Digital bargraph Dinalog A96x24/ Dinalog A144x36

- Front panel dimensions: 144 x 36 mm
- Light-strip indicator with 71 high-contrast LEDs
- Red LED display color
- Digital display range for portrait format: –999 to 999
- Portrait or landscape format
- Measuring span and limit values can be adjusted digitally
- Easy programming
- Programmed parameters can be locked
- Power supply is electrically isolated from the measuring circuit
- Housing suitable for grid mounting
- Quick installation with mounting tabs
- IEC 61010 model available as well

Applications

DINALOG indicators are suitable for all applications which require simultaneous monitoring of several measurement values. High-contrast LED displays assure good legibility even in dark rooms. The display is designed for easy reading, even from unfavorable angles. These indicators can thus be utilized where conventional analog indicators or light-strip indicators with LCDs are unusable due to poor lighting.
Each indicator can be equipped with various measuring modules for performance of the following tasks:

- Measurement of direct current up to . 200 mA
- 4 ... 20 mA direct current measurement
- Measurement of direct voltage up to . 300 V
- Alternating current measurement with ... / 1A or ... / 5 A current transformer
- Measurement of alternating voltage up to 700 V
- Temperature measurement with Pt100, or with J, K, R and S thermocouples
- Measurement of resistance up to 20 K....

Installation

These measuring instruments are specified for use within an ambient temperature range of 0 to 50 °C. Maximum power consumption for each measuring instrument is approximately 5 W. If several devices are installed, suitable ventilation must be used to assure that the maximum temperature of 50 °C is not exceeded.

Description

The basic device is comprised of a DC voltmeter with a measur-ing range upper limit of 2 V. Measuring modules installed upstream transform the input signal into a corresponding direct voltage. Each device can thus be ideally adapted to the measur-ing task at hand . Analog-digital conversion is accomplished by means of the dual-slope method. The measuring cycle has a duration of approximately 200 ms.
Measuring span can be programmed with the front panel keys for the digital display, as well as for the light-strip. Adjustable limit value functions are also included for limit monitors. Limit value adjustment is accomplished with the same keys, but at a separate programming level which eliminates the possibility of inadvertent alteration of the indicator function during limit value selection.
All programmable values remain in memory, even if a power failure should occur. All selected parameters can be protected against alteration by means of hardware configuration with an external contact.

Applicable Regulation and Standard

IEC 61010-1 / EN 61010-1 /	Safety requirements for electrical equipment for measurement, control and laboratory use
EN 60529 VDE 0470 Part 1	Test instruments and test procedures, protection provided by enclosures (IP code)
EN 50081-2	Electromagnetic compatibility (EMC), generic standard for interference emission
EN 50082-2 / IEC 61000	Electromagnetic compatibility (EMC), generic standard for interference immunity

Technical Data

Display

Type: Analog	71 segment light-strip
	2 channel selection LEDs
	2 / 4 limit value LEDs (for contacting instruments only)
Digital	7 segment LED, 3 digits with minus sign (for measuring instruments in portrait format only)
Display Color	red
Light-Strip	
Height / Length	approx. 91 mm
Brightness	adjustable from 0 to 7
Display Range	–999 to 999
Character Height	approx. 8 mm
Polarity	"–" is displayed automatically
Decimal Point	programmable

Scale

Format	portrait or landscape format
Scale Height / Length	91 mm
Scale Color	swan white
Graduation and Labelling	black, according to measuring range option: as requested

Analog-Digital Conversion

Measuring Method	dual-slope
Measuring Rate	8 times per second
Measuring Time	approx. 40 ms

Input

Via Measuring Modules	according to the selected measuring range, see Measuring ange and Input Quantity under Order Information and Features

Voltage Module

Input Impedance	> 1 M...for measurements > 2 V
	> 70 k...for measurements < 2 V

Current Module

Voltage Drop	max. 2 V

Temperature Module, Pt100 / Resistance

Sensor Current	2 mA

Thermocouples

Input J, K, R, S	
Broken Sensor	overload display
Cold Spot Compensation	within a range of 0 to 50 °C

Dual Module

Data	same as current and voltage modules

Error Limits

For Basic Device	
Without Module	± (0.1% of reading + 2 digits)
Dual Module (DC)	± (0.1% of reading + 2 digits)
Temper a t ur e Coefficient	< 80 ppm / K
SMRR	> 35 dB at 50 Hz
CMRR	> 120 dB related to measuring range 200 mV at 50 Hz

AC Module (arithmetic)

Intrinsic Error at	
45 ... 65 Hz	± (0.2% of reading + 3 digits)
30 ... 1 kHz	± (0.3% of reading + 5 digits)
Temperatur e Coefficient	± (0.01% + 0.01 mV) / K

TRUE RMS Module

Intrinsic Error at	
45 ... 65 Hz	± (0.2% of reading + 3 digits)
20 Hz ... 1 kHz	± (0.3% of reading + 5 digits)
Crest Factor	6 (plus 0.5% of reading)
Temperature Coefficient	± (0.01% of reading + 0.01 mV) / K

Temperature Module, Pt100 / Resistance

Max. Error	± (0.4% of reading + 3 digits)
Temper atur e Coefficient	< 150 ppm / K
Offset Drift	< 0.1 digits / K

Thermocouple Module

Max. Error	± (0.4% of reading + 3 digits)
Linearization Error	< 1 K
Temperature Coefficient	< 150 ppm / K
Cold Spot Compen-sation error	within a range of 10 to 50 °C < 1 K

Control Inputs

Device Test (Reset)	controlled via floating contact
Save Display Value(Hold)	controlled via floating contact
Disable Programming(Lock)	controlled via floating contact

Relays

Contacts	1 changeover and 1 normally open contact each
Switching Capacity	5A / 250 V AC, 5 A / 30 V DC
Switching Time	max. 200 ms
Switching Hysteresis	adjustable from 0 to ± 100 digits

Power Supply

230 / 115 V AC ± 15% 50 / 60 Hz /
90 ... 260 V DC approx. 5 W or
18 V ... 36 V DC /
24 V AC ± 15% 50 / 60 Hz approx. 4 W

Electrical Safety

Types	IEC 61010-1: 1.91 / EN 61010-1: 3.94
Safety	Class II
Overvoltage	Category II

Protection	EN 60529 / VDE 0470-1
Housing Front Panel	IP 65
Ter minals	IP 00

EMC

Interference Immunity	EN 50082-2, IEC 61000
Interference Emission	EN 50081-2

Operating Voltage

DC Voltage Module	300 V
AC Voltage Module 100/700 V	600 V
DC / AC Current Module	300 V
Temperature Module Pt100	50 V
Thermocouple Module	50 V
Resistance Module	50 V
Dual Module for DC Ranges	50 V

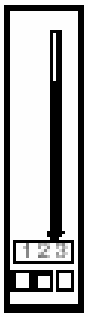
Ambient Conditions

Operating Temp.	0 ... 50 °C
Storage Temperature	–20 ... 70 °C
Relative Humidity	max. 85%
Vibration Resistance	IEC 61010-1/ EN 61010-1: 3.94

Housing

Type	plastic, ABS
Front Dimensions	144 x 36 mm
Panel Cutout	138 +1 x 33 +0.6 mm
Panel Thickness	min. 1 to max. 54 mm
Bezel Height	5 mm
Installation Depth	max. 127 mm plus wiring
Weight approx.	0.3 kg
Connectors	screw terminal blocks for wire with cross section of up to 2.5 square mm
Mounting	plastic mounting tabs

Display Format



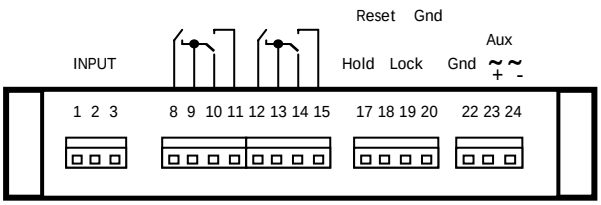
Single Display

Double Display

Output
(depending upon device type, relay type and number of limit values)

Device Type	Relay Type	Relay Terminal Assignments	
Single display-	-	-	
Double display with one light-strip	-	-	
Double display with two light-strips	-	-	
Single contacting instrument (MECO)	see serial plate	Relay 1	Terminals 9, 10, 11 = changeover for 1st limit value
		Relay 2	Terminals 13, 14, 15 = changeover for 2nd limit value
		Relay 3	Terminals 8, 9 = normally open for 3rd limit value
		Relay 4	Terminals 12, 13 = normally open for 4th limit value
		Relay 1	Terminals 9, 10, 11 = changeover for 1st limit value
		Relay 2	Terminals 13, 14, 15 = changeover for 2nd limit value
		Relay 3	Terminals 8, 9 = normally open for 3rd limit value
		Relay 4	Terminals 12, 13 = normally open for 4th limit value
Single display with slave pointer	-	-	

Connector Terminal Assignments



Dimension.