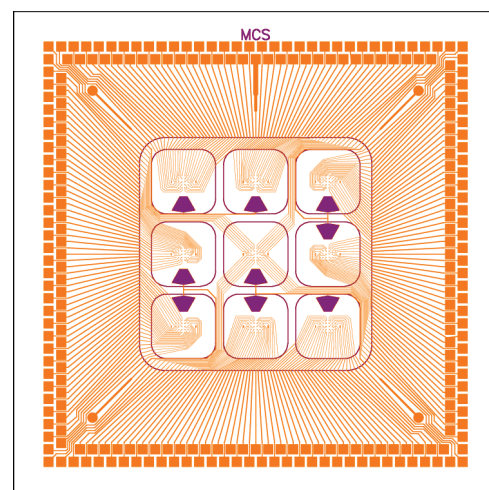


256-9wellMEA for MEA2100-256-Systems and for USB-MEA256-System

Layout



Technical Specifications

Temperature compatibility	0 - 125 °C
Dimensions (W x D x H)	49 mm x 49 mm x 1 mm
Base material	Glass
Track material	ITO (Indium tin oxide)
Contact pads	ITO (Indium tin oxide)
Electrode diameter	30 µm (recording), 50 x 200 µm (stimulation)
Interelectrode distance (center to center)	300 µm (recording), 500 µm (stimulation)
Electrode height	Planar
Electrode material	TiN (Titanium nitride)
Isolation material	Silicon nitride 500 nm (PEVCD)
Electrode impedance	< 100 kΩ
Electrode layout grid	6 x 5 recording + 2 stimulation electrodes in each well
Number of recording electrodes	252 (26 electrodes in each well)
Number of reference electrodes	9, one internal reference electrode (iR) in each well
Contact pads for reference electrodes (connected to ground)	4, the reference electrodes are connected to 2 pads only
Software	
Multi Channel Experimenter	MEA Layout: 256-9wellMEA
MC_Rack	Source Layout: Configuration
Channel map	256-9wellMEA.cmp

Advantages

- 256-9wellMEAs are developed, for example, for safety-pharmacological screenings of drug induced QT-prolongation.
- The 256-9wellMEA allows running nine experiments with identical surrounding conditions at once.
- A macrolon quadrat with nine chamber is available which can be covered by a semipermeable membrane for culturing tissues.

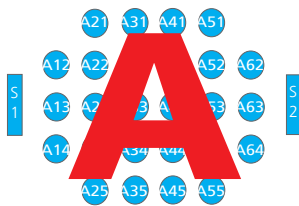
9 Well MEA Perfusion Chamber

(mq) Macrolon quadrat with 9 wells:
 ID 6.5 x 6.5 mm of each well, OD 24 x 24 mm of all wells,
 height 9 mm, Volumetric capacity of each well: minimum 250 µl.

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256-9wellMEA for MEA2100-256-Systems and for USB-MEA256-System

Layout

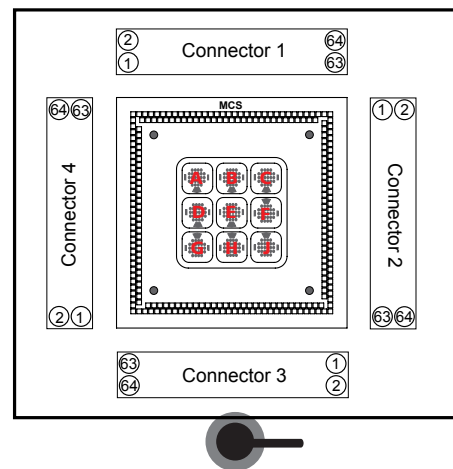


Example Well A

The numbering of MEA electrodes in the 6 x 5 grid per each well follows the standard numbering scheme for square grids: The first digit is the column number and the second digit is the row number. For example, electrode 23 is positioned in the second column of the third row.

Two rectangular electrodes (S1 and S2) per well are available for stimulation or recording. There is one big internal reference electrode in each well. The nine reference electrodes are connected to four contact pads for grounding them.

The 256-9wellMEA is not rotationally symmetrical!

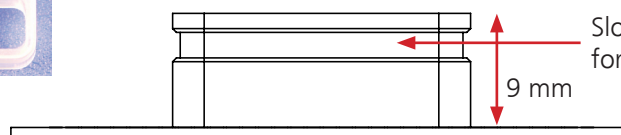


Please insert the 256-9wellMEA in correct orientation into the amplifier: If you can not read the "MCS" on top, please use the black reference electrodes as marker.

9 Well MEA Perfusion Chamber



Macrolon Quadrate



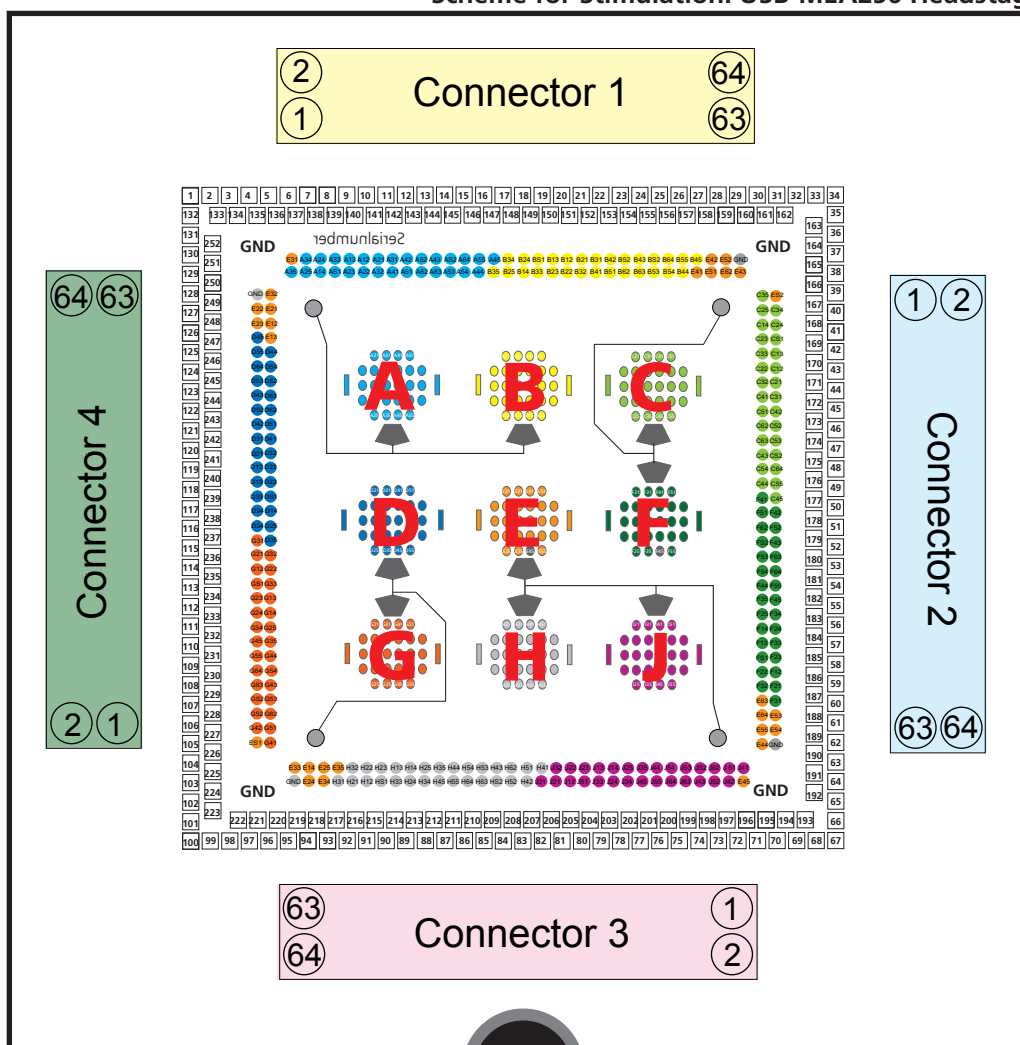
Slot to insert an O-ring for membrane covering

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256-9wellMEA for MEA2100-256-Systems and for USB-MEA256-System

- **Stimulation with USB-MEA256 Headstage:** Please see the scheme below and use the table to correlate the stimulation electrodes on the 256MEA.
- **Stimulation with MEA2100-256-Headstage:** Select any stimulation electrode via software.

Scheme for Stimulation: USB-MEA256 Headstage



The letter digit code is the electrode identifier and refers to the position of the electrode in the 6 x 5 layout grid per well. The layout of the letter digit code for the four connectors of the USB-MEA256 amplifier is shown. To correlate the pin layout of the connectors, please see the table on the next page.

256-9wellMEA for MEA2100-256-Systems and for USB-MEA256-System

Layout

Stim. Socket = Stimulation socket number in the connectors 1 to 4.

Spring Contact = Spring contacts in the lid of the amplifier

Electrode ID = Electrode ID of the MEA electrode in the 6 x 5 + 2 layout grid.

Table

Connector 1			Connector 2			Connector 3			Connector 4		
Stim Socket	Electrode ID	Spring Con.	Stim Socket	Electrode ID	Spring Con.	Stim Socket	Electrode ID	Spring Con.	Stim Socket	Electrode ID	Spring Con.
1	A35	2	1	C35	35	1	J41	68	1	G41	101
2	E31	1	2	ES2	34	2	E45	67	2	ES1	100
3	A25	3	3	C25	36	3	J51	69	3	G51	102
4	A34	133	4	C34	163	4	J42	193	4	G42	223
5	A14	4	5	C14	37	5	J62	70	5	G62	103
6	A24	134	6	C24	164	6	J52	194	6	G52	224
7	AS1	5	7	C23	38	7	JS2	71	7	G53	104
8	A33	135	8	CS1	165	8	J43	195	8	G52	225
9	A23	6	9	C33	39	9	J53	72	9	G43	105
10	A13	136	10	C13	166	10	J63	196	10	G63	226
11	A22	7	11	C22	40	11	J54	73	11	G54	106
12	A12	137	12	C12	167	12	J64	197	12	G64	227
13	A32	8	13	C32	41	13	J44	74	13	G44	107
14	A21	138	14	C21	168	14	J55	198	14	G55	228
15	A41	9	15	C41	42	15	J35	75	15	G35	108
16	A31	139	16	C31	169	16	J45	199	16	G45	229
17	AS1	10	17	CS1	43	17	J25	76	17	G25	109
18	A42	140	18	C42	170	18	J34	200	18	G34	230
19	A62	11	19	C62	44	19	J14	77	19	G14	110
20	A52	141	20	C52	171	20	J24	201	20	G24	231
21	A63	12	21	C63	45	21	J13	78	21	G13	111
22	A43	142	22	C53	172	22	J33	202	22	G23	232
23	A53	13	23	C43	46	23	J23	79	23	G33	112
24	AS2	143	24	CS2	173	24	JS1	203	24	GS1	233
25	A54	14	25	C54	47	25	J22	80	25	G22	113
26	A64	144	26	C64	174	26	J12	204	26	G12	234
27	A44	15	27	C44	48	27	J32	81	27	G32	114
28	A55	145	28	C55	175	28	J21	205	28	G21	235
29	B35	16	29	F41	49	29	H41	82	29	D35	115
30	A45	146	30	C45	176	30	J31	206	30	G31	236
31	B25	17	31	F51	50	31	H51	83	31	D25	116
32	B34	147	32	F42	177	32	H42	207	32	D34	237
33	B14	18	33	F62	51	33	H62	84	33	D14	117
34	B24	148	34	F52	178	34	H52	208	34	D24	238
35	B33	19	35	FS2	52	35	H43	85	35	D51	118
36	B51	149	36	F43	179	36	H52	209	36	D33	239
37	B23	20	37	F53	53	37	H53	86	37	D23	119
38	B13	150	38	F63	180	38	H63	210	38	D13	240
39	B22	21	39	F54	54	39	H54	87	39	D22	120
40	B12	151	40	F64	181	40	H64	211	40	D12	241
41	B32	22	41	F44	55	41	H44	88	41	D32	121
42	B21	152	42	F55	182	42	H55	212	42	D21	242
43	B41	23	43	F35	56	43	H35	89	43	D41	122
44	B31	153	44	F45	183	44	H45	213	44	D31	243
45	B51	24	45	F25	57	45	H25	90	45	D51	123
46	B42	154	46	F34	184	46	H34	214	46	D42	244
47	B62	25	47	F14	58	47	H14	91	47	D62	124
48	B52	155	48	F24	185	48	H24	215	48	D52	245
49	B63	26	49	F13	59	49	H13	92	49	D63	125
50	B43	156	50	F33	186	50	H33	216	50	D43	246
51	B53	27	51	FS1	60	51	H23	93	51	D52	126
52	B52	157	52	F23	187	52	H51	217	52	D53	247
53	B54	28	53	F22	61	53	H22	94	53	D54	127
54	B64	158	54	F12	188	54	H12	218	54	D64	248
55	B44	29	55	F32	62	55	H32	95	55	D44	128
56	B55	159	56	F21	189	56	H21	219	56	D55	249
57	E41	30	57	E63	63	57	E35	96	57	E13	129
58	B45	160	58	F31	190	58	H31	220	58	D45	250
59	E51	31	59	E64	64	59	E25	97	59	E12	130
60	E42	161	60	E53	191	60	E34	221	60	E23	251
61	E62	32	61	E55	65	61	E14	98	61	E21	131
62	E52	162	62	E54	192	62	E24	222	62	E22	252
63	E43	33	63	E44	66	63	E33	99	63	E32	132
GND			GND			GND			GND		