

```
<a name="home">
```

```
<p>
```

```
    <br />
```

```
</p>
```

```
</a><center style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;"><a name="home">
```

```
</a><div style="border: 2px dashed rgb(23, 128, 221); height: 240px; overflow: auto; padding: 10px; width: 330px;"><a name="home">
```

```
    <span style="font-family: arial;"><b>DAFTAR ISI</b><br /></span>
```

```
    </a><div style="text-align: left;"><a name="home">
```

```
        </a><a href="#Tujuan" style="background: transparent; color: #2196f3; text-decoration-line: none;"><span style="font-family: arial;">1.Tujuan</span></a>
```

```
    </div>
```

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

```
        <a href="#Alat" style="background: transparent; color: #2196f3; text-decoration-line: none;"><span style="font-family: arial;">2. Alat dan Bahan</span></a>
```

```
    </div>
```

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

```
        <a href="#Dasar" style="background: transparent; color: #2196f3; text-decoration-line: none;"><span style="font-family: arial;">3. Dasar Teori</span></a>
```

```
    </div>
```

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

```
        <span style="font-family: arial;"><a href="#Percobaan" style="background: transparent; color: #2196f3; text-decoration-line: none;">4. Percobaan</a><br /></span>
```

```
    <div>
```

```
        <a href="#video" style="background: transparent; color: #2196f3; text-decoration-line: none;"><span style="font-family: arial;">5. Video</span></a>
```

```
    </div>
```

```
    <div>
```

```
        <span style="font-family: arial;"><a href="#Download" style="background: transparent; color: #2196f3; text-decoration-line: none;">6. Download</a>&nbsp;</span>
```

```
    </div>
```

```
    <div>
```

```
        <span style="font-family: arial;"><br /></span>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</center>
```

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">
```

```
<span style="font-family: arial;"><br /></span>
```

```
</div>
```

```
<h1 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; margin: 0.67em 0px; text-align: center;"><span style="font-family: arial;">Kontrol Keamanan Lift di Rumah</span></h1>
```

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px; text-align: center;">
```

```
<span style="font-family: arial;"><br /></span>
```

```
</div>
```

```
<h2 style="background-color: white; color: #757575; font-family: Roboto, sans-serif;"><span style="font-family: arial; font-size: large;">1. Tujuan<span style="font-family: arial; font-size: large;"><a href="#home" style="background: transparent; color: #2196f3; text-decoration-line: none;">[kembali]</a></span></h2>
```

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">
```

```
<ol>
```

```
<li style="margin: 0px 0px 0.25em; padding: 0px;">
```

```
<span style="color: #505050; font-family: arial;"><span style="font-size: 15.4px;">Untuk memahami bagaimana sistem digital bekerja</span></span>
```

```
</li>
```

```
<li style="margin: 0px 0px 0.25em; padding: 0px;">
```

```
<span style="color: #505050; font-family: arial;"><span style="font-size: 15.4px;">Untuk memahami bagaimana prinsip kerja rangkaian kontrol Lift</span></span>
```

```
</li>
```

```
</ol>
```

```
</div>
```

```
<h3 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 16px;"><span style="font-family: arial; font-size: large;"><a href="https://www.blogger.com/null" name="Alat" style="background: transparent; color: #2196f3; text-decoration-line: none;">&nbsp;</a>2. Alat dan Bahan<span style="font-family: arial; font-size: large;"><a href="#home" style="background: transparent; color: #2196f3; text-decoration-line: none;">[kembali]</a></span></h3>
```


transparent; color: #888888; margin-left: 1em; margin-right: 1em; text-decoration-line: none;">

</div>

<div class="separator" style="clear: both; color: #222222; font-size: 13.2px; text-align: center;">

</div>

<p style="color: #222222; font-size: 13.2px;"></p>

<p class="MsoNormal" style="color: #222222; font-size: 13.2px; line-height: 19.8px; margin-left: 35.45pt; text-align: justify;">

Motor DC digunakan sebagai output dari rangkaian dan juga merupakan alat yang dapat mengubah energi listrik menjadi energi listrik menjadi energi gerak berupa putaran.</p>

</p>

<p class="MsoNormal" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; color: #222222; font-size: 13.2px; line-height: 14.85pt; margin-left: 35.45pt; text-align: justify;">

konfigurasi pin:</p>

</p>

<p align="center" class="MsoNormal" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; color: #222222; font-size: 13.2px; line-height: normal; margin: 0cm 0cm 0cm 35.45pt; text-align: center;">

</p>

</p>

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

<i>*Continuous Collector current (IC) is 100mA</i>

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

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

<i>*Emitter Base Voltage (VBE) is 6V</i>

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

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

<i>*Base Current(IB) is 5mA maximum</i>

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

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

<i>*Available in To-92 Package</i>

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal;


```
<span style="font-family: arial; font-size: 15px;"><br style="color: #222222; font-size: 13px; margin: 0px; padding: 0px;" />
```

```
<br /></span>
```

```
<div style="color: #222222; font-size: 15.4px;">
```

```
<span face="Arial, Helvetica, sans-serif"><span style="font-size: 13px;"><span style="font-family: arial;"><br /></span></span></span>
```

```
</div>
```

```
<div style="color: #222222; font-size: 15px;">
```

```
<span style="font-size: 15.4px;"><span style="font-family: arial;">
```

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

```
<a
```

```
href="https://1.bp.blogspot.com/-50YlBRGCVXM/YEJhexSP0qI/AAAAAAAAABPk/DurNCQOVfzA2e-jaYMO6bybql_3R80UhwCLcBGAsYHQ/s759/Screenshot%2B%2528679%2529.png" style="background: transparent; color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>
```

```
</div>
```

```
<span style="font-size: 13px;"><br />
```

```
<ul style="background: 0px 0px; border: 0px; color: #505050; font-size: 15px; line-height: 1.5; list-style: none; margin: 0px; outline: 0px; padding: 0px 0px 0px 20px; vertical-align: baseline;">
```

```
<li style="background: 0px 0px; border: 0px; line-height: 1.5; list-style: none; margin: 5px 0px; outline: 0px; padding: 0px; vertical-align: baseline;">
```

```
<span style="background: 0px 0px; border: 0px; outline: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">
```

```
<div class="separator" style="background: 0px 0px; border: 0px; clear: both; outline: 0px; padding: 0px; text-align: left; vertical-align: baseline;">
```

```
<span style="background: 0px 0px; border: 0px; outline: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">
```

```
<div class="separator" style="background: 0px 0px; border: 0px; clear: both; outline: 0px; padding: 0px; text-align: left; vertical-align: baseline;">
```

```
<span style="background: 0px 0px; border: 0px; font-size: medium; outline: 0px; padding: 0px; vertical-align: baseline;">d) Sound Sensor</span>
```

</div>

</div>

<div class="separator" style="background: 0px 0px; border: 0px; clear: both; outline: 0px; padding: 0px; text-align: center; vertical-align: baseline;">

</div>

<div style="background: 0px 0px; border: 0px; outline: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">

</div>

<div style="background: 0px 0px; border: 0px; outline: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">

<strong style="background: 0px 0px; border: 0px; margin: 0px; outline: 0px; padding: 0px; text-align: start; vertical-align: baseline;">Spesifikasi :<br style="margin: 0px; padding: 0px; text-align: start;" />

<ul style="background: 0px 0px; border: 0px; line-height: 1.5; list-style: none; margin: 0px 0px 20px 20px; outline: 0px; padding: 0px; text-align: start; vertical-align: baseline;">

M1Q0qV4teGqg3wCLcBGAsYHQ/s320/loadcell.png" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; border: none; box-shadow: rgba(0, 0, 0, 0.1) 1px 1px 5px; height: inherit; max-width: 100%; padding: 8px; position: relative;" width="320" />

</div>

</div>

</div>

</div>

</div>

<p style="font-size: 15.4px;">

 e) Sensor

MQ2

</p>

<div class="separator" style="clear: both; color: black; font-size: large; font-weight: bold;">

</div>

<div class="separator" style="clear: both; color: black; font-size: 13.2px; font-weight: bold;">

Spesifikasi :

</div>

<div class="separator" style="clear: both; color: black;">

<ol style="border: 0px; font-size: 13.2px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; list-style-image:


```
        <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px 0px
0.25em; padding: 0px; vertical-align: baseline;">
```

```
                <span style="font-size: medium;"><span
style="font-family: arial;">Pin 1 merupakan heater internal yang terhubung dengan
ground.</span></span>
```

```
        </li>
```

```
        <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px 0px
0.25em; padding: 0px; vertical-align: baseline;">
```

```
                <span style="font-size: medium;"><span
style="font-family: arial;">Pin 2 merupakan tegangan sumber (VC) dimana  $V_c$  &lt; 24
VDC.</span></span>
```

```
        </li>
```

```
        <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px 0px
0.25em; padding: 0px; vertical-align: baseline;">
```

```
                <span style="font-size: medium;"><span
style="font-family: arial;">Pin 3 (VH) digunakan untuk tegangan pada pemanas (heater internal)
dimana  $V_H = 5VDC$ .</span></span>
```

```
        </li>
```

```
        <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px 0px
0.25em; padding: 0px; vertical-align: baseline;">
```

```
                <span style="font-size: medium;"><span
style="font-family: arial;">Pin 4 merupakan output yang akan menghasilkan tegangan
analog.</span></span>
```

```
        </li>
```

```
    </ol>
```

```
    <div>
```

```
        <span style="font-family: arial;"><br /></span>
```

```
    </div>
```

```
    <div>
```

```
        <span style="font-family: arial;">&nbsp;<b style="text-align: start;">Sensor PIR</b></span>
```

```
    </div>
```

```
    <div style="font-size: 13.2px; text-align: start;">
```


Sensitivitas: Pengatur tingkat sensitivitas sensor PIR

Regulator 3VDC: Penstabil tegangan menjadi 3V DC

Dioda Pengaman: Mengamankan sensor jika terjadi salah pengkabelan VCC dengan GND

DC Power: Input tegangan dengan range (3 – 12) VDC (direkomendasikan menggunakan input 5VDC).

Output Digital: Output digital sensor

```
font-style: inherit; font-weight: inherit; margin: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;">
```

```
medium;"><span style="font-family: arial;"><span style="border: 0px; box-sizing: inherit; font-style:
inherit; font-weight: 700; margin: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;">Ground</span>&nbsp;: Hubungkan dengan ground (GND)</span></span>
```

```
</li>
```

```
<li style="border: 0px; box-sizing: inherit;
font-style: inherit; font-weight: inherit; margin: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;">
```

```
medium;"><span style="font-family: arial;"><span style="border: 0px; box-sizing: inherit; font-style:
inherit; font-weight: 700; margin: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;">BISS0001</span>&nbsp;: IC Sensor PIR</span></span>
```

```
</li>
```

```
<li style="border: 0px; box-sizing: inherit;
font-style: inherit; font-weight: inherit; margin: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;">
```

```
medium;"><span style="font-family: arial;"><span style="border: 0px; box-sizing: inherit; font-style:
inherit; font-weight: 700; margin: 0px; outline: 0px; padding: 0px; vertical-align: baseline;">Pengatur
Jumper</span>&nbsp;: Untuk mengatur output dari pin digital<span style="box-sizing: inherit;
font-weight: 700;">.</span></span></span>
```

```
</li>
```

```
</ol>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<div style="color: #222222;">
```

```
<div style="color: black; font-size: large;">
```

```
<span style="font-family: arial;"><span style="font-size:
medium;"></span></span>
```

```
</div>
```

```
<p style="font-size: 15.4px;">
```

```
<span style="font-family: arial;">&nbsp;f) Relay</span>
```

</p>

<ul style="line-height: 1.4; margin: 0.5em 0px; padding: 0px 2.5em;">

<div class="separator" style="clear: both; font-size: 13.2px; text-align: center;">

</div>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">

<p style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: left;">

- Spesifikasi

</p>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal; text-align: left;">

<span

face=""Arial";"sans-serif"">* Trigger Voltage (Voltage across coil) : 5V DC

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Trigger Current (Nominal current) : 70mA

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Maximum AC load current: 10A @ 250/125V AC

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Maximum DC load current: 10A @ 30/28V DC

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal; text-align: left;">

<span
face=""Arial";"sans-serif"">* Compact 5-pin
configuration with plastic moulding

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings:
normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates:
normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings:
normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal;
text-align: left;">

<span
face=""Arial";"sans-serif"">* Operating
time: 10msec Release time: 5msec

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings:
normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates:
normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings:
normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal;
text-align: left;">

<span
face=""Arial";"sans-serif"">* Maximum
switching: 300 operating/minute (mechanically)

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings:
normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates:
normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings:
normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p class="MsoNormal" style="line-height: normal;
text-align: left;">

<span
face=""Arial";"sans-serif"">- Konfigurasi
Pin

</p>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<div>

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Coil End 1 : Used to trigger(On/Off) the Relay, Normally one end is connected to 5V and the other end to ground.

</p>

</div>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<div>

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Coil End 2 : Used to trigger(On/Off) the Relay, Normally one end is connected to 5V and the other end to ground.

</p>

</div>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<div>

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Common (COM) : Common is connected to one End of the Load that is to be controlled.

</p>

</div>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<div>

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Normally Close (NC) : The other end of the load is either connected to NO or NC. If connected to NC the load remains connected before trigger.

</p>

</div>

</blockquote>

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<div>

<p class="MsoNormal" style="line-height: normal; text-align: left;">

* Normally

font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">"

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">"

"Berfungsi sebagai lampu indikator keberadaan gas pada rangkaian

</blockquote>

</blockquote>

<p style="font-size: 15.4px;">"

" h) Buzzer

</p>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-size: 15.4px; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">"

<p></p>

</blockquote>

<p style="font-size: 15.4px; text-align: center;">"</p>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">">

">">

</div>

</div>

</div>

<div style="font-size: 15px;">">

```
<span style="font-family: arial;"><br /></span>
</div>
<div style="font-size: 15px;">
    <span style="font-family: arial;"><span face="Arial, Tahoma, Helvetica, FreeSans,
sans-serif" style="color: #333333; font-size: small;">
        <p class="MsoNormal" style="line-height: 13.65px; margin-bottom: 0in;">
            <span style="background-attachment: scroll; background-clip: initial;
background-image: none; background-origin: initial; background-position: 0% 0%;
background-repeat: repeat; background-size: initial; line-height: 13.65px;">i Decoder</span>
        </p>
        <p class="MsoNormal" style="text-align: justify;">
            <span style="background-attachment: scroll; background-clip: initial;
background-image: none; background-origin: initial; background-position: 0% 0%;
background-repeat: repeat; background-size: initial; line-height: 13.65px;"></span>
        </p>
        <div class="separator" style="clear: both; text-align: center;">
            <span style="background-attachment: scroll; background-clip: initial;
background-image: none; background-origin: initial; background-position: 0% 0%;
background-repeat: repeat; background-size: initial; line-height: 13.65px;"><a
href="https://1.bp.blogspot.com/-Yjt_iQGqXfo/YF_ITPi-WII/AAAAAAACSM/IlxV4I2QSL8dTTQegkP-1
q-5I4b14OsQgCLcBGAsYHQ/s225/adecod.jpg" style="background: transparent; color: #29aae1;
margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a></span>
        </div>
        <span style="background-attachment: scroll; background-clip: initial;
background-image: none; background-origin: initial; background-position: 0% 0%;
background-repeat: repeat; background-size: initial; line-height: 13.65px;"><br
/></span></span><span style="color: #333333; font-size: 13px;"><span style="font-size:
medium;">IC 74247, merupakan IC TTL Decoder BCD to 7 Segment. IC ini berfungsi untuk mengubah
kode bilangan biner BCD (Binary Coded Decimal) menjadi data tampilan untuk penampil/display 7
segment yang bekerja pada tegangan TTL (+5 volt DC).</span></span></span>
        <p style="color: #333333; font-size: 13px;"></p>
        <p class="MsoNormal" style="color: #333333; font-size: 13px;">
```

konfigurasi pin:

</p>

<p class="MsoNormal" style="color: #333333; font-size: 13px;">

</p>

<div class="separator" style="clear: both; color: #333333; font-size: 13px; text-align: center;">

</div>

<br style="color: #333333; font-size: 13px;" />

 Datasheet decoder:

<p style="color: #333333; font-size: 13px;"></p>

<p class="MsoNormal" style="color: #333333; font-size: 13px;">

</p>

<div class="separator" style="clear: both; color: #333333; font-size: 13px; text-align: center;">


```

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</div>
```

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</div>
```

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</div>
```

```
<h2 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; margin: 0.67em
0px; text-align: left;"><a href="https://www.blogger.com/null"
name="Dasar" style="background: transparent; color: #2196f3; text-decoration-line:
none;"> <a href="#home" style="background: transparent; color:
#2196f3; text-decoration-line: none;">[kembali]</h2>
```

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size:
15px;">
```

```
<span style="background-attachment: initial;
background-clip: initial; background-image: initial; background-origin: initial; background-position:
0px 0px; background-repeat: initial; background-size: initial; border: 0px; color: #656565; outline:
0px; padding: 0px; vertical-align: baseline;"><span face="arial" , "helvetica" ,
"sans-serif" style="background: 0px 0px; border: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;"><span style="background: 0px 0px; border: 0px; font-size: small; outline: 0px; padding:
0px; vertical-align: baseline;"><span face="arial" , "helvetica" , "sans-serif"
style="background: 0px 0px; border: 0px; outline: 0px; padding: 0px; vertical-align:
baseline;"> <b style="color: #222222; font-size:
13.2px;"><span style="font-size: 12pt; line-height:
32px;">Potensiometer
```

```
</div>
```

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size:
15px;">
```

```
<div style="color: #222222; font-size: 13.2px;">
```

```
 <span style="font-size:
medium;">Berfungsi untuk mengatur tegangan
dengan menaikkan atau menurunkan resistansi.
```

```
</div>
```

```
<div style="color: #222222; font-size: 13.2px;">
```

```
<span style="font-size: 12pt; line-height:
32px;">
```

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

<a href="https://1.bp.blogspot.com/-qKbuFg7rGm4/YF62F9ne9oI/AAAAAAAAAC5s/MBpyCVCdgc4tyF349kpgHpqks1YPLFQCgCLcBGAsYHQ/s210/potensio.PNG" style="background: transparent; color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>

</div>

<br /></span>

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

<a href="https://1.bp.blogspot.com/-s3OepZVuSmE/YF62OO1ej6I/AAAAAAAAAC5w/dGaxz9hxstgEbY9nKshXlhcw3YT5cKALQLcBGAsYHQ/s676/SP%2BPOtensi.PNG" style="background: transparent; color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>

</div>

<br /></b>

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

<a href="https://1.bp.blogspot.com/-30AO75Ilf1w/YF62TYKyJAI/AAAAAAAAAC50/RT5zF8rywts2GYISqRXy\_E5IV8Oa1IYigCLcBGAsYHQ/s682/SP%2BPOt.PNG" style="background: transparent; color: #33aaff; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>

</div>

<div>

<b>&nbsp;</b>NOT Gate

<p class="MsoNormal" style="font-size: 13.2px;">

<span face="&quot;Arial&quot;;&quot;sans-serif&quot;" style="font-size: 12pt; line-height: 18.4px;">Gerbang NOT atau disebut juga "NOT GATE" atau Inverter (Gerbang Pembalik) adalah jenis gerbang logika yang hanya memiliki satu input (Masukan) dan satu output (keluaran). Dikatakan Inverter (gerbang pembalik) karena gerbang ini akan menghasilkan nilai output yang berlawanan dengan nilai inputnya . Untuk lebih jelasnya perhatikan simbol dan tabel kebenaran gerbang NOT berikut.</span>

</p>

<div class="separator" style="clear: both; font-size: 13.2px; text-align: center;">

<a

href="https://1.bp.blogspot.com/-toPSnpX3fwE/YDJ\_96-50zI/AAAAAAAAAChc/0VFwP2-iqnoqZYFrVkw tBSh0ZOKGX-APgCLcBGAsYHQ/s550/Symbol-Gerbang-Logika-NOT-dan-Tabel-Kebenaran-Gerbang-NOT.jpg" style="background: transparent; color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>

</div>

<span style="font-size: 13.2px;"><br /><span face="&quot;Arial&quot;;&quot;sans-serif&quot;" style="font-size: 12pt; line-height: 18.4px;"><br /></span></span>

<p class="MsoNormal" style="font-size: 13.2px;">

<span face="&quot;Arial&quot;;&quot;sans-serif&quot;" style="font-size: 12pt; line-height: 18.4px;">Pada gerbang logika NOT, simbol yang menandakan operasi gerbang logika NOT adalah tanda minus (-) diatas variabel, perhatikan gambar diatas.</span>

</p>

<p class="MsoNormal" style="font-size: 13.2px;"></p>

<p class="MsoNormal" style="font-size: 13.2px;">

<span face="&quot;Arial&quot;;&quot;sans-serif&quot;" style="font-size: 12pt; line-height: 18.4px;">Perhatikan tabel kebenaran gerbang NOT. Cara cepat untuk mengingat tabelnya adalah dengan mengingat pernyataan berikut. "Gerbang NOT akan menghasilkan output (keluaran) logika 1 bila variabel input (masukan) bernilai logika 0" sebaliknya "Gerbang NOT akan menghasilkan keluaran logika 0 bila input (masukan) bernilai logika 1"</span>

</p>

- Potensiometer







data-original-height="139" data-original-width="210" height="265" src="https://1.bp.blogspot.com/-NT08oPK0os8/YF62zge2KYI/AAAAAAAAAC6A/Hvb\_Cq804dUZc1SUjR RVaLfqsmB8SQ85QLcBGAsYHQ/w400-h265/potensio.PNG" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; border: 1px solid rgb(238, 238, 238); box-shadow: rgba(0, 0, 0, 0.1) 1px 1px 5px; height: inherit; max-width: 100%; padding: 5px; position: relative;" width="400" /></a>

</div>

</span>

</div>

</div>

</span></span></span>

</div>

<div>

<span style="font-family: arial;">&nbsp;<span face="Arial, Helvetica, sans-serif" style="font-size: 13px;">Encoder adalah kebalikan dari decoder, encoder 10 line (desimal) ke BCD 74147 adalah sebuah chip IC yang berfungsi untuk mengokdekan 10 line jalur input (desimal) menjadi data dalam bentuk BCD (Binary Coded decimal). IC encoder 74147 merupakan encoder data desimal menjadi data BCD dengan input aktif LOW dan output 4 bit BCD aktif LOW. Encoder desimal ke BCD ini sering kita perlukan pada saat perancangan suatu perangkat digital dan kita mengalami kekurangan port atau jalur untuk input saklarnya. IC encoder 74147 merupakan IC dalam keluarga TTL yang bekerja dengan tegangan sumber + 5 volt DC. Konfigurasi pin dan tabel kebenaran dari encoder TTL 10 line (desimal) ke BCD IC 74147 dapat dilihat pada gambar berikut. Konfigurasi Pin Dan Tabel Kebenaran Encoder 74147</span></span>

</div>

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

<a

href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEg3tpHa\_mD15qle2kyfAH80htw1\_Gd5qG\_2wHHfPy3-3g9\_Ag8SVZ1lqevauXI2C1FmOegGB3jho9dUrlW3UfynXZTpTymDCViKIlqKabk4YoqNrjuYlml9eQCbJXvzjXGchudrZ4Vp2bEh6JT\_7TM9XSatOYtqDEu9z393NiSLgri-MqY2cs--4vhA/s556/Capture.PNG" style="background: transparent; color: #2196f3; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"><span style="font-family: arial;"></span></a>

</div>

<span style="font-family: arial;"><br /></span>

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

<span style="font-family: arial;"><br /></span>

</div>

<span style="font-family: arial;"><span face="Arial, Helvetica, sans-serif" style="font-size: 13px;">Konfigurasi pin dan tabel kebenaran encoder 74147 diatas diambil dari datasheet IC 74147. IC 74147 memiliki 16 pin dengan kemasan IC DIP. Encoder IC 74147 memiliki 9 jalur input desimal 1 sampai 9 aktif LOW dan 4 jalur output BCD aktif LOW. Tegangan sumber untuk IC 74147 diberikan melalui pin Vcc (+5 volt DC) dan pin GND (ground). Input pada encoder IC 74147 ini di simbolkan dengan input 1 sampai 9 dan jalur output BCD 4 bit disimbolkan dengan Q0 sampai Q3. Pada tabel kebenaran encoder IC 74147 terdiri dari data jalur input 9 line (1 – 9) aktif LOW, 4 bit output (Q0, Q1, Q2, Q3) BCD aktif LOW dan nilai logika negatif BCD. Kode H (HIGH) merepresentasikan kondisi logika 1 (HIGH), L merepresentasikan logika 0 (LOW) dan kode X adalah don't care yaitu tidak berpengaruh terhadap proses encoding data desimal ke BCD IC Encoder 74147.</span><br style="font-size: 13px; margin: 0px; padding: 0px;" />

<br style="font-size: 13px; margin: 0px; padding: 0px;" />

<span face="Arial, Helvetica, sans-serif" style="font-size: 13px;">Read more  
at:&nbsp;</span><a href="https://elektronika-dasar.web.id/encoder-10-line-desimal-ke-bcd-74147/" style="background: transparent; color: #393939; font-size: 13px; margin: 0px; padding: 0px; text-decoration-line: none;">https://elektronika-dasar.web.id/encoder-10-line-desimal-ke-bcd-74147/</a><br style="font-size: 13px; margin: 0px; padding: 0px;" />

<span face="Arial, Helvetica, sans-serif" style="font-size: 13px;">Copyright © Elektronika Dasar</span></span>

</div>

<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">

<span face="Arial, Helvetica, sans-serif"><span style="font-size: 13px;"><span style="font-family: arial;"><br /></span></span></span>

</div>

<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">

<span style="font-family: arial;"><span face="Arial, Helvetica, sans-serif"><span style="font-size: 13px;">&nbsp;</span></span><span face="Lato, sans-serif" style="color: #2b2b2b; font-size: 16px;">IC 7447</span></span>

</div>

<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">

<span face="Lato, sans-serif" style="color: #2b2b2b; font-size: 16px;"><span style="font-family: arial;"><br /></span></span>

</div>

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif;">
```

```

```

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

```
 <a
```

```
href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEiHT4g4_SoAik8xMopENYit4rnqpl_yQh-oDeOwMjQMdE1K9ITb24yv834p-xBrBluY9uRWBWMstpCgZOx80g8-EIQLi2FN1CR94foqcma
gP46HpAAFF4mpZUTi2f93UEk-HTF69G-ocQRQxbsBGWVoBsal_xq-DsbTtg2E0pnuhzGNumD--Om90vVP/s567/Capture(1).PNG" style="background: transparent; color: #2196f3; margin-left: 1em;
margin-right: 1em; text-decoration-line: none;">
```

```
 </div>
```

```

 merupakan IC TTL Decoder BCD to 7 Segment. IC ini berfungsi untuk
mengubah kode bilangan biner BCD (Binary Coded Decimal) menjadi data tampilan untuk
penampil/display 7 segment yang bekerja pada tegangan TTL (+5 volt DC).
```

```
 <ul style="border: 0px; color: #2b2b2b; font-size: 16px; list-style-image: initial;
list-style-position: initial; margin: 0px 0px 24px 20px; outline: 0px; overflow-wrap: break-word;
padding: 0px; vertical-align: baseline;">
```

```
 <li style="border: 0px; font-style: inherit; font-weight: inherit; margin: 0px; outline:
0px; padding: 0px; vertical-align: baseline;">
```

```
 Jalur input data BCD, pin input ini terdiri
dari 4 line input yang mewakili 4 bit data BCD dengan sebutan jalur input A, B, C dan D.
```

```

```

```
 <li style="border: 0px; font-style: inherit; font-weight: inherit; margin: 0px; outline:
0px; padding: 0px; vertical-align: baseline;">
```

```
 Jalur ouput 7 segmen, pin output ini
berfungsi untuk mendistribusikan data pengkodean ke penampil 7 segmen. Pin output
dekoder BCD ke 7 segmen ini ada 7 pin yang masing-masing diberi nama a, b, c, d, e, f dan g.
```

```

```

```
 <li style="border: 0px; font-style: inherit; font-weight: inherit; margin: 0px; outline:
0px; padding: 0px; vertical-align: baseline;">
```

```
 Jalur LT (Lamp Test) yang berfungsi untuk
menyalakan semua led pada penampil 7 segmen, jalur LT akan aktif pad saat diberikan logika LOW
pad jalur LT tersebut.
```

```

```

```
<li style="border: 0px; font-style: inherit; font-weight: inherit; margin: 0px; outline: 0px; padding: 0px; vertical-align: baseline;">
```

```
Jalur RBI (Riple Blanking Input) yang berfungsi untuk menahan sinyal input (disable input), jalur RBI akan aktif bila diberikan logika LOW.
```

```

```

```
<li style="border: 0px; font-style: inherit; font-weight: inherit; margin: 0px; outline: 0px; padding: 0px; vertical-align: baseline;">
```

```
Jalur RBO (Riple blanking Output) yang berfungsi untuk menahan data output ke penampil 7 segmen (disable output), jalur RBO ini akan aktif pada sat diberikan logika LOW.
```

```

```

```

```

```
<p style="border: 0px; color: #2b2b2b; font-size: 16px; margin: 0px 0px 24px; outline: 0px; overflow-wrap: break-word; padding: 0px; vertical-align: baseline;">
```

```
Dalam aplikasi decoder, ketiga jalur kontrol (LT, RBI dan RBO) harus diberikan logika HIGH dengan tujuan data input BCD dapat masuk dan penampil 7 segmen dapat menerima data tampilan sesuai data BCD yang diberikan pada jalur input.
```

```
</p>
```

```
<p style="border: 0px; color: #2b2b2b; font-size: 16px; margin: 0px 0px 24px; outline: 0px; overflow-wrap: break-word; padding: 0px; vertical-align: baseline;">
```

```
IC 7447 biasanya dipasangkan dengan 7 segment common anode. Hal ini dikarenakan output untuk IC 7447 berlogika low.
```

```
</p>
```

```
<div style="font-size: 15px;">
```

```
 Sensor Sound
```

```
</div>
```

```
<div style="color: #222222; font-size: 15px;">
```

```
<div style="font-size: 15.4px;">
```

```
<div class="separator" style="clear: both;">
```

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

```
<a
```

```
href="https://1.bp.blogspot.com/-8tEOzotHHHw/YEJ14jCjgml/AAAAAAAAABQw/_KiSJWvFfREe5o49I744FpvadzYC82PCgClcBGAsYHQ/s750/Sound-Detection-Sensor.png" style="background: transparent; color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"><span
```

```
style="font-family: arial;">
```

```
</div>
```

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</div>
```

```
</div>
```

```
<blockquote style="border: none; color: #444444; font-feature-settings: normal;
font-kerning: auto; font-optical-sizing: auto; font-size: 15.4px; font-stretch: normal; font-style: italic;
font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal;
font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;
text-align: center;">
```

```
<div>
```

```
<div class="separator" style="clear: both;">
```

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

```
Sensor pendeteksi
suara bekerja mirip dengan Telinga kita, memiliki diafragma yang mengubah getaran menjadi sinyal.
Namun, yang berbeda adalah sensor suara terdiri dari mikrofon kapasitif internal, detektor puncak,
dan amplifier (LM386, LM393, dll.) Yang sangat sensitif terhadap suara.
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<div>
```

```
<div class="separator" style="clear: both;">
```

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

```


```

```
</div>
```

```
</div>
```

```
</div>
```

```
<div>
```

```
<div class="separator" style="clear: both;">
 <div class="separator" style="clear: both; text-align:
justify;">
 Dengan
komponen-komponen ini, memungkinkan sensor untuk bekerja:
 </div>
</div>
</div>
<div>
 <div class="separator" style="clear: both;">
 <div class="separator" style="clear: both; text-align:
justify;">

 </div>
 </div>
</div>
<div>
 <div class="separator" style="clear: both;">
 <div class="separator" style="clear: both; text-align:
justify;">
 1. Gelombang suara
merambat melalui molekul udara
 </div>
 </div>
</div>
<div>
 <div class="separator" style="clear: both;">
 <div class="separator" style="clear: both; text-align:
justify;">
 2. Gelombang suara
seperti itu menyebabkan diafragma di mikrofon bergetar, yang mengakibatkan perubahan
kapasitansi
 </div>
 </div>
</div>
```



</p>

<div class="separator" style="box-sizing: inherit; clear: both; color: #777777; font-size: 14px; text-align: center;">

<span style="box-sizing: inherit; font-size: small;"><span style="box-sizing: inherit;"><a href="https://1.bp.blogspot.com/-M9sT0ttKuGM/XwQs-xOVpXI/AAAAAAAAAKA/71mKbrPit2It3ynXt\_Ae0N4qAfJkoNr5ACLcBGAsYHQ/s1600/sensor%2Bmq-2.jpg" style="background: transparent; box-sizing: inherit; color: #bbbbbb; margin-left: 1em; margin-right: 1em; outline: 0px; overflow-wrap: break-word; text-decoration-line: none; word-break: break-word;"><span style="font-family: arial;"></span></a></span></span>

</div>

<span style="font-family: arial; font-size: 15.4px;"><span face="Lato, Helvetica, sans-serif" style="box-sizing: inherit; color: #777777; font-size: small; text-align: justify;"><br style="box-sizing: inherit;" />

</span><span face="Lato, Helvetica, sans-serif" style="color: #777777; font-size: 14px; text-align: justify;"></span><br style="box-sizing: inherit; color: #777777; font-size: 14px; text-align: justify;" />

</span>

<div class="separator" style="box-sizing: inherit; clear: both; color: #777777; font-size: 14px; text-align: center;">

<span style="box-sizing: inherit; font-size: small;"><span style="box-sizing: inherit;"><a href="https://1.bp.blogspot.com/-g5K8A6YUKog/XwQsr-NMQ1I/AAAAAAAAAj4/Lw\_T8SjIpojDDIBmnS4xbaPxJWYpsxuQCLcBGAsYHQ/s1600/gas%2B123.jpg" style="background: transparent; box-sizing: inherit; color: #f78769; margin-left: 1em; margin-right: 1em; overflow-wrap: break-word; text-decoration-line: none; word-break: break-word;"><span style="font-family: arial;"></span></a></span></span>

</div>

<span face="Lato, Helvetica, sans-serif" style="box-sizing: inherit; color: #777777; font-size: small; text-align: justify;"><span style="font-family: arial;"><br style="box-sizing: inherit;" />

</span></span>

<p class="MsoListParagraphCxSpLast" style="color: #333333; font-size: 14.85px; margin-left: 21.3pt;">

<span style="color: black; font-size: 12pt; line-height: 18.4px;"><span style="font-family: arial;">Karakteristik sensor gas MQ2 yaitu:</span></span>

</p>

<p class="MsoNormal" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; color: #333333; font-size: 14.85px; line-height: normal; margin: 0cm 0cm 0cm 42.55pt; text-align: justify; text-indent: -14.7pt; vertical-align: baseline;">

<span style="font-family: arial;"><span style="color: black; font-size: 12pt;">1.<span style="font-size: 7pt; font-stretch: normal; font-variant-east-asian: normal; font-variant-numeric: normal; line-height: normal;">&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;</span></span><span style="border: 1pt none windowtext; color: black; font-size: 12pt; padding: 0cm;">Catu daya pemanas : 5V AC/DC</span><span style="color: black; font-size: 12pt;"></span></span></span>

</p>

<p class="MsoNormal" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; color: #333333; font-size: 14.85px; line-height: normal; margin: 0cm 0cm 0cm 42.55pt; text-align: justify; text-indent: -14.7pt; vertical-align: baseline;">

<span style="font-family: arial;"><span style="color: black; font-size: 12pt;">2.<span style="font-size: 7pt; font-stretch: normal; font-variant-east-asian: normal; font-variant-numeric: normal; line-height: normal;">&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;</span></span><span style="border: 1pt none windowtext; color: black; font-size: 12pt; padding: 0cm;">Catu daya rangkaian : 5VDC</span><span style="color: black; font-size: 12pt;"></span></span></span>

</p>

<p class="MsoNormal" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; color: #333333; font-size: 14.85px; line-height: normal; margin: 0cm 0cm 0cm 42.55pt; text-align: justify; text-indent: -14.7pt; vertical-align: baseline;">

<span style="font-family: arial;"><span style="color: black; font-size: 12pt;">3.<span style="font-size: 7pt; font-stretch: normal; font-variant-east-asian: normal; font-variant-numeric: normal; line-height: normal;">&nbsp;&nbsp;&nbsp;</span></span><span style="border: 1pt none windowtext; color: black; font-size: 12pt; padding: 0cm;">Range pengukuran : 200 - 5000ppm untuk LPG, propane 300 - 5000ppm untuk butane 5000 - 20000ppm untuk methane 300 - 5000ppm untuk Hidrogen</span><span style="color: black; font-size: 12pt;"></span></span></span>

</p>

<p class="MsoNormal" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial;



</p>

<p style="font-size: 13.2px; margin-left: 1cm;">

<span style="font-family: arial;"><b>Konfigurasi Pin :</b><br /></span>

</p>

<div class="separator" style="clear: both; font-size: 13.2px; text-align: center;">

<a

href="https://1.bp.blogspot.com/-6Wullrx\_nvQ/X6\_8\_JUGcal/AAAAAAAAABiU/4oL7zu5acjQvtYb9lc2Z  
ZLZ1rzbGc1aNgCPcBGAYYCw/s200/pir.PNG" style="background: transparent; color: #2288bb;  
margin-left: 1em; margin-right: 1em; text-decoration-line: none;"><span style="font-family:  
arial;">&nbsp;</span></a>

</div>

<div class="MsoNormal" style="line-height: normal; margin: 0in 0in 3pt 1in;">

<div class="separator" style="clear: both;">

<div class="separator" style="clear: both; font-size: 13.2px;">

<span style="font-size: 12pt;"><b><span style="font-family:  
arial;">Konfigurasi PIN</span></b></span>

</div>

<div class="separator" style="clear: both;">

<span style="font-family: arial; font-size: 13.2px;"><span  
style="font-size: 12pt;"><b>&nbsp;</b></span><span style="font-size: 12pt;"><b><a  
href="https://1.bp.blogspot.com/-XUhtdK8N3CA/X9lmyQP0kl/AAAAAAAAACTA/RMOYE6v8gnIVPtfko  
qRbnvPkQZXLj0cACLcBGAsYHQ/s400/pin%2Bpirr.png" style="background: transparent; color:  
#2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a></b></span><br /></span>

<div class="separator" style="clear: both; font-size:

13.2px;">



background-origin: initial; background-position: 0% 0%; background-repeat: repeat; background-size: initial; line-height: 24px; margin: 0cm 0cm 3pt 60.55pt; text-indent: -18pt;">

<span style="line-height: 27px;"><span style="font-family: arial;">5. Memiliki setting sensitivitas.</span></span>

</p>

<p class="MsoListParagraphCxSpMiddle" style="background-attachment: scroll; background-clip: initial; background-image: none; background-origin: initial; background-position: 0% 0%; background-repeat: repeat; background-size: initial; line-height: 24px; margin: 0cm 0cm 3pt 60.55pt; text-indent: -18pt;">

<span style="line-height: 27px;"><span style="font-family: arial;">6. Memiliki setting time delay.</span></span>

</p>

<p class="MsoListParagraphCxSpMiddle" style="background-attachment: scroll; background-clip: initial; background-image: none; background-origin: initial; background-position: 0% 0%; background-repeat: repeat; background-size: initial; line-height: 24px; margin: 0cm 0cm 3pt 60.55pt; text-indent: -18pt;">

<span style="line-height: 27px;"><span style="font-family: arial;">7. Dimensi : 3,2 cm x 2,4 cm x 2,3 cm.</span></span>

</p>

<p class="MsoListParagraphCxSpLast" style="background-attachment: scroll; background-clip: initial; background-image: none; background-origin: initial; background-position: 0% 0%; background-repeat: repeat; background-size: initial; line-height: 24px; margin: 0cm 0cm 3pt 60.55pt; text-indent: -18pt;">

<span style="line-height: 27px;"><span style="font-family: arial;">8. Berat : 10 gr.</span></span>

</p>

</div>

</div>

<span style="font-family: arial; font-size: 13.2px;"><br />&nbsp;</span>

</div>

<div class="separator" style="clear: both; font-size: 13.2px;">

<span style="font-family: arial;"><b>Grafik Respon :</b><br /></span>

</div>

</div>

</div>

```
<div style="font-size: 13.2px; text-align: center;">
```

```

```

```
</div>
```

```
<p style="font-size: 15.4px;">
```

```

 <b style="color: black; font-size: medium;">Sensor Load Cell
```

```
</p>
```

```
<div style="color: black;">
```

```
 <span style="background-attachment:
initial; background-clip: initial; background-image: initial; background-origin: initial;
background-position: initial; background-repeat: initial; background-size: initial; line-height:
18.4px;">Load Cell<span style="background-attachment: initial; background-clip: initial;
background-image: initial; background-origin: initial; background-position: initial;
background-repeat: initial; background-size: initial; line-height: 18.4px;"> adalah alat
electromekanik yang biasa disebut Transducer, yaitu gaya yang bekerja berdasarkan prinsip
deformasi sebuah material akibat adanya tegangan mekanis yang bekerja, kemudian merubah gaya
mekanik menjadi sinyal listrik.
```

```
</div>
```

```
<div style="color: black;">
```

```
 Simbol load cell di proteus:
```

```
</div>
```

```
<div style="color: black;">
```

```

```

```
 <p class="MsoNormal" style="background-attachment: initial;
background-clip: initial; background-image: initial; background-origin: initial; background-position:
initial; background-repeat: initial; background-size: initial; font-size: large; line-height: normal;
margin-left: 54pt; vertical-align: baseline;">
```

```
 <o:p></o:p>
```

```
</p>
```

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

<a href="https://1.bp.blogspot.com/-POQSaXxvYiE/X9byf9zF84I/AAAAAAAAAIs/T\_vKZMX\_NY0cydl3AQHWSJB4b6j5HN4xACLcBGAsYHQ/s393/logo%2Bload%2Bcell.png" style="background: transparent; color: #2079b1; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>

</div>

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

<br />

</div>

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

<span style="text-align: left;"><br /></span>

</div>

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

<span style="text-align: left;">Respon sesnor:</span>

</div>

<p align="center" class="MsoNormal" style="line-height: normal; margin-left: 54pt; text-align: center;"></p>

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

<a

href="https://1.bp.blogspot.com/--lvHLGOJLJs/YDM42pSwaBI/AAAAAAAAAsU/1s1dr3MiSUQ2-hlgbB0\_V1Z299xgTpZfACLcBGAsYHQ/s563/grafik%2Bload%2Bcell.png" style="background: transparent; color: #2079b1; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a>

</div>

```

</div>
</div>
<div>
 <div style="color: #222222;">
 <p style="font-size: 15.4px;">
 - Resistor

 </p>
 <blockquote style="border: none; color: #444444; font-feature-settings:
normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic;
font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal;
font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;
text-align: center;">
 <blockquote style="border: none; font-feature-settings: normal;
font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal;
font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal;
line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">
 <p style="text-align: justify;">
 Resistor adalah
komponen elektronika yang berfungsi untuk menghambat atau membatasi aliran listrik yang
mengalir dalam suatu rangkaian. Fungsi resistor yang bersifat resistif merupakan salah satu
komponen kategori pasif dalam elektronika. Satuan resistansi resistor disebut Ohm yang
dilambangkan dengan simbol Omega (Ω). Hukum Ohm mengatakan bahwa resistansi berbanding
terbalik dengan jumlah arus yang mengalir melaluinya.
 </p>
 </blockquote>
 </blockquote>
 </div>
 <p style="font-size: 15.4px; text-align: center;"></p>
 <div class="separator" style="clear: both; font-size: 15.4px; text-align:
center;">
 <a
href="https://1.bp.blogspot.com/-Zo9Nr8FNQYQ/X2sZoOIVxLI/AAAAAAAAAMI/JiPsg3SPILgARinAMcflgfi3hbUx9JuCgCLcBGAsYHQ/s188/rumus%2Bhukum%2Bohm.png" style="background: transparent;
color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;">

</div>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

Rumus Hukum Ohm

</div>

<p style="font-size: 15.4px;">

</p>

<p style="font-size: 15.4px;"></p>

<p style="font-size: 15.4px; text-align: center;"></p>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

</div>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

Simbol Resistor

</div>

<p style="font-size: 15.4px;"></p>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-size: x-large; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal;

font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">"

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">"

<p></p>

<div>

 Cara menghitung nilai resistansi resistor dengan gelang warna:

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

1. Masukkan angka langsung dari kode warna gelang pertama

</div>

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

2. Masukkan angka langsung dari kode warna gelang kedua

</div>

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

3. Masukkan angka langsung dari kode warna gelang ketiga

</div>

<span style="border: 0px; box-sizing: border-box; font-size: 15.4px; font-stretch: inherit; font-style: inherit; font-variant: inherit;

font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: justify; vertical-align: baseline; white-space-collapse: preserve;">

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

<span style="font-style: inherit;

font-variant-caps: inherit; font-variant-ligatures: inherit; font-weight: inherit;">4. Masukkan jumlah nol dari kode warna gelang ke-4 atau pangkatkan angka tersebut dengan 10(10^n)

</div>

</div>

<p></p>

</blockquote>

</blockquote>

<p style="font-size: 15.4px; text-align: center;">

</p>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

</div>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

</div>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: justify;">

 -Relay

</div>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p style="text-align: justify;">

 Relay adalah Saklar (<em style="border: 0px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 0px; padding: 0px; vertical-align: baseline;">Switch) yang dioperasikan secara listrik dan merupakan komponen Electromechanical (Elektromekanikal) yang terdiri dari 2 bagian utama yakni Elektromagnet (Coil) dan Mekanikal (seperangkat Kontak Saklar/Switch). Relay menggunakan Prinsip Elektromagnetik untuk menggerakkan Kontak Saklar sehingga dengan arus listrik yang kecil (<em style="border: 0px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 0px; padding: 0px; vertical-align: baseline;">low power) dapat menghantarkan listrik yang bertegangan lebih tinggi. Sebagai contoh, dengan Relay yang menggunakan Elektromagnet 5V dan 50 mA mampu menggerakkan Armature Relay (yang berfungsi sebagai saklarnya) untuk menghantarkan listrik 220V 2A.

</p>

</blockquote>

</blockquote>

<p style="font-size: 15.4px; text-align: center;"></p>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

</div>

<p style="font-size: 15.4px;">

</p>

<p style="font-size: 15.4px;"></p>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p style="font-size: x-large;"></p>

<div>

 Pada dasarnya, Relay terdiri dari 4 komponen dasar yaitu :

</div>

<p></p>

<ol style="border: 0px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; list-style-image: initial; list-style-position: initial; margin: 0px 0px 1.25rem 2.5rem; padding: 0px; vertical-align: baseline;">

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: left; vertical-align: baseline;">

Electromagnet (Coil)

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: left; vertical-align: baseline;">

Armature

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: left; vertical-align: baseline;">

Switch
Contact Point (Saklar)

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: left; vertical-align: baseline;">

<span style="font-family:
arial;">Spring

</blockquote>

</blockquote>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p style="border: 0px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 0px 0px 1.25rem; padding: 0px; vertical-align: baseline;">

Kontak Poin
(Contact Point) Relay terdiri dari 2 jenis yaitu :

</p>

<ul style="border: 0px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; list-style: square; margin: 0px 0px 1.25rem 2.5rem; padding: 0px; vertical-align: baseline;">

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: left; vertical-align: baseline;">

Mkre3ATrI_XqwoQCLcBGAsYHQ/s513/cara-kerja-relay.jpg" style="background: transparent; color: #2288bb; margin-left: 1em; margin-right: 1em; text-decoration-line: none;">

</div>

<p style="font-size: 15.4px;">

</p>

<p style="font-size: 15.4px;"></p>

<p style="font-size: 15.4px;"></p>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px;">

<p style="text-align: justify;">

Beberapa fungsi Relay yang telah umum diaplikasikan kedalam peralatan Elektronika diantaranya adalah :

</p>

<ol style="border: 0px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; list-style-image: initial; list-style-position: initial; margin: 0px 0px 1.25rem 2.5rem; padding: 0px; vertical-align: baseline;">

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">

Relay digunakan untuk menjalankan Fungsi Logika (<em style="border: 0px; font-stretch: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; vertical-align: baseline;">Logic Function

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">

Relay digunakan untuk memberikan Fungsi penundaan waktu (<em style="border: 0px; font-stretch: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; vertical-align: baseline;">Time Delay Function

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">

Relay digunakan untuk mengendalikan Sirkuit Tegangan tinggi dengan bantuan dari Signal Tegangan rendah.

<li style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px; padding: 0px; text-align: justify; vertical-align: baseline;">

Ada juga Relay yang berfungsi untuk melindungi Motor ataupun komponen lainnya dari kelebihan Tegangan ataupun hubung singkat (Short).

</blockquote>

</blockquote>

<p>

 - Transistor

</p>

<blockquote style="border: none; color: #444444; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-style: italic; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: center;">

<blockquote style="border: none; font-feature-settings: normal; font-kerning: auto; font-optical-sizing: auto; font-stretch: normal; font-variant-alternates: normal; font-variant-east-asian: normal; font-variant-numeric: normal; font-variation-settings: normal; line-height: normal; margin: 0px 0px 0px 40px; padding: 0px; text-align: justify;">


```

                <span style="font-family: arial;">Fungsi-fungsi
Transistor diantaranya adalah :</span>
            </div>
            <ul style="border: 0px; font-stretch: inherit;
font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; list-style: square;
margin: 0px 0px 1.25rem 2.5rem; padding: 0px; vertical-align: baseline;">
                <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px;
padding: 0px; text-align: justify; vertical-align: baseline;">
                    <span style="font-family: arial;">sebagai
Penyearah,</span>
                </li>
                <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px;
padding: 0px; text-align: justify; vertical-align: baseline;">
                    <span style="font-family: arial;">sebagai
Penguat tegangan dan daya,</span>
                </li>
                <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px;
padding: 0px; text-align: justify; vertical-align: baseline;">
                    <span style="font-family: arial;">sebagai
Stabilisasi tegangan,</span>
                </li>
                <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px;
padding: 0px; text-align: justify; vertical-align: baseline;">
                    <span style="font-family: arial;">sebagai
Mixer,</span>
                </li>
                <li style="border: 0px; font-stretch: inherit;
font-style: inherit; font-variant: inherit; font-weight: inherit; line-height: inherit; margin: 0px;
padding: 0px; text-align: justify; vertical-align: baseline;">
                    <span style="font-family: arial;">sebagai
Osilator</span>
                </li>

```


</p>

</blockquote>

</blockquote>

<p style="font-size: 15.4px; text-align: center;"></p>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: center;">

</div>

<div class="separator" style="clear: both; font-size: 15.4px; text-align: justify;">

- IC 74157

</div>

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

<p class="MsoNormal" style="border: 0px; color: #444444; font-size: 14px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; text-align: left; vertical-align: baseline;">

<b style="border: 0px; font-size: inherit; font-stretch: inherit; font-style: inherit; font-variant: inherit; line-height: inherit; margin: 0px; max-height: 1e+07em; padding: 0px; vertical-align: baseline;">IC 74157

</p>

<p class="MsoNormal" style="border: 0px; color: #444444; font-size: 14px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; text-align: left; vertical-align: baseline;">

</p>

<div class="separator" style="border: 0px; clear: both; color: #444444; font-size: 14px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 0px; max-height: 1e+07em; padding: 0px; text-align: center; vertical-align: baseline;">

</div>

<br style="color: #444444; font-size: 14px; margin: 0px; max-height: 1e+07em; padding: 0px; text-align: left;" />

<o:p style="color: #444444; font-size: 14px; margin: 0px; max-height: 1e+07em; padding: 0px; text-align: left;"></o:p>

<p style="border: 0px; color: #444444; font-size: 14px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; text-align: left; vertical-align: baseline;"></p>

<p class="MsoNormal" style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; vertical-align: baseline;">

IC 74157 merupakan IC multiplekser yang memiliki empat buah data selektor. Setiap data selektor mempunyai dua saluran masukan (A dan B) dan satu keluaran (Y).<o:p style="margin: 0px; max-height: 1e+07em; padding: 0px;"></o:p>

</p>

<p class="MsoNormal" style="border: 0px; color: #444444; font-size: 14px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; vertical-align: baseline;"></p>

<div class="separator" style="border: 0px; clear: both; color: #444444; font-size: 14px; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 0px; max-height: 1e+07em; padding: 0px; text-align: center; vertical-align: baseline;">

</div>

<br style="margin: 0px; max-height: 1e+07em; padding: 0px;" />

<p style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; text-align: left; vertical-align: baseline;"></p>

<p class="MsoNormal" style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; vertical-align: baseline;">

Pada tabel kebenaran dapat dilihat bahwa:<o:p style="margin: 0px; max-height: 1e+07em; padding: 0px;"></o:p>

</p>

<p class="MsoListParagraphCxSpFirst" style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px 1.5em 21.3pt; max-height: 1e+07em; padding: 0px; text-align: left; text-indent: -14.2pt; vertical-align: baseline;">

1. Jika pin Enable diberi logika HIGH, maka apapun masukan dan apapun keadaan pin Select maka keluaran akan selalu berlogika LOW.<o:p style="margin: 0px; max-height: 1e+07em; padding: 0px;"></o:p>

</p>

<p class="MsoListParagraphCxSpMiddle" style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px 1.5em 21.3pt; max-height: 1e+07em; padding: 0px; text-align: left; text-indent: -14.2pt; vertical-align: baseline;">

2.

vertical-align: baseline;"> Jika pin Enable diberi logika LOW dan pin Select juga diberi logika LOW, maka masukan pada pin A akan diteruskan ke keluaran.

</p>

<p class="MsoListParagraphCxSpLast" style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px 1.5em 21.3pt; max-height: 1e+07em; padding: 0px; text-align: left; text-indent: -14.2pt; vertical-align: baseline;">

3. Jika pin Enable diberi logika LOW dan pin Select juga diberi logika HIGH, maka masukan pada pin B akan diteruskan ke keluaran.

</p>

<p class="MsoNormal" style="border: 0px; color: #444444; font-stretch: inherit; font-variant-east-asian: inherit; font-variant-numeric: inherit; line-height: inherit; margin: 1.5em 0px; max-height: 1e+07em; padding: 0px; vertical-align: baseline;">

<b style="border: 0px; font-stretch: inherit; font-style: inherit; font-variant: inherit; line-height: inherit; margin: 0px; max-height: 1e+07em; padding: 0px; vertical-align: baseline;">

</p>

</div>

</div>

</div>

</div>

<h1 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; margin: 0.67em 0px;">

```
<div style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; border: 0px; color: #656565; font-size: 15px; font-weight: 400; line-height: 19.8px; margin: 0cm 0cm 0.0001pt 1cm; outline: 0px; padding: 0px; position: relative; text-align: justify; vertical-align: baseline;">
```

```
    <div class="MsoNormal" style="background: 0px 0px; border: 0px; line-height: 19.5px; outline: 0px; padding: 0px; text-indent: 36pt; vertical-align: baseline;">
```

```
        <span style="background-color: initial; font-size: large; text-indent: 31.05pt;"><span style="font-family: arial;"><br /></span></span>
```

```
    </div>
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</div>
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<div style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; border: 0px; color: #656565; font-size: 15px; font-weight: 400; line-height: 19.8px; margin: 0cm 0cm 0.0001pt 1cm; outline: 0px; padding: 0px; position: relative; text-align: justify; vertical-align: baseline;">
```

```
    <div class="MsoNormal" style="background: 0px 0px; border: 0px; line-height: 19.5px; outline: 0px; padding: 0px; text-indent: 36pt; vertical-align: baseline;"></div>
```

```
</div>
```

```
</h1>
```

```
<h2 style="background-color: white; color: #757575; font-family: Roboto, sans-serif;"><span style="font-family: arial;"><a href="https://www.blogger.com/null" name="Percobaan" style="background: transparent; color: #2196f3; text-decoration-line: none;">&nbsp;</a>4. Percobaan<span style="font-family: arial;"><a href="#home" style="background: transparent; color: #2196f3; text-decoration-line: none;">[kembali]</a></span></h2>
```

```
<h4 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;"><span style="font-family: arial;">1.Prosedur percobaan</span></h4>
```

```
<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">
```

```
    <ul style="color: #505050; font-size: 15.4px; line-height: 1.4; margin: 0.5em 0px; padding: 0px 2.5em;">
```

```
        <li style="margin: 0px 0px 0.25em; padding: 0px;">
```

```
            <span style="font-family: arial;">siapkan komponen yang dibutuhkan</span>
```

```
        </li>
```

```
        <li style="margin: 0px 0px 0.25em; padding: 0px;">
```

```
            <span style="font-family: arial;">letakkan semua komponen sesuai dengan gambar dibawah</span>
```

```
        </li>
```


ES-H/w471-h305/Screenshot%202023-07-18%20074818.png" style="border: 0px; height: inherit; max-width: 100%; width="471" />

</div>

</div>

<h4 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">3. prinsip kerja</h4>

<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">

Prinsip Kerja:

</div>

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Sensor pertama yang akan aktif yaitu sensor PIR, sensor PIR digunakan untuk mendeteksi orang didepan pintu lift. Jika sensor PIR mendeteksi adanya orang atau logic state berlogika 1 maka akan keluar output tegangan dari sensor. Diumpangkan menjadi input pada ic multiplexer 74157, karena kaki enable dan selektornya diberi dihubungkan ke ground(atau diberi logika 0). Maka sesuai dengan truth table, jika input pada mux 74157 adalah $E=0$ $S=0$ $A=1$, maka output yang keluar pada $Y=1$. Berarti ada tegangan dan diumpangkan ke resistor sebesar 10k ohm, dan menghasilkan tegangan sebesar 0.79V pada kaki VBE, yang mana itu cukup untuk mengaktifkan transistor. Sehingga mengalir arus dari power supply menuju relay, lalu ke kaki kolektor menuju kaki kolektor dan ke ground. Karena ada arus yang mengalir sehingga relay berpindah kekiri dan menggerakkan motor untuk membuka pintu. Namun, jika PIR sensor tidak aktif(tidak mendeteksi adanya orang) atau pada logic state diberi logika 0, maka tidak ada tegangan yang keluar dari kaki out sensor, dan menghasilkan input pada mux 74157 menjadi $E=0$, $S=0$, $A=0$, sehingga output $Y=0$, menandakan tidak ada arus yang diumpangkan pada resistor dan tegangan pada kaki VBE transistor adalah 0 dan transistor tidak aktif, karena untuk mengaktifkan transistor dibutuhkan tegangan sebesar $V_{BE} > 0,6$ V. Lalu, tidak ada arus yang mengalir sehingga relay tidak berpindah, dan menggerakkan pintu penutup. Input Tombol Lantai Selanjutnya ada input tombol yang digunakan untuk memilih lantai. Terdapat 3 pilihan lantai. Digunakan button yang dipasang dengan resistor pull-down yang berfungsi untuk menghindari kondisi floating. Jika ditekan button LT1, maka arus dari VCC akan mengalir menuju resistor 10k Ohm sehingga menghasilkan logika 1 untuk input gerbang NOT(karena input pada encoder 74147 adalah aktif low). Output 0 pada gerbang NOT diinputkan ke input 1 pada encoder. Karena input pada encoder adalah 11111110, maka outputnya 1110, karena outputnya LOW, maka keluarannya di-NOT kan sebelum di-inputkan ke input dekoder yang aktif high, sehingga input pada dekoder menjadi 0001 dan karena itu menghasilkan output aktif low, yaitu $QA=1$, $QB=0$, $QC=0$, $QD=1$, $QE=1$, $QF=1$, $QG=1$. Lalu

dihubungkan ke 7-segment common anoda dan menampilkan angka 1. Begitu pula untuk pemilihan rantai 2 dan 3.

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Sensor LOADCELL Lalu, ada LOADCELL sensor yang digunakan untuk mendeteksi beban pada lift. Jika nilai yang terbaca pada loadcell besa dari 85, untuk saat ini adalah 86, yang mana pada tegangannya yaitu sebesar 0.0207V dan diumpankan kekaki non-inverting amplifier dan diberi penguatan sebanyak 15 kali ($R_{15}/18 * V_{in}$) dan menghasilkan output 0,36V. Lalu, diumpankan lagi ke kaki non-inverting detektor. Dimana pada rangkaian detektor non-inverting terdapat tegangan referensi yang dapat diatur menggunakan potensiometer dgn maksimal tegangan sebesar 1V. Cara mencari nilai tegangan referensi, persentase potensiometer yang dipakai dikali maksimal tegangan referensi, akan didapatkan ($35\% \times 1 = 0,35V$). Kemudian, di rangkaian detektor non inverting, terdapat tegangan saturasi yang dimana ketika tegangan input \geq tegangan referensi maka output yg dihasilkan adalah +Vsat, namun apabila tegangan input kecil dari tegangan referensi maka outputnya -Vsat. didapat dgn rumus ($+ -vsat = + -vs + -2$) sehingga yang kita dapatkan pada rangkaian ini, krna tegangan input \geq tegangan referensi, kita dapatkan +vsat sebesar 13,8V. Lalu diumpankan ke resistor sebesar 10k dan menghasilkan tegangan sebesar 0,87V. Yang mana cukup untuk mengaktifkan transistor, sehingga mengalir arus dari power supplay menuju relay, menuju kaki kolektor, lalu kaki emitor dan ground. Karena ada arus yang mengalir, maka relay berpindah ke kiri dan arus mengalir dari batrai menuju motor untuk membuka pin dan juga alarm penanda bahwa kapasitas beban lift sudah melebihi batas.

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DEMULTIPLEXER Sensor Vibration Selanjutnya ada sensor Vibration yang digunakan untuk mendeteksi adanya gempa. Jika terjadi gempa maka output sensor vibration yang berupa tegangan akan masuk ke input A demultiplexer dan pada input A ic demux 4556 adalah E=0, B=0, A=1. Yang mana sesuai dengan truth table akan menghasilkan keluaran 1101, pada kaki Q1 =0, karena outputnya aktif LOW, maka diumpankan ke ic NOT sehingga outputnya menjadi 1 dan diumpankan ke resistor 10k ohm sehingga pada kaki VBE terbaca tegangan sebesar 0,79V yang mana cukup untuk mengaktifkan transistor. Sehingga arus mengalir dari power supply,

menuju relay, lalu ke kaki kolektor, kaki emitor dan ground. Karena adanya arus yang mengalir, maka relay akan berpindah ke kiri dan mengalirkan arus ke baterai dan alarm sebagai penanda gempa pemberitahuan orang di dalam lift.

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Sensor Gas MQ-2 Sensor gas MQ-2 digunakan untuk mendeteksi adanya asap rokok pada lift. Jika terdapat asap rokok yang ditandai dengan logic state berlogika 1, maka akan keluar output berupa tegangan menuju input B pada ic 4556. Sehingga input yang masuk adalah E=0, B=1, A=0 akan menghasilkan output 1011, pada kaki Q2=0, karena outputnya aktif LOW, maka diumpungkan ke ic NOT sehingga outputnya menjadi 1 dan diumpungkan ke resistor 10k ohm sehingga pada kaki VBE terbaca tegangan sebesar 0,79V yang mana cukup untuk mengaktifkan transistor. Sehingga arus mengalir dari power supply, menuju relay, lalu ke kaki kolektor, kaki emitor dan ground. Karena adanya arus yang mengalir, maka relay akan berpindah ke kiri dan mengalirkan arus ke baterai dan motor sebagai penghisap asap rokok dalam lift.

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Jika kedua sensor tidak menyala, maka input pada demux adalah E=0, B=0, A=0 yang mana akan menghasilkan output 0111, pada Q0=0, karena outputnya aktif LOW, maka diumpungkan ke ic NOT sehingga outputnya menjadi 1 dan diumpungkan ke resistor 220 ohm lalu ke LED green, yang mana menandakan tidak ada bencana atau kondisi aman. Namun, jika kedua sensor menyala, maka input pada demux adalah E=0, B=1, A=1 maka outputnya adalah 0111, pada Q3=0, karena outputnya aktif LOW, maka diumpungkan ke ic NOT sehingga outputnya menjadi 1 dan diumpungkan ke resistor 10k ohm sehingga pada kaki VBE terbaca tegangan sebesar 0,79V yang mana cukup untuk mengaktifkan transistor. Sehingga arus mengalir dari power supply, menuju relay, lalu ke kaki kolektor, kaki emitor dan ground. Karena adanya arus yang mengalir, maka relay akan berpindah ke kiri dan mengalirkan arus ke baterai dan alarm sebagai penanda bencana orang di dalam lift dan juga LED red sebagai indikator bahaya

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<div class="separator" style="background-color: white; clear: both; color: #757575; font-family: Roboto, sans-serif; font-size: 15px; text-align: center;">

<h3 style="font-size: 16px; text-align: left;"> 5. Video[kembali]</h3>

</div>

<div class="separator" style="background-color: white; clear: both; color: #757575; font-family: Roboto, sans-serif; font-size: 15px; text-align: center;">

</div><div class="separator" style="clear: both; text-align: center;"><object class="BLOG_video_class" contentid="d12a452ccdbd2c20" height="266" id="BLOG_video-d12a452ccdbd2c20" width="320"></object></div>

<h3 style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 16px;"> 6. Download[kembali]</h3>

<div style="background-color: white; color: #757575; font-family: Roboto, sans-serif; font-size: 15px;">

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Download HTML

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Download Rangkaian Simulasi

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Download Rangkaian Simulasi

[Download datasheet resistor](https://drive.google.com/uc?export=download&id=1d_dHpe7SBylbWOdx8JTLa-_jcX2Mwvw5)

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[Download](https://drive.google.com/uc?export=download&id=1d_dHpe7SBylbWOdx8JTLa-_jcX2Mwvw5) [Download](https://drive.google.com/uc?export=download&id=1YtO5bfoFvpbxufTrBwO9i-IU_NidhDbn) [Download](https://drive.google.com/uc?export=download&id=1xuwxTOPbWkfdaANckNyGDwTj5SIGeNOA) [Download](https://drive.google.com/uc?export=download&id=16JoS3eEVThdjHAMn30Lyf8w_CpmfQccm) [Download](https://drive.google.com/uc?export=download&id=1o4ObvSjkhI-OTbnvGVaWnqDL-z4Ews_O) [Download](https://drive.google.com/uc?export=download&id=1YtO5bfoFvpbxufTrBwO9i-IU_NidhDbn) [Download](https://drive.google.com/uc?export=download&id=1xuwxTOPbWkfdaANckNyGDwTj5SIGeNOA) [Download](https://drive.google.com/uc?export=download&id=16JoS3eEVThdjHAMn30Lyf8w_CpmfQccm) [Download](https://drive.google.com/uc?export=download&id=1o4ObvSjkhI-OTbnvGVaWnqDL-z4Ews_O) [Download](https://drive.google.com/uc?export=download&id=1YtO5bfoFvpbxufTrBwO9i-IU_NidhDbn) 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