

Industrial mV/V measuring instruments With multi-function display Model E1930

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Applications

- Precision scales
- Industrial scales
- Machine building and plant construction, manufacturing automation

Special features

- 5-digit digital display, easy to read up to 50 m
- High accuracy: 0.02 % of reading $+3 \mu\text{V}$
- Extensive functions easy to set on the instrument or via PC
- Plug-in expansion cards, analogue output, 2 or 4 limit values, serial interface
- Ingress protection IP65



Industrial mV/V measuring instruments, large display or display model E1930

Description

mV/V measuring instruments as a display for the panel mounting or as a large display E1930 are well suited for numerous applications because of their accuracy and being easy to read. Measured values and the status of the relay outputs are shown on the 5-digit digital multi-function display. The measuring instruments also offer a totalizer as well as Min/Max memory.

The connection to the corresponding force transducer and the parameterisation are usually performed by the customer for this model. Programming the instrument is menu-driven. Any strain gauge force transducer (a maximum of 4 sensors of 350Ω in parallel) with an output signal of up to max. $\pm 4.8 \text{ mV/V}$ or $\pm 48 \text{ mV/V}$ can be connected. The internal sensor supply is either DC 5 or 10 V.

Requests and parameterisation of different values are possible by way of the optional serial interface. The optional 2 or 4 relays allow the monitoring of falling below or exceeding limit values. In addition, a 0/4 ... 20 mA output signal is available for analogue evaluation. Disruptive signals can be eliminated by filter setting options.

Option:

- Large display with 10 mm high LED, easy to read from 50 m
- Large display with a robust enclosing case made of aluminium
- DC voltage supply

Specifications

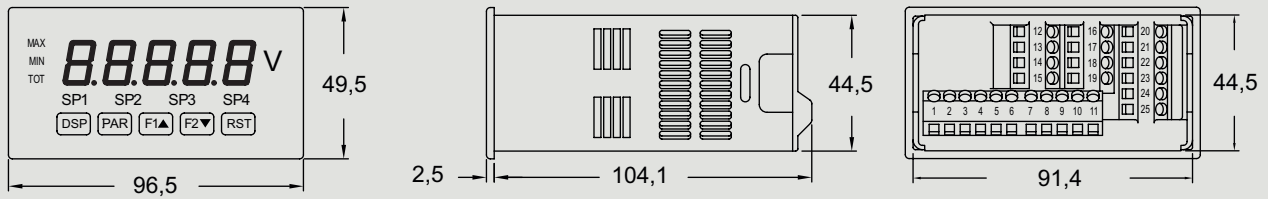
Model E1930	
Measuring range	Full-bridge strain gauge in 4-wire technology Option: 6-wire technology connection available Selectable by jumper: ■ ± 24 mV ■ ± 240 mV
Display	5-digit, red, LED display readable in sunlight, 14 or 100 mm high Output max. -19,999 to +99,999 digits Refresh rate: 1 to 20 updates/s. Min./Max. display Relay status display
Sensor supply	Selectable by jumper: DC 5 V ± 2 %, max. 65 mA DC 10 V ± 2 %, max. 125 mA
Accuracy	± 0.02 % of FS ± 1 digit
Linearisation	Number of linearisation steps: Selectable from 2 to 16 Scale range: -19,999 to 99,999 Decimal point: 0 to 0.0000
Rated temperature range	18 ... 28 °C
Service temperature B_{T,G}	0 ... 50 °C (with all 3 cards inserted 0 ... 45 °C)
Storage temperature range	-40 ... 60 °C
Output signal (option)	2 or 4 relay outputs (transistor outputs available as an alternative) Analogue output 0 ... 20 mA and DC 0 ... 10 V RS-232 interface RS-485 interface Profi-DP interface
Digital input	3 programmable user inputs Maximum voltage: DC 30 V Maximum step response time: 50 ms Selectable by jumper: ■ NPN: Active Vin < DC 0.9 V, inactive Vin > DC 3.6 V ■ PNP: Active Vin > DC 3.6 V, inactive Vin < DC 0.9 V
Resolution	16-bit A/D converter
Sampling rate	20 Hz
Supply voltage ■ Standard ■ Option	AC 85 ... 250 V, 50/60 Hz, 15 VA DC 11 ... 36 V, 11 W / AC 24 V, 15 VA
Response time	< 200 ms for displaying 99 % of the final reading value without zero adjustment < 700 ms for displaying 99 % of the final reading value with zero adjustment The response time changes with setting digital stage filtering
Ingress protection (per IEC/EN 60529)	IP65 (front only) IP20 (rear of unit)
Interference emission	CISPR 11 class A
Immunity	EN 61326-1 immunity for industrial areas
Common-mode rejection (CMR)	> 100 dB, DC to 120 Hz
Relative humidity	max. 85 % r. h., non-condensing
Approvals	UL approval (Underwriters Laboratories) for the USA and Canada
Weight	Display: approx. 300g (without plug-in options) Large display: approx. 2.25 kg (including measurement module)

Operation

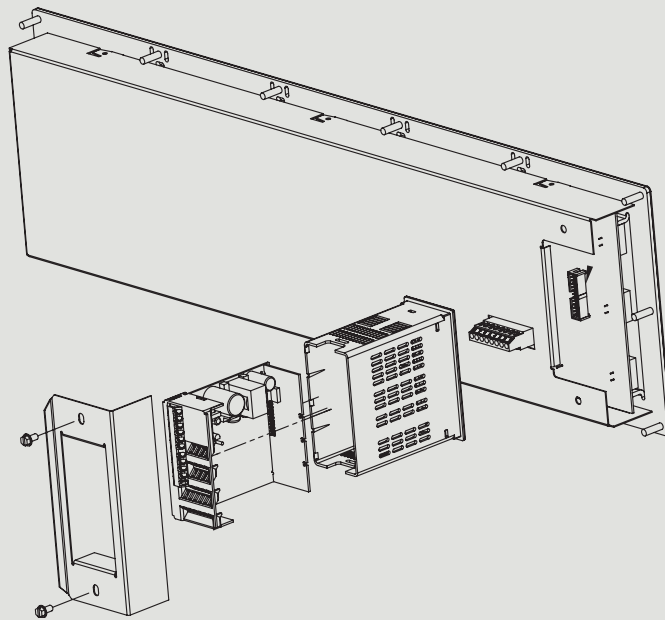
Setting and operating the display is menu-driven via the 5 front buttons. The large display can be set with a programming remote control (available as accessory). The 5 buttons of the remote control have the same functions as the 5 front buttons of the small display.

Dimensions in mm

Display version



Large display version



Pin assignment

Pin	Connections	
1	AC	AC 85 - 250 V 50/60 Hz
2	AC	AC 85 - 250 V 50/60 Hz
3	+SIG	Signal input +
4	-SIG	Signal input -
5	COMM.	Ground signal input
6	+EXCITATION	Bridge supply
7	USERCOMM	Ground user input
8	USER1	User input 1
9	USER2	User input 2
10	USER3	User input 3

Accessories

- Programming instruments for the large display
- Case
- Plug-in RS-485 interface card
- Plug-in DeviceNet interface card
- Plug-in PROFIBUS-DP interface card
- Plug-in relay output card, 2 x change-over contacts
- Plug-in relay output card, 4 x change-over contacts
- Plug-in transistor output card, 4 x NPN
- Plug-in transistor output card, 4 x PNP

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