



KS vario BT

Graphic operating terminals for modular controller system



Operating terminals with convenient user interface

Comprehensive range of functions
for operating up to 30 control zones

Connection of one KS vario via Modbus interface

High-contrast TFT-/STN LC colour display 3,5"/5,7"/12,1"

Touchscreen

Ethernetinterface

FEATURES

- ❖ Touchscreen operation
- ❖ Display size 3,5", 5,7" or 12,1"
- ❖ 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
- ❖ 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 terminals

The operating terminals KS vario BT are 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 terminals are 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 terminals 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 BTs. 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.

Touchpanel

The KS vario BT operating terminals have 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 displays have resolutions of 320 x 240 (QVGA) or 800 x 600 (SVGA) pixels. Moreover, the displays are 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 terminals KS vario BT come 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.

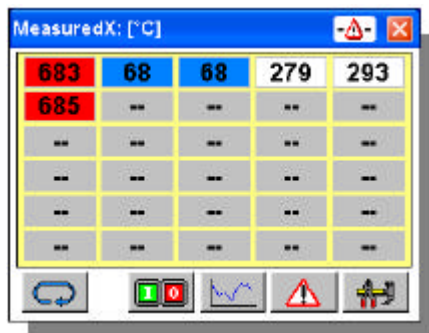
All operating and functional data are selected on-screen with the help of context-related menus.

The following operating & functional display screens are available:

Operating Level:

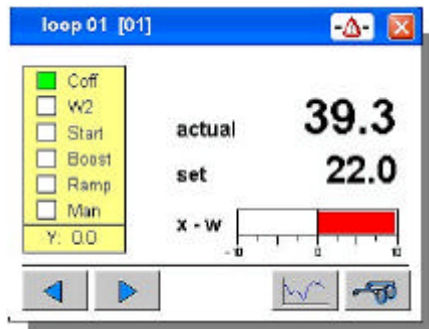
Overall survey

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 / reserved)

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

KSvarioBT 3 / KSvarioBT

- CPU: Intel XscalePXA270 (312/416MHz)
- Passive cooling
- 64 MByte RAM onboard
- 32/64 MByte Flash-memory onboard

KSvarioBT 12

- CPU: GX3 LX800 (500MHz)
- Passive cooling
- 256 MByte RAM onboard

DISPLAY

KSvarioBT 3

- 3,5" TFT-colour-display,
- Resolution: QVGA 320 x 240 pixel
- 64k colours 200cd/qm
- resistive touch

KSvarioBT

- 5,7" Farb-FSTN LC-Display,
- Resolution: QVGA 320 x 240 pixel
- 64k colours 300 cd/qm
- resistive touch

KSvarioBT 12

- 12,1" Farb-TFT Display,
- Resolution: SVGA 800 x 600 pixel
- 256k colours 300 cd/qm
- resistive touch

INTERFACES

Serial interface

- Type: RS232 / V.24, 9 pol. Sub-D connector
- Max. cable length: 12m
- Type: RS485, 9 pol. Sub-D connector
- Max. cable length: 1000m
- (KSvarioBT 3 alternative to RS232)

Netzwerk

Ethernetinterface (10/100 Base-T)

USB-interface

- 2 x USB (Type A) KSvarioBT 12
- 2 x USB (1xType A, 1xTyp B) KSvarioBT
- 1 x USB (1 Type A mini with adapter, KSvarioBT 3 only)

Memory expansion

- 1 x SD-Card (KSvarioBT 3 only)
- 1 x Compact-Flash-Card Type I (KSvarioBT and KSvarioBT 12 only)

POWER SUPPLY

- Operating voltage: 24 V DC (18..32 V DC)
- KSvarioBT 3 ≤ 10W (8.. 28 V DC)
- KSvarioBT ≤ 20W
- KSvarioBT 12 ≤ 60W
- 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 % bei 40°C, no condensation

INFLUENCING FACTORS

Supply voltage

No effect. No loss of configuration data in case of a power failure (Flash EPROM 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.

ELEKTROMAGNETIC 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

Weight

KSvarioBT 3 / KSvarioBT / KSvarioBT 12:

ca. 0,3 kg / 0,8 kg / 2,2kg

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

Panel mounting elements

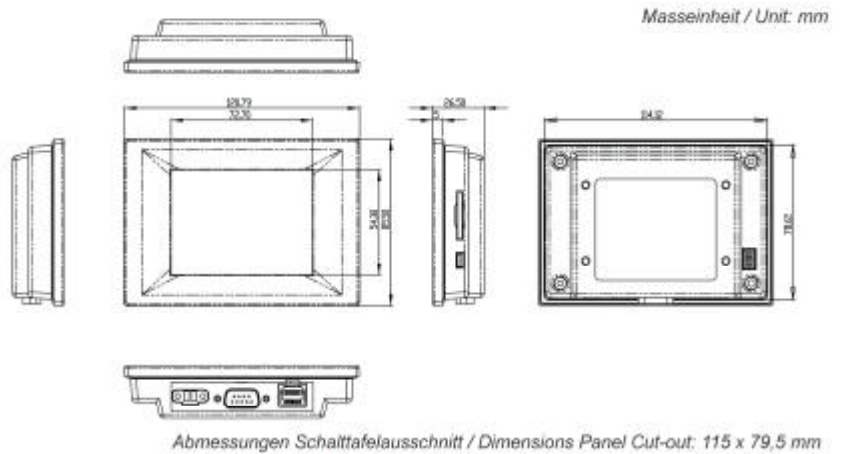


Fig. 1: Dimensions KSvarioBT

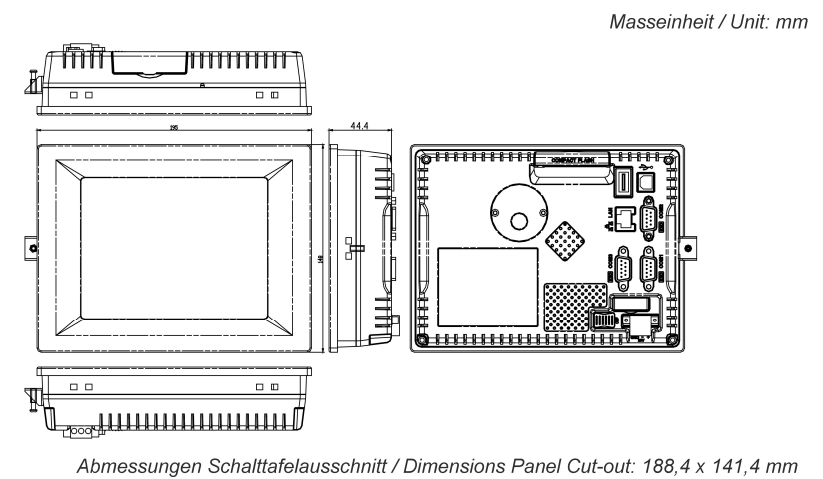


Fig. 2: Dimensions KSvarioBT

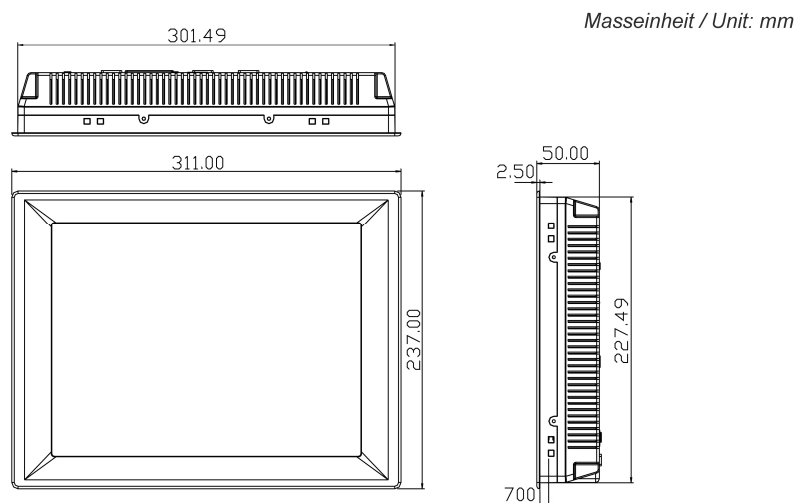


Fig. 3: Dimensions KSvarioBT 12

<i>Description</i>	<i>Order-no.</i>	<i>Function</i>
KS vario BT 3	KSVC-111-02351	Fully graphical touch-screen operating terminal with 3,5" TFT-display and software package for KS vario with Modbus interface.
KS vario BT	KSVC-111-02151	Fully graphical touch-screen operating terminal with 5,7" colour-LC-display and software package for KS vario with Modbus interface.
KS vario BT 12	KSVC-111-02651	Fully graphical touch-screen operating terminal with 12,1" TFT-display and software package for KS vario with Modbus interface.
Modbuscable RS232	KSVC-119-00011	RS232 connecting cable between KS vario BT (COM1) and engineering-interface KS VARIO controller module, length approx. 3m
Modbuscable RS485 KSvarioBT	KSVC-119-00001	RS485 connecting cable between KS vario BT (COM 3) and modbuscoupler KS VARIO BK MOD, length approx. 5m
Modbuscable RS485 KSvarioBT 12	KSVC-119-00021	RS485 connecting cable between KS vario BT 12 (COM 4) and modbuscoupler KS VARIO BK MOD, length approx. 5m
Modbuscable RS485 KSvarioBT 3	KSVC-119-00031	RS485 connecting cable between KS vario BT 3 (COM 1) and modbuscoupler KS VARIO BK MOD, length approx. 5m



PMA

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