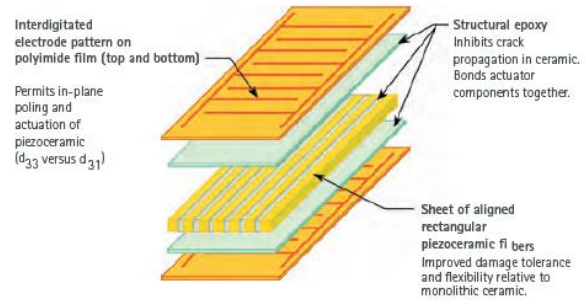


CEDRATEC India proposes mechatronic kits, **plug and play solutions** for Macro fibre Composites, High Voltage Power Amplifiers, Energy Harvesting Circuits, to discover and practice various aspects of piezo mechatronic for different purposes.

MFC benefits

- Flexible and durable
- Increased strain actuator efficiency
- Directional actuation / sensing
- Damage tolerant
- Available as elongator (d_{33} mode) and contractor (d_{31} mode)
- Conforms to surfaces
- Readily embeddable
- Environmentally sealed package
- Demonstrated performance
- Different piezo ceramic materials available

Schematic structure of the MFC



MFC Work Modes



Expansion



Bending



Torsion



The Star MFC



Customized layouts and arrays



Advanced actuator elements



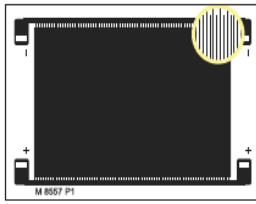
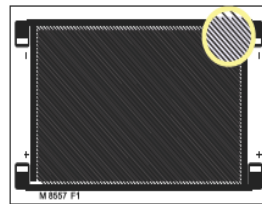
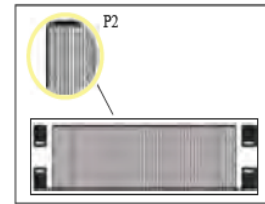
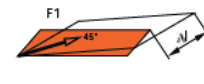
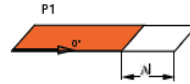
triangular MFC for strain adaptation



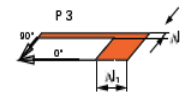
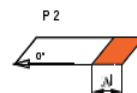
sensor/actuator arrays for closed loop control



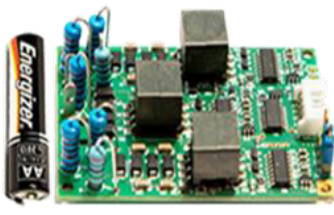
customized contact pads

 d_{33} Actuators with expanding motion P1 d_{33} Actuators with twisting motion F1 d_{31} Actuators with contracting motion P2MFC P1 / F1 Types (d_{33} effect actuators)

model	active length mm	active width mm	overall length mm	overall width mm	Capacitance nF	free strain ppm	blocking force N
P1-Types (0° fiber orientation)							
M-2503-P1	25	3	46	10	0.20	788	21
M-2807-P1	28	7	40	18	0.54	1035	62
M-2814-P1	28	14	38	20	1.15	1160	146
M-4005-P1	40	5	50	11	0.38	885	38
M-4010-P1	40	10	50	16	1.23	1050	90
M-4312-P1	43	12	60	21	2.03	1080	95
M-5628-P1	56	28	67	37	5.07	1350	340
M-8503-P1	85	3	110	14	0.64	788	21
M-8507-P1	85	7	101	13	1.76	1035	65
M-8514-P1	85	14	101	20	3.39	1200	152
M-8528-P1	85	28	103	35	6.58	1350	454
M-8557-P1	85	57	103	64	12.84	1350	693
M-14003-P1	140	3	160	10	1.46	1050	28
F1-Types (45° fiber orientation)							
M-8528-F1	85	28	105	35	7.06	1350	364 calc.
M-8557-F1	85	57	105	64	13.26	1350	710 calc.

MFC P2 / P3 Types (d_{31} effect actuators)

model	active length mm	active width mm	overall length mm	overall width mm	Capacitance nF	free strain ppm	blocking force N
P2-Types (anisotropic)							
M-0714-P2	7	14	16	16	7.89	-540	-57
M-2807-P2	28	7	37	10	15.11	-585	-35
M-2814-P2	28	14	37	18	30.78	-630	-76
M-5628-P2	56	28	66	31	113.06	-740	-175
M-8503-P2	85	3	113	8	15.68	-430	-11
M-8507-P2	85	7	100	10	49.84	-605	-38
M-8514-P2	85	14	100	18	84.04	-630	-76
M-8528-P2	85	28	103	31	177.07	-740	-180
M-8557-P2	85	57	103	60	342.93	-750	-385
M-8585-P2	85	85	103	88	520.37	-750	-585
P3-Types (orthotropic)							
M-2814-P3	28	14	37	18	33.75	-620	-95
M-5628-P3	56	28	66	31	133.12	-800	-240
M-8528-P3	56	28	103	31	224.06	-800	-240



microHVA-2 High Voltage Amplifier



Energy Harvesting Kit



CL-50 Energy Harvesting Module



SMART Charge