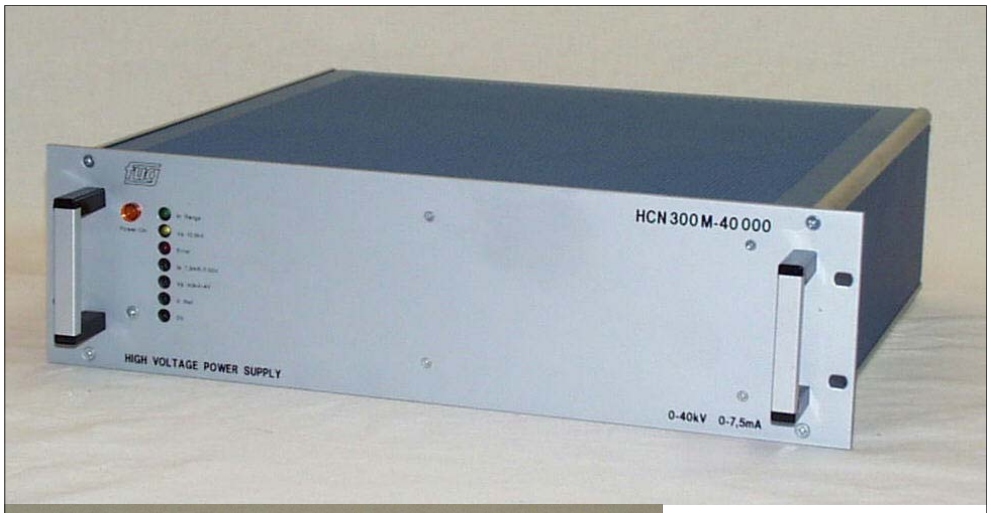
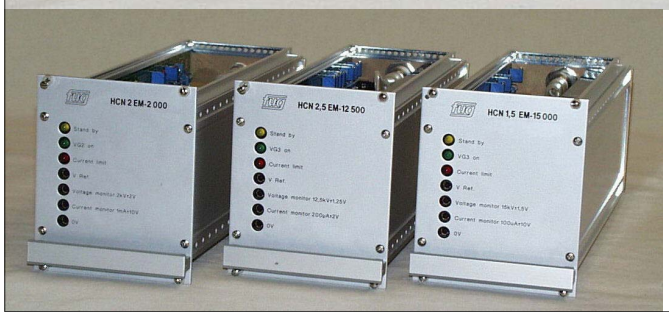
Power Supplies for Picture Tube Test Equipments

Types: **HCN 300M-40000 / HCN 2EM-2000**
HCN 2,5EM-12500 / HCN 1,5 EM-15000





The set consists of one 19” unit and three Euro cassette power supplies with different voltages.

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Low and High Voltage Power supplies

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Features / Application

The power supplies are specially designed for the requirements of picture tube tests.

External control

All units are remote controlled by 0-10V analog programming, instruments and internal setting potentiometers are not provided.

Technical data all units

Input voltage, all units:	230V +-10% 47-63Hz
Safety standards	VDE 0100/0160
The power supplies are short-circuit proof.	
Max. ambient temperature:	0 - 50 °C
Max. humidity:	90 %
All boards with lacquer coating	
Mains transformers:	Sealed
HV-components >10kV:	Moulded in silicon

HCN 1.5 EM - 15 000

Output voltage:	0 - 15 000 V, adjustable
Output current:	max. 100 µA
Accuracy:	< +- 1x10 e-4
Measuring accuracy:	< 0.1% (on monitoring instruments)
Residual ripple:	< 0.1%
On-period:	< 600 msec (from 0 to 99% of adjusted output voltage)
Regulation time:	< 75 msec (for +-10% voltage change)
Off-period:	< 600 msec to 1% of adjusted voltage
On/off:	switch-off supply voltage via relay contact Relay is controlled via ext floating contact
Measuring sockets	Voltage monitoring on front panel: 0 - 1.5 V = 0 - 15 kV (default) 0 – 10 V = 0 – 15 kV
Accuracy:	< 1%

Current monitoring:	0 - 10 V = 0 - 100 µA
Accuracy:	< 1%
Display on front panel:	Mains voltage on (yellow LED) "stand by" Voltage regulation (green LED) "VG3 on" Current regulation (red LED) "Current limit"
Output on the rear:	Connector Lemo 3415
Mains input on the rear:	Connector Amphenol T3110-000, series C16-1

Reference, control inputs on the rear, and measuring outputs on Sub-D15 connector

Reference input voltage:	0 - 7.5 V = 0 - 15 kV (default) 0 – 10 V = 0 – 15 kV
Monitor voltage:	0 - 10 V = 0 - 15 kV
Accuracy:	< 1%
On/Off:	External contact closed = on

HCN 2 EM - 2 000

Output voltage:	0 - 2 000 V, adjustable
Output current:	max. 1 mA
Accuracy:	< +- 1x10 e-4
Measuring accuracy:	< 0.1% (on monitoring instruments)
Residual ripple:	< 0.1%
On-period:	< 50 msec (from 0 to 99% of adjusted outputvoltage)
Regulation time:	< 20 msec (for +-10% voltage change)
Off-period:	< 100 msec to 5% of adjusted voltage
On/off:	switch-off supply voltage via relay contact Relay is controlled via ext floating contact
Measuring sockets	Voltage monitoring on front panel: 0 – 2 V = 0 – 2 kV
Accuracy:	< 1%
Current monitoring:	0 - 10 V = 0 - 1 mA
Accuracy:	< 1%
Display on front panel:	Mains voltage on (yellow LED) "stand by" Voltage regulation (green LED) "VG2 on" Current regulation (red LED) "Current limit"
Output on the rear:	Connector Radiall SHV
Mains input on the rear:	Connector Amphenol T3110-000, series C16-1

Reference, control inputs on the rear, and measuring outputs on Sub-D15 connector

Reference input voltage:	0 - 10 V = 0 - 2 kV
Monitor voltage:	0 - 10 V = 0 - 2 kV
Accuracy:	< 1%
On/Off:	External contact closed = on

HCN 2.5 EM - 12 500

Output voltage:	0 - 12 500 V, adjustable
Output current:	max. 200 µA
Accuracy:	< +- 1x10 e-4
Measuring accuracy:	< 0.1% (on monitoring instruments)
Residual ripple:	< 0.1%
On-period:	<250 msec (from 0 to 99% of adjusted outputvoltage)
Regulation time:	< 20 msec (for +-10% voltage change)
Off-period:	< 500 msec to 1% of adjusted voltage
On/off:	switch-off supply voltage via relay contact Relay is controlled via ext floating contact
Measuring sockets	Voltage monitoring on front panel: 0 - 10 V = 0 - 12,5 kV
Accuracy:	< 1%

Current monitoring:	0 - 10 V = 0 - 200 µA
	0 - 2 V = 0 - 200 µA
Accuracy:	< 1%
Display on front panel:	Mains voltage on (yellow LED) "stand by"
	Voltage regulation (green LED) "VG3 on"
	Current regulation (red LED) "Current limit"
Output on the rear:	Connector Lemo 3415
Mains input on the rear:	Connector Amphenol T3110-000, series C16-1

Reference, control inputs on the rear, and measuring outputs on Sub-D15 connector

Reference input voltage:	0 - 10 V = 0 - 12,5 kV
	0 - 10 V = 0 - 10 kV
	0 - 6,25 V = 0 - 12,5 kV
Monitor voltage:	0 - 10 V = 0 - 15 kV
	0 - 10 V = 0 - 10 kV
	0 - 6,25 V = 0 - 12,5 kV
Accuracy:	< 0,1%
Monitor current 1:	0 - 2 V = 0 - 200 µA
Accuracy:	< 0,1%
Monitor current 2:	0 - 10 V = 0 - 200 µA
Accuracy:	< 0,1%
On/Off:	External contact closed = on

HCN 300M - 40 000

Output voltage:	0 - 40 000 V, adjustable, polarity positive
Output current:	max. 7,5 mA
Output isolation	The "0V"-terminal is floating, but limited to 90V by an arrestor.
Linearity:	< ± 0,5% between 20kV and 40kV
Residual ripple:	< 40V pp, with an external load of 2 nF
Voltage change:	< 100V at 100% load change
Stability:	< 0,01% / h, after 30min. warm up time, 0,05 % / 8h
Temperature coefficient:	<± 0,01 % / K
Regulation time:	< 100 ms for ±10% voltage change
Switching ON:	<90 ms from 10% to 90% of adjusted output voltage:
Switching OFF:	< 900ms from 90% to 10% output voltage, without external capacitor
	< 1,02s from 90% to 10% output voltage, with extxternal capacitor of 2 nF
	< 1,9s from 90% to 10% output voltage, with extxternal capacitor of 5nF
Output :	HV output on the rear, a mating connector "GES" for coaxial cable is incuded.

LED indicators on the front panel

Power ON:	ON, when the mains switch is switched on.
Within the range:	ON, when unit is in voltage constant mode.
Va > 12,5kV:	ON, when output voltage is >12,5kV .
Error:	ON, when unit in current limitation.

Measuring terminals on the front panel

Vref:	Test terminal for the voltage set value on the rear input "Control"
Va	Voltage monitor: 0 - 4V = 0 - 40kV (Rout = 2 kΩ ; Accuracy = 1%)
Ia	Current monitor: 0 - 7,5V = 0 - 7,5mA (Rout = 2 kΩ ; Accuracy = 1%)
0V	Common for Vref, Va and Ia.

Subject to alteration , mistakes excepted. February 2000