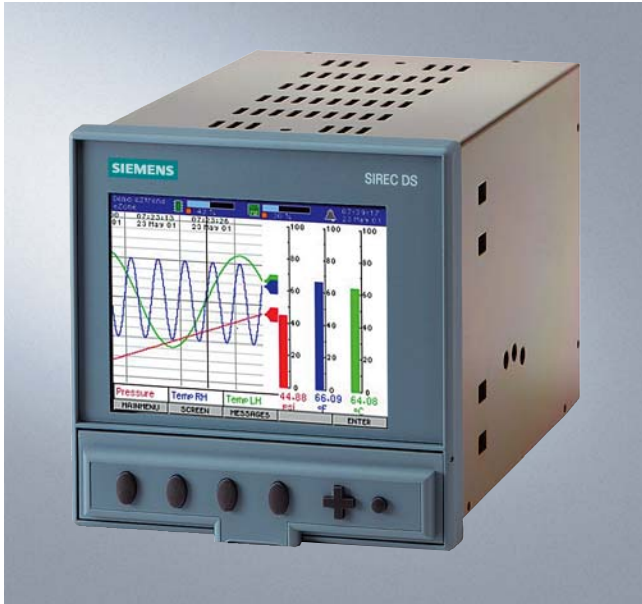


SIREC D display recorder

SIREC DS

Overview



SIREC DS

- Permits the recording of up to 6 analog and 2 binary inputs
- Output on 5" color LC display (STN)
- Storage of data on 1.44 Mbyte diskette
- Ethernet interface as standard
- Data evaluation using the SIREC D-Viewer PC program (included in scope of delivery)
- Programming from the front panel or using the SIREC D-Manager PC program (option)
- Full network functionality (FTP, real-time Trendbus, Modbus) with the SIREC D Server PC program (option)

Application

The SIREC DS recorder is used to record and display electrical variables. The measured data in the main memory are available on the display for direct observation of the trend. The measured data on the interchangeable data memory (diskette) are evaluated on a PC.

- The input variables can be freely adjusted within wide ranges. The unit is therefore suitable for almost all process engineering sectors.
- The binary inputs and binary outputs permit control of the unit or also the output of signals.
- The recorder can be connected to a PC via Ethernet to permit central acquisition of the measured data.

Design

The SIREC DS has a housing for panel mounting. Front dimensions: 144 x 144 mm.

The unit is operated and set using a short-stroke keypad on the front panel. The diskette drive for data storage is accessible by lifting up the keypad.

The electric connections are made at the rear of the recorder:

- Power supply connection: appliance plug for 90 to 250 V AC version
- Power supply connection: screw terminals for 24 V DC version
- Process signal connections: plug-in screw terminals
- Ethernet TCP/IP interface connection: 8-pin RJ45 connector

Function

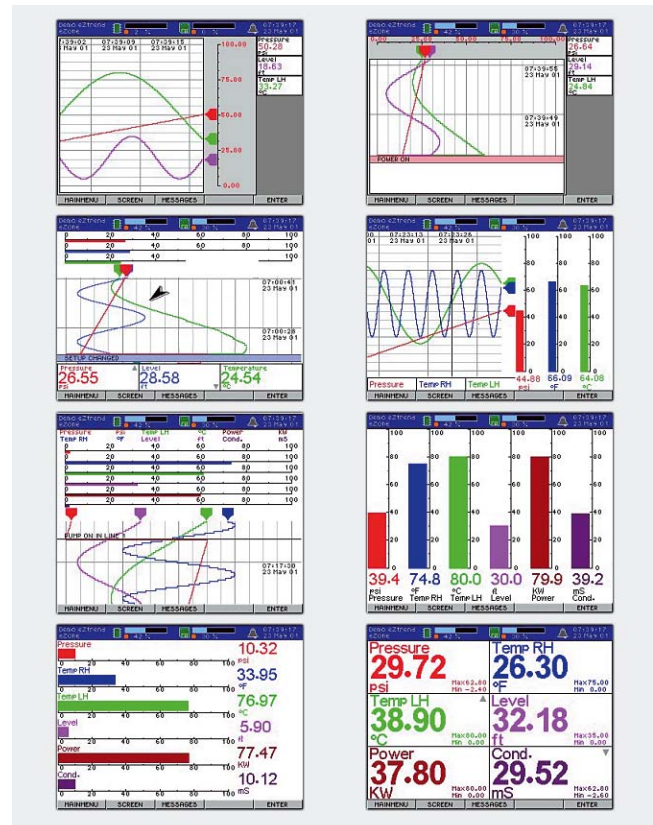
The process variables are measured, and displayed as trend curves, bargraphs or digital displays in various combinations.

The internal memory of 4 Mbyte is operated as a ring buffer. The oldest data in each case are overwritten by the newest data.

The following data storage possibilities exist:

- Selective data storage per channel. Individual selection of storage method and rate
- Optional data compression using fuzzy logging mode (selectable per channel)

Display of measured data



SIREC DS display modes

The display of the measured data can be freely adjusted within wide ranges, permitting:

- Analog trend display up to 1200 mm/h
- Horizontal or vertical analog display
- Horizontal or vertical bargraph
- Detailed alarm and event reports
- Numerical display of values
- Event marking with I&C number, time and date
- Status line with date, time, occupation of RAM and diskette in percent

Further important features

- Simple and fast configuration on the device or using software
- Operating menu in German, English, French, Italian, Spanish, Portuguese, Polish, Hungarian, Slovakian, Czech, Romanian, Turkish
- User-defined access coding with password protection. There are four access levels; up to 10 different passwords are possible.
- Real-time clock with calendar function
- Options:
 - 6 relay outputs / 2 binary inputs
 - Fundamental mathematical functions, summation, 6 additional recording channels

Technical specifications

Analog inputs

Quantity	6 input channels
Sampling rate	100 ms (with RTD/TC: 500 ms)
Measured-value memory	Measured value, mean value, min./max.
Input variables	Voltages (mV, V, mA), thermocouple, resistance thermometer (current via external shunt)
Resolution	16 bits (0.0015%)
Input impedance	Current loop resistance (DC): 10 Ω \pm 5% (external) All others: 1 M Ω
Source resistance	Resistance thermometer: max. 40 Ω per conductor
Insulation resistance	> 9.9 M Ω between any terminal and ground terminal
Input filter	Simple low-pass filter, adjustable by software between 1 and 15 s
Electrical isolation	Common-mode: 250 V AC Series-mode: 250 V AC
Linear scaling	-999999 to +999999 Scale factors from 1 to 9999; automatic positioning of decimal point or fixed setting. Freely-definable technical dimensions (5 characters)
Logarithmic scaling	1 to 9 decades
Square-root extraction	For all input modes

Technical specifications

Recording

Types	Measured value, mean value, min./max.
Interval modes	Continuous, event and fuzzy
Interval	100/500 ms to 4 days selectable per channel
Display	STN QVGA
Size	5" (12.7 cm) diagonal, color
Resolution	QVGA (320 x 240 pixels)
Refresh rate	Values are updated every 250 ms

Conditions for use

Installation conditions

Mounting	Vertical panel mounting, max. \pm 20° out of vertical; panel thickness: 2 ... 20 mm
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Ambient conditions

Permissible ambient temperature	
• Operation	15 ... 40 °C
• Storage	-10 ... +60 °C
Relative humidity	10 ... 90% (no condensation)
Vibration	0 ... 70 Hz, 0.1 g
Shock	1 g/30 ms
Degree of protection of housing (front)	IP54 Terminals IP20

Design

Weight	2.5 kg
Materials	
• Housing	Galvanized sheet-steel
• Front frame	Unbreakable polycarbonate plastic with scratchproof window
Dimensions (H x W x D) in mm	144 x 144 x 224 Recommendation: provide additional 30 mm for mains cable and signal plug.

Power supply

Supply voltage	90 ... 250 V AC 24 V DC (18 ... 30 V)
Line frequency	47 ... 64 Hz
Power consumption	Max. 20 VA

Safety and EMC standards

Safety standard	Corresponds to EN 61 010-1 (2001)
Noise immunity	Corresponds to EN 61 326-1 (1997)
Overvoltage protection	Category II: EN 61 010-1
EC declaration of conformity	No. 3540.000 CE marking: 07/03 Compliance with following directives: 89/336/EEC, 73/23/EEC

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Technical specifications

Measured variables and measuring range limits

Thermocouples

- B
- C (W5)
- E
- J
- K
- L
- N (Nicrosil Nisil)
- R
- S
- T
- W
- Chromel/Copel

Temperature range

0 ... 600 °C
600 ... 1750 °C

0 ... 2300 °C

-200 ... +1000 °C

-200 ... 0 °C
0 ... 1190 °C

-200 ... 0 °C
0 ... 1000 °C
1000 ... 1350 °C

-200 ... +100 °C
100 ... 900 °C

-200 ... 0 °C
0 ... 1300 °C

0 ... 300 °C
300 ... 1750 °C

0 ... 300 °C
300 ... 1750 °C

-200 ... 0 °C
0 ... 400 °C

1000 ... 1800 °C
1800 ... 2300 °C

-50 ... +600 °C

Technical specifications

Resistance thermometers

- Pt100, 100 Ω
- Pt200, 200 Ω
- Ni120

Measuring range limits

Voltage input

Temperature range

-200 ... +650 °C
-200 ... +180 °C
-80 ... +240 °C

± 100 mV; ± 200 mV; ± 1 V;
 ± 10 V

Current input

± 10 mA; ± 20 mA
with external 10 Ω shunt
The accuracy depends on the
used resistor, e.g. 0.1%.

Selection and Ordering Data	Order No.
SIREC DS display recorder ^{A)} Front dimensions: 144 mm x 144 mm, for all standard applications Ethernet interface, 1.44 MB diskette drive as data memory	7ND4 120-
Power supply <ul style="list-style-type: none"> 50 or 60 Hz, 90 ... 240 V AC 24 V DC 	1 4
Signal inputs Universal inputs (mA, mV, V, TC, RTD, R)	A B
Switching outputs and inputs <ul style="list-style-type: none"> None 6 relays / 2 binary inputs 	A C
Firmware options <ul style="list-style-type: none"> None Event marking Mathematics + summation + 6 additional recording channels Mathematics + summation + 6 additional recording channels + event marking 	A D E H
Documentation <ul style="list-style-type: none"> Manual in German Manual in English 	1 2

▶ Available ex stock

A) Subject to export regulations AL:N, ECCN: EAR99

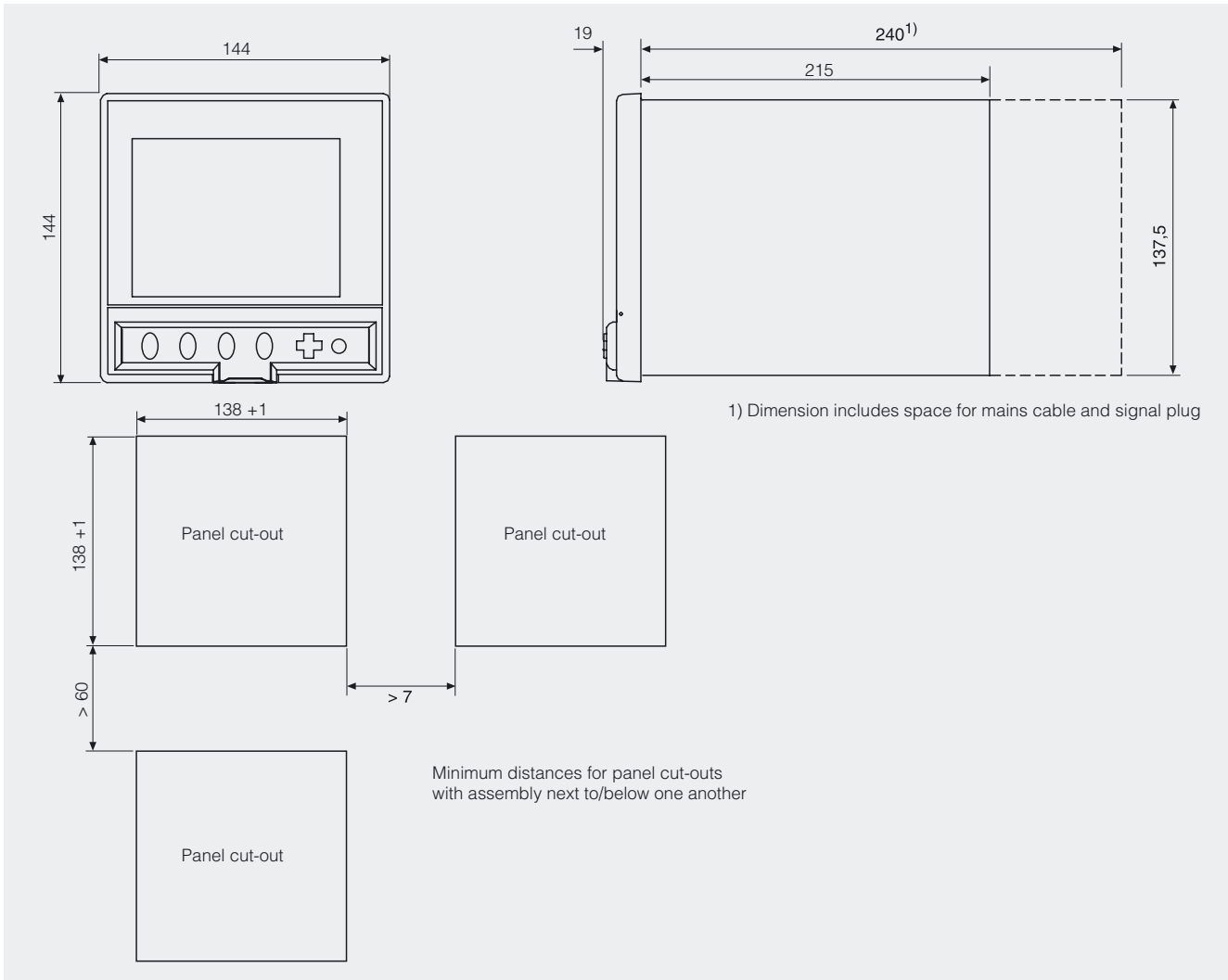
Scope of delivery:
 Recorder, CD-ROM with manual in German and English, SIREC D software (SIREC D-Viewer)

Accessories	Order No.
Firmware options for SIREC DS Code No. of recorder required	
Event marking	7ND4 800-8CD
Mathematics + summation + 6 additional recording channels	7ND4 800-8DD
Mathematics + summation + 6 additional recording channels + event marking	7ND4 800-8GD
Options / enabling of SIREC D software	
Enabling of SIREC D-Manager	7ND4 800-8BA
Enabling of SIREC D-Server	7ND4 800-8CA
Upgrading of SIREC D-Manager to SIREC D-Server	7ND4 800-8EA
Software Only for subsequent orders; software is included in delivery of recorder	
SIREC D software Evaluation software for SIREC DS/DM/DH (on CD) incl. enabling for SIREC D-Viewer and manual for the software on CD in German, English, French	7ND4 800-8AA
Documentation Included on CD-ROM in scope of delivery	
SIREC DS recorder manual	
<ul style="list-style-type: none"> German (can also be downloaded from Internet) 	A5E00117350
<ul style="list-style-type: none"> English (can also be downloaded from Internet) 	A5E00117351
<ul style="list-style-type: none"> French (can only be downloaded from Internet) 	

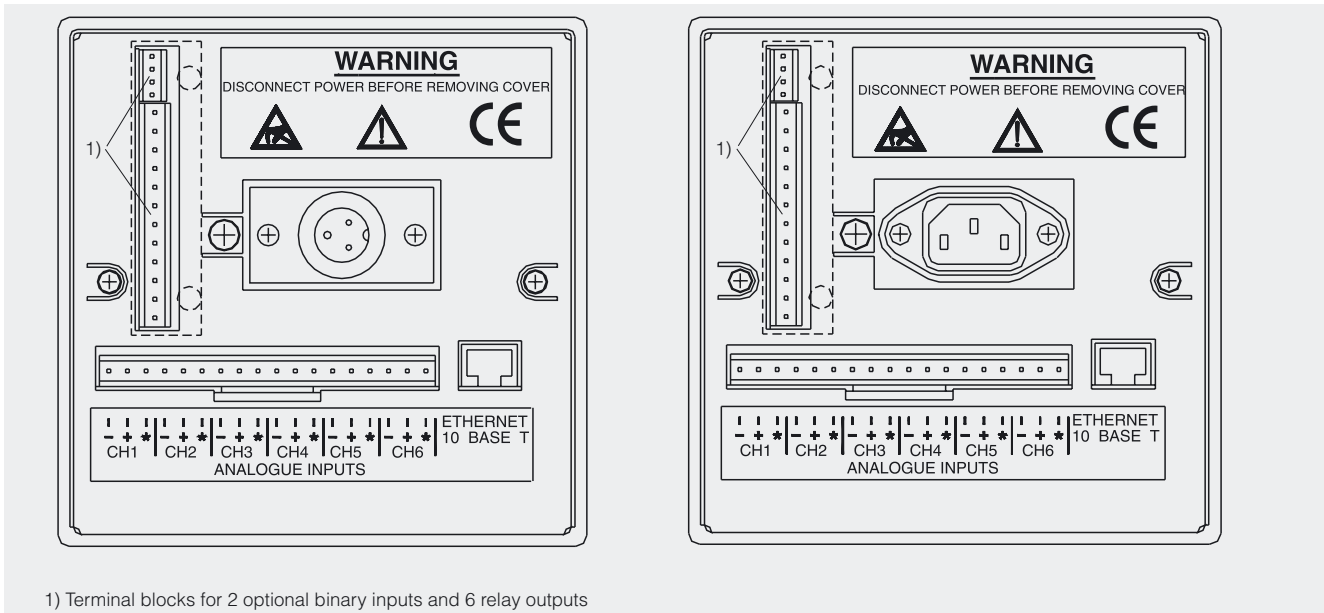
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Dimensional drawings



SIREC DS, dimensions



SIREC DS, rear of unit with terminal assignments; *left*: 24 V DC version; *right*: 90 to 240 V AC version