

SCREEN RECORDER KD7 TYPE



CE

MAIN FEATURES:

- QVGA HIGH COLOR screen, 320 x 240 pixels, with touch screen,
- recording and data archiving on CompactFlash card, from 16 MB up to 4 GB,
- IP65 protection class on the front panel,
- 6 or 12 galvanically isolated analog measuring channels,
- 24 measuring channels for data transmitted through communication interfaces,
- 16 or 32 alarms and 8 or 16 digital inputs,
- 4 or 8 analog outputs,
- visualization of measurements in digital form, charts, bargraphs, trends,
- RS-232, RS-485 serial interfaces and USB 1.1 Device,
- ETHERNET communication, WWW server,
- intuitive servicing based on the graphical Windows® interface,
- 32-bit processor with ARM® core, Windows® CE operating system.

APPLICATION

The KD7 screen recorder is applied as a data acquisition station in measuring and control systems. It finds application to measure, visualise and supervise technical process parameters in various industrial branches, e.g. in pharmacy, food, chemical and papermaking industries. It can be also used as an autonomous measuring and recording device.

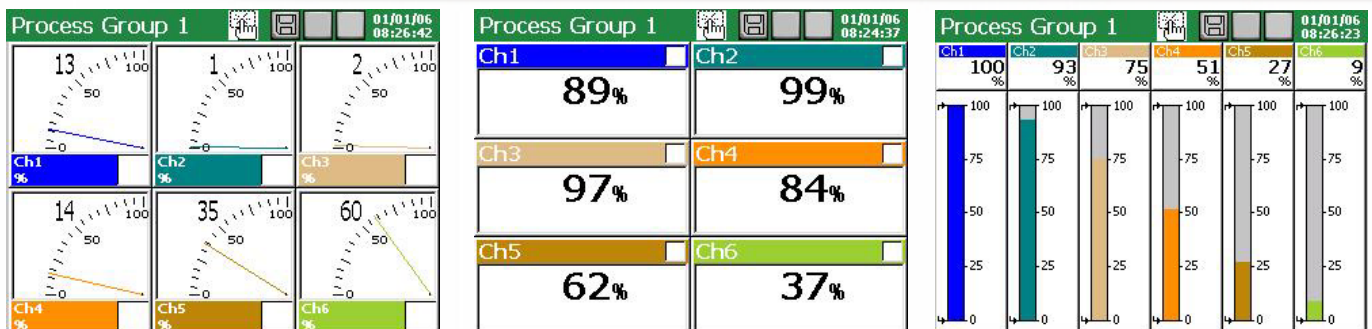
OPERATIONAL FUNCTION

- measuring inputs for the direct connection of thermocouples, voltage, current and resistance,
- programmable current, voltage and resistance inputs,
- 6 MB internal memory with data support,
- exchangeable external memory, from 16 MB up to 4 GB,
- access to recorded data via the internet browser,
- mathematical functions,
- counters and totalizers,
- visualization and archiving of 4 groups with 6 channels in each group (from 32 accessible channels), for which inputs are: 1...12 analog measuring inputs, 1...24 interface measuring inputs, 1...16 mathematical functions and 1...12 binary inputs,
- various language versions (English, Polish, Italian, Russian),
- digital signature for archive data,
- „Just in place” help,
- programmable events.

DATA EXPOSURE

The KD7 recorder enables the visualization of recorded data in following shapes:

- linear and bar trends,
- digital and analog indicators,
- each channel has the possibility to assign settings as: colour, name, range and presentation view.



DATA ARCHIVING

A CompactFlash card and the internal memory are destined for data archiving in the KD7 recorder. Depending on user's needs, the recorder is delivered with a memory card size up to 4 GB.

SAFETY OF STORED DATA - ACCESS CHECK

The individual login and password for each user, configurable access right to recorder resources, are only several of numerous solutions applied in the KD7 recorder in order to ensure the recorder work safety in the network.

PC SOFTWARE

KD7 SETUP, KD7 ARCHIVING, KD7 CONNECT and KD7 CHECK programs are destined for KD7 recorder servicing.

The **KD7 SETUP** program serves to configure the KD7 recorder.

The exchange of configuration data between the recorder and PC is carried out through the USB interface or the CompactFlash card.

The **KD7 ARCHIVING** program is destined for collection and archiving, visualization and printout of data obtained from the recorder (this program will be available soon).

The **KD7 CONNECT** program is destined for communication between PC and the KD7 recorder through the USB link. It enables the acquisition of archived data from the recorder, writing and erasing data on the CF card.

The **KD7 CHECK** program is destined to digital signature verification of archive data.

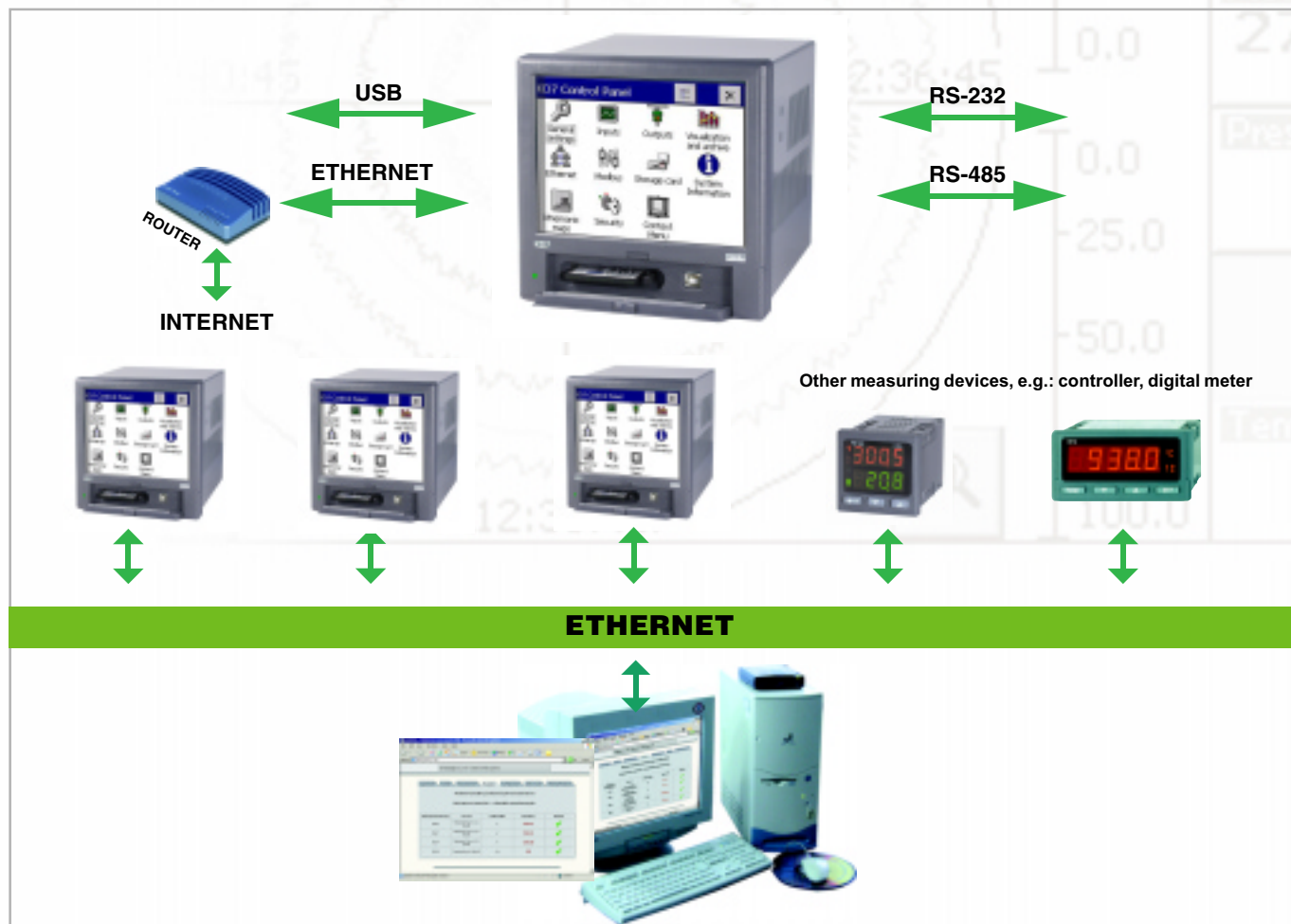
RECORDER WORKING IN THE NETWORK

Depending on needs, the user has the choice of following communication interfaces:

- RS-232
- RS-485 MODBUS Master and Slave
- ETHERNET 10 Base-T
- USB 1.1 Device

The recorder communication in the network is possible by means of the MODBUS or HTTP protocol.

The „HTTP server” (WWW) enables to carry out through the WWW browser, the preview of the recorder current state and the sampling of archived data.



TECHNICAL DATA

• Programmable measuring inputs:

- number of measuring channel 6 (or 12)
- input resistance > 10 MΩ
- sampling rate 250 ms (for 1 measuring place)
- measurement accuracy 0.25 % (0.5% for Pt500, Pt1000)
- isolation between measuring places 100 V d.c.
- isolation measuring place-housing 500 V d.c.

• Standard measuring inputs (version acc. to the ordering code):

- number of measuring channels 6 (or 12)
- measuring ranges:
 - voltage measurement 0...10 V input resistance > 1MΩ
 - current measurement 0...20 mA/ 4...20 mA input resistance < 10 Ω

Measuring ranges (universal measuring inputs)

Input signal	Signal symbol in the menu	Measuring range	Minimal subrange
Voltage	mV	0...±9999 mV	5 mV
Current	mA	0...±20 mA	1 mA
Thermocouple (TC)			
J(Fe -CuNi)	TC J	-200...1200°C (-328...2192°F)	100°C (212°F)
(NiCr -NiAl)	TC K	-200...1370 °C (-328...2498°F)	130°C (266°F)
N(NiCrSi -Ni Si)	TC N	-200...1300°C (-328...2372°F)	200°C (392°F)
E(NiCr-CuNi)	TC E	-200...1000°C (-328...1832°F)	100°C (212°F)
R(PtRh13 -Pt)	TC R	0...1760°C (32...3200°F)	540°C (1004°F)
S(PtRh10 -Pt)	TC S	0...1760°C (32...3200°F)	570°C (1058°F)
T(Cu-CuNi)	TC T	-200...400°C (-328...752°F)	110°C (230°F)
B(PtRh30-PtRh6)	TC B	400...1820°C (752...3308°F)	1000°C (1832°F)
Resistance thermometer (RTD)			
Pt 100	Pt 100	-200...850°C (-328...1562°F)	50°C (122°F)
Pt 500	Pt 500	-200...850 °C (-328...1562°F)	
Pt 1000	Pt 1000	-200...850°C (-328...1562°F)	
Ni 100	Ni 100	-60...180°C (-76...356°F)	
Cu 100	Cu 100	-50... 180°C (-58...356°F)	
Potentiometric transmitter	Pot.Trans.	50...2000 Ω	50 Ω
Resistance transmitter	Res.Trans.	0...2000 Ω	50 Ω

Characteristic of thermocouples acc. to EN 605084-1

Characteristic of resistance thermometers acc. to IEC 755+A1+A2

- isolation between measuring channels 500 V d.c.
- isolation between measuring channels and the housing 500 V d.c.
- measurement accuracy 0.25 % of the measuring range
- measurement time of each input minimum 100 ms

- **Admissible overload in the measuring system** acc. to EN 60051-8
- **Logic inputs** 8 (or 16), with a common mass
 - control signal 0 / 5...24 V d.c.
 - isolation to the housing 500 Vd.c.
- **Analog outputs**
 - Current:** 4 (or 8) galvanically isolated
 - output signal 0..5 mA or 0..20 mA or 4..20 mA
 - additional error 0.2 %
 - load resistance < 500 Ω
 - isolation to the housing 500 V d.c.
 - Voltage:** 4 (or 8) galvanically isolated
 - output signal 0..5 V, 1..5 V load resistance ≥ 250 Ω
 - additional error 0.2 %
 - or 0..10 V, load resistance ≥ 500 Ω
 - isolation to the housing 500 V d.c.
- **Alarms**
 - Electromagnetic relays:** 8 (or 16), programmable
 - load capacity for resistance load AC max: 125 V a.c., 0.5 A
DC max: 30 V d.c., 0.5 A
 - OptoMOS relays:** 8 (or 16), programmable
 - load capacity for resistance load ≤ 85 V d.c., 100 mA
≤ 60 V a.c., 70 mA
300 mA / 10 ms
ca 8 Ω
- protection against an excessive current SMD type F 125V / 125mA (SIBA) or the current accretion rate: ≤ 5 A/s - from the 0 mA value
≤ 1.5 A - from the 100 mA value
- protection against an excessive voltage when switching and inductive load external system (varistor, transistor, triac)
- **Interfaces**
 - RS-232** transmission protocol: Modbus
baud rate: 300 ... 256000 bit/s
transmission mode: ASCII/RTU
D-Sub 9 connector
 - RS-485 (Modbus Master) and RS-485 Modbus Slave** baud rate: 300 ... 256000 bit/s
transmission mode: ASCII/RTU
 - Ethernet** 10 Base-T, Server WWW,
Socket RJ45
 - USB** V.1.1 Device, Socket USB-B
- **General recorder parameters:**
 - frontal face dimensions 144 x 144 mm
 - length behind the panel 155 mm
 - colour graphical screen LCD 5,7" of TFT type,
320 x 240 pixels,
with a touch screen
 - external data carrier CompactFlash 128MB
(or another, acc. to the order)
 - internal memory (buffer) 6 MB
 - built-in operators and functions arithmetical, logic, integral
 - working temperature 0...23...50°C
 - supply voltage 90...230...253 V a.c.
or 18...24...30 V d.c.
 - power consumption (max.) < 30 VA
 - protection of the power pack supply Fuse RFS 1.6 A,
250 V (for a.c. supply)

ORDER CODES

KD7 SCREEN RECORDER	X	X	X	X	X	X	X	X	X	X	X
Measuring inputs (slot 1):											
without measuring inputs	0										
6 programmable measuring inputs	1										
6 standard measuring inputs: 0...10 V	2										
6 standard measuring inputs: 0...20 mA	3										
6 standard measuring inputs: 4...20 mA	4										
6 standard measuring inputs: 3 x 0...10 V + 3 x 0...20 mA	5										
6 standard measuring inputs: 3 x 0...10 V + 3 x 4...20 mA	6										
Measuring inputs (slot 2):											
without measuring inputs	0										
6 programmable measuring inputs	1										
6 standard measuring inputs... ¹⁾	2...6										
Interface measuring input:											
with RS-485 (1) interface measuring input	1										
Digital signals/analog outputs (slot 3):											
without digital signals and analog outputs	0										
8 alarms (NO relays) + 8 alarms (OptoMos)	1										
8 alarms (NC relays) + 8 alarms (OptoMos)	2										
8 digital inputs + 4 analog outputs: 0...5 mA	3										
8 digital inputs + 4 analog outputs: 0...20 mA	4										
8 digital inputs + 4 analog outputs: 4...20 mA	5										
8 digital inputs + 4 analog outputs: 0...5 V	6										
8 digital inputs + 4 analog outputs: 0...10 V	7										
Digital signals/analog outputs (slot 4):											
without digital signals and analog outputs	0										
8 alarms (NO relays) + 8 alarms (OptoMos)	1										
8 alarms (NC relays) + 8 alarms (OptoMos)	2										
8 digital inputs + 4 analog outputs... ²⁾	3...7										
Interfaces:											
USB	1										
USB + Ethernet + RS-485(2)	2										
USB + Ethernet + RS-232	3										
Memory for measuring data:											
with a 128 MB CF card	1										
as per order ³⁾	2										
Supply:											
90...253 V a.c.	1										
18...30 V d.c. ⁴⁾	2										
Recorder firmware:											
without mathematical functions ⁵⁾	0										
with mathematical functions	1										
Softwares servicing the recorder from PC:											
KD7 CONNECT + KD7 CHECK	1										
KD7 CONNECT + KD7 SETUP + KD7 ARCHIVING ⁴⁾ + KD7 CHECK	2										
Acceptance tests:											
without an extra quality inspection certificate	0										
with an extra quality inspection certificate	1										
according to user's agreements	2										

- ¹⁾ Write the range code from the item 2...6 as above: (Slot1)
- ²⁾ Write the range code from the item 3...7 as above: (Slot3)
- ³⁾ After agreeing with the manufacturer (the recorder services up to 4 GB CompactFlash cards)
- ⁴⁾ These functions will be available soon
- ⁵⁾ One may buy extra mathematical functions in future

NOTE:

When ordering, one must specify the name and the version code of the recorder.

• Housing protection class:

- from frontal side IP 65 ac. to EN 60529
- from terminal side IP 00 ac. to EN 60529

• Operational safety:

- installation category ac. to EN 61010-1
II
- pollution level 2

• Electromagnetic compatibility:

- noise emissions ac. to EN 61000-6-4
- noise immunity ac. to EN 61000-6-2

• Weight

ca 2 kg