

# Indicator Display for Strain Gauge

*Series IN 4896 FO (Loadcell)*

Ref : I FP 2117

Rev :



## DESCRIPTION

This device is a high-precision 5-digit programmable indicator for a bridge gauge sensor supplemented by a weighing function.

The device is based on an 8-bit microcontroller with 24-bit multi-channel sigma-delta converter, which ensures high precision, stability and simplified control of the device.

## CONTROL

The device is developed and controlled by five keys, positioned opposite front of the device. All device settings can be made by 3 types of programming.

**THE LIGHT MENU** is protected by an optional numeric code and contains only the stations required for adjusting the device.

**THE PROFI MENU** is protected by an optional numeric code and contains the entire device setting.

**THE USER MENU** can contain arbitrary items, chosen from the menu programming (LIGHT / PROFI) to which permission is given (see or edit). Access is free, without the password. The device is equipped as standard with the OMLink interface which allows you to modify the program and save all device settings as well as update the internal software of the device (with the OML cable).

All settings are saved in EEPROM memory (they remain in memory in the event of a power failure). The units of measurement can be displayed on the screen.

## OPTION

**ALARMS** are assigned to monitoring one, two, three or four values limits with Relay Output. As a user, you can select the mode limit: LIMIT / DOSAGE / UNTIL. Limits have adjustable hysteresis in the Display range as well as the adjustable switch-on time of 0... 99.9 s. Exceeding the predefined limits is signaled by an LED and by starting the relay.

**THE COMMUNICATIONS OUTPUTS** are, for the transmission of the measurement for display repetition or even directly in the control systems. Isolated type RS232 and RS485 with the ASCII / PROFIBUS protocol.

**Isolated ANALOG OUTPUTS** are useful when you need to process data in an external system. This universal SA allows the selection of the output type - voltage / current. The analog output value corresponds with the displayed values, the type and the range can be selected in the menu.

**RECORDING OF MEASUREMENTS** is based on an internal clock. Useful for record the measured values. Available in two modes, FAST, designed for rapid acquisition (<40 records / s) up to 8000 records, or RTC, or the data is governed in real time with storage of the data in a configurable time period and acquisition speed. Up to 266,000 values can be stored in the instrument's memory. The transmission of data in the PC is done via the RS232 / 485 serial interface and the OM Link software.

## STANDARD FUNCTIONS

### PROGRAMMABLE DISPLAY

Calibration: Adjustment of the maximum sensitivity and measurement range of the sensor

Automatic - After learning, setting of limit values for the range of measurement using the reference load.

Weighing function: manual or automatic calibration, stable measurement indication, zero stability, automatic zero monitoring, adjustment of the counting step

Selection no increment: 0.001 / ... / 0.1 / 0.2 / 0.5 / 1/2/5/10/20/50/100 (Mode - WEIGHT)

Display:  $\pm 99999$  (Mode - Standard)

### SENSOR EXCITATION

Fixed: 10 VDC, load  $\geq 80 \Omega$

### FUNCTION

Linearization: 50-point linearization curve (only with OM Link)

Min./max. Value: recording of the min / max values reached during the measurement

Tare: designed to reset the display to zero when the input signal drifts

Fixed Tare: Preset Tare

PEAK value: displays the maximum or minimum value

Mathematical operations: polynomial,  $1/x$ , logarithm, exponential, square, root square,  $\sin x$

### DIGITAL FILTER

Floating average: over 2 ... 30 measurements

Exponential average: over 2... 100 measurements

Arithmetic mean: over 2 ... 100 measurements

Rounding: setting the filter for the display

### EXTERNAL ORDER

Lock: key lock

Blocking: display blocking

Tare: activation of the tare

RESET MM: RESET min./max. value

## TECHNICAL DATA

MODÈLE		
<b>Input</b>		
Nombre inputs		1
<b>T</b>	Range	Selectable in the menu 1...4 mV/V 2...8 mV/V 4...16 mV/V
	Excitation Sensor	10 VDC, charge $\geq 80 \Omega$
	Connexion	6 Wires
	Incrément pitch	0.001/0.002/0.005/0.01/0.02/0.05/0,1/0,2/0,5/1/2/5/10/20/50/100
	Auto. Zéro	Within 4% of the measuring range, the value is automatically reset to 0, provided that the display does not exceed 0.5 measurements / s.
	Auto. zéro RAZ	If in a period > 5 s, a negative value is stabilized on the display (When the Tare function is active) The Tare is automatically erased.
External inputs		3 inputs, on contact The following functions can be assigned OFF input off HOLD display / indicator lock LOCK key lock PASS. blocking access to the menu TARE tare activation CL. YOUR. RESET tare CL. M.M. RESET maximum and minimum value SAVE data recording (FAST / RTC) CL. ME. Reset reset data (FAST / RTC) CHAN. A. "Channel A" value display WIRE. A. "Channel A" value display + filter MAST. FN. value display „Math. Function"

## DISPLAY

**Display:** -99999... 999999, 14-segment monochrome LED

**Height of figures:** 14 mm

**Display color:** red or green

**Unit of Measure:** the last two Digits, on a 6-Digit display, can be used to display the unit of the measured value

(Adjustable in the menu)

**Comma:** adjustable in the menu

**Brightness:** adjustable in the menu

## ALARMS

**Type:** digital adjustable in the menu, response time <30 ms

**Hysteresis mode:** switching limit, hysteresis band "Lim  $\pm 1 / 2$ Hys."

and time ( $\pm 99.9$  s), which determine the switching delay

'From - to' mode: on and off interval

**Dosage mode :** Correction of Pier mode

**Output :** 1... 2x Form A relay (250 VAC / 30 VDC, 3 A)

and 1 ... 2x Form C relay (250 VAC / 50 VDC, 3 A);

2x / 4x open collector (30 VDC / 100 mA); 2x SSR (250 VAC / 1 A);

2x Bistable relay (250 VAC / 250 VDC, 3 A / 0.3 A)

## DATA OUTPUTS

**Protocol:** ASCII, MESSBUS, MODBUS RTU, PROFIBUS DP

**Data format:** 8 bit + no parity + 1 stop bit (ASCII)

7 bits + even parity + 1 stop bit (Messbus)

Speed: 600... 230,400 Baud

9,600 Baud... 12 Mbaud (PROFIBUS)

**RS 232:** isolated

**RS 485:** isolated, addressing (max. 31 devices)

## POWER SUPPLY

**Range:** 10... 30 V AC / DC,  $\pm 10\%$ , PF  $\geq 0.4$ , I<sub>STP</sub> <40 A / 1 ms, isolated

80... 250 V AC / DC,  $\pm 10\%$ , PF  $\geq 0.4$ , I<sub>STP</sub> <40 A / 1 ms, isolated

**Consumption:** <8.0 W / 7.8 VA

The power supply is protected by a fuse inside the device.

## MECHANICAL CHARACTERISTICS

**Material:** Noryl GFN2 SE1, non-flammable UL 94 V-I

**Dimensions:** 96 x 48 x 120 mm (W x H x D)

**Drilling dimension:** 90.5 x 45 mm (w x h)

## DEVICE ACCURACY

**TC:** 50 ppm / ° C

**Accuracy:**  $\pm 0.05\%$  of range + 1 digits

(The accuracy is indicated for a display 99999 and 10 mes./s)

**Speed:** 1... 100 measurement / s

**Possible overload:** 2x; 10x (t <30 ms)

**Linearization:** 50-point linearization curve (only with OM Link)

**Digital filter:** average exp / floating / arithmetic, rounded

**Function:** offset, minimum and maximum value, tare, PEAK value, math operations.

**Recording of measured data:** in the device memory

RTC - 15 ppm / ° C, time-date-measurement value, <266k data

FAST - measured value, <8k data

**Watchdog:** Reset after 400 ms

**OM Link:** Communication interface for Control, Adjustment and Update device day

**Calibration:** at 25 ° C and 40% RH

## ANALOG OUTPUTS

**Type:** isolated, programmable with 16-bit resolution, the type and range are adjustable in the menu

**Non-linearity:** 0.1% of the range

**TC:** 15 ppm / ° C

**Speed:** response time value change <1 ms

**Ranges:** 0... 2/5/10 V,  $\pm 10$  V, 0... 5 mA, 0/4... 20 mA

(comp. <600  $\Omega$  / 12 V or 1000  $\Omega$  / 24 V)

## TERMS OF USE

**Connection:** pluggable screw connector, section <1.5 / 2.5 mm<sup>2</sup>

**Stabilization period:** 5 minutes after switching on

**Operating temperature:** -20 °... 60 ° C

**Storage temperature:** -20 °... 85 ° C

**Water resistance:** IP64 (only for the front panel)

**Electrical safety:** EN 61010-1, A2

**Dielectric characteristics:** 4 kVAC after 1 min. between food and entry

4 kVAC after 1 min. between power supply, RSxxx, analog output

4 kVAC after 1 min. between power supply and relay output

2.5 kVAC after 1 min. between input, RSxxx, analog output

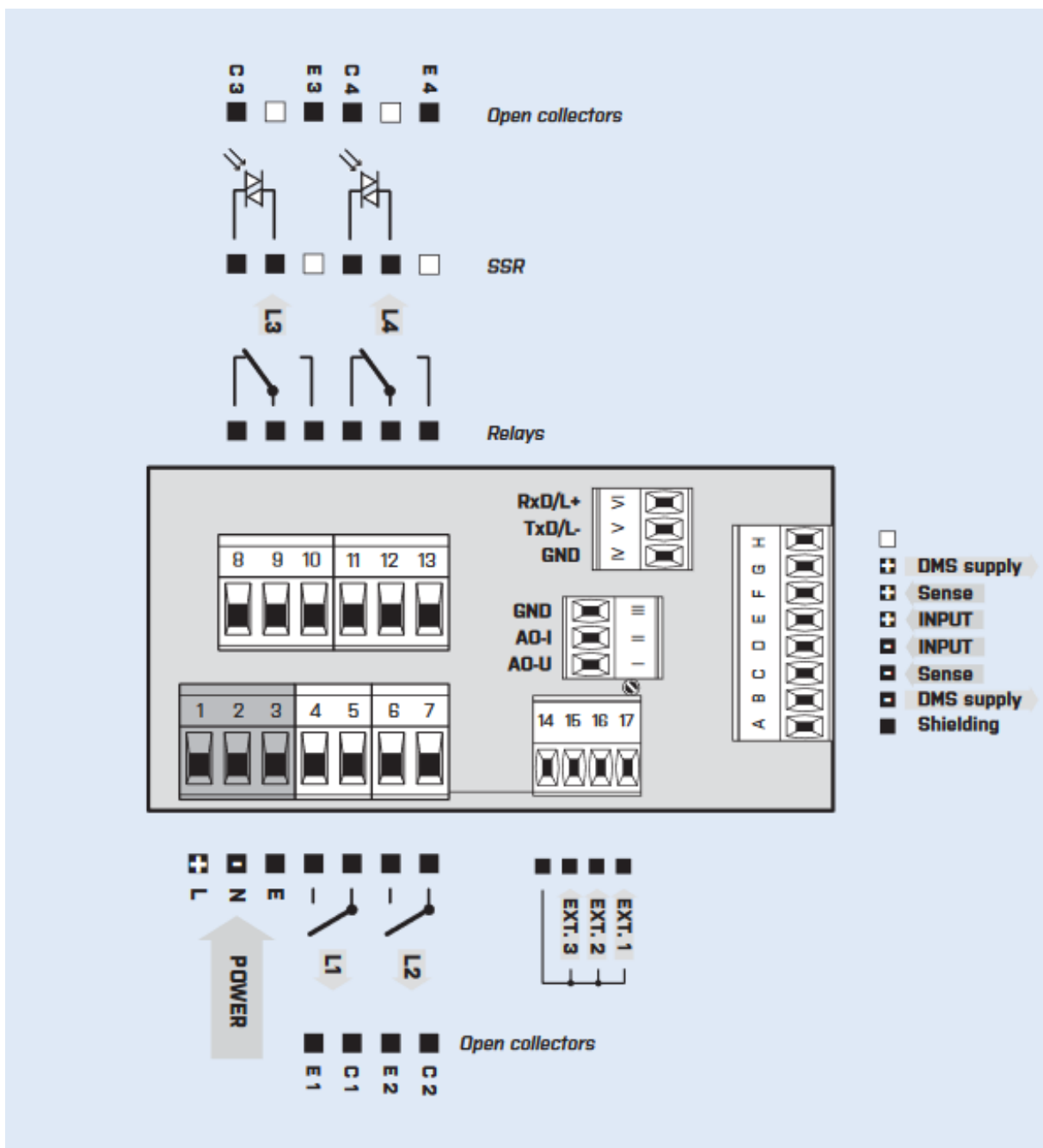
**Insulation resistance:** for pollution degree II, cat. II.

power supply > 670 V (BI), 300 V (DI)

input, output, Excitation Sensor > 300 V (BI), 150 V (DI)

**EMC:** EN 61326-1 (Industrial zone)

CONNECTION



CONTACT

MESUREX  
 13 Rue des Corroyés  
 78730 Saint Arnoult en Yvelines

Tel : +33 (0) 1 30 41 23 62  
 Fax : +33 (0) 1 30 41 23 80  
 Mail : [mesurex@mesurex.fr](mailto:mesurex@mesurex.fr)