

# CCP Preamplifiers and Microphone Sets

## HDMS\_CCP... / HDP\_CCP...

### ○ CCP\* / IEPE COMPATIBLE

Standardized Constant Current Supply widely available in many professional measurement frontends

### ○ BEST ACCURACY WITH ACCEPTABLE COST

High precision of measurements at affordable cost

### ○ FLEXIBILITY

Easy integration with other sensors into CCP based systems

### ○ EASY CONNECTION AND LOW COST CABLING

Two wire common low cost cables can be used along with BNC connectors

### ○ DIFFERENT MODELS FOR EVERY APPLICATION

Several possibilities of gain, sensor output sensitivity and sound field optimization

### ○ INDIVIDUAL CALIBRATION

Microphone sets provided with individual calibration and sensitivity values

**Delta OHM**

Member of GHM GROUP



### Main Applications

Multichannel acquisition  
Production quality control  
NVH automotive testing  
Home appliances testing  
Laboratory measurements

## Sound Pressure Levels Precision Measurement

The quality, stability and reliability of a microphonic preamplifier are fundamental in the process of acquiring accurate measurements of sound pressure levels.

The high impedance signal generated by precision microphones, which is very sensitive to the characteristics of the transmission cables, needs to be **amplified and made compatible** with the input specifications of professional measurement systems. The quality of transduction of this signal depends on the preamplifier, a fundamental element of the measurement chain. Our CCP preamplifiers use a **standardized 2 ÷ 20 mA power supply** which makes them **compatible with most professional measurement systems** and allow to use two-wire signal transmission cables with BNC connectors, widely adopted in the measurement front-ends.

Delta OHM also introduces, in addition to the CCP preamps, a new range of **complete microphone sets**, consisting of a CCP preamp + precision microphone. Microphone sets are available in different configurations to meet key measurement needs.

**CCP preamplifiers** use a two-wire system, where the signal is superimposed on the wire through which the current is kept constant. This allows that simple co-axial cables can be used.

**Microphone Sets** based on CCP preamplifiers can be connected directly to all professional measurement systems through coaxial cables. Our Microphone Sets are delivered as a unit microphone + CCP preamplifier and individually calibrated including sensitivity values and frequency response curves. Sensitivity value can therefore be used directly in acquisition system setup.

\*CCP (Constant Current Power) is equivalent to IEPE (Integrated Electronic Piezo-Electric) and CCLD (Constant Current Line Drive) and is compatible with many other constant current driven products such as Deltatron®, Isotron, etc.

## CCP\* Preamplifiers - technical specifications

	HDP_CCP	HDP_CCP/5	HDP_CCP/10	HDP_CCP_UC	HDP_CCP_UC/5	HDP_CCP_UC/10
Size	½"	½"	½"	½"	½"	½"
Freq. response (±2dB) (Hz)	1 ÷ 70k			1 ÷ 50k		
Output connector	BNC					
Power supply (mA)	2 ÷ 20 (typ. 4 mA)					
Input referred Noise A-weighted (µV)	< 9	< 6	< 5	< 10	< 7	< 6
Max output voltage (Vpp)	16					
Gain with 22pF capacitive adapter (dB)	0	4	10	3	6	13
Operating temperature	-20...+75 °C (storage temperature -40...+85 °C)					
Microphones	MC21 / MC22E			UC52/1		

\* For alternative microphone capsule and compatibility check, please contact Delta OHM sales department sales@deltaohm.com

## CCP Microphone sets - technical specifications

	HDMS_CCP	HDMS_CCP/5	HDMS_CCP/10	HDMS_CCP_UC	HDMS_CCP_UC/5	HDMS_CCP_UC/10	HDMS_CCP_RI	HDMS_CCP_RI/5	HDMS_CCP_RI/10
Application	Free Field						Random Incidence		
Microphone	MC21E			UC52			MC22E		
Size	½"	½"	½"	½"	½"	½"	½"	½"	½"
Output connector	BNC								
Length (mm)	88.6			84.4			88.6		
Sensitivity (mV/Pa)	30	50	100	25	50	80	30	50	100
Frequency response (±2dB) [Hz]	3.5 ÷ 20k			20 ÷ 12.5k			3.5 ÷ 12.5k		
Power supply	2 ÷ 20 mA (typ. 4 mA)								
Dynamic range (dBA)	22 ÷ 140	17 ÷ 135	16 ÷ 130	24 ÷ 140	20 ÷ 135	18 ÷ 130	22 ÷ 140	17 ÷ 135	16 ÷ 130
Max Peak Level (dB)	143	138	133	143	138	133	143	138	133
Max output Peak voltage (V)	8								
Operating temperature	-20...+75 °C								
Polarization Voltage (V)	0								
IEC 61094-4 compliance	WS2F			-			WS2D		

## Microphones - technical characteristics

	MC21E	MC21P*	MC23*	UC52	MC22E	MC22P*
Size	½"	½"	½"	½"	½"	½"
Capsule Response	Free Field			Diffuse Field		
Sensitivity (mV/Pa)	50	44.5	50	22.5	50	
Dynamic range (3% THD) (dB)	147	146	146	150	144	146
Inherent noise (dBA)	15	<15	15	18	<15	15
Capacitance (pF)	12	15	19	19	11	16
Temp. Coeff. (dB/°C)	0.009	0.006	<0.01	-0.008	0.009	<0.01
Frequency range (±2dB) (Hz)	3.15 ÷ 20K		3.5 ÷ 20K	20 ÷ 8K	3.15 ÷ 12.5K	
Polarization voltage	0V	200V	200V	0V	0V	200V
IEC 61094 compliance	WS2F			-	WS2D	
IEC 17025 calibration	Option (Accredited calibration services available on request)					

\* Not compatible with HDP\_CCP preamplifiers.

### UC52

Pre-polarized condenser microphones - standard ½" diameter



MC21E - MC22E  
Pre-polarized condenser microphones - standard ½" diameter"

MC21P - MC22P - MC23  
200V polarized condenser microphones - standard ½" diameter"



**Delta OHM**

Member of GHM GROUP

In order to ensure the quality of our instruments, we are constantly re-evaluating our products. Improvements can imply changes in specification; we advise you to always check our website for the newest version of our documentation.

We look forward to your enquiry:

Phone: +39 049 89 77 150

Email: sales@deltaohm.com

Delta OHM S.r.l.

Single Member Company subject to direction and coordination of GHM MESSTECHNIK GmbH

Via Marconi 5 | 35030 Caselle di Selvazzano (PD) | ITALY

Rev.1.1 - 09/21