

# DAFTAR ISI

|                                |      |
|--------------------------------|------|
| LAPORAN SKRIPSI.....           | ii   |
| LEMBAR PERSETUJUAN .....       | ii   |
| LEMBAR PENGESAHAN PENGUJI..... | iv   |
| <i>ABSTRAK</i> .....           | vi   |
| <i>ABSTRACT</i> .....          | vii  |
| KATA PENGANTAR.....            | viii |
| BAB 1 .....                    | 1    |
| PENDAHULUAN.....               | 1    |
| 1.1 Latar Belakang .....       | 1    |
| 1.2 Batasan Masalah .....      | 6    |
| 1.3 Rumusan Masalah.....       | 8    |
| 1.4 Tujuan .....               | 9    |
| 1.4.1. Tujuan Umum .....       | 9    |
| 1.4.2. Tujuan Khusus .....     | 9    |
| 1.5 Manfaat .....              | 9    |
| 1.5.1. Manfaat Teoritis.....   | 9    |
| 1.5.2. Manfaat Praktis.....    | 10   |
| BAB 2 .....                    | 11   |
| TINJAUAN PUSTAKA.....          | 11   |

|                                       |           |
|---------------------------------------|-----------|
| 2.1 Studi Literatur .....             | 11        |
| 2.2 Kalibrasi .....                   | 14        |
| 2.3 Occlusion .....                   | 16        |
| 2.4 Infus Pump dan Syringe Pump ..... | 17        |
| 2.5 Infusion Device Analyzer .....    | 19        |
| 2.6 Sensor Tekanan Air .....          | 20        |
| 2.7 Selenoid Valve.....               | 22        |
| 2.8 Arduino .....                     | 24        |
| 2.9 LCD TFT 7 Inch.....               | 26        |
| 2.10 Modul Bluetooth HC-05.....       | 27        |
| 2.11 Motor DC Pompa Air .....         | 29        |
| <b>BAB 3 .....</b>                    | <b>30</b> |
| <b>METODOLOGI PENELITIAN .....</b>    | <b>30</b> |
| 3.1 Diagram Blok Sistem .....         | 30        |
| 3.2 Diagram Alir .....                | 32        |
| 3.3 Diagram Mekanis .....             | 34        |
| 3.4 Alat dan Bahan .....              | 35        |
| 3.5 Desain Penelitian .....           | 35        |
| 3.6 Variabel Penelitian.....          | 36        |
| 3.6.1 Variabel Bebas.....             | 36        |

|                               |                                                            |    |
|-------------------------------|------------------------------------------------------------|----|
| 3.6.2                         | Variabel Terikat.....                                      | 36 |
| 3.6.3                         | Variabel Terkendali.....                                   | 36 |
| 3.7                           | Definisi Operasional Variabel.....                         | 37 |
| 3.8                           | Teknik Analisis Data.....                                  | 37 |
| 3.8.1                         | Rata-Rata.....                                             | 37 |
| 3.8.2                         | Standart Deviasi.....                                      | 38 |
| 3.8.3                         | Ketidapastian Baku Tipe A (UA).....                        | 38 |
| 3.8.7                         | Error.....                                                 | 39 |
| 3.9                           | Urutan Kegiatan (Prosedur Penelitian).....                 | 39 |
| 3.10                          | Tempat dan Jadwal Kegiatan Penelitian.....                 | 42 |
| BAB 4                         | .....                                                      | 44 |
| HASIL PENGUKURAN DAN ANALISIS | .....                                                      | 44 |
| 4.1                           | Hasil Pembuatan Modul.....                                 | 44 |
| 4.1.1                         | Tampak Depan.....                                          | 44 |
| 4.1.2                         | Tampak Belakang.....                                       | 44 |
| 4.1.3                         | Tampak Samping.....                                        | 45 |
| 4.1.4                         | Rangkaian yang Terdapat di Dalam <i>Box</i> .....          | 46 |
| 4.3.1                         | Kondisi Ruang.....                                         | 48 |
| 4.3.2                         | UUT ( <i>Unit Under Test</i> ) dan Langkah Pengukuran..... | 48 |

|                       |                                                                                |            |
|-----------------------|--------------------------------------------------------------------------------|------------|
| 4.3.3                 | Pengukuran Modul Terhadap UUT ( <i>Unit Under Test</i> ) .....                 | 64         |
| 4.3.4                 | Hasil Pengukuran yang Terkirim melalui Bluetooth dan Tersimpan pada Excel..... | 71         |
| <b>BAB V</b>          | <b>PEMBAHASAN</b> .....                                                        | <b>93</b>  |
| 5.1                   | Pembahasan Hasil Pengukuran .....                                              | 93         |
| 1.2.1                 | Wiring Diagram .....                                                           | 95         |
| 5.3                   | Pembahasan Listing Program.....                                                | 98         |
| 5.4                   | Pembahasan Sistem Keseluruhan.....                                             | 107        |
| <b>BAB VI</b>         | .....                                                                          | <b>110</b> |
| <b>PENUTUP</b>        | .....                                                                          | <b>111</b> |
| 6.1                   | Kesimpulan .....                                                               | 111        |
| 6.2                   | Saran.....                                                                     | 113        |
| <b>DAFTAR PUSTAKA</b> | .....                                                                          | <b>115</b> |
| <b>LAMPIRAN</b>       | .....                                                                          | <b>120</b> |