J. Schneider Elektrotechnik GmbH

Original language: German

Operating Instructions

PSXX-1113G01001

*(TEC**Control***)*

TECControl

Page

Content

1   General

1.1 General safety guidelines

> **Note**
> The manual must be read before the software is installed or used and the instructions are to be complied with. Failure to do so may void all warranty claims!

1.2 Brief description

The *TEC***Control** system consists of an **AKKU**-*TEC* 24xx or **C**-*TEC* 24xx, a switching module for switching off the PC, the interface cable between the UPS and PC, and the *TEC***Control** software.
The *TEC***Control** software continuously monitors both the network and the charge status of the UPS energy storage system.
In the event of mains power failure, the IPC shuts the system down after a pre-definable time. Both the UPS and the IPC will then be switched off. Once mains power is restored, the UPS releases the output voltage, allowing the system to automatically restart. If the power supply comes back on during the shutdown process (the shutdown time has expired), the PC still shuts down and the UPS separates the IPC power supply briefly to allow the IPC to then restart without error. These features not only allow all power outages to be dealt with easily, but allow complete systems to be shut down via the main switch and let **AKKU-**ized *TEC* or **C-**size *TEC* and *TEC***Control** take over the entire internal plant shutdown routine.
Downtime and damage due to an uncontrolled process-stop can be avoided.

*TEC***Control** has a service, which protecs the IPC during no user is logon. In the event of mains power failure, the IPC shuts down.

1.3 System requirements

Operating system	Windows XP, Vista, 7
. Net Framework	3.5
Interfaces	Serial or USB (FTDI driver)

2   Installation

The software may be installed on Windows 98 / 2000 / NT, XP, Vista and 7. Before you install the software, close all applications on your computer. To begin the installation, please run the setup file **TEC-Control Setup xxxxxx**. (The six 'x's stand for the version number of the software.) The menu-driven application then installs the *TEC***Control** software on your PC. The following installation parameters are requested:

Default destination folder: *C:\Program Files\J. Schneider Elektrotechnik GmbH\TECControl*

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3   Operation

3.1   Main menu

After *TEC***Contro**l starts, the main menu appears. The *TEC***Control** software always starts at User level 0 and the last state in which it was ended. This may mean that it starts minimised and in the monitoring mode.


The following actions can be taken from blue the main menu:

- Retrieve settings
- Change user level
- Change language
- Retrieve software information

In the area "choose interface" you can select that the *TEC***Control** automatic search interface to the UPS or that the user can be set the interface manually.
In the automatic search, when the main menu is called up all available interfaces known to the system are searched for a possible connection to a J. Schneider UPS. If a device is found, it will be periodically monitored. The automatic search runs in the main menu only so long as the monitoring is off. In addition, the current port is displayed here.

In the left under area is the actual User Level displayed. In the right area you can minimize and close the Software.
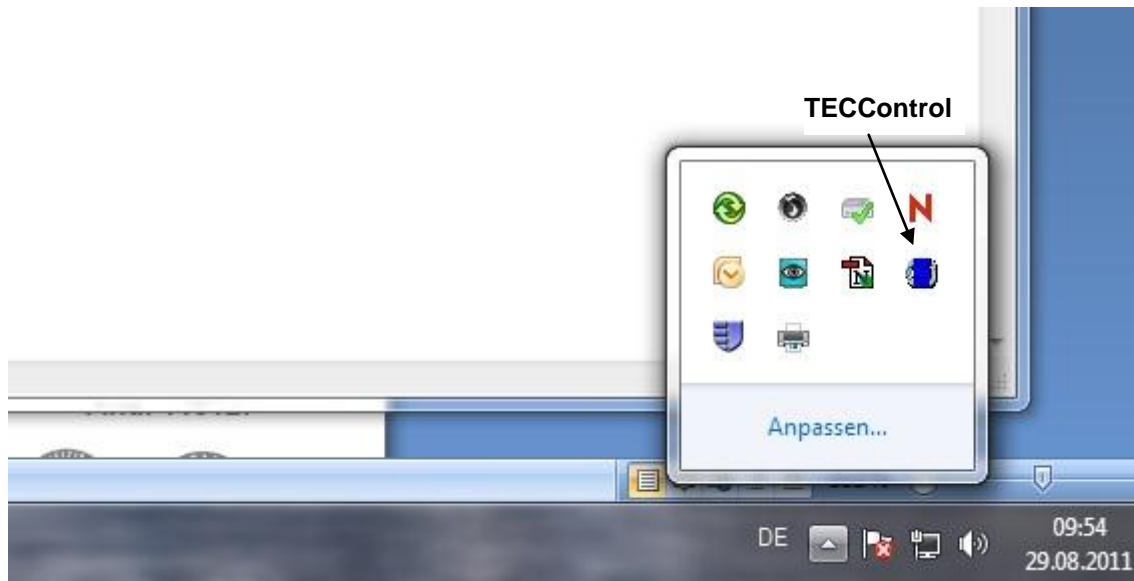
Minimised mode

The *TEC*Control software can be re-maximised by right-clicking the *TEC*Control icon and selecting Open.

3.2   User level

The user level can be changed under the "*User level*" menu. To Stopping the monitoring and be able to Retrieve settings menu, the user level must be changed into level 1.

To get into Level 1, a four-digit password is required. For level 0, no password is needed. If a password has not been assigned, the factory setting is **0000**.

To change the Level 1 password, the old password must first be entered.

3.3 Settings

The setting menu is separated in three areas. Software settings, device parameters and Service.

3.3.1   Software Settings

In the menu for the software settings you can choose the actions, which will be cause be the events mains power failure and capacity error. In additional you can set if the software starts with Windows and has to create a log file.
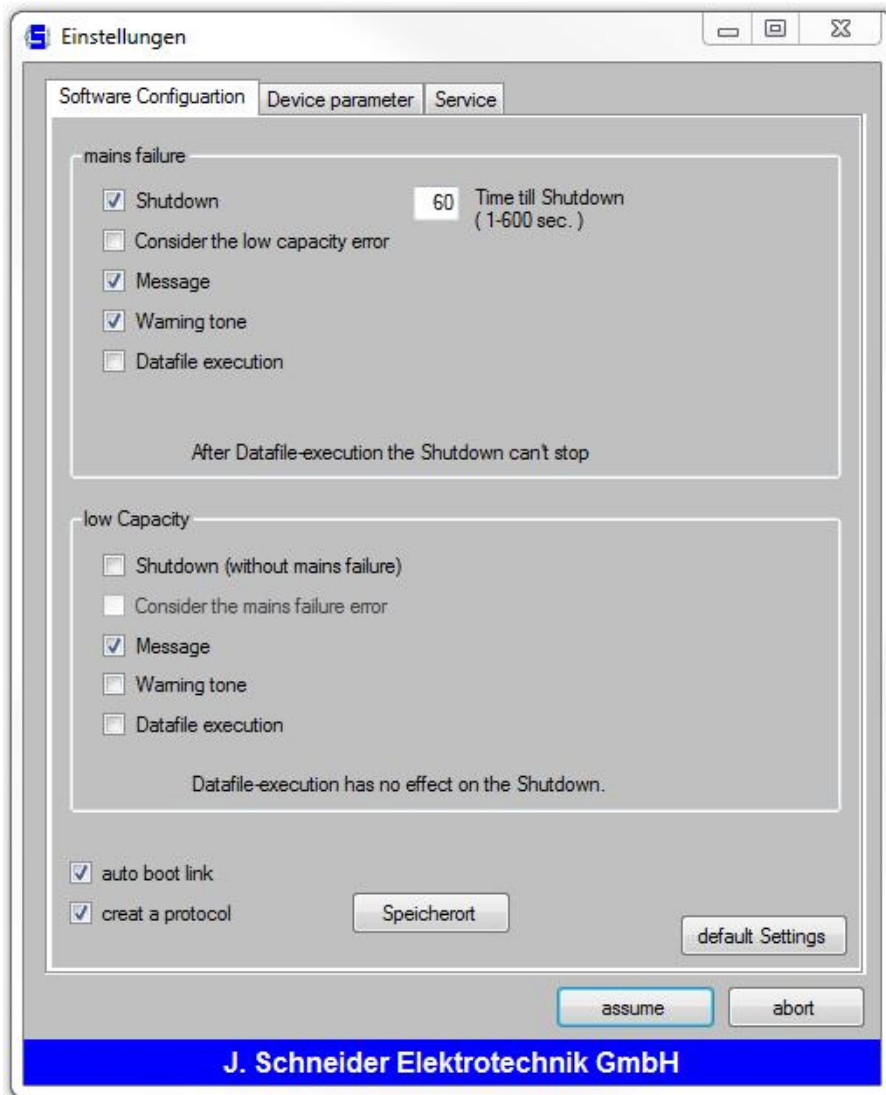
Power failure:

All of the following options relate to the message "*power failure*".

Shutdown: After a pre-definable time, a system shutdown is performed.

Consider the low capacity error: If during a power failure a low capacity error also occurs, this will trigger the setting of a new shutdown time, if the current time is even greater. This allows responses to shortened buffer times.

Datafile execution: After a pre-definable time, any file may be run.

Low residual capacity:

All of the following options relate to the message "*low residual capacity*".

Shutdown (without power failure): After a pre-definable time, a system shutdown is performed, regardless of the network state.

Consider the mains failure error: a system shutdown will be only performed, if the event main failure and capacity error happened.

Message: An additional message window is generated.

Warning tone: An audio warning is generated.

Datafile execution: After a pre-definable time, any file may be run.

> **Note**
> There can be selected only **Power failure**: take capacity into consideration **or Low residual capacity**: shutdown (without power failure).
> The boundaries for the times are recalculated after the entry of a superordinate time. Times set too high are corrected automatically

Autostart shortcut

A link to the autostart is created. The program will start automatically on system start-up.

> **Note**
> For an autostart shortcut, the program must be started in administrator mode.

Create protocol

A log file is created in .csv format and logs all the events that occur during monitoring, recording the date and time. The file name consists of the date and time when the monitoring was begun. The file is located in program/folder/protocols.

Pressing the "Factory defaults" key resets all parameters to the factory defaults.

The "Apply" key saves any modified settings and exits the menu.

The "Cancel" key discards all your settings changes and exits the menu.

3.3.2 Device parameters

The delay time for the USB shutdown signal in the device can be changed via "Device Parameters". The time indicates how long it takes the UPS to switch off the output following a shutdown.
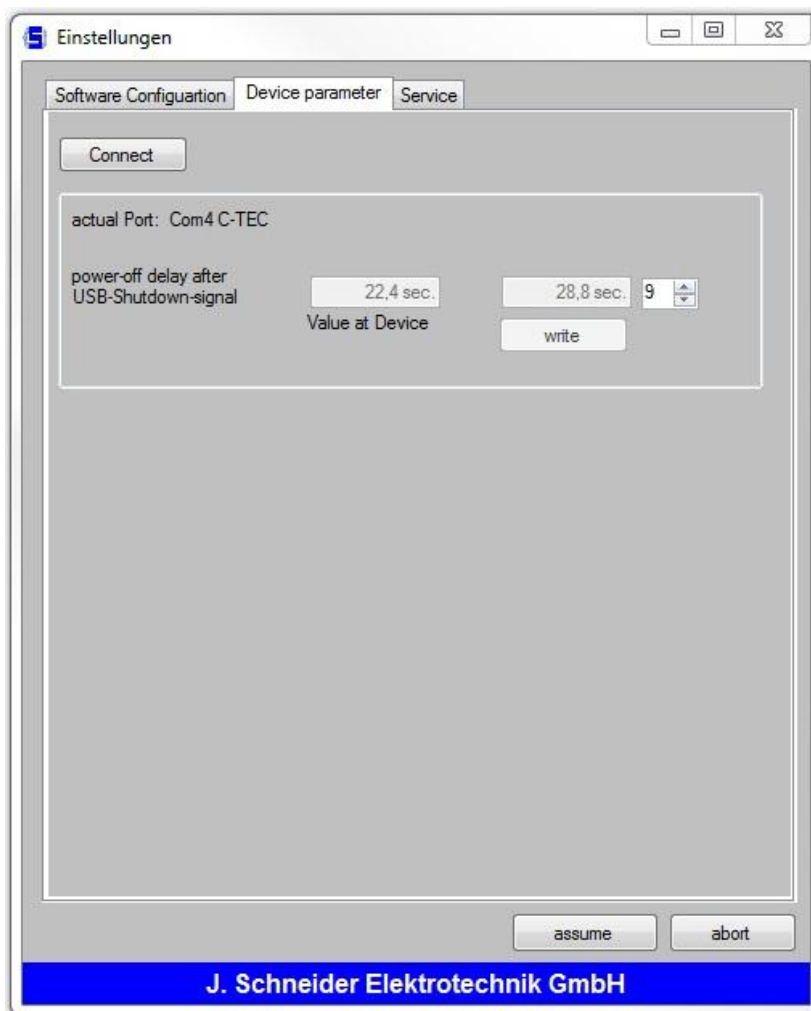
First, the software must be connected to the UPS via the "Connect" key and the current value read. The currently selected port will be accepted as the port. If no USB device is connected, an error message is generated. Once the connection succeeds, a new value may be written into the device. This is again immediately read and displayed for checking purposes.

3.3.3 Service

Under the tab Service can be change the shutdown time for the service. You can also get the status of the services and if you start *TEC*Control in administration mode it is possible to stop the service.

4   Monitoring

After all settings have been made and the correct port selected, the monitor can be started in the main menu.

4.1   Overview windows

Monitoring without error

Monitoring with error

If the monitoring has commenced and the UPS immediately has an error, the user is given ten seconds to still stop the shutdown process. If the shutdown procedure has been stopped, the *TEC**Control*** software responds again to errors only if the UPS has been error-free in-between.

If the power returns before the shutdown time has elapsed, the software does not shut the system down. If the power fails again, the time restarts. The time for the start-up file remains the same. If a file has already been running, however, and the power comes back on, the system will shut down anyway.

Stopping the shutdown process is possible at any time by pressing the "stop monitoring" key.

When serial devices are connected in series, the standard 'power failure' and 'low capacity' error messages come on if the connection to the UPS is broken during monitoring. For USB devices, a message warns that the connection has been interrupted, and the system does not shut down. The last known interface is checked periodically to check whether the UPS is once again available.

> **Note**
> If the USB connection is disconnected during monitoring and then connected to another port, this port will not be discovered! In this case, the monitoring must be stopped.

4.2 Monitoring flow

The Monitoring flows arise from the different software settings. For a better understanding the different flows will be descripted in four functions by text and flow diagram.

Function 1: The option shutdown is selected by only one of the two errors (main failure or capacity error).When the error occurs the shutdown timer is starting (shown at the Flow diagram Function 1).

Function 2: At the menu point mains failure the options Shutdown and Consider the low capacity error is selected. If during a mains failure a capacity error also occurs, this will trigger the setting of a new shutdown time, if the current time is even greater (shown at the Flow diagram Function 2).

Function 3: The option shutdown is selected by both errors (main failure and capacity error).When one of these errors occurs the shutdown timer is starting immediately. If both errors occur at the same time the shutdown timer is starting with the shortest time (shown at the Flow diagram Function 3).

Function 4: At the menu point low capacity the options Shutdown and Consider the Power failure error is selected. The shutdown timer starts only when both errors occur mains failure and capacity error (shown at the Flow diagram Function 4).

Function Datafile execution: Die cause of the option Datafile execution is shown in an extra diagram. (shown at the Flow diagram Datafile execution).

The options Message and Warning tone have no effect on the flow.

Flow diagram Function 1

mains failure
- ☑ Shutdown
- ☐ Consider the low capacity error
- ☐ Message
- ☐ Warning tone
- ☐ Datafile execution

`120` Time till Shutdown (1-600 sec.)

low Capacity
- ☑ Shutdown (without mains failure)
- ☐ Consider the mains failure error
- ☐ Message
- ☐ Warning tone
- ☐ Datafile execution

`90` Time till Shutdown (1-600 sec.)

Flow diagram Function 2

Flow diagram Function 3

low Capacity		
☑ Shutdown (without mains failure)	90	Time till Shutdown (1-600 sec.)
☐ Consider the mains failure error		
☐ Message		
☐ Warning tone		
☐ Datafile execution		

mains failure		
☑ Shutdown	120	Time till Shutdown (1-600 sec.)
☐ Consider the low capacity error		
☐ Message		
☐ Warning tone		
☐ Datafile execution		

```
                        ┌─────────┐
                        │  Start  │
                        └────┬────┘
                             │
          no ◄───────────────●───────────────► no
           │                 │                 │
           ▼                 ▼                 │
       ╱Mains  ╲         ╱  Low   ╲            │
      ╱ failure ╲       ╱ capacity ╲           │
      ╲    ?    ╱       ╲    ?     ╱           │
       ╲      ╱          ╲       ╱             │
          │yes              │yes              │no
          ▼                 ▼                 │
   ┌─────────────┐   ┌─────────────┐          │
   │   Timer     │   │ Timer für   │          │
   │  Shutdown   │   │ Shutdown    │          │
   │ Mains failure│  │ Low capacity│          │
   └──────┬──────┘   └──────┬──────┘          │
          │                 │                 │
          └────────┬────────┘                 │
                   ▼                           │
               ╱  Is   ╲                       │
              ╱ Timer over ╲◄──────────────────┘
              ╲    ?     ╱
               ╲      ╱
                  │yes
                  ▼
           ┌─────────────┐
           │  Shutdown   │
           └──────┬──────┘
                  │
                  ▼
              ┌───────┐
              │  End  │
              └───────┘
```

Flow diagram Function 4

low Capacity

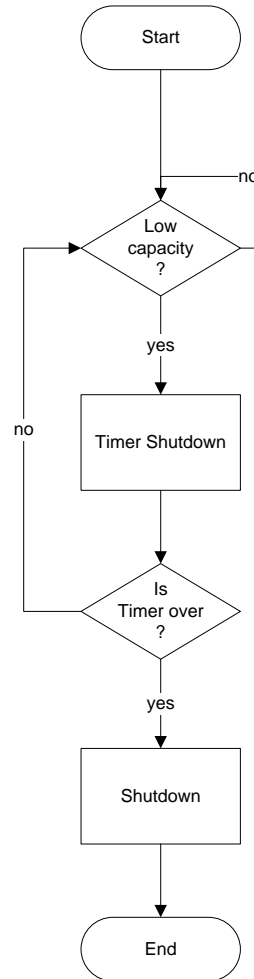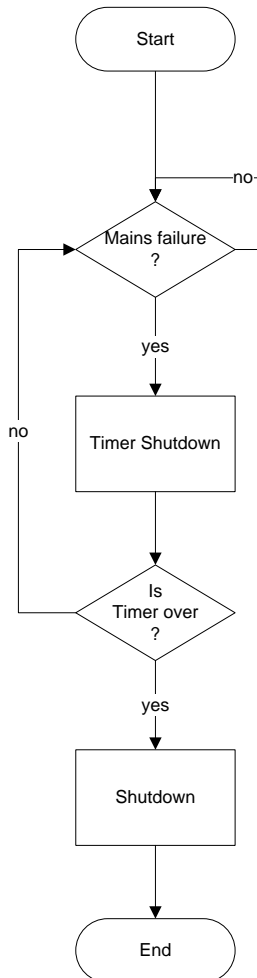☑ Shutdown (with mains failure)   `90`   Time till Shutdown
                                          (1-600 sec.)
☑ Consider the mains failure error
☐ Message
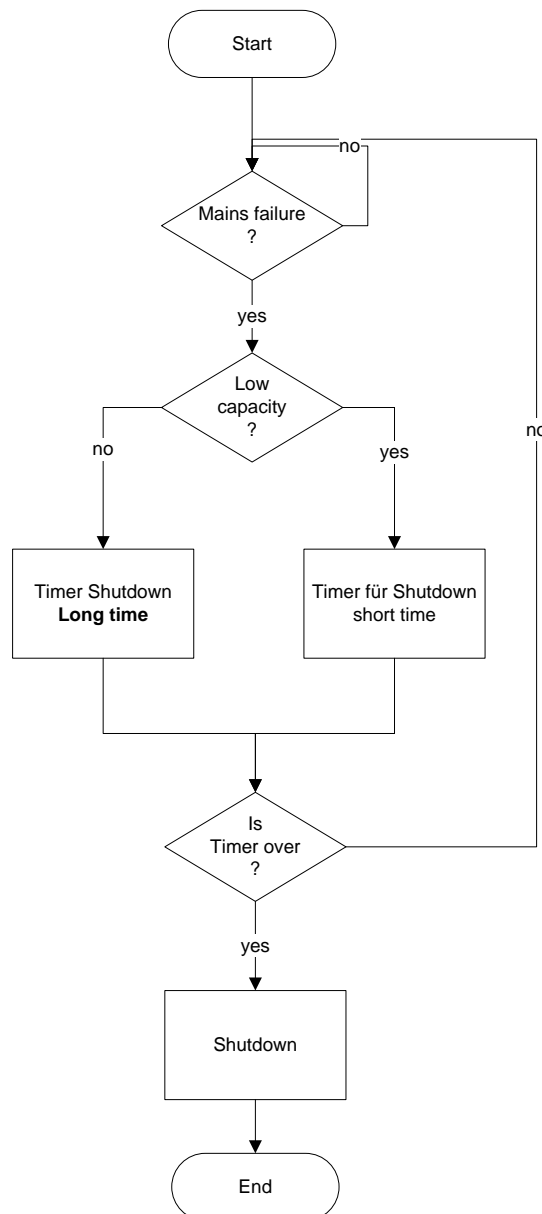☐ Warning tone
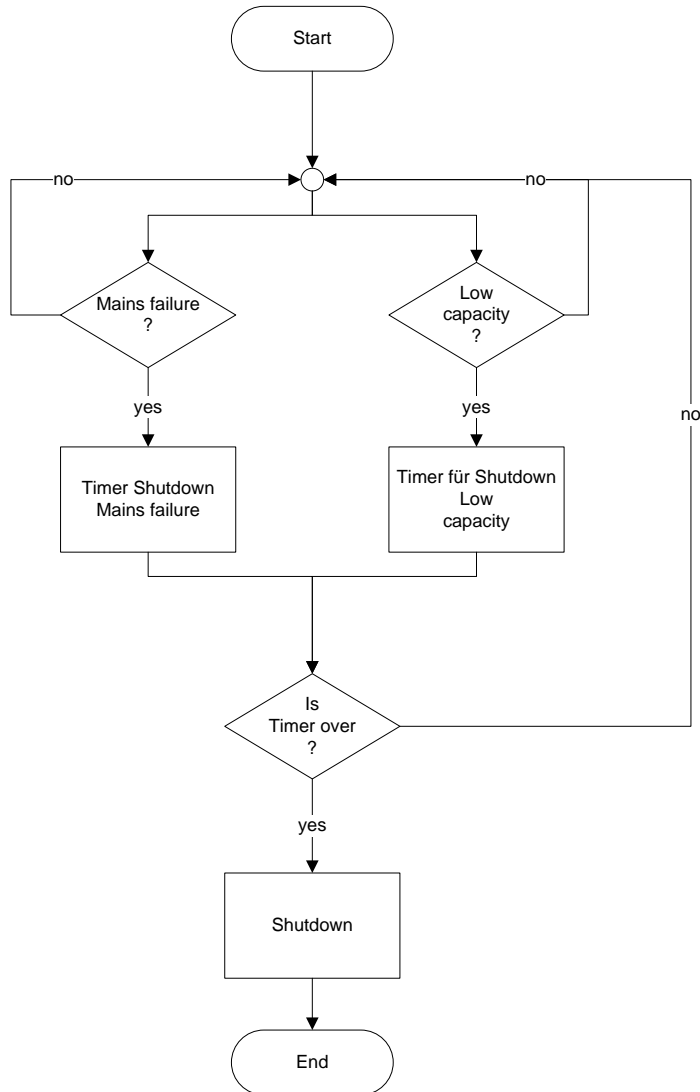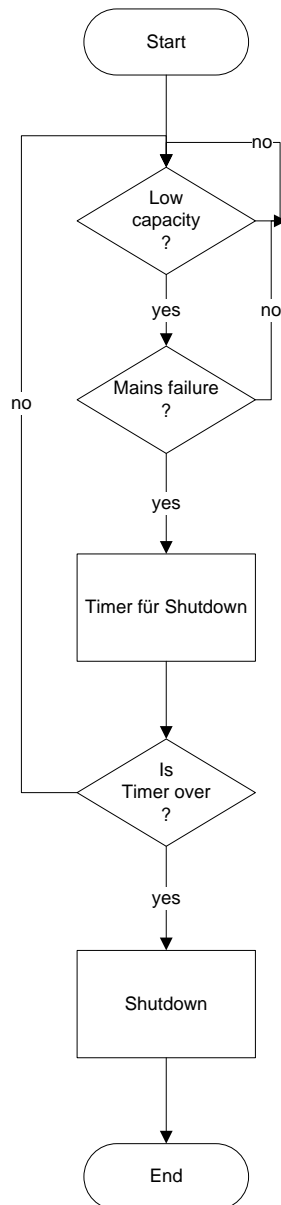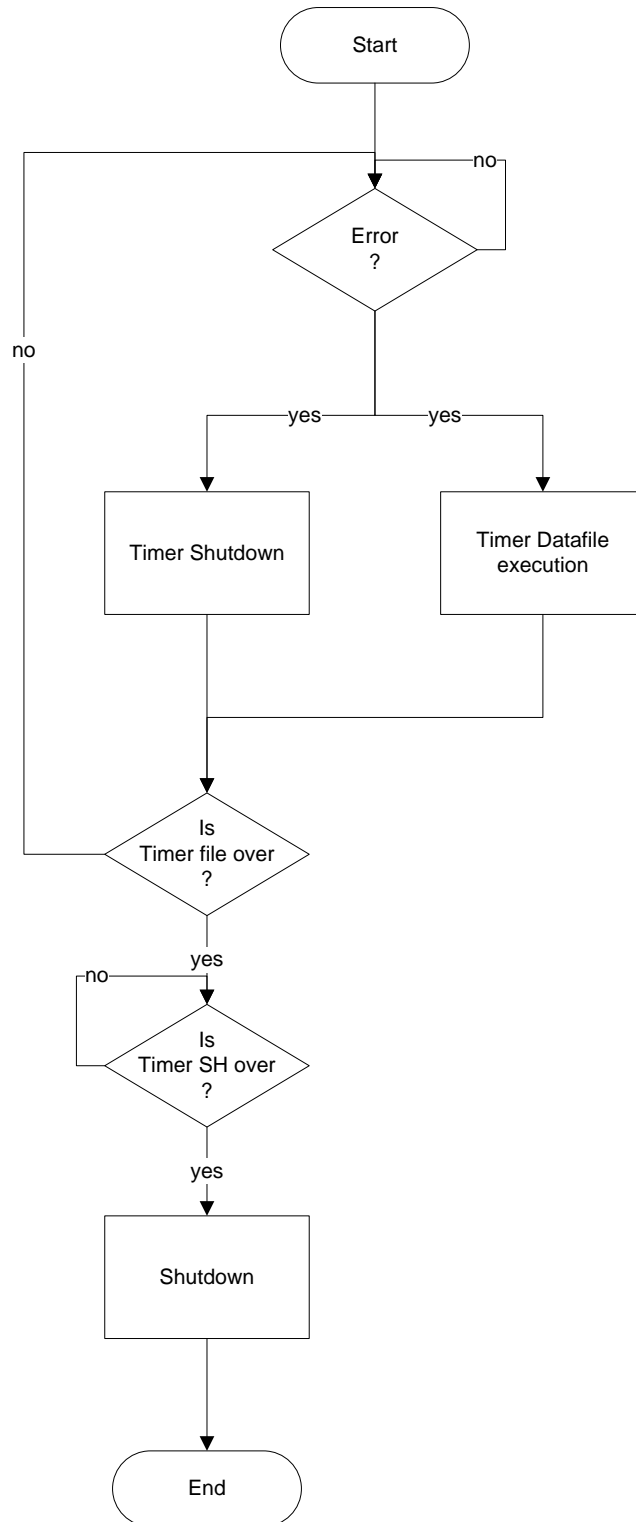☐ Datafile execution

```
                    ┌─────────┐
                    │  Start  │
                    └─────────┘
                         │
                         │              no
        ┌────────────────┤ ──────────────────┐
        │            ◇─────────◇             │
        │           ╱   Low     ╲            │
        │          ◇   capacity  ◇───────────┤
        │           ╲     ?     ╱            │
        │            ◇─────────◇             │
        │             yes  │       no        │
        │                  │                 │
        │            ◇─────────◇             │
        │           ╱  Mains    ╲            │
        │          ◇   failure   ◇           │
        │           ╲     ?     ╱            │
        │            ◇─────────◇             │
     no │             yes  │                 │
        │                  │                 │
        │         ┌──────────────────┐       │
        │         │ Timer für Shutdown│      │
        │         └──────────────────┘       │
        │                  │                 │
        │            ◇─────────◇             │
        │           ╱    Is     ╲            │
        └──────────◇  Timer over ◇           │
                    ╲     ?     ╱            
                     ◇─────────◇             
                      yes  │                 
                           │                 
                   ┌──────────────┐          
                   │   Shutdown   │          
                   └──────────────┘          
                           │                 
                      ┌─────────┐            
                      │   End   │            
                      └─────────┘            
```

Flow diagram Function Data file execution

```
                          ┌─────────┐
                          │  Start  │
                          └────┬────┘
                               │
          ┌────────────────────┤               no
          │                   ◇◇◇◇◇ ────────────┐
          │                  ◇ Error ◇          │
          │                  ◇   ?   ◇ ◄────────┘
          │                   ◇◇◇◇◇
          │                    │  │
    no    │            yes ────┘  └──── yes
          │                │              │
          │                ▼              ▼
          │         ┌────────────┐  ┌──────────────┐
          │         │   Timer    │  │    Timer     │
          │         │  Shutdown  │  │   Datafile   │
          │         │            │  │  execution   │
          │         └──────┬─────┘  └──────┬───────┘
          │                │               │
          │                └───────┬───────┘
          │                        ▼
          │                      ◇◇◇◇◇
          └─────────────────────◇  Is  ◇
                               ◇ Timer file over ◇
                                ◇   ?   ◇
                                  ◇◇◇
                                   │ yes
                      no  ◇◇◇◇◇    ▼
                      ┌──◇  Is  ◇
                      └─►◇ Timer SH over ◇
                         ◇   ?   ◇
                          ◇◇◇
                           │ yes
                           ▼
                    ┌────────────┐
                    │  Shutdown  │
                    └──────┬─────┘
                           │
                           ▼
                      ┌─────────┐
                      │   End   │
                      └─────────┘
```

5 Monitoring at the logon window (*TEC*Control Service)

At Monitoring with no user login the *TEC*Control Service monitors only the mains failure. Also there is no Message or display which shows the status. At the event of a mains failure the service starts the shutdown timer. After that the service sends the shutdown signal to the UPS and the system shutdown can't stop. If the *TEC*Control Software starts, the service is still running but disconnects the UPS. So that the monitoring function can transfer to the *TEC*Control. If the user logged off the service connect to the UPS automatically.

The TECControl Service can only be started by the Windows. So a restart after installation is necessary.

*TEC*Control Sevice
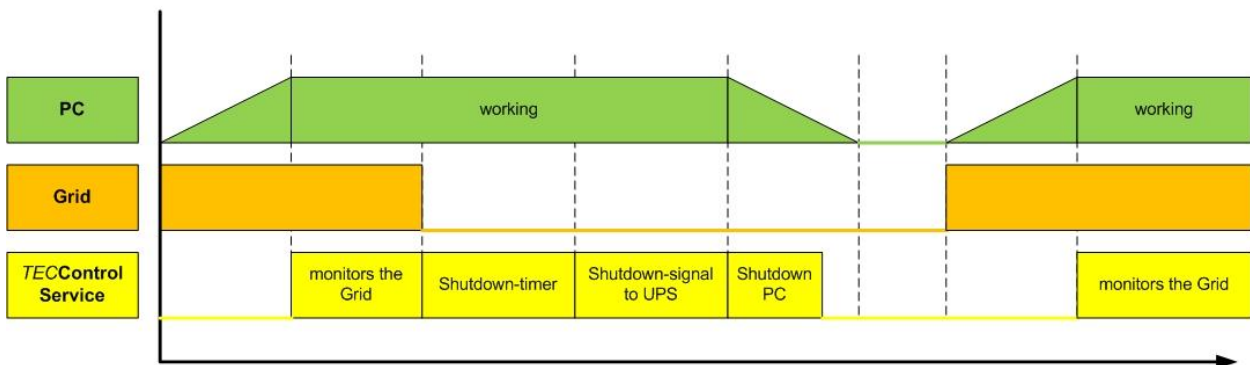
*TEC*Control Systemstart
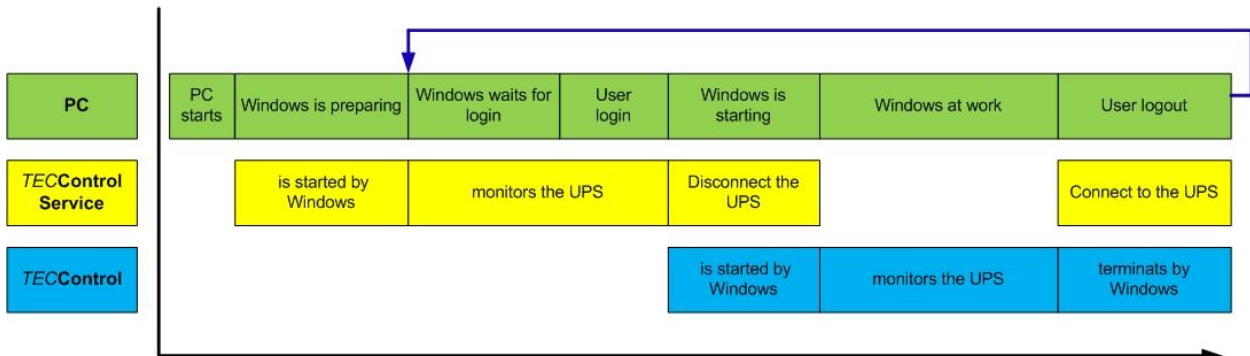
Attention: If the *TEC*Control will close, then the service takes over the monitoring**.**

Troubleshooting

Error	Cause
Program does not start automatically, although there is a check-mark at AutoStart.	Program does not have administrative rights. Exit program and restart as Admin. Uncheck Autostart box and reset.
Monitoring reports connection lost, though USB plug has been reinserted.	USB connector is plugged into another port.
Software cannot connect to a USB device to change the device parameters, although automatic search was selected.	Automatic search takes place only in the main menu. After selecting automatic search, please go first to the main menu.
The settings menu will not open.	Monitoring is running.
Automatic search finds no device, though device is plugged into PC.	Windows has not yet installed the drivers for the USB device. Please check if the devices appear in Device Manager. If Windows finds no driver, please install it manually.

6   Accessories

Designation	Schneider-No.:	Suitable for:
Interface cable DC-UPS / PC RS232	PSDP-0324G01002 cable C1 (1.2m) PSDP 0324G01003 cable C2 (5.0 m) PSDP-0324G01005 cable C3 (10.0m)	**AKKU-**_TEC_ 2405 to 2440
Interface cable DC-UPS / PC RS232	PSDP-0324G01004 cable A (1.2m)	**AKKU-**_TEC_ 2402 / 2403 For the following devices this cable can be used as an alternative to the device's own USB port! **AKKU-**_TEC_2405 USB **C**-_TEC_
Interface cable DC-UPS / PC RS232	Cable B	**AKKU-**_TEC_ 2403 DC/DC
Interface cable DC-USV / PC USB	Cable D	**AKKU-**_TEC_ 2405 USB **C**-_TEC_
IPC-switching module	RBSM0429G01001	For **AKKU-**_TEC_ 2402 / 2403 / 2405 / 2410

7 Example circuit

*TEC*Control Complete System
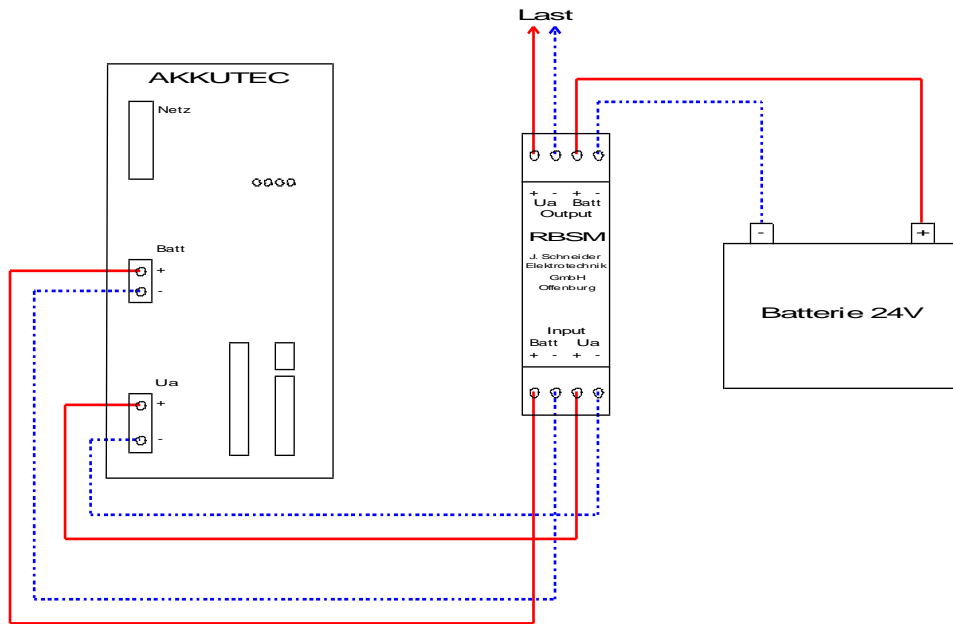
*TEC*Control System without RBSM
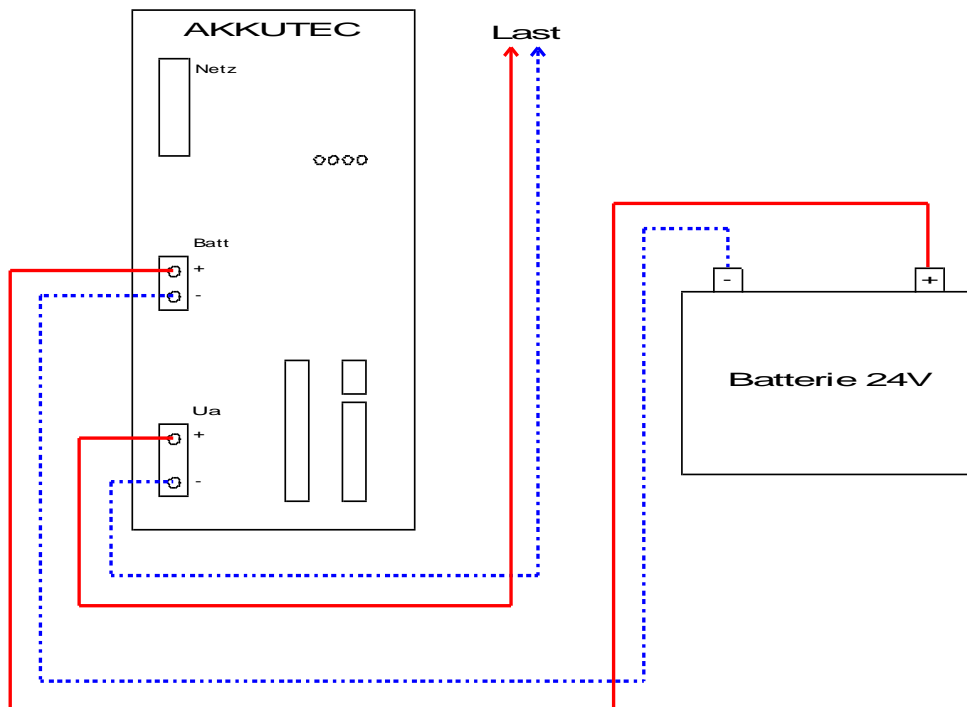
If the *TEC*Control system runs without RBSM, the IPC cannot be turned off in the event of returning mains power and active shutdown! The IPC can be shut down only if **no** mains power is available!

8   Assignment interface cable

IO-1 **IO-2**
ws — 1   1
      2   2
br — 3   **IO-3**
      4   1
      5   2
      6   3
      7   4
gn — 8 gr — 5
ge — 9 rt — 6
	Assignment of the RS232 interface cable
	(**AKKU-***TEC* 2405 to 2440)
	
	Cable C1 Type No. PSDP0324G01002 (1.2m)
	Cable C2 Type No. PSDP0324G01003 (5.0m)
	Cable C3 Type No. PSDP0324G01005 (10.0m)

I/O
      1
      2
ws — 3
br — 4
      5
ge — 6
gn — 7
rt — 8
gr — 9
	Assignment of the RS232 interface cable for **AKKU-***TEC* 2402/3
	
	8.1.1.1 If the USB interface is not used, also
	
	AKKU-*TEC* 2405 USB
	
	Cable A Type No. PSDP0324G01004 (1.2m)

I/O
ws — 1
br — 2
ge — 3
gn — 4
rt — 5
gr — 6
      7
      8
      9
	Assignment of the RS232 interface cable for
	C-*TEC* 2405 - 2410
	
	8.1.1.2 (Use only if the USB interface of C-TEC is not used)
	
	Cable A Type No. PSDP0324G01004 (1.2m)

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	Assignment of the RS232 interface cable for **AC C-**_TEC_ 2403 Cable A Type No. PSDP0324G01004 (1.2m)
	Assignment of the RS232 interface cable for **DC C-**_TEC_ 2403 Cable A Type No. PSDP0324G01004 (1.2m)
RS232 1:1 cable 9-pin D-SUB (m / f)	**AKKU-**_TEC_ 2403 DC/DC Cable B
USB cable with USB-A/USB-B plug	**AKKU-**_TEC_ 2405 USB and **C-**_TEC_ Cable D