

# Indicator Display Universal Input

*Series IN 4896 UNI*

Ref: I FP 2116

Rev:



## DESCRIPTION

This device is a 4-digit panel indicator developed for maximum efficiency and for user comfort while keeping prices attractive.

It's a universal input indicator with the possibility of configuring 8 different types of inputs, which are easily configurable in the device menu. With the different input modules, it is possible to extend the DC voltage and current range. We can also increase the number of inputs to 4 (1 universal, 3 Process 4-20mA, 0-10V).

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

## 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).

## 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

Selection: input type and measurement range  
 Measuring range: adjustable, fixed or with automatic change (OHM)  
 Setting: manual, in the display menu, it can be set for both values input signal limits, for example input 0... 10.00 V > 0... 850.0  
 Display: -9999... 9999

### SENSOR EXCITATION

Range: 5... 24 VDC / 1.2 W, for supplying sensors and transmitters  
 COMPENSATION  
 Line (RTD, OHM): automatic (wire 3- and 4-) or manual in the menu (wire 2-)  
 Probes (RTD): internal connection (resistance of the pipe in the head measured)  
 Cold junction (T / C): manual or automatic, in the menu it is possible to select the type of thermocouple and the cold junction compensation, which is adjustable or automatic

### 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  
 PEAK value: displays the maximum or minimum value  
 Mathematical operations: polynomial, 1 / x, logarithmic, exponential, square root, square root and math functions between inputs

### DIGITAL FILTER

Floating / Exp. / Average arithmetic: on 2... 30/100/100 measures  
 Rounding: setting the filter for the display

### EXTERNAL ORDER

Lock: key lock  
 Blocking: display blocking  
 Tare: activation of the tare  
 RESET MM: RESET maximum and minimum value

## TECHNICAL DATA

MODÈLE	
<b>Input</b> Input number	1
DC Range	selectable in the menu ±60 mV > 100 MΩ Input U ±150 mV > 100 MΩ Input U ±300 mV > 100 MΩ Input U ±1 200 mV > 100 MΩ Input U
PM Range	selectable in the menu 0...20 mA < 400 mV Input I 4...20 mA < 400 mV Input I ±2 V 1 MΩ Input U ±5 V 1 MΩ Input U ±10 V 1 MΩ Input U ±40 V 1 MΩ Input U
OHM Range	selectable in the menu 0...100 Ω 0...1 kΩ 0...10 kΩ 0...100 kΩ
Pt Type	Connexion : 2, 3 or 4 Wire selectable in the menu EU > 100/500/1 000 Ω, 3 850 ppm/°C -50°...450°C US > 100 Ω, 3 920 ppm/°C -50°...450°C RU > 50 Ω, 3 910 ppm/°C -200°...1 100°C RU > 100 Ω, 3 910 ppm/°C -200°...450°C
Ni Type	Connexion : 2, 3 or 4 Wire selectable in the menu Ni 1 000/10 000, 5 000 ppm/°C -50°...250°C Ni 1 000/10 000, 6 180 ppm/°C -50°...250°C
Cu Type	Connexion : 2, 3 or 4 Wire selectable in the menu Cu 50/100, 4 260 ppm/°C -50°...200°C Cu 50/100, 4 280 ppm/°C -200°...200°C
T/C Type	selectable in the menu J (Fe-CuNi) -200°...900°C K (NiCr-Ni) -200°...1 300°C T (Cu-CuNi) -200°...400°C E (NiCr-CuNi) -200°...690°C B (PtRh30-PtRh6) 300°...1 820°C S (PtRh10-Pt) -50°...1 760°C R (Pt13Rh-Pt) -50°...1 740°C N (Omegalloy) -200°...1 300°C L (Fe-CuNi) -200°...900°C
DU Alimentat. potent. Linear	2 VDC/6 mA, Resistance potentiometer > 500 Ω
Ext. input	3 inputs, on contact The following functions can be assigned OFF / HOLD / LOCK / PASS. / TARE / CL. TA. / CL. M.M. / SAVE / CL. ME. / CHAN. A. / FIL. A. /MAT. FN. / SWIT.

## DISPLAY

**Display:** -99999... 999999, 14-segment monochrome LED  
-999... 9999, 3-color LED with 7 segments

**Height of figures:** 14 or 20 mm

**Display color:** red or green (height 14 mm)  
red / green / orange (height 20 mm)

**Unit of Measure:** the last two Digits, on a 6 Digits display, can be used to display the unit of the measured value (Adjustable in the menu) (only 14mm Display)

**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);

## 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, 0.0096... 12 Mbaud (PROFIBUS)

**RS 232:** isolated

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

## POWER SUPPLY

Range: 10... 30 V AC / DC,  $\pm 10\%$ , PF  $\geq 0.4$ , ISTOP <40 A / 1 ms, isolated

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

Consumption: <9.4 W / 9.2 VA

The power supply is protected by a fuse inside the device

## SENSOR EXCITATION

Range: 10... 30 V AC / DC,  $\pm 10\%$ , PF  $\geq 0.4$ , ISTOP <40 A / 1 ms, isolated

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

Consumption: <6.7 W / 7 VA

The power supply is protected by a fuse inside the device

## MECHANICAL CHARACTERISTICS

**Material:** Noryl GFN2 SE1, non-flammable UL 94 V-1

**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:**  $\pm 0.1\%$  of range + 1 digit (for display 9999 and 5 meas./s)  
 $\pm 0.15\%$  of range + 1 digits PT, T / C

**Cold junction accuracy:**  $\pm 1.5$  ° C

**Speed:** 0.1... 40 measurement / s

**Possible overload:** 2x; 10x (t <30 ms) - not for > 200 V and 5 A

Resolution (RTD, T / C): 1 ° / 0.1 ° / 0.01 ° C

**Line compensation:** max. 30  $\Omega$  (RTD)

**Cold junction compensation:** adjustable -20 °... 99 ° C or automatic

**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

**OM Link:** Communication interface for Control, Adjustment and Update of devices

**Watchdog:** Reset after 400 ms

**Calibration:** at 25 ° C and 40% RH

## ANALOG OUTPUTS

**Type:** isolated, programmable with 16 bit resolution, 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

Temper. working / storage: -20 °... 60 ° C / -20 °... 80 ° 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)

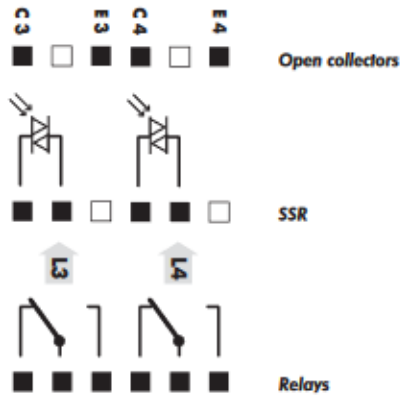
**Seismic capacity:** IEC 980: 1993, par. 6

**SW validated:** class B, C in compliance with standard IEC 62138, 61226

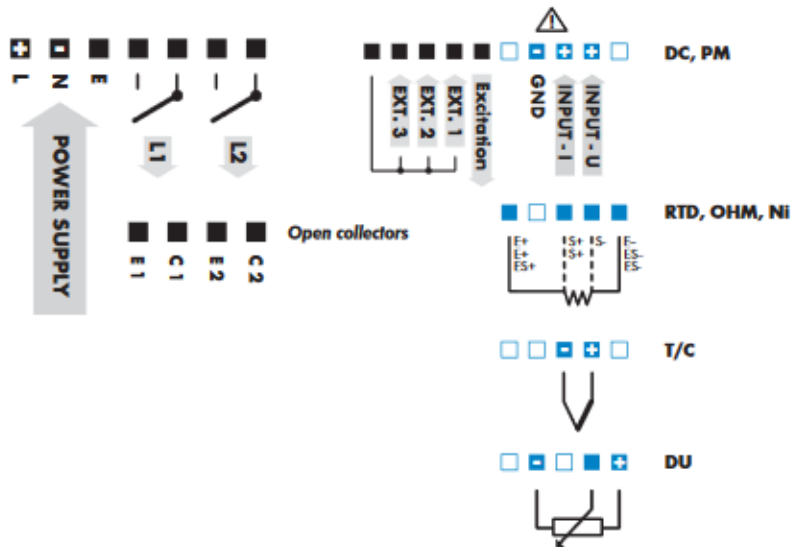
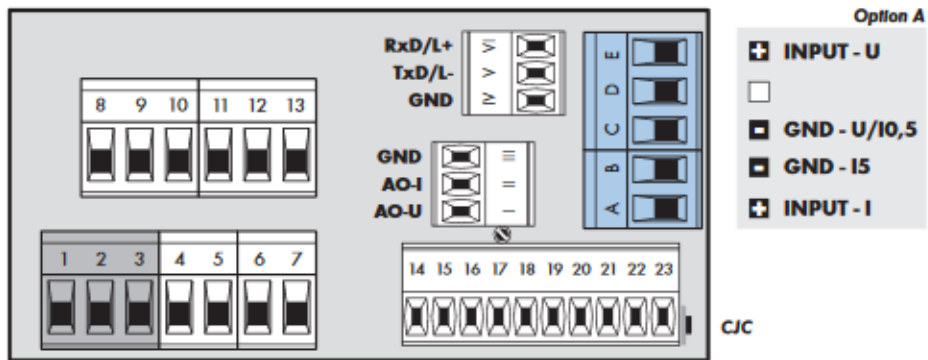


## CONNECTION

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**!**  
Excitation has the minus pole common with the input - the bracket no. 20 - GND and you may set its value by trimmer above the bracket no. 17



Maximum of 250 mA may be connected to "INPUT - I" (bracket no. 21) , i.e. 10-times range overload.  
Mind the correct connection/mistaking of current - voltage input.  
Destruction of measuring resistance in current input (15R) may occur.

## CONTACT

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