RENAULT

# ENERGY EFFICIENCY

**ECONOMIZER CONTROL SYSTEM**
**CLIENT**

| | |
|---|---|
| ID | 23006 |
| DATE | 20.02.2023 |
| TOTAL PAGE | 12 |
| EKONOMİZER CLIENT | |

| | | | |
|---|---|---|---|
| Escon Energy | Zake Enginnering | Renault Oyak | See Elektrical V8.2 |

# Bill of Materials, Terminals and Cables

| Tag | Type (Cat. No.) | Series | Description | Product | Price | Lin. Weight | Outer Diam. | Voltage | Current | Supplier |
|---|---|---|---|---|---|---|---|---|---|---|
| ZVTM | | ZVTM-51 | I/O MODUL | ZAKE | 1 | | | | | |
| F1 | | A9F74406 | iC60N - minyatür devre kesici - 4P - 6A - C eğrisi | SCHNEIDER | 1 | | | | | |
| F2 | | A9F74202 | C2A-2P | SCHNEIDER | 1 | | | | | |
| F3 | | A9F74202 | C2A-2P | SCHNEIDER | 1 | | | | | |
| F5 | | 2CSM204753R1801 | E 93/32 | ABB | 1 | | | | | |
| F4 | | DF81 | Fuse carrier TeSys DF, 1P 25A, fuse size 8.5x31.5 mm | SCHNEIDER | 1 | | | | | |
| F100 | | A9F74202 | C2A-2P | SCHNEIDER | 1 | | | | | |
| F1-B | | A9A26476 | ACTIRMA BOBIN | SCHNEIDER | 1 | | | | | |
| V1 | | 9KV-AA120-0250 | ANALOG VOLTMETRE | SCHNEIDER | 1 | | | | | |
| V2 | | 9KV-AA120-0250 | ANALOG VOLTMETRE | SCHNEIDER | 1 | | | | | |
| V3 | | 9KV-AA120-0250 | ANALOG VOLTMETRE | SCHNEIDER | 1 | | | | | |
| S2 | | XB4BS8442 | T.MEKANİK PLS ACİL STOP KIRMIZI | SCHNEIDER | 1 | | | | | |
| S3 | | L5K13MIP311 | KAPAK SWITCH-ACISAL HAREKETLİ 14 MM. PLS. MAKARALI KOL | EMAS | 1 | | | | | |
| R1 | | WMU1122770000 | 24VOLT SLIM ROLE 6A | WEIDMULLER | 1 | | | | | |
| R2 | | WMU1122770000 | 24VOLT SLIM ROLE 6A | WEIDMULLER | 1 | | | | | |
| S1 | | VCF0 | LOTO ANAHTAR | SCHNEIDER | 1 | | | | | |
| BARA | | GW-4X7 | 4 KUTUP DAGITIM BARASI 220VOLT | GWEST | 2 | | | | | |
| LAMP | | ACK AN10 | Ack 7,5W 6500K Beyaz Merkür LED Bant Armatür AN10-00730 | ACK | 1 | | | | | |
| PANO | | HM 70 50 30 | D MONOBLOK | EAE | 1 | | | | | |
| PS | | S8VK-C06024 | OMRON 2.5 A GÜÇ KAYNAGI | OMRON | 1 | | | | | |
| M1 | | GV2P05 | TeSys GV2-Devre kesici-termal manyetik - 0,63...1 A - vida kelepçesi terminalleri | SCHNEIDER | 1 | | | | | |
| Q1 | | LC1D09M7 | TeSys D kontaktör - 3P(3 NA) - AC-3 - <= 440 V 9 A - 220 V AC bobin | SCHNEIDER | 1 | | | | | |
| KONTAK | | GVAE11 | TeSys GV2 ve GV3 - yardımcı kontak - 1 NA + 1 NK | SCHNEIDER | 1 | | | | | |
| | | DF2BN0200 | KARTUS SIGORTA 2A 8X31 | SCHNEIDER | 1 | | | | | |
| | | | | | | | | | | |
| | | DF2BN0200 | KARTUS SIGORTA 2A 8X31 | SCHNEIDER | 1 | | | | | |

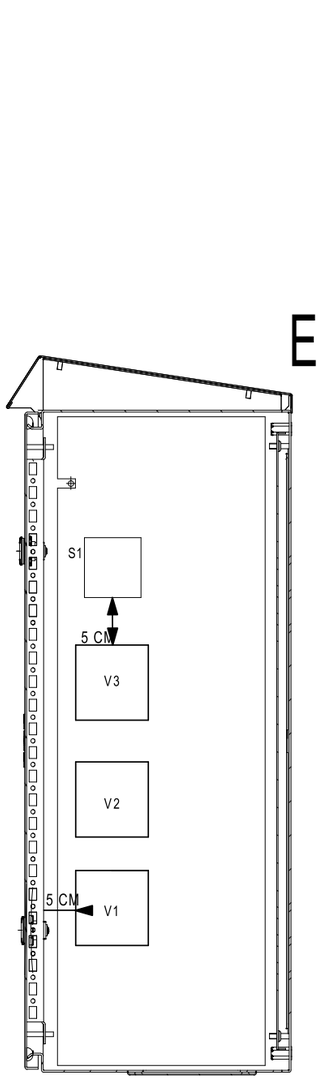
| | Modifications Since Previous Revision |
|---|---|
| Modification #1 | |
| Modification #2 | |
| Modification #3 | |

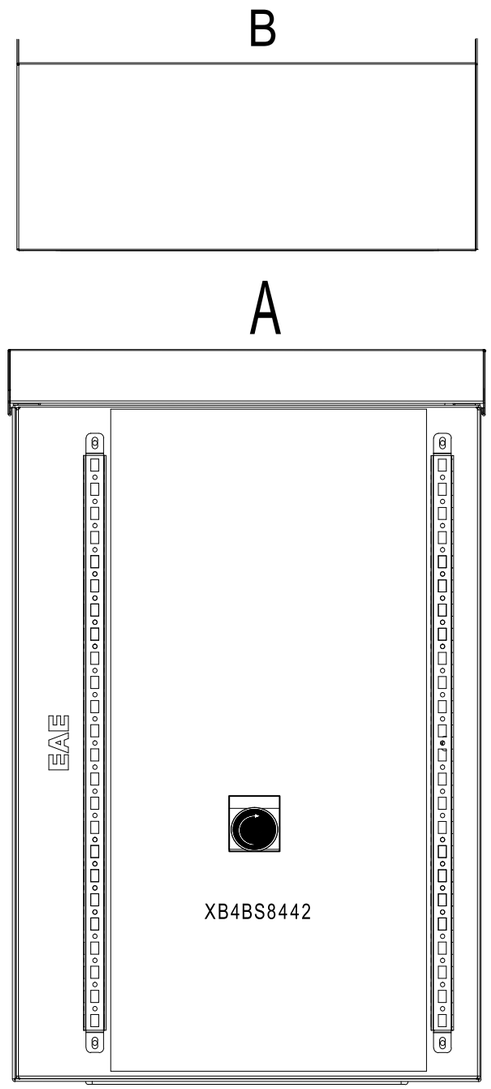
Ekonomizer

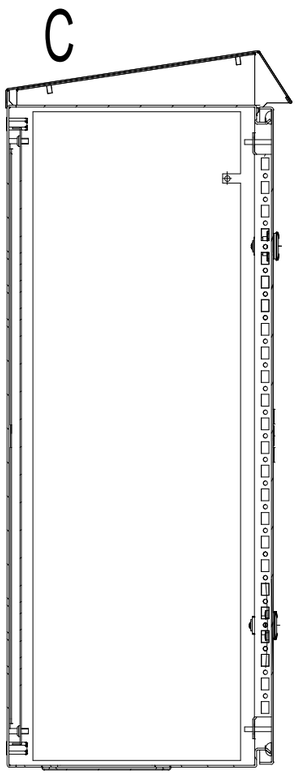
A LIST OF MATERIALS 2

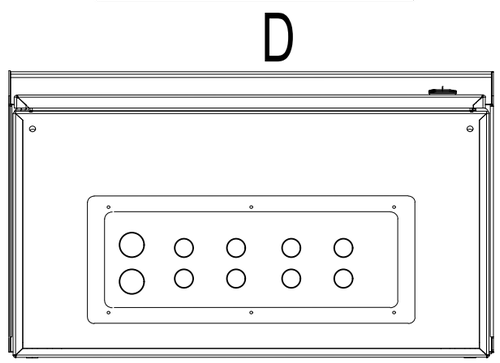
| Document Number: | Sheet: 1 of 13 | Rev. Date: | Rev.: |
|---|---|---|---|
| | | Cre. Date: 12.03.2023 | |
| | | Sheet Created by: | |

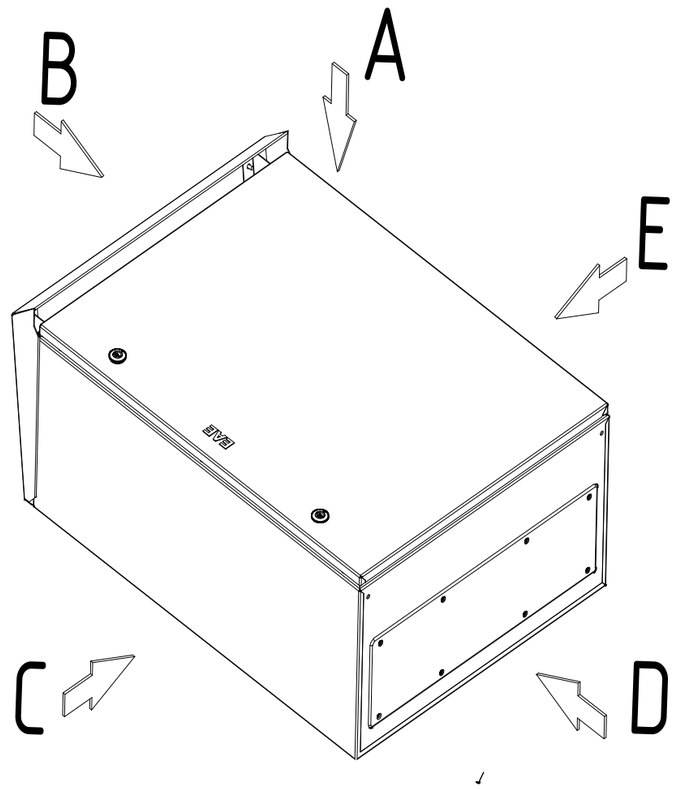
For Technical Support Please Call 1-866-SEE-INFO



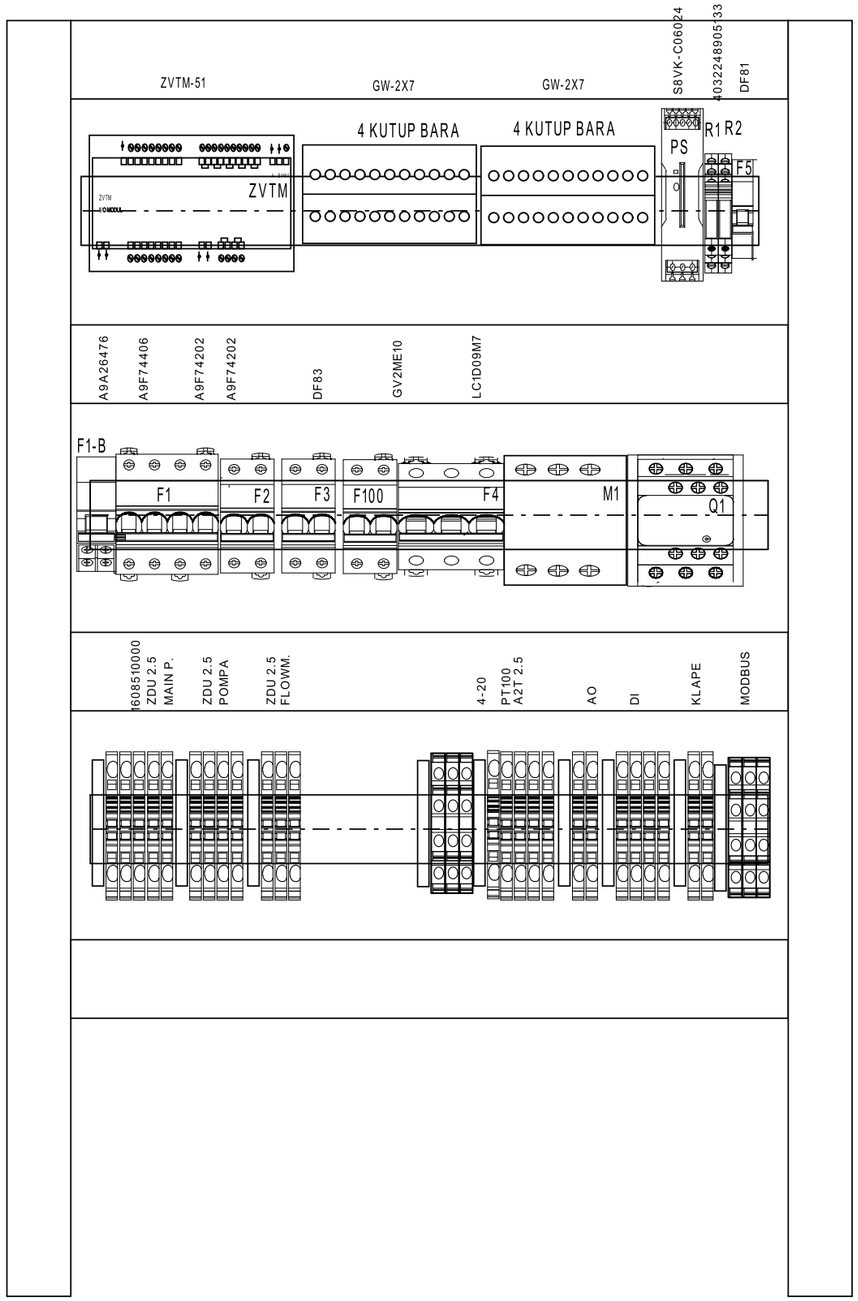




| | | | | | | |
|---|---|---|---|---|---|---|
| zake | | DESIGN-1 | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 2 |
| | | | Tarih: 12.03.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 | Sonraki Sayfa: 3 |

# HM 70 50 30




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| zake | | DESIGN-2 | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | | Sayfa: 3 |
| | | | Tarih: 16.03.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 | Sonraki Sayfa: 4 |

# List of Documents

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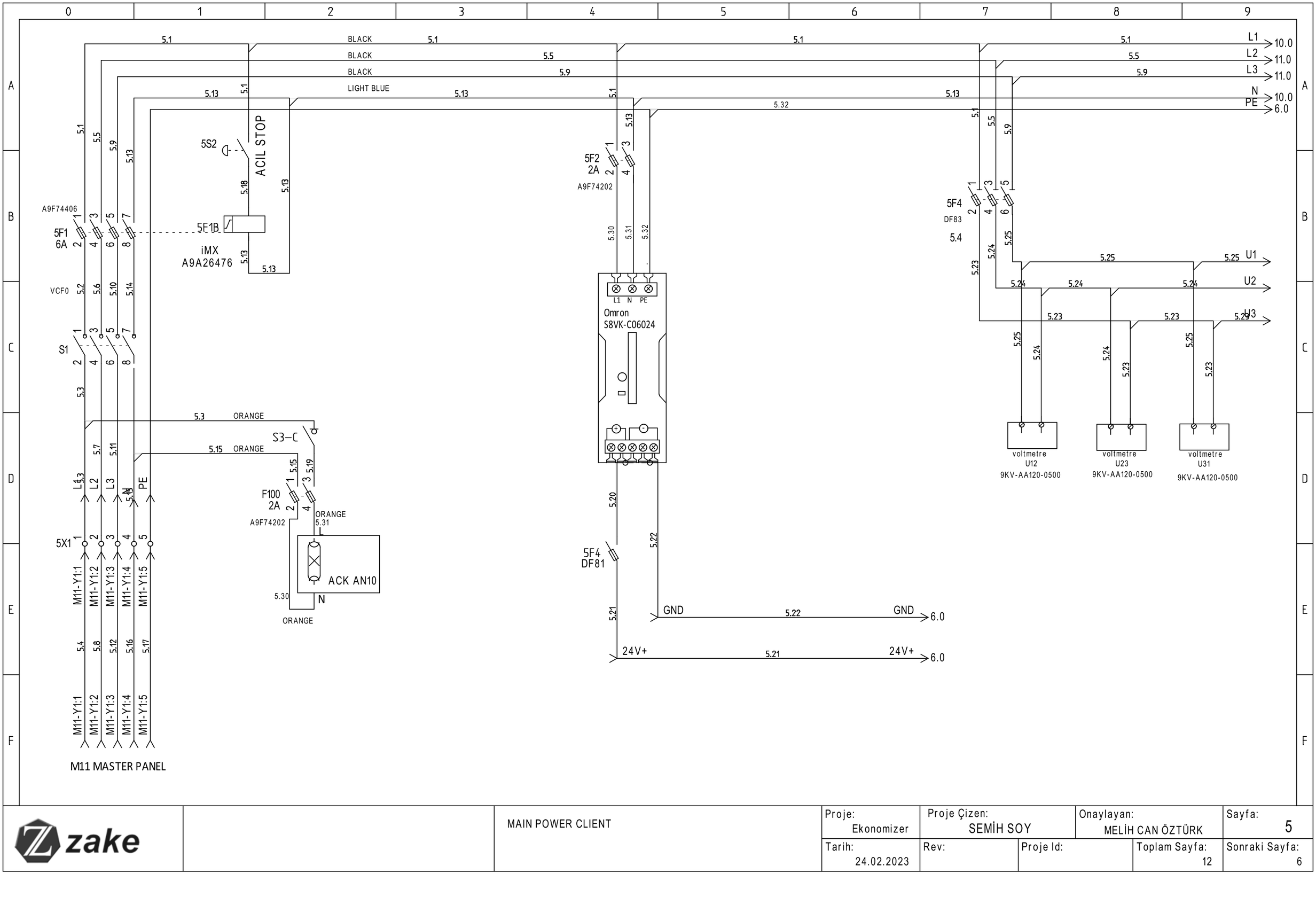
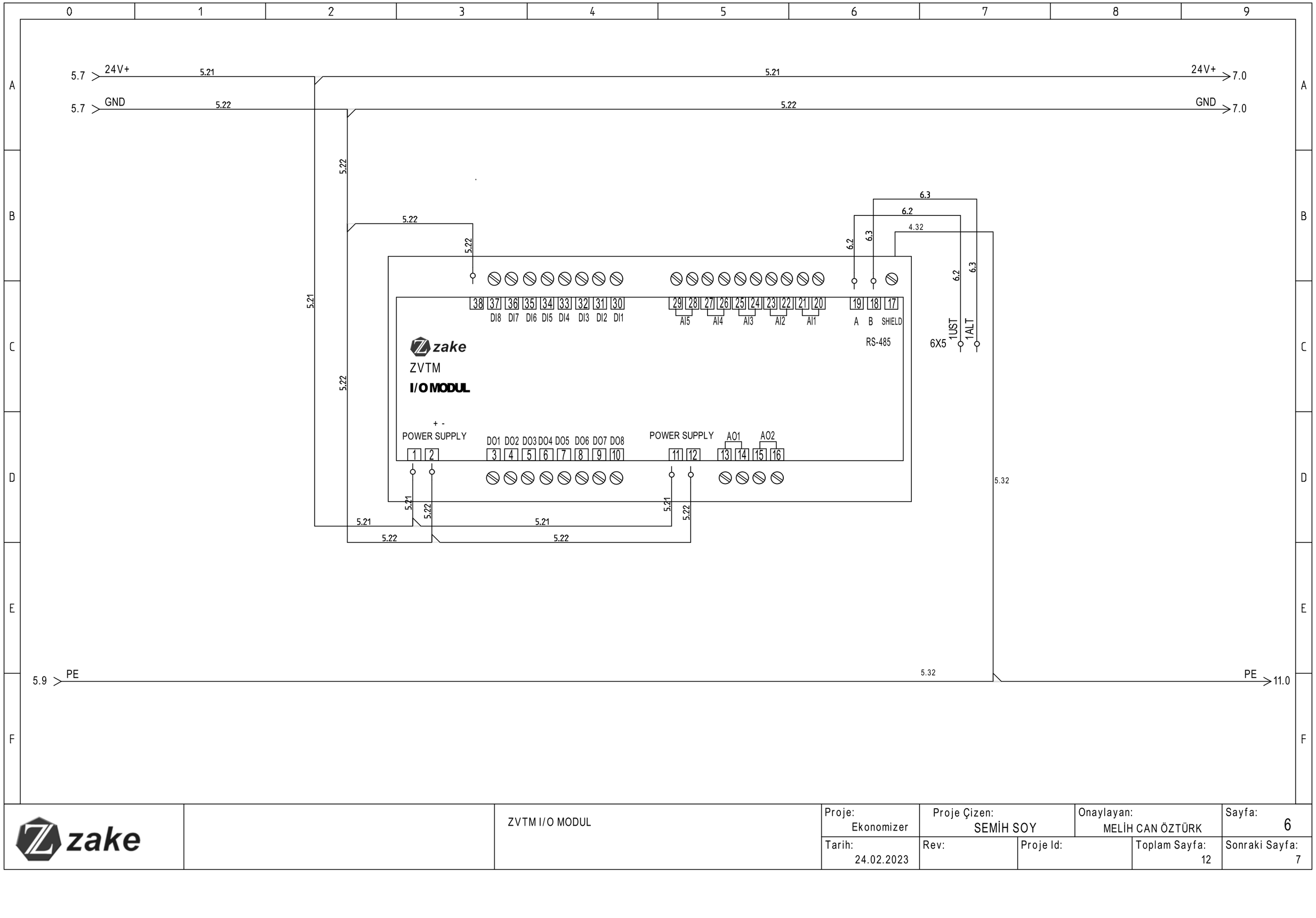
|---|---|---|---|
| 1 | Table of Contents | | 16.03.2023 |
| 1 | Project cover sheet | | |
| 1 | Circuit diagrams (EN/IEC) | A LIST OF MATERIALS 2 | |
| 2 | Circuit diagrams (EN/IEC) | DESIGN-1 | |
| 3 | Circuit diagrams (EN/IEC) | DESIGN-2 | |
| 4 | Circuit diagrams (EN/IEC) | LIST OF DOCUMENTS1 | |
| 5 | Circuit diagrams (EN/IEC) | MAIN POWER CLIENT | |
| 6 | Circuit diagrams (EN/IEC) | ZVTM I/O MODUL | |
| 7 | Circuit diagrams (EN/IEC) | ANALOG | |
| 8 | Circuit diagrams (EN/IEC) | DIGITAL INPUT | |
| 9 | Circuit diagrams (EN/IEC) | DIGITAL OUTPUT | |
| 10 | Circuit diagrams (EN/IEC) | AC DC KONTROL | |
| 11 | Circuit diagrams (EN/IEC) | AC KONTROL | |
| 12 | Circuit diagrams (EN/IEC) | TERMINAL | |

| Sheet | Kind of Document | Description | Revision date |
|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| | | LIST OF DOCUMENTS1 | Project: Ekonomizer | Drawing no.: | Rev.: | Init.: |
| | | | Date: 12.03.2023 | | | Page: 4 |




| | | | | | | |
|---|---|---|---|---|---|---|
| zake | | MAIN POWER CLIENT | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 5 |
| | | | Tarih: 24.02.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 / Sonraki Sayfa: 6 |

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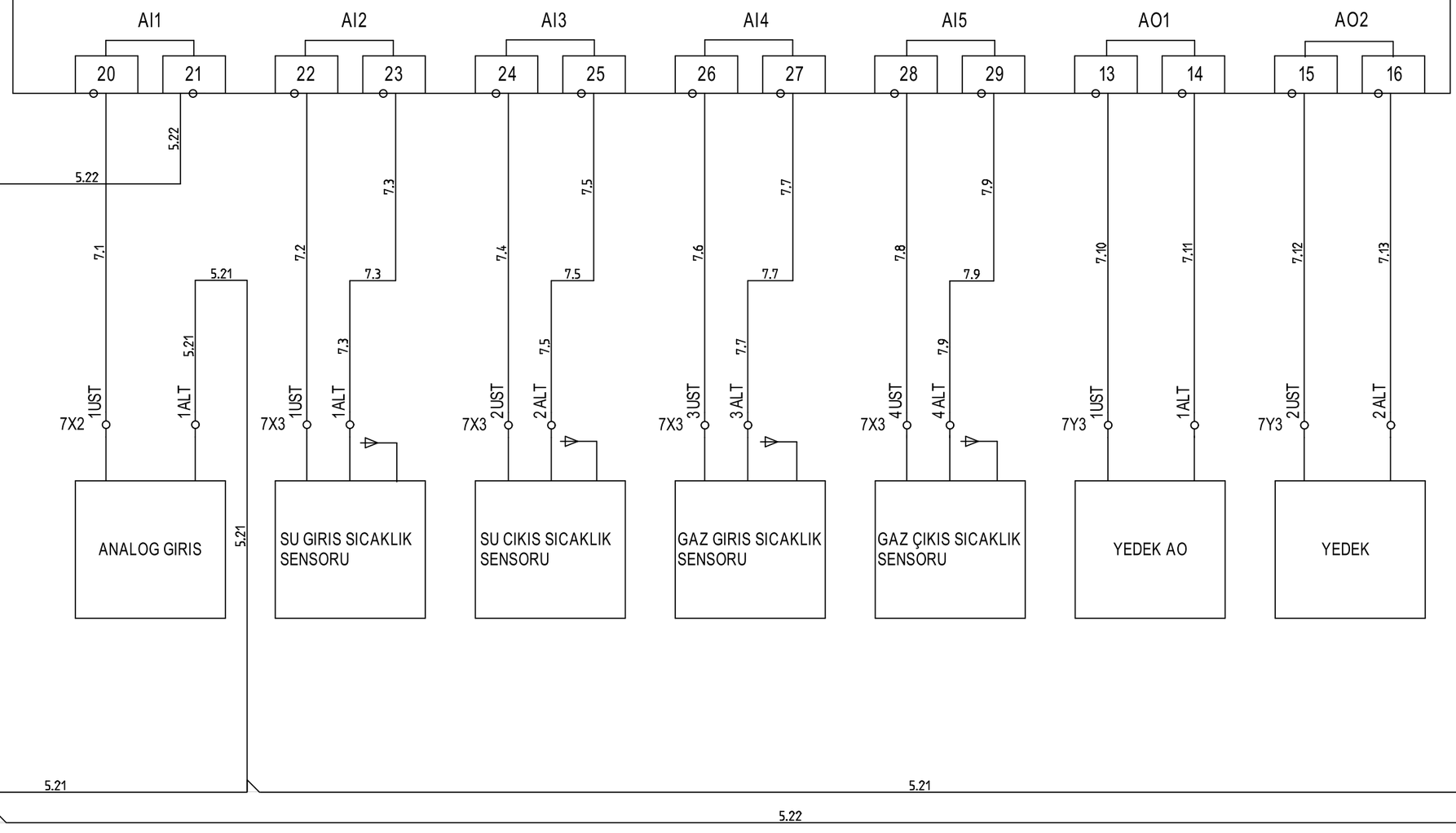
|---|---|---|---|---|---|---|
| zake | | ZVTM I/O MODUL | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 6 |
| | | | Tarih: 24.02.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 / Sonraki Sayfa: 7 |

zake

ZVTM

**I/O MODUL**




| | | | | | | |
|---|---|---|---|---|---|---|
| zake | | ANALOG | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 7 |
| | | | Tarih: 24.02.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 | Sonraki Sayfa: 8 |

| FLOW PULSE | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI1 |
| Anschl. | DI1 |

| REMOTE START | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI2 |
| Anschl. | DI2 |

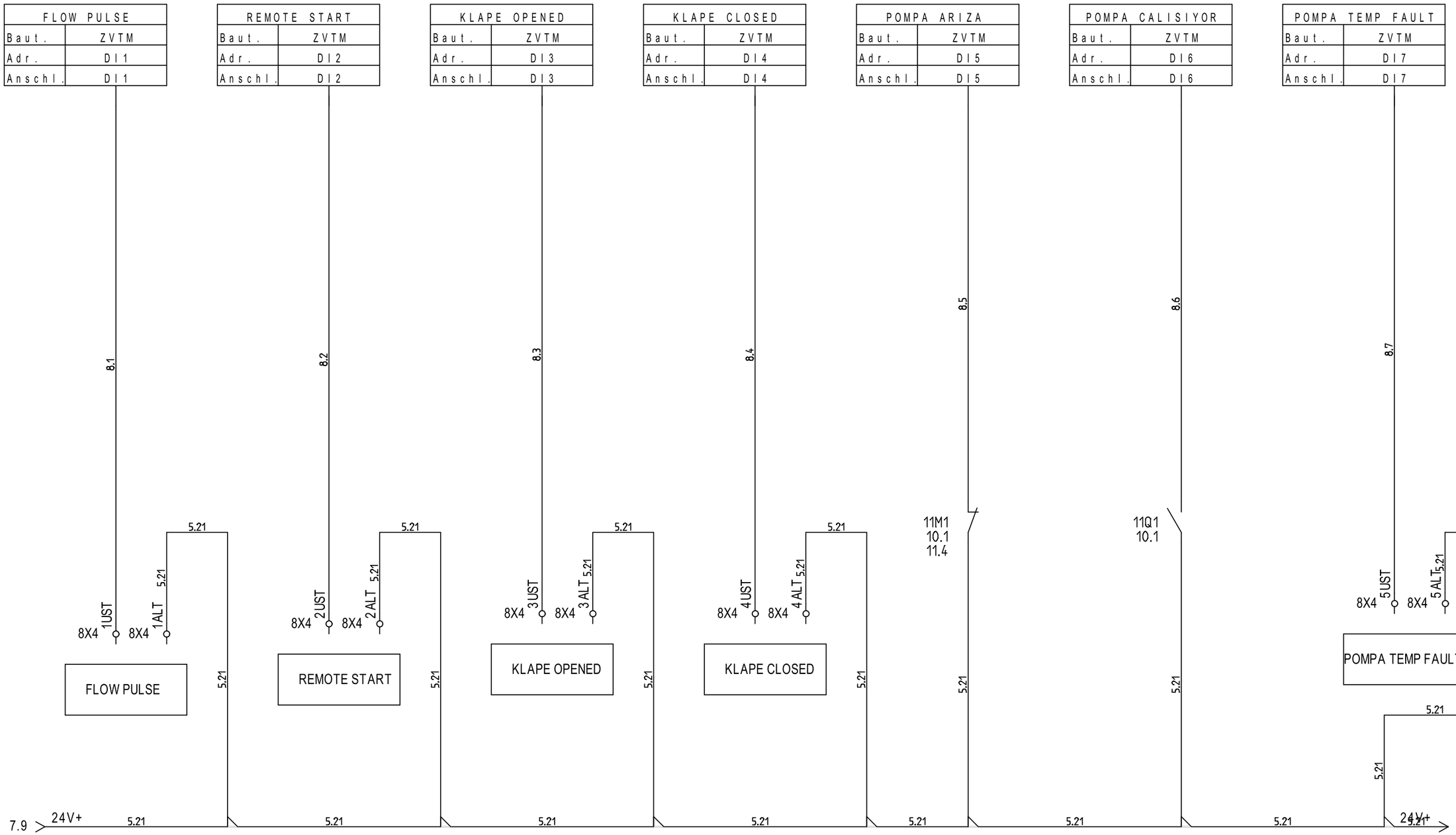
| KLAPE OPENED | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI3 |
| Anschl. | DI3 |

| KLAPE CLOSED | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI4 |
| Anschl. | DI4 |

| POMPA ARIZA | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI5 |
| Anschl. | DI5 |

| POMPA CALISIYOR | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI6 |
| Anschl. | DI6 |

| POMPA TEMP FAULT | |
|---|---|
| Baut. | ZVTM |
| Adr. | DI7 |
| Anschl. | DI7 |




| | | | | | | |
|---|---|---|---|---|---|---|
| zake | | DIGITAL INPUT | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 8 |
| | | | Tarih: 14.03.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 / Sonraki Sayfa: 9 |

| POMPA RUN | |
|---|---|
| Baut. | ZVTM |
| Adr. | D08 |
| Anschl. | DO8 |

| KLAPE RUN | |
|---|---|
| Baut. | ZVTM |
| Adr. | D07 |
| Anschl. | DO7 |

9.1

9.2

9R1

9R2

POMPA_RUN

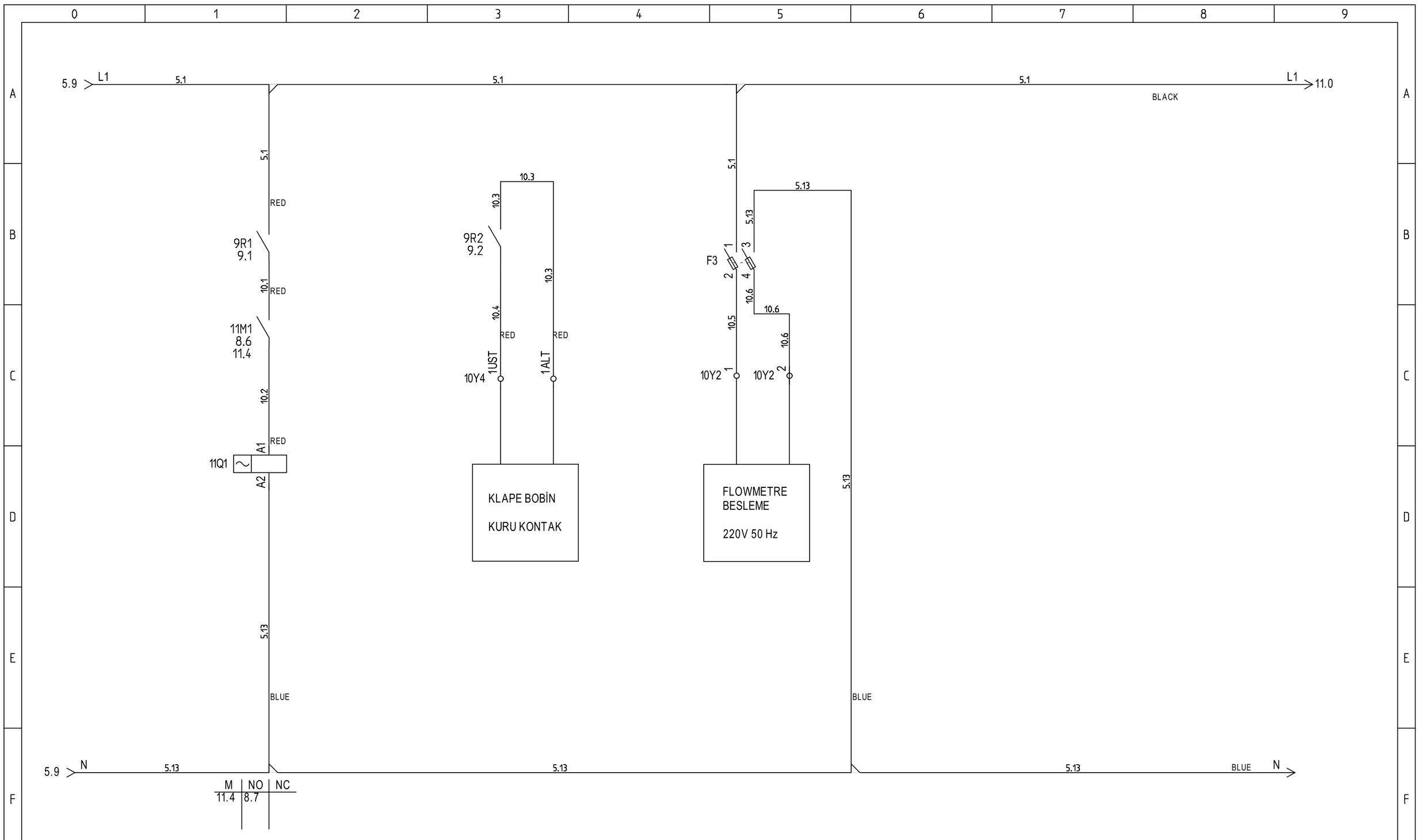
KLAPE

5.22

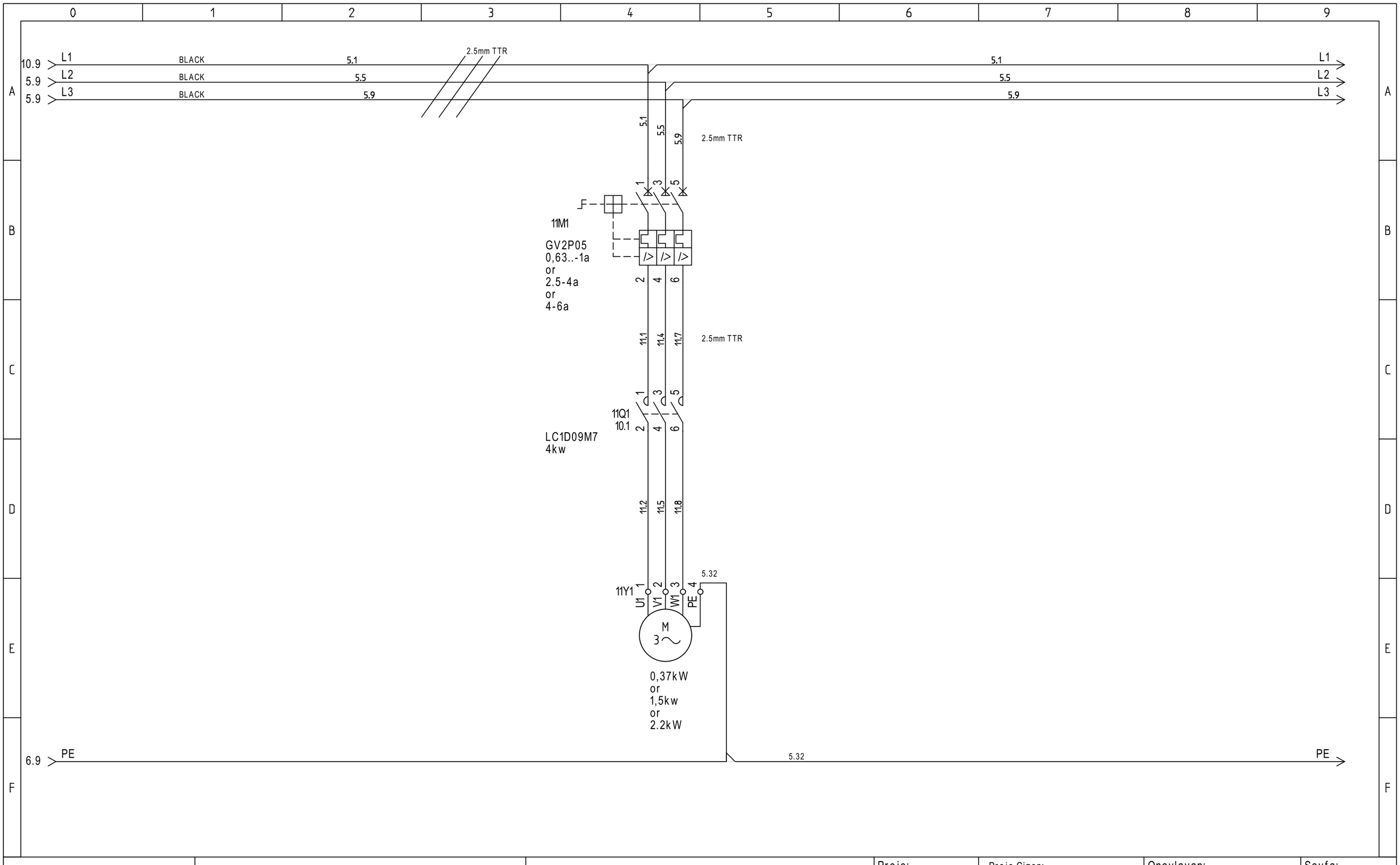
5.22

7.9 GND 5.22 5.22 5.22 GND

| | | | | | | |
|---|---|---|---|---|---|---|
| zake | | DIGITAL OUTPUT | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 9 |
| | | | Tarih: 14.03.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 | Sonraki Sayfa: 10 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| zake | | AC DC KONTROL | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 10 |
| | | | Tarih: 24.02.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 | Sonraki Sayfa: 11 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| zake | | AC KONTROL | Proje: Ekonomizer | Proje Çizen: SEMİH SOY | | Onaylayan: MELİH CAN ÖZTÜRK | Sayfa: 11 |
| | | | Tarih: 24.02.2023 | Rev: | Proje Id: | Toplam Sayfa: 12 | Sonraki Sayfa: 12 |

## 5X1

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 | ○ | 5 | 0 | 5.3 | 5.3 | S1:2 |
| | ○ | | | 5.3 | 5.3 | S3-C |
| 2 | ○ | 5 | 0 | 5.7 | 5.7 | S1:2 |
| 3 | ○ | 5 | 0 | 5.11 | 5.11 | S1:2 |
| 4 | ○ | 5 | 1 | 5.15 | 5.15 | F100:1 |
| 5 | ○ | 5 | 1 | | | |

## 7X2

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 UST | ○ | 7 | 1 | 7.1 | 7.1 | ZVTM-AI1: |
| 1 ALT | ○ | 7 | 2 | 5.21 | 5.21 | F8 |
| | ○ | | | 5.21 | 5.21 | X4:1 ALT |

## 7X3

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 UST | ○ | 7 | 2 | 7.2 | 7.2 | ZVTM AI2 + |
| 1 ALT | ○ | 7 | 3 | 7.3 | 7.3 | ZVTM AI2 - |
| 2 UST | ○ | 7 | 3 | 7.4 | 7.4 | ZVTM AI3 + |
| 2 ALT | ○ | 7 | 4 | 7.5 | 7.5 | ZVTM AI3 - |
| 3 UST | ○ | 7 | 4 | 7.6 | 7.6 | ZVTM AI4 + |
| 3 ALT | ○ | 7 | 5 | 7.7 | 7.7 | ZVTM AI4 - |
| 4 UST | ○ | 7 | 5 | 7.8 | 7.8 | ZVTM AI5 + |
| 4 ALT | ○ | 7 | 6 | 7.9 | 7.9 | ZVTM AI5 - |

## 6X5

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 UST | ○ | 6 | 7 | 6.2 | 6.2 | ZVTM DATA + |
| 1 ALT | ○ | 6 | 7 | 6.3 | 6.3 | ZVTM DATA - |

## 11Y1

| | No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|---|
| SIRKULASYON POMPASI : U1 | 1 | ○ | 11 | 4 | 11.3 | 11.3 | 11.2 | 11.2 | Q1:2 |
| SIRKULASYON POMPASI : U1 | 2 | ○ | 11 | 4 | 11.6 | 11.6 | 11.5 | 11.5 | Q1:2 |
| SIRKULASYON POMPASI : U1 | 3 | ○ | 11 | 4 | 11.9 | 11.9 | 11.8 | 11.8 | Q1:2 |
| SIRKULASYON POMPASI : U1 | 4 | ○ | 11 | 4 | 11.10 | 11.10 | | | |

## 10Y2

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 | ○ | 10 | 5 | 10.5 | 10.5 | F3:2 |
| 2 | ○ | 10 | 5 | 10.6 | 10.6 | F3:2 |

## 7Y3

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 UST | ○ | 7 | 6 | 7.10 | 7.10 | ZVTM AO1 + |
| 1 ALT | ○ | 7 | 7 | 7.11 | 7.11 | ZVTM AO1 - |
| 2 UST | ○ | 7 | 7 | 7.12 | 7.12 | ZVTM AO2 + |
| 2 ALT | ○ | 7 | 8 | 7.13 | 7.13 | ZVTM AO2 - |

## 10Y4

| No. | Term. | Sheet | Line | | | |
|---|---|---|---|---|---|---|
| 1 UST | ○ | 10 | 3 | 10.4 | 10.4 | R2 |
| 1 ALT | ○ | 10 | 3 | 10.3 | 10.3 | R2 |