VOLTS
18	SPARE
19	RESERVED
20	SPARE
21	SPARE
22	RESERVED
23	RESERVED
24	RESERVED
25	RESERVED
26	SPARE
27	SPARE
28	+ 24 VOLTS
29	- 24 VOLTS
30	SPARE
31	CARRY NO. 2.
32	SPARE
33	117 VOLTS A.C. (HOT)
34	POWER RETURN GND
35	RESET
36	GATE
37	SPARE
38	COAXIAL
39	COAXIAL
40	COAXIAL
41	117 VOLTS A.C.(NEUTRAL)
42	HIGH QUALITY GND
G	GROUND GUIDE PIN

\* MUST BE BUSSED TO ALL BIN CONNECTORS PG1B THROUGH PG12B



NOTES:-

- A. CONNECTORS ARE IN ACCORDANCE WITH DRAWING NO. ND-519.
- B. RESERVED PINS ARE FOR FUTURE ASSIGNMENT BY THE COMMITTEE AND SHALL NOT BE USED UNTIL SUCH ASSIGNMENTS ARE MADE.
- C. GP-1 = GUIDE PIN  
GGP = GROUND GUIDE PIN  
GS-1 = GUIDE SOCKET  
GGS = GROUND GUIDE SOCKET } PER ND-519
- D. SEE ALSO SECTION F OF THIS REPORT.



EU KONFORMITÄTSERKLÄRUNG IM SINNE DER  
Niederspannungs- und EMV- RICHTLINIEN /73/23/EWG, BZW.  
89/336/EWG

Der Hersteller:

FAST ComTec GmbH,  
Grünwalder Weg 28a, 82041 Oberhaching / Deutschland

erklärt hiermit, daß nachfolgend beschriebene Geräte:

NIM Überrahmen Modell 7014, 7018, 7021 – 7033

übereinstimmt mit den Erfordernissen der Richtlinien  
73/23/EWG und 89/336/EWG

Angewandte Normen sind:

EN 50081-1 (Störaussendung)

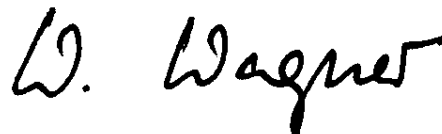
EN 50082-2 (Störfestigkeit)

**EN 61010 (Niederspannungsrichtlinie)**

Oberhaching ,den 2.11.1999

Ort

Datum



rechtsverbindliche Unterschrift

Geschäftsführer

Funktion