Unit 111, Dunston Innovation Centre
Chesterfield, S41 8NG, U.K.
Tel: + 44 (0) 1246 452909
Fax: + 44 (0) 1246 452942
Web: www.etps.co.uk
Email: sales@etps.co.uk
Sales: 0800 612 95 75

CHQ

CAMAC High Voltage PSU

Description

The CHQ are a series of single and dual channel, high voltage power supplies built to operate on the CAMAC (Computer Automated Measurement And Control) standard bus. Typical applications include medical, nuclear and particle physics along with vacuum technology. The output polarity can be switched and the voltage ramp time adjusted via computer interface after switch on. The CHQ is available in two versions. The standard range offers a measurement resolution of 1V and up to 100nA. The high precision offers superior voltage and current resolution with high stability. Both versions offer adjustment of the output voltage ramp, switchable polarity and, optionally, output power increased to 30W per channel.

- High voltage PS in 2/25 CAMAC standard cassette
- High Precision and Standard versions available
- SHV connector on rear side (up to 6kV)
- LCD display for voltage & current
- 1 & 2 channel versions available
- Full control via CAMAC Bus

Technical Summary Contents

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High Precision Models

Selection Table

Part Number	Maximum Power (Each Channel)	Output Voltage	Output Current	Interface Type	Number of Channels
CHQ 122M	12W	0 - 2 kV	0 - 6 mA	CAMAC	Single
CHQ 222M	12W	0 - 2 kV	0 - 6 mA	CAMAC	Dual
CHQ 123M	12W	0 - 3 kV	0 - 4 mA	CAMAC	Single
CHQ 223M	12W	0 - 3 kV	0 - 4 mA	CAMAC	Dual
CHQ 124M	12W	0 - 4 kV	0 - 3 mA	CAMAC	Single
CHQ 224M	12W	0 - 4 kV	0 - 3 mA	CAMAC	Dual
CHQ 125M	10W	0 - 5 kV	0 - 2 mA	CAMAC	Single
CHQ 225M	10W	0 - 5 kV	0 - 2 mA	CAMAC	Dual
CHQ 126L	6W	0 - 6 kV	0 - 1 mA	CAMAC	Single
CHQ 226L	6W	0 - 6 kV	0 - 1 mA	CAMAC	Dual

Different output ranges and application/user specific options are possible. Please contact ET to discuss your requirements.

Technical Data

Ripple & noise (22M, 23M, 24M)	$2mV_{p-p}$
Ripple & noise (25M, 26L)	$5mV_{p-p}$
Resolution of voltage measurement (Display)	1V
Resolution of voltage measurement (via Interface)	100mV (optional 10mV up to 4kV)
Resolution of current measurement (Range)	I_{NOM} (option 104 = 100µA) (option ON1 = 10µA)
Resolution of current measurement (Display)	1µA (option 104 = 10nA) (option On1 = 1nA)
Resolution of current measurement (via Interface)	100nA (option 104 = 1nA) (option ON1 = 100pA)
Voltage accuracy (for one year)	± (0.05% V_O + 0.02% V_{NOM} + 1 digit)
Current accuracy (for one year)	± (0.05% I_o + 0.02% of range + 1 digit)
Stability (?V_O/?V_{IN})	< 3 x 10^{-5} x V_{NOM}
Stability load, no load (?V_O)	< 5 x 10^{-5} x V_{NOM}
Temperature coefficient	< 3 x 10^{-5}/K
LCD display	4 digit for voltage or current
Voltage setting	Manual: 10 turn potentiometer DAC: via CAMAC Interface (selectable)
Ramp speed at HV On/Off	Hardware ramp: 500V/s
Ramp speed at Interface	Software ramp: 2 - 255V/s
Protection	Separate current & voltage limit, INHIBIT, current trip
Power requirements V_{IN}	±24VDC (<800mA/single chn. <400mA) +6V (<300mA) -6V (<100mA) (option N24 = without 6V)
Output polarity	Switchable

Options Table

Code	Description
/104	100µA current range with resolution of 10nA via display and 1nA via interface
/0N1 (Only available with options /2MA and /2M)	10µA current range with resolution of 1nA via display and 100pA via interface
/2MA	2 current measurement ranges with automatic crossover
/2MM	2 current measurement ranges with manual selection
/VHR	10mV voltage measurement resolution via interface up to 4kV
/N24	Only ±24Vdc Input. (No ±6Vdc Input)
/NHQxxxN	Output power increased to 30W per channel (only up to 3kV)

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Standard Models

Selection Table

Part Number	Maximum Power (Each Channel)	Output Voltage	Output Current	Interface Type	Number of Channels
CHQ 102M	12W	0 - 2 kV	0 - 6 mA	CAMAC	Single
CHQ 202M	12W	0 - 2 kV	0 - 6 mA	CAMAC	Dual
CHQ 103M	12W	0 - 3 kV	0 - 4 mA	CAMAC	Single
CHQ 203M	12W	0 - 3 kV	0 - 4 mA	CAMAC	Dual
CHQ 104M	12W	0 - 4 kV	0 - 3 mA	CAMAC	Single
CHQ 204M	12W	0 - 4 kV	0 - 3 mA	CAMAC	Dual
CHQ 105M	10W	0 - 5 kV	0 - 2 mA	CAMAC	Single
CHQ 205M	10W	0 - 5 kV	0 - 2 mA	CAMAC	Dual
CHQ 106L	6W	0 - 6 kV	0 - 1 mA	CAMAC	Single
CHQ 206L	6W	0 - 6 kV	0 - 1 mA	CAMAC	Dual
CHQ 108L	8W	0 - 8 kV	0 - 1 mA	CAMAC	Single
CHQ 208L	8W	0 - 8 kV	0 - 1 mA	CAMAC	Dual

Different output ranges and application/user specific options are possible. Please contact ET to discuss your requirements.

Technical Data

Ripple & noise (02M, 03M, 04M)..... $2mV_{p-p}$
Ripple & noise (05M, 06L)..... $5mV_{p-p}$
Ripple & noise (08L)..... $200mV_{p-p}$
Resolution of voltage measurement (Display)..... 1V
Resolution of voltage measurement (via Interface)..... 1V
Resolution of current measurement (Range)..... I_{NOM} (option 104 = 100µA)
Resolution of current measurement (Display)..... 1µA (option 104 = 100nA)
Resolution of current measurement (via Interface)..... 1µA (option 104 = 100nA)
Voltage accuracy (for one year)..... ± (0.05% V_O + 0.02% $V_{O\,max}$ + 1 digit)
Current accuracy (for one year)..... ± (0.05% I_O + 0.02% of range + 1 digit)
Stability (?V_O/?V_{IN})..... < 5 x 10^{-5} x V_{NOM}
Stability load, no load (?V_O)..... < 5 x 10^{-5} x V_{NOM}
Temperature coefficient..... < 5 x 10^{-5}/K
LCD display..... 4 digit for voltage or current
Voltage setting..... Manual: 10 turn potentiometer DAC: via CAMAC Interface (selectable)
Ramp speed at HV On/Off..... Hardware ramp: 500V/s
Ramp speed at Interface..... Software ramp: 2 - 255V/s
Protection..... Separate current & voltage limit, INHIBIT, current trip
Power requirements V_{IN}..... ±24VDC (<800mA/single channel <400mA)
+6VDC (<300mA) -6V (<100mA) (option N24 = without 6V)
Output polarity..... Switchable

Options Table

Code	Description
/104	100µA current range with resolution of 10nA via display and 1nA via interface
/0N1	10µA current range with resolution of 1nA via display and 100pA via interface
/2MA	2 current measurement ranges with automatic crossover
/2MM	2 current measurement ranges with manual selection
/VHR	10mV voltage measurement resolution via interface up to 4kV
/N24	Only ±24Vdc Input. (No ±6Vdc Input)
/NHQxxxN	Output power increased to 30W per channel (only up to 3kV)