

```
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style="font-family: helvetica; font-size: medium;">(Percobaan 3&nbsp;</span></b><b><span
style="font-family: helvetica; font-size: medium;">Synchronous Binary
Counter</span></b><b><span style="font-family: helvetica; font-size:
medium;">)</span></b></span></div><div style="color: #999999; font-family: &quot;Times
New Roman&quot;; text-align: center;"><b><span style="font-family: helvetica; font-size:
medium;"><br /></span></b></div>
</span><div style="text-align: center;">
<a href="https://rahmatuzz212017.blogspot.com/2023/06/modul-iii-counter.html"><span
style="color: #2b00fe; font-family: arial;">[KEMBALI KE MENU
SEBELUMNYA]</span></a></div>
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<span style="color: #2b00fe; font-family: arial;"><b>DAFTAR ISI</b>
<br />
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<a href="#kondisi"><span style="color: #2b00fe; font-family: arial;">1.
Jurnal</span></a></div>
<div style="text-align: left;">
<a href="#hardware"><span style="color: #2b00fe; font-family: arial;">2. Alat dan
Bahan</span></a></div>
<div style="text-align: left;">
<a href="#rangkaian"><span style="color: #2b00fe; font-family: arial;">3. Rangkaian
Simulasi</span></a></div>
<div style="text-align: left;">
<a href="#flowchart"><span style="color: #2b00fe; font-family: arial;">4. Prinsip Kerja
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Analisa</span></a></div>
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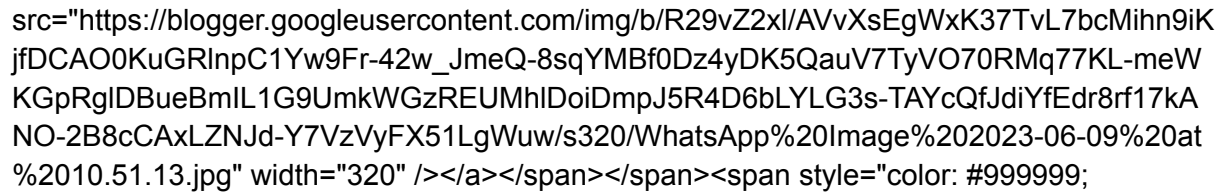
1. Jurnal

[Kembali](#)



Gambar 1

Jurnal Percobaan 3a



Gambar 1

Jurnal Percobaan 2b

2. Alat dan Bahan

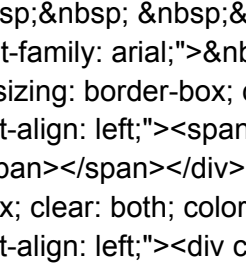
[hardware](#)

href="#top">[Kembali]</div><div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px;"><ul style="text-align: left;"><b style="background-color: none; font-family: arial; font-size: medium;">Saat praktikum:</div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px;">a.Panel DL 2203D </div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px;">b.Panel DL 2203C </div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px;">c.Panel DL 2203S</div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px; text-align: center;"></div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px; text-align: center;">Gambar 1. Modul De Lorenzo</div></div><div>
</div><div><div style="background-color: none; border: 0px; box-sizing: border-box; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px;">d. Jumper</div><div class="separator" style="background-color: none; border: 0px; box-sizing: border-box; clear: both; font-family: "open sans"; arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px; text-align: center;"></div><div class="separator" style="background-color: none; border: 0px; box-sizing: border-box; clear: both; font-family: "open sans", arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px; text-align: center;">Gambar 2.2. Jumper</div><div class="separator" style="background-color: none; border: 0px; box-sizing: border-box; clear: both; font-family: "open sans", arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px; text-align: center;"><br style="box-sizing: border-box;" /></div><div class="separator" style="background-color: none; border: 0px; box-sizing: border-box; clear: both; font-family: "open sans", arial, helvetica, sans-serif; font-size: 15px; margin: 0px; padding: 0px;"><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; margin: 0px; padding: 0px;">
</div></div></div><div><div><div style="background-color: none;"> </div><div style="background-color: none;">
</div><div style="background-color: none; text-align: left;"><ul style="text-align: left;">Pada Proteus: </div><div style="background-color: none;"><div class="separator" style="clear: both; text-align: center;">
</div><div class="separator" style="clear: both; text-align: center;"><div style="background-color: none; text-align: left;"><div class="separator" style="clear: both;">1. </div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 11px; margin: 0px; padding: 0px; text-align: center;"><div class="separator" style="clear: both; text-align: center;"></div><div class="separator" style="clear: both; text-align: center;">
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</div><div style="background-color: none; text-align: left;"><ul style="text-align: left;">Pada Proteus: </div><div style="background-color: none;"><div class="separator" style="clear: both; text-align: center;">
</div><div class="separator" style="clear: both; text-align: center;"><div style="background-color: none; text-align: left;"><div class="separator" style="clear: both;">1. </div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 11px; margin: 0px; padding: 0px; text-align: center;"><div class="separator" style="clear: both; text-align: center;"></div><div class="separator" style="clear: both; text-align: center;">
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</div><div class="separator" style="clear: both; text-align: center;"><div style="background-color: none; text-align: left;"><div class="separator" style="clear: both;">1. </div><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 11px; margin: 0px; padding: 0px; text-align: center;"><div class="separator" style="clear: both; text-align: center;"></div><div class="separator" style="clear: both; text-align: center;">
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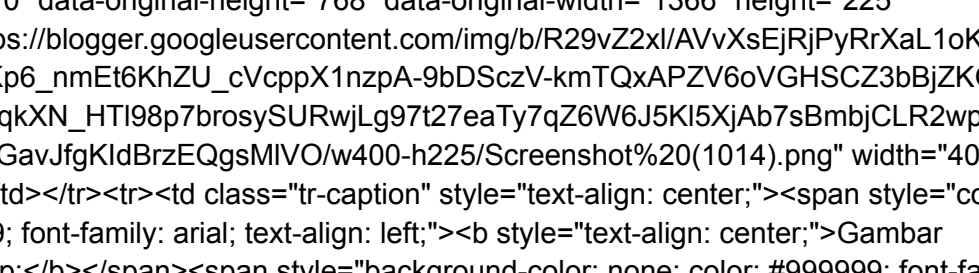
2.

Gambar 2.4.

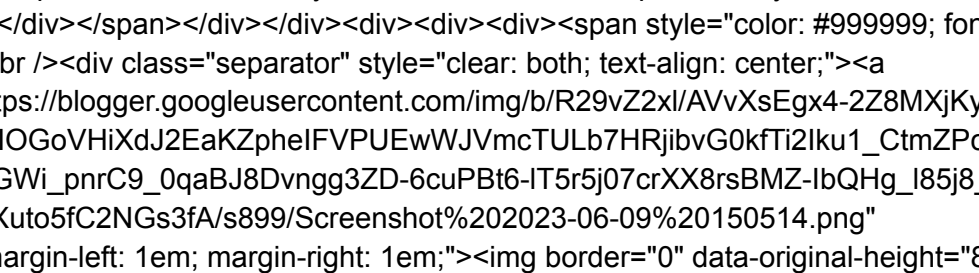
Switch (SW-SPDT)



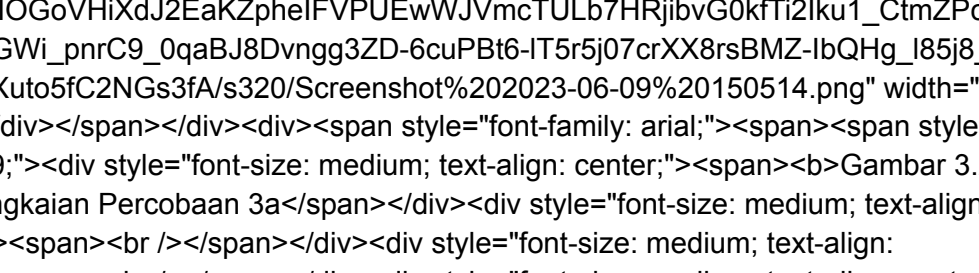
[illegible]



Rangkaian Simulasi pada Modul De Lorenzo



Rangkaian Percobaan 3a



Rangkaian Percobaan 3b

4. Prinsip Kerja Rangkaian

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Percobaan 2a

Pada percobaan terdapat 2 IC yaitu IC 74193 dan IC 74192. Perbedaan dari kedua IC ini yaitu IC 74193 merupakan IC binary counter yang melakukan counter dari bit 0000 sampai 1111 (0-15), sedangkan IC 74192 merupakan IC BCD counter yang melakukan counter dari bit 0000 sampai 1001 (0-9). Untuk melakukan counter pada IC ini, salah satu dari pin up atau down harus aktif (berlogika 1 pada rangkaian) atau tidak diberi inputan sama sekali, sedangkan pin yang satunya diberi inputan berupa sumber clock atau dilakukan trigger pada inputannya.

Sehingga IC akan melakukan counter up atau down sesuai dengan pin yang diberi input sumber clock atau yang ditrigger. Jadi untuk melakukan counter up, maka kita harus mentrigger pin up dan memberi input logika 1 untuk pin down. Begitupun sebaliknya, jika ingin melakukan counter down, maka yang ditrigger adalah pin down dan pin up diberi logika 1.

Pin MR (Master Reset) berfungsi untuk menonaktifkan atau mereset semua output dari IC tersebut. Pin PL (Parallel Load) berfungsi untuk mengatur output dari IC sesuai dengan logika yang telah diinputkan pada pin D0, D1, D2 dan D3.

Percobaan 3b

[illegible]

 Saat pin PL mati input B1-B4 akan menjadi don't care. Hal ini disebabkan input B1-B4 ini merupakan sebuah data yang di simpan di dalam IC tersebut. Sehingga untuk mebgambil data tersebut pin PL harus kita aktifkan. Jika tidak, output rangkaian hanya akan mengikuti kondisi yang ada, apakah counter up, down atau dalam kondisi reset.

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Datasheet

IC 74192

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Datasheet

IC 74193

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Datasheet gerbang logika

OR

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Download

Datasheet

Switch

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</div>