

## Large digital display for mV/V-(DMS), V and mA signals

for force transducers and load cells

**Input signal:**

- mV/V  
(model series E1930X800)
- V and mA  
(model series E1931X800)



### Features

- As a digital display for 0 to 10V and 4 to 20mA signals or for DMS (mV/V signal)
- Easy to read from 50 m with 100 mm high bright LED's
- Retrofittable integrated additional functions: Analogue output, 2 or 4 limits and RS232, RS485, PROFIBUS-DP, DeviceNet
- Rapid operation: easy to make device settings
- 3 programmable user inputs

### Display:

5 digits, 100 mm high red 7-segment LED, clearly visible from 50 m

### Indicators:

- 3 indicators on left-hand side for indicating display mode
- 4 indicators on right-hand side for indicating status of limit contacts

### Programming:

The display can be programmed in three ways:

- Using an external clamping block for connecting at least 4 buttons
- Connecting a programming box with a 3m cable via an RJ12 plug-in connection
- Programming via a serial interface (RS232 or RS485) and convenient Windows™ software

### Power supply:

85-250 VAC 50/60 Hz, 23 VA

### Protection class:

Switchboard installation: Hoseproof from the front and impervious to dust in acc. with IP65.  
Housing: IP65 all round

### Housing:

Switchboard installation: Aluminium housing painted black (W 630mm x H 183mm x D 118mm) with scratch-proof polyurethane front film, cut-out W 605 mm x H 159 mm, secured using threaded bolts and lock nuts

### Ambient temperature:

Operation: see specifications of individual displays  
Storage: -40 to +60°C

### Electromagnetic compatibility (CE) compliant:

- Interference emission: EN 50 081-2
- Resistance to jamming: EN 50 082-2

### Scope of delivery:

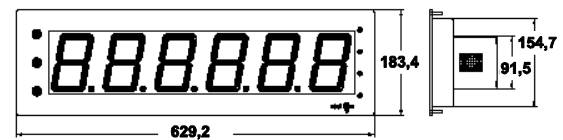
Device, seal, installation template, operating instructions

### Accessories:

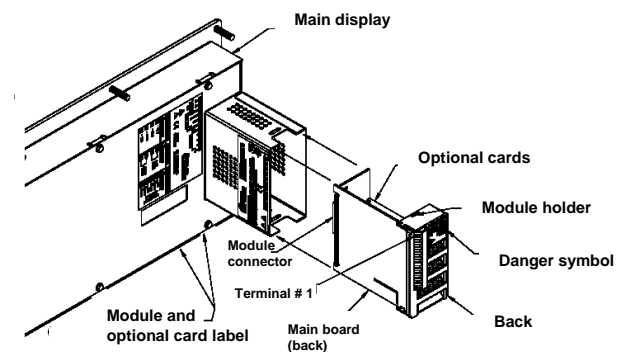
Housing IP65 all round, sunshield

### Large display installation:

The large display is designed to be a built-in equipment item and complies with protection class IP65 if it is correctly installed. The all-round IP65 housing allows the entire unit to be protected.



Dimensions (mm)



Installing the modules and optional cards

### Optional card installation:

The optional cards (analogue output, limit card or serial interface) are plugged into the relevant slot and therefore connected to the large display.

**Model: E1931X800/ E1931X800**

**As standard signal display (BR E1931X800)**

Free digital scalable 5-digit digital display for 0 - 10 V, 0/4 - 20 mA signals, easy scaling and programming via the 5 buttons on the front, 20 measurements/second, 16-bit resolution, 24 VDC controlled sensor supply, max. 50 mA, 16-step linearisation, MIN/MAX value memory and accumulation function.

**As digital display for DMS (BR E1930X800)**

Free digital scalable 5-digit digital display with 2 input ranges: +/- 24 mVDC, +/- 240 mVDC. Easy scaling and programming using the 5 buttons on the front, 20 measurements/second, 16-bit resolution, bridge supply selectable using jumpers. 5 VDC, max. 65 mA; 10 VDC, max. 125 mA. 16-step linearisation, MIN/MAX value memory and accumulation function.

**Optional cards**

Every large display can be easily upgraded with different output cards. Each unit can be configured with an interface card, a relay or transistor output card and an analogue output card. The cards are extremely easy to install yourself.

**Plug-in interface card**

1. Half duplex RS 232, programmable
  2. Multipoint RS 485, programmable
  3. DeviceNet, programmable
  4. PROFIBUS-DP, programmable
- 500 V isolation from signal input, not isolated against ground of other outputs.

**Plug-in relay output cards:**

1. 2 x relay change-over contacts 5 A at 120/230 VAC or 28 VDC (ohmic load), at 120 VAC (80 VA inductive load). Relay service life is 100,000 cycles at max. load. Service life increases with less load.
2. 4 x relays with make contact 3 A at 250 VAC or 30 VDC (ohmic load), at 120 VAC (80 VA inductive load). Relay service life is 100,000 cycles at max. load. Service life increases with less load.

**Plug-in transistor output cards:**

1. 4 x NPN-OC transistors: max. 100 mA at  $V_{sat} = 0.7$  V,  $V_{max} = 30$  V, galvanic separation of 500 V against signal input.
2. 4 x PNP-OC transistors: Internal supply 24 VDC +/- 10%, max. 30 mA for all 4 transistors. External supply max. 30 VDC, 100 mA for each individual transistor.

**Plug-in analogue output card**

Selectable analogue signal: 0 to 20 mA, 4 to 20 mA, 0 to 10 VDC. Digitally scalable, offset, accuracy: 0.17% of range at operating temperature of 10-28°C, 4% of range at operating temperature of 0-50°C, resolution 1/3500, voltage 10 VDC (500 Ohms max. loop impedance). Galvanically separated up to 500 V against signal input.

## Technical data

Model	E1930X800	E1931X800
Output	5-digit, red LED-display, 100 mm high; Min.-/Max.-display Relay status display 0.02% of F.S. $\pm$ 1 digits   0.03% of F.S. $\pm$ 1 digits 2 or 4 relay outputs (alternatively, transistor outputs possible); Analogue output 0 ... 20 mA or 0 ... 10 V; RS-232-port; RS-485-port; Profibus DP-interface	
Input	- Signal: -24 mV ... 0 ... +24 mV or -240mV ... 0 ... +240 mV, 4-wire technology - Digital input: 3 programmable user inputs (pnp- or npn-connected) - Sensor supply: 5 VDC, max. 65 mA or 10 VDC, max. 125 mA (Jumper)   24 VDC, $\pm$ 5%, regulated, max. 100mA - Resolution: 16-bit-A/D-converter; Output max. -19999 to +99999 D; up to 20 measurements/sec. internal - Limit frequency: approx. 5 Hz (200 ms for display of 99% of the final value, max. 0.7 s; gets extended with increase in the digital filtering)	
Setting	Menu-driven through programming box, connectable keyboard or optional parameterizing software	Menu-driven via keyboard, or optional parameterising software
Power requirement	85 ... 250 VAC 50/60 Hz, 23 VA;	85 ... 250 VAC 50/60 Hz, 15 VA;
Nominal temperature range	+18°C ... +25°C	
Service temperature range	0°C ... +50°C (with all 3 cards outfitted 0°C ... +40°C)	
Storage temperature range	-40°C ... +60°C	
Noise emission	EN 50081-2	
Noise immunity	EN 50082-2	
Protection type (acc. to EN 60529 / IEC 529)	Front resistant to splashing water and airtight acc. to IP 65	
Electrical connection	Screw terminals	
Housing	- Material: Electrical panel mounting: black enameled aluminium housing (B x H x T: 630 x 183 x 118 mm) scratchproof PU-front foil, cutout (BxH) 605 x 159 mm; Fastening by means of threaded bolts/lock nuts - Dimensions: (W x H x T) 630x183x76 mm	
Weight	Approx. 1500 g (without pluggable options)	
Signal filter	programmable	
Zero point / range	programmable	
Tare button	Yes	
Measurement memory	Max., Min.	
number of input signals	Parallel 4 x 350 $\Omega$	1
Sensor parameter memory	Parallel 4 x 350 $\Omega$	1
Analogue output	Optional	
Limit contact	Optional	
Switching relay	Optional	
Switching hysteresis	programmable	
Interface	Optional	

Other available models, e.g.

- with analogue output,
- with RS-232-port,
- with RS485-port,
- with 2 or 4 relay outputs

as well as in different combinations of these options.

Information and order numbers for this available upon request.

Right reserved to make technical changes