

# IMOD

## INTELLIGENT & MODULAR DEVICES

The IMOD series is an intelligent, modular system consisting of the 3 separately located units:

- the Control-Unit for operation
- the completely housed Function-Unit
- the bench rack module with Output-Unit

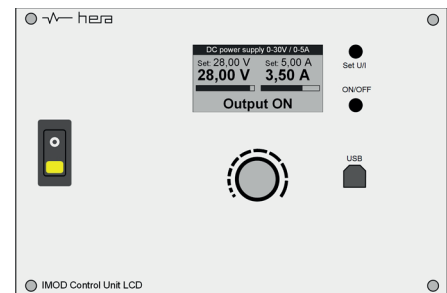
The advantages are:

- Up to 5 Function-Units can be controlled with only one Control-Unit, thus the space requirement for device combinations is less.
- More working efficiency as operation and reading of the Control-Unit can be done ergonomically in the middle of the bench, so there is no need for the operator to continuously change position.
- Some Function-Units might be very heavy and voluminous, this is now completely decoupled and can be placed in convenient positions, e.g. variacs under the bench.
- The outputs can be placed in small channels and optimal positions, either vertical or horizontal, this will keep workspaces free of laboratory cords.

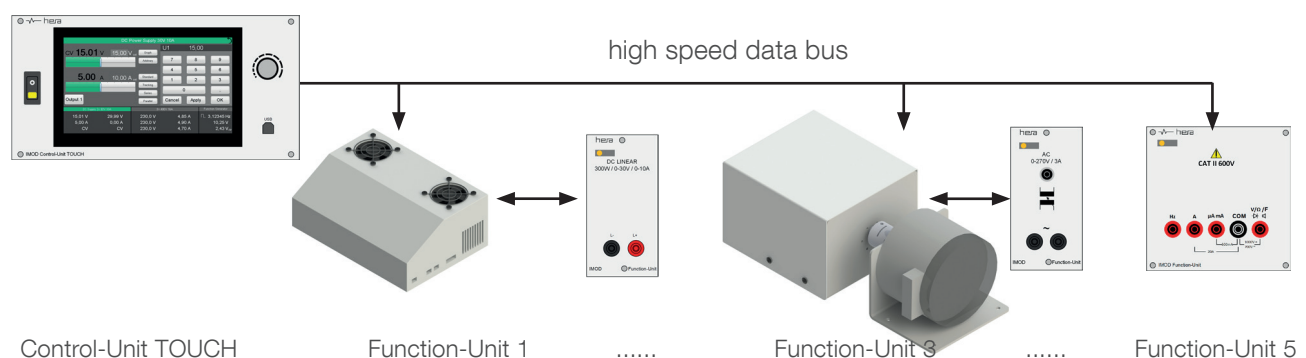
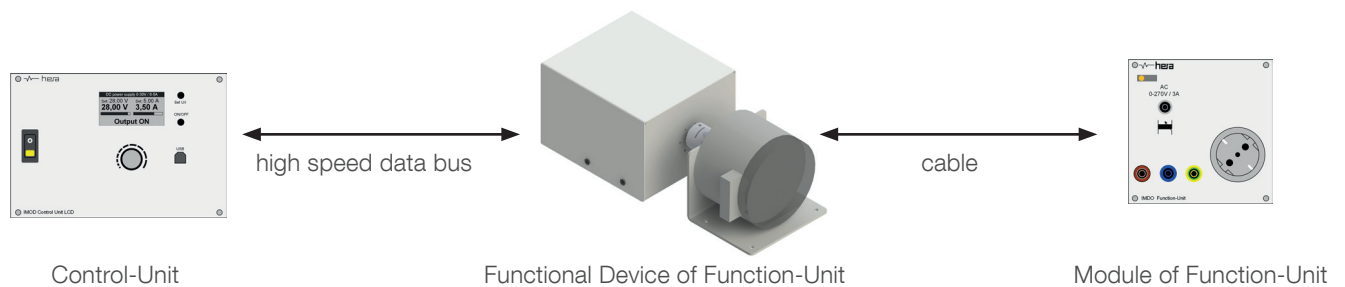
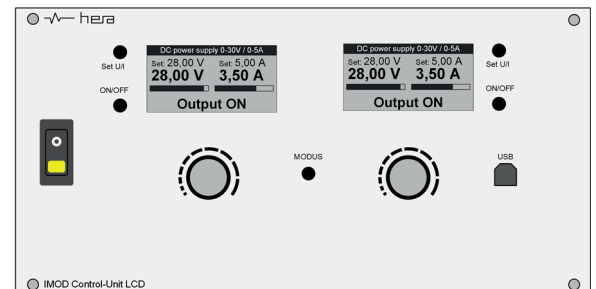


## EP/MP IMOD CONTROL-UNIT LCD

- Controller with integrated communication bus for one of the following function units.
- Background illuminated LC-display 60x30mm (128x64).
- Rotary switch with tip-function for direct and precise settings.
- 2x extra buttons for quick and intuitive operation.
- USB interface at the front and LAN interface at the rear instrument side.
- Illuminated 2poles switch for central on/off.
- With wire harness and coupler.

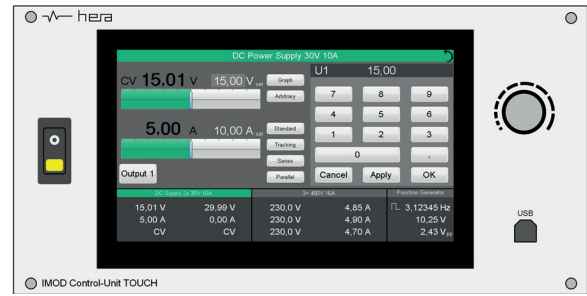


IMod Control-Unit LCD		6 S 0.000 A 00
S System	A Type	
3 EP	3 1x LC Display 0,75EP / 1,5MP	
5 MP	5 2x LC Display 1EP / 2MP (only double power supplies)	



## EP/MP IMOD CONTROL-UNIT TOUCH

- Controller with internal bus for the central control of max. 5 function units.
- Flush integrated 7" TFT display (800x480) with glass front and wide-angle-view.
- High precision capacitive multitouch operation.
- Rotary switch with tip-function for a direct control of all main functions.
- Value setting either by touch slide bar, touch keypad or rotary switch.
- Value indication with large figures and bargraph, data logging of graph and numeric table.
- USB interface at the front and LAN interface at the rear instrument side.
- Illuminated 2poles switch for central on/off.
- With wire harness and coupler.



### IMOD Control-Unit TOUCH

630.000.100	1 EP
650.000.100	1,5 MP



## EP/MP IMOD FUNCTION-UNIT: AC SOURCE 1PHASE

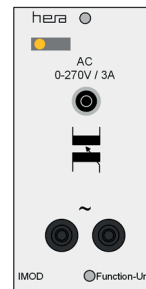
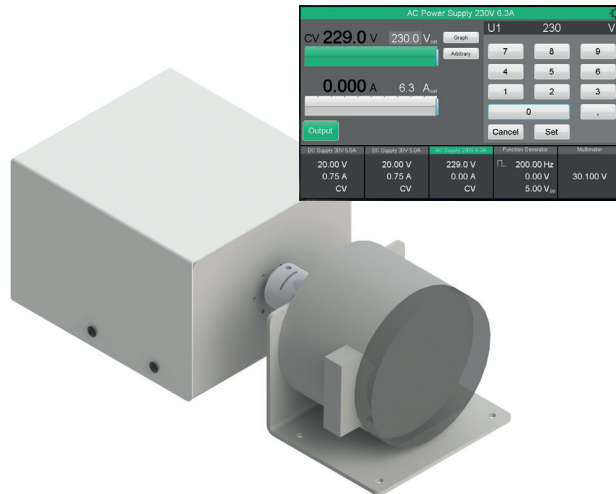
A combination of output module for bench rack integration and a separate, completely housed functional device which can be positioned either in the bench rack, in the cable tray or under the bench top.

### Configuration of Output Module with respect to type:

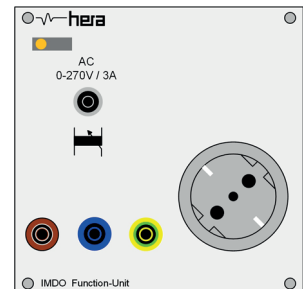
- Status indication with RGB-LED.
- Front side operated thermomagnetic fuse for output.
- 4mm safety jacks.
- PE socket or universal socket for floating voltage.
- Selector switch for floating type.
- Bridge rectifier (BRF) for a pulsating DC voltage with 48% ripple.

### Functional Unit (separate housing):

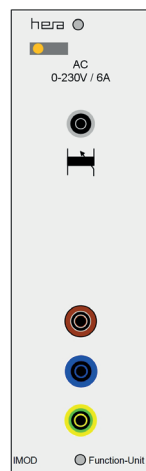
- Motor-driven variac (floating type with downstream connected isolated transformer).
- Silent running motor for voltage adjustment, with intelligent speed control for a minimum of overshoot and response time. Incl. supply unit.
- 2x TrueRMS converter (voltage and current) with 12bit resolution.
- Internal communication bus for data transfer with Control-Unit.
- Precision adjustment for voltage or current (selector switch).



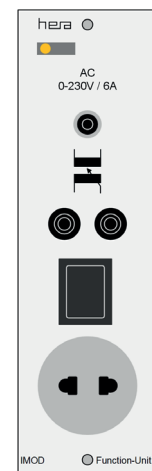
EP Module with jacks (floating)



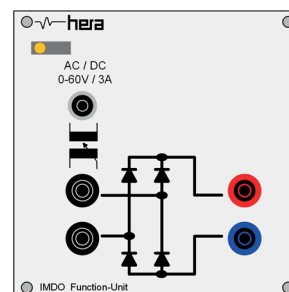
EP Module with jacks + PE socket (non floating)



MP Module with jacks (non floating)



MP Module with jacks and universal socket for floating voltage (with selector switch)



EP Module AC/DC with Bridge Rectifier + jacks (floating)

### IMod Function-Unit: AC Source 1phase

6 S 2. A LL.LLL

S System	A Output	LL.LLL Functional Device
3 EP	1 Safety Jacks 0,25EP / 0,5MP	23.010 0-230V / 1A
5 MP	2 PE Socket or Universal (floating) 0,25EP / 0,5MP	23.030 0-230V / 3A
	3 Jacks and PE Socket/ Universal 0,5EP / 0,5MP	23.060 0-230V / 6,3A
	4 AC/DC with BRF and Jacks 0,5EP / 0,5MP	23.100 0-230V / 10A
		23.140 0-230V / 14A
		03.045 0-30V / 4A floating
		06.035 0-60V / 3A floating
		27.015 0-270V / 1A floating
		27.035 0-270V / 3A floating
		27.055 0-270V / 5A floating
		27.105 0-270V / 10A floating
		27.125 0-270V / 12A floating
		30.105 0-300V / 10A floating
		27.165 0-270V / 16A floating
		30.165 0-300V / 16A floating

Primary L1-L2 3phase supply required

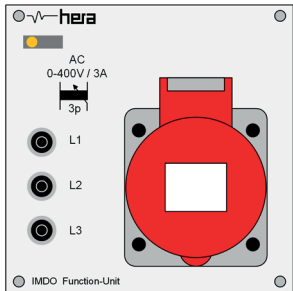


EP/MP IMOD FUNCTION-UNIT: AC SOURCE 3PHASES

A combination of output module for bench rack integration and a separate, completely housed functional device which can be positioned either in the bench rack, in the cable tray or under the bench top.

Configuration of Output Module with respect to type:

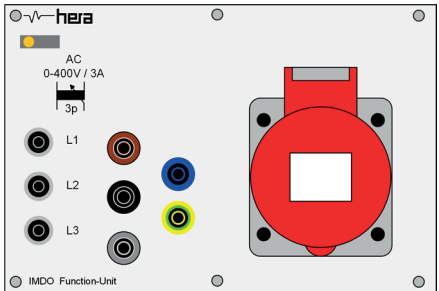
- Status indication with RGB-LED.
- Front side operated thermomagnetic fuse for output.
- 4mm safety jacks.
- CEE socket 5poles red 400V / 6h.
- 6-level-rectifier (6-level-RF) for a pulsating DC voltage with a ripple of 4,3%.



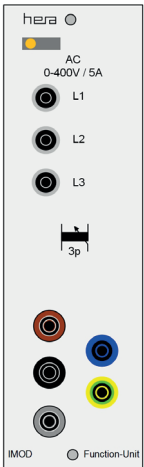
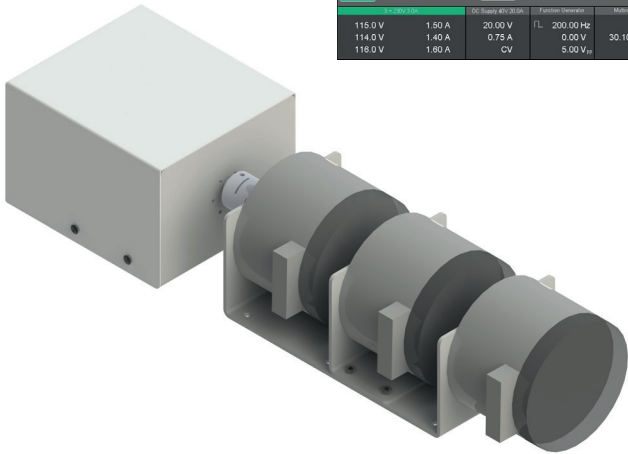
EP Module with CEE socket and jacks

Functional Unit (separate housing):

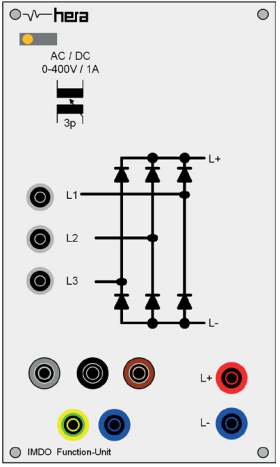
- Motor-driven variac (floating type with downstream connected isolated transformer).
- Silent running motor for voltage adjustment, with intelligent speed control for a minimum of overshoot and response time. Incl. supply unit.
- 6x TrueRMS converter (3x voltages and 3x current) with 12bit resolution.
- Internal communication bus for data transfer with Control-Unit.
- Precision adjustment for voltage or current (selector switch).



EP Module with CEE socket and jacks (non floating)



MP Module with jacks (non floating)



MP Module AC/DC with 6-level-rectifier and jacks (floating)

IMOD Function-Unit: AC Source 3phases			6 S 3. A LL.LLL	
S System	A Output		LL.LLL	Functional Device
3 EP	1 Safety Jacks	0,5EP / 0,5MP	40.010	0-400V / 1A
5 MP	2 CEE Socket 5poles	0,5EP / 1MP	40.030	0-400V / 3A
	3 Jacks and CEE Socket	0,75EP / 1MP	40.060	0-400V / 6,3A
	4 AC/DC with 6-level-RF and Jacks	0,5EP / 1MP	40.100	0-400V / 10A
			40.140	0-400V / 14A
			40.015	0-400V / 1A floating
			40.035	0-400V / 3A floating
			45.055	0-450V / 5A floating
			40.105	0-400V / 10A floating
			40.145	0-400V / 14A floating
			52.075	0-520V / 7A floating
			52.105	0-520V / 10A floating

## EP/MP IMOD FUNCTION-UNIT: LAB POWER SUPPLY LINEAR

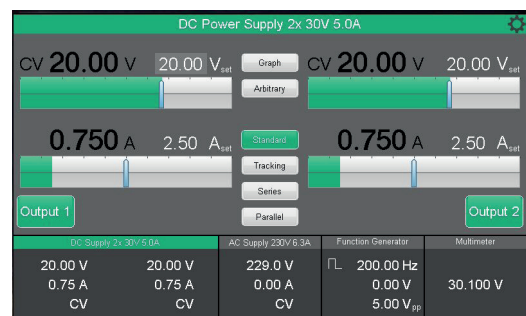
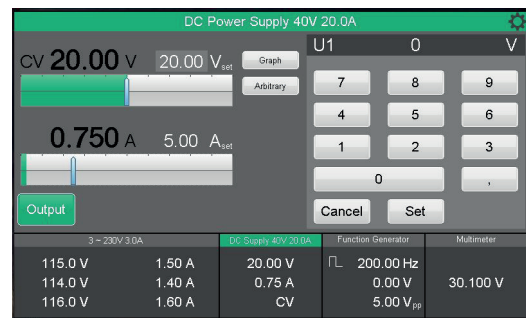
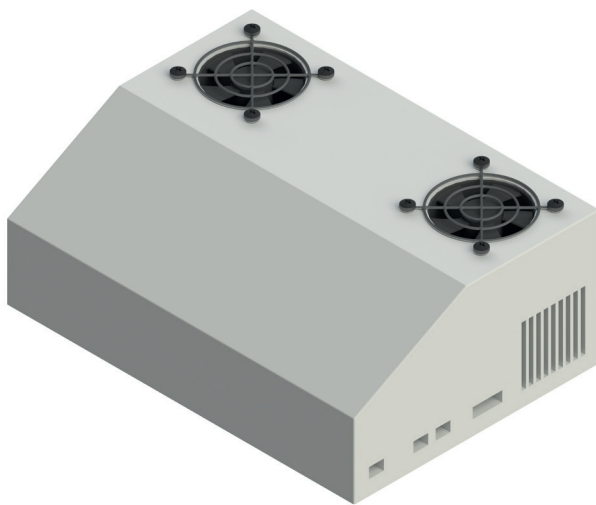
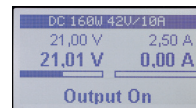
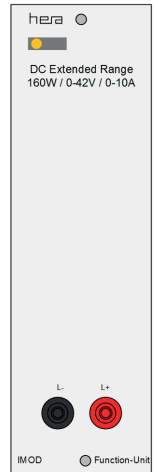
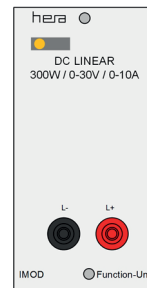
A combination of output module for bench rack integration and a separate, completely housed functional device which can be positioned either in the bench rack, in the cable tray or under the bench top.

### Configuration of Output Module:

- Status indication with RGB-LED.
- 2x 4mm safety jacks.

### Functional Unit (separate housing):

- Linear regulated laboratory power supply with power factor correction (PFC).
- Up to 150W fanless.
- Resolution of set - and actual values: 14Bit (1638dots).
- Resolution of measurements: 16Bit (65536dots).
- Ripple (at  $I_a = 50\%$ ): <1mV rms.
- Response time (load step 10-90%  $I_a$ , at 50%  $U_a$ ): <50 $\mu$ s.
- External voltage protection: 100V.



IMOD Function-Unit: Lab Power Supply Linear		6 <b>S</b> 6.10 <b>L.LL</b> 0		0,25EP / 0,5MP	
<b>S</b>	System	<b>L.LL</b>	Funtional Device		
3	EP	3.02	60W: 0-30V / 0-2A	6.05	300W: 0-60V / 0-5A
5	MP	3.05	150W: 0-30V / 0-5A	3.20	600W: 0-30V / 0-20A
		3.10	300W: 0-30V / 0-10A	6.10	600W: 0-60V / 0-10A

EP/ MP IMOD FUNCTION-UNIT: LAB POWER SUPPLY EXTENDED RANGE

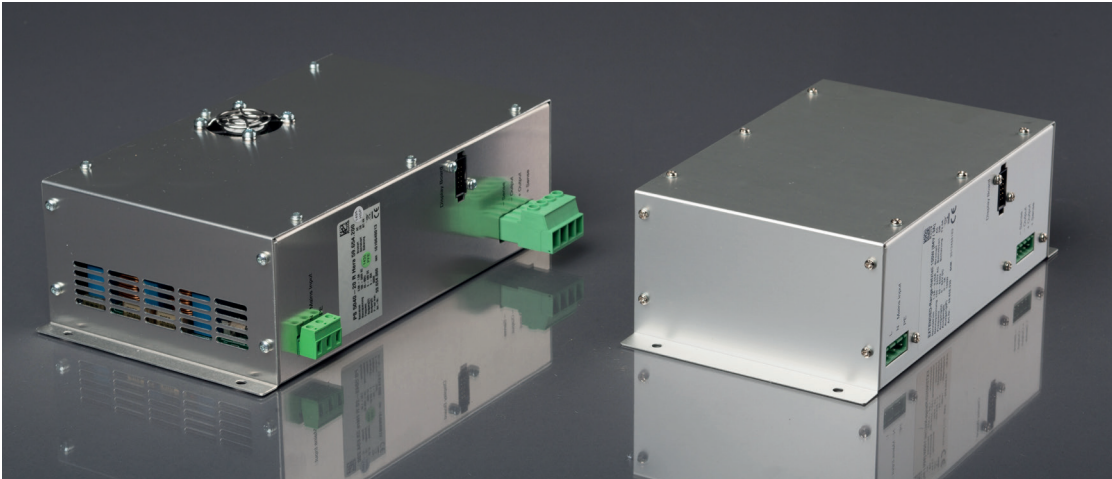
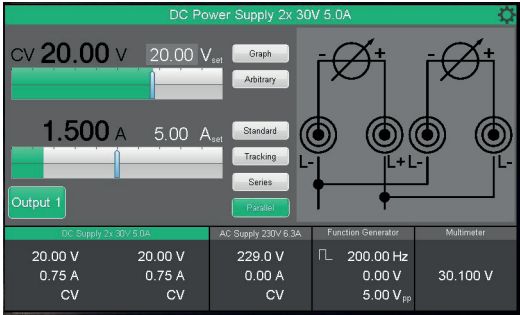
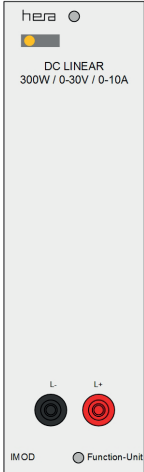
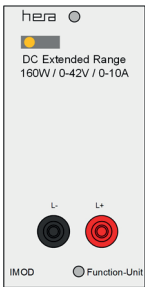
A combination of output module for bench rack integration and a separate, completely housed functional device which can be positioned either in the bench rack, in the cable tray or under the bench top.

Configuration of Output Module:

- Status indication with RGB-LED.
- 2x 4mm safety jacks.

Functional Unit (separate housing):

- Switch-mode laboratory power supply, fanless up 160W.
- Stability at 0-100% load: <0,8%.
- Stability at 10% mains alternation: <0,02%.
- Ripple: <5mVrms.
- Response time 10-100% load: <1ms.
- Overvoltage protection: 0...46,2V.
- Accuracy: <0,2%.
- Actual value of current and voltage adjust each other, so the max. power ( $P = U \times I$ ) is not exceeded.

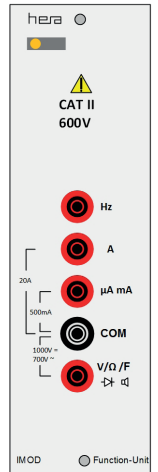
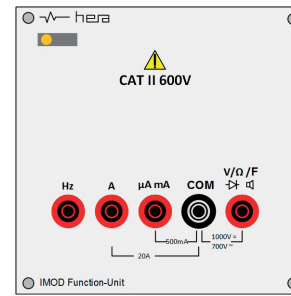


IMOD Function-Unit: Lab Power Supply Extended Range 6 E 5.10 L.LL0 0,25EP / 0,5MP					
S	System	L.LL	Functional Device		
3	EP	4.06	100W: 0-42V / 0-6A	8.03	100W: 0-84V / 0-3A
5	MP	4.10	160W: 0-42V / 0-10A	8.05	160W: 0-84V / 0-5A
		4.20	320W: 0-40V / 0-20A		

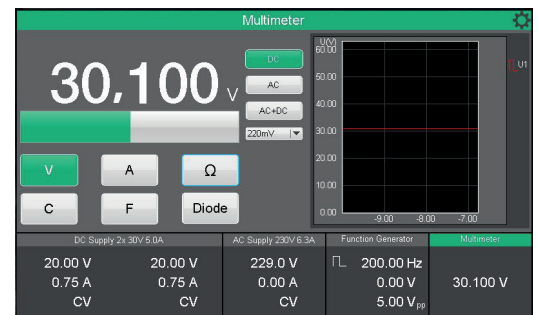
## EP/MP IMOD FUNCTION-UNIT: MULTIMETER

### Configuration with Multimeter (in housing):

- Status indication with RGB-LED.
- 5x 4mm safety jacks (Hz, A,  $\mu$ A/mA, COM, V / Ohm / F / Diode / Continuity Test).
- Resolution: 4 3/4 stellig (50.000 Counts).
- Voltage DC: 10 $\mu$ V – 1000V.
- Voltage AC TrueRMS: 10 $\mu$ V – 700V.
- Current DC: 10nA – 20A.
- Current AC TrueRMS: 10nA – 20A.
- Front side operated thermomagnetic fuse of input  $\mu$ A/mA.
- Resistance: up to 50M $\Omega$ .
- Frequency: 100  $\mu$ Hz – 50MHz.
- Capacity: up to 50mF.
- Other functions: diode test, continuity test.
- Range selection: manual and automatic.
- Measuring rate: 2,5 measurements/ sec.
- Safety class: EN 61010-1; CAT II 600V.



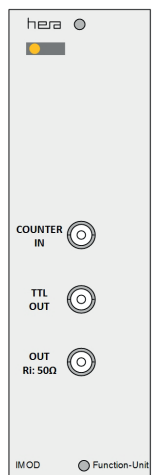
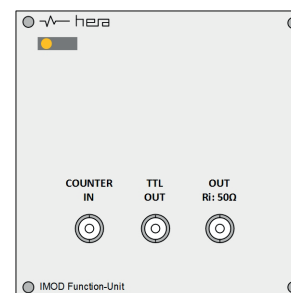
IMOD Function-Unit: Multimeter	
634.000.000	0,5EP
654.000.000	1MP



## EP/MP IMOD FUNCTION-UNIT: FUNKTION GENERATOR

### Configuration with Function Generator (in housing):

- Status indication with RGB-LED.
- 3x BNC sockets.
- Basic functions: sinus, triangle, saw tooth, pulse and DC voltage.
- Frequency range: 1mHz – 10MHz (sinus), 10Hz – 1MHz (other signals).
- Arbitrary function: up to 4096dots.
- Other functions: PWM, TTL output.
- Amplitude: 30Vss (max. 1MHz), max. 3Vpp at 10MHz.
- Resolution: 14 Bit.
- Duty cycle: 0,1% ... 99,9%.
- DC Offset:  $\pm$  10V.
- Frequency and counter: max. 100MHz.



IMod Function-Unit: Function Generator	
637.000.000	0,5EP
657.000.000	1MP

