Operator control and monitoring with TesiMod operating terminals



SÜTRON ELECTRONIC GMBH

Operator Control and Monitoring

SÜTRON Operati

Features

- Operator control completely integrated into the terminal
- PLC is relieved of operating tasks
- True product family
- Consistent operating concept across all devices
- Interchangeability of PLCs with same application
- Interchangeability of applications between terminals
- Consistent functionality across entire operating terminal series
- Simple handling of drivers



Functions

- **Cursor keys for menu control**
- **Help key with integrated LED**
- **Alphanumeric keyboard for data input**
- **Incremental input via + / - keys**
- **Function keys with exchangeable labeling strips**
  - as softkeys (mask-specific)
  - as global keys (mask-independent)
- **Extensive help system for masks and variables**
  - one help mask per user mask
  - one help mask per input variable
- **8 Running time meters**
- **Online switchable multilingual operator guidance**
- **Any number of variables per mask**
- **9999 Masks**
- **9999 Message texts**
- **Storage of applications in a Flash-Eprom memory**
- **Monitoring functions for the communications interface**
- **Input/output of process variables**
- **Variable types**
  - Decimal number (integer/fixed point number)
  - Floating point number (IEEE-format, Siemens-format)
  - Hexadecimal number
  - Binary number
  - Timer & counter
  - BCD numbers
  - Alphanumeric
  - Selection text
  - Selection image



ing Terminals:

- **Bar graphs**
  - horizontal
  - vertical
  - freely definable representation
- **Graphic variables** (dynamic)
- **Background images** (static)
- **Curves** (x/t-diagrams)
- **Table variables**
  Representation of contiguous PLC memory areas.
  Maximum length = 256 rows.
  This allows easy development of a diagnosis function on the terminal within a minimum of time.
- **User definable font**
- **2 font sizes / 5 representation attributes for text and variable**
  - Normal
  - Invers
  - Flashing
  - Underline
  - Zoom
- **Direct read and write access to all PLC data areas via the terminal**
  For point-to-point connections, no function blocks are required for communication handling.
- NEW ! **Print logs**
  Process data can be sent directly from the operating terminal to a printer
- NEW ! **Bit access to data areas, selective access via bit mask**
- NEW ! **Application ID**
  Version description for identification
- NEW ! **Firmware download**
  (Operating terminal-dependent function)
- NEW ! **Windows fonts**
  (Operating terminal-dependent function)
- NEW ! **Scanner or bar code reader**
  Production data can be scanned via bar code

- **Recipes**
  Enhancement
  - Bi-directional data transfer via single addresses or data buffer
  - Data sets are maintained after application download
  - Data exchange can be initiated by the terminal or the controller
- **Message systems**
  – parallel (status messages)
  – serial (error history)
  Enhancement
  - ARRIVED, DEPARTED, ACKNOWLEDGED
  - One help mask for each message text
  - Automatic change of mask on message activation
- **Loop-through operation**
  - Protocol: **SIEMENS** AS511, **BOSCH** BUEP19, BUEP19E, **OMRON** Host Link
- **9-level password protection**
- **Password management**
  Enhancement
  - Mask and variable access can be protected
- NEW ! **Configurable printer interface**
  - Permanent or temporary configuration of printer interface



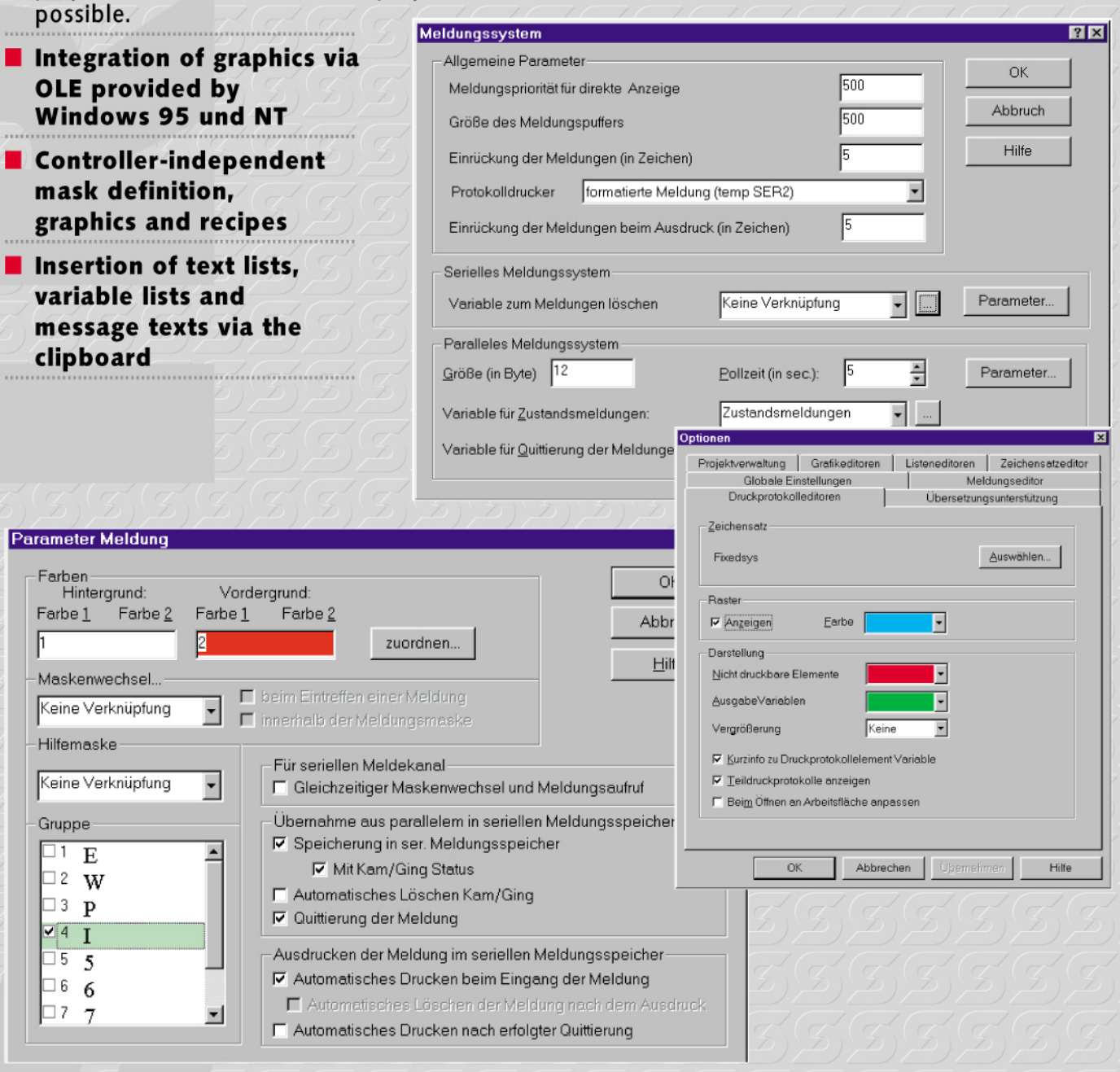
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The SÜTRON TSw

TSwin Programming Software

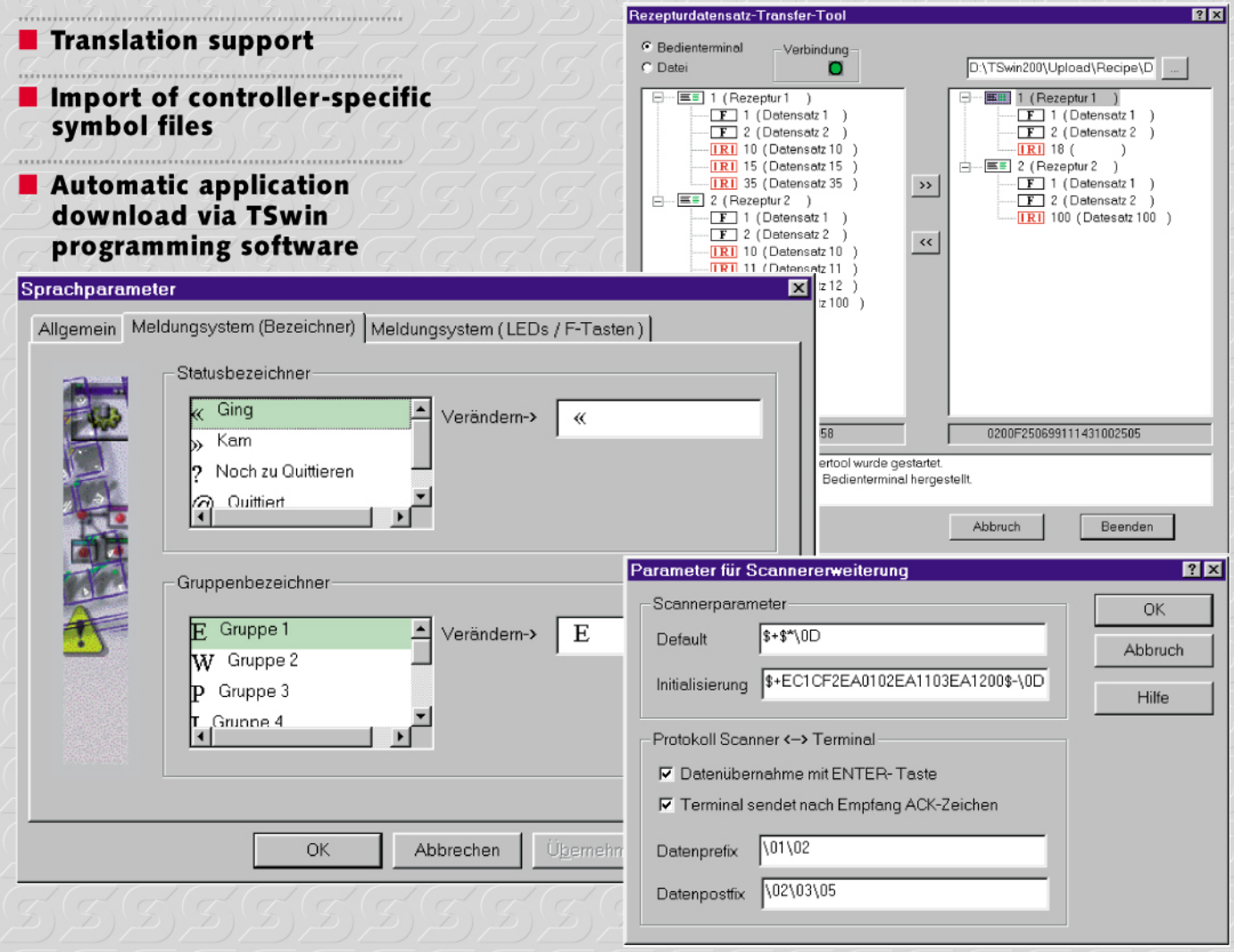
- **Full-Graphics Windows 95 and Windows NT based programming software**
- **Uniform programming software for all TesiMod terminals**
- **Font editor for creating of userdefined fonts**
- **Copy, Cut and Paste**
  Complete exchange of data within one project and between different projects possible.
- **Integration of graphics via OLE provided by Windows 95 und NT**
- **Controller-independent mask definition, graphics and recipes**
- **Insertion of text lists, variable lists and message texts via the clipboard**
- **Representation of texts, variables and graphics in the editor according to WYSIWYG**
  (what you see is what you get)
- **Controller-specific variable definition**
  Assignment of the variable name to a controller address (I/O/F/T/C/DW etc.). Access in bit / byte / word or double-word mode



win-Software:

- **Online help system**
- **Parallel editing of variables, graphics, messages and masks without having to change the context**
- **Windows-conforming operation**
- **Multiple controllers and languages combinable within one project**
- **Termial type can be changed within a project**
- **Documentation generation**
- **Translation support**
- **Import of controller-specific symbol files**
- **Automatic application download via TSwin programming software**

- **Enhancements:**
- **UNDO-function**
  (last action can be reversed)
- **Recipes**
  - Data set transfer tool
  - RAM data set creation via the TSwin programming software
- **Upload of an operating terminal application**
- **Tip of the Day**



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Operator Control and Monitoring

This is NEW:

The Update:

SÜTRON-Operating Terminals Future-Oriented Technology

TesiMod with extended hardware

The operating terminals **BT5N, BT10N, BT15N** and **BT20N** are new additions to the TesiMod product family. With respect to appearance, the new terminals can be distinguished only by the redesigned rear panel.

Each device offers the same additional features such as more application memory, semiconductor fuse and an universal interface. What is more, all of the terminals allow a firmware download.

The firmware can now be exchanged or updated by the user himself simply by means of the TSwin programming software, hardware intervention is not necessary.

The line of displays has been extended. The terminal types **BT2, BT5N** and **BT10N** can be fitted with various displays. Depending on the type, ASCII characters with German special characters or alternatively Cyrillic or Katakana characters can be displayed.

Similarly to the **BT2** and **BT5N**, the **BT10N** can now also be equipped with an vacuum fluorescence display **(VF)**. The luminescent display guaratees optimum legibility even from larger distances and angles contributing to even more user-friendliness.

Compared with the previous model, bus capability has been added to the **BT10N** making it suitable for all bus connections.

The new terminal types can be equipped with an internal **MPI** interface.

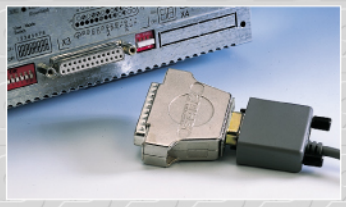
Bar code readers allow production data to be scanned in via the printer interface.

The **BT handy** is a functionally compatible TesiMod device in a handy format and with a graphics display.

BTXXN and BTXXNV terminals

Application Flash memory
- Standard: 256 Kbytes
- Optionally: 768 Kbytes

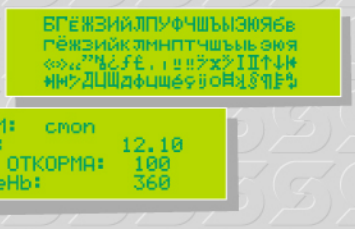
Uniform universal connector 25-pin SubminD



Communication TTY/20mA-RS232-RS485
Application download RS232

Firmware download via the TSwin programming software
(operating terminal-dependent;
BT2, BT5N, BT5NV, BT10N, BT10NV, BT15N, BT20N, BT20H, BT22C, BT35, BT35C, TP35, TP35C)

BT2, BT5N und BT10N with Cyrillic font and Katakana font



Scanner or bar code reader



BT handy



Connections

BUS connection, networking several operating terminals:

INTERBUS
Certified! No.209

- **Interbus (*)**
  Remote bus station with 4 words, indirect process data channel in accordance with the MMI-COM profile.
  Connection via optical waveguide (SUPI3 OPC with 2 Mbit/s) **and 9-pin SubminD.**

- **Interbus Loop**
  Remote bus station with 2 words, indirect process data channel based on MMI-COM profile

PROFI BUS

- **Profibus DP (*)**
  Slave station with a selectable data width (max. 32 bytes)

SUCOnet K
MOELLER

- **SUCOnet K (*)**
  MOELLER PS4-200, PS4-150, PS4-341, PS416
  Slave station with selectable telegram length

CiA
CAN in AUTOMATION

- **CAN-, CANopen (*)**
  Connection in keeping with the CiA standard

- **Modbus, J-Bus slave**

DIN-Meßbus
DIN 66348

- **DIN-Measurement Bus**
  Conversion of a point-to-point connection (Siemens PG, BUEP 19 ...) to the DIN measurement bus

- **LON** (**L**ocal **O**perating **N**etwork) **(*)**

(*) please call us to find out which connections are already available.

- Further bus protocols available on request -

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Protocols for the S

The point-to-point connections

ABB CS31	All KT and KR models
ABB T200	All T200 models
BOSCH BUEP 19	CL300
BOSCH BUEP 19E	CL150, CL151, CL200, CL350, CL400, CL500
SIEMENS MPI	S7-300, S7-400
SIEMENS MPI (HMI adapter)	S7-300, S7-400
SIEMENS PPI	S7-200
SIEMENS AS 511	S5 90U, 95U, 100U, 115U, 135U, 155U (CPU 945, 948)
SIEMENS L1	Master connection (point-to-point connection)
SIEMENS 3964R (RK512)	Communications module, e. g. CP525, SAS525, ...
SAIA MPI	PCD series xx7
BECK 3964R (RK512)	PS1-system without Multiprog wt
MOELLER SUCOM A	PS306, PS316, PS4-150, PS4-200, PS4-341, PS4-416
MITSUBISHI FX-Protocol	FX0-, FX0N- and FX series
MITSUBISHI	A series via communications module
AEG KS functions	Micro, A120, A250
AEG Modbus/RTU	Modicon 984, TSX Quantum, master- and slave connection
PEP Modular Computers Modbus/RTU	OS9 data module, e. g. Smart1, Smart2, IUC, VME

ütron TesiModSeries

TELEMECHANIQUE Modbus/RTU	TSX Premium
TECHNO TRADE Modbus/RTU	T-Box
SELECTRON Modbus/RTU	CPU 7xx
OMRON Host Link	C series, CV series
OMRON NT Link	C series, CV series
ALLEN BRADLEY DF1 protocol	SLC500-5/03, -5/04, -5/05, PLC5, MicroLogix
PC Connection	3964R, bus connection
GE FANUC SNP protocol	90 Series, Micro
EBERLE 3964R	PLS514 K43, PLS520
JETTER PASE, PCOM5	PaseE, Pase Micro, Nano, Delta
KLASCHKA YCOM/C	Seconix C and D, Seconomy D and F
IDEC	Micro 3
DIN-Measurement-Bus Slave	PC, processor controller



– Further interface protocols on request –

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BT 2 BT 2 VF



– Technical details subject to change without prior notice –

Keyboard	Keyboard with Short-Stroke Keys, Incremental Input, 7 Keys + 4 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Alphanumeric with 4 Lines with 20 Characters each, Characters Height 4,16 mm, Display Area 74 x 23 mm **BT2**: LED Backlit LCD-Display, Standard: ASCII Font Including Katakana Optionally: ASCII Font Including Cyrillic **BT2VF**: Luminescent **V**acuum **F**luorescence Display Standard: ASCII Font Including Katakana
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	256 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Flash-Eprom, Firmware 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Universal Interface SER1, SER2 • Optionally: MPI- and Profibus Interface
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption ‹0,3A Peak Current ‹0,5A
Connected Load	~ 10 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 at the Front Temperature Range 0° C ... 50° C EU Directive EMC 89/336/EEC CE Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 144 x 96 x 3,5 mm
Device Variant	Rear Mounting, Polyethylene Foam Rubber Seal Around Rear Side
Mounting Cutout	138 x 82 mm
Mounting Depth	43 mm without Connector (70 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	380 g

For connections see overview

BT 5 N

BT 5 NV



– Technical details subject to change without prior notice –

Keyboard	Membrane Keyboard, Mech. with Tactile Feedback, Alphanumeric Input, 22 Keys + 8 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Alphanumeric with 4 Lines with 20 Characters each, Characters Height 4,16 mm, Display Area 74 x 23 mm **BT5N**, LED Backlit LCD Display, Standard: ASCII Font including Katakana Optionally: ASCII Font including Cyrillic **BT5NV**, Luminescent **V**acuum **F**luorescence Display Standard: ASCII Font including Katakana
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	256 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Flash-Eprom, Firmware 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Universal Interface SER1, SER2 • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,3A Peak Current <0,5A
Connected Load	~ 10 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 at the Front Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC CE Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 120 x 168 x 4 mm
Device Variant	Rear Mounting, Polyethylene Foam Rubber Seal Around Rear Side
Mounting Cutout	112 x 160 mm
Mounting Depth	40 mm without Connector (60-100 mm depending on Bus Variant incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	500 g (standard)

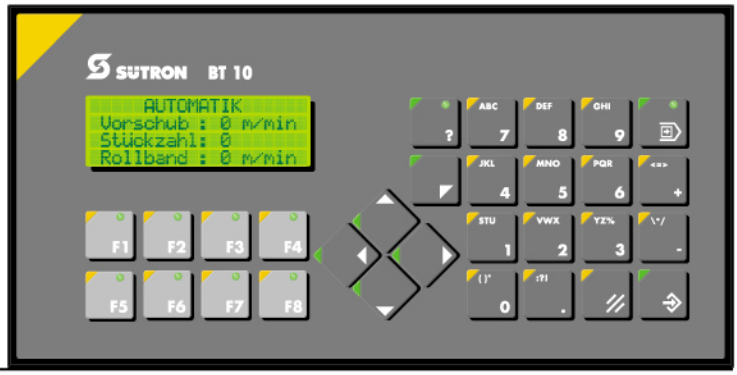
For connections see overview

SÜTRON ELECTRONIC GMBH

Operator Control and Monitoring

BT 10 N

BT 10 NV



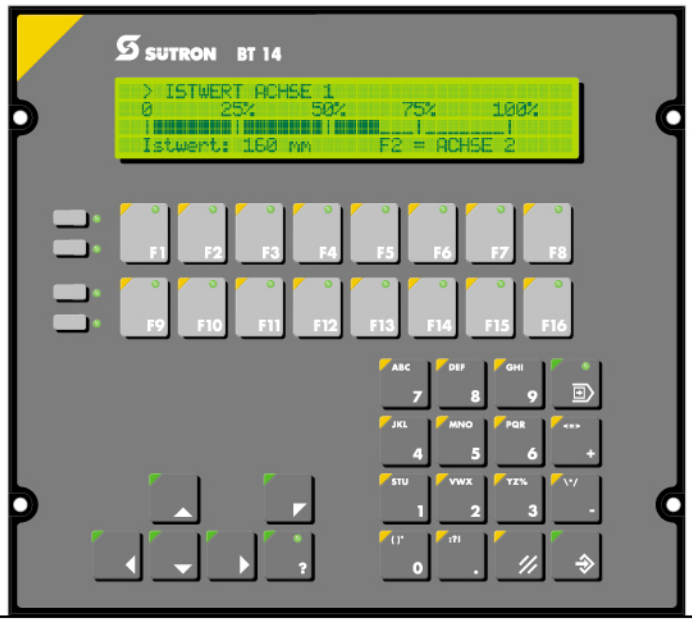
– Technical details subject to change without prior notice –

Keyboard	Keyboard with Short-Stoke Keys, Alphanumeric Input, 22 Keys + 8 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Alphanumeric, with 4 Lines with 20 Characters each, Character Height 4,16 mm, Display Area 74 x 23 mm **BT10N**, LED Backlit LCD Display, Standard: ASCII Font Including Katakana Optionally: ASCII Font Including Cyrillic **BT10NV**, Luminescent **V**acuum **F**luorescence Display Standard: ASCII Font Including Katakana
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	256 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Flash-Eprom, Firmware 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Universal Interface SER1, SER2 • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,35A Peak Current <0,5A
Connected Load	~ 10 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC CE Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 240 x 120 x 3 mm
Device Variant	Rear Mounting IP 54, Front Mounting IP 65, Rubber Seal Around Rear Side*
Mounting Cutout	232 x 112 mm
Mounting Depth	44 mm without Connector (100 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	800 g

For connections see overview

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BT 14



– Technical details subject to change without prior notice –

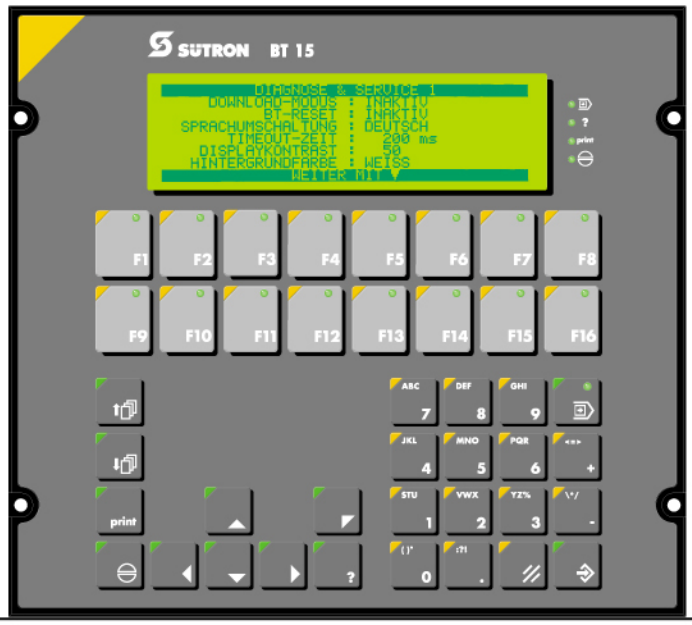
Keyboard	Keyboard with Short Stroke Keys, Alphanumeric Input, 22 Keys + 16 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Alphanumeric, Backlit LCD Display with 4 Lines with 40 Characters each, Character Height 4,8 mm, ASCII Font, Display Area 149 x 23 mm
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	128 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Firmware Eprom 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,4A Peak Current <0,6A
Connected Load	~ 10 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65, at the Front Temperature Range 0°C ... 50°C EUDirective EMC 89/336/EEC CE-Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 224 x 202 x 4 mm
Device Variant	Front Mounting, Rubber Seal Around Rear Side
Mounting Cutout	204 x 188 mm
Mounting Depth	54 mm without Connector (90 mm incl. Connector)
Casing	Zinc Coated Sheet Steel
Weight	1500 g

For connections see overview

SUTRON ELECTRONIC GMBH

Operator Control and Monitoring

BT 15 N

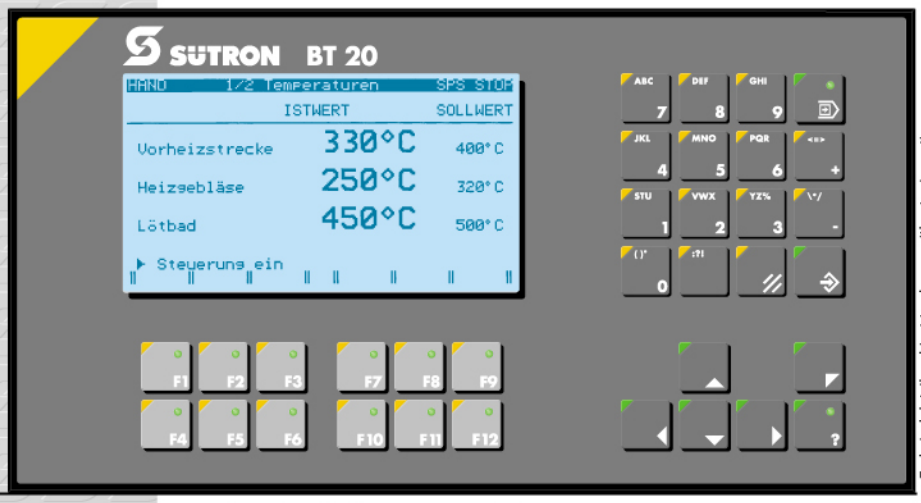


– Technical details subject to change without prior notice –

Keyboard	Membrane Keyboard, Mech. with Tactile Feedback, Alphanumeric input, 25 Keys + 17 Function Keys with Integrated LEDs
Function Keys	with Slide-In Identification Strips
Display	Full-Graphics, LED Backlit LCD Display, 240 x 64 Pixels, 8 Lines with 40 Characters each, Character Height 3,7 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full-Graphics, Display Area 134 x 40,4 mm
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	256 Kbyte Flash-Eprom, Mask Memory; Optionally: 768 Kbyte 256 Kbyte Flash-Eprom, Firmware 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plu-in Type, via SubminD Connectors and Male Connector Strips • Universal Interface SER1, SER2 • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,4A Peak Current <0,6A
Connected Load	~ 10 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65, at the Front Temperature Range 0°C ... 50°C EU-Directive EMC 89/336/EEC CE-Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 224 x 202 x 4 mm
Device Variant	Front Mounting, Rubber Seal Around Rear Side
Mounting Cutout	204 x 188 mm
Mounting Depth	52 mm without Connector (90 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	1100 g

For connections see overview

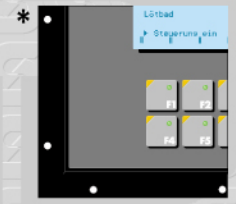
BT 20 N



– Technical details subject to change without prior notice –

Keyboard	Keyboard with Short-Stroke, Alphanumeric Input, 22 Keys + 12 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Full-Graphics LCD Display with CFL Lighting, 240 x 128 Pixel, 16 Lines with 40 Characters each, Characters Height 3,7 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full-Graphics, Display Area 131 x 72 mm
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	256 Kbyte Flash-Eprom, Mask Memory; Optionally: 768 Kbyte 256 Kbyte Flash-Eprom, Firmware 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Universal Interface SER1, SER2 • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,7A Peak Current <3,0A
Connected Load	~ 20 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC CE Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 300 x 160 x 3 mm
Device Variant	Rear Mounting IP 54, Front Mounting IP 65, Rubber Seal Around Rear Side*
Mounting Cutout	292 x 152 mm
Mounting Depth	65 mm without Connector (120 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	1500 g

For connections see overview

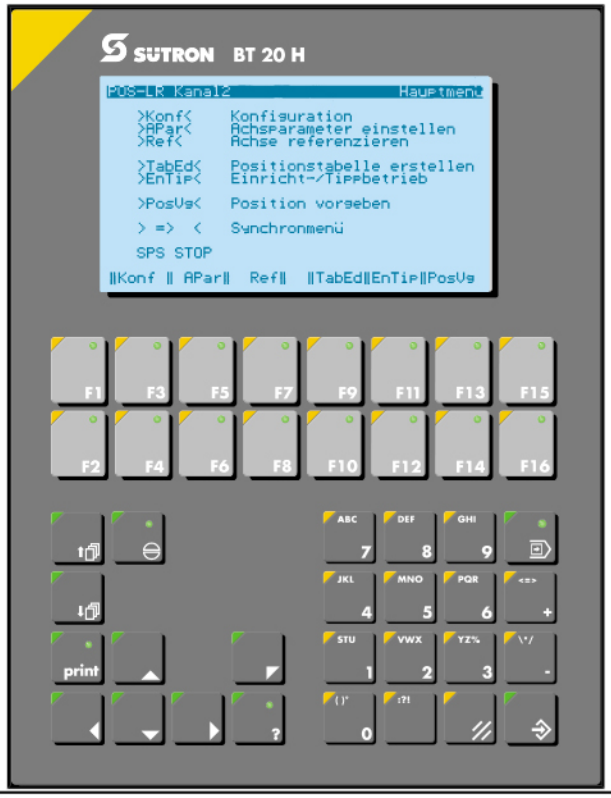


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Operator Control and Monitoring

BT 20 H



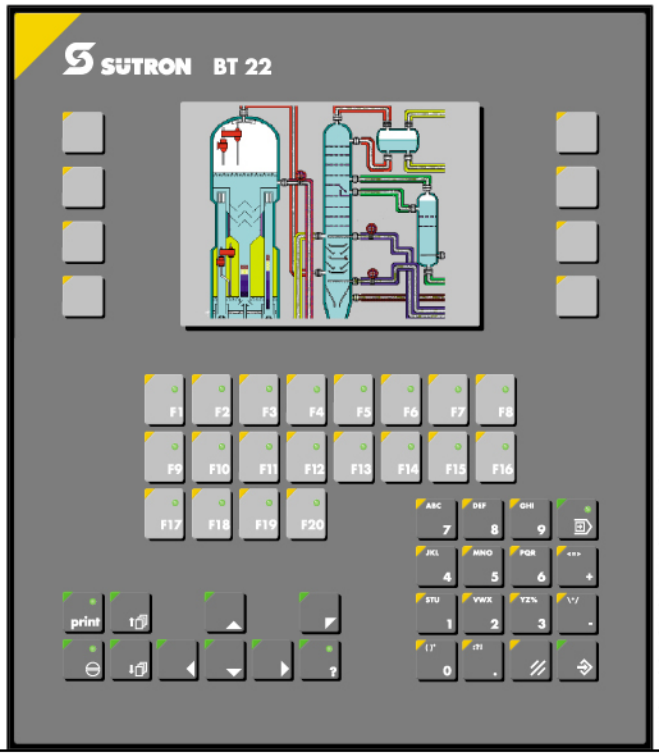
– Technical details subject to change without prior notice –

Keyboard	Membrane Keyboard with Tactile Feedback, Alphanumeric Input, 25 Keys + 17 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Full-Graphics LCD Display with CFL Lighting, 240 x 128 Pixels, 16 Lines with 40 Characters each, Character Height 3.5 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Display Area 123 x 69 mm
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	256 Kbyte Flash-Eprom, Mask Memory; Optionally: 768 Kbyte, 256 Kbyte Flash-Eprom, Firmware 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,3A Peak Current <3,5A
Connected Load	-10 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 at the Front Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC CE-Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 195 x 255 x 3 mm
Device Variant	Rear Mounting, Rubber Seal Around Rear Side
Mounting Cutout	179 x 239 mm
Mounting Depth	50 mm without Connector (110 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	1150 g

For connections see overview

BT 22 BT22 C

Color and Monochrome



– Technical details subject to change without prior notice –

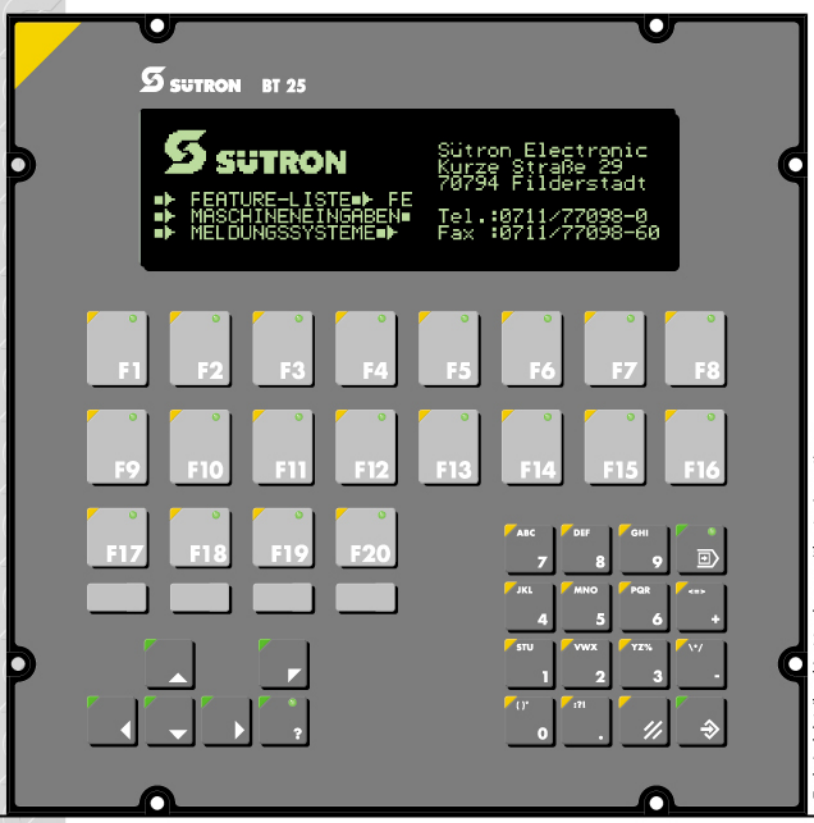
Keyboard	Keyboard with Short-Stroke Keys, Alphanumeric Input, 25 Keys + 21 Function Keys with Integrated LEDs and 8 Function Keys without LEDs
Function Keys	With Slide-In Identification Strips
Display Monochrome	Full-Graphics LCD Display with CFL Lighting, 320 x 240 Pixels, 20 Lines with 40 Characters each, Character Height 3.6 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full-Graphics, Display Area 120 x 90 mm
Display Color	Full-Graphics STN-LCD Display with CFL Lighting, 320 x 240 Pixels, 20 Lines with 40 Characters each, Character Height 3.6 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full-Graphics, Display Area 120 x 90 mm
Central Unit Monochrome	TMPZ84C015, 10 MHz, Watchdog-Timer, Real Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Central Unit Color	CPU 386EX, 25 MHz, Watchdog-Timer, Real Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory Monochrome	512 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Firmware Eprom 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Memory Color	640 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,8A Peak Current <3,0A
Connected Load	~20 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 at the Front Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC, CE-Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 260 x 300 x 4 mm
Device Variant	Rear Mounting, Rubber Seal Around Rear Side
Mounting Cutout	224 x 264 mm
Mounting Depth	54 mm without Connector (90 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	1950 g

For connections see overview

SÜTRON ELECTRONIC GMBH

Operator Control and Monitoring

BT 25

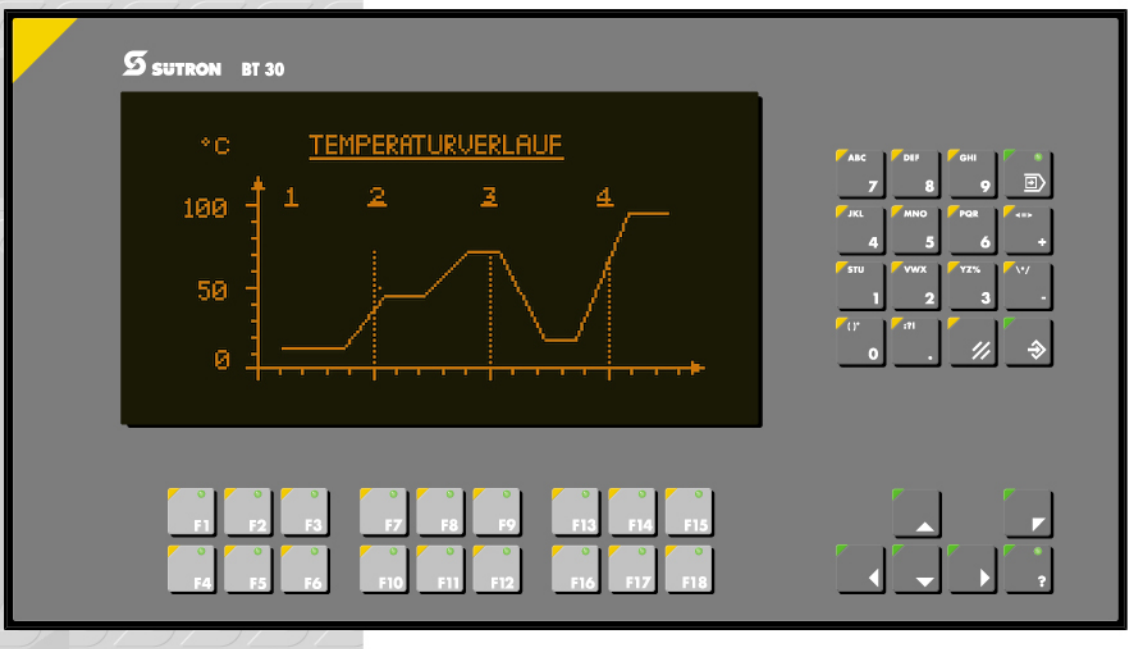


– Technical details subject to change without prior notice –

Keyboard	Keyboard with Short-Stroke Keys, Alphanumeric Input, 22 Keys + 20 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Full-Graphics, Luminescent Vacuum Fluorescence Display, 256 x 64 Pixels, 8 Lines with 42 Characters each, Character Height 5.2 mm Character Attributes, Extended ASCII Font (Semi-Graphics) / Full Graphics, Display Area 167 x 42 mm
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memory	128 Kbyte Flash-Eprom, Mask Memory 256 Kbyte Firmware Eprom 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,8A Peak Current <2,0A
Connected Load	~20 W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 at the Front Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC CE-Conformity Declaration available on Request
Front Panel	AluAnodized, Milled with Polyester Cover 265 x 265 x 4 mm
Device Variant	Front Mounting, Rubber Seal Around Rear Side
Mounting Cutout	241 x 241 mm
Mounting Depth	54 mm without Connector (90 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	2500 g

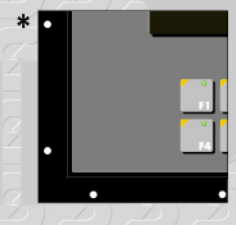
For connections see overview

BT 30



Keyboard	Keyboard with Short-Stroke Keys, Alphanumeric Input, 22 Keys + 18 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display	Full Graphics, Luminescent Gas-Plasma Display, 256 x 128 Pixels, 14 Lines with 42 Characters each, Character Height 5,4 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full Graphics, Display Area 205 x 103 mm
Central Unit	TMPZ84C015, 10 MHz, Watchdog-Timer, Reai-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Battery Monitoring, User-Mode-Switch
Memory	128 Kbyte Flash-Eprom, Mask Memory; Optionally: 256 Kbyte 256 Kbyte Firmware Eprom 128 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption 0,8 ... 2,3A Peak Current <3,5A
Connected Load	~20 ... 55W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 Temperature Range 0°C ... 50°C EU-Directive EMC 89/336/EEC CE-Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 380 x 210 x 4 mm
Device Variant	Rear Mounting IP 54, Front Mounting IP 65, Rubber Seal Around Rear Side*
Mounting Cutout	372 x 202 mm
Mounting Depth	69 mm wihout Connector (120 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	3100 g

For connections see overview



*

– Technical details subject to change without prior notice –

SUTRON ELECTRONIC GMBH

Operator Control and Monitoring

BT 35

Color and Monochrome

BT35 C



Keyboard	Membrane Keyboard or Keyboard with Short-Stroke Keys, Alphanumeric Input, 25 Keys + 21 Function Keys with Integrated LEDs and 20 Function Keys without LEDs
Function Keys	With Slide-In Identification Strips
Display Monochrome	Full-Graphics, Backlit STN Display, 640 x 480 Pixels, 40 Lines with 80 Characters each, Character Height 3.3 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full Graphics, Display Area 215 x 162 mm
Display Color	Full-Graphics, Backlit TFT Display, 256 Colors, 640 x 480 Pixel, 40 Lines with 80 Characters each, Character Height 3.3 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full Graphics, Display Area 215 x 162 mm
Central Unit	CPU 386EX, 25 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memoryr Monochrome	2,64 Mbyte Flash-Eprom, Mask Memory 256 Kbyte Stat. CMOS-RAM, Battery-Backed
Memory Color	4,64 Mbyte Flash-Eprom, Mask Memory 256 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,8A (color) / <0,5A (monochrome) Peak Current <4A
Connected Load	~40W
Degrees of Protection and Noise Immunity	Degrees of Protection IP 65 at the Front Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC, CE Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 450 x 320 x 4 mm
Device Variant	Front Mounting, Rubber Seal Around Rear Side
Mounting Cutout	426 x 296 mm
Mounting Depth	65 mm without Connector (120 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	3760 g

For connections see overview

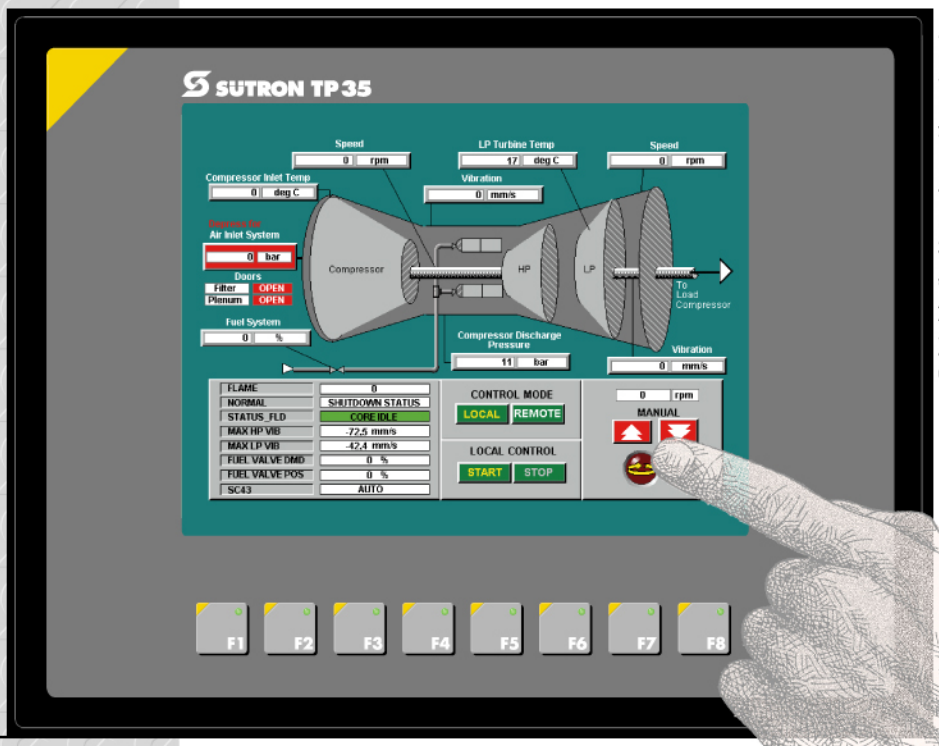
– Technical details subject to change without prior notice –

Touch

TP35

Color and Monochrome

TP35 C



– Technical details subject to change without prior notice –

Keyboard	Keyboard with Short-Stroke Keys, 8 Function Keys with Integrated LEDs
Function Keys	With Slide-In Identification Strips
Display Monochrome	Touch-Screen, Full-Graphics, Backlit STN Display, 640 x 480 Pixels, 40 Lines with 80 Characters each, Character Height 3.3 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full Graphics, Display Area 215 x 162 mm
Display Color	Touch-Screen, Full-Graphics, Backlit TFT Display, 640 x 480 Pixels, 40 Lines with 80 Characters each, Character Height 3.3 mm, Character Attributes, Extended ASCII Font (Semi-Graphics), Full Graphics, Display Area 215 x 162 mm
Central Unit	CPU 386EX, 25 MHz, Watchdog-Timer, Real-Time Clock, Programmable Interface Parameters, Temperature Compensation of the Display, Setting of Contrast, Battery Monitoring, User-Mode-Switch
Memoryr Monochrome	2,64 Mbyte Flash-Eprom, Mask Memory 256 Kbyte Stat. CMOS-RAM, Battery-Backed
Memory Color	4,64 Mbyte Flash-Eprom, Mask Memory 256 Kbyte Stat. CMOS-RAM, Battery-Backed
Connection System	Plug-in Type, via SubminD Connectors and Male Connector Strips • Optionally: All Bus Interfaces
Supply Voltage	24V Direct Voltage, Residual Ripple Max. 10% Minimum Voltage 19,2V Maximum Voltage 30,2V Power Consumption <0,8A (color) / <0,5A (monochrome) Peak Current <4A
Connected Load	~40W
Degrees of Protection and Noise Immunity	Degree of Protection IP 65 at the Front Temperature Range 0°C ... 50°C EU Directive EMC 89/336/EEC, CE Conformity Declaration available on Request
Front Panel	Alu Anodized, Milled with Polyester Cover 350 x 275 x 4 mm
Device Variant	Rear Mounting, Rubber Seal Around Rear Side
Mounting Cutout	324 x 249 mm
Mounting Depth	65 mm without Connector (120 mm incl. Connector)
Casing	Zinc-Coated Sheet Steel
Weight	ca. 3200 g

For connections see overview

SUTRON ELECTRONIC GMBH

Operator Control and Monitoring

SÜTRON Special Terminals

Standard series or individual customer-specific solutions?



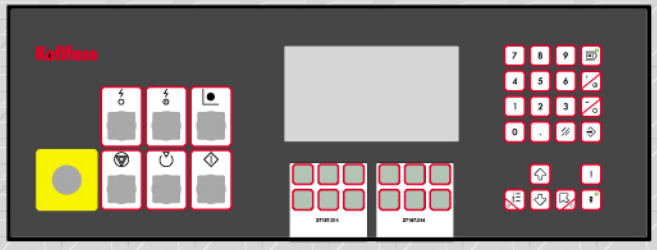
SÜTRON offers the following three answers:

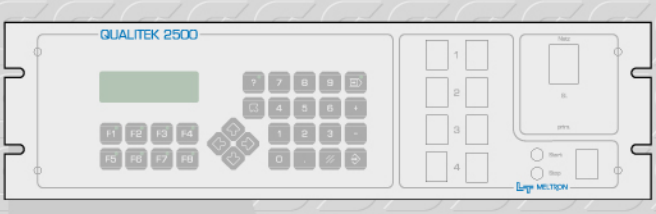
- Highly-qualified staff
- Up-to-date know-how
- Continuous flow of first-hand experience due to our in-house problem-oriented research.

"Operator Control & Monitoring - from a single source" -

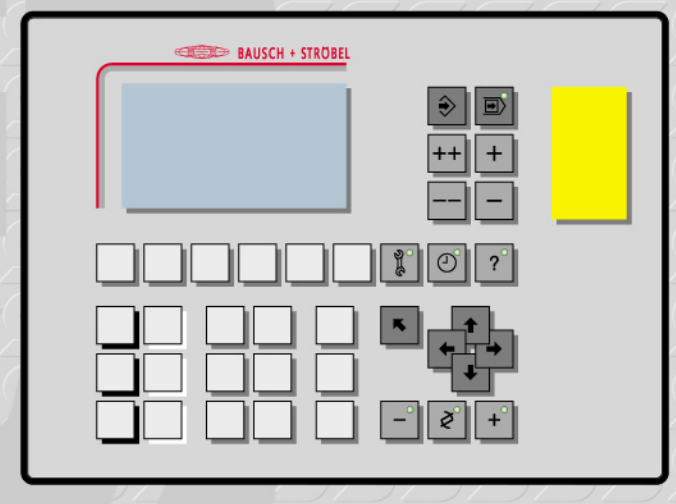
this outlines the SÜTRON performance profile. From qualified advice, hardware and software development, through manufacturing or testing to after-sales service.

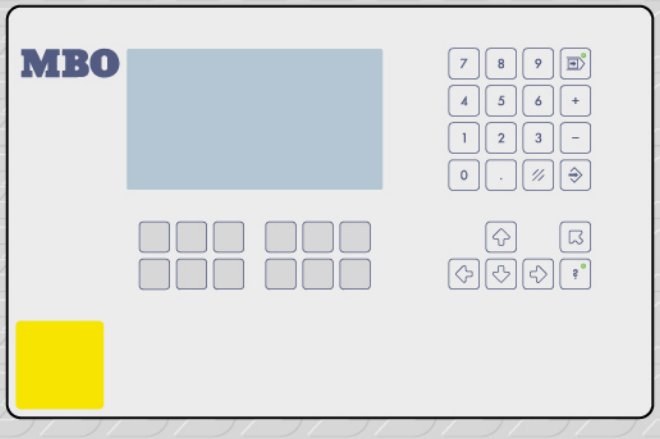
- To offer standard operating terminals of the TesiMod series complemented by operating terminals designed in accordance with customer specifications has been our commitment from the start - whether your requirement is for a specially designed front panel or an operating terminal tailored to the specific functional needs of the user.









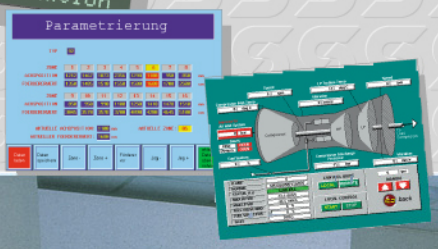


Decades of Competence

SÜTRON ELECTRONIC GmbH has been developing and manufacturing systems for all branches of industrial electronics for more than 25 years:

- Electronic positioning controllers
- Modules and components in accordance with customer specifications
- Systems for the field of operator control and monitoring
- Controller combined with operator panel
- ISO-certificate - quality under control
- Support in creating applications by skilled engineers at site
- Support through our hotline if questions arise during the programming or commissioning phase







- Training on TesiMod products held in the SÜTRON ELECTRONIC facilities

SÜTRON ELECTRONIC GMBH

Operator Control and Monitoring

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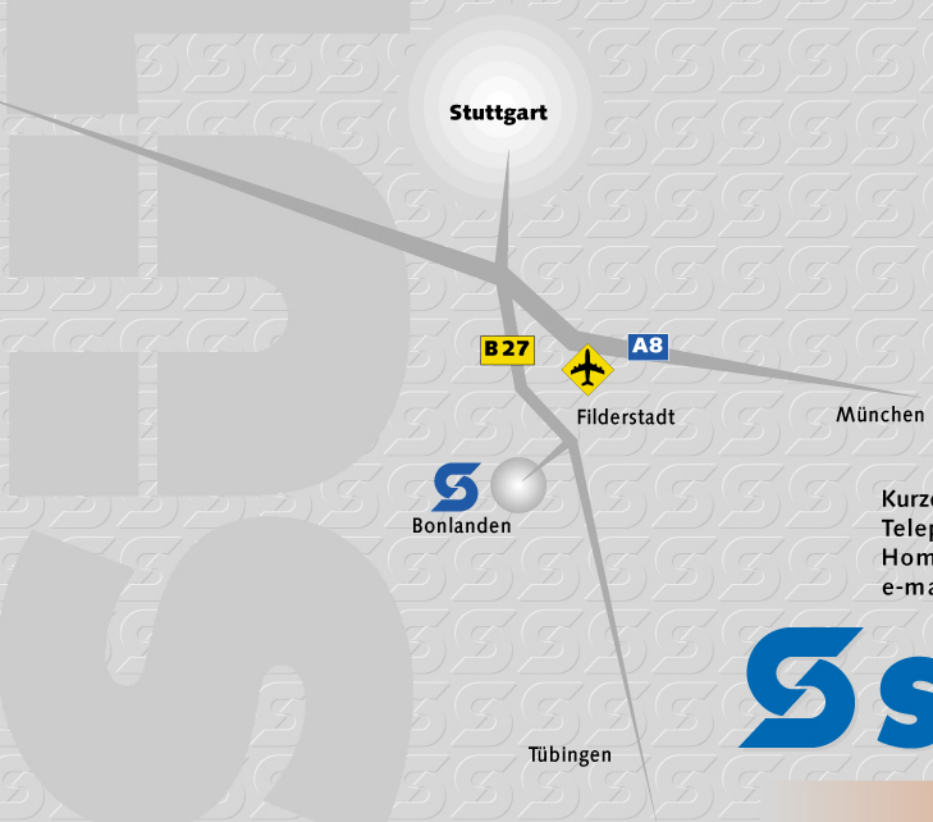
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Operator Control and Monitoring

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