

MMS

UNIVERSAL LOW / HIGH VOLTAGE MULTICHANNEL POWER SUPPLY SYSTEM

MPOD CRATES BY W-IE-N-E-R



ECH CRATES BY ISEG



SYSTEMS

Mpod
ics2

- ▶ two manufacturers - one standard
- ▶ up to 10 slots and 480 channels per crate
- ▶ up to 30 kV, up to 100 W per channel
- ▶ pure LV, HV compatible and mixed setup crates available
- ▶ high quality precision low and high voltage supplies
- ▶ compatible controller boards for networking and software control

The 19" / 6U Eurocassette standard based modular low and high voltage system is the ISEG and W-IE-N-E-R vendor specific multichannel power supply standard. With a wide set of modules the MMS system provides the most advanced features in low voltage and high voltage generation.

Many users world-wide trust in the reliability, precision and quality of established MMS hardware. Offering a variety of chassis from a single slot up to 10 slots for desktop or 19" rack-mount use the MMS system is scalable from small to large applications. MMS Systems can be equipped with either the W-IE-N-E-R MPOD controller or the new ISEG CC24 controller.

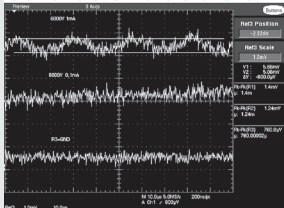
The ISEG CC24 Master with embedded Linux hardware provides EPICS IOC, SNMPservice, easy webbrowser based configuration and control, TCP/IP protocols and much more directly from unit without additional hardware or setup efforts.

MMS MODULES

LARGE RANGE OF LOW AND HIGH VOLTAGE MULTICHANNEL SUPPLIES



MODULE OPTIONS



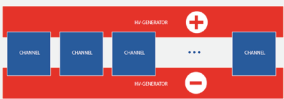
low noise and high stability



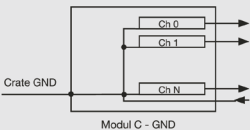
distributor channel supply



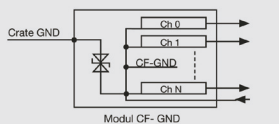
distinct source supply



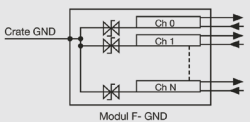
bipolar channel supply



common ground principle



common floating ground principle



floating ground principle

MODULES

EDS SERIES



DISTRIBUTOR HV MODULE WITH CFG

- ▶ 16 / 24 / 48 channel, 500 V/1.5 kV/ 3 kV versions
- ▶ Low Cost versions with reduced current measurement accuracy
- ▶ very low ripple and noise
- ▶ hardware voltage and current limit
- ▶ voltage control and current measurement per channel
- ▶ programmable parameters

EHS SERIES



VERSATILE HIGH PRECISION HV MODULE in CG/CFG/FG

- ▶ Standard and High Precision versions
- ▶ NEW: Versions "Flex" and "Stack"
- ▶ 4 / 8 / 16 / 32 channel, 100 V - 20 kV versions
- ▶ extreme high stability, low temperature coefficient
- ▶ very low ripple and noise
- ▶ second current measurement range 20 μ A for high resolution of 50 pA available
- ▶ hardware voltage and current limit
- ▶ voltage control and current measurement per channel
- ▶ programmable parameters (delayed trip etc.)

EBS SERIES



BIPOLAR 4 QUADRANT HIGH VOLTAGE MODULE WITH CFG

- ▶ 4 / 12 / 24 channel, 500 V/1.2 kV/3 kV and custom versions
- ▶ 4-quadrant, usable as bipolar current sink and source
- ▶ perfect for electron optical systems and capacitive loads
- ▶ low ripple and noise
- ▶ floating ground principle
- ▶ voltage control and current measurement per channel
- ▶ programmable parameters (delayed trip etc.)

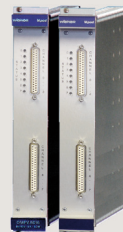
ESS SERIES



SINGLE CHANNEL 2 QUADRANT HV MODULE WITH FG

- ▶ 1 channel, 10 / 20 / 30 kV and customized versions
- ▶ 2-quadrant capabilities, usable as unipolar current sink and source
- ▶ perfect for electron optical systems and capacitive loads
- ▶ low ripple and noise
- ▶ floating ground principle
- ▶ programmable parameters (delayed trip etc.)

MPV SERIES



HIGH PRECISION LOW VOLTAGE MODULE WITH FG

- ▶ 8 channels, 8 / 16 / 30 / 60 / 120 V at 50W per channel
- ▶ 4 channels, 8 / 16 / 30 / 60 at 100W per channel
- ▶ individual return lines, individually sensed, single floating
- ▶ extremely low noise and ripple: $<3\text{mV}_{\text{pp}}$ (0-20MHz)
- ▶ voltage or current controlled mode
- ▶ fully programmable for each channel (regulation speed, over / under voltage and current limit, ramp-up / down slopes, ..)
- ▶ user defined action on fault conditions
- ▶ INTERLOCK and safety loop features

SERIES	POWER	CHANNELS	V _{NOM}	NOISE	CH. SUPPLY	FLOATING	CONNECTORS	OPTIONS
EHS	-	4/8/16/32/48	0.1 - 20 kV	LN VLN ULN	Distinct Source	CG CFG FG	REDEL 51 SHV	VCT L TC
EDS	-	16/24/48	0.5 - 3 kV	LN	Distributor	CFG	REDEL 51 SHV	
EBS	-	4/12/24	± 0.5 - 3 kV	LN	Bipolar Distributor	CFG	REDEL 51 SHV LEM	3UC
ESS	-	1	10 / 20 / 30 kV	LN	Distinct Source	FG	SHV GES	
MPV4	100 W/ch.	4	8 / 16 / 30 / 60 V	ULN	Distinct Source	FG	D-SUB	
MPV8	50 W/ch.	8	8 / 16 / 30 / 60 / 120 V	ULN	Distinct Source	FG	D-SUB	

MMS CRATES

19" AND DESKTOP FRAMES FOR MMS COMPATIBLE MODULES

CRATES

ECH 54A / 55A / 56A



ECH 242 / 244 / 224 / 238



MPOD / MPOD-MIX



MPOD MINI / MICRO-1 / MICRO-2



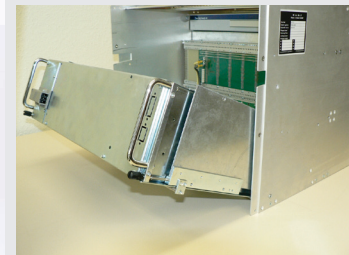
CRATE OPTIONS



FRONT CONTROL WITH DISPLAY
- monitor and control directly



VERY RELIABLE
- perfect air condition by fan trays



EASY TO MAINTAIN:
- removable power supplies with optional UPS

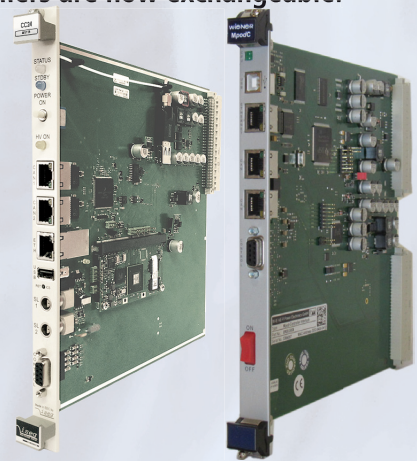
TYPE SERIES	DIMENSIONS (H/W/L)	SLOTS	POWER MAX.	HV/LV	INTERFACES	CONTROLLER	MODULE POS.	SPECIAL FEATURES	OPTIONS
ECH 5xA	8U / 19" / 462 mm	10	3 kW HV / 4 kW LV	HV LV	Ethernet CAN	MPODC CC 24	front rear	19" removable fan / power	AIR FILTER UPS
ECH 238	6U / 19" / 450 mm	8	1,200 W	HV	CAN		front	19" removable fan / power	UPS FAN
ECH 242	7U / 120 mm / 350 mm	2	200 W	HV	Ethernet CAN	CC 24 CC 23	front		
ECH 224	7U / 235 mm / 350 mm	4	300 W	HV	CAN	-	front		
ECH 244	7U / 235 mm / 350 mm	4	300 W	HV	Ethernet CAN	CC 24 CC 23	front		
MPOD	8U / 19" / 462 mm	10	3 kW HV / 4 kW LV	HV LV	Ethernet CAN	MPODC CC 24	front rear	19" removable fan / power	AIR FILTER UPS DISPLAY
MPOD-MIX	8U / 19" / 462 mm	10	3 kW HV / 4 kW LV	HV LV	Ethernet CAN	MPODC CC 24	front rear	like MPOD but with VME, VME64x, PXI or cPCI sub-system	
MPOD MINI	5U / 19" / 412 mm	4	600W HV / 1.6kW LV	HV LV	Ethernet CAN	MPODC CC 24	front rear	19" removable fan	AIR FILTER DISPLAY
MPOD MICRO-2 3U	19" / 412 mm	2	300W HV / 800W LV	HV LV	Ethernet CAN	MPODC CC 24	front rear	19" removable fan	AIR FILTER DISPLAY
MPOD MICRO-1 2U	19" / 412 mm	1	300W HV / 400W LV	HV LV	Ethernet CAN	MPODC CC 24	front rear	19" removable fan	AIR FILTER DISPLAY

MMS CONTROLLER OPTIONS

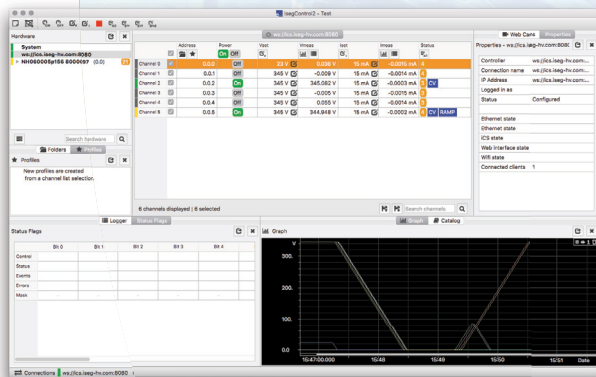
FLEXIBLE WAYS TO CONTROL MULTICHANNEL VOLTAGE SUPPLIES



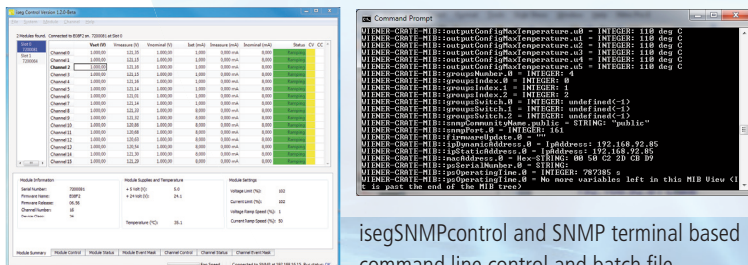
MMS controllers are now exchangeable:



Webbrowser based iCScontrol and iCSconfig for hardware configuration



isegControl2: unified control software for MMS systems and other power supplies



isegSNMPcontrol and SNMP terminal based command line control and batch file

SYSTEM	CC24 WITH ICS	MPOD CONTROLLER
INTERFACE	100/1000 MBIT ETHERNET	100 MBIT ETHERNET
WIFI	OPTIONAL	-
LINUX SERVER	EMBEDDED	-
SLAVE EXTENSIONS	CC23 (via CAN)	-
HARDWARE INTERLOCK	ONBOARD	ONBOARD
WEBSERVER	CONTROL & CONFIGURATION	MONITORING
SNMP	INTEGRATED	INTEGRATED
EPICS IOC	INTEGRATED	BY SOFTWARE
OPC U/A	INTEGRATED	BY SOFTWARE
LOGGING	INTEGRATED	BY SOFTWARE
LABVIEW SUPPORT	VI AVAILABLE	VI AVAILABLE

SOFTWARE

ISEG CONTROL 1 (SNMP)	READY	READY
ISEG CONTROL 2	READY	COMING SOON
ISEG SNMP CONTROL	READY	READY



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