

# UNIVERSAL INDICATOR 8 CHANNELS

Ref : FP

Rev :



## DESCRIPTION

This device is a 4 or 8-channel display / recorder designed for maximum efficiency and comfort for users while maintaining a favorable price.

The device has the possibility of configuring 8 different input types on each channel. The instrument is based on an 8-bit microcontroller with a 24-bit sigma-delta converter which ensures high precision, stability and easy use.

High quality of the instrument, due to the high sampling rate on the different channels such as the possibility of recording all the inputs at the same time.

## 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 digital code and contains only the items required for setting the device.

**THE PROFI MENU** is protected by an optional digital 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 modifier). Access is free, without the password.

The device is standard equipped with the OMLink interface which allows you to modify the program and save all device settings as well as put a update the internal software of the device (with the OML cable).

EEPROM (they remain all the settings are saved in the memory) memory sector in the event of a blackout). The units of measurement can be displayed on the screen.

## OPTION

**ALARMS** are intended for monitoring four or eight limit values, with a relay output. The user can choose the LIMIT / Sur-TO limit regime. The limits have an adjustable hysteresis and an optional delay in the range. Achievement limits indicated by an LED and by launching the appropriate output.

**THE COMMUNICATIONS OUTPUTS** are, for the transmission of the measurement for display repetition or directly in the control systems.

Isolated RS232 and RS485 types with ASCII / MESSBUS / MODBUS / PROFIBUS.

Isolated **ANALOG OUTPUTS** will find their place in applications where the processing of measurement data is necessary in the devices external. We offer a universal analog output with the selection of output type - voltage / current. The analog output value corresponds with the displayed values and the type and range can be selected in the menu.

**RECORDING OF MEASUREMENTS** is based on an internal clock. It is appropriate in cases where it is necessary to record the measured values. Of them modes of acquisition can be used. FAST is designed for acquisition fast (storage of 40 records / s) up to 8000 records. The second RTC mode, where the recording data is managed in real time with data storage in a period of time and acquisition speed configurable. Up to 532,000 values can be stored in the memory of the instrument. Data transmission in the PC is done via a serial interface RS232 / 485 and OM Link software.

## STANDARD FUNCTIONS

### PROGRAMMABLE DISPLAY

Selection: input type and measurement range

Setting: manual, it is possible to set the corresponding display value for the two limit values of the input signal in the menu

Display: -999... 9999

### SWITCHING INPUTS

Manual: by control key on the front panel or external contact

Automatic: by a configurable time interval

### 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: by linear interpolation on 255 points / 8 ch. (via OM Link)

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

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

PEAK value: displays the maximum or minimum value

Mathematical operations: polynomial, 1 / x, logarithm, exponential, square, root square, sin x and the mathematical functions between the inputs - sum, difference, product, quotient

### 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

Blocking: display blocking

Lock: key lock

RESET MM: RESET min./max. value

Function: controls the optional functions of the device menu

## TECHNICAL DATA

MODÈLE	
<b>Input</b> Input number	4/8
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 A...H/ CL. T.A...H / CL. M.M. / SAVE / CL. ME. / SWITCH.

## DISPLAY

**Display:** -999... 9999, 14-segment LED  
**Height of figures:** 14 mm  
**Measuring units:** 0... 99, 14-segment LED  
**Height of figures:** 10 mm  
**Display color:** red or green  
**Channel display:** 0... 9, 7-segment LED  
**Height of figures:** 9.1 mm  
**Display color:** red or green (opposite to the measured value)  
 Comma : adjustable in the menu

## ALARMS

**Type:** digital adjustable in the menu, response time <30 ms  
**Hysteresis mode:** switching limit, hysteresis band „Lim ± 1 / 2Hys. “  
 and time (± 99.9 s), which determine the switching delay  
 ‘From - to’ mode: on and off interval  
**Dosage mode :** correction for Pier mode  
**Output :** 4 / 8x Form A Relay (250 VAC / 30 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  
 9,600 Baud... 12 Mbaud (PROFIBUS)  
**RS 232:** isolated  
**RS 485:** isolated, addressing (max. 31 devices)

## POWER SUPPLY

**Range:** 10... 30 V AC / DC, ± 10%, PF ≥ 0.4, I<sub>STP</sub> <40 A / 1 ms,  
 isolated  
 80... 250 V AC / DC, ± 10%, PF ≥ 0.4, I<sub>STP</sub> <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-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:** ± 0.2% of range + 1 digit (for display 9999 and 5 meas./s)  
**Cold junction accuracy:** ± 1.5 ° C  
**Speed:** 0.1... 40 measurement / s  
**Possible overload:** 2x; 10x (t <30 ms)  
**Résolution :** 0.1 ° C (RTD), 1 ° C (T / C)  
**Line compensation:** max. 40 Ω  
**S.F compensation:** manual 0 °... 99 ° C or automatic  
**Linearization:** by linear interpolation over 255 points / for 8 measurement channels  
**Digital filter:** average exp / floating / arithmetic, rounded  
**Function:** Min./max. Value, Tare, PEAK value, Mathematical operations between inputs  
 Recording of measured data: in the device memory  
 RTC - 15 ppm / ° C, time-date-measurement value, <532k data  
 FAST - measured value, <8k data  
**Watchdog:** Reset after 400 ms  
**OM Link:** Communication interface for Control, Adjustment and Update of devices  
**Calibration :** at 25 ° C and 40% RH

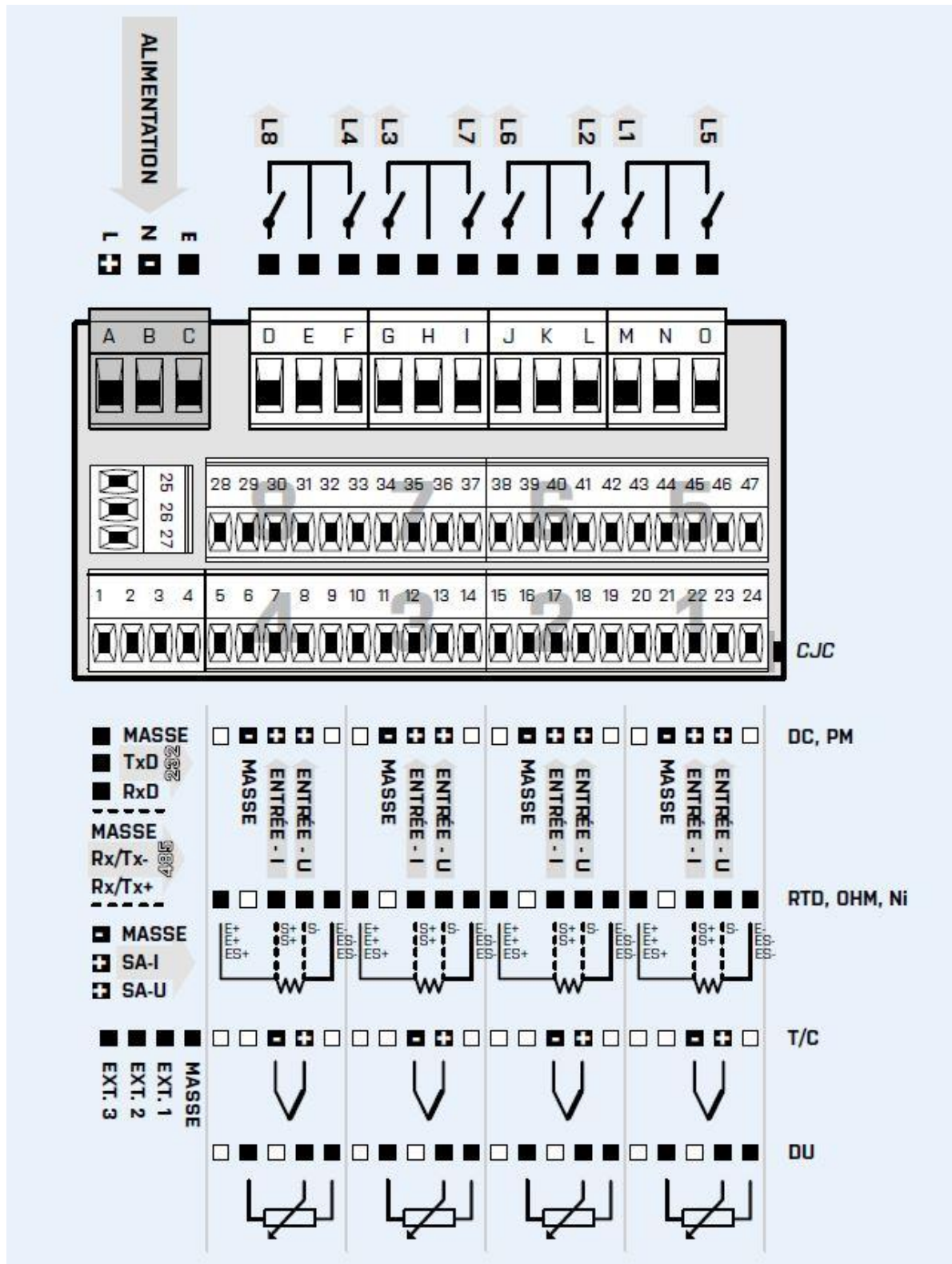
## ANALOG OUTPUTS

**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, ± 10 V, 0... 5 mA, 0/4... 20 mA  
 (comp. <600 Ω / 12 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)  
**Seismic capacity:** IEC 980: 1993, par. 6  
**SW validated:** class B, C in compliance with standard IEC 62138, 61226

CONNECTION



CONTACT

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