HAMEG® Instruments

Programmable 2/3 Channel High-Performance Power Supply HMP2020/HMP2030
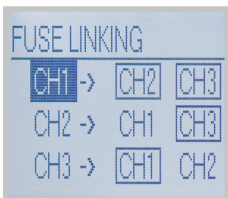
1st Quarter 2009

HMP2030

PROGRAMMABLE POWER SUPPLY HMP 2030

16.000 V	5.000 A	CH 1
5.500 V	5.000 A	CH 2
32.000 V	2.500 A	CH 3

MADE IN GERMANY

CH 1 — 0–32 V / 0–5 A (80 W max.)
CH 2 — 0–5.5 V / 0–5 A
CH 3 — 0–32 V / 0–5 A (80 W max.)

USB · RS-232 · optional TCP/IP · optional IEEE-488 · inclusive

2 channel derivative HMP2020

Individual linking of single channels using FuseLink

FUSE LINKING
CH1 → CH2 CH3
CH2 → CH1 CH3
CH3 → CH1 CH2

Rear outputs for simple integration in rack systems

☑ HMP2020: 1 x 0...32V/0...10A   1 x 0...5.5V/0...5A

☑ HMP2030: 2 x 0...32V/0...5A   1 x 0...5.5V/0...5A

☑ 188W output power realized by intelligent power management

☑ Low residual ripple: ‹ 150µV$_{rms}$ due to linear post regulators

☑ High setting- and read-back resolution of 1mV/0.1mA

☑ Galvanically isolated, earth-free output channels

☑ Advanced parallel- and serial operation via V/I tracking

☑ EasyArb function for free definable V/I characteristics

☑ FuseLink: individual channel combination of electronic fuses

☑ Free adjustable overvoltage protection (OVP) for all outputs

☑ All parameters clearly displayed via LCD/glowing buttons

☑ Rear connectors for all channels including sense

☑ USB/RS-232 Interface, optional Ethernet/USB or IEEE-488

Programmable 2 Channel High Performance Power Supply HMP2020
Programmable 3 Channel High Performance Power Supply HMP2030
Programmable 3 Channel High Performance Power Supply HMP4030

All data valid at 23 °C after 30 minute warm-up

Outputs

Advanced parallel and series operation: simultaneously switch on/off of active channels via 'Output' button, common voltage- and current control using tracking mode (individual channel linking), individual mapping of channels which shall be affected by FuseLink overcurrent protection (switch-off), all channels galvanically isolated and independant from protective earth

HMP2020	1 x 0...32V/0...10A	0...5.5V/0...5A
HMP2030	2 x 0...32V/0...5A	0...5.5V/0...5A
HMP4030	3 x 0...32V/0...10A	

Output terminals:	4mm safety sockets frontside Screw-type terminal rear side (4 units per channel)
Output power:	
HMP2020/HMP2030	188W max.
HMP4030	384W max.
Compensation of lead resistances (Sense):	1V
Overvoltage / overcurrent protection (OVP/OCP):	Adjustable for each channel
Electronic fuse:	Adjustable for each channel, combinable via FuseLink
Response time:	<10ms

32V channels

Output values:	
HMP2020	1 x 0...32V/0...10A, (5A at 32V)
HMP2030	2 x 0...32V/0...5A, (2.5A at 32V)
HMP4030	3 x 0...32V/0...10A, (5A at 32V)
Resolution:	
Voltage	1mV
Current HMP2030	<1A: 0.1mA; ≥1A: 1mA
Current HMP2020/4030	<1A: 0.2mA; ≥1A: 1mA
Setting accuracy:	
Voltage	<0.05% + 5mV (typ. ±2mV)
Current HMP2030	<0.1% + 5mA (typ. ±0.5mA at I <500mA)
Current HMP2020/4030	<0.1% + 5mA (typ. ±1mA at I <500mA)
Measurement accuracy:	
Voltage	<0.05% + 2mV
Current HMP2030	<500mA: <0.05% + 0.5mA, typ. ±0.2mA
Current HMP2030	≥500mA: <0.05% + 2mA, typ. ±1mA
Current HMP2020/4030	<500mA: <0.05% + 0.5mA, typ. ±0.5mA
Current HMP2020/4030	≥500mA: <0.05% + 2mA, typ. ±2mA
Residual ripple (3Hz...100kHz):	
Voltage	<150µV$_{rms}$
Current	<1mA$_{rms}$
Stabilisation at load change (10...90%):	
Voltage	<0.01% + 2mV
Current	<0.01% + 250µA
Stabilisation at line voltage variation (±10%):	
Voltage	<0.01% + 2mV
Current	<0.01% + 250µA
Entire load regulation: (at 10%...90% load peak, balance time to match within 10mV U$_{nom.}$)	<50µs

5.5V channel

Output values:	
HMP2020/HMP2030	1 x 0...5.5V/0...5A
Resolution:	
Voltage	1mV
Current	<1A: 0.1mA; ≥1A: 1mA
Setting accuracy:	
Voltage	<0.05% + 5mV (typ. ±2mV)
Current	<0.1% + 5mA (typ. ±0.5mA at I <500mA)
Measurement accuracy:	
Voltage	<0.05% + 2mV
Current	<500mA: <0.05% + 0.5mA; typ. ±0.2mA
Current	≥500mA: <0.05% + 2mA, typ. ±1mA

Residual ripple (3Hz...100kHz):	
Voltage	<150µV$_{rms}$
Current	<1mA$_{rms}$
Stabilisation at load change (10%...90%):	
Voltage	<0.01% + 2mV
Current	<0.01% + 250µA
Stabilisation at line voltage variation (±10%):	
Voltage	<0.01% + 2mV
Current	<0.01% + 250µA
Entire load regulation: (at 10%...90% load peak, balance time to match within 10mV U$_{Nenn}$)	<50µs

Arbitrary Function easyARB (32V and 5V channels)

Parameters of points:	Voltage, current, time
Number of points:	128
Dwell time:	10ms ...100s
Repetition rate:	Continuously or burst mode with 1...255 changes
Trigger:	Manually via keyboard or via Interface

Maximum ratings

Reverse voltage:	33V max.
Incorrectly polarized voltage:	0.4V max.
Max. permitted current in case of reverse voltage:	5A max.
Voltage to earth:	150V max.

Miscellaneous

Temperature coefficient/°C:	
Voltage	0.01% + 2mV
Current	0.02% + 3mA
Display:	
HMP2020/HMP2030	240 x 64 Pixel LCD (full grafical)
HMP4030	240 x 120 Pixel LCD (full grafical)
Memory:	Non volatile memory for 3 Arbitrary functions and 10 device settings
Interface:	Dual-Interface USB/RS-232 (HO720)
Process time:	<50ms
Protection class:	Safety class I (EN61010-1)
Power supply:	115/230V ± 10%; 50/60Hz, CAT II
Mains fuse:	Microfuse 5 x 20mm slow blow
HMP2020/HMP2030	115V: 2 x 6A 230V: 2 x 3.15A
HMP4030	115V: 2 x 10A 230V: 2 x 5A
Power consumption:	
HMP2020/HMP2030	350VA max.
HMP4030	550VA max.
Operating temperature:	+5°C...+40°C
Storage temperature:	-20°C...+70°C
Max. rel. humidity:	5%...80% (non condensing)
Dimensions (W x H x D):	
HMP2020/HMP2030	285 x 75 x 365mm
HMP4030	285 x 125 x 365mm
Weight:	
HMP2020/HMP2030	8,5kg
HMP4030	approx. 10kg

Accessories supplied: Line cord, Operating manual, Dual-Interface USB/RS-232 (HO720), CD
Optional accessories:
HO730   Dual-Interface Ethernet/USB
HO740   Interface IEEE-488 (GPIB), galvanically isolated
HZ10S   5 x silicone test lead (measurement connection in black)
HZ10R   5 x silicone test lead (measurement connection in red)
HZ42   2RU 19'' Rackmount Kit (HMP2020, HMP2030)
HZ43   3RU 19'' Rackmount Kit (HMP4030)

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