

# KS vario BT

## Graphic operating terminal for modular controller system

Operating terminal with convenient user interface

Comprehensive range of functions for operating up to 30 control zones

Connection of KS vario via Modbus interface

High-contrast STN LC colour display

Touch-screen operation

Ethernet interface

### FEATURES

- ⊕ Graphical touch-screen operation
- ⊕ Simple access for 4...30 control loops
- ⊕ Overall surveys
- ⊕ Grouped operation of control loops
- ⊕ Operating Level for process values
- ⊕ Configuration Level for control parameters and configuration data
- ⊕ Alarm processing (limit values, sensor, heating current, etc.)
- ⊕ Online trend display
- ⊕ Recipe management
- ⊕ 3-level password protection
- ⊕ Language selection
- ⊕ Direct connection of the KS vario via RS 485 or RS 232 interface
- ⊕ FTD-Network access to recipes (Ethernet TCP/IP)
- ⊕ USB-interface for external recipe backup

### APPLICATIONS

- Plastics processing
- Hot runners
- Heated molds
- Textile machines
- Packaging machines
- Semiconductor production
- Furnaces
- Driers
- Climatic chambers
- Thermal treatments
- Burners & boilers

- Medical equipments
- Sterilisers

### DESCRIPTION

Fully graphical operating terminal  
The operating terminal **KS vario BT** is intended for convenient, stand-alone operation of the **KS vario** controller system. This enables the multi-channel system to be operated as several single-loop controllers without the need of a superordinate PLC.

The terminal is connected to the controller's Modbus coupler via an RS 485 interface. Alternatively, communication can be switched over to parallel operation via the controller's RS 232 Engineering interface.

By means of an Ethernet interface, the operating terminal can be linked into existing networks. Recipe data can be transmitted from or to the terminal. Similarly, an external OPC server can be used for access to process data. An additional possibility for data access is provided by an optional web server in the **KS vario BT**. The user interface made available via a network in the form of HTML pages. By means of a standard browser, operation & display can then be implemented with a PC.

### TOUCH PANEL

The **KS vario BT** has been designed as an extremely compact unit for panel mounting.

The computing core consists of a 'low power' RISC processor, which operates without cooling fan. Flash modules are used as program memory. This design makes the terminal's hardware extremely robust and gives it a long service life.

The full-colour graphic display has a resolution of 320 x 240 pixels (1/4 VGA). Moreover, the display is featured by especially good readability and brightness as well as a durable backlighting element.

The integrated resistive 'touch' feature permits direct controller operation via the display screen. No further operating controls are required.

### USER INTERFACE

The terminal **KS vario BT** comes with a user interface for operating up to 30 control zones in a **KS vario** control system.

The number of control loops and the active interfaces can be configured online.

Handling of the **KS vario BT** is designed completely for 'touch screen' operation.

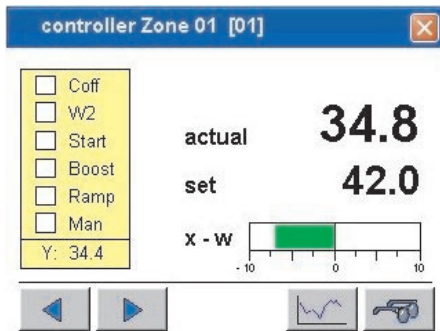
All operating and functional data are selected on-screen with the help of context-related menus.

**The following operating & functional display screens are available:**

### Operating Level

#### Overall survey

Display of up to 30 control loops on one page, display of one value per control loop, colour-change of the values as a function of the limit values. Switchover of the displayed values between process value, setpoint, and heating current.



#### Controller settings

Individual adjustments for every control zone, plus additional functions (On/Off, W/W2, start-up, etc.).

#### Trend display

Online trend display: setpoint versus process value on one screen page.

#### Alarm page

Currently active alarms with time stamp and alarm messages in plain text.

#### Language selection

max. 3 languages (English / German / French/Italian)

#### Operator access

3 password levels:

0 = no changes possible

1 = only entries in the Operating Level permitted

2 = full access

### Function Level

#### Control parameters

Tabular overview of control parameters and other function parameter for one controller.

#### Limit values

Tabular overview for one relative tolerance band, two absolute limit values, and the minimum heating current value.

#### Optimizing page

Page for starting / selecting the self-tuning function.

#### Group assignment

Definition of controller groups for grouped operation.

#### Copying of settings

Copying the settings (operating values and parameters) from one controller to one or several other controllers.

#### Recipes

Reading / writing of pre-defined recipes.

#### Device configuration (setup)

##### Selection of the interface.

Number of connected control loops.

Description of the control loops.

## TECHNICAL DATA KS VARIO BT

### PROCESSOR

CPU: Arm 9 SC 2410 266 MHz  
Passive cooling  
64 Mbyte on-board RAM  
64 Mbyte on-board Flash memory

### DISPLAY

5,7-inch FSTN LC colour display, QVGA, 320 x 240 pixel resolution, 256 colours, 165 cd/sqm, resistive touch

### INTERFACES

#### Port for KS vario Modbus coupler (COM3)

Type: RS 485, 9-pin Sub-D connector.  
Max. cable length: 1000 m

#### Port for KS vario BlueControl interface (COM1)

Type: V.24 / RS 232, 9-pin Sub-D connector.  
Max. cable length: 3 m

#### Network

Ethernet interface (10/100 Base-T)

#### USB interface

1 x USB client (type B)

1 x USB host (type A)

#### Memory expansion

1 x Compact Flash card type I

### POWER SUPPLY

Operating voltage: 24 V DC  $\leq$  12W  
Protection class III (protective low voltage)

### ENVIRONMENTAL CONDITIONS

Permissible temperatures  
For operation: 0...50°C  
For storage / transport: -20...60 °C

#### Climatic category

Relative humidity: 10...95 % at 40 °C, no condensation.

## INFLUENCING FACTORS

#### Supply voltage

No effect. No loss of configuration data in case of a power failure (Flash PROM storage).

#### Vibration test

Sinusoidal oscillations according to DINEN60 068-2-6.

Test: 2g, 1 h along each axis

#### Shock test

According to DIN EN 60 068-2-27.

Test: 10g during 11 ms, half sine wave, three shocks along each axis and orientation.

## ELECTROMAGNETIC COMPATIBILITY

#### Electromagnetic immunity

To EN 50 082-2

All interface cables must be screened.

#### Electromagnetic radiation

To EN 50 081-2

Radiation from housing: Class A in accordance with EN 55 011

## GENERAL

#### Housing

Dimensions: 195 x 148 x 45 mm

(WxHxD)

Panel cutout: 188 x 141 mm

#### Weight

approx. 0,8 kg

#### Protection mode

Front: IP 65

Rear panel: IP 20

#### Safety tests

Complies with EN 61 010-1 (VDE 0411-1):

Overvoltage category II

Contamination class 2

Working voltage range 50 V

Protection class III

#### CE marking

The unit meets the European requirements regarding „Electromagnetic Compatibility“ and „Low-voltage equipment“.

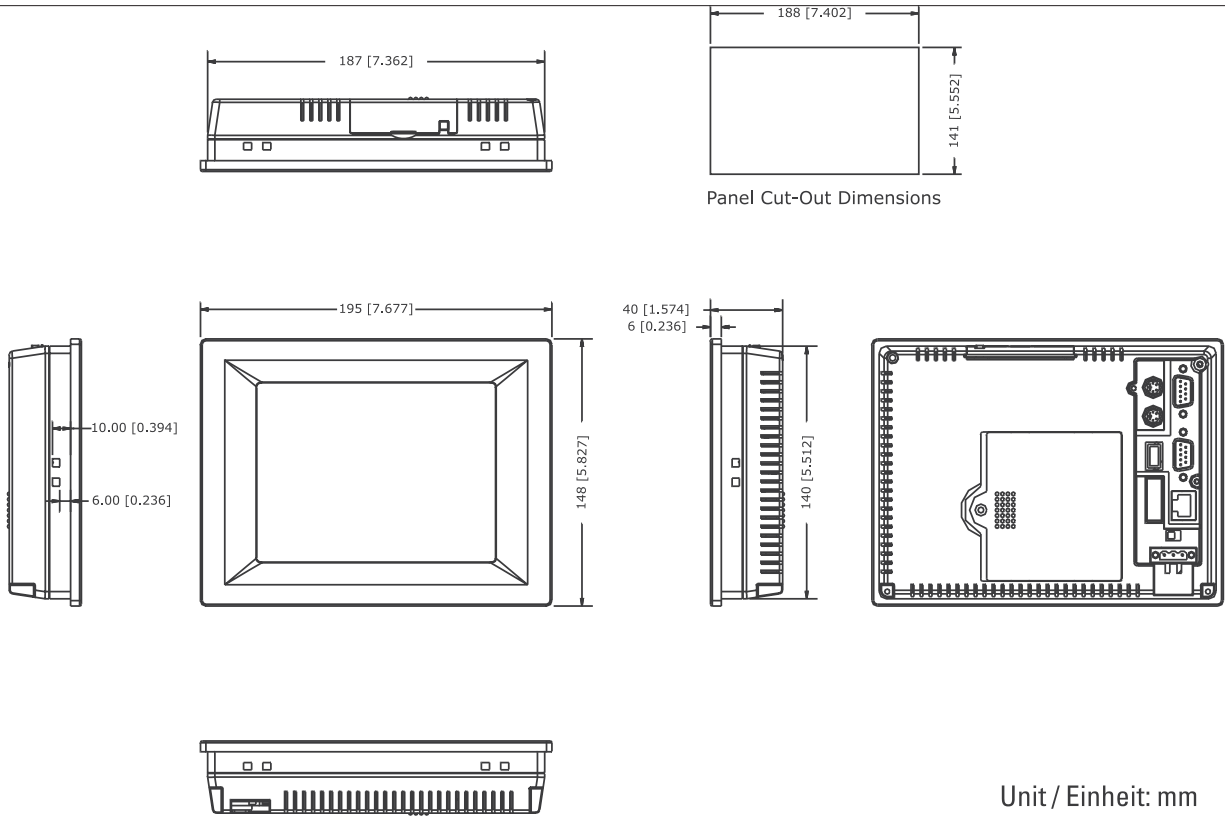
#### Standard accessories

Connector for supply voltage

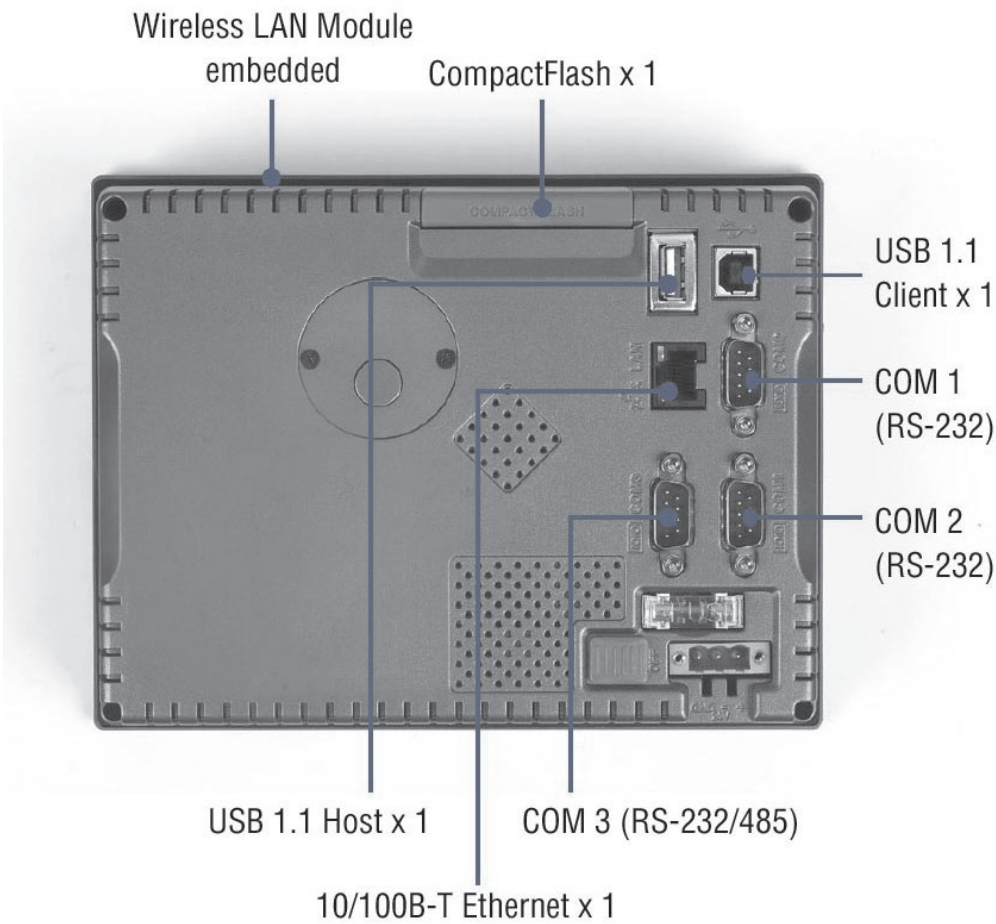
Keyboard adapter

Panel mounting elements

Dimensions



Rear KS vario BT



<b>Description</b>	<b>Order no.</b>	<b>Function</b>
KS vario BT	KSVC-111-01151	Fully graphical touch-screen operating terminal with software package for KS vario with Modbus interface.
Modbus cable RS 485	KSVC-119-00001	RS 485 connecting cable between KS vario BT and Modbus coupler KS VARIO BK MOD, length approx. 5 m.
Modbus cable RS232	KSVC-119-00011	RS232 connecting cable between Ks vario BT (COM1) and Engineering-Port KS VARIO controller modul. Length approx. 3m



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**PMA**

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