microComponents

TechNote

Sound emission – micropumps mp6-hyb and mp6-gas

Typical sound emission values have been measured for the mp6-hyb and mp6-gas micropump. As due to resonance of either housing or the medium inside the pump, the results may strongly vary at specific driving conditions. Therefore, the values presented below can only be considered as a guideline for application specific measurements in customer applications.

The measurements were taken against a background level of 33.5 – 35 dB[A], using the sine signal the sound emission was below the background level.

Sound emission mp6-gas measured with the mp-x controller

Driving parameters: 250 V, 100 Hz, mp-x controller

Measurement of 5 pumps, no major deviations between the pumps were observed.

Gas performance	Sound level [dB[A]] sine signal	Sound level [dB[A]] SRS signal	Sound level [dB[A]] rectangular signal
Next to pump body	33.5 - 35	50 - 51	66.6
0.3 m distance	33.5 - 35	40.5	53.4
1 m distance	33.5 - 35	40	52

Driving parameters: 250 V, 300 Hz, mp-x controller

Measurement of 5 pumps, no major deviations between the pumps were observed.

Gas performance	Sound level [dB[A]] sine signal	Sound level [dB[A]] SRS signal	Sound level [dB[A]] rectangular signal
Next to pump body	33.5 - 35	65 - 67	69.8
0.3 m distance	33.5 - 35	50.5 - 52	54.6
1 m distance	33.5 - 35	47.5	53

Sound emission mp6-hyb measured with the mp-x controller

Driving parameters: 250 V, 100 Hz, mp-x controller, pump is filled with water

Measurement of 5 pumps, no major deviations between the pumps were observed.

Water performance	Sound level [dB[A]] sine signal	Sound level [dB[A]] SRS signal	Sound level [dB[A]] rectangular signal
Next to pump body	33.5 - 35	38.5	39.2
0.3 m distance	33.5 - 35	33.5 - 35	36.6
1 m distance	33.5 - 35	33.5 - 35	35.6

Driving parameters: 250 V, 300 Hz, mp-x controller, pump is filled with water

Measurement of 5 pumps, no major deviations between the pumps were observed.

Water performance	Sound level [dB[A]] sine signal	Sound level [dB[A]] SRS signal	Sound level [dB[A]] rectangular signal
Next to pump body	38.8	43.8	43.8
0.3 m distance	35.4	37	37.8
1 m distance	33.5 - 35	35	35.4

Sound emission mp6-gas measured with the mp6-QuadEVA evaluation board

Driving parameters: 260 V, 100 Hz, sinus signal, mp6-QuadEVA evaluation board

Gas performance	Sound level [dB[A]] single pump	Sound level [dB[A]] two pumps	Sound level [dB[A]] three pumps	Sound level [dB[A]] four pumps
Next to pump body	32	32	35	36
0.3 m distance	31	31	31	31
1 m distance	28	28	29	29

Driving parameters: 260 V, 300 Hz, sinus signal, mp6-QuadEVA evaluation board

Gas performance	Sound level [dB[A]] single pump	Sound level [dB[A]] two pumps	Sound level [dB[A]] three pumps	Sound level [dB[A]] four pumps
Next to pump body	34	35	36	42
0.3 m distance	29	30	30	31
1 m distance	28	28	29	30

Driving parameters: 260 V, 800 Hz, sinus signal, mp6-QuadEVA evaluation board

Gas performance	Sound level [dB[A]] single pump	Sound level [dB[A]] two pumps	Sound level [dB[A]] three pumps	Sound level [dB[A]] four pumps
Next to pump body	45	48	48	53
0.3 m distance	39	40	42	42
1 m distance	38	38	38	39

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