Examples:

- **BUSE** complement is -1
  - For XOR, we use +1
  - For OR, we use 1
  - For AND, we use a 0

We can manipulate individual bits of bytes and words using BITWISE logic.

**BITWISE Logic Statements in C**

```c
/* MESES.MESES.NO. */

WITH (LIGHT.ONE)

 novembre (ok? (creatico % 1050) == 0)

((day = tuesday) || (day = thursday) && (time < 9:00 am) && (time > 11:00 am))

for equals, we use ==

for exclusive OR, we use a +

for OR, we use || instead of +

for AND, we use && instead of &

in the syntax, a bit different

Logic Statements in C

main()
Front Bumper
Low when "Open". High when "Closed"

Rear Bumper
Low when "Open". High when "Closed"

Light Sensor
Low when "Dark". High when "Light"

Motor Forward
Low when "Off". High when "On".

Motor Backward
Low when "Off". High when "On".

TABLE 9.2. LOGIC FAMILY CONNECTIONS

<table>
<thead>
<tr>
<th>TO</th>
<th>FROM</th>
<th>TTL</th>
<th>HCT ACT</th>
<th>HC AC</th>
<th>HC, AC @3.3V</th>
<th>NMOS LSI</th>
<th>4000B, 74C @5V</th>
<th>4000B, 74C @10V</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTL</td>
<td>OK</td>
<td>OK</td>
<td>A</td>
<td>OK</td>
<td>OK</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>HCT ACT</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>OK</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>HC AC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>OK</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>HC, AC @3.3V</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>B</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMOS LSI</td>
<td>OK</td>
<td>OK</td>
<td>A</td>
<td>OK</td>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000B, 74C @5V</td>
<td>OK*</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000B, 74C @10V</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

* with limited fanout. A – pullup to +5V, or use HCT as interface.
B – use 5V OC pullup to +10V, or 4010, 14504, or LTC1045 level translator.
C – use 74C250, 4049/50, 14504, or LTC1045 level translator.
## Switching Characteristics

| 
| --- |
| Uc (V) | 0 |
| 2Uc (V) | 0 |
| 3Uc (V) | 0 |
| 4Uc (V) | 0 |
| 5Uc (V) | 0 |

### Electrical Characteristics

- **Operating Supply Voltage:** 5V
- **Input Logic:** 0 or 1
- **Output Logic:** 0 or 1

### Recommended Operating Conditions

- **Operating Temperature:** 0°C to 70°C
- **Storage Temperature:** -65°C to 150°C
- **Supply Current:** 5mA

### Function Table

<table>
<thead>
<tr>
<th>Function</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Connections Diagram

```
Connection Diagram
```

---

**General Description**

This section contains the technical specifications and features of the device, including its operating conditions, power requirements, and performance characteristics. The diagrams and tables provide a visual representation of the internal architecture and pin-out details for designers and engineers. The information is intended to assist in the design and implementation of circuits that incorporate this component.