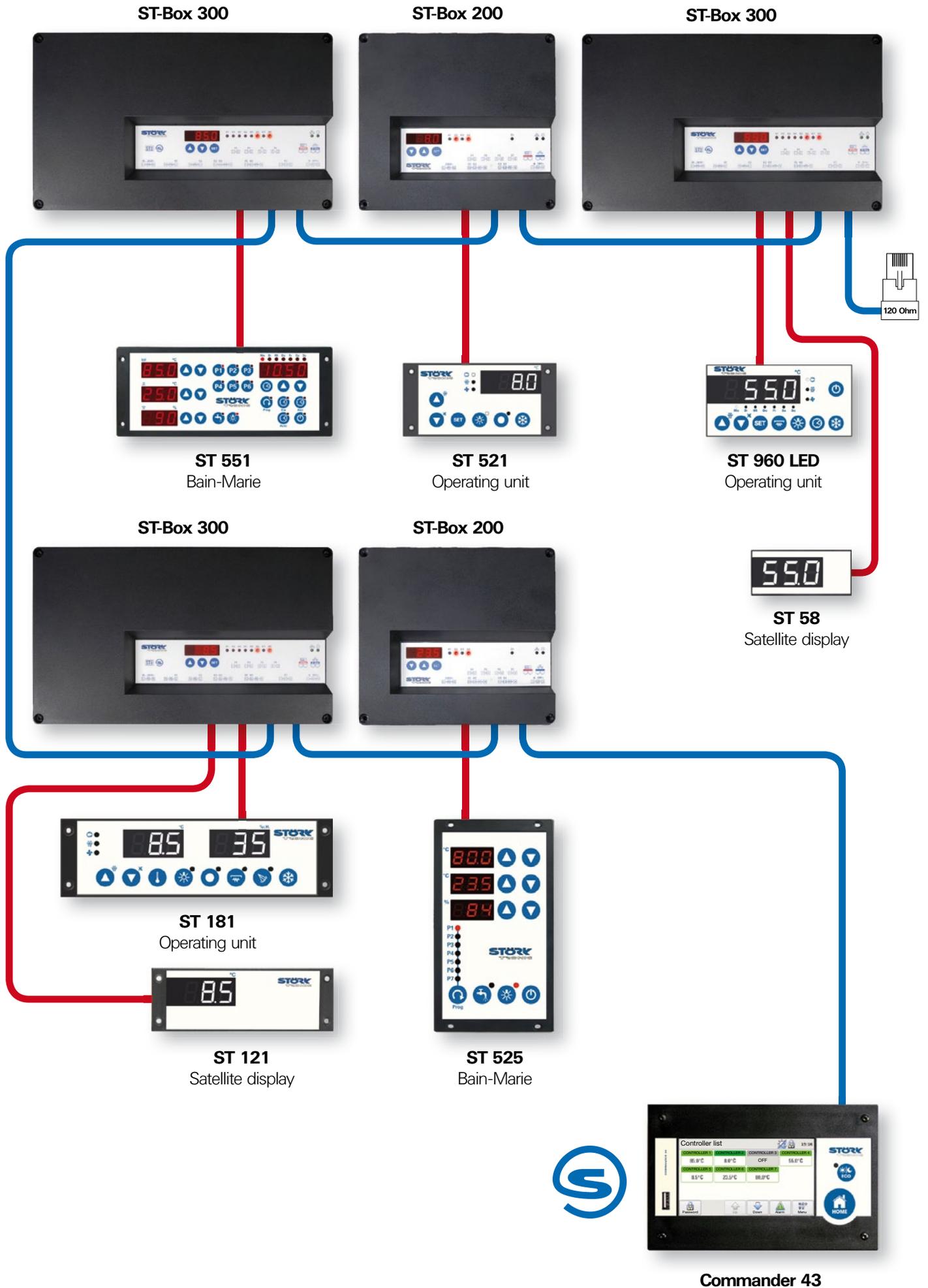


**ST-BOX**  
THE PERFECT SPLIT SOLUTION



**100% made in Germany!**



**Commander 43**

## A NEW GENERATION OF DISPLAY REFRIGERATOR CONTROLLERS

Störk-Tronic has been firmly established in the market for refrigeration controllers for nearly 3 decades, possessing a broad range of expertise in this field. The market expertise that was gained from numerous customer-specific projects and many years of market experience has been integrated into the development of the ST-Box – a new and innovative generation of split-controllers. Hereby, the power output unit of the cooling controller (ST-Box) is separated from the operating unit - which provides the customer with a broad variety of optional operating units.

### Modular design

The modular design provides a great degree of flexibility for the selection of different operating units, design versions, assembly types as well as the performance-appropriate design of the controller. Standard CAT5 cables are used to establish the connection between the units and thus greatly simplifies the start-up.

### ST-Box 200 or ST-Box 300

The control modules are available in two different sizes: the ST-box 200 is optimised for small and medium display refrigerators, and the ST-Box 300 is perfectly suited for medium and large display refrigerators.

### Simple installation and start-up

The ST-Box is fastened with four variable locking tabs. As desired, it can either be mounted horizontally or vertically.

The ST-Box 200, with its exterior dimensions of 185 x 170 x 80 mm is perfectly optimised for small and medium-sized display refrigerators.



The ST-Box 300, with its exterior dimensions of 285 x 170 x 80 mm is optimised for medium and large display refrigerators.

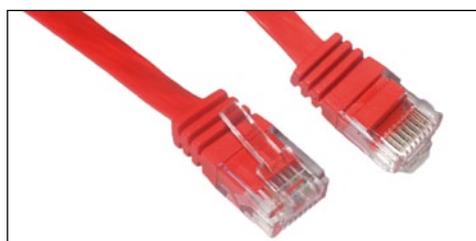
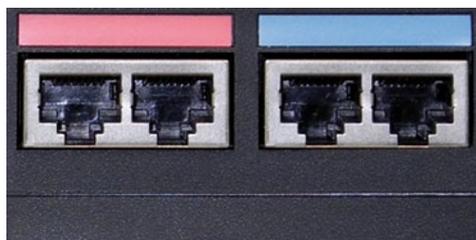


### Networking

In addition to the two interfaces for the operating units and satellite displays, all controllers are also equipped with two network plug connectors (CAT5) which are necessary for networking. This enables the integration into networked systems and the use of the Störk-Tronic Commander system.

### Standard CAT5 cables

A unique feature is that special assembly-requiring cables are not necessary for either the connection, or the internal networking of the controller and satellite units. All units are connected with standard, commercially available prefabricated CAT5 cables thus far less expensive. This does not only save installation time, it also speeds up the troubleshooting of possibly incorrect cabling.



Fast networking and low cost through prefabricated CAT5 cables.



The difference between the ST-Box 200 and ST-Box 300 is the number of inputs and outputs, as well as the scope of functionality.

## THE ST-BOX 200 AND ST-BOX 300 – THE SMALL AND LARGE SPLIT SOLUTION

The difference between the ST-Box 200 and ST-Box 300 is the number of inputs and outputs, as well as the scope of functionality. However, all versions share certain technical characteristics.

### Current-carrying capacity

The output relays used are designed to handle a continuous voltage of at least 16 A at 230 V. Depending on the requirements, the outputs for compressors with a switching relay are suitable for 1 kW or 2 kW motor performance – which enables the avoidance of external relays, even for higher compressor performances. Switching relays are integrated for the lamp loads and are equipped with contacts, that can even adapt to very high pulse-like inrush currents.

### Temperature control and programming

A software specially designed for display refrigerator controllers ensures the temperature control of the display refrigerators and thereby covers all eventualities. During the start-up and the initial adjustments, our technical sales specialists will be available to you to answer any arising questions.

The parameterisation of the controllers is either conducted directly via the ST-Box or with the help of the operating unit. If networking of the controller module is established via the ST-bus interface, the parameterisation can be comfortably conducted from the workplace using the „ST-Studio“ software package.

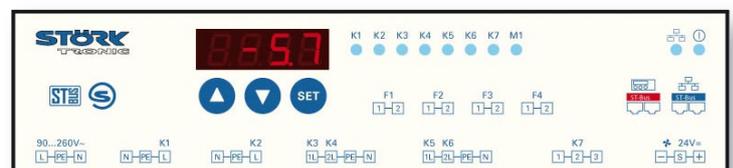
Additionally it is possible to set-up different counter models, with pre-programmed parameter sets. In this case, only one parameter will be set during the initial installation („J“ parameter).

ST-Studio for the convenient  
configuring of all modules from  
the desktop.



### The ST-Box display

In principle, it is possible to use the ST-Box as a black box. To ease the service work and the initial start-up, the outputs and interfaces were provided with notification lamps. The seven-segment display and three buttons enable a configuration and parameterisation of the controller.



The seven-segment display allows the programming to be performed on the ST-Box. All outputs and interfaces have their own notification lamps.

### Cold store fan speed control

There are two different approaches available for a seamless speed control of the cold store fan. Triac phase controllers can be used for 230 V AC fans. For 24 V DC cooling fans, we can provide outputs with a 5...24 V adjustment range. However, as far as it is possible for the user we favour and recommend the use of 24 V DC fans. These are twice as efficient - which creates significantly less heat in the cooling circuit. Further advantages are the optimum speed adjustability in a very broad range, as well as the low voltage inside the fan. This will omit the need for an expensive and bulky watertight (IP65) fan for many applications.

The total power of the connected 24 V DC cooling fan may be 24 or 48 W depending on the version.

### Safe start

To ensure a safe fan start-up, the fans are always started with the maximum voltage using a circuit for the start-up boost, that only lowers the speed to the value set by the user after a few seconds.

With the ST-Box, the safe operation of cold store fans is controlled in a reliable, economical and environmentally sound manner.



## THE ST-BOX RELIABLY MONITORS AND CONTROLS

### No humidifier necessary

The fan speed is pre-set by the parameterisation in the controller. To avoid the use of expensive and impractical humidifiers for certain applications, you can set different speeds for the cooling and defrosting.

### The highlights

- Five to eight outputs
- Can be combined with many operating units and satellite displays
- Connection for temperature sensor, humidity sensor and switching inputs
- Utilization performance up to 25 A at 230 V mains voltage
- High switching capacity in particular for compressors
- Colour and mechanical encoding of the plug connector
- For small, medium and large counter systems
- Easy networking
- Variable mounting options
- Time saving through a simple installation
- DC fan control up to max. 48 W performance
- Standards-compliant design
- UL approval

- 1 Seven-segment display
- 2 Push buttons
- 3 Notification lamps switching outputs
- 4 Pictograms for all connections
- 5 Notification lamp networking
- 6 Notification lamp mains voltage
- 7 Connections for grid connection and outputs
- 8 Inputs temperature sensor
- 9 Input humidity sensor
- 10 CAT5 plug connectors of the operating units and satellite displays
- 11 CAT5 plugs for the networking
- 12 Plug connectors for the outputs and grid connection



## THE ST-BOX BAIN-MARIE

Bain-Marie controllers are also used in addition to the ST-Box 200 and ST-Box 300. They are founded on the same basic principle as the ST-Boxes for cooling applications, but are utilised in heated hot water tanks, the so-called Bain-Maries, to keep food warm. The Bain-Marie intention is to evenly distribute the heat throughout the food via the water bath, heating but not burning the food. The temperature is always kept below the boiling point of water. As a heat-related application, the ST-Box Bain-Marie controls the water temperature, the level compensation of the water bath, the continuous power for halogen lamps or infrared lamps as well as other secondary functions.

### The highlights

- The same basic principle as the ST-Box 200 and ST-Box 300
- Control of the heaters for spotlight power, water temperature, etc.
- Integration of the entire performance components into a single box
- No additional components required
- Quick assembly for an immediate deployment
- No comparable products on the market
- Innovative functions
- Continuous and gentle performance control



- 1 Seven-segment display
- 2 Push buttons
- 3 Pictograms for all connections
- 4 Notification lamps for inputs and outputs
- 5 Notification lamp networking
- 6 Notification lamp mains voltage
- 7 CAT5 plug connectors for the networking
- 8 CAT5 plug connectors for the operating unit and satellite display
- 9 Input level detection
- 10 Inputs temperature sensor
- 11 Output connectors
- 12 Three-phase power supply
- 13 Sensor plug
- 14 Operating unit ST 551 Bain-Marie

## MODULAR DESIGN WITH DIFFERENT OPERATING UNITS AND SATELLITE DISPLAYS

All control modules are equipped with interfaces for operating units and satellite displays – they enable the individual configuration of a system. Whether it is used as a horizontal, vertical, front or rear mounted unit – the ST-Box technology adapts itself to every single one of your design concepts and the available space. The membrane of the display can be customised upon request.

You want to customise the scope of performance and the design to suit your needs? No problem – for larger quantities it is even possible to customise the design of the operating units.

### Operating units

Depending on the version, the operating units are equipped with four to eight buttons on the front side. By default, one button is provided as a stand-by button and three keys are used to set the controller. The function

of the optionally available buttons can be determined through the programming depending on the requirements.



ST 525 Bain-Marie

### Satellite displays

For many applications, a customer facing display of temperature is required. For this task, Störk-Tronic offers satellite displays – which are available with concealed front or rear buttons. Here, the start-up is also significantly simplified through the networking with standard CAT5 cables.



ST 58 satellite display



ST 121 satellite display



ST 181 operating unit



ST 181 operating unit



ST 960 LED operating unit



ST 521 operating unit

## INTELLIGENTLY DESIGNED DOWN TO THE LAST DETAIL

### Connection technology

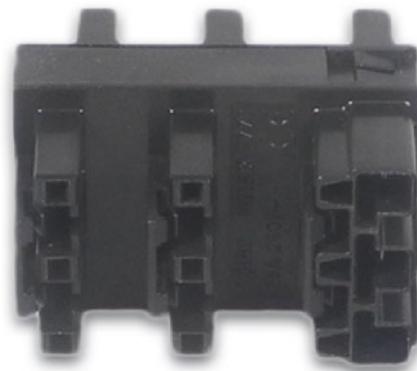
Störk-Tronic has decades of experience with plug-in display refrigerator controllers. We were able to develop this degree of expertise through a close cooperation with the company WAGO – the specialist for electrical connection systems. New and innovative connectors were specially designed for the ST-Box system, which were then introduced into the market by WAGO.



The colour and mechanical encoding of the connectors enables a simplified installation.



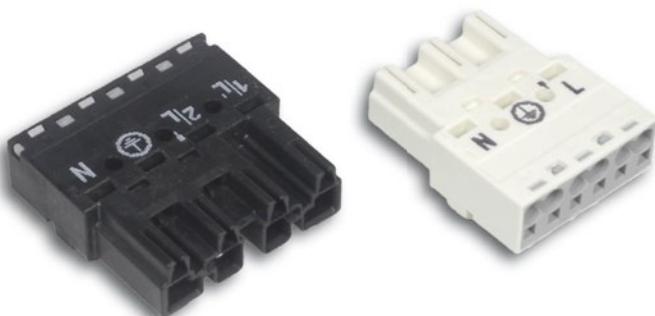
Because of their high reliability and easy installation options, the ST-Box system utilises cage clamps. The 3, 4 and 5-pole plug connectors have a 10 mm grid and are intended for mains network or 24 V DC connections (fan controller). The plug connectors are equipped with a leading protective grounding contact, a neutral contact as well as one or more phase contacts.



Beyond that, it is also possible to utilise various additional distributors, for example, for lights and fans.

Each terminal can accommodate two connection lines. The current carrying capacity of the contacts can reach 25 A at 230 V or 400 V depending on the version, which provides a substantial performance increase compared to previous versions.

For the sensor side 2-pole plug connectors with a 5 mm grid dimension are used.



### No additional switching cabinets

Thanks to the connector-based technology, it is possible to omit additional switching cabinets for nearly every application scenario. Typically, the consumer devices, i.e. compressors, lamps, defrost heaters, fans, etc. are prefabricated with the connection cables and plug connectors, possibly connected for the first time when they are installed.



The ST-Boxes are delivered in secure packaging.

### Accessories included in the scope of delivery

All controllers are generally delivered with the appropriate connectors. The connectors are also available as spare parts. In addition to their power establishment function, the plug connectors are also used for locking and cable strain relief purposes. The locking can be loosened with merely a screwdriver, which is in accordance with the latest regulations. A matching screwdriver is included with each controller, and should also be used for the installation of the cage clamps.



### Only a few minutes assembly time

This plug connector concept enables a quick and easy assembly. The installation and removal of the controllers can be performed in just a few minutes without any special knowledge or training effort.





**100% made in Germany!**