

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, trend, ...
- ❖ 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 Automatisierungslösung.

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, BlueControl[®] 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.

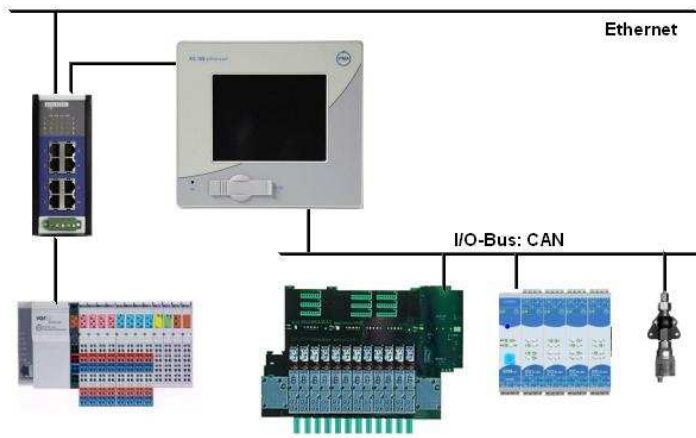
The computer core consists of a 'low power' processor, which operates without the need for additional cooling. The program is stored in an onboard Flash memory. Thanks to this design, the device's hardware is particularly robust for a long service life.

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.



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

Hauptmenü
Bedienseiten
Parameter
Konfiguration
I/O-Daten
Allgemeine Daten

Slave contr.

Alarm

Para

25.0

Cascade 25.0

SPe 33.0

°C

DV: -10.0 % 10.0 % -8.0

Master profiler

Rezept 1

PV 33.000 1212.00

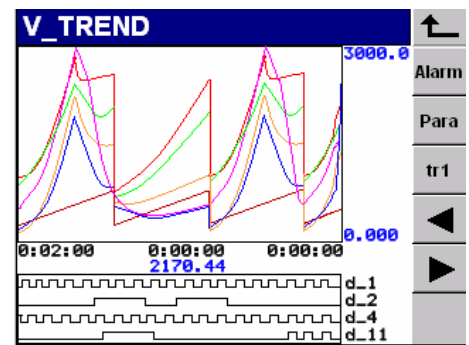
Segment: 12 1111.00 ... 1212.00

tSegRest [h] 0:00:00

tNetto [h] 2:09:00

tRest [h] 0:00:00

man end stop



Datenlogger

Alarm

Para

Copy

off

Dateiname Datenlogger

Kopfzeile ----

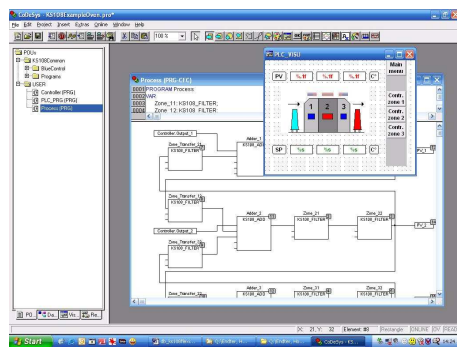
SD - Freier Speicher 127 MByte

USB - Freier Speicher 255 MByte

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:

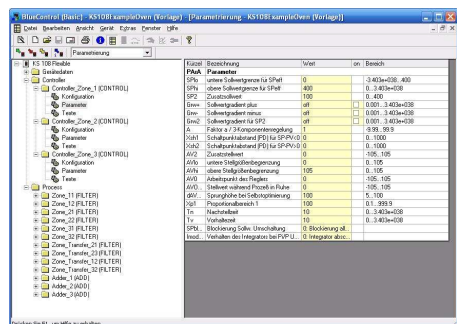
- Instruction List (IL)
- Function Block Diagram (FBD)
- Ladder Diagram (LD)
- Structured Text (ST)
- Sequential Function Chart (SFC)
- Continuous Function Chart (CFC)

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_res et       ao_BI_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
  
```

AnalogProgrammer - Parameter

RecEdit Rec 1

SP 0 -1111.0

Type 1 Zeit

TpGr 1 0:01:00

SP 1 111.0

Type 2 Gradient

Integrated visualisation system

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

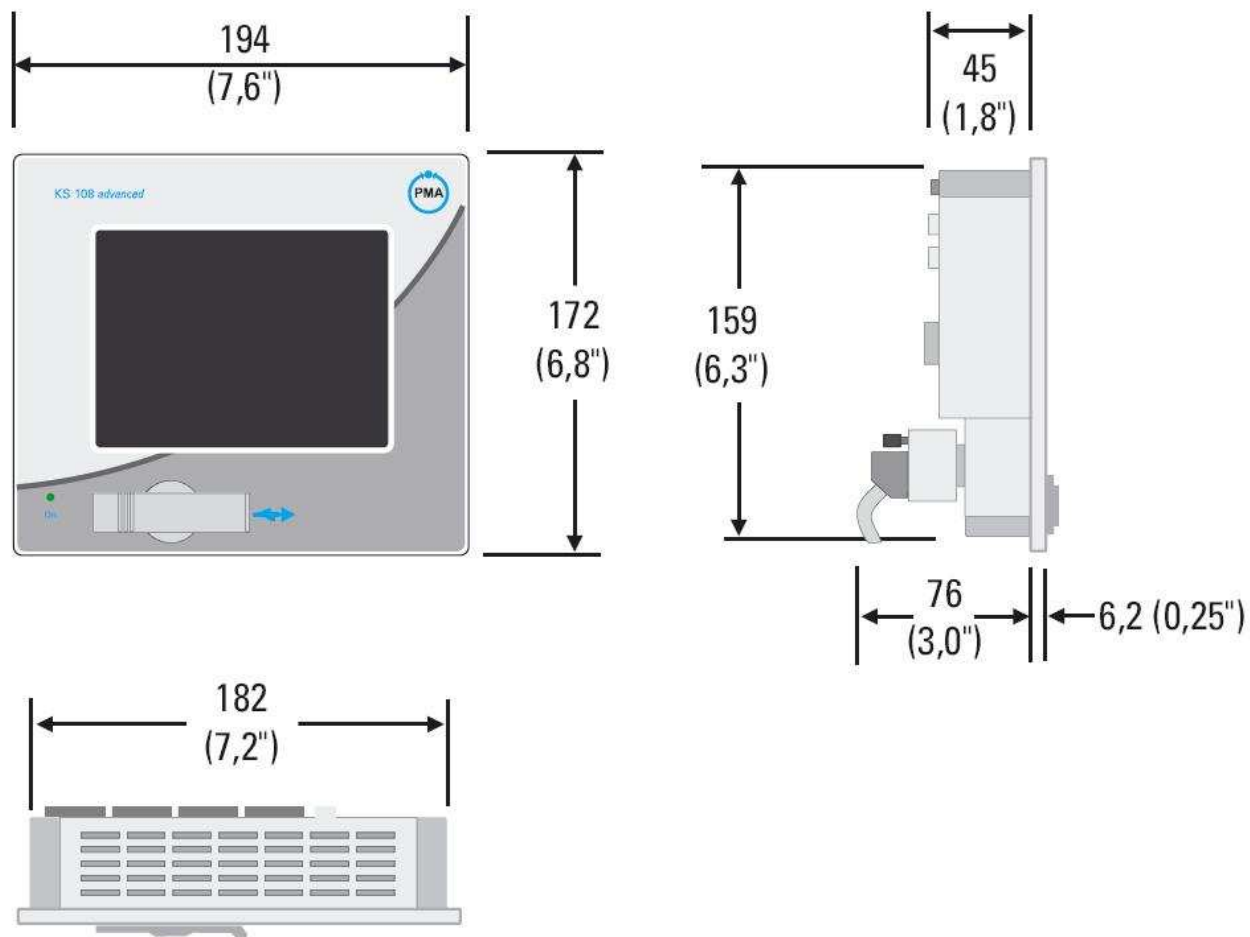


Fig. 1: Overall dimensions KS 108 flexible

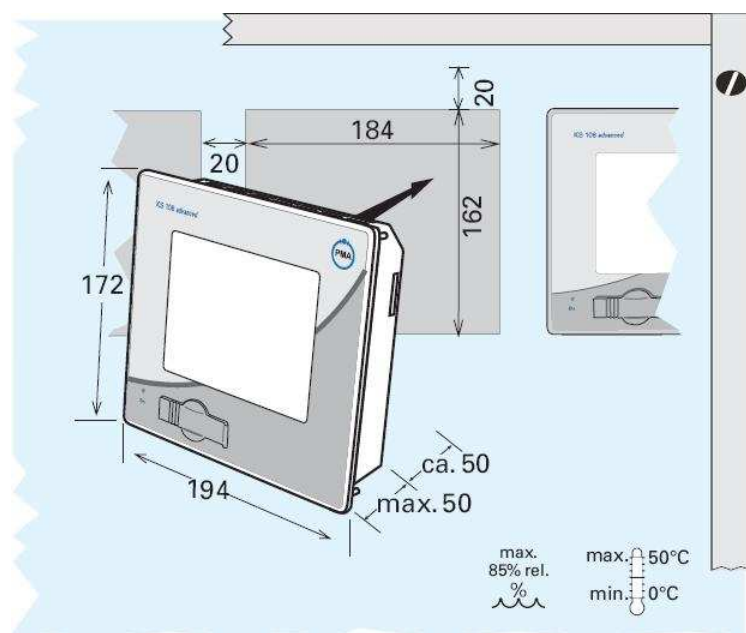


Fig. 2: Fitting dimensions KS 108 flexible

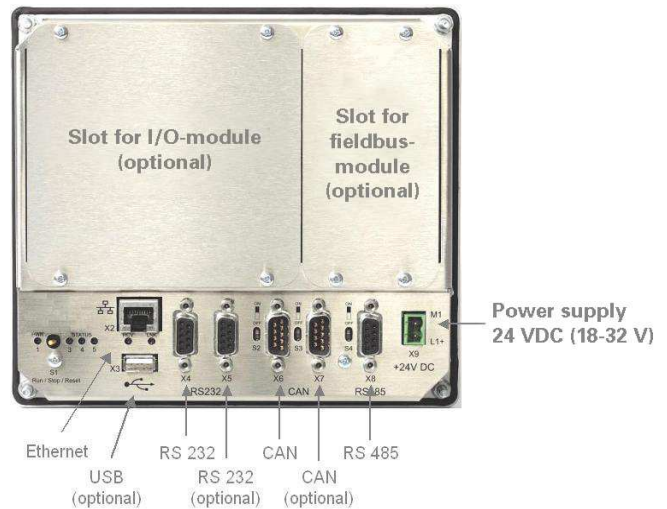
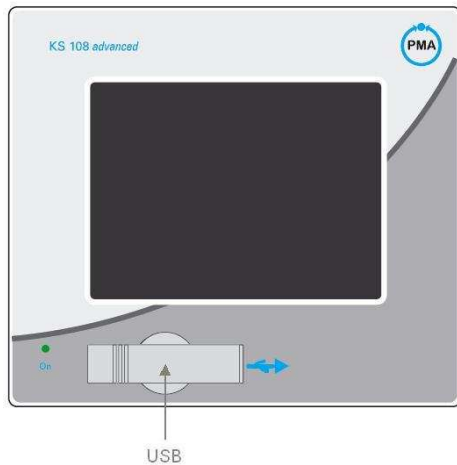


Fig. 3: Connections KS 108 flexible

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: