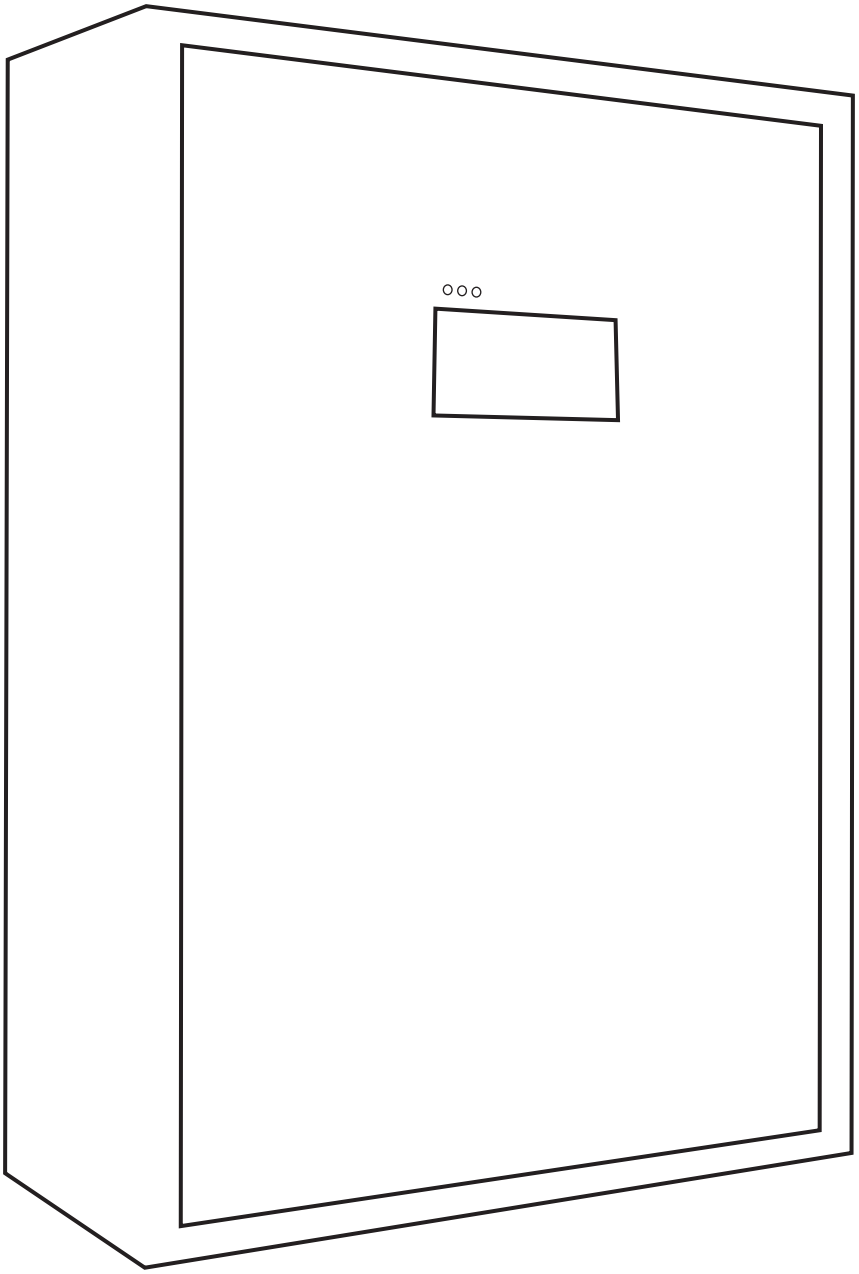
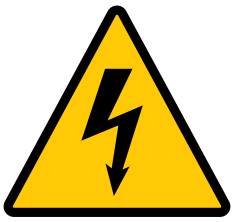
# TKT7Series

Addressable 230 V Central Battery Systems

# User's Guide



TEKNOWARE®



**The central battery unit and the battery housing can be opened only by a qualified electrician. Only a qualified electrician can do maintenance or installing tasks.**

**Setting only the input fuse to 0-position will NOT make the central battery unit de-energized.**

**Device must be made de-energized before any maintenance or repair work: set the input fuse and the battery fuses to 0-positions.**

**Green LED lit:** Mains present, central battery unit in mains mode (AC)

**Green LED blinking:** Mains present, central battery unit in battery mode (DC), for example during the battery test

**Yellow LED lit:** Central battery unit in battery mode (DC)

**Red LED lit:** Internal / external error

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# 1. Product Description

## 1.1 Manufacturer

Teknoware Oy
PL 19, FI-15101 Lahti
Ilmarisentie 8, FI-15200 Lahti

## 1.2 Type

TKT75...C

TKT76...C

TKT77...C

TKT78...C

## 1.3 General Description

TKT7 Series consists of addressable 230 V central battery units (=CBU) for emergency lighting. In a normal situation, the central battery unit operates using a 230 V AC mains voltage, maintaining the battery charge level and supplying a voltage of 230 VAC to the output circuits. If the mains voltage is interrupted, the central battery unit switches to battery use. This connects a voltage of 216 VDC to the emergency light circuits. The battery supply is used as long as the mains voltage remains unavailable or the battery voltage has dropped to the low discharge limit.

In addition to the above mentioned standard functions, the control unit of the central battery unit also includes the following monitoring, testing and reporting functions:

- Testing the luminaires automatically, monitoring their operation, and indicating faulty luminaires addresses'.
- Testing the batteries automatically.
- All tests can be activated also manually.
- A learning system; luminaires can be added and removed after commissioning.
- Status- and error warnings via relay connections to building management systems.
- A direct data connection to Teknoware's ACM systems.
- All functions available from the touch screen user interface.

## 1.4 Storage

If the CBU and batteries are not installed upon delivery, please note the following things:

- Store the unit in a dry place, protected from humidity.
- Store the unit and the batteries in the recommended storing temperature of +10...+30°C.
- If the batteries are stored for a longer period of time, they must be recharged every six months for at least 12 hours at a time.

**Note!**

The delivery may include lead acid batteries, that have charge, and that may short circuit due to improper storage! Take this into account when storing the CBU.

# 2. Planning the System

In Teknoware TKT7 Series system the monitoring data between the CBU and the luminaires is transferred via the circuit cables. There is no need for separate data cabling, and the supply cables can be drawn as any emergency lighting cabling would be. The following, however, must be taken into account:

- All luminaires must be addressable Teknoware 230 V luminaires. These luminaires contain the necessary electronics for the communication between the CBU and the luminaires.

Each of the luminaires within a circuit must have an individual address. (1..32). Addresses can be chosen freely, as long as there are no overlapping addresses within a circuit. The addresses are marked to the included label according to electrical planning (circuit nr. / luminaire nr.). Additional information about setting the address can be found from the documents delivered with the luminaires.

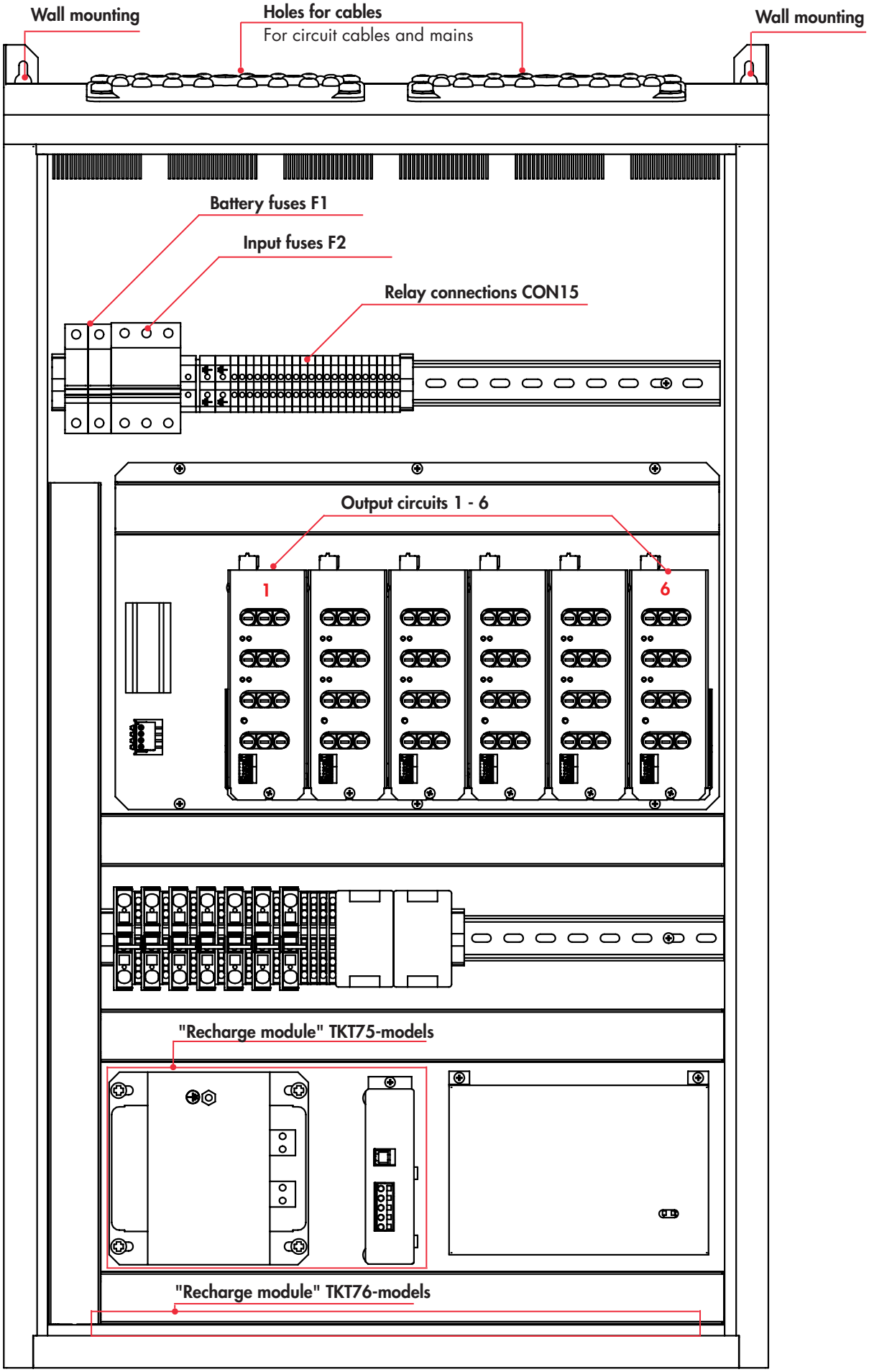
# 3. Installing the System

1. TKT75/76: attach the CBU firmly to a wall (there are four attachment points)
2. TKT77/TKT78: set the CBU to an even sturdy surface against a wall
3. Open the CBU door.
4. Make sure that the input fuse and the battery fuses are in 0 positions.
5. Connect the circuits and additional devices. Connections and interfaces are listed at the end of this Guide.
6. Place the temperature sensor between the batteries. Note that misplacing the temperature sensor may damage the batteries!
7. Connect the batteries in series (check the polarity and insulation distances). Start from the furthest battery (looking from the battery fuse), and connect the battery connected to the battery fuse last.
8. Connect the CBU to mains.
9. Turn the battery fuses to 1 position.
10. Turn the input fuse to 1 position
11. Check the batteries and connections for short circuits.
12. Close and lock the CBU door.
13. The CBU is ready for commissioning

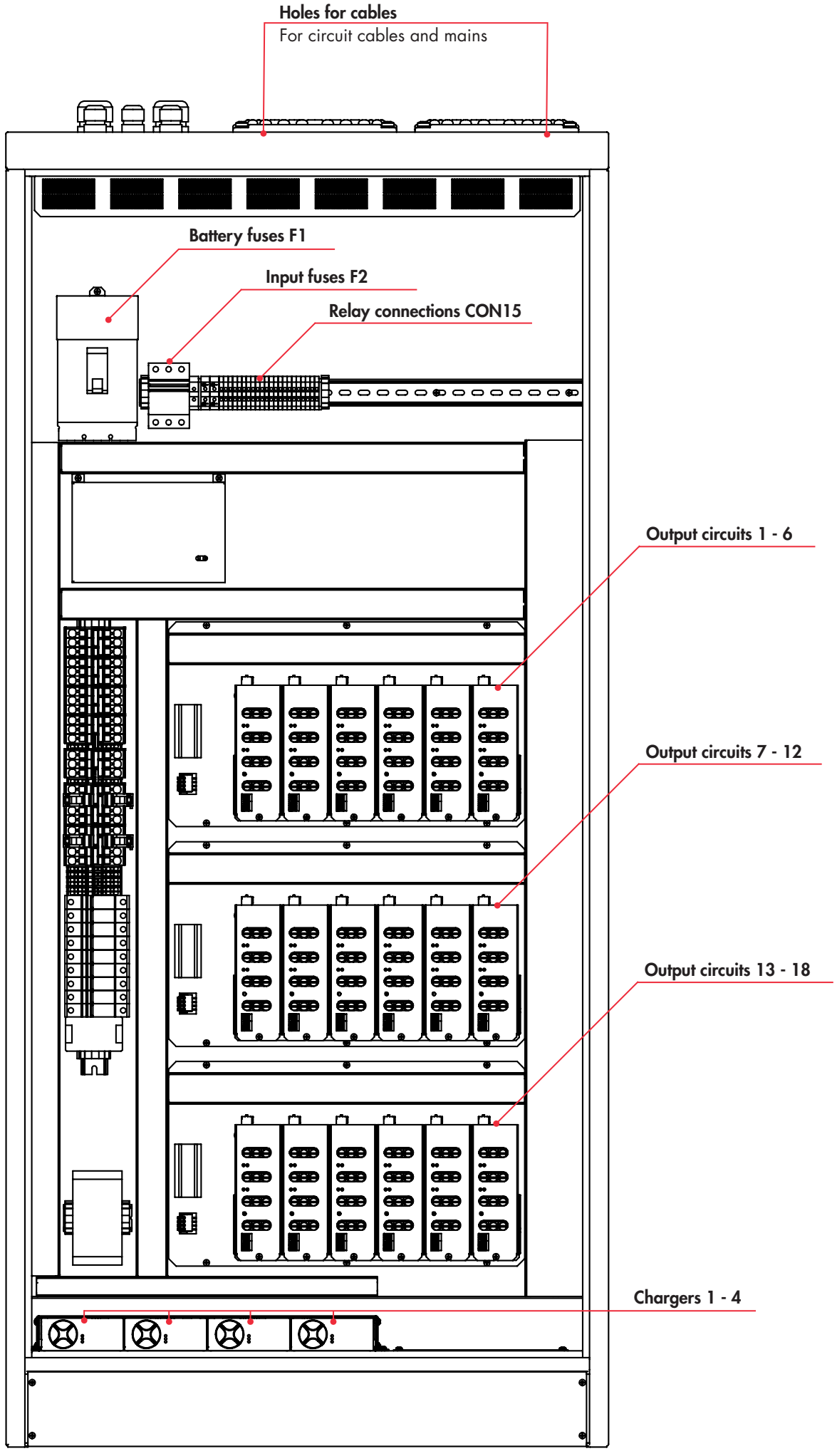
# 4. Parts and Layout

## 4.1 TKT75/76/78

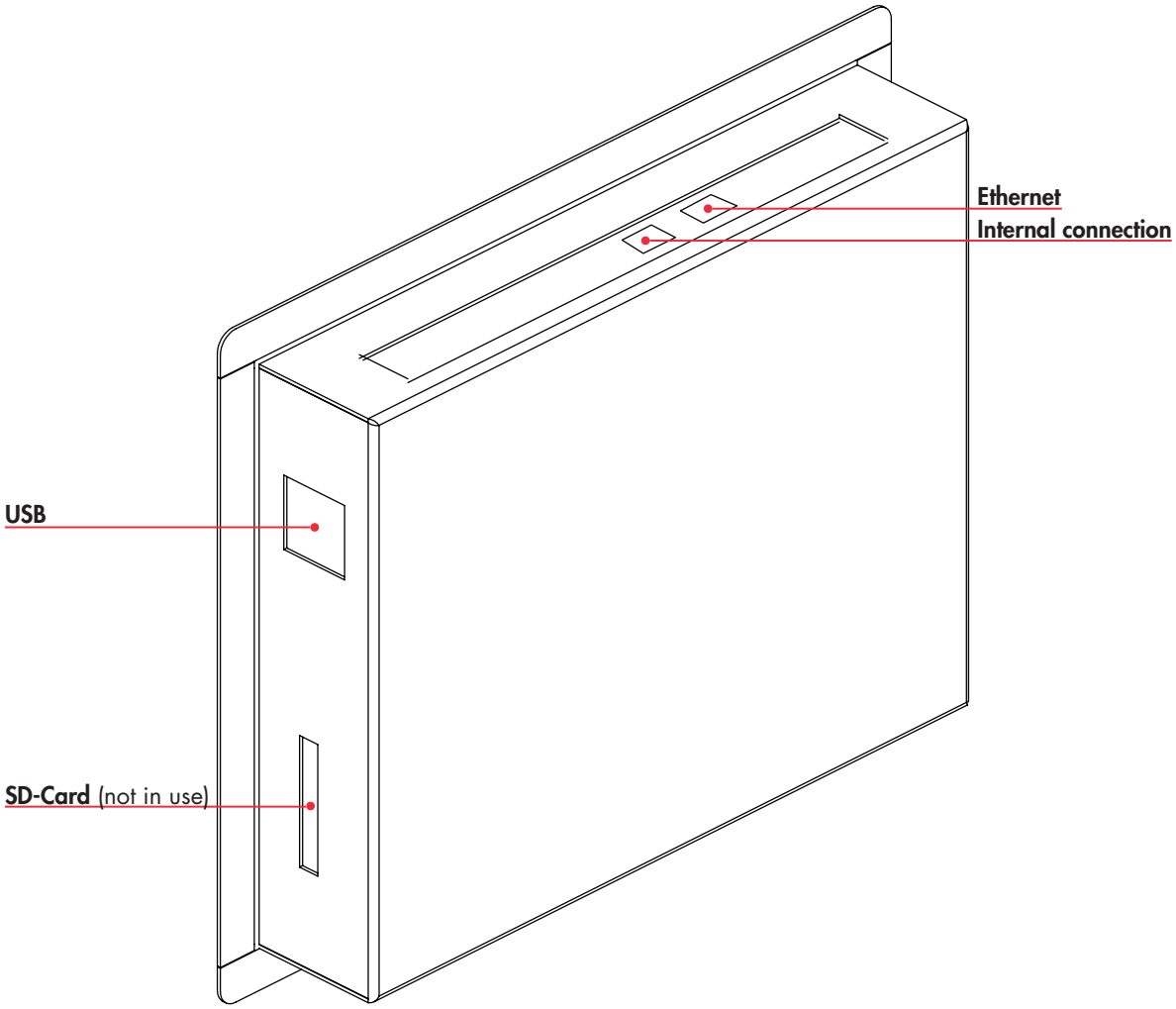
**Note!** TKT78 models have an integrated battery cabinet, and no wall mounting tabs.



## 4.2 TKT77


Holes for cables
For circuit cables and mains
Battery fuses F1
Input fuses F2
Relay connections CON15
Output circuits 1 - 6
Output circuits 7 - 12
Output circuits 13 - 18
Chargers 1 - 4

## 4.3 Data Connections (USB, Ethernet)




# 5. Commissioning

**Process description:**

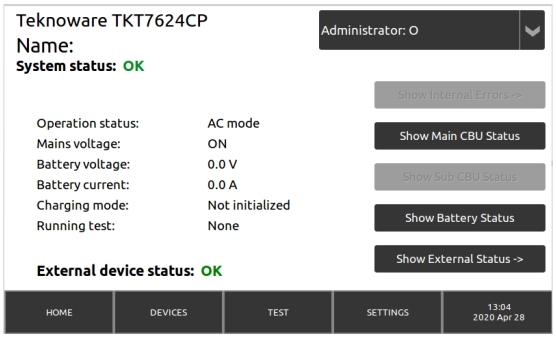
1. Set the system time – see *Chapter 6.1 Settings System Time*.
2. Configure the battery settings – see *Chapter 7.3 Battery Settings*.
3. Configure the test settings – see *Chapter 7.2 Automatic Testing*.
4. Optional: Configure internet settings for MyTeknoware, WebCM/ACM and direct connection – see *Chapter 7.4 Network Settings*.
5. Recommended: Change the Administrator password, and set up user accounts – see *Chapter 7.1 Adding and Modifying User Profiles*.
6. Get the luminaire configuration – see *Chapter 7 Settings*.
7. Recommended: Create a database backup – see *Chapter 7 Settings*.

**Re-configuring the luminaire setup**

If the emergency lighting system is changed (luminaires added or removed) after commissioning, the luminaire configuration must be made again. The system compares the luminaire test results to an existing database, so for example, changes in the amount of luminaires might result in unnecessary luminaire error notifications.

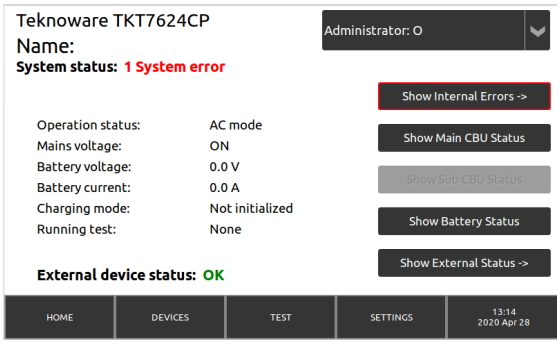
# 6. Main View

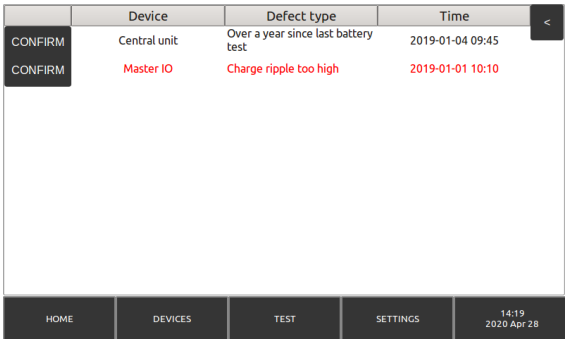
- Displayed without a password.
- **System status:** States the system status: OK/error (if there are errors in the system they are displayed here). Note that the **Deep discharge** error is displayed separately.
- **Operation status**: AC=mains / DC=battery operation.
- **Mains voltage**
- **Battery voltage**
- **Battery current**
- **Upper right corner:** Login to system/ user name.




**After login:**

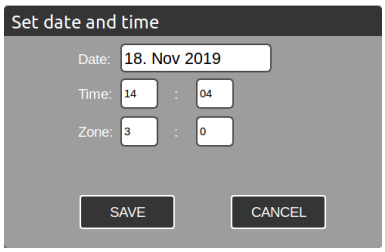
- **Show Internal Errors:** If there are internal errors in the system, tapping this button list the errors with details
- **Show Main CBU Status**
- **Show Battery Status**
- **Show External Status:** Displays circuit- and luminaire statuses. If there are external errors in the system, tapping this button will show a summary of the errors, and options to view the faulty luminaires/ circuits.



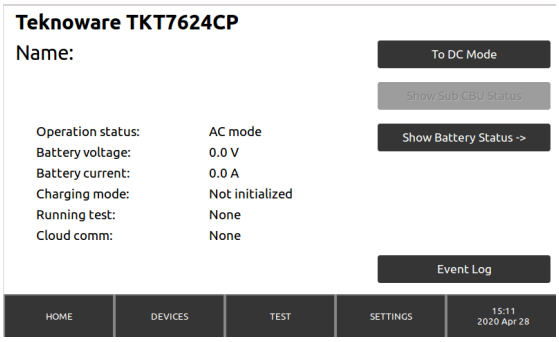

## 6.1 Setting system time

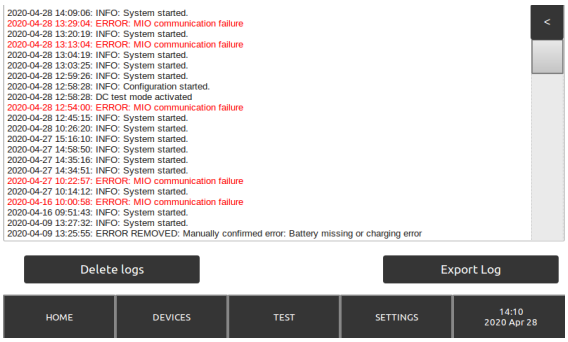
To set/change the system time, log in as an administrator, tap the time/date box on the lower right corner of the screen, and type in the correct time and date.



## 6.2 Show Main CBU Status

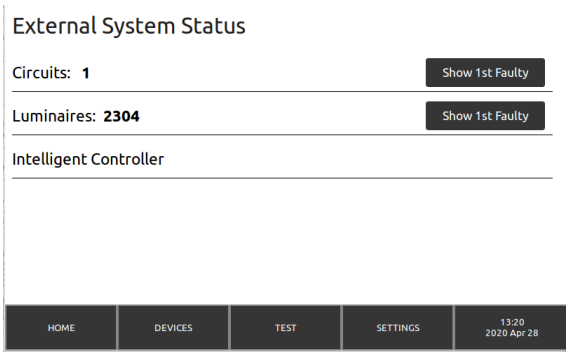
- **To DC Mode -button**: Switches the CBU to DC mode (note that all emergency lights are lit!). Returns to AC automatically in 5 minutes.
- **Show Sub CBU Status**
- **Show Battery Status**
- **Operation status**: AC or DC mode.
- **Event Log:** Opens the event log (see image)



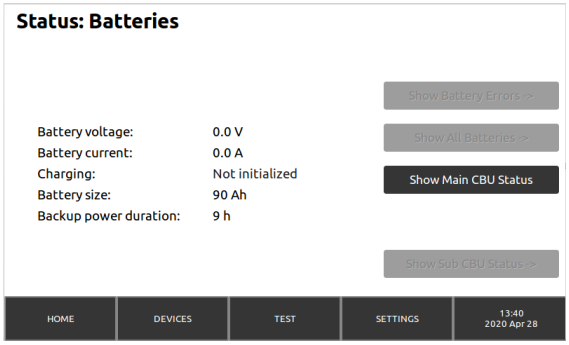

## 6.3 Show External Status

- **Circuits:** the number of circuits in the system.
  - Show 1st Faulty: If there are errors present, this function opens the Extern Devices view, with a focus on the first circuit with errors.
- **Luminaires:** the amount of luminaires in the system
  - Show 1st Faulty: If there are errors present, this function opens the External Devices/ luminaire details view, displaying details about the first luminaire with an error.
- **Intelligent controller:** the number of Intelligent Controller control units in the system.



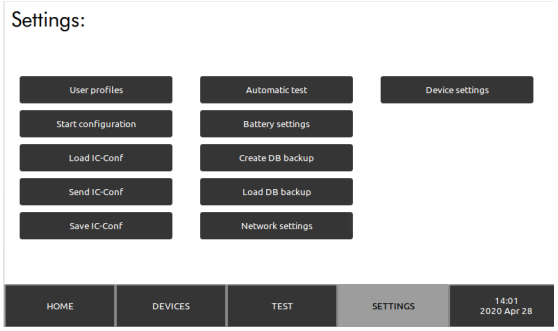

## 6.4 Status: Batteries

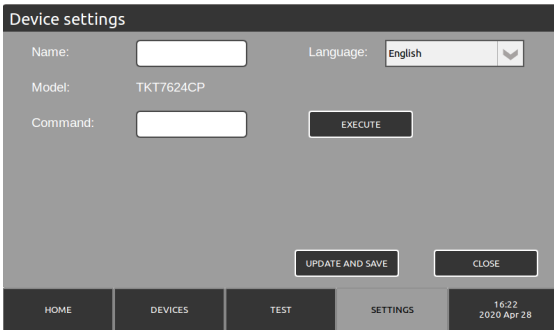
- **Battery voltage**
- **Battery current**
- **Charging:** Charge mode.
- **Battery size**
- **Backup power duration**



# 7. Settings

- **User Profiles:** Add and edit user accounts.
- **Start configuration**: Start the automatic luminaire configuration. Do this when commissioning the CBU for the first time, and when the luminaire setup has changed.
- **Load IC-Conf**: Load Intelligent Controller -configuration to CBU.
- **Send IC-Conf**: Send Intelligent Controller -configuration to IC controller.
- **Save IC-Conf**: Save current Intelligent Controller -configuration to the USB drive.
- **Automatic test**: Automatic test settings.
- **Battery settings**
- **Create DB backup**: Create a backup of the CBU database to a USB drive. The database contains all settings, including user-profiles and circuit/luminaire data. To create a database, insert a USB drive to the USB port, tap Create DB backup button, and follow the instructions on the screen.
- **Load DB backup**: Load a previously saved CBU backup database from a USB drive.
- **Network settings**.
- **Device settings**: From here you can name the CBU, and change the operating system's language. Simply make the changes, and tap "UPDATE AND SAVE". Note that the "Command" function is reserved only for authorized maintenance work.

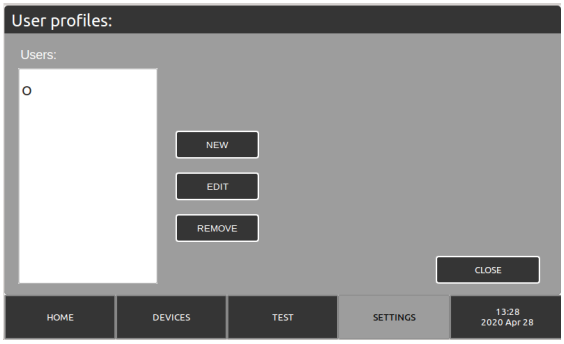


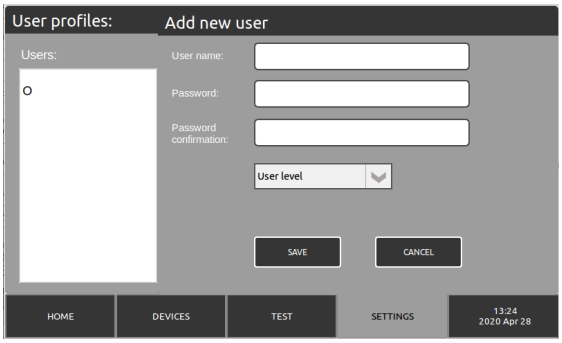




## 7.1 Adding and Modifying User Profiles

### Settings > User Profiles

- On the left side, there is a list of the existing user profiles in the system.
- To add a user to the system, first log in as Administrator. Then, from the User profiles view, tap "NEW". Type in the User name and the password for this user. Type the password again in the Password confirmation box. Select a user level from the drop-down menu:
  - Basic user can view error notifications and system status
  - Advanced user can also start tests and view test logs
  - The administrator has unlimited access to change CBU settings and create new user profiles.
- You can modify user settings by selecting a user from the Users list, and tapping "EDIT". To remove a user, select the user from the list and tap "REMOVE".

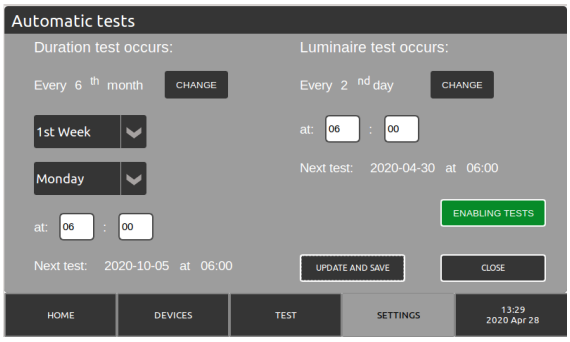


## 7.2 Automatic Testing

**Settings > Automatic tests**

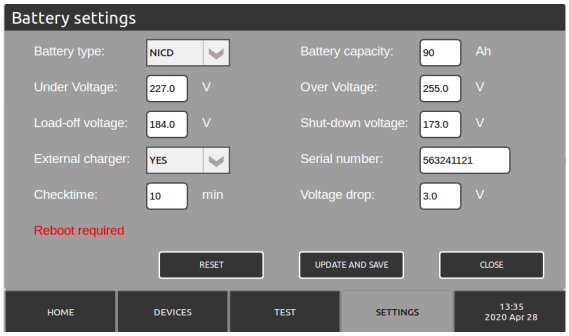
- Duration test occurs: set the time interval for duration test and the time for running the test. Preferred time for the test is a time when the building is as empty as possible. For example, an office building might be empty during a national holiday, at night time.
- Luminaire test occurs: set the time interval for the luminaire test, and the time for running the test. Note that the luminaires may blink during the test.

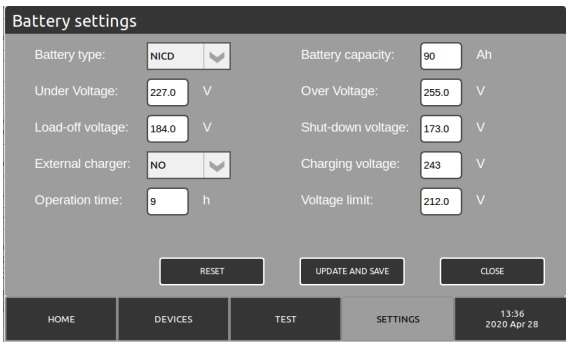



## 7.3 Battery Settings

**Settings > Battery settings**

- These are correct by default.
- Note: do not change these settings unless you know what you are doing.



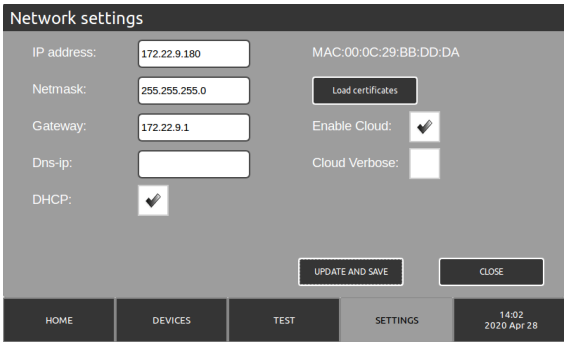




## 7.4 Network Settings

**Settings > Network settings**

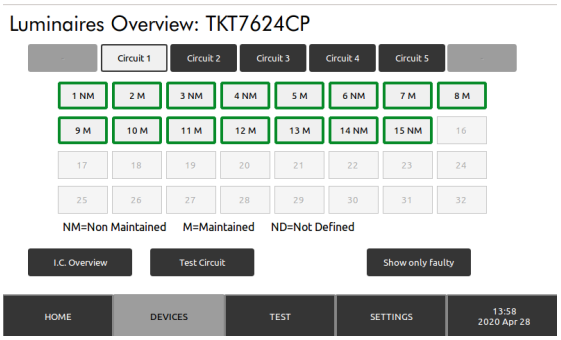
Contains the network settings of the CBU. These are used for direct connection, WebACM/CM connections, and MyTeknoware connections.

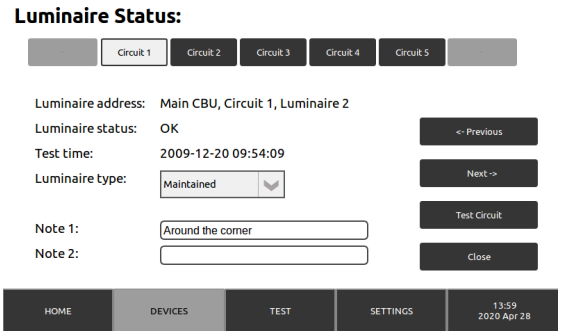
- **Device name**
- **IP address**
- **Netmask**
- **Gateway**
- **Dns-ip**
- **DHCP**
- **Enable Could:** check this box, and tap the Load certification button to load a cloud connection certificate to connect to MyTeknoware.



# 8. Devices

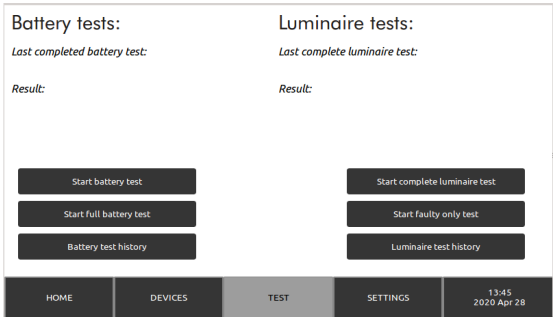
- **Circuit:** Output circuit, 1-4 circuits / module
- **Main view:** The luminaires connected to the selected circuit board. Green squares are luminaires that are functioning correctly. Red squares are luminaires that have reported an error. NM=Non Maintained (emergency luminaire), M=Maintained (exit luminaire), ND=Not Defined.
- Tapping a luminaire square displays details about the luminaire. You can also add notes to the luminaire from this view.
- I.C. Overview: An overview of optional Teknoware Intelligent Controller system.
- Test Circuit: Tests the selected circuit.
- Show only faulty: Display only the faulty luminaires/circuits.



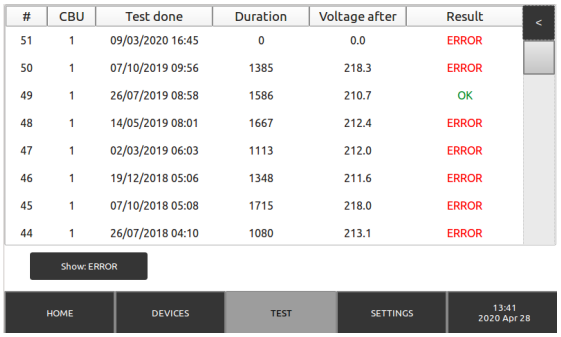




# 9. Test Settings and Logs

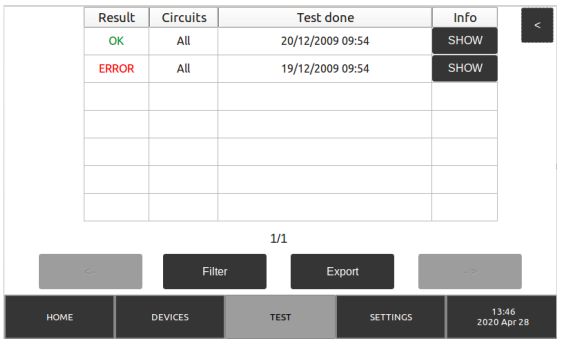
- **Start battery test:** Runs a battery test for 2/3 of the set duration.
- **Start a full battery test:** Runs a battery test for the full duration.
- **Start complete luminaire test:** Tests all luminaires in the system.
- **Start faulty only**: Start a test for luminaires that have reported an error.




- **Battery test history**: A log of previously ran battery tests. Show ERROR option shows only tests that reported an error. "CBU" indicates the number of the CBU, "Test done" when the test was run, "Duration" how many minutes the test lasted, "Voltage After" the battery voltage after the test, and "Result" whether the test found any errors (OK/ ERROR).




- **Luminaire test history**: A log of previously ran luminaire tests. "Result" indicates whether the test found any errors, and "SHOW" button displays details about the test.



# 10. Updating the System Software

To update the TKT7 system software:

1. Make sure the update files are on the root folder of a USB drive. There should be no other files on the drive.
2. It is recommended that you create a database backup before updating the system.
3. De-energize the CBU.
4. Insert the USB drive to the USB port.
5. Energize the CBU, and follow the instructions on the screen.

**Note!**

Do not remove the USB drive, or de-energize the CBU during update!

# 11. Technical details

**Default voltage limits**

- When mains drops below 180 VAC, the CBU supplies voltage for the emergency lighting from the batteries.
- If the battery voltage rises above 255 V, the CBU gives a Battery Overvoltage warning.
- If the battery voltage drops below 227 V, the CBU gives a Battery Undervoltage warning.
- During battery mode, if the battery voltage drops below 173 V, the CBU goes into deep discharge mode.

| | |
|---|---|
| **Casing / IP Class** | IP31 |
| **Max. relative humidity:** | 95% |
| **Ambient Temperature:** | +10...+30°C |
| **Output Voltage:** | Main supply: 220-240 VAC,<br>Battery supply: 216 VDC |
| **Battery Voltage:** | 216 VDC (18 x 12V Pb / 180 x 1,2V NiCD) |
| **Battery Recharge Time:** | 12 h (80 %) |
| **Output Connector:** | max. wire 4 mm2 |
| **Mass (without batteries):** | TKT75: max 61 kg<br>TKT76: max 50 kg<br>TKT77: max 110 kg<br>TKT78: max 145 kg |

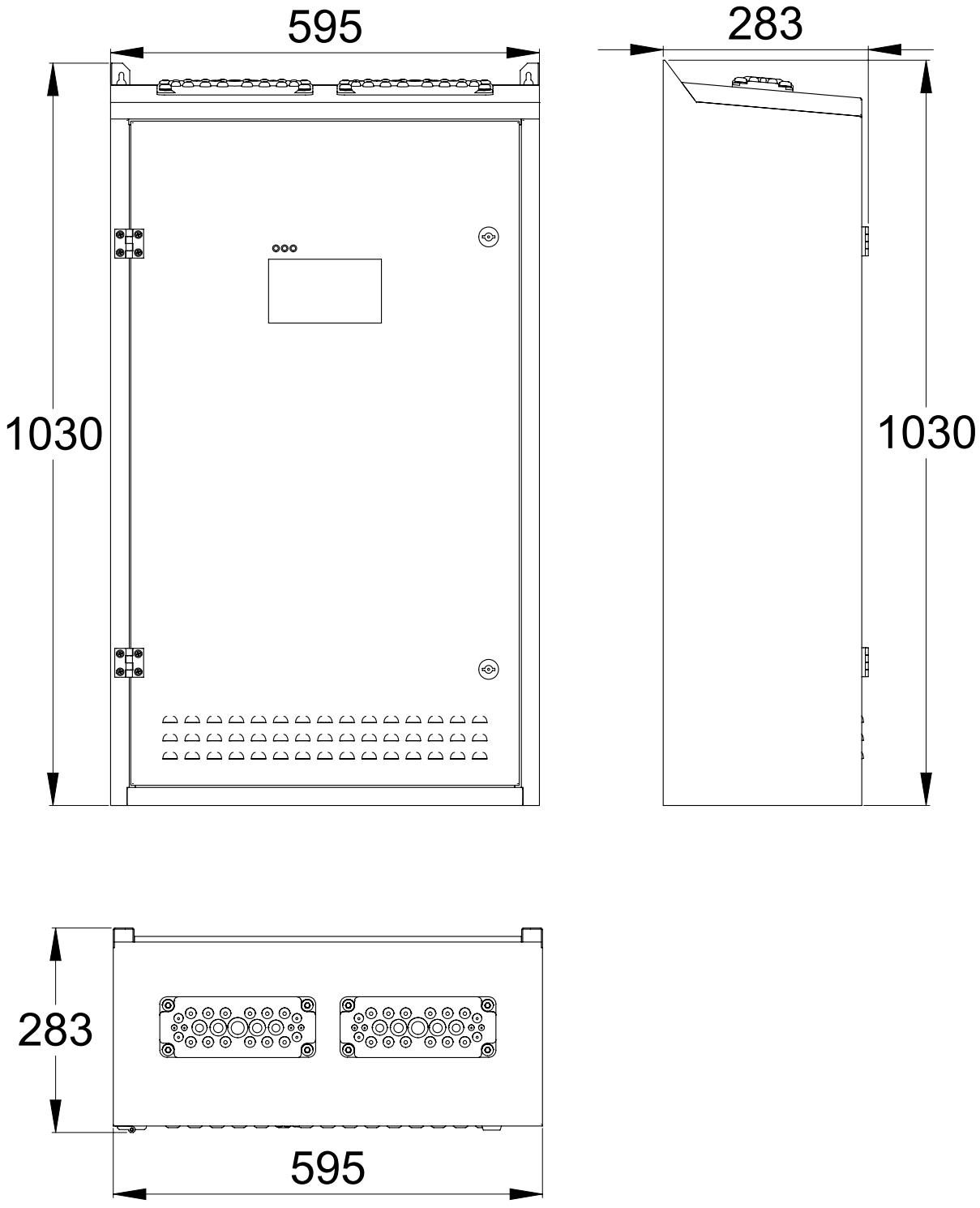
| Model | CBU Input Fuse: | Battery fuse: |
|---|---|---|
| **TKT75/7804CFP** | 3-phase circuit breaker 16 A C-curve | circuit breaker 16 A |
| **TKT75/7804CP** | 1-phase circuit breaker 16 A C-curve | circuit breaker 10 A |
| **TKT75/7808CFP** | 3-phase circuit breaker 16 A C-curve | circuit breaker 16 A |
| **TKT75/7808CP** | 1-phase circuit breaker 16 A C-curve | circuit breaker 16 A |
| **TKT75/7816CFP** | 3-phase circuit breaker 16 A C-curve | circuit breaker 32 A |
| **TKT75/7816CP** | 1-phase circuit breaker 16 A C-curve | circuit breaker 32 A |
| **TKT75/7824CFP** | 3-phase circuit breaker 32 A C-curve | circuit breaker 32 A |
| **TKT75/7824CP** | 1-phase circuit breaker 16 A C-curve | circuit breaker 32 A |
| **TKT7604CFP** | 3-phase circuit breaker 16 A C-curve | circuit breaker 16 A |
| **TKT7608CFP** | 3-phase circuit breaker 16 A C-curve | circuit breaker 16 A |
| **TKT7616CFP** | 3-phase circuit breaker 32 A C-curve | circuit breaker 32 A |
| **TKT7624CFP** | 3-phase circuit breaker 32 A C-curve | circuit breaker 63 A |
| **TKT7724-72CP** | 3-phase circuit breaker 50 A C-curve | circuit breaker 160 A |

**Output circuit fuses:** 5x20 mm sand-filled glass tube fuse 2,5 A

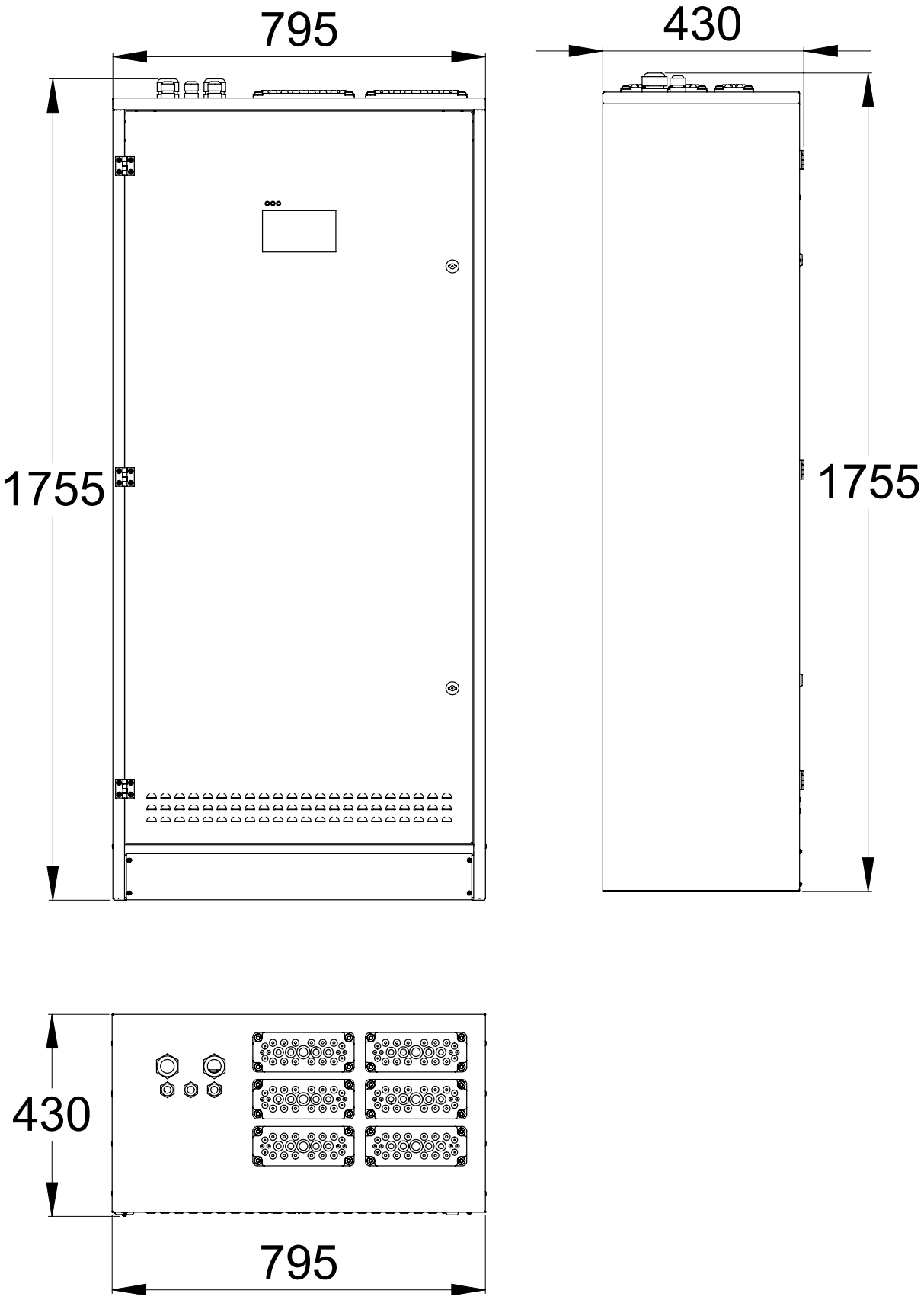
| Product Code | Nominal Supply Voltage | Max Battery Capacity (Ah) | Max total load, mains operation (VA) | Max total load, battery operation 1h (W) | Max total load, battery operation 3h (W) | Circuits |
|---|---|---|---|---|---|---|
| **TKT7504CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 65 | 1400 | 1400 | 1400 | 4 |
| **TKT7504CP** | 1~ N/PE 220-240 VAC, 50/60 Hz | 65 | 1400 | 1400 | 1400 | 4 |
| **TKT7508CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 65 | 2800 | 2800 | 2800 | 8 |
| **TKT7508CP** | 1~ N/PE 220-240 VAC, 50/60 Hz | 65 | 2580 | 2800 | 2800 | 8 |
| **TKT7516CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 65 | 5600 | 5600 | 3340 | 16 |
| **TKT7516CP** | 1~ N/PE 220-240 VAC, 50/60 Hz | 65 | 2580 | 5600 | 3340 | 16 |
| **TKT7524CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 65 | 8400 | 6000 | 3340 | 24 |
| **TKT7524CP** | 1~ N/PE 220-240 VAC, 50/60 Hz | 65 | 2580 | 6000 | 3340 | 24 |
| **TKT7604CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 150 | 1400 | 1400 | 1400 | 4 |
| **TKT7608CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 150 | 2800 | 2800 | 2800 | 8 |
| **TKT7616CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 150 | 5600 | 5600 | 5600 | 16 |
| **TKT7624CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 150 | 8400 | 8400 | 7580 | 24 |
| **TKT7724CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 8400 | 8400 | 8400 | 24 |
| **TKT7732CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 11200 | 11200 | 11200 | 32 |
| **TKT7740CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 14000 | 14000 | 14000 | 40 |
| **TKT7748CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 16800 | 16800 | 16800 | 48 |
| **TKT7756CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 19600 | 19600 | 19600 | 56 |
| **TKT7764CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 22400 | 22400 | 22400 | 64 |
| **TKT7772CP** | 3~ N/PE 220-240/380-415 VAC, 50/60 Hz | 450 | 25200 | 25200 | 22740 | 72 |

| Product Code | Nominal Supply Voltage | Max Battery Capacity (Ah) | Max total load, mains operation (VA) | Max total load, battery operation 1h (W) | Max total load, battery operation 3h (W) | Circuits |
|---|---|---|---|---|---|---|
| **TKT7804CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60Hz | 65 | 1400 | 1400 | 1400 | 4 |
| **TKT7804CP** | 1~ N/PE 220-2240 VAC, 50/60Hz | 65 | 1400 | 1400 | 1400 | 4 |
| **TKT7808CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60Hz | 65 | 2800 | 2800 | 2800 | 8 |
| **TKT7808CP** | 1~ N/PE 220-2240 VAC, 50/60Hz | 65 | 2580 | 2800 | 2800 | 8 |
| **TKT7816CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60Hz | 65 | 5600 | 5600 | 3340 | 16 |
| **TKT7816CP** | 1~ N/PE 220-2240 VAC, 50/60Hz | 65 | 2580 | 5600 | 3340 | 16 |
| **TKT7824CFP** | 3~ N/PE 220-240/380-415 VAC, 50/60Hz | 65 | 8400 | 6000 | 3340 | 24 |
| **TKT7824CP** | 1~ N/PE 220-2240 VAC, 50/60Hz | 65 | 2580 | 6000 | 3340 | 24 |

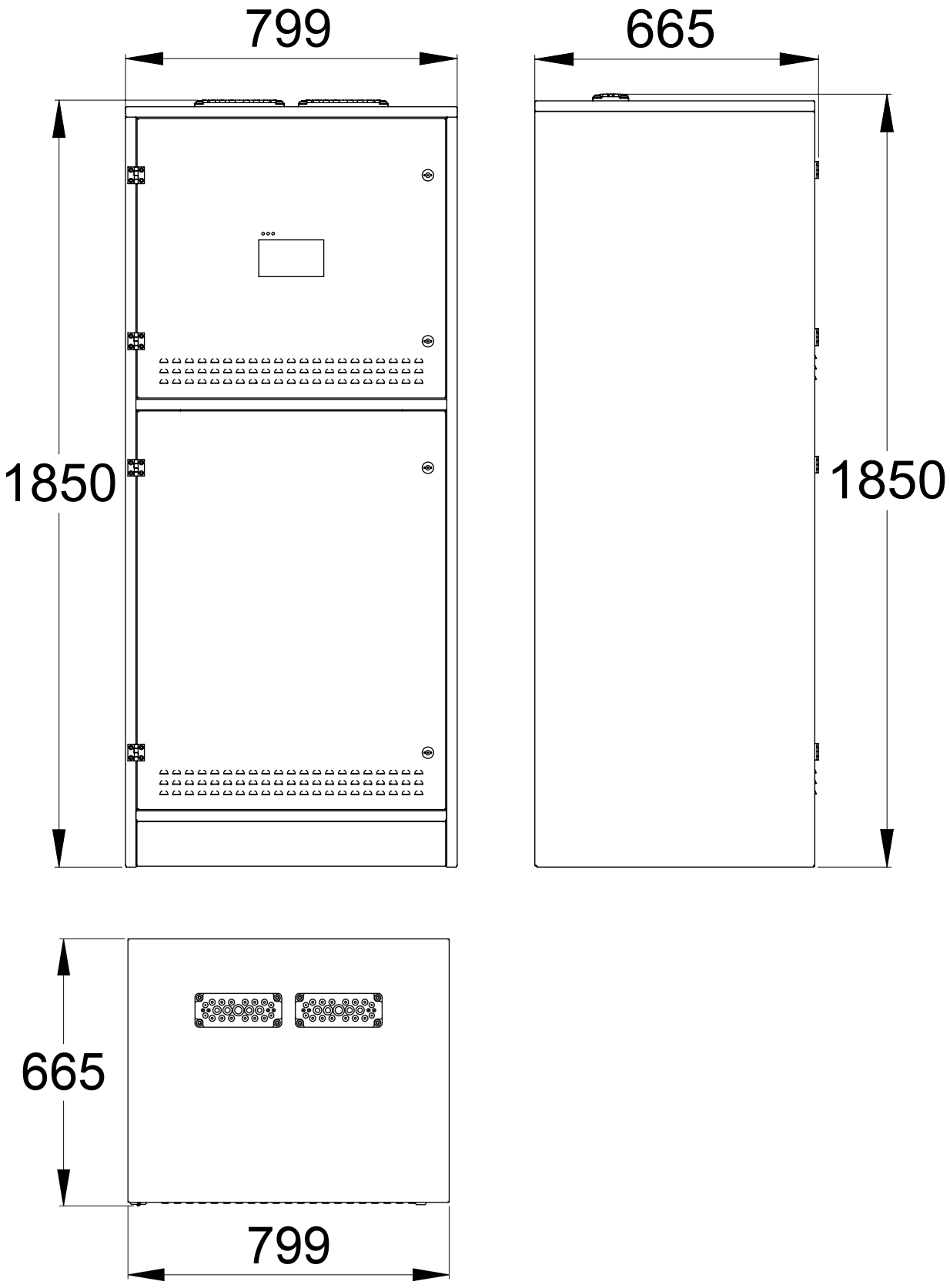
# 12. Mechanical Dimensions: TKT75/76



# 13. Mechanical Dimensions: TKT77



# 14. Mechanical Dimensions: TKT78

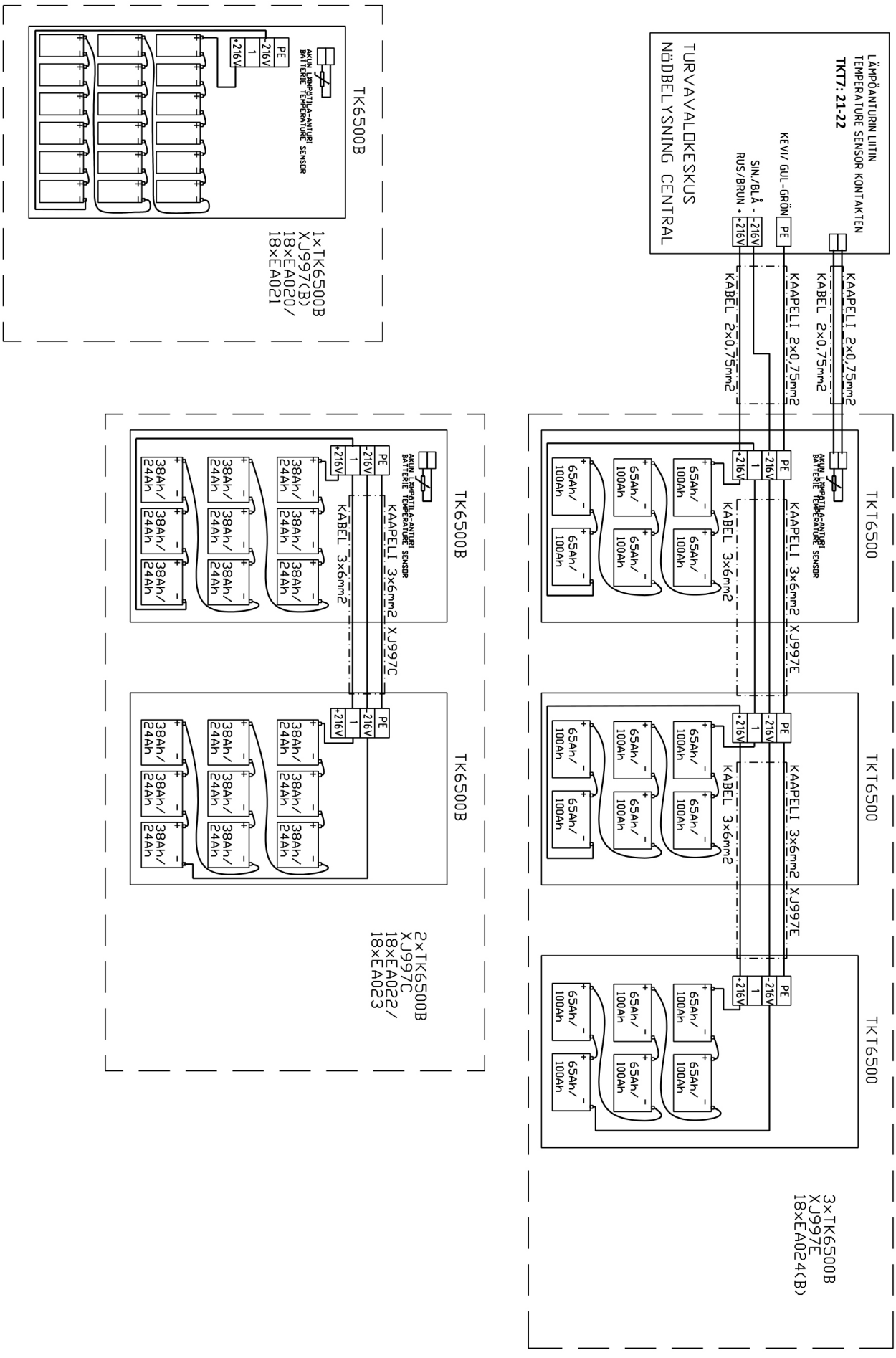


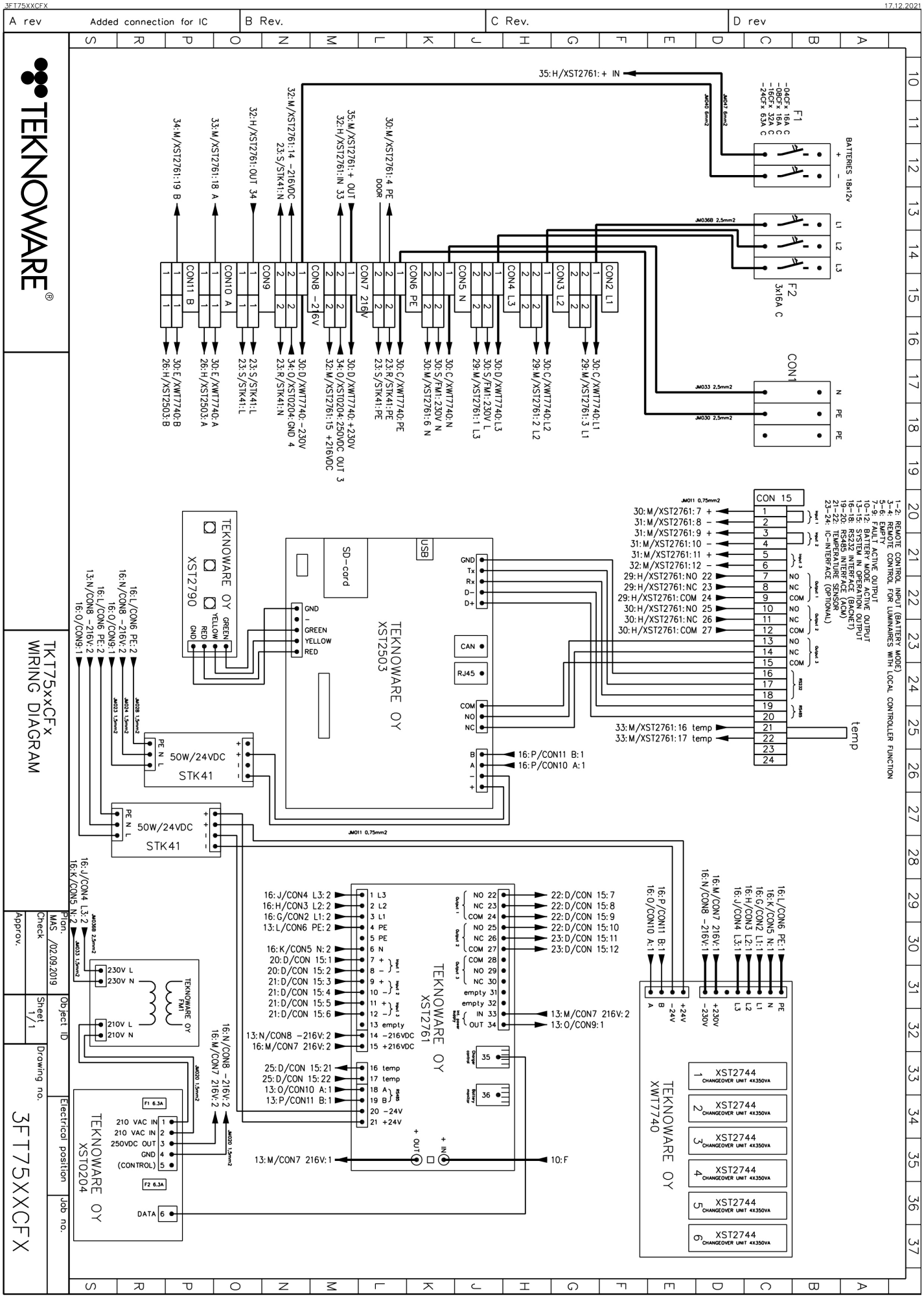
# 15. Connections

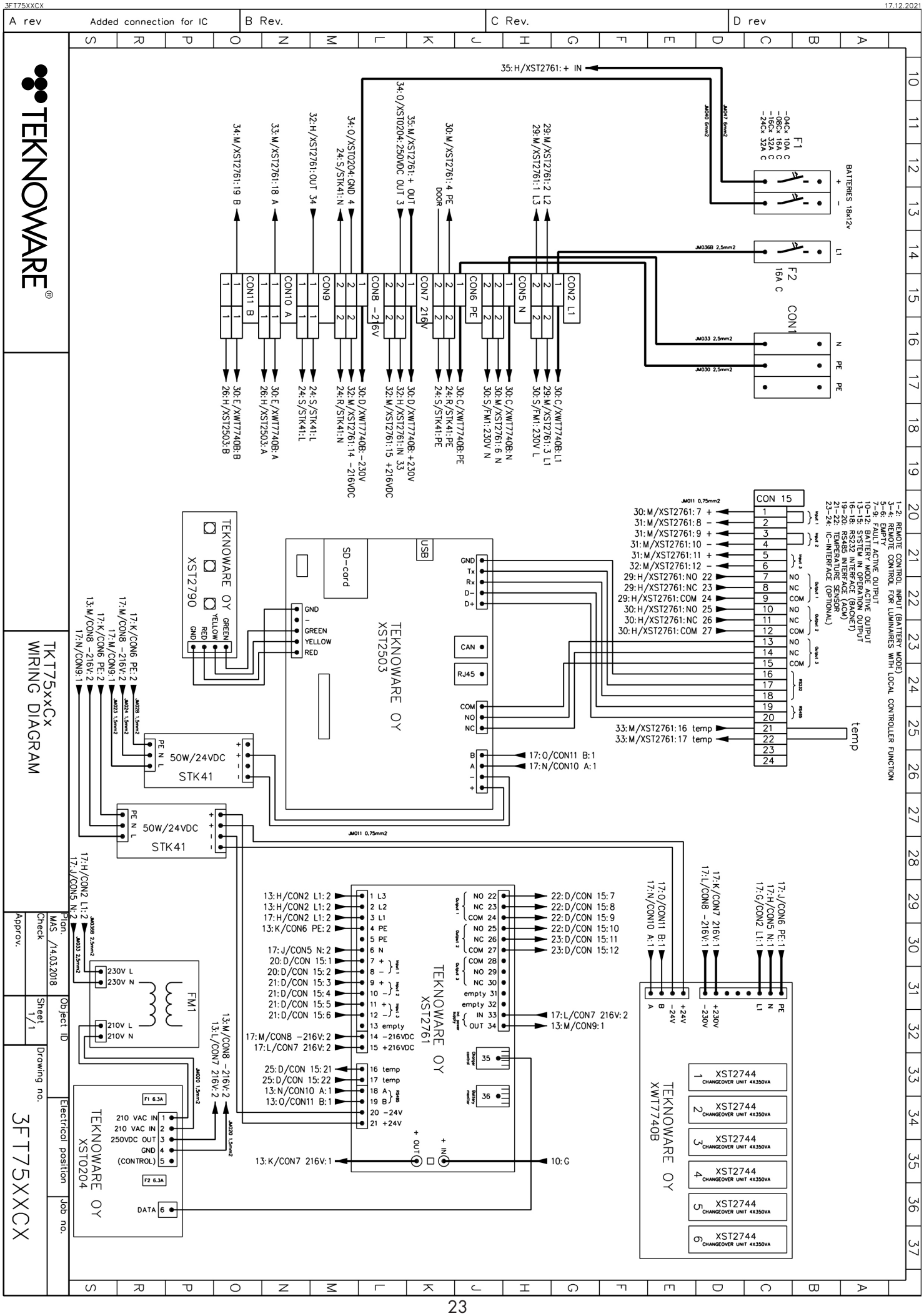
## 15.1 Interfaces

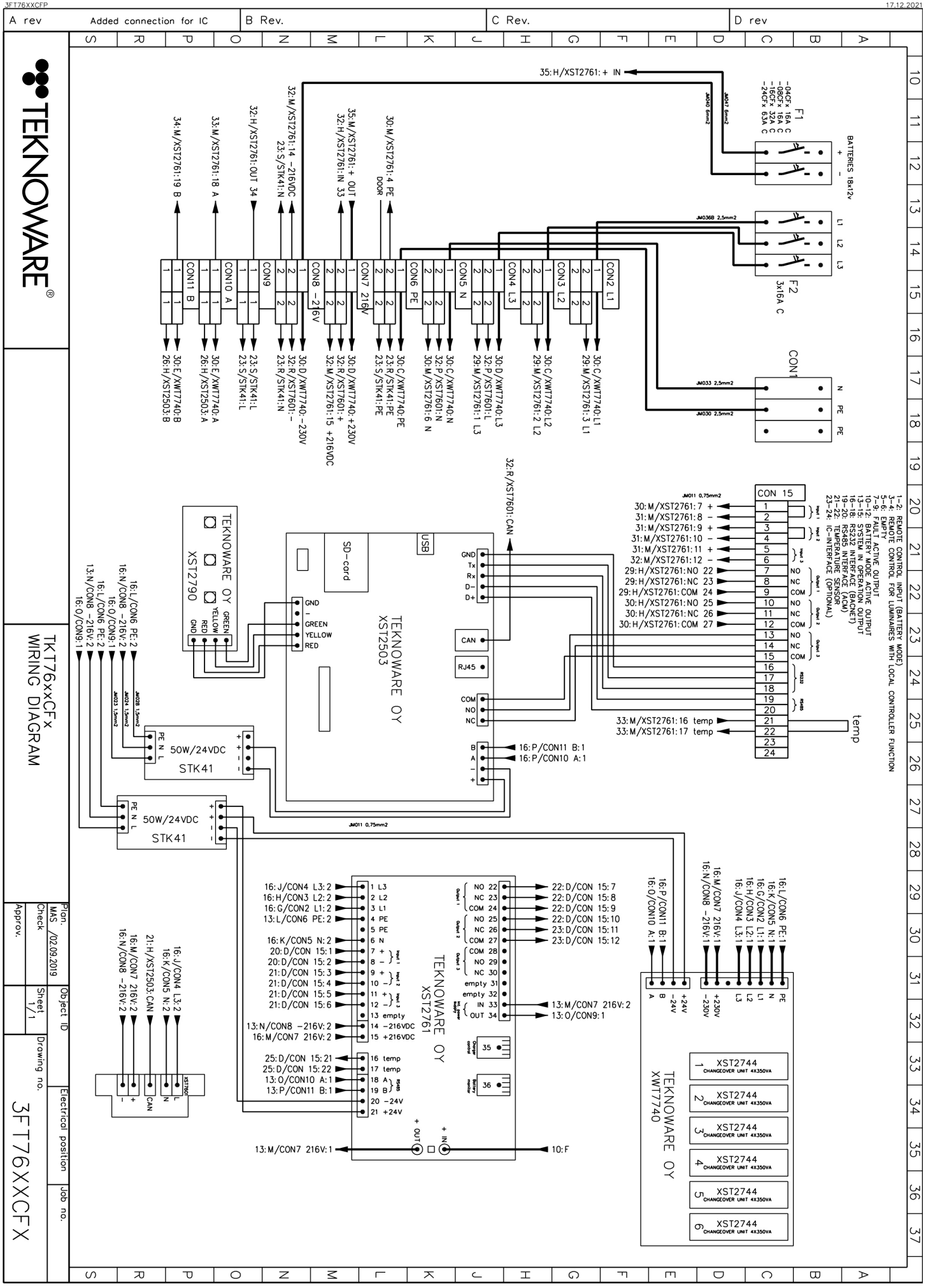
| | |
|---|---|
| **1-2** | REMOTE CONTROL INPUT (BATTERY MODE) |
| **3-4** | REMOTE CONTROL FOR LUMINAIRES WITH LOCAL CONTROLLER FUNCTION INPUT |
| **5-6** | EMPTY |
| **7-9** | FAULT ACTIVE OUTPUT |
| **10-12** | BATTERY MODE ACTIVE OUTPUT |
| **13-15** | SYSTEM IN OPERATION OUTPUT |
| **16-18** | RS232 INTERFACE (BACNET) |
| **19-20** | RS485 INTERFACE (ACM) |
| **21-22** | TEMPERATURE SENSOR |
| **23 (+) - 24 (-)** | IC-INTERFACE (OPTIONAL) |

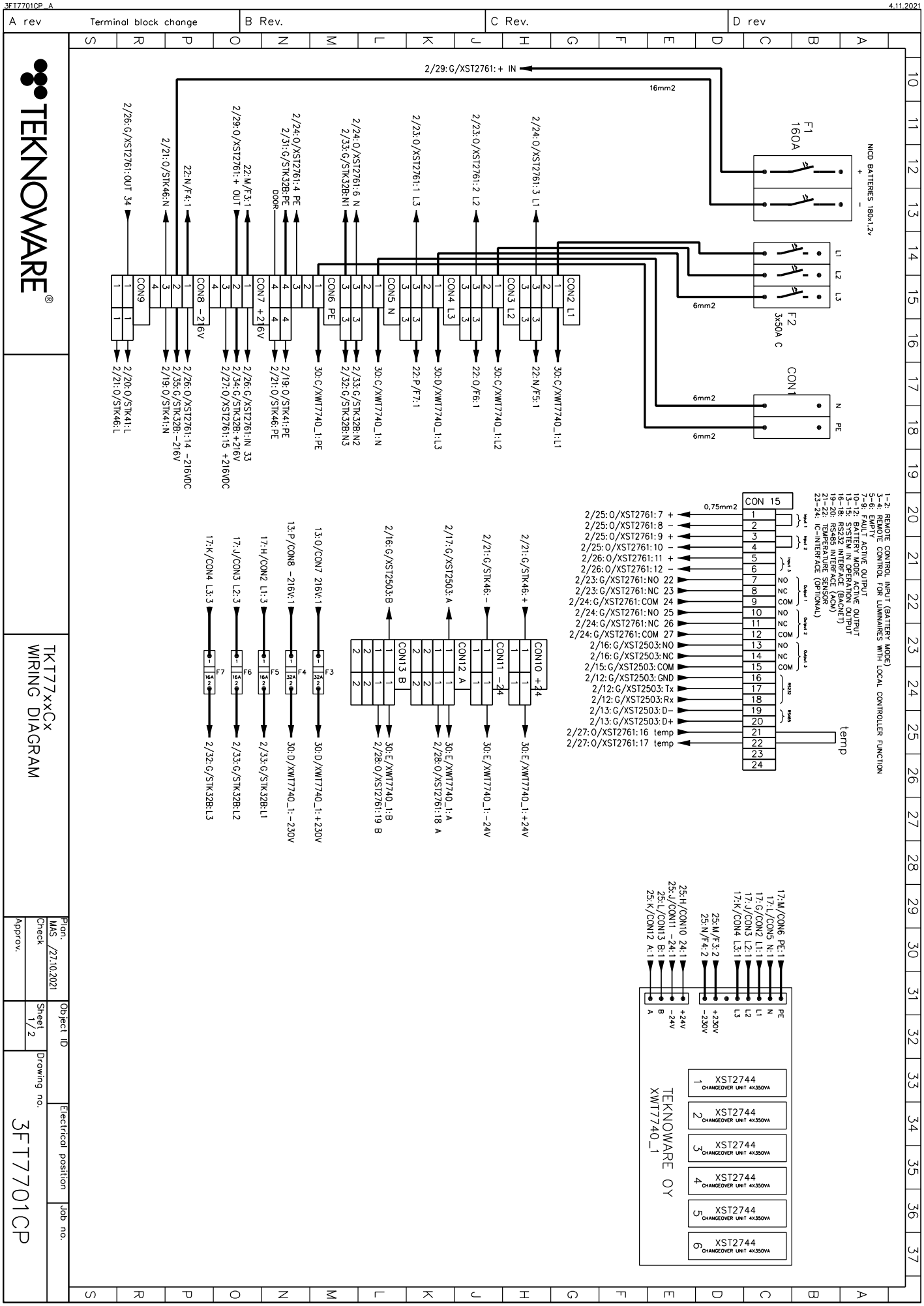
# 16. Connection alternatives for batteries

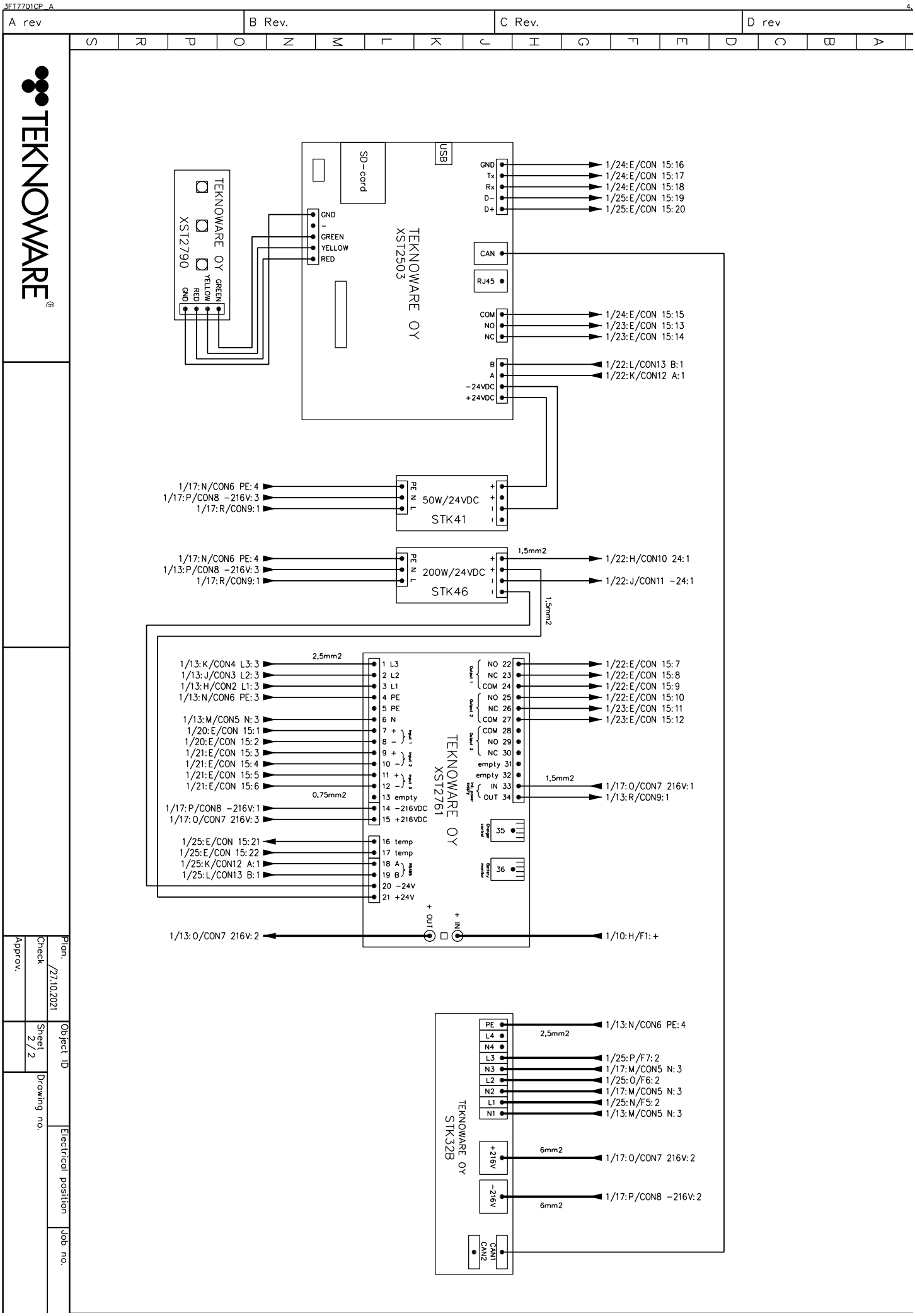


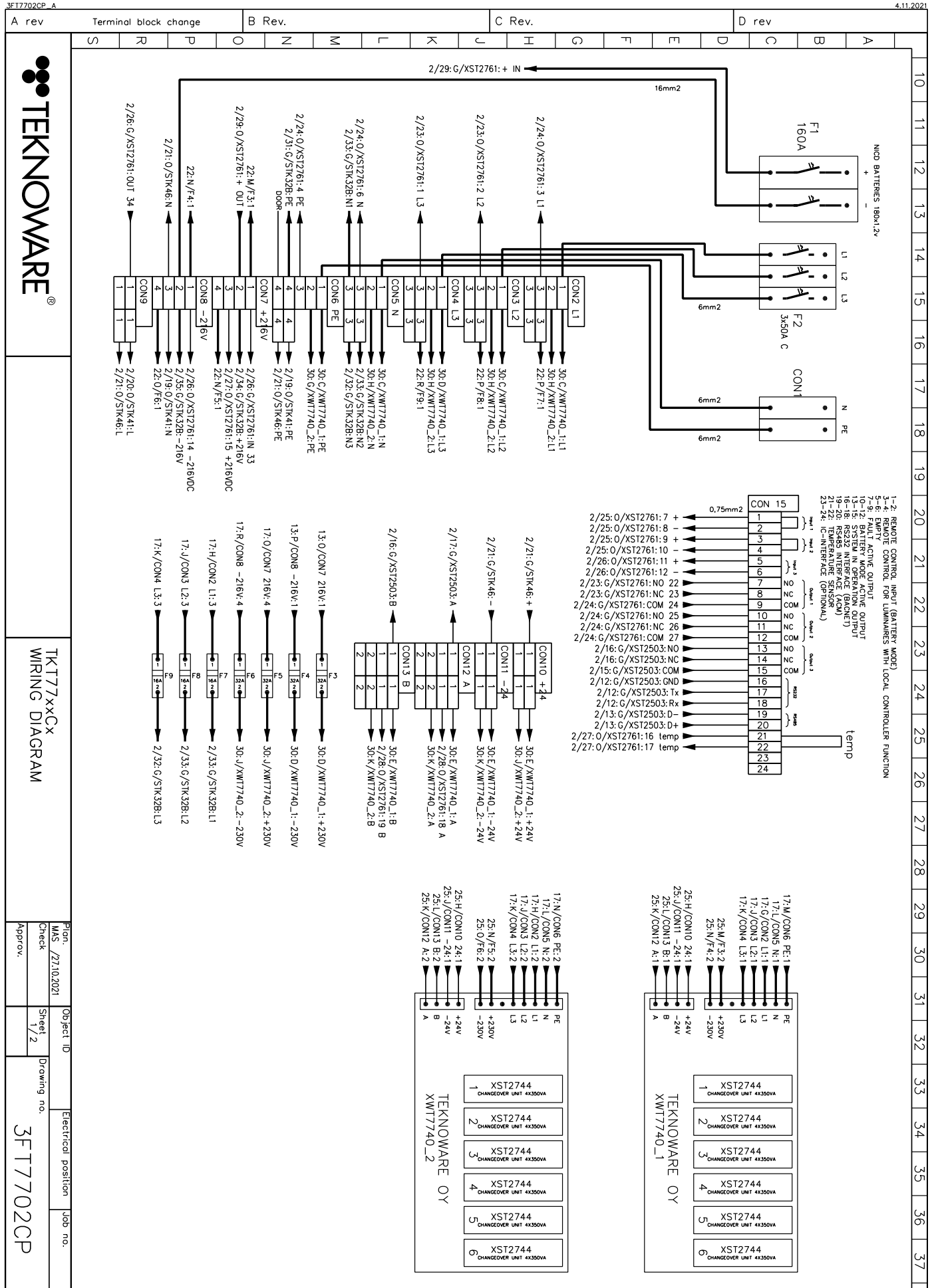

3FT75XXCFX
17.12.2021
A rev
Added connection for IC
B Rev.
C Rev.
D rev
TEKNOWARE
TKT75xxCFx
WIRING DIAGRAM
Plan.
MAS /02.09.2019
Check
Approv.
Sheet
1/1
Object ID
Electrical position
Job no.
Drawing no.
3FT75XXCFX
35:H/XST2761:+ IN
F1
-04CF× 16A C
-06CF× 16A C
-10CF× 16A C
-24CF× 6A C
BATTERIES 18x12v
F2
3x16A C
CON1
CON2 L1
CON3 L2
CON4 L3
CON5 N
CON6 PE
CON7 216V
CON8 -216V
CON9
CON10 A
CON11 B
CON 15
1-2: REMOTE CONTROL INPUT (BATTERY MODE)
3-4: REMOTE CONTROL FOR LUMINARES WITH LOCAL CONTROLLER FUNCTION
5-6: EMPTY
7-9: FAULT ACTIVE OUTPUT
10-12: BATTERY MODE ACTIVE OUTPUT
13-15: SYSTEM IN OPERATION OUTPUT
16-18: RS232 INTERFACE (GAGNET)
19-20: RS485 INTERFACE (DALI/DSI/DMX)
21-22: TEMPERATURE SENSOR
23-24: IC-INTERFACE (OPTIONAL)
TEKNOWARE OY
XST2790
SD-card
TEKNOWARE OY
XST2503
USB
CAN
RJ45
50W/24VDC
STK41
TEKNOWARE OY
XST2761
TEKNOWARE OY
XST0204
TEKNOWARE OY
XWT7740
XST2744
CHANGEOVER UNIT 4X350VA
temp

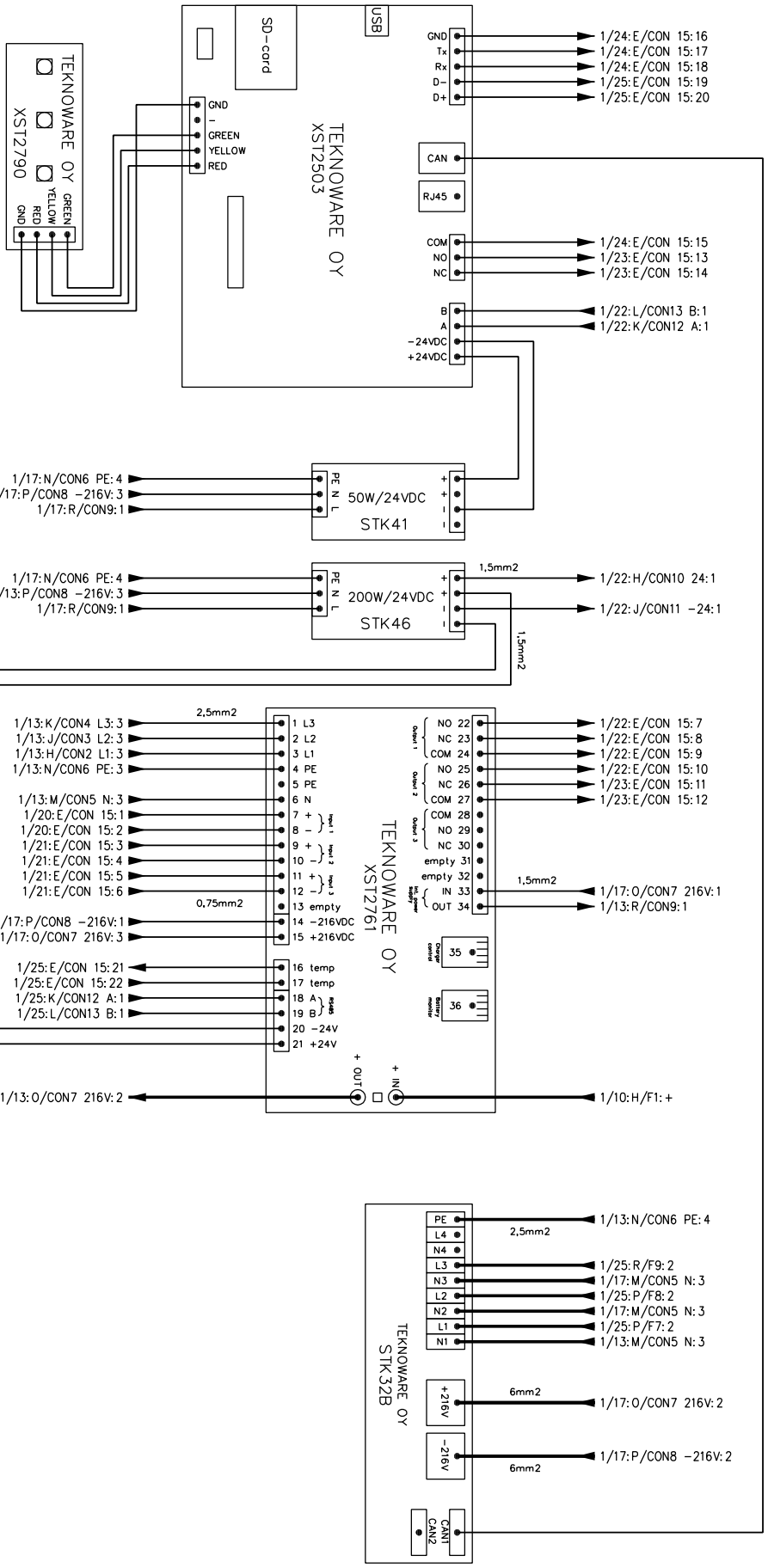

3FT75XXCX
17.12.2021
A rev
Added connection for IC
B Rev.
C Rev.
D rev
TEKNOWARE
TKT75xxCx
WIRING DIAGRAM
3FT75XXCX
Plan.
MAS /14.03.2018
Check
Approv.
Object ID
Sheet
1/1
Drawing no.
Electrical position
Job no.
F1
-04Cx 10A C
-08Cx 16A C
-16Cx 32A C
-24Cx 32A C
BATTERIES 18x12v
F2
16A C
CON1
CON 15
1-2: REMOTE CONTROL INPUT (BATTERY MODE)
3-4: REMOTE CONTROL FOR LUMINAIRES WITH LOCAL CONTROLLER FUNCTION
5-6: EMPTY
7-9: FAULT ACTIVE OUTPUT
10-12: BATTERY MODE ACTIVE OUTPUT
13-15: SYSTEM IN OPERATION OUTPUT
16-18: RS232 INTERFACE (BACNET)
19-20: RS485 INTERFACE (ACM)
21-22: TEMPERATURE SENSOR
23-24: IC-INTERFACE (OPTIONAL)
temp
TEKNOWARE OY
XST2790
TEKNOWARE OY
XST2503
SD-card
USB
CAN
RJ45
50W/24VDC
STK41
TEKNOWARE OY
XST2761
TEKNOWARE OY
XST0204
FM1
TEKNOWARE OY
XWT7740B
XST2744
CHANGEOVER UNIT 4X350VA


3FT76XXCFP
17.12.2021
A rev
Added connection for IC
B Rev.
C Rev.
D rev
TEKNOWARE®
TKT76xxCFx
WIRING DIAGRAM
Plan.
MAS /02.09.2019
Check
Approv.
Object ID
Sheet
1/1
Drowing no.
3FT76XXCFX
Electrical position
Job no.
F1
-04CF x 16A C
-08CF x 16A C
-16CF x 32A C
-24CF x 63A C
BATTERIES 18x12v
F2
3x16A C
CON1
CON 15
1-2: REMOTE CONTROL INPUT (BATTERY MODE)
3-4: REMOTE CONTROL FOR LUMINAIRES WITH LOCAL CONTROLLER FUNCTION
5-6: EMPTY
7-9: FAULT ACTIVE OUTPUT
10-12: BATTERY MODE ACTIVE OUTPUT
13-15: SYSTEM IN OPERATION OUTPUT
16-18: RS232 INTERFACE (BACNET)
19-20: RS485 INTERFACE (ACM)
21-22: TEMPERATURE SENSOR
23-24: IC-INTERFACE (OPTIONAL)
TEKNOWARE OY
XST2503
SD-card
USB
CAN
RJ45
TEKNOWARE OY
XST2790
GREEN
YELLOW
RED
50W/24VDC
STK41
TEKNOWARE OY
XST2761
TEKNOWARE OY
XWT7740
XST2744
CHANGEOVER UNIT 4X350VA
temp
35: H/XST2761: + IN
10: F
13: M/CON7 216V: 1

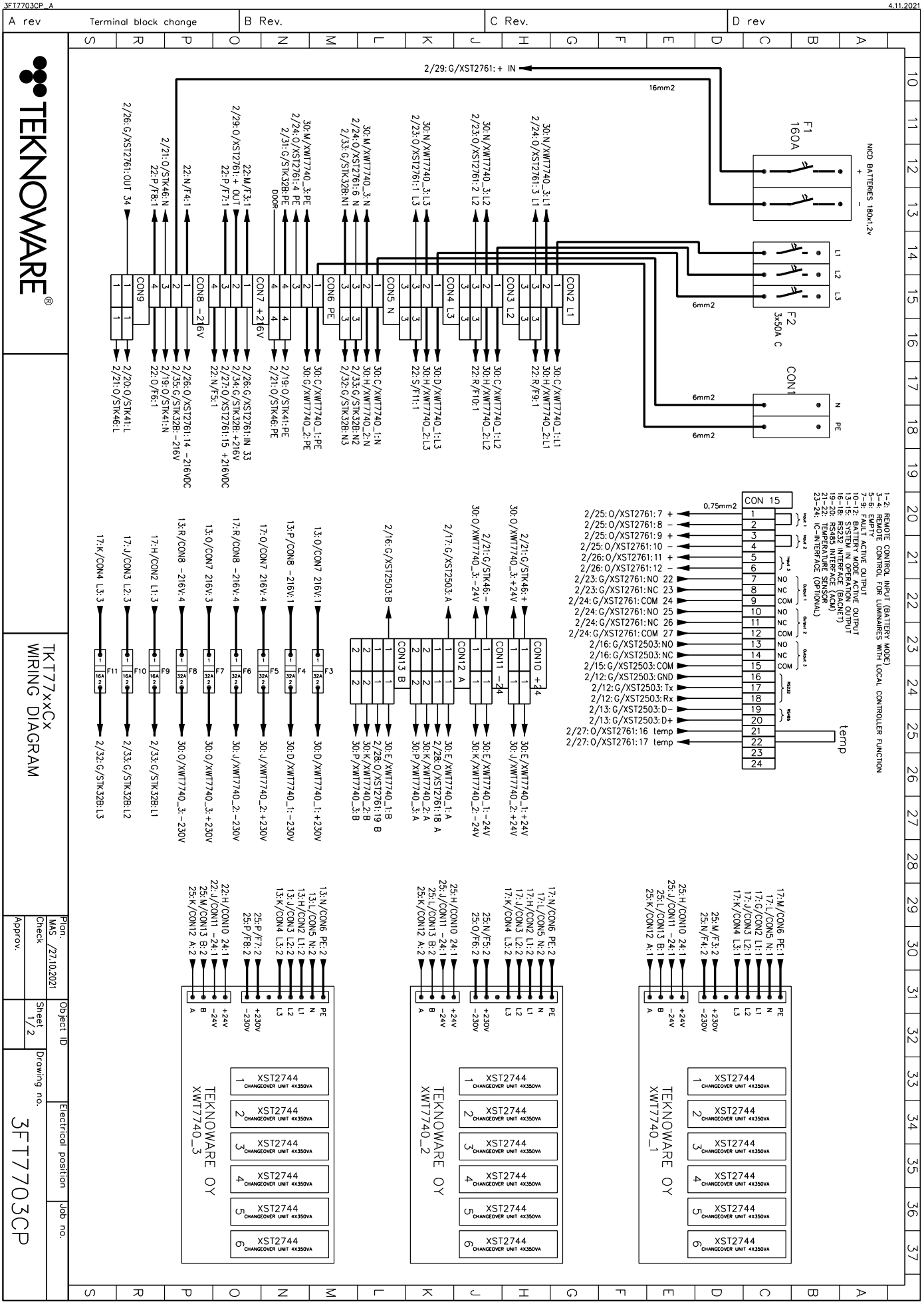

3FT7701CP_A
4.11.2021
A rev Terminal block change
B Rev.
C Rev.
D rev
TEKNOWARE®
TKT77xxCx
WIRING DIAGRAM
Plan. MAS /27.10.2021
Check
Approv.
Object ID
Sheet 1/2
Drawing no. 3FT7701CP
Electrical position
Job no.
2/29:G/XST2761:+ IN
16mm2
F1 160A
NICD BATTERIES 180x1.2v
F2 3x50A C
CON1
6mm2
2/24:O/XST2761:3 L1
2/23:O/XST2761:2 L2
2/23:O/XST2761:1 L3
2/24:O/XST2761:6 N
2/33:G/STK32B:N1
2/24:O/XST2761:4 PE
2/31:G/STK32B:PE
DOOR
2/29:O/XST2761:+ OUT
2/26:O/XST2761:OUT 34
2/21:O/STK46:N
22:N/F4:1
22:M/F3:1
CON2 L1
CON3 L2
CON4 L3
CON5 N
CON6 PE
CON7 +216V
CON8 -216V
CON9
30:C/XWT7740_1:L1
22:N/F5:1
30:C/XWT7740_1:L2
22:O/F6:1
30:D/XWT7740_1:L3
22:P/F7:1
30:C/XWT7740_1:N
30:C/XWT7740_1:PE
2/19:O/STK41:PE
2/21:O/STK46:PE
2/26:G/XST2761:IN 33
2/34:G/STK32B:+216V
2/27:O/XST2761:15 +216VDC
2/26:O/XST2761:14 -216VDC
2/35:G/STK32B:-216V
2/19:O/STK41:N
2/20:O/STK41:L
2/21:O/STK46:L
1-2: REMOTE CONTROL INPUT (BATTERY MODE)
3-4: EMPTY
5-6: REMOTE CONTROL FOR LUMINAIRES WITH LOCAL CONTROLLER FUNCTION
7-9: FAULT/ACTIVE OUTPUT
10-12: BATTERY MODE ACTIVE OUTPUT
13-15: SYSTEM IN OPERATION OUTPUT
16-18: RS232 INTERFACE (BACNET)
19-20: RS485 INTERFACE (ACM)
21-22: TEMPERATURE SENSOR
23-24: IC-INTERFACE (OPTIONAL)
CON 15
0,75mm2
2/25:O/XST2761:7 +
2/25:O/XST2761:8 -
2/25:O/XST2761:9 +
2/25:O/XST2761:10 -
2/26:O/XST2761:11 +
2/26:O/XST2761:12 -
2/23:G/XST2761:NO 22
2/23:G/XST2761:NC 23
2/24:G/XST2761:COM 24
2/24:G/XST2761:NO 25
2/24:G/XST2761:NC 26
2/24:G/XST2761:COM 27
2/16:G/XST2503:NO
2/16:G/XST2503:NC
2/15:G/XST2503:COM
2/12:G/XST2503:GND
2/12:G/XST2503:Tx
2/12:G/XST2503:Rx
2/13:G/XST2503:D-
2/13:G/XST2503:D+
2/27:O/XST2761:16 temp
2/27:O/XST2761:17 temp
temp
2/21:G/STK46:+
2/21:G/STK46:-
2/17:G/XST2503:A
2/16:G/XST2503:B
CON10 +24
CON11 -24
CON12 A
CON13 B
30:E/XWT7740_1:+24V
30:E/XWT7740_1:-24V
30:E/XWT7740_1:A
30:E/XWT7740_1:B
2/28:O/XST2761:18 A
2/28:O/XST2761:19 B
13:O/CON7 216V:1
13:P/CON8 -216V:1
17:H/CON2 L1:3
17:J/CON3 L2:3
17:K/CON4 L3:3
F3
F4
F5
F6
F7
30:D/XWT7740_1:+230V
30:D/XWT7740_1:-230V
2/33:G/STK32B:L1
2/33:G/STK32B:L2
2/32:G/STK32B:L3
17:M/CON6 PE:1
17:L/CON5 N:1
17:G/CON2 L1:1
17:J/CON3 L2:1
17:K/CON4 L3:1
25:M/F3:2
25:N/F4:2
25:H/CON10 24:1
25:J/CON11 -24:1
25:L/CON13 B:1
25:K/CON12 A:1
PE
N
L1
L2
L3
+230V
-230V
+24V
-24V
B
A
TEKNOWARE OY
XWT7740_1
XST2744 CHANGEOVER UNIT 4X350VA
1
2
3
4
5
6


3FT7701CP_A
A rev
B Rev.
C Rev.
D rev
TEKNOWARE
TEKNOWARE OY
XST2790
GND
GREEN
YELLOW
RED
SD-card
USB
TEKNOWARE OY
XST2503
GND
Tx
Rx
D-
D+
CAN
RJ45
COM
NO
NC
B
A
-24VDC
+24VDC
1/24:E/CON 15:16
1/24:E/CON 15:17
1/24:E/CON 15:18
1/25:E/CON 15:19
1/25:E/CON 15:20
1/24:E/CON 15:15
1/23:E/CON 15:13
1/23:E/CON 15:14
1/22:L/CON13 B:1
1/22:K/CON12 A:1
1/17:N/CON6 PE:4
1/17:P/CON8 -216V:3
1/17:R/CON9:1
50W/24VDC
STK41
1/17:N/CON6 PE:4
1/13:P/CON8 -216V:3
1/17:R/CON9:1
200W/24VDC
STK46
1,5mm2
1/22:H/CON10 24:1
1/22:J/CON11 -24:1
1/13:K/CON4 L3:3
1/13:J/CON3 L2:3
1/13:H/CON2 L1:3
1/13:N/CON6 PE:3
1/13:M/CON5 N:3
1/20:E/CON 15:1
1/20:E/CON 15:2
1/21:E/CON 15:3
1/21:E/CON 15:4
1/21:E/CON 15:5
1/21:E/CON 15:6
1/17:P/CON8 -216V:1
1/17:O/CON7 216V:3
1/25:E/CON 15:21
1/25:E/CON 15:22
1/25:K/CON12 A:1
1/25:L/CON13 B:1
2,5mm2
0,75mm2
1 L3
2 L2
3 L1
4 PE
5 PE
6 N
7 +
8 -
9 +
10 -
11 +
12 -
13 empty
14 -216VDC
15 +216VDC
16 temp
17 temp
18 A
19 B
20 -24V
21 +24V
TEKNOWARE OY
XST2761
NO 22
NC 23
COM 24
NO 25
NC 26
COM 27
COM 28
NO 29
NC 30
empty 31
empty 32
IN 33
OUT 34
1/22:E/CON 15:7
1/22:E/CON 15:8
1/22:E/CON 15:9
1/22:E/CON 15:10
1/23:E/CON 15:11
1/23:E/CON 15:12
1,5mm2
1/17:O/CON7 216V:1
1/13:R/CON9:1
35
36
1/13:O/CON7 216V:2
1/10:H/F1:+
+ OUT
+ IN
TEKNOWARE OY
STK32B
PE
L4
N4
L3
N3
L2
N2
L1
N1
+216V
-216V
CAN1
CAN2
1/13:N/CON6 PE:4
2,5mm2
1/25:P/F7:2
1/17:M/CON5 N:3
1/25:O/F6:2
1/17:M/CON5 N:3
1/25:N/F5:2
1/13:M/CON5 N:3
6mm2
1/17:O/CON7 216V:2
6mm2
1/17:P/CON8 -216V:2
Plan. /27.10.2021
Check
Approv.
Object ID
Sheet 2/2
Drawing no.
Electrical position
Job no.

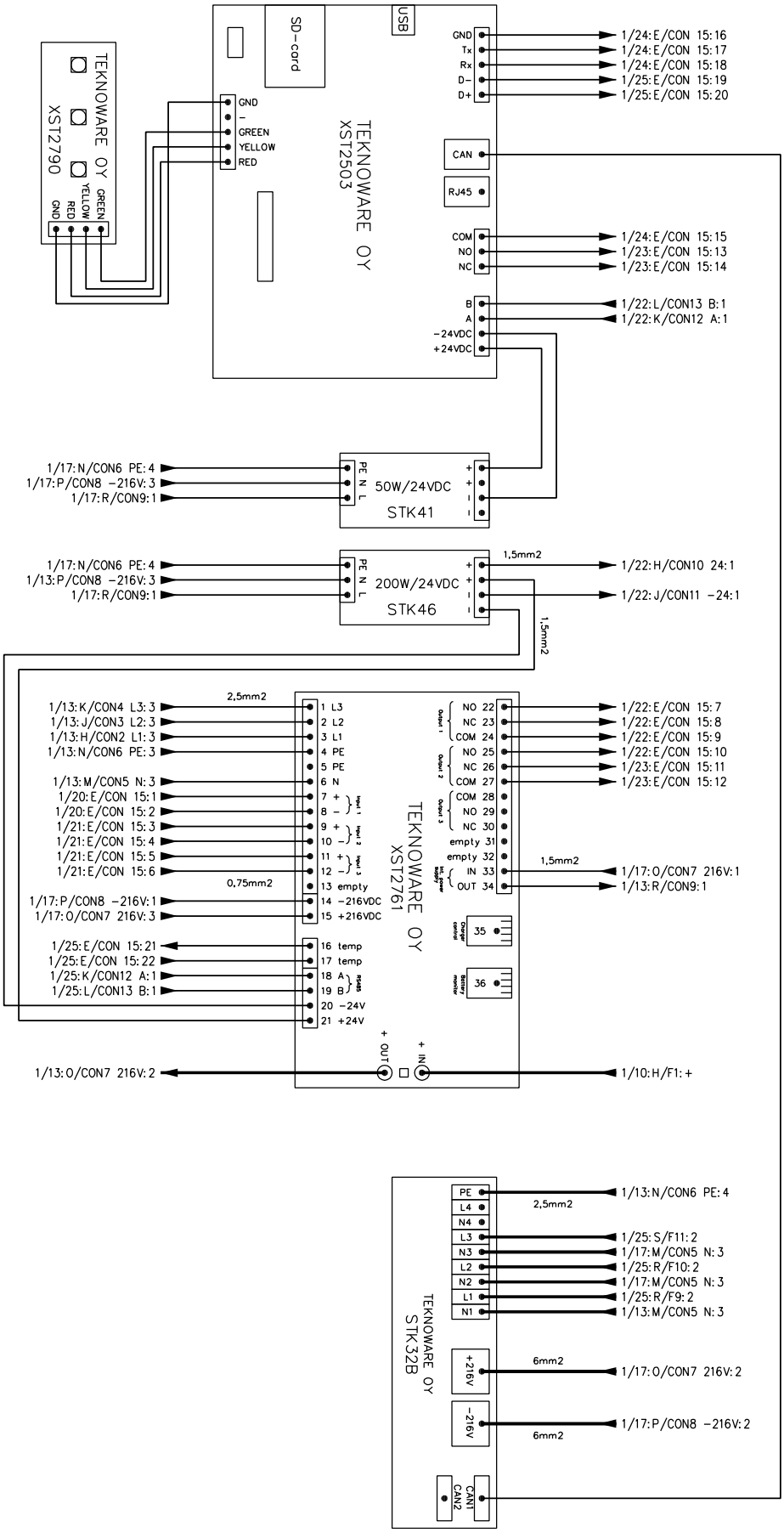

3FT7702CP_A
4.11.2021
A rev Terminal block change
B Rev.
C Rev.
D rev
TEKNOWARE
TKT77xxCx
WIRING DIAGRAM
Plan MAS 27.10.2021
Check
Approv.
Object ID
Sheet 1/2
Drawing no.
3FT7702CP
Electrical position
Job no.
2/29: G/XST2761: + IN
16mm2
F1 160A
NICD BATTERIES 180x1.2V
F2 3x50A C
CON1
6mm2
2/24: O/XST2761: 3 L1
2/23: O/XST2761: 2 L2
2/23: O/XST2761: 1 L3
2/24: O/XST2761: 6 N
2/33: G/STK32B: N1
2/24: O/XST2761: 4 PE
2/31: G/STK32B: PE DOOR
2/29: O/XST2761: + OUT
22: M/F3: 1
22: N/F4: 1
2/21: O/STK46: N
2/26: G/XST2761: OUT 34
CON2 L1
CON3 L2
CON4 L3
CON5 N
CON6 PE
CON7 +216V
CON8 -216V
CON9
30: C/XWT7740_1: L1
22: P/F7: 1
30: H/XWT7740_2: L1
30: C/XWT7740_1: L2
22: P/F8: 1
30: H/XWT7740_2: L2
30: D/XWT7740_1: L3
22: R/F9: 1
30: H/XWT7740_2: L3
30: C/XWT7740_1: N
30: H/XWT7740_2: N
2/32: G/STK32B: N3
30: C/XWT7740_1: PE
30: G/XWT7740_2: PE
2/19: O/STK41: PE
2/21: O/STK46: PE
22: N/F5: 1
2/26: G/XST2761: IN 33
2/34: G/STK32B: +216V
2/27: O/XST2761: 15 +216VDC
2/26: O/XST2761: 14 -216VDC
2/35: G/STK32B: -216V
2/19: O/STK41: N
22: O/F6: 1
2/20: O/STK41: L
2/21: O/STK46: L
1-2: REMOTE CONTROL INPUT (BATTERY MODE)
3-4: REMOTE CONTROL INPUT FOR LUMINAIRES WITH LOCAL CONTROLLER FUNCTION
5-6: EMPTY
7-9: FAULT ACTIVE OUTPUT
10-12: BATTERY MODE ACTIVE OUTPUT
13-15: SYSTEM OPERATION OUTPUT
16-18: RS232 INTERFACE (BACNET)
19-20: RS485 INTERFACE (ACM)
21-22: TEMPERATURE SENSOR
23-24: IC-INTERFACE (OPTIONAL)
CON 15
0,75mm2
2/25: O/XST2761: 7 +
2/25: O/XST2761: 8 -
2/25: O/XST2761: 9 +
2/25: O/XST2761: 10 -
2/26: O/XST2761: 11 +
2/26: O/XST2761: 12 -
2/23: G/XST2761: NO 22
2/23: G/XST2761: NC 23
2/24: G/XST2761: COM 24
2/24: G/XST2761: NO 25
2/24: G/XST2761: NC 26
2/24: G/XST2761: COM 27
2/16: G/XST2503: NO
2/16: G/XST2503: NC
2/15: G/XST2503: COM
2/12: G/XST2503: GND
2/12: G/XST2503: Tx
2/12: G/XST2503: Rx
2/13: G/XST2503: D-
2/13: G/XST2503: D+
2/27: O/XST2761: 16 temp
2/27: O/XST2761: 17 temp
temp
2/21: G/STK46: +
2/21: G/STK46: -
2/17: G/XST2503: A
2/16: G/XST2503: B
CON10 +24
CON11 -24
CON12 A
CON13 B
30: E/XWT7740_1: +24V
30: J/XWT7740_2: +24V
30: E/XWT7740_1: -24V
30: K/XWT7740_2: -24V
30: E/XWT7740_1: A
2/28: O/XST2761: 18 A
30: K/XWT7740_2: A
30: E/XWT7740_1: B
2/28: O/XST2761: 19 B
30: K/XWT7740_2: B
13: O/CON7 216V: 1
13: P/CON8 -216V: 1
17: O/CON7 216V: 4
17: R/CON8 -216V: 4
17: H/CON2 L1: 3
17: J/CON3 L2: 3
17: K/CON4 L3: 3
F3
F4
F5
F6
F7
F8
F9
30: D/XWT7740_1: +230V
30: D/XWT7740_1: -230V
30: J/XWT7740_2: +230V
30: J/XWT7740_2: -230V
2/33: G/STK32B: L1
2/33: G/STK32B: L2
2/32: G/STK32B: L3
17: M/CON6 PE: 1
17: L/CON5 N: 1
17: G/CON2 L1: 1
17: J/CON3 L2: 1
17: K/CON4 L3: 1
25: M/F3: 2
25: N/F4: 2
25: H/CON10 24: 1
25: J/CON11 -24: 1
25: L/CON13 B: 1
25: K/CON12 A: 1
17: N/CON6 PE: 2
17: L/CON5 N: 2
17: H/CON2 L1: 2
17: J/CON3 L2: 2
17: K/CON4 L3: 2
25: N/F5: 2
25: O/F6: 2
25: H/CON10 24: 1
25: J/CON11 -24: 1
25: L/CON13 B: 2
25: K/CON12 A: 2
TEKNOWARE OY
XWT7740_1
TEKNOWARE OY
XWT7740_2
XST2744
CHANGEOVER UNIT 4X350VA




Plan. /27.10.2021
Check
Approv.
Object ID
Sheet 2/2
Drawing no.
Electrical position
Job no.


3FT7703CP_A
4.11.2021
A rev Terminal block change
B Rev.
C Rev.
D rev
TEKNOWARE
TKT77xxCx
WIRING DIAGRAM
Plan. MAS /27.10.2021
Check
Approv.
Object ID
Sheet 1/2
Drawing no. 3FT7703CP
Electrical position
Job no.
2/29: G/XST2761: + IN
16mm2
F1 160A
NiCD BATTERIES 180x1.2V
F2 3x50A C
CON1
6mm2
6mm2
6mm2
CON2 L1
CON3 L2
CON4 L3
CON5 N
CON6 PE
CON7 +216V
CON8 -216V
CON9
CON 15
0,75mm2
1-2: REMOTE CONTROL INPUT (BATTERY MODE)
3-4: REMOTE CONTROL FOR LUMINAIRES WITH LOCAL CONTROLLER FUNCTION
5-6: EMPTY
7-9: FAULT ACTIVE OUTPUT
10-12: BATTERY MODE ACTIVE OUTPUT
13-15: SYSTEM IN OPERATION OUTPUT
16-18: RS485 INTERFACE (MODBUS)
19-20: RS485 INTERFACE (ACM)
21-22: TEMPERATURE SENSOR
23-24: IC-INTERFACE (OPTIONAL)
temp
CON10 +24
CON11 -24
CON12 A
CON13 B
F3 F4 F5 F6 F7 F8 F9 F10 F11
XST2744 CHANGEOVER UNIT 4X350VA
TEKNOWARE OY
XWT7740_1
XWT7740_2
XWT7740_3

| A rev | B Rev. | C Rev. | D rev |
|---|---|---|---|




TEKNOWARE

| | | |
|---|---|---|
| Plan. | 27.10.2021 | |
| Check | | |
| Approv. | | |
| Object ID | | |
| Sheet | 2 / 2 | |
| Drawing no. | | |
| Electrical position | | |
| Job no. | | |

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