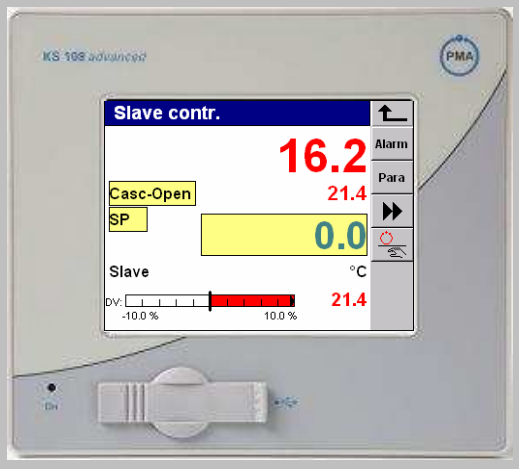
KS 108 *flexible*

Compact automation unit for industrial & process engineering



Combined control, sequencing, and operation

Comprehensive function library with integrated operating dialogs ...

... embedded in an IEC 61131-3 programming environment

High-performance commissioning tools

Flexible I/O systems

- **Compact, robust hardware**
- **Touch-screen operation**
- **Brilliant TFT color display**
- **Numerous interface ports: Front USB, CAN, RS232, RS485, Ethernet**
- **Other interfaces optional**
- **Function library: Controller, datalogger, tend, ...**
- **Simple, fast operation by means of ready-made operating pages and parametrization dialogs**
- **Integrated graphics editor for user-specific display pages**
- **Convenient tools: CoDeSys, BlueControl, PMATune**
- **Self-tuning for PID controllers**
- **Access to datalogger files via USB and network**
- **Direct and efficient data exchange between visualization and operating levels**
- **Simple update of firmware and user program via USB stick**

APPLICATIONS

- **Industrial furnaces**
- **Heat treatment plants**
- **Driers**
- **Test stands**
- **Process engineering**
- **Machine building**

DESCRIPTION

General

The automation unit KS 108 flexible is a practice-oriented combination of:

- Industrial and process controller
- Sequencing acc. to IEC 61131-3
- On-site visualization and operation
- Measurement data recording (datalogger, trend)
- Communication.

Zusammen mit den empfohlenen I/O-Systemen VARIO und/oder RL400 ergibt sich eine vollständige Automatisierungs-lösung.

Together with the recommended I/O systems VARIO and/or RL400, you get a complete automation solution.
Thanks to the proven and type-tested function blocks in the PMA library, fast and highly efficient programming is ensured, as well as utmost functional safety.
Automatically generated operating catalogs arranged in a predefined menu structure provide access to all relevant parameters and data, without the need for additional programming. As a result, projecting and testing times are considerably reduced. Moreover, every additional operating page generated by the customer provides direct access to the master operating menu at any time.

In addition, the user has the full flexibility of the familiar PLC programming environment at his disposal.

Similarly, BlueControlÒ is available for commissioning, maintenance, and service in the plant. This powerful tool provides simple online access to operational data and parameters during operation. Consequently, all these tasks can also be carried out on site by persons without programming experience. This approach also prevents unintentional changes to the programmed sequence.

Design

The KS 108 flexible is a particularly compact device intended for panel mounting.

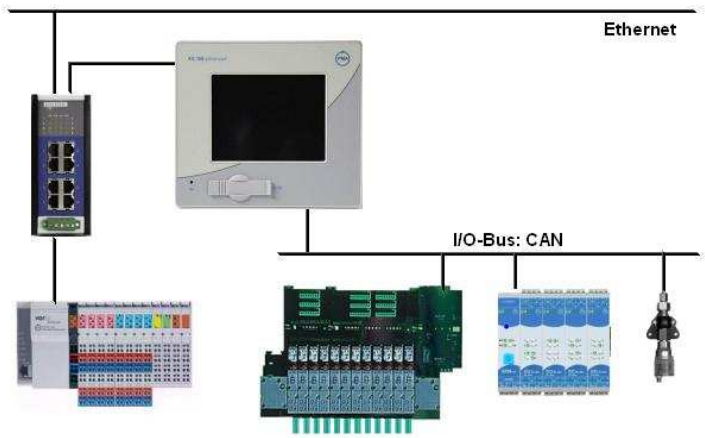
The computer core consists of a 'low power' processor, which operates without the need for additional cooling.
The program is stored in an onboard Flash memory. Thanks to this design, the device's hardware is particularly robust for a long service life.

All of the interface ports are easily accessible from the rear of the unit.

The internal memory can be expanded e.g. for data acquisition purposes by means of an SD card that plugs into a socket on the side.

Visualization is provided by a color TFT display with a resolution of 320 x 240 pixels. The display features excellent readability and brightness, plus long-life background lighting.

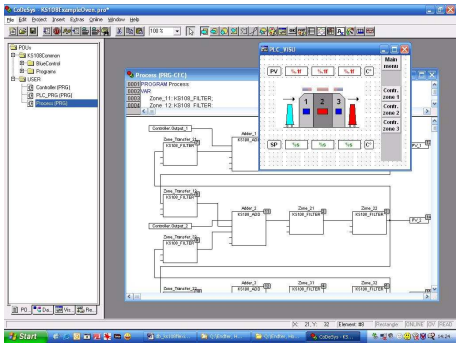
Moreover, the resistive touch feature permits direct operation via the screen. No other external operating controls (e.g. buttons) are required.



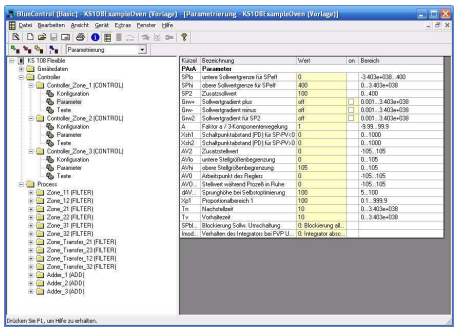
IEC 61131 programming environment
Programming of the terminal is based on the international IEC 61131-3 standard. The CoDeSys system is fully compatible with the standard, and offers convenient programming in all of the languages defined in IEC 61131:

- Instruction List (IL)
- Function Block Diagram (FBD)
- Ladder Diagram (LD)
- Structured Text (ST)
- Sequential Function Chart (SFC)
- Continuous Function Chart (CFC)

Powerful test functions greatly reduce the necessary programming and commissioning times.
The integrated visualization system supports the convenient generation of customized operating pages.



BlueControl
This tool permits on-site display and adjustment of selected plant parameters using an Explorer-type structure.



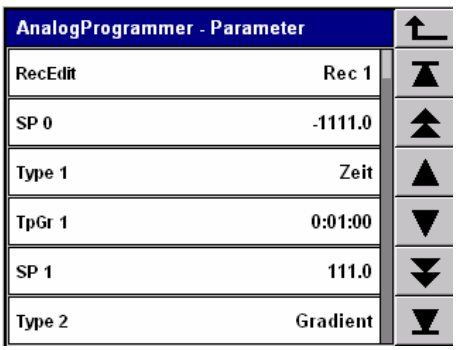
By exporting these parameters to CoDeSys, the data can be transferred into the PLC project as basic settings.
In addition, BlueControl® provides online operation plus display of the variables.

Function library
The library of the KS 108 flexible contains a comprehensive range of functions for the following operations:

- Controlling
- Programming
- I/O connections
- Scaling
- Arithmetic
- Logic
- Trend
- Datalogging

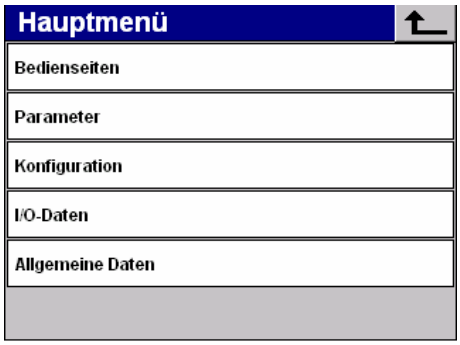
The example of a programmer block with its associated online parametrizing dialog is shown below.

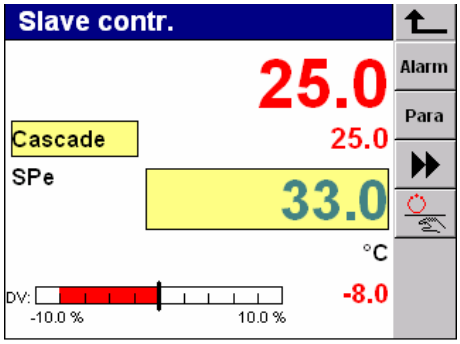
KS108_A_PROG	
ai_PSet	ao_SP
ai_DBlock	ao_TNetto
ai_ProgNo	ao_TBrutt
ai_PV	ao_TRest
ai_SlavNo	ao_SegNo
di_hide	ao_SPend
di_lock	ao_ProgNo
di_run	ao_SegRes
di_reset	ao_Bl_no
di_preset	do_run
di_search	do_reset
di_p_show	do_end
di_halt	do_fkey
di_manfree	do_preset
tData	do_manual

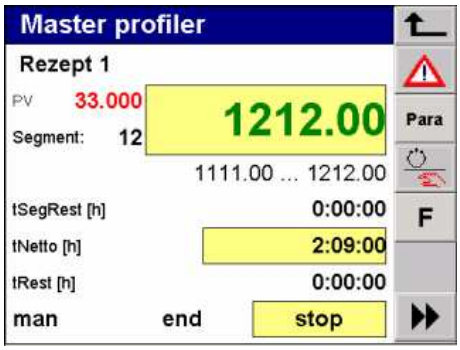


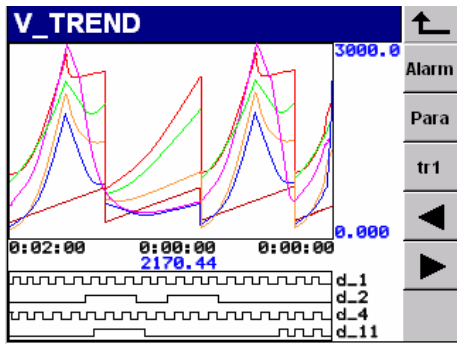
Integrated visualisation system

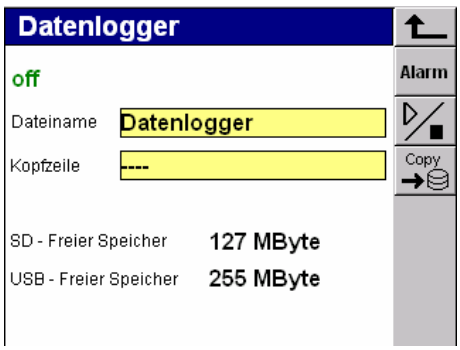
Every function block of the PMA library automatically supplies the associated operating dialogs.











TECHNICAL DATA

PROCESSOR

CPU: Freescale Power PC / 266 MHz
Fanless cooling
64 MByte RAM / 32 MByte free
16 MByte Flash / 8 MByte free
16kByte RAM (Retain)
Real time clock
Backup: Lithium battery

DISPLAY

5,7-inch colour TFT,
Resolution: QVGA 320 x 240 pixels
256 colours, resistive touch operation

INTERFACES

Serial interfaces
Type: RS 232, 9-pin Sub-D
Max. cable length: 12 m

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

CAN interface
galvanic isolated, 9 pol. Sub-D,
max. cable length according to CANopen standard

Network
Ethernet interface (10/100 Base-T)
Galvanic isolated

USB interface
USB Host (Typ A, front access)

Expansion interface
Slot for I/O module
Slot for fielbus module
Slot for SD card

POWER SUPPLY

Supply voltage:
24 V DC (18…32V / SELV)
Galvanic isolated
Residual ripple: ≤ 4 Vss
Current consumption: typical 1A, max. 2 A

ENVIRONMENTAL CONDITIONS

Permissible temperatures
For specified accuracy: 0...50°C
Storage & transport: -20...70 °C

Relative humidity: max. 85%
no condensation

INFLUENCING FACTORS

Power supply
No effect. No loss of data in case of a power supply failure (Flash, EEPROM)

Vibration test
Sinusoidal oscillations in accordance with IEC 60068-2-6 and EN 60068-2-6;
Test Fc: 10…150Hz, 1g

Shock test
to IEC 60068-2-27 and EN 60068-2-27
Test Ea: 15g for 10 ms, half sine wave

ELECTROMAGNETIC COMPATIBILITY

Immunity test
In accordance with 61000-6-2 and EN 61326-1, Industry

Emission test
In accordance with 61000-6-4 and EN 61326-1, Industry

GENERAL

Weight
approx. 1,5 kg

Protection class
Front panel: IP 65
Rear: IP 20

Electrical safety
Complies with EN 61 010-1
and IEC 61131-2
Over-voltage category II
Contamination degree 2
Protection Class III

CE marking
Fulfills the EU Directives for electro-magnetic compatibility and low voltage.

UL / cUL
submitted

Standard accessories
Supply voltage terminal
Mounting accessories

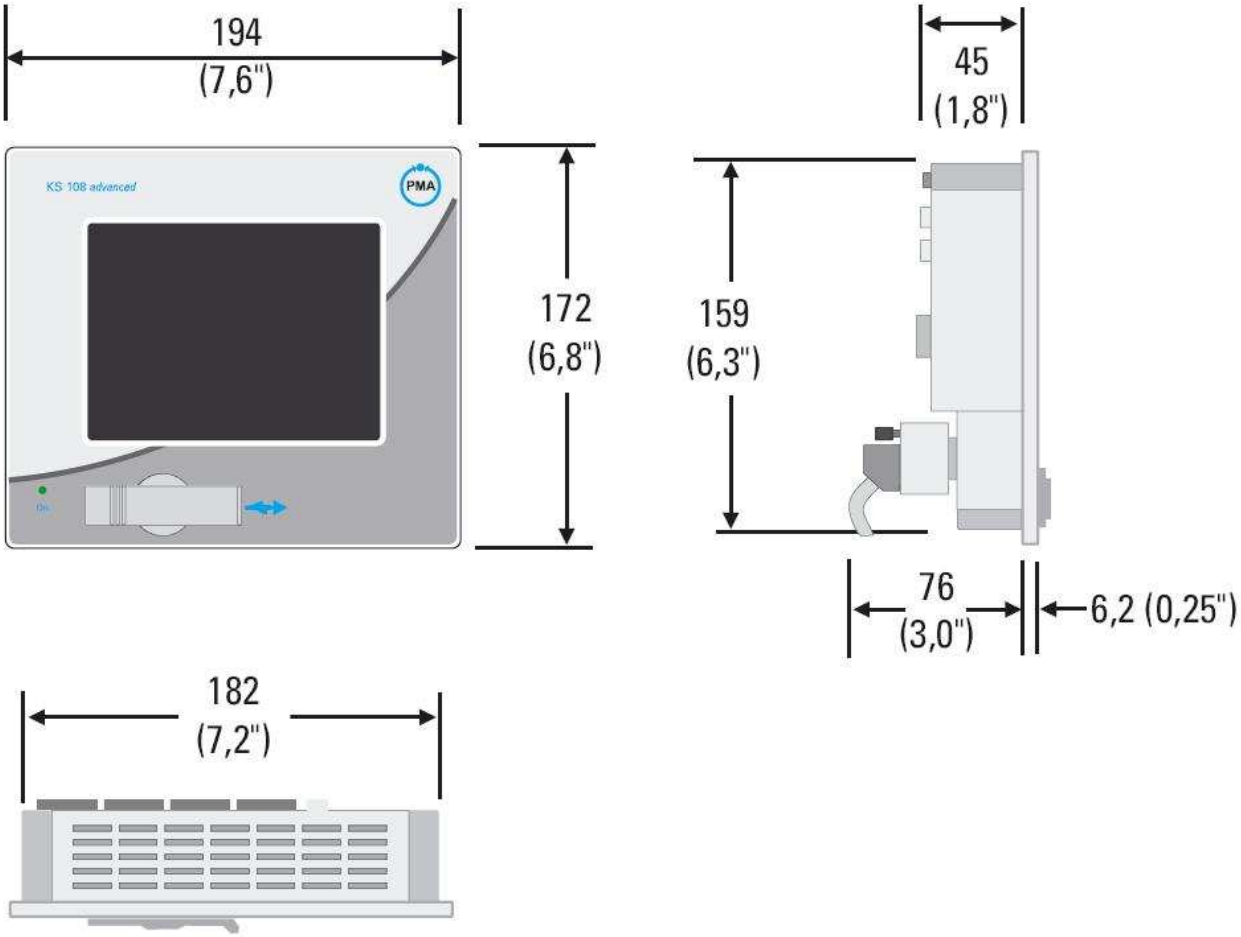


Fig. 1: Overall dimensions KS 108 flexible

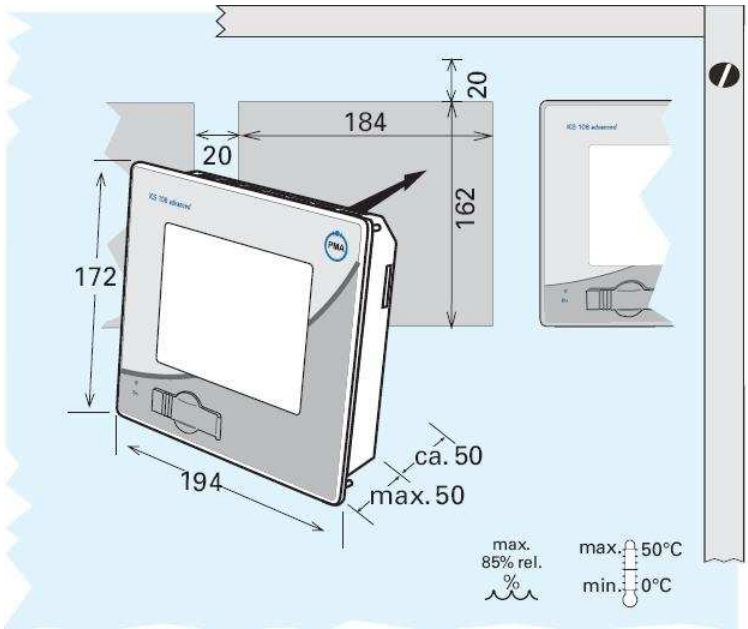


Fig. 2: Fitting dimensions KS 108 flexible

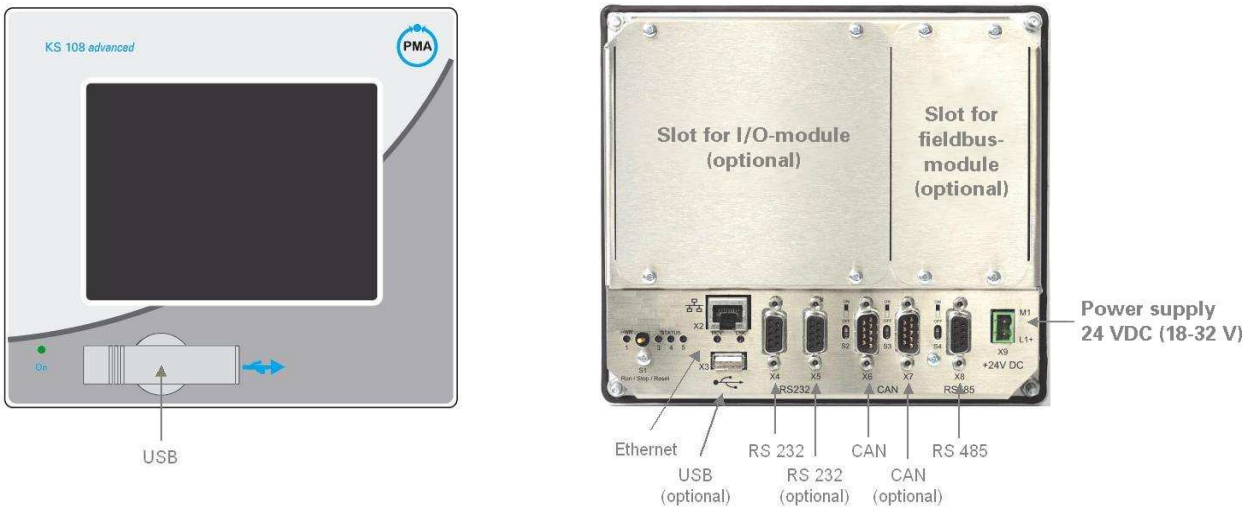


Fig. 3: Connections KS 108 flexible

Ordering information

Description	*Order-No.*	*Function*
KS 108 *flexible*	K108-230-00000	Automation unit KS 108 *flexible*, with 5,7-inch TFT colour display

Accessories

Description	*Order-No.*	*Function*
Engineering set (D)	9407-999-10611	Engineering manual and installation CD (Deutsch)
Engineering set (E)	9407-999-10601	Engineering manual and installation CD (English)
8 Port ETH Switch	EDG-6528L	8 port industrial switch for rail mounting

Recommended I/O systems

Description	*Order-No.*	*Function*
vario I/O	KSVC-xxx-xxxxx	See data sheet ... (www.pma-online.de)
rail line	RL40-xxx-xxxxx	See data sheet ... (www.pma-online.de)

PMA
Prozeß- und Maschinen- Automation GmbH
P.O. Box 31 02 29
34058 Kassel / Germany
Tel.: +49 561 505 1307
Fax.: +49 561 505 1710
E-mail: mailbox@pma-online.de
Internet: http://www.pma-online.de

Your local representative:

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