KD7 SCREEN RECORDER

LUMEL

FEATURES:

MODBUS · IP65 · RTC · Password protection · f(x)

INPUTS:

DC · RS485 MASTER

OUTPUTS:

0/4...20 mA · 0...10 V · U · RS 485 · RS 232 · USB

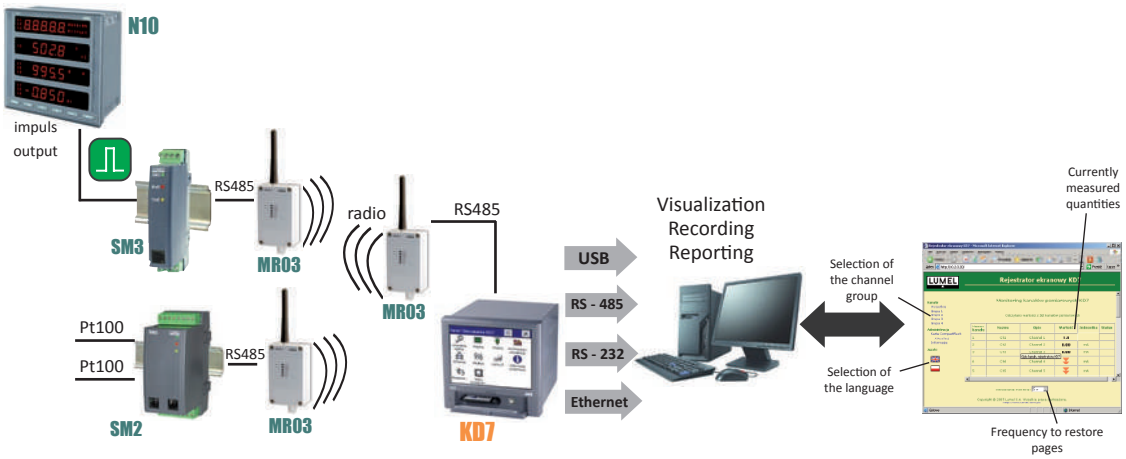
GALVANIC ISOLATION:

Supply · Digital interface



- Intuitive servicing - LCD TFT 5.7'' screen, with touch panel.
- Data archiving on CompactFlash card, capacity up to 4 GB.
- IP65 protection grade on the front panel.
- Up to 24 measuring channels.
- 12 analog inputs (programmable and standard).
- 6 or 32 alarms outputs.
- 8 or 16 digital inputs.
- 4 or 8 analog outputs.
- Visualization of measurements in digital form, analog indicators, diagrams, bargraphs.
- RS-232, RS-485 and USB serial interfaces.
- ETHERNET communication, WWW and FTP server, MODBUS SLAVE TCP/IP.
- MS Windows® CE operating system.
- PC softwares: KD7 SETUP, KD CHECK, KD CONNECT, KD ARCHIVE.
- Diversified user's access rights.
- Menu available in various language versions.

EXAMPLE OF APPLICATION



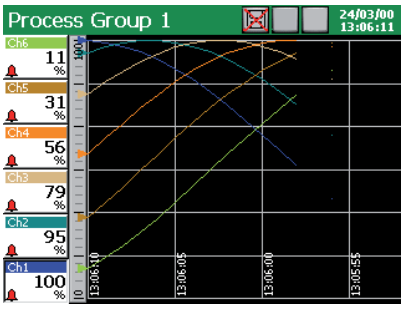
System of measurement, control and recording of temperature and energy with wireless communication.

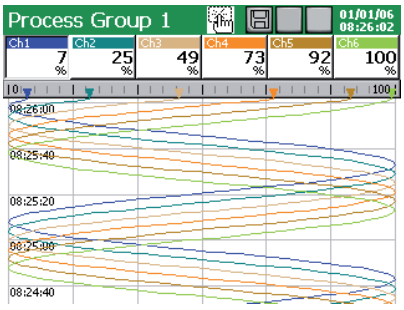
EXAMPLES OF MEASURING DATA PRESENTATION

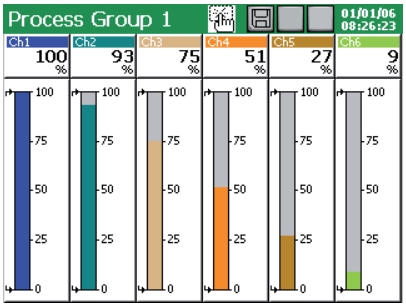
Various forms of data display:

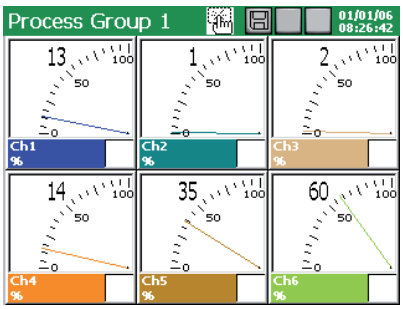
- linear diagrams,
- digital indicators,
- analog views,
- bargraphs,
- tables and others.

(manual and automatic switching between screens.)









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KD7 SCREEN RECORDER

INPUTS

Input signal	Measuring range/ Accuracy class (%)		Minimal subrange/ Accuracy class (%)	
Voltage	0 .. ±9999 mV	0.15	5 mV	0.25
Current	0 .. ±20 mA	0.15	1 mA	
Thermocouple (TC): **J** (Fe-CuNi)	-200 .. 1200°C	0.1	100°C	1
K (NiCr-NiAl)	-200 .. 1370°C		130°C	0.7
N (NiCrSi-NiSi)	-200...1300°C		200°C	0.5
E (NiCr-CuNi)	-200...1000°C		100°C	1
R (PtRh13-Pt)	0 .. 1760°C	0.2	540°C	0.3
S (PtRh10-Pt)	0 .. 1760°C		570°C	0.3
T (Cu-CuNi)	-200 .. 400°C	0.1	110°C	0.9
B (PtRh30-PtRh6)	400 .. 1820°C	0.2	1000°C	0.2
L (GOST)	-200 .. 800°C	0.1	90°C	0.2
K (GOST)	-200 .. 1370°C		130°C	0.7
Resistance transmitter (RTD): **Pt** 100	-200 .. 850°C	0.15	50°C	0.25
Pt 500		0.3		0.5
Pt 1000		0.3		
Ni 100	-60 .. 180°C	0.15		0.25
Cu 100	-50 .. 180°C			
GR.21 (GOST'78) (GOST'94)	-260 .. 1100°C			
50**P** (GOST'78) (GOST'94)				
100**P** (GOST'78)				
100**P** (GOST'94)	-200 .. 200°C			
50**M** (GOST'78) (GOST'94)				
100**M** (GOST'78) (GOST'94)				
Potentiometric transmitter	50 .. 2000 Ω		100 Ω	
Resistance transmitter	0 .. 2000 Ω		100 Ω	
Logic input	control signal 0/5 .. 24 V d.c.		switching frequency up to 50 Hz	

OUTPUTS

Output type	Properties
Analog	- current: 0 .. 5 mA, 0 .. 20 mA lub 4 ..20 mA, load resistance < 500 Ω - voltage: 0 .. 5 V, 1 ..5 V, 0 .. 10 V
Relay	- electromagnetic relays: ≤ 250 V a.c./1 A or ≤ 30 V d.c./1 A - OptoMOS relays: ≤ 85 V d.c., 100 mA or ≤ 60 V a.c., 70 mA
Output to supply object transducers	- 2 outputs 24 V d.c./ 30 mA

DIGITAL INTERFACE

Interface type	Properties
RS-485	2 interfaces: MODBUS Slave and Master, baud rate 0.3 .. 256 kbit/s, transmission mode ASCII/ RTU
RS-232	interface: MODBUS Slave, baud rate 0.3 .. 256 kbit/s, transmission mode ASCII/ RTU
USB	Device V.1.1, socket USBB-G
ETHERNET	10 Base-T, socket RJ45, MODBUS Slave TCP/IP, FTP and WWW server

EXTERNAL FEATURES

Supply voltage	90 .. 230 .. 253 V	input power ≤ 30 VA
Temperature	operating: 0 .. 23 .. 55°C	storage: -20 .. 60°C
Humidity	< 70%	condensation inadmissible

RATED OPERATING CONDITIONS

Display field	LCD 5.7" TFT type	320 x 240 pixels, with touch screen
Overall dimensions	144 x 144 mm	panel cut-out dimensions: 138+1 x 138+1 mm
Weight	< 2 kg	
Protection grade	from frontal side: IP65	from terminal side: IP20

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise emissions	acc. to EN 61000-6-4
	noise immunity	acc. to EN 61000-6-2
Isolation between circuits	500 V d.c.	acc. to EN 61010-1
Isolation between supply and measuring system	2 kV	
Pollution level	2	
Installation category	II	
Maximal operating voltage in relation to earth	for the measuring system, relays and supply: 500 V	acc. to EN 61010-1
Altitude above sea level	< 2000 m	

SOFTWARES ASSISTING THE KD7 RECORDER WORK:

KD ARCHIVE
Software destined to review and analyse archive data from the recorder on a PC computer, stored in a binary format with digital signature.

KD7 SETUP
Software destined to configure recorder settings by means of a PC computer.

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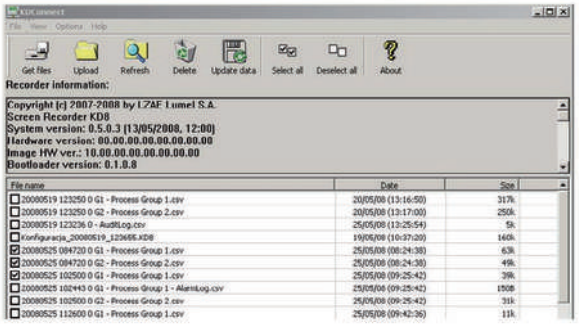
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EXEMPLARY FUNCTIONS OF KD8 ASSISTING SOFTWARES

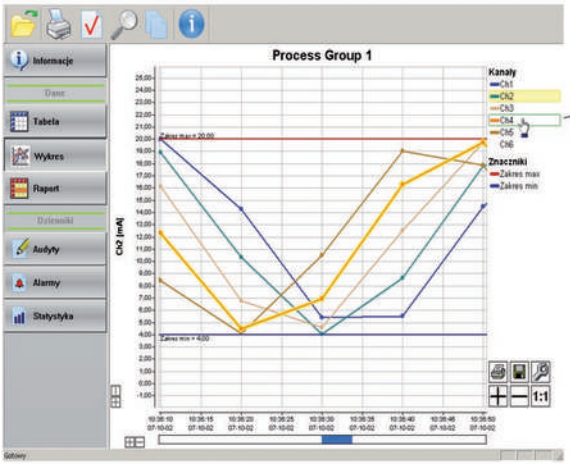
SOFTWARES ASSISTING THE KD7 RECORDER WORK:

KD CONNECT

Software destined for the communication between the recorder and the PC computer through the USB interface in order to download archive data and record/erase on the CF card.



Downloading and erasing of archive data by means of the PC computer - KD CONNECT.

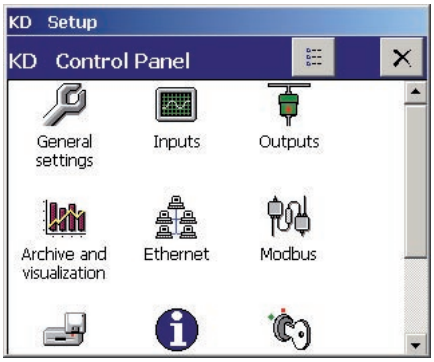


Backlighting of the selected measuring channel diagram.

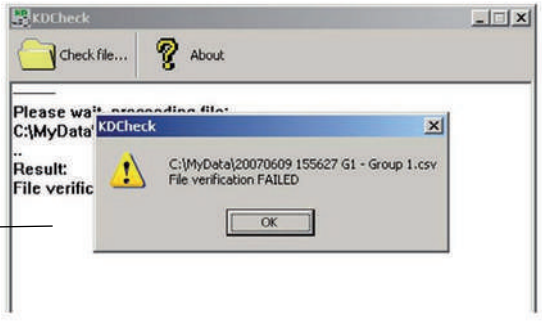
Review of archive data through the PC computer - KD ARCHIVE.

KD CHECK

Software destined to verify the digital signature in archive data stored in text format.



KD7 configuration through the PC computer -KD SETUP.



Checking result:
incorrect file verification

Verification of the digital signature of text data - KD CHECK.

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ORDERING

Screen Recorder KD7 -	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										
3 programmable measuring inputs	7										
Measuring inputs (Slot 2):											
without measuring inputs		0									
6 programmable measuring inputs		1									
6 standard measuring inputs[1)]		2..6									
3 programmable measuring inputs		7									
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 4 GB CF card							6				
as per order							X				
Supply:											
90..253 V a.c.								1			
Recorder firmware:											
without mathematical functions [3)]									0		
with mathematical functions									1		
Softwares servicing the recorder from PC:											
KD Connect, KD Check										1	
KD Connect, KD Check, KD Archive, KD7 Setup										2	
Acceptance tests:											
without extra quality inspection requirements											8
with an extra quality inspection certificate											7
according to customer's request											X

[1)] Write the range code from the item 2...6 as above: (Slot 1)
[2)] Write the range code from the item 3...7 as above: (Slot 3)
[3)] A key for the activation of mathematical functions can be ordered separately

Example of order:

the code **KD7-1-1-1-0- 0-1-6-1-1-1-8** means: KD7 recorder, (Slot 1) with 6 programmable measuring inputs, (Slot 2) with 6 programmable measuring inputs, with RS-485 interface measuring input, (Slot 3) without digital and analog outputs, (Slot 4) without digital signals and analog outputs, with USB interface, with a 4 GB CF memory card, supply: 90 .. 253 V a.c., with mathematical functions, with KD Connect and KD Check softwares, without extra quality inspection requirements.

SEE ALSO:



Temperature sensors.



Programmale transducer of temperature and humidity - P18.



Controllers.



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