

DAFTAR GAMBAR

| | |
|---|----|
| Gambar 2. 1 Bagian-Bagian PLC [12] | 8 |
| Gambar 2. 2 Bagian Utama Inverter [13]..... | 10 |
| Gambar 3. 1 Diagram Blok Perancangan Sistem | 12 |
| Gambar 3. 2 Diagram Proses Sistem Continue..... | 13 |
| Gambar 3. 3 Power Supply Q16P..... | 14 |
| Gambar 3. 4 CPU Q03UDVCPU..... | 15 |
| Gambar 3. 5 Input Modules QX40 | 16 |
| Gambar 3. 6 Output Modules QY22 | 17 |
| Gambar 3. 7 Modul Analog Output Q64DAN | 18 |
| Gambar 3. 8 Modul RTD Q64TCRTN | 18 |
| Gambar 3. 9 Inverter FVR-Micro..... | 19 |
| Gambar 3. 10 Sensor Temperature RTD PT100 | 20 |
| Gambar 3. 11 HMI Mitsubishi GT2508-VTBA | 21 |
| Gambar 3. 12 a) Tampilan Depan b) Tampilan Dalam Heater Control Box | 22 |
| Gambar 3. 13 a) Tampilan Depan b) Tampilan Dalam Motor Control Box..... | 23 |
| Gambar 3. 14 a) Tampilan Depan b) Tampilan Dalam PLC Control Box..... | 23 |
| Gambar 3. 15 Flowchart Desain Perangkat Lunak | 24 |
| Gambar 3. 16 PLC Parameter Setting..... | 25 |
| Gambar 3. 17 Modul Parameter Setting..... | 26 |
| Gambar 3. 18 Program Ladder Pada GX Works 2 | 26 |
| Gambar 3. 19 Tampilan Konfigurasi HMI..... | 27 |
| Gambar 3. 20 Tampilan Desain HMI..... | 27 |
| Gambar 3. 21 Tampilan Radicasoftware..... | 28 |
| Gambar 3. 22 Layout PLC | 29 |
| Gambar 3. 24 Skema Instalasi | 30 |
| Gambar 3. 23 Power Heater Circuits..... | 30 |
| Gambar 3. 25 Power Motor Circuits..... | 31 |
| Gambar 4. 1 Grafik Perubahan Suhu Terhadap Waktu | 33 |
| Gambar 4. 2 Diagram Ladder Input Screw Feeder..... | 35 |
| Gambar 4. 3 Hasil Pengukuran Elevated Screw | 37 |
| Gambar 4. 4 Grafik Perubahan Output DAC Terhadap Frekuensi Pada Elevated Screw | 38 |
| Gambar 4. 5 Grafik Perubahan Frekuensi Terhadap RPM..... | 39 |
| Gambar 4. 6 Diagram Ladder Input Elevated Screw..... | 40 |

| | |
|--|-----------|
| Gambar 4. 7 Hasil Pengukuran Screw Out | 41 |
| Gambar 4. 8 Grafik Perubahan Output DAC Terhadap Frekuensi..... | 42 |
| Gambar 4. 9 Grafik Perubahan Frekuensi Terhadap RPM Screw Out..... | 43 |
| Gambar 4. 10 Diagram Ladder Input Screw Out..... | 44 |
| Gambar 4. 11 Aliran Oil Heater | 45 |
| Gambar 4. 12 Pompa NaOH | 45 |
| Gambar 4. 13 Tampilan Menu HMI | 46 |
| Gambar 4. 14 Tampilan ON Pada Menu HMI | 47 |
| Gambar 4. 15 Gambar a) Data Logger Temperature b) Data Logger RPM | 48 |
| Gambar 4. 16 Pulp TKKS Pengujian Pertama | 48 |
| Gambar 4. 17 Pulp TKKS Pengujian Kedua | 49 |
| Gambar 4. 18 Pulp TKKS Pengujian Ketiga | 50 |
| Gambar 4. 19 a) Hasil Proses Sistem Kontinu b) Hasil Proses Sistem Batch..... | 50 |