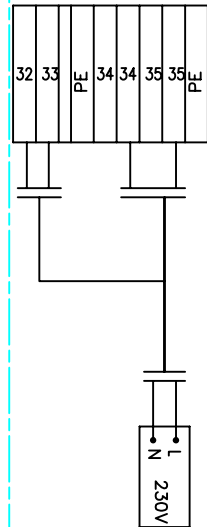
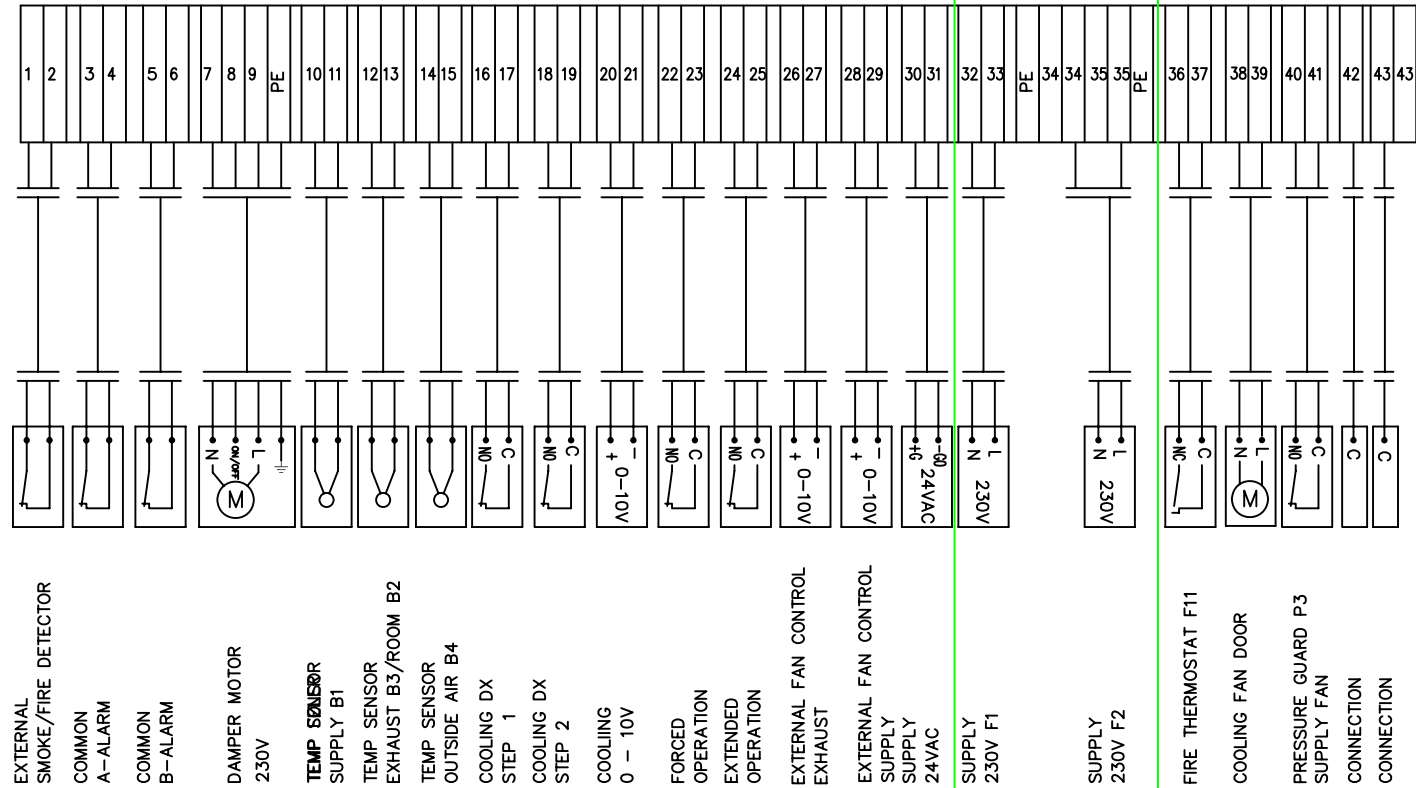


CONNECTION DAMPER



2 TEGNING ENDRET 2007-10-25/LA

1 TEGNING ENDRET 2005-08-23/LA

Changes Date/Sign.

| No. Unit                  | Pos. No. | Name, type, dim.  | Drawing no. Standard | Art. No. | Matr. Spec.  |
|---------------------------|----------|-------------------|----------------------|----------|--------------|
| Date                      | 10.02.04 | Drawn T. I. Engen | Projection           | Scale    |              |
| Checked                   |          | Appr.             |                      |          |              |
| CONNECTOR DIAGRAM CS 1000 |          |                   |                      |          | Replaces:    |
| ELECTRIC HEATER           |          |                   |                      |          | Replaced by: |
| ART.NO.:93510             |          |                   |                      |          | Side:        |



342075

# CONNECTIONS TERMINAL AND COMPONENTS

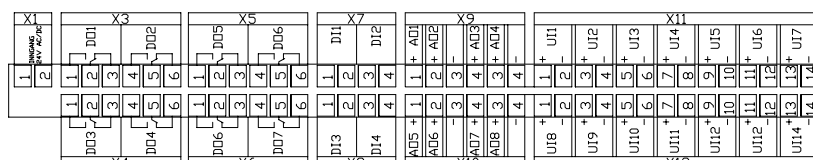
| CS1000 Function IO      |                                                                                    | IO type                      | Connection CS1000 | Connection components                   |
|-------------------------|------------------------------------------------------------------------------------|------------------------------|-------------------|-----------------------------------------|
| <b>Relay outputs</b>    |                                                                                    |                              |                   |                                         |
| DO1                     | Pump (water battery)/<br>Heat stage2 (electric battery)                            | Digital                      | X3 (Pin 1,2)      | X:35, X:40<br>X:41, K2-A1               |
| DO2                     | Heat stage3 (electric battery)                                                     | Digital                      | X3 (Pin 4,5)      |                                         |
| DO3                     | Fan start/stop-internal                                                            | Digital                      | X4 (Pin 1,2)      | X:43, G0 *                              |
| DO4                     | Outdoor air damper                                                                 | Digital                      | X4 (Pin 4,5)      | X:8, X:35                               |
| DO5                     | Cooling dx stage1                                                                  | Digital                      | X5 (Pin 1,2)      | X:16, X:17                              |
| DO6                     | Cooling dx stage2                                                                  | Digital                      | X5 (Pin 4,5)      | X:18, X:19                              |
| DO7                     | Alarm output priority A                                                            | Digital                      | X6 (Pin 1,2)      | X:3, X:4                                |
| DO8                     | Alarm output priority B                                                            | Digital                      | X6 (Pin 4,5)      | X:5, X:6                                |
| <b>Analog outputs</b>   |                                                                                    |                              |                   |                                         |
| AO1                     | Cooling                                                                            | Analog (0 - 10V)             | X9 (Pin 1,3)      | X:20, G0                                |
| AO2                     | Heating FULL Range water battery                                                   | Analog (0 - 10V)             | X9 (Pin 2,3)      | X:36, G0                                |
| AO3                     | Pulse width Modulating 0 or 10V (ON/OFF)                                           | Analog (0/10VDC)             | X9 (Pin 4,6)      | X:SSR1-2 A1, G0                         |
| AO4                     | Rotor (Heat/Cool Recovery) or<br>Damper                                            | Analog (0 - 10 V)            | X9 (Pin 5,6)      | SP1500(X:33), G0<br>Damper led.3, G0    |
| AO5                     | Supply air fan. Freq. Conv.                                                        | Analog (0 - 10 V)            | X10 (Pin 1,3)     | FanSup X:4, G0 **                       |
| AO6                     | Extract air fan Freq. Conv.                                                        | Analog (0 - 10 V)            | X10 (Pin 2,3)     | FanExt X:4, G0 **                       |
| AO7                     | Air volume indication extract air                                                  | Analog (0 - 10 V)            | X10 (Pin 4,6)     |                                         |
| AO8                     | Air volume indication supply air                                                   | Analog (0 - 10 V)            | X10 (Pin 5,6)     |                                         |
| <b>Binary inputs</b>    |                                                                                    |                              |                   |                                         |
| DI1                     | Plate heat exchanger: Overheating<br>thermostat With rotor: Rotor alarm            | Digital                      | X7 (Pin 1,2)      | Thermostat F20<br>SP1500X:42,SP1500X:43 |
| DI2                     | Alarm external fire/smoke                                                          | Digital                      | X7 (Pin 3,4)      | X:1, X:2                                |
| DI3                     | Alarm fan supply/extract                                                           | Digital                      | X8 (Pin1,2)       | FanExt X:NO, FanSup<br>X:NO***          |
| DI4                     | External start/stop                                                                | Digital                      | X8 (Pin 3,4)      |                                         |
| <b>Universal inputs</b> |                                                                                    |                              |                   |                                         |
| UI1                     | Extract/room temperature                                                           | Passive (Ni 1000)            | X11 (Pin 1,2)     | X:12, X:13                              |
| UI2                     | Supply air temperature                                                             | Passive (Ni 1000)            | X11 (Pin 3,4)     | X:10, X:11                              |
| UI3                     | Outside temperature                                                                | Passive (Ni 1000)            | X11 (Pin 5,6)     | X14, X:15                               |
| UI4                     | External sensor extract (pressure or CO2)                                          | Analog (0 - 10 V)            | X11 (Pin 7,8)     | X:26, G0                                |
| UI5                     | External sensor supply (pressure or CO2)                                           | Analog (0 - 10 V)            | X11 (Pin 9,10)    | X:28, G0                                |
| UI6                     | With Plate heat exchanger: Frost/ice sensor<br>With rotor: This is Elec heater O/H | Analog                       | X11(Pin11,12)     | Thermoguard<br>Thermostat F20           |
| UI7                     | Spare                                                                              |                              | X11(Pin13,14)     |                                         |
| UI8                     | Filter guard supply air                                                            | Analog (0 - 10 V)            | X12 (Pin 1,2)     | Filterguard P1, G0                      |
| UI9                     | Filter guard extract air                                                           | Analog (0 - 10 V)            | X12 (Pin 3,4)     | Filterguard P2, G0                      |
| UI10                    | Input internal sensor extract                                                      | Analog (0 - 10 V)            | X12 (Pin 5,6)     | Sensor P11, G0                          |
| UI11                    | Input internal sensor supply                                                       | Analog (0 - 10 V)            | X12 (Pin 7,8)     | Sensor P12, G0                          |
| UI12                    | Forced operation (press button)                                                    | Digital                      | X12 (Pin 9,10)    | X:22, X:23                              |
| UI13                    | Extended operation (press button)                                                  | Digital                      | X12(Pin11,12)     | X:24, X:25                              |
| UI14                    | Fire thermostat from electrical battery<br>Frost/ice sensor at water battery       | Digital<br>Passive (Ni 1000) | X12(Pin13,14)     | Thermostat F10<br>Temperatur sensor B5  |

\* Not in use with external converter ( L50)

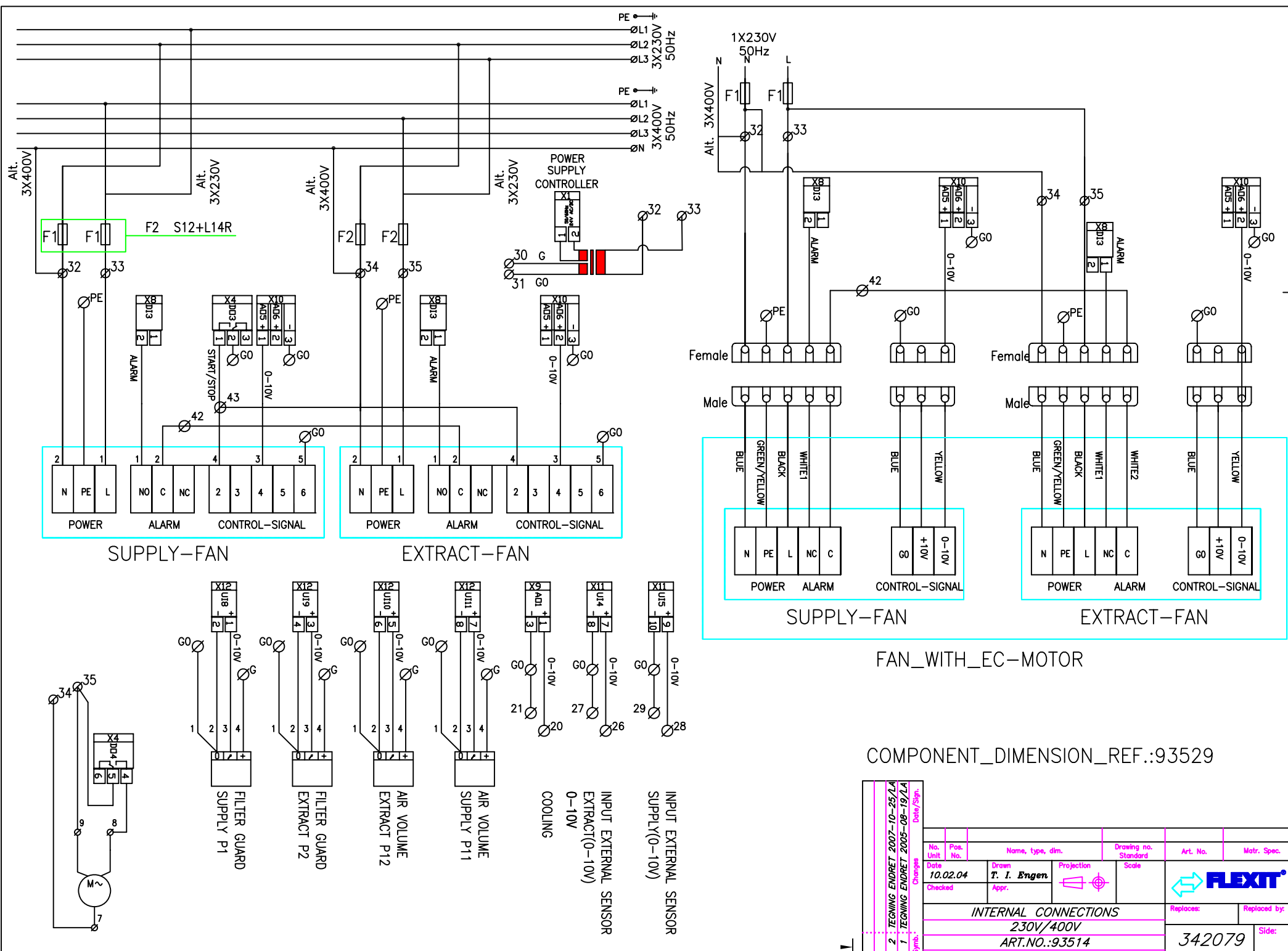
\*\* With external converter (L50) : X:10(Pin1,3) Supply converter AI2, G0  
X:10(Pin2,3) Extract converter AI2, G0

\*\*\* With external converter (L50): X8(Pin1,2) Extract con. R1C, Supply con.R1C

|          |               |
|----------|---------------|
| Ark.nr:  | 1/6 - English |
| Teg.nr:  | 342077        |
| Art.nr:  | 93512         |
| Dato:    | 10.03.04      |
| Versjon: | 1.1           |



|                                                               |         |            |              |    |  |
|---------------------------------------------------------------|---------|------------|--------------|----|--|
| Farge kode interne ledninger<br>Colour code - Internal wiring |         |            |              |    |  |
| L1 1~ (N)                                                     | 230V    | Blå (lys)  | Blue (light) | BU |  |
| L2 1~                                                         | 230V    | Svart      | Black        | BK |  |
|                                                               |         |            |              |    |  |
| 24V AC (G)                                                    | Led 1 + | Rød        | Red          | RD |  |
| Zero (0-point) G0                                             | Led 2 - | Hvit       | White        | WH |  |
|                                                               |         |            |              |    |  |
| 24V DC                                                        | Led 1 + | Blå (mørk) | Blue (dark)  | BU |  |
| Zero (0-point) G0                                             | Led 2 - | Hvit       | White        | WH |  |
|                                                               |         |            |              |    |  |
| 0-10V DC                                                      |         | Grå        | Grey         | GY |  |
|                                                               |         |            |              |    |  |
| Pot.free signal                                               |         | Grå        | Grey         | GY |  |
|                                                               |         |            |              |    |  |
| G0 (0-point) from trafo 24V -                                 |         |            |              |    |  |



COMPONENT\_DIMENSION\_REF.:93529

|   |  |                              |  |                          |          |             |                  |                                                                                       |                      |                                                                                       |             |  |              |  |
|---|--|------------------------------|--|--------------------------|----------|-------------|------------------|---------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------|-------------|--|--------------|--|
| 2 |  | TEGNING ENDRET 2007-10-25/LA |  | Date/Sign.<br><br>Change |          |             |                  |                                                                                       |                      |                                                                                       |             |  |              |  |
| 1 |  | TEGNING ENDRET 2005-08-19/LA |  |                          | No. Unit | Pos. No.    | Name, type, dim. |                                                                                       | Drawing no. Standard | Art. No.                                                                              | Metr. Spec. |  |              |  |
|   |  |                              |  |                          | Date     | Drawn       |                  | Projection                                                                            | Scale                |  |             |  |              |  |
|   |  |                              |  |                          | 10.02.04 | T. I. Engen |                  |  |                      |                                                                                       |             |  |              |  |
|   |  |                              |  |                          | Checked  | Appr.       |                  |                                                                                       |                      |                                                                                       |             |  |              |  |
|   |  |                              |  | INTERNAL CONNECTIONS     |          |             |                  |                                                                                       |                      |                                                                                       | Replaces:   |  | Replaced by: |  |
|   |  |                              |  | 230V/400V                |          |             |                  |                                                                                       |                      |                                                                                       |             |  |              |  |
|   |  |                              |  | ART.NO.:93514            |          |             |                  |                                                                                       |                      |                                                                                       |             |  | Side:        |  |
|   |  |                              |  |                          |          |             |                  |                                                                                       |                      |                                                                                       | 342079      |  |              |  |

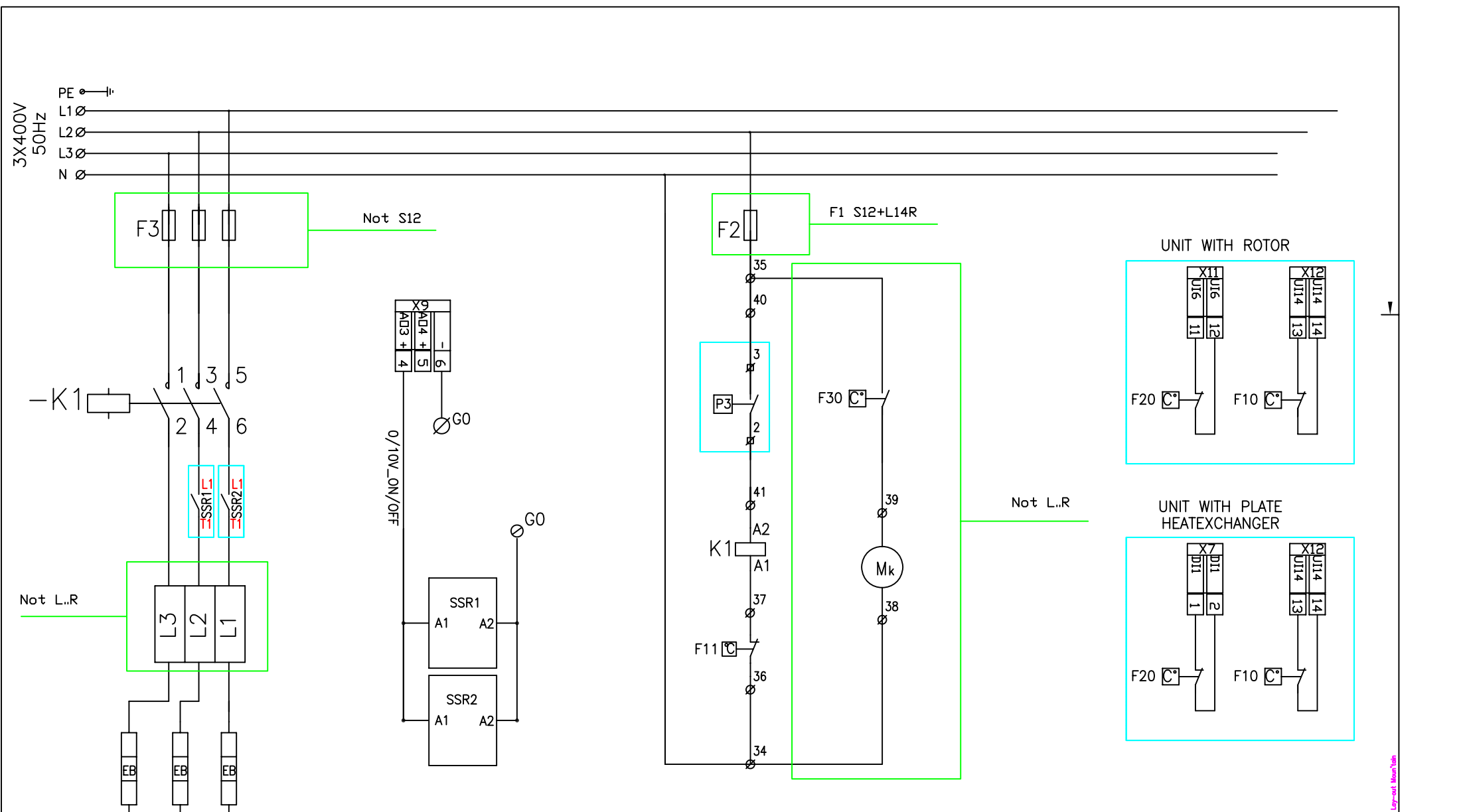
Top-out Mounting



# Elkomponentoversikt CS1000

93529/2008-01

| Type           | F1   | F2   | F3       | F4       | K1   | K2   | SSR | EB/stk     | Tot kW  |
|----------------|------|------|----------|----------|------|------|-----|------------|---------|
| L20 XE 230 V   | 2*16 | 2*16 | 3*50     |          | 3*45 |      | 50  | 2500W      | 15kW    |
| L20 XE 400 V   | 2*16 |      | 3*25     |          | 3*25 |      | 50  | 2500W      | 15kW    |
| L20 XW 230 V   | 2*10 | 2*10 |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| L30 XE 230 V   | 2*16 | 2*16 | 3*32     | 3*32     | 3*32 | 3*32 | 50  | 3333W      | 20kW    |
| L30 XE 400 V   | 2*16 |      | 3*32     |          | 3*25 | 3*25 | 50  | 3333W      | 20kW    |
| L30 XW 230 V   | 2*10 | 2*10 |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| S20/30 E 230 V | 2*16 | 2*16 | 3*50     |          | 3*45 |      | 50  | 2000/2500W | 12/15kW |
| S20/30 E 400 V | 2*16 |      | 3*25     |          | 3*45 |      | 50  | 2000/2500W | 12/15kW |
| S20/30 W 230 V | 2*16 | 2*16 |          |          |      |      |     |            |         |
| S20/30 W 400 V | 2*16 |      |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| L14 RE 230V    | 2*10 |      | 3*10     |          | 3*25 |      | 25  | 1200W      | 3,6kW   |
| L14 RE 400V    | 1*10 |      | 3*10     |          | 3*25 |      | 25  | 1200W      | 3,6kW   |
| L14 RE 230V    | 2*10 |      | 3*10     |          | 3*25 |      | 25  | 600W       | 1,8kW   |
| L14 RE 400V    | 1*10 |      | 3*10     |          | 3*25 |      | 25  | 600W       | 1,8kW   |
| L14 RW 230V    | 2*10 |      |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| L20 RE 230V    | 2*10 | 2*10 | 3*16     |          | 3*25 |      | 25  | 2000W      | 6kW     |
| L20 RE 400V    | 2*10 |      | 3*16     |          | 3*25 |      | 25  | 2000W      | 6kW     |
| L20 RE 230V    | 2*10 | 2*10 | 3*16     |          | 3*25 |      | 25  | 1000W      | 3kW     |
| L20 RE 400V    | 2*10 |      | 3*16     |          | 3*25 |      | 25  | 1000W      | 3kW     |
| L20 RW 230V    | 2*10 | 2*10 |          |          |      |      |     |            |         |
| L20 RW 400V    | 2*10 |      |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| L40/30 RE 230V | 2*16 | 2*16 | 3*32     |          | 3*45 |      | 75  | 2000W      | 12kW    |
| L40/30 RE 400V | 2*16 |      | 3*25     |          | 3*45 |      | 75  | 2000W      | 12kW    |
| L40/30 RE 230V | 2*16 | 2*16 | 3*25     |          | 3*45 |      | 75  | 2000W      | 6kW     |
| L40/30 RE 400V | 2*16 |      | 3*16     |          | 3*45 |      | 75  | 2000W      | 6kW     |
| L40/30 RW 230V | 2*16 | 2*16 |          |          |      |      |     |            |         |
| L40/30 RW 400V | 2*16 |      |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| L50XE 230V     | 3*32 | 2*10 | external | external | 3*45 | 3*45 | 50  | 2833W      | 34kW    |
| L50XE 400V     | 2*25 | 1*10 | external | external | 3*45 | 3*45 | 50  | 2833W      | 34kW    |
| L50XW 230V     | 3*32 | 2*10 |          |          |      |      |     |            |         |
| L50XW 400V     | 2*25 | 1*10 |          |          |      |      |     |            |         |
|                |      |      |          |          |      |      |     |            |         |
| L60RE 230V     | 3*16 | 3*16 | 3*50     |          | 3*45 |      | 75  | 2500W      | 15kW    |
| L60RE 400V     | 3*16 | 3*16 | 3*25     |          | 3*45 |      | 75  | 2500W      | 15kW    |
| L60RE 230V     | 3*16 | 3*16 | 3*25     |          | 3*45 |      | 75  | 2500W      | 7,5kW   |
| L60RE 400V     | 3*16 | 3*16 | 3*16     |          | 3*45 |      | 75  | 2500W      | 7,5kW   |
| L60RW 230V     | 3*16 | 3*16 |          |          |      |      |     |            |         |
| L60RW 400V     | 3*16 | 3*16 |          |          |      |      |     |            |         |



- F1: FUSE
- F2: FUSE
- F3: FUSE
- EB: ELEMENT
- P3: PRESSURE GUARD SUPPLY FAN
- K1: CONTACTOR
- F11: THERMOSTAT, OVERHEATING MAN. RESET
- F30: THERMOSTAT COOLING FAN
- Mk: COOLING FAN
- SSR: SOLID STATE RELAY

COMPONENT\_DIMENSION\_REF.:93529

1

TEGNIUM ENDET 2007-10-25/L4

Changes

Date/Sign.

|                                  |          |                  |             |          |              |
|----------------------------------|----------|------------------|-------------|----------|--------------|
| No.                              | Pos.     | Name, type, dim. | Drawing no. | Art. No. | Metr. Spec.  |
| Unit                             | No.      | Standard         | Scale       |          |              |
| Date                             | 10.02.04 | Drawn            | T. I. Engen |          |              |
| Checked                          |          | Appr.            |             |          |              |
| CONNECTIONS ELECTRIC HEATER 400V |          |                  | Replaces:   |          | Replaced by: |
| 1 STEP 3 ELEMENTS                |          |                  |             |          |              |
| ART.NR.:93531                    |          |                  | 342089      |          | Side:        |

Exp-out: Man/Man