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<br />
<a name="awal">
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<div style="text-align: center;">
<br />
<a href="https://filzahzaki212006.blogspot.com/">[KEMBALI KE MENU SEBELUMNYA]</a></div>
<br />
<br />
<center>
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<b>DAFTAR ISI</b>
<br /><br />
<div style="text-align: left;">
<a href="#judul-dan-tujuan">1. Tujuan</a></div>
<div style="text-align: left;">
<a href="#komponen">2. Alat Dan Bahan</a></div>
<div style="text-align: left;">
<a href="#prinsip-kerja">3. prinsip kerja</a></div>
<div style="text-align: left;">
<a href="#dasar-teori">4. dasar teori</a><br />
<div style="text-align: left;">
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[5. Link Download](#link)

1. Judul dan Tujuan

[\[KEMBALI\]](https://filzahzaki212006.blogspot.com/p/lpf-40dbdec.html)

[judul-dan-tujuan](#)

LPF (Low Pass Filter) -40dB/dec

Tujuan : a. Mengetahui pengertian dan prinsip kerja rangkaian LPF -40dB/dec

b. Mengetahui apa saja komponen rangkaian LPF -40dB/dec

2. Alat Dan Bahan

[\[KEMBALI\]](https://filzahzaki212006.blogspot.com/p/lpf-40dbdec.html)

[komponen](#)

resistor

initial;">trik di antara kedua pin dimana nilai tegangan terhadap resistansi tersebut berbanding lurus dengan arus yang mengalir, berdasarkan persamaanhukum Ohm:<b style="font-family: Arial, Helvetica, sans-serif; text-align: start;"> </div>

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Penjelasan tentang pita pada resistor </div>

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mKcAsH5pPs91-LvbACLcBGAsYHQ/s1600/res_kode_warna.png" style="margin-left: 1em;
margin-right: 1em;"></div>

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<div class="separator" style="clear: both; text-align: center;">

simbol resistor pada proteus 8</div>

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</div>

<span face=""arial" , "helvetica" ,
sans-serif">Kapasitor

Kondensator atau kapasitor adalah suatu alat yang dapat menyimpan energi di dalam medan listrik, dengan cara mengumpulkan ketidakseimbangan internal dari muatan listrik. Kondensator atau Kapasitor memiliki satuan yang disebut Farad dari nama Michael Faraday. Satuan

1nF = 1.000pF (piko Farad)<o:p></o:p></div>

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<div style="font-weight: bold;">

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jenis jenis kapasitor dapat dibagi seperti berikut </div>

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Pada rangkaian LPF -40/dec ini menggunakan kapasitor jenis biasa (Non-Polaritas). Fungsi Kapasitor atau kondensor sebagai penyimpan arus

atau tegangan listrik, Konduktor yang dapat

melewatkan arus AC (Alternating Current), Isolator yang menghambat arus DC (Direct

Current) dan dapat menjadi Filter dalam Rangkaian Power

Supply (Catu Daya).

<div style="text-align: center;">

Simbol kapasitor pada proteus 8</div>

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<div class="separator" style="clear: both; text-align: center;">

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</div>

<div class="MsoNormal" style="line-height: normal; margin-bottom: 0in; margin-left: .25in; margin-right: 0in; margin-top: 0in; margin: 0in 0in 0in 0.25in; vertical-align: baseline;">

<o:p></o:p></div>

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<div class="separator" style="clear: both; text-align: center;">

</div>

<li style="text-align: left;">Op Amplifier

<div style="text-align: left;">

 <b style="font-family: sans-serif; font-size: 14px;">Penguat operasional <b style="font-family: sans-serif; font-size: 14px;">op-amp elektronika sambatan arus searah faktor penguatan</i>)</div>

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<div class="separator" style="clear: both; text-align: center;">

<li class="MsoNormal" style="line-height: 16.8pt; margin: 0.5rem 0px; mso-list: l0 level1 lfo1; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: list .5in; vertical-align: baseline;">Pin3 (IN +): Pin <a href="https://abdulelektro.blogspot.com/2019/07/penguat-non-inverting-op-amp.html"

style="outline: none; transition: all 0.2s ease 0s;" target="_blank">Non-inverting dari

Op-amp<o:p></o:p>

<li class="MsoNormal" style="line-height: 16.8pt; margin: 0.5rem 0px; mso-list: l0 level1 lfo1; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: list .5in; vertical-align: baseline;">Pin4 (Vcc-): Pin ini terhubung ke

ground jika tidak rel negatif<o:p></o:p>

<li class="MsoNormal" style="line-height: 16.8pt; margin: 0.5rem 0px; mso-list: l0 level1 lfo1; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: list .5in; vertical-align: baseline;">Pin6 (Output): output daya pin

Op-amp<o:p></o:p>

<li class="MsoNormal" style="line-height: 16.8pt; margin: 0.5rem 0px; mso-list: l0 level1 lfo1; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: list .5in; vertical-align: baseline;">Pin7 (Vcc +): Pin ini terhubung

ke + ve rail dari supply tegangan<o:p></o:p>

<li class="MsoNormal" style="line-height: 16.8pt; margin: 0.5rem 0px; mso-list: l0 level1 lfo1; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: list .5in; vertical-align: baseline;">Pin8 (NC): Tidak ada koneksi<o:p></o:p>

<div style="text-align: center;">

Simbol op-amp 741 pada proteus 8

<div class="separator" style="clear: both; text-align: center;">

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</div>

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<div style="text-align: left;">

- VCC**

VCC menyebut tegangan pada kaki collector. VCC menyatakan tegangan (Voltage) pada kaki Collector. Jadi istilah VCC pada awalnya merujuk kepada tegangan di Collector ini. VCC menyatakan power supply positif.

<div style="text-align: left;">

- VEE

<span face=""lucida grande"; , "lucida sans unicode"; , "segoe ui"; ,
 "helvetica"; , "arial"; , sans-serif">
 <span face=""roboto"; ,
 "arial"; , sans-serif" style="font-size: 16px; text-align: justify;">VEE merupakan power
 supply negatif. T<span face=""lucida grande"; , "lucida sans unicode"; ,
 "segoe ui"; , "helvetica"; , "arial"; , sans-serif" style="font-size:
 12.8px;">egangan pada Emitter disebut VEE. </div>

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3. Prinsip kerja

[\[KEMBALI\]](https://filzahzaki212006.blogspot.com/p/lpf-40dbdec.html)

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<div class="separator" style="clear: both; text-align: left;">

 Pada rangkaian LPF -40dB/dec ini pada dasarnya menggunakan rangkaian amplifier karena memakai feedback negatif tetapi rangkaian filter
ACL nya sama dengan satu . dengan cara
tentukan dahulu tegangan di titik A dan tegangan di titik B.</div>

<div dir="ltr" style="color: #222222; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt; text-align: justify;">

Dimana ACL dibuat menjadi

<div style="font-family: arial, tahoma, helvetica, freesans, sans-serif; font-size: 13.2px;">

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jika memakai op-amp ideal maka $E_d = 0$ sehingga $V_o =$ VB. </div>

<div dir="ltr" style="color: #222222; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt; text-align: justify;">

Gunakan hukum khirchoff arus untuk mencari tegangan di titik A, dimana:

<div dir="ltr" style="color: #222222; line-height: 1.38; margin-bottom: 0pt; margin-left: 78pt; margin-top: 0pt; text-align: justify;">

3 = I4 </div>

<div dir="ltr" style="color: #222222; line-height: 1.38; margin-bottom: 0pt; margin-left: 78pt; margin-top: 0pt; text-align: justify;">

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sehingga :

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<span face=""open_sansregular"; "arial"; "helvetica";
sans-serif" style="color: #333333; text-align: justify;">

<div class="separator" style="clear: both; text-align: center;">

<span face=""open_sansregular"; "arial"; "helvetica";
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href="https://1.bp.blogspot.com/-_QQxfudWKps/Xq0rdkh5TDI/AAAAAAAAABa0/ffV27B-p9UQOF3OoS
SQzwqpj-F_bB_Q7agCEwYBhgL/s1600/Screenshot%2B%2528116%2529.png" style="margin-left:
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<span face=""open_sansregular"; "arial"; "helvetica";
sans-serif" style="color: #333333; text-align: justify;">
</div>

<span face=""open_sansregular"; "arial"; "helvetica";
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<div style="text-align: left;">

</div>

<span style="font-family: "arial"; font-size: 14pt; text-align: justify; vertical-align:
baseline;">Lalu masukkan nilai V<span style="font-family: "arial"; font-size:
8.4pt; text-align: justify; vertical-align: sub;">A<span style="font-family: "arial";
font-size: 14pt; text-align: justify; vertical-align: baseline;"> ke persamaan arus

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[!\[\]\(ed1c174c5d80bce5bc8fea3f20e80aae_img.jpg\)](https://1.bp.blogspot.com/-kUySqedMmRc/Xq0rhNbYagl/AAAAAAAAABa4/v48uXW8TScEgc5T2atB8qZvkGDHmvdquACEwYBhgL/s1600/Screenshot%2B%2528127%2529.png)

[!\[\]\(3b961a802326a7839b80181423b3a541_img.jpg\)](https://1.bp.blogspot.com/-kUySqedMmRc/Xq0rhNbYagl/AAAAAAAAABa4/v48uXW8TScEgc5T2atB8qZvkGDHmvdquACEwYBhgL/s1600/Screenshot%2B%2528127%2529.png)

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[!\[\]\(521f1a977c2a09f9a0f6305b666df3da_img.jpg\)](https://1.bp.blogspot.com/-kUySqedMmRc/Xq0rhNbYagl/AAAAAAAAABa4/v48uXW8TScEgc5T2atB8qZvkGDHmvdquACEwYBhgL/s1600/Screenshot%2B%2528127%2529.png)

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[!\[\]\(01928c9a4866ba722ca3bc440f2b7382_img.jpg\)](https://1.bp.blogspot.com/-kUySqedMmRc/Xq0rhNbYagl/AAAAAAAAABa4/v48uXW8TScEgc5T2atB8qZvkGDHmvdquACEwYBhgL/s1600/Screenshot%2B%2528127%2529.png)

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<div class="separator" style="clear: both; text-align: center;">

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<div class="separator" style="clear: both; text-align: center;">

</div>

<div dir="ltr" style="color: #222222; font-family: arial, tahoma, helvetica, freesans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-top: 0pt;">

Pada saat w = wc maka </div>

<div dir="ltr" style="color: #222222; font-family: arial, tahoma, helvetica, freesans, sans-serif; font-size: 13.2px; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt;">

Sehingga, bagian real dari ACL bernilai 0.</div>

<div dir="ltr" style="color: #222222; font-family: arial, tahoma, helvetica, freesans, sans-serif; font-size: 13.2px; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt;">

Jadi,</div>

<div dir="ltr" style="color: #222222; font-family: arial, tahoma, helvetica, freesans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-top: 0pt;">

 </div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.2; margin-bottom: 0pt; margin-left: 63.8pt; margin-top: 0pt;">

 </div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-left: 70.9pt; margin-top: 0pt;">

</div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-left: 70.9pt; margin-top: 0pt;">

</div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-left: 70.9pt; margin-top: 0pt;">

</div>

<div dir="ltr" style="line-height: 1.38; margin-bottom: 0pt; margin-top: 0pt;">

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt;">

Variasi nilai w terhadap nilai wc yang ditunjukkan pada tabel 4.</div>

</div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt; text-align: justify;">

Adapun sket hasil tabel 2 adalah hampir menyamai hasil bode plot simulasi gambar 222.</div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.2; margin-bottom: 0pt; margin-top: 0pt;">

Adapun langkah-langkah perancangan LPF -40dB/dec adalah seperti berikut
 </div>

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-left: 36pt; margin-top: 0pt;">

1. Pilih <img height="23"

5. Pilih R_f < 2R₁, untuk memperkecil efek bias current.

<div dir="ltr" style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; line-height: 1.38; margin-bottom: 0pt; margin-left: 36pt; margin-top: 0pt;">

<div class="separator" style="clear: both; text-align: left;">

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<div style="text-align: center;">

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</div>

<h4 style="clear: both; color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; text-align: center;">

Respon Rangkaian LPF -40dB/dec ACL vs w </h4>

<div class="separator" style="clear: both; color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; text-align: center;">

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<div class="separator" style="clear: both; text-align: center;">

</div>

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</div>

<div class="separator" style="clear: both; color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; text-align: center;">

Pada Rangkaian LPF -40dB/dec ini memiliki beberapa komponen seperti resistor, kapasitor, op amplifier, grounding, serta menggunakan VCC dan VEE. </div>

<div style="clear: both; text-align: center;">

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</div>

<div style="clear: both; text-align: left;"> Rangkaian </div>

<div class="separator" style="clear: both; text-align: left;">

 Adapun rangkaian LPF -40dB/dec adalah seperti pada gambar </div>

<div class="separator" style="clear: both; text-align: left;">

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<div class="separator" style="clear: both; text-align: center;">

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<div class="separator" style="clear: both; text-align: center;">

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<div class="separator" style="clear: both; text-align: center;">

</div>

<div class="separator" style="clear: both; text-align: left;">Video </div>

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