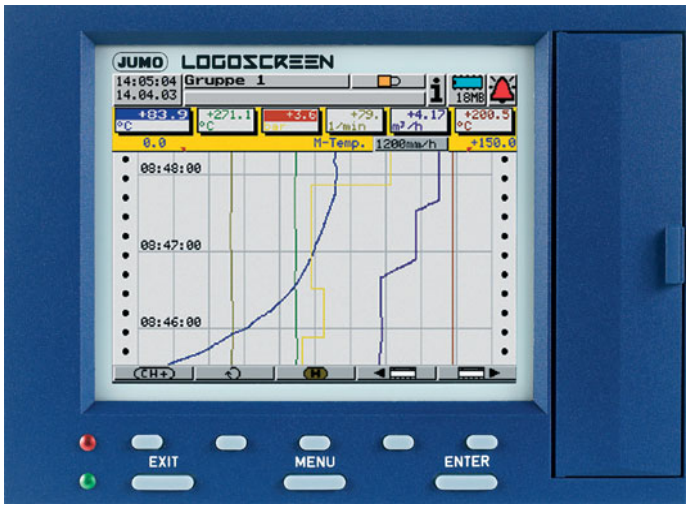


LOGOSCREEN es

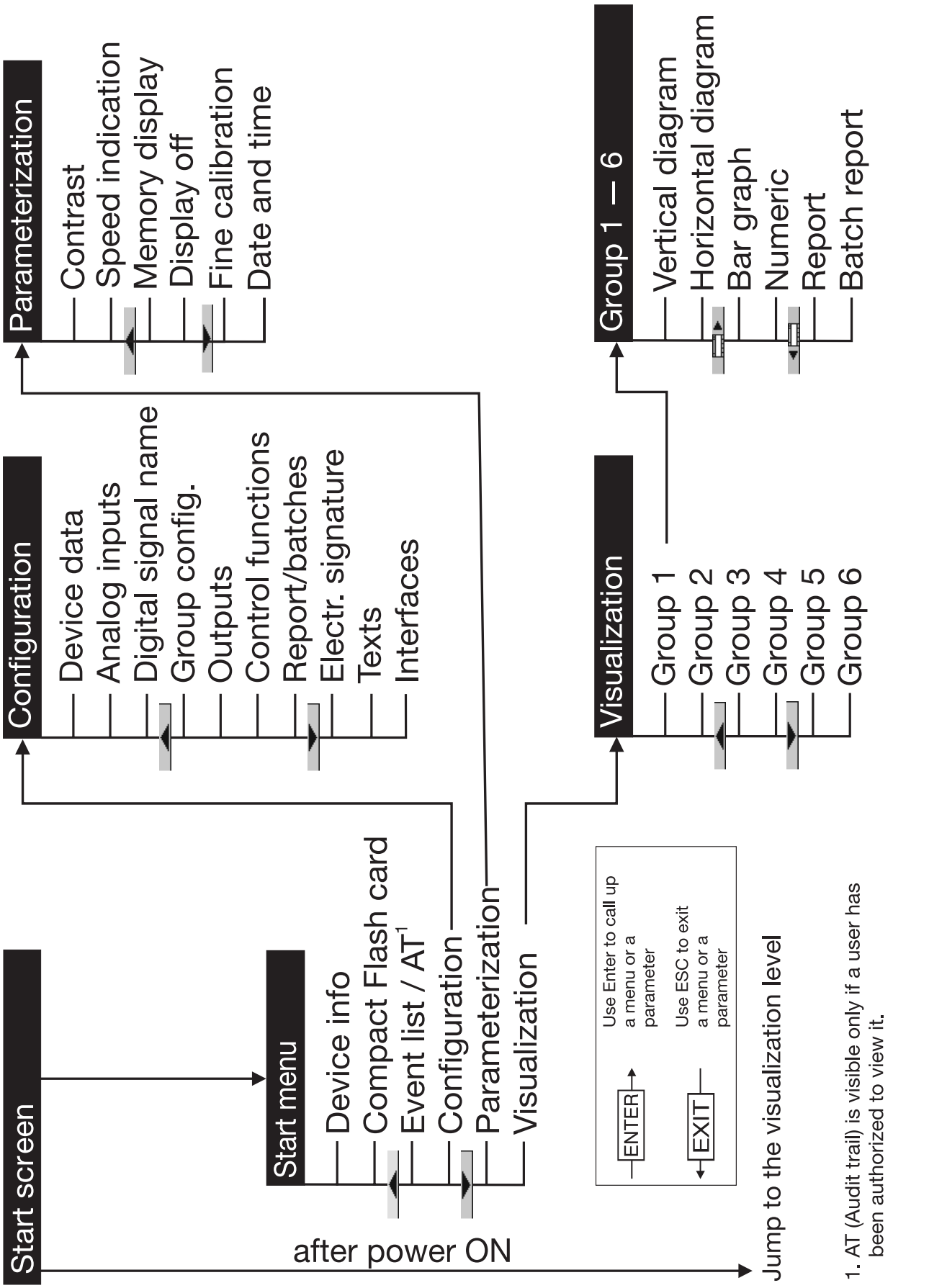
Paperless Recorder for secure acquisition of FDA-compliant measurement data

B 70.6560.4

Installation Instructions

11.07/00415650

Menu structure of the paperless recorder



1. AT (Audit trail) is visible only if a user has been authorized to view it.

Contents

Contents

1.1 Preface

Please read these Installation Instructions before commissioning the instrument. Keep the instructions in a place that is accessible to all users at all times.

Please assist us to improve these installation instructions, where necessary.

Your suggestions will be appreciated.

If any problems should occur during commissioning, please do not carry out any manipulations on the unit, as this could endanger your rights under the instrument warranty!

Please contact the nearest subsidiary or the head office in such a case.

When returning modules, assemblies and components, the regulations of EN 61340-5-1 and EN 61340-5-2 “Protection of electronic devices from electrostatic phenomena” must be observed. Use only the appropriate **ESD** packaging for transport.

Please note that we cannot accept any liability for damage caused by ESD (electrostatic discharge).

1.2 Arrangement of the documentation

The documentation for this instrument is addressed to the equipment manufacturer (OEM) and users with appropriate technical expertise. It consists of the following parts:

Sales documentation in PDF file format

White Paper

The White Paper presents the company's position with regard to the legislation "21 CFR Part 11" of the American health authority FDA (Food and Drug Administration). With each section of the regulatory text, the user is given information on the fulfillment of the requirements.

Product description

The product description illustrates the safety and operating concepts behind the system, and the results that can be achieved by JUMO in the course of the validation of an installation. It is intended to serve as an introduction to the system, and not as a formal technical documentation.

Instrument documentation in printed form

B 70.6560.1 Operating Instructions

The operating instructions are an extract from the operating manual. They cover the basic operation of the paperless recorder.

B 70.6560.4 Installation Instructions

The installation instructions describe the installation of the paperless recorder and the connection of the supply and signal cables. The instructions also contain a list of the technical data.

Instrument documentation in PDF file format

The "Instrument documentation in PDF file format" is on the CD that is included in the delivery.

B 70.6560.0 Operating Manual

It contains information about commissioning, operation and parameter setting on the instrument as well as through the PC setup program (option).

B 70.6560.1 Operating Instructions

The operating instructions are an extract from the operating manual. They cover the basic operation of the paperless recorder.

B 70.6560.2.0 **Interface description (serial interfaces)**

This provides information on the communication (RS232; RS422/RS485) with supervisory systems.

Interface description (Ethernet interface)

This provides information on the connection of a paperless recorder to a company-internal network. The description is incorporated in the B 70.6560.2.0

B 70.6560.2.1 **Interface description (LON interface)**

This provides information on the connection and use of modules of the “JUMO mTRON automation system”.

B 70.6560.2.3 **Interface description (PROFIBUS-DP interface)**

This provides information on the connection of a paperless recorder to a PROFIBUS-DP system.

B 70.6560.4 **Installation instructions**

The installation instructions describe the installation of the paperless recorder and the connection of the supply and signal cables. They also contain a list of the technical data.

T 70.6560 **Data sheet**

The data sheet contains general information, the order details and the technical data.

All documents are available on the Internet for downloading at www.jumo.net

1.3 Typographical conventions

Warning signs

The signs for **Danger** and **Caution** are used in this manual under the following conditions:

Danger

This symbol is used where there may be **danger to personnel** if the instructions are disregarded or not followed accurately!

Caution

This symbol is used where there may be **damage to equipment or data** if the instructions are disregarded or not followed accurately!

Caution

This symbol is used where special precautions must be taken when handling **electrostatically sensitive components**.

Note signs

Note

This symbol is used to draw your **special attention** to a remark.

Reference

This sign refers to **further information** in other manuals, chapters or sections.

abc[1]

Footnote

Footnotes are comments that **refer to specific parts** of the text. Footnotes consist of two parts: a marking in the text and the footnote text.

The marking in the text is arranged as continuous superscript numbers.

*

Action

This sign marks the description of a **required action**.

The individual steps are indicated by this asterisk, e. g.

* Press the ▲ key

* Confirm with ENTER

2.1 Nameplate

Identification

Position The nameplate is affixed to the paperless recorder.

Contents It contains important information such as:

Description	Designation on nameplate	Example
Instrument type	Typ	706560/10-888,000-51-0032-0032-23,020
Sales number	VARTN	70/00342163
Production number	F-Nr	0022969000003130006
Supply voltage		AC 110 … 240V +10/-15%, 48…63Hz

Typ Please compare the type that was supplied with your order details. You can identify the type by referring to Chapter 2.2 “Type designation”.

VARTN The sales number unambiguously designates the article in the catalog. It is used for communication between the customer and the sales department.

F-Nr The production number indicates the production date (year/week). The figures concerned are in position 12, 13, 14, 15.

Example:

F-Nr 0022969000**0313**0006

This shows that the paperless recorder was manufactured in 2003, week 13.

Repeat order for a recorder in the identical version

When placing a repeat order for a paperless recorder of the same type, it is necessary to state “Typ”, “VARTN” and “F-Nr.” This is the only way an instrument of the same type can be produced.

2 Identifying the instrument version

2.2 Type designation

Paperless recorder for secure acquisition of FDA-compliant meas. data

							(1) Basic version
						706560/00	paperless recorder, no analog inputs
						706560/01	paperless recorder, no analog inputs, incl. PC software package and interface cable/adapter
						706560/10	paperless recorder with 6 analog inputs
						706560/20	paperless recorder with 6 analog inputs, incl. PC software package and interface cable/adapter
						706560/11	paperless recorder with 12 analog inputs
						706560/21	paperless recorder with 12 analog inputs incl. PC software package and interface cable/adapter
							(2) Inputs 1 — 6 (configurable)
x	x					000	not assigned
		x	x	x	x	888	factory-set
							(3) Inputs 7 — 12 (configurable)
x	x	x	x			000	not assigned
				x	x	888	factory-set
							(4) Interface
x	x	x	x	x	x	51	RS232C (standard)
x	x	x	x	x	x	54	RS422/485
x	x	x	x	x	x	66	RS232C and LON
x	x	x	x	x	x	67	RS422/485 and LON
x	x	x	x	x	x	68	RS232C and PROFIBUS-DP
x	x	x	x	x	x	69	RS422/485 and PROFIBUS-DP
							(5) Internal memory
x	x	x	x	x	x	0032	32MB backup memory
x	x	x	x	x	x	0064	64MB backup memory
x	x	x	x	x	x	0128	128MB backup memory
							(6) External memory
x	x	x	x	x	x	0000	no external memory
x	x	x	x	x	x	0032	32MB CompactFlash memory card
x	x	x	x	x	x	0064	64MB CompactFlash memory card
x	x	x	x	x	x	0128	128MB CompactFlash memory card
							(7) Supply
x	x	x	x	x	x	23	110 — 240V AC +10/-15%, 48 — 63Hz
x	x	x	x	x	x	25	20 — 30V AC/DC, 48 — 63Hz
							(8) Extra codes
x	x	x	x	x	x	008	Ethernet connection
x	x	x	x	x	x	020	lithium battery for memory buffering (ex-factory)
x	x	x	x	x	x	021	storage capacitor (instead of extra code 020)
x	x	x	x	x	x	258	7 logic inputs, 1 open-collector output, 4 relay outputs, voltage output 24V DC 50mA
x	x	x	x	x	x	350	universal carrying case TG-35[2]
x	x	x	x	x	x	444	stainless steel front with membrane keys

Order code (1) [ ] - (2) [ ] , (3) [ ] - (4) [ ] - (5) [ ] - (6) [ ] - (7) [ ] / (8) [ ] ,...

Order example 706560/10 - 888 , 000 - 51 - 0032 - 0032 - 23 / 020[1]

1. List extra codes in sequence, separated by commas.
2. The UL approval only applies to the panel-mounting unit.

2.3 Standard accessories

- 1 Installation Instructions B 70.6560.4
- 1 Operating Instructions B 70.6560.1
- 2 mounting brackets
- 4 cable-tie with foot (can be released)
  for strain relief of the sensor connection cables
- 1 CD with additional documentation
  (see Chapter 1.2 “Arrangement of the documentation”)

2.4 Accessories

- PC software package consisting of:

  setup program,

  PC evaluation software (PCA3000),

  PCA communications software (PCC),

  PC Security Manager software (PCS) and

  PC Audit Trail Manager software (PCAT).
- PC interface cable with TTL/RS232 converter and adapter,
  for setup program, Sales No. 70/00350260
- PC interface cable with USB/TTL converter, adapter (socket) and adapter (pins) for setup program, Sales No. 70/00456352

2 Identifying the instrument version

3.1 Location and climatic conditions

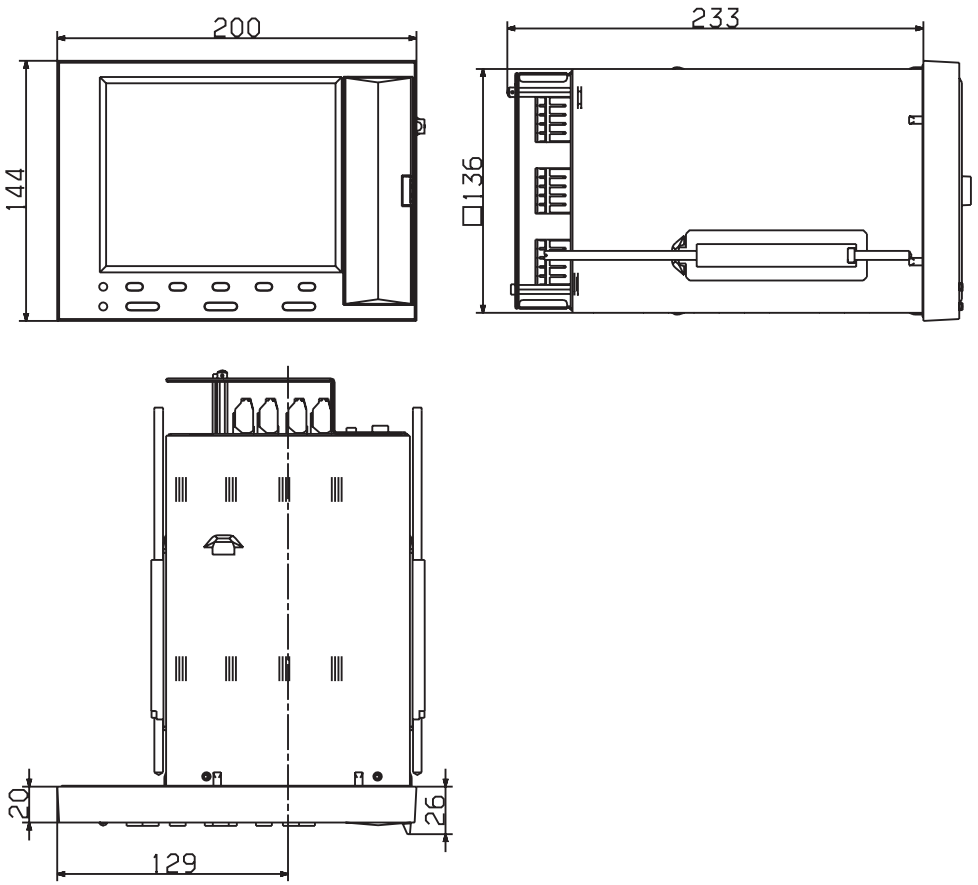
The location should be as free as possible from shock and vibration. Stray electromagnetic fields from motors, transformers etc. should be avoided.

The ambient temperature at the location can be 0 to +45 °C, at a relative humidity of ≤75 %, no condensation.

⇨ Chapter 4.1 “Installation notes”

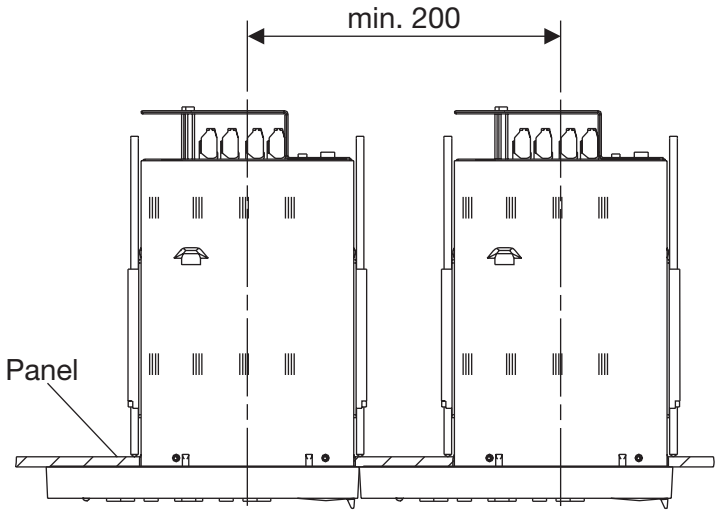
3.2 Mounting in position

Outline drawings



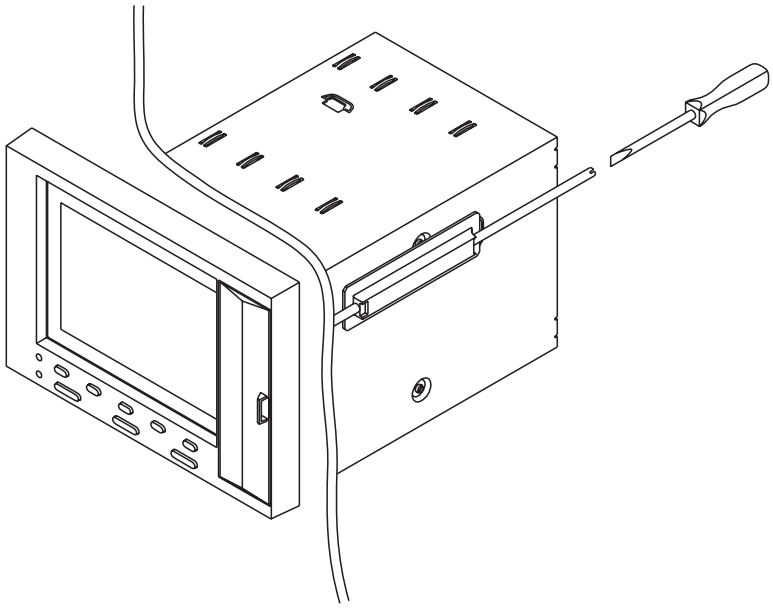
3 Installation

Fitting into the panel



Fitting in position

* Insert the paperless recorder from the front into the panel cut-out.
* From the back of the panel, hook the two mounting brackets into the recesses on the sides of the housing. The flat sides of the brackets must be against the housing.
* Place the mounting brackets against the rear of the panel and tighten them evenly.



4.1 Installation notes

- The choice of the cable, the installation and the electrical connection must conform to the requirements of VDE 0100 “Regulations on the Installation of Power Circuits with nominal voltages below 1000V”, or the appropriate local regulations.
- Work inside the instrument must only be carried out to the extent described and, like the electrical connection, only by qualified personnel.
- If contact with live parts is possible while working on the instrument, it must be isolated from the supply on both poles.
- The electromagnetic compatibility (EMC) conforms to the standards and regulations listed under Technical Data.

  ⇨ Chapter 7 “Technical data”
- Run the input, output and supply cables separately, and not parallel to one another.
- All input and output cables without connection to the supply network must be arranged as twisted and screened cables. Earth the screen on the instrument side to the earth potential.
- Earth the instrument at the PE terminal to the protective conductor. This cable should have the same cross-section as the supply cable. Earthing cables should be run in a star layout to a common earthing point which is connected to the protective conductor of the supply. Do not loop the earthing cable, i.e. do not run it from one instrument to another.
- Do not connect any additional loads to the supply terminals of the instrument.
- The instrument is not suitable for use in hazardous areas.
- Inductive loads close to the instrument, such as contactors or solenoid valves, should have RC modules fitted for interference suppression.
- The supply to the instrument must be provided with additional fusing. Depending on the supply voltage, the following fuse values apply:

  20 — 30V AC/DC, 48 — 63Hz : fuse 2A slow

  110 — 240V AC +10/-15%, 48 — 63Hz : fuse 1A slow

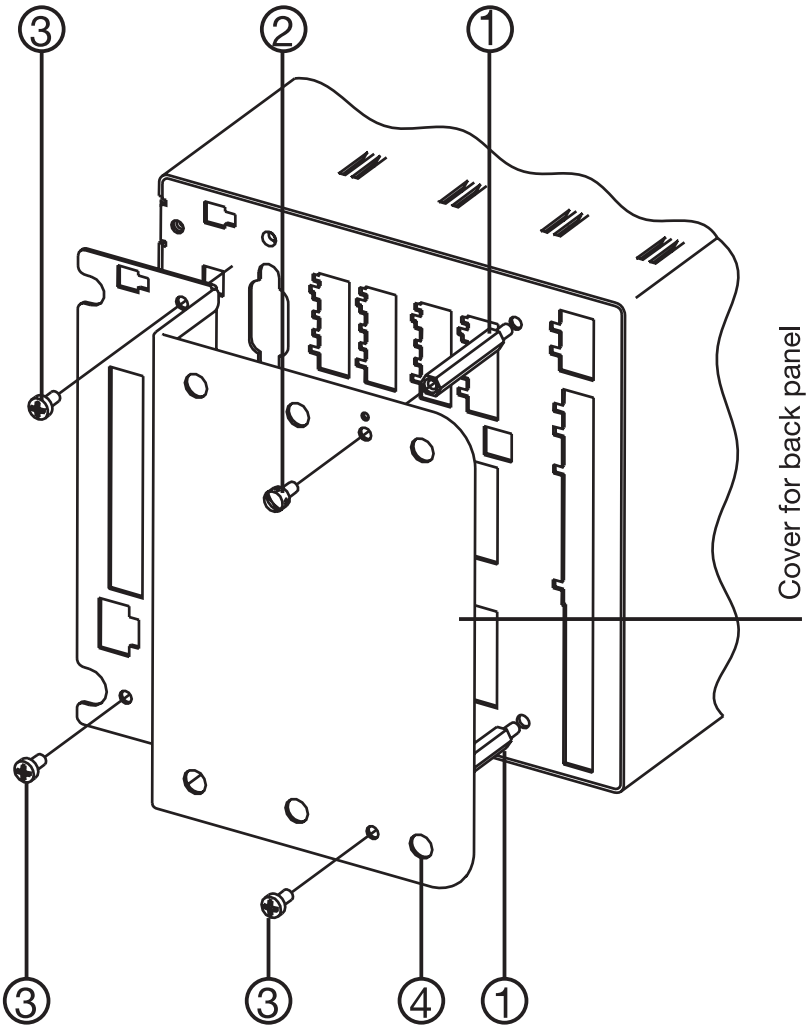
  A type-G miniature cartridge fuse marked F1 is built into the instrument itself:

  20 — 30V AC/DC, 48 — 63Hz : fuse 1.6A slow

  110 — 240V AC +10/-15%, 48 — 63Hz : fuse 0.63A slow

4.2 Procedure

* Carry out electrical connection as per Chapter 4.3 “Connection diagram”.
* Screw back panel cover on (spacer bolt first)
* If necessary, use cable-ties for strain relief of connecting cables.



① Spacer bolt

② Capstan headed screw and bore, suitable for lead sealing of the back panel cover

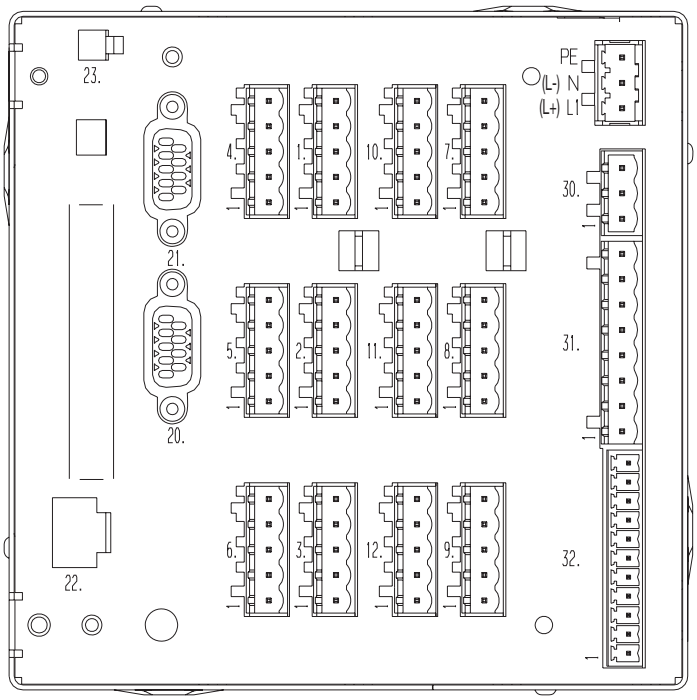
③ Cross-point screws

④ 6 bores provided for the cable-ties supplied, for strain relief of the connection cables

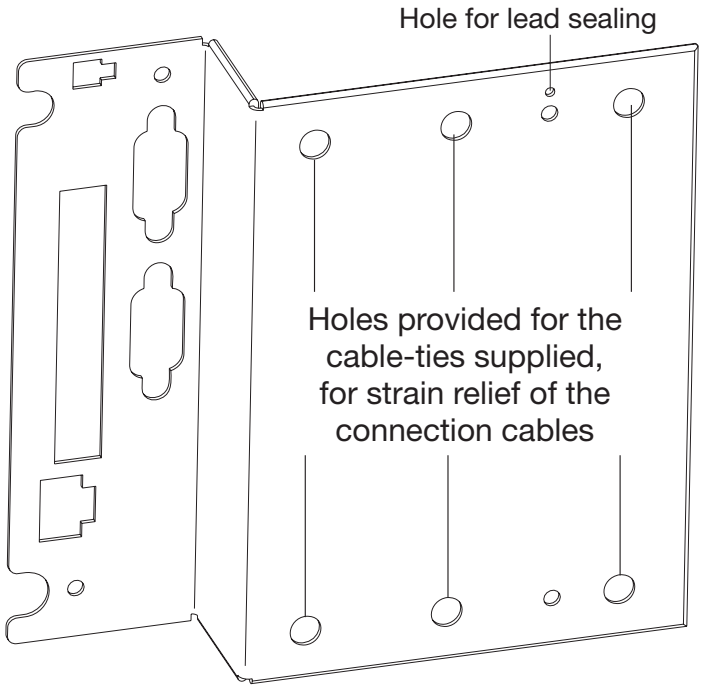
4.3 Connection diagram

The electrical connection must only be carried out by qualified personnel.

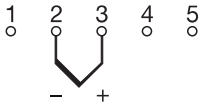
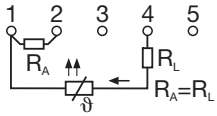
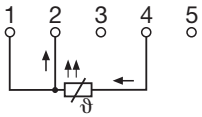
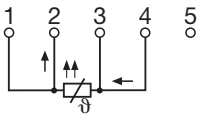
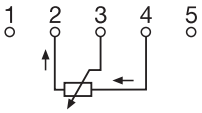
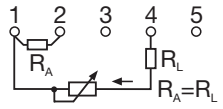
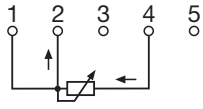
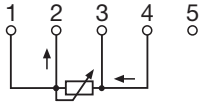
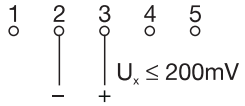
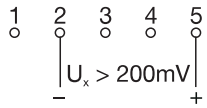
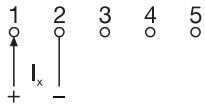
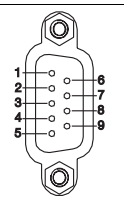
Back panel **Rear view with pluggable screw terminals**

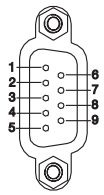
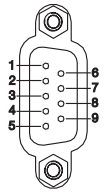
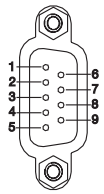
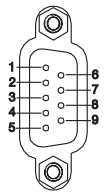
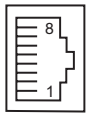
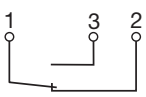
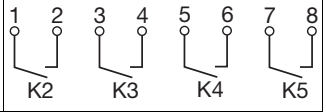


Cover for back panel

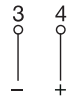
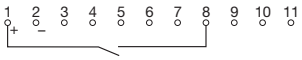


4 Electrical connection

	Terminal assignment	Connector	Connection diagram
Supply	Supply voltage as per data sheet	L1(L+) N (L-) PE	
Analog inputs	Thermocouple	1 to 12	
	Resistance thermometer in 2-wire circuit	1 to 12	
	Resistance thermometer in 3-wire circuit	1 to 12	
	Resistance thermometer in 4-wire circuit	1 to 12	
	Resistance transmitter	1 to 12	
	Potentiometer in 2-wire circuit	1 to 12	
	Potentiometer in 3-wire circuit	1 to 12	
	Potentiometer in 4-wire circuit	1 to 12	
	Voltage input ≤ 200 mV	1 to 12	
	Voltage input > 200 mV	1 to 12	
	Current input	1 to 12	
Interfaces	RS232C 9-pole SUB-D socket 2 RxD receive data 3 TxD transmit data 5 GND ground	20	

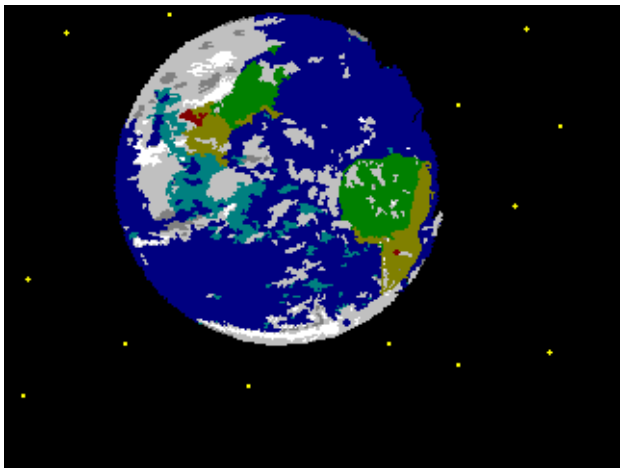
	Terminal assignment	Connector	Connection diagram
Interfaces	RS422 9-pole SUB-D socket (extra code) 3 TxD+ transmit data + 4 RxD+ receive data + 5 GND ground 8 TxD- transmit data - 9 RxD- receive data -	20	
	RS485 9-pole SUB-D socket (extra code) 3 TxD+/RxD+ transmit/receive data + 5 GND ground 8 TxD-/RxD- transmit/receive data -	20	
	LON 9-pole SUB-D socket (extra code) 3 Net_A 9 Net_B	21	
	PROFIBUS-DP 9-pole SUB-D socket (extra code) 3 RxD/TxD-P B-cable receive/transmit data-Plus 5 DGND data transmission potential 6 VP supply voltage-Plus 8 RxD/TxD-N A-cable receive/transmit data-N	21	
	Ethernet RJ45 socket (extra code) 1 TX+ transmit data + 2 TX- transmit data - 3 RX+ receive data + 6 RX- receive data -	22	
	Setup interface The recorder also has a setup interface on the front panel (wired in parallel). Do **not** use both at the same time.	23	
Relay outputs	Relay K1 (changeover, 3A, 230V AC)[1]	30	
	Relay K2 to K5 (make/break contact, 3A, 230V AC)[1] (extra code)	31	
	1. with resistive load. SELV circuits and supply circuits must not be combined.		

Digital I/O

Terminal assignment	Connector	Connection diagram
Open-collector output (25V max., 100mA max.) (extra code) 3 ground 4 collector	32	
Logic inputs, voltage-operated (extra code) LOW = -3 to +5V DC HIGH = 12 to 30V DC 1 +24V/50mA auxiliary supply not stabilized 2 GND 5 Logic input 7 6 Logic input 6 7 Logic input 5 8 Logic input 4 9 Logic input 3 10 Logic input 2 11 Logic input 1	32	 Example: input 4 (terminal 8) contact-operated Input Terminal 1 11 2 10 3 9 4 8 5 7 6 6 7 5

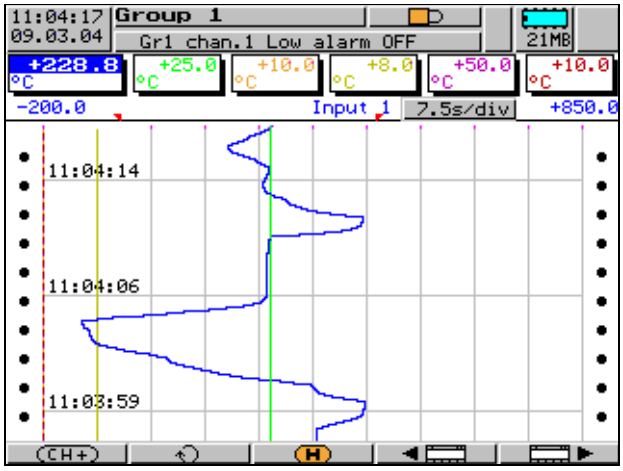
When the paperless recorder is installed and connected, it can be started up. After the supply voltage has been connected or switched on, the start screen will appear briefly.

Start screen



After the end of the initialization phase, the visualization level is automatically started.

Visualization level



The recorder is now in recording mode.

Further steps

The instrument can be configured by an authorized person, either from the instrument keys or by using the setup program. Additional information about the configuration can be found in the Operating Manual B 70.6560.0.

Afterwards, please check again that connection, configuration and operational mode are correct.

5 Function check

6 Device replacement / software update

If you need to replace the device or update the software, this chapter will help you back up and restore all necessary settings and parameters.

✱ Fill in this page before replacing the device.

Proof of service

Order number : _____

Date : _____

Device designation : _____

Production number : _____

Activity

		done	
		yes	no
1.	Save measurement data to CF card or through the PCC software.		
2.	Save configuration data (setup) to CF card or through the setup software.		
3.	If used, save reports to CF card. Please note: reports cannot be terminated through the PC software.		
4.	If used, read out counter values with the setup software and write them down. Counter 1 : _____ Counter 2 : _____ Ext. counter 1 : _____ Ext. counter 2 : _____		
5.	Read off IP address, Subnet-Mask and Gateway on the device or through the setup software and write them down. IP address : _____ . _____ . _____ ._____ Subnet-Mask : _____ . _____ . _____ ._____ Gateway : _____ . _____ . _____ ._____		
6.	Read off values for fine calibration for all analog inputs on the device and write them down. Start act. / Start targ./ End act. / End targ. Analog input 1 : _____ / _____ / _____ /_____ Analog input 2 : _____ / _____ / _____ /_____ Analog input 3 : _____ / _____ / _____ /_____ Analog input 4 : _____ / _____ / _____ /_____ Analog input 5 : _____ / _____ / _____ /_____ Analog input 6 : _____ / _____ / _____ /_____ Analog input 7 : _____ / _____ / _____ /_____ Analog input 8 : _____ / _____ / _____ /_____ Analog input 9 : _____ / _____ / _____ /_____ Analog input 10 : _____ / _____ / _____ /_____ Analog input 11 : _____ / _____ / _____ /_____ Analog input 12 : _____ / _____ / _____ /_____		

6 Device replacement / software update

Info

After uploading the user list, the users must log in with the password that was initially assigned by the administrator.
If a user no longer knows the password, then the user status has to be set to “New” and a new password assigned through the PCS software.
After altering the device software (update), the process data are stored in a new PCA3000 archive.

Notes

Analog inputs (channels 1 — 12)

Thermocouple

Designation	Type	Standard	Range	Linearization accuracy[1]
Fe-Con	L	DIN 43 710	-200 to +900°C	±0.1%
Fe-Con	J	EN 60 584	-210 to +1200°C	±0.1% above -100°C
Cu-Con	U	DIN 43 710	-200 to +600°C	±0.1% above -150°C
Cu-Con	T	EN 60 584	-270 to +400°C	±0.15% above -150°C
NiCr-Ni	K	EN 60 584	-270 to +1372°C	±0.1% above -80°C
NiCr-Con	E	EN 60 584	-270 to +1000°C	±0.1% above -80°C
NiCrSi-NiSi	N	EN 60 584	-270 to +1300°C	±0.1% above -80°C
Pt10Rh-Pt	S	EN 60 584	-50 to +1768°C	±0.15% above 0°C
Pt13Rh-Pt	R	EN 60 584	-50 to +1768°C	±0.15% above 0°C
Pt30Rh-Pt6Rh	B	EN 60 584	0 to 1820°C	±0.15% above 400°C
Chromel-Copel			-200 to +800°C	±0.15%
Shortest span			L, J, U, T, K, E, N, Chromel-Copel: S, R, B:	100°C 500°C
Range start/end			freely programmable within the limits in 0.1°C steps	
Cold junction			Pt100 internal or thermostat external constant	
Cold junction accuracy (internal)			± 1°C	
Cold junction temperature (external)			-50 to +100°C adjustable through setup software	
Sampling cycle			6 or 12 channels 125 msec	
Input filter			2nd order digital filter; filter constant adjustable from 0 to 10.0 sec	
Test voltage			500 V (across optocoupler)	
Resolution			>14 bit	
Features			also programmable in °F	

1. The linearization accuracy refers to the maximum span.
   The linearization accuracy is reduced for shorter spans.

Resistance thermometer

Designation	Standard	Connection	Range	Linearization accuracy	Measuring current
Pt 100	EN 60 751	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +500°C -200 to +850°C -200 to +500°C -200 to +850°C	±0.4°C ±0.8°C ±0.4°C ±0.5°C	500µA 250µA 500µA 250µA
Pt 100	JIS	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +500°C -200 to +650°C -200 to +500°C -200 to +650°C	±0.4°C ±0.8°C ±0.4°C ±0.5°C	500µA 250µA 500µA 250µA
Pt 500	EN 60 751	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +500°C -200 to +850°C -200 to +500°C -200 to +850°C	±0.4°C ±0.8°C ±0.4°C ±0.5°C	250µA 250µA 250µA 250µA
Pt 1000	EN 60 751	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +500°C -200 to +850°C -200 to +500°C -200 to +850°C	±0.4°C ±0.8°C ±0.4°C ±0.5°C	500µA 250µA 500µA 250µA
Ni 100	EN 43760	2/3-wire 4-wire	-60 to +180°C -60 to +180°C	±0.4°C ±0.4°C	500µA 500µA

7 Technical data

Designation Standard	Connection	Range	Linearization accuracy	Measuring current
Cu 50	2/3-wire 2/3-wire 4-wire 4-wire	-50 to +100°C -50 to +200°C -50 to +100°C -50 to +200°C	±0.5°C ±0.9°C ±0.5°C ±0.6°C	500µA 250µA 500µA 250µA
Connection type	2-, 3- or 4-wire circuit			
Shortest span	15°C			
Sensor lead resistance	max. 30 Ω per core for 3-/4-wire circuit max. 10Ω per core for 2-wire circuit			
Range start/end	freely programmable within the limits in 0.1°C steps			
Sampling cycle	6 or 12 channels 125msec			
Input filter	2nd order digital filter; filter constant adjustable from 0 to 10sec			
Test voltage	500V (across optocoupler)			
Resolution	> 14bit			
Features	also programmable in °F			

Resistance transmitter and potentiometer

Range	Accuracy	Measuring current
up to 180Ω up to 390Ω up to 2000Ω up to 4000Ω	±150mΩ ±300mΩ ±2Ω ±4Ω	500µA 250µA 500µA 250µA
Connection type	resistance transmitter: 3-wire circuit potentiometer: 2-/3-wire circuit	
Shortest span	6Ω	
Sensor lead resistance	max. 30Ω per core for 4-wire circuit max. 20Ω per core for 2- and 3-wire circuit up to 200 Ω range: max. 10 Ω per core for 2- and 3-wire circuit	
Resistance values	freely programmable within the limits in 0.1 Ω steps	
Sampling cycle	6 or 12 channels 125msec	
Input filter	2nd order digital filter; filter constant adjustable from 0 to 10.0sec	

Input for DC voltage, DC current

Basic range	Accuracy	Input resistance
-20 to +70mV -5 to +105mV -10 to +210mV -0.5 to +12V -0.05 to +1.2V -1.2 to +1.2V -12 to +12V	±80µV ±100µV ±240µV ±6mV ±1mV ±2mV ±12mV	$R_{IN} \geq 1$ MΩ $R_{IN} \geq 1$ MΩ $R_{IN} \geq 1$ MΩ $R_{IN} \geq 470$ kΩ $R_{IN} \geq 470$ kΩ $R_{IN} \geq 470$ kΩ $R_{IN} \geq 470$ kΩ
Shortest span	5mV	
Range start/end	freely programmable within the limits (up to 999mV in 0.01 mV steps, above 1V in 1 mV steps)	
-2 to +22mA -22 to +22mA	±20µA ±44µA	burden voltage ≤ 1V burden voltage ≤ 1V
Shortest span	0.5mA	

Range start/end	freely programmable within the limits in 0.1 mA steps
Sampling cycle	6 or 12 channels 125 msec
Input filter	2nd order digital filter; filter constant adjustable from 0 to 10.0 sec
Feature	adjustable linearizations for thermocouples and resistance thermometers (for connection of transmitters without linearization)

Transducer short-circuit/break

	Short-circuit[1]	**Break**[1]
Thermocouple	not detected	detected
Resistance thermometer	detected	detected
Resistance transmitter	detected	detected
Potentiometer	not detected	detected
Voltage up to ± 1 V	not detected	detected
Voltage > ± 1 V	not detected	not detected
Current	not detected	not detected

1. programmable reaction of instrument, e.g. triggering alarm

Logic inputs (extra code)

Number	7 to DIN VDE 0411, Part 500; max. 25 Hz, max. 32 V
Level	logic “0“: -3 to +5 V, logic “1”: 12 to 30 V
Sampling cycle	minimum 1 sec

Outputs

1 relay (ex-factory)	changeover, 3 A, 230 V AC [1]
4 relays (extra code)	make/break, 3 A, 230 V AC[1]
1 open-collector output (extra code)	max. 25 V, max. 100 mA
1 voltage output (extra code)	24 V DC, 50 mA

1. with resistive load. SELV circuits and supply circuits must not be combined.

External analog inputs / logic inputs / logic outputs

Type	JUMO mTRON automation system
Sampling cycle	1 sec
Technical data	see Data Sheet: 70.4015 Relay module 70.4020 Analog input module 70.4030 Logic module
Configuration	Project design software iTOOL (70.4090)

Screen

Resolution	320 x 240 pixels
Size	5.7"
Number of colors	27 colors

7 Technical data

Electrical data

Supply (switch-mode power supply)	110 — 240V AC +10/-15%, 48 — 63Hz or 20 — 30V AC/DC, 48 — 63Hz
Electrical safety Test voltages (type test) - mains supply circuit to measuring circuit - mains supply circuit to housing (protective conductor) - measuring circuits to measuring circuit and housing - electrical isolation between the analog inputs	to EN 61 010, Part 1 of August 2002 overvoltage category II, pollution degree 2 with AC supply: 3.7kV/50Hz, 1min, with AC/DC supply: 510V/50Hz, 1min with AC supply: 2.3kV/50Hz, 1min, with AC/DC supply: 510V/50Hz, 1min 510V/50Hz, 1min up to 30V AC and 50V DC
Supply voltage error	< 0.1% of range span
Power consumption	approx. 25VA
Electrical connection	at rear by plug-in screw terminals, max. conductor cross-section 2.5mm^2 or 2x 1.5mm^2 with ferrules

Environmental influences

Ambient temperature range	0 to +45°C
Ambient temperature error	0.03% per °C
Storage temperature range	-20 to +60°C
Climatic conditions	≤ 75% rel. humidity, no condensation
EMC - interference emission - immunity to interference	EN 61 326 Class A to industrial requirements

Housing

Housing front	zinc die-casting or stainless steel
Housing type	panel-mounting housing to DIN 43 700, galvanized steel sheet
Bezel size	200mm x 144mm
Depth behind panel	233mm
Panel cut-out	$138^{+1.0}$mm x $138^{+1.0}$mm
Housing fixing	in panel to DIN 43 834
Operating position	unrestricted, taking into account the viewing angle of the screen, horizontal ±50°, vertical ±30°
Protection	to EN 60 529 Category 2, front IP54 (IP65 with extra code stainless steel front), rear IP20
Weight	approx. 3.5kg

Approvals

UL	Underwriter Laboratories

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