

# REGISTRATORE TOUCH SCREEN PANEL TOUCH SCREEN PANEL RECORDER

# TSDR7

- SCHERMO DA 5,7" A COLORI LCD TFT, TOUCH SCREEN, 320 x 230 PIXELS.
  - MEMORIZZAZIONE ED ARCHIVIO DATI SU COMPACTFLASH CARD CON CAPACITÀ FINO 4GB.
  - 3, 6 o 12 CANALI DI MISURA ANALOGICI, GALVANICAMENTE ISOLATI.
  - 16 o 32 ALLARMI E 8 o 16 INGRESSI DIGITALI, 4 o 8 USCITE ANALOGICHE.
  - PROTEZIONE PANNELLO FRONTALE PARI A IP65.
  - VISUALIZZAZIONE MISURE PER CARTA, INDICATORI ANALOGICI, DIGITALI, BARGRAPHS.
  - INTERFACCIA SERIALE RS-232, RS-485 E USB DEVICE, ETHERNET COMMUNICATION.
- ◆ LCD TFT 5.7" COLOUR SCREEN, 320 x 240 PIXELS, WITH TOUCH SCREEN.
  - ◆ RECORDING AND DATA ARCHIVING ON COMPACTFLASH CARD WITH CAPACITY UP TO 4 GB.
  - ◆ 3, 6 OR 12 GALVANICALLY ISOLATED ANALOG MEASURING CHANNELS.
  - ◆ 16 OR 32 ALARMS AND 8 OR 16 DIGITAL INPUTS, 4 OR 8 ANALOG OUTPUTS.
  - ◆ IP65 PROTECTION CLASS ON THE FRONT PANEL
  - ◆ VISUALIZATION OF MEASUREMENTS IN DIGITAL FORM, CHARTS, BARGRAPHS, ANALOG INDICATORS
  - ◆ RS-232, RS-485 SERIAL INTERFACES AND USB DEVICE, ETHERNET COMMUNICATION, WWW SERVER



## GENERALITA'

Il registratore digitale grafico TSDR7 può essere impiegato come dispositivo di acquisizione dati in sistemi di misura e controllo. Trova applicazione per misurare, visualizzare e supervisionare parametri di processi in varie tipologie d'industria quali chimica, farmaceutica, alimentare, carta, cemento, petrolchimico, ecc. Può essere correttamente impiegato come sistema di misura e registrazione autonomo. L'accesso al registratore grafico è permesso solo agli utenti in possesso di user's name (login) e password. Particolarmente semplice nell'utilizzo grazie all'interfaccia grafica basata su MS Windows con sistema operativo MS WindowsCE. Rispetta la normativa FDA CFR21 Part 11 (norme per registrazioni con dispositivi elettronici e firme digitali).

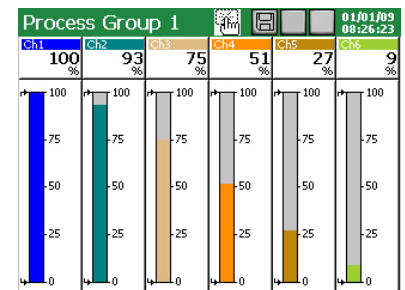
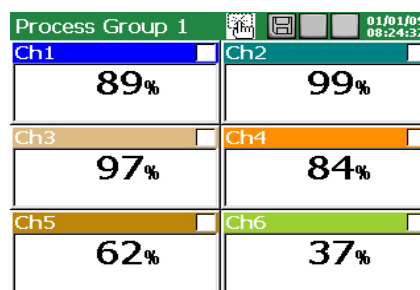
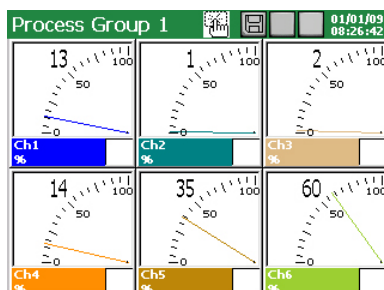
## CARATTERISTICHE PRINCIPALI

- gli ingressi di misura accettano direttamente termocoppie, termoresistenze, tensione d.c., corrente d.c. e resistenze,
- ingressi programmabili per tensione, corrente e resistenza,
- memoria interna da 6MB per il supporto dei dati,
- memoria esterna removibile per dimensioni fino a 4GB.
- possibilità di accesso remoto ai dati mediante internet browser,
- funzioni matematiche,
- contatori e totalizzatori,
- visualizzazione ed archivio di 4 gruppi con 6 canali ognuno (tra i 32 canali accessibili), per i quali i riferimenti possono essere:
  - 1...12 ingressi di misura analogici,
  - 1...24 ingressi di misura di interfaccia,
  - 1...16 funzioni matematiche,
  - 1...16 ingressi binari,
  - 1...32 canali per totalizzatori logici,
  - 1...32 canali per allarmi logici,
  - 1...32 canali per minimo, massimo, media,
- disponibile con varie lingue (inglese, italiano, francese, polacco, russo, rumeno, tedesco),
- firma digitale per i dati archiviati,
- menù di aiuto immediato ('just in place' help),
- eventi programmabili.

## PRESENTAZIONE DATI

Il registratore TSDR7 permette la visualizzazione dei dati registrati nelle seguenti forme:

- lineare e bargraphs,
- indicatori digitali ed indicatori analogici,
- ogni canale può essere personalizzato a piacere impostando: colore, nome, scala e forma di visualizzazione.



## GENERAL DETAILS

The TSDR7 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. Is there supervised access to the recorder through the user's name (login) and password. It is user friendly graphical interface based on the MS Windows layout MS WindowsCE operating system, and complies with the regulation FDA CFR21 Part 11 - regulation for electronic records and signatures.

## MAIN CHARACTERISTICS

- measuring inputs for the direct connection of thermocouples, voltage d.c., current d.c. and resistance,
- programmable current, voltage and resistance inputs,
- 6 MB internal memory with data support,
- exchangeable external memory up to 4 GB,
- access to recorded data via an 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
  - 1...16 binary inputs,
  - 1...32 logic channel totalizers,
  - 1...32 logic channel alarms,
  - 1...32 logic channel minimum, maximum, average,
- various language versions (English, Italian, French, Polish, Russian, Romanian, German),
- digital signature for archive data,
- „Just in place” help,
- programmable events.

## DATA EXPOSURE

The TSDR7 recorder enables the visualization of rec data in following shapes:

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

**CARATTERISTICHE TECNICHE** **GENERAL DETAILS**

**Programmable measuring inputs:**

- number of measuring channel 3, 6 or 12
- input resistance >10MΩ (U, TC); ≤100Ω (I)
- max. sampling rate 350 ms (for 1 measuring place)
- measurement accuracy according to the table 1
- additional measuring error with automatic temperature compensation of thermocouple reference cold junction 1°C
- isolation between measuring places 100 V d.c.
- isolation measuring place-housing 500 V d.c.

**Standard measuring inputs (version acc. to the ordering)**

- number of measuring channels 6 (or 12)
- measuring ranges:
- voltage measurement 0...10 V Rin > 1MΩ
- current measurement 0...20 mA/4...20 mA Rin < 10Ω
- isolation between measuring channels 500 V d.c.
- isolation between measuring channels and housing 500 V d.c.
- measurement accuracy 0,25% of the measuring range
- measurement time of each input minimum 100 ms

**Admissible overload** according to EN 60051-8

**Logic inputs** 8 (or 16), with a common mass

- control signal 0/5... 24 V d.c.
- switching frequency up to 50 Hz (depending config.)
- isolation to the housing 500 V d.c.

**Analog outputs:**

- Current:** 4 (or 8) galvanically isolated
- output signal 0...5 mA, 0...20 mA or 4...20 mA
- additional error 0.2%
- load resistance < 500Ω
- isolation to the housing 500 V d.c.
- Voltage:** 4 (or 8) galvanically isolated
- output signal 0...5 V, 1...5 V load resist. 250Ω or 0...10 V load resist. 500Ω
- additional error 0.2%
- isolation to the housing 500 V d.c.

**Alarms:**

- Electromagnetic relays:** 8 (or 16), programmable
- load capacity for resistive load 250Va.c. / 1 A - 30Vd.c./ 1 A
- OptoMOS relays:** 8 (or 16), programmable
- load capacity for resistive load 60Va.c./70mA - 85Vd.c./100mA
- current peak value 300 mA / 10 ms
- OptoMOS resistance ca. 8Ω
- protection excessive current SMD type F 125 V/125 mA (SIBA) or BSMD-S0.125 A (TME)
- For the current accretion rate: 5 A/s - from the 0 mA value 1.5 A - from the 100 mA value
- protection excessive voltage when switching an inductive load external device (varistor,transil,...)

**Interfaces:**

- RS-232 (Modbus Slave) D-Sub 9 connector (female) baud rate: 300... 256000 bit/s transmission mode: ASCII/RTU
- RS-485 (Modbus Master-Slave) D-Sub 9 connector (female) baud rate: 300... 256000 bit/s transmission mode: ASCII/RTU
- Ethernet 10 Base-T, Socket RJ45, Server WWW, Modbus Slave
- USB V.1.1 Device, Socket USB-B

**Supplying outputs for external object device supply**

2 x 24 Vd.c./30 mA

**Measuring ranges / accuracy class**

Input signal	Table 1			
	Measuring range / Meas accuracy(%)	Minimal sub-range / accuracy class(%)		
Voltage	0... ± 9999 mV	0.15	5 mV	0.25
Current	0... ± 20 mA	0.15	1 mA	0.25
<b>Thermocouple (TC):</b>				
J (Fe - CuNi)	-200...1200°C	0.1	100°C	1
K (NiCr - NiAl)	-200...1370°C	0.1	130°C	0.7
N (NiCrSi-NiSi)	-200...1300°C	0.1	200°C	0.5
E (NiCr - CuNi)	-200...1000°C	0.1	100°C	1
R (PtRh13-Pt)	0...1760°C	0.2	540°C	0.3
S (PtRh10-Pt)	0...1760°C	0.2	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	0.1	130°C	0.7
<b>Resistance dect.(RTD):</b>				
Pt 100	-200... 850°C	0.15	50°C	0.25
Pt 500	-200... 850°C	0.3	50°C	0.5
Pt 1000	-200... 850°C	0.3	50°C	0.5
Ni 100	- 60... 180°C	0.15	50°C	0.25
Cu 100	- 50... 180°C	0.15	50°C	0.25
GR.21(GOST'78)	-260...1100°C	0.25	50°C	0.15
GR.21(GOST'94)	-260...1100°C	0.25	50°C	0.15
50P(GOST'78)	-260...1100°C	0.25	50°C	0.15
50P(GOST'94)	-260...1100°C	0.25	50°C	0.15
100P(GOST'78)	-260...1100°C	0.25	50°C	0.15
100P(GOST'94)	-200... 200°C	0.25	50°C	0.15
50M(GOST'78)	-200... 200°C	0.25	50°C	0.15
50M(GOST'94)	-200... 200°C	0.25	50°C	0.15
100M(GOST'78)	-200... 200°C	0.25	50°C	0.15
100M(GOST'94)	-200... 200°C	0.25	50°C	0.15
Potentiometric transm.	50...2000pts	0.15	100Ω	0.25
Resistance transmitter	0...2000pts	0.15	100Ω	0.25

**General recorder parameters:**

- frontal face dimensions 144 x 144 mm
- length behind the panel 155 mm
- panel cut-out dimensions 138<sup>+</sup> x 138<sup>+</sup> mm
- colour graphical screen LCD 5.7" TFT , 320x240 pixels with touch screen
- external data carrier CompactFlash card up to 4 GB
- memory of internal buffer (flash) 6 MB
- working temperature 0...23...50°C
- climatic conditions < 75% relative humidity, without condensation
- supply voltage 90...230...253 V a.c. or 18...24...30 V d.c. < 30 VA
- power consumption (max) fuse RFS 1.6 A 250 V(a.c. supply)
- protection of the power supply

**Housing protection class:**

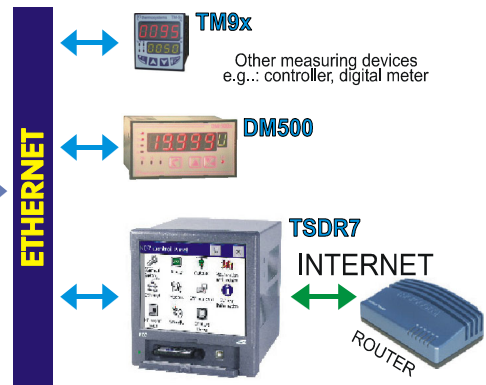
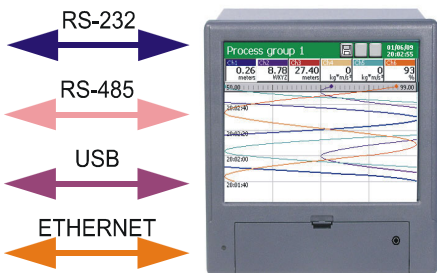
- from frontal side IP 65 acc. to EN 60529
- from terminal side IP 20 acc. to EN 60529

**Operational safety:** acc. to EN 61010-1

- installation category II
- pollution level 2

**Electromagnetic compatibility:**

- noise emission acc. to EN 61000-6-4
- noise immunity acc. to EN 61000-6-2
- Weight** < 2 kg



Subject to change without notice.

Soggetto a modifiche senza preavviso

data revisione : 12/06/09

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