PICA100-P

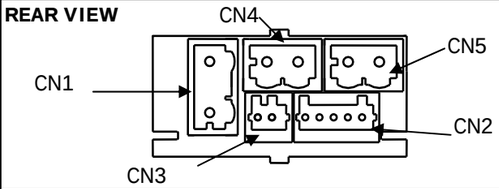
INSTRUCTIONS MANUAL

- Process indicator for ±10 V or ±20 mA signals
- Supply excitation for the captor
- Voltmeter DC up to ±60 V
- Ammeter DC for Shunt
- Two 5A STSP mounted Relays.
- Communication option RS485

SIZE

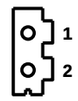
Front: **48 x 24** mm 1/32 DIN, Depth: 100 mm
Panel cut out 45 x 22 mm

REAR VIEW



CONNECTORS DESCRIPTION

CN1 AC SUPPLY
PIN 1 Phase --
PIN 2 Neutral
CN1 DC SUPPLY ~
PIN 1 Negative
PIN 2 Positive +

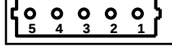


CN3 RS485 OUTPUT
PIN 1 B = TxD+ / RxD+
PIN 2 A = TxD- / RxD-

CN4 RELAY 1 OUTPUT
PIN 1 } N.O.
PIN 2 }

CN5 RELAY 2 OUTPUT
PIN 1 } N.O.
PIN 2 }

CN2 SIGNAL

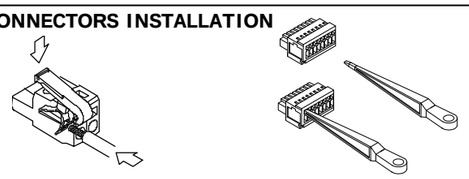


PIN 1 + Input 60/10 V dc
PIN2 + Input mA (20 mA)
PIN3 + Input mV (SHUNT)
PIN 4 - Common (Input and Excitation)
PIN 5 + Excitation (24 V dc)

POWER SUPPLY

PICA100-P ..... 85 to 265 V AC 50/ 60 Hz
..... 100 to 300 V DC
PICA100-P6 ..... 21 to 53 V AC 50/ 60 Hz
..... 10,5 to 70 V DC

CONNECTORS INSTALLATION



WARNING: If these instructions are not respected, protection against overtension is not guaranteed.

In order to guarantee electromagnetic compatibility, the following guidelines for cable wiring must be followed:
Power supply wires must be routed separated from signal wires. Never run power and signal wires in the same conduit.
Use shielded cable for signal wiring and connect the shield to ground.
The cable section must be ≥0.25 mm^2

INSTALLATION
To meet the requirements of the directive EN61010-1, where the unit is permanently connected to the mains supply it is obligatory to install a circuit breaking device easy reachable to the operator and clearly marked as the disconnect device.

CLEANING: The frontal cover should be cleaned only with a soft cloth soaked in neutral soap product. **DO NOT USE SOLVENTS**

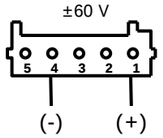
DESCRIPTION

PICA100-P, instrument of the KOSMOS series, size 1/32 DIN with 4 digits LED red 8 mm high, designed for measuring process signals in range from 0 to 10 V, 0 to 20 mA, 4 to 20 mA with power supply for the transducer incorporated, easily scalable in engineering units, via keyboard or field signal.
Incorporates others inputs, from 0 to 60 Vdc that allows voltages measurements like batteries of 12, 24 or 48 V and from 0 to 100 mV adequate for connection with Shunts of 50, 60 or 100 mV that allows measurements of tensions up to ± 2000 A. Its two supply ranges makes it useful for industrial applications like installations with batteries. For this reason, it is a very useful equipment for nautical applications especially for measurement and control of batteries or tanks of irregular shape thanks to the linearization of ramps option incorporated on this instrument.
Its two mounted relays allows this instrument not only to measure but also to be able to control, regulate and detect alarms for the mentioned signals.
Tanks to its communication option RS4P (RS485) it can be integrated within a measurement system and is able to provide information via its MODBUS-RTU protocol, and can be totally configured by PC with a free el software available in www.ditel.es
Incorporates three keys located on the font bottom for the configuration of all the parameters.
Its brightness level is programmable with 4 levels in order to adapt it to the environment where it works. Registers the minimum and maximum process value since its commissioning or resetting. Offers the possibility to make a tare (display value absorption) that can be locked out at any time.
The output options are isolated from the input and the power supply.

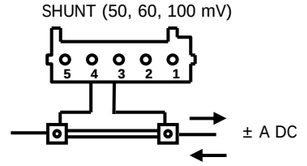
WIRING SCHEMATICS ACCORDING INPUT

APLICATIONS MEASUREMENT DC Voltage and Current
Example: Measurement and control of Battery Voltage or Current charge and discharge

VOLTMETER DC
±60 V

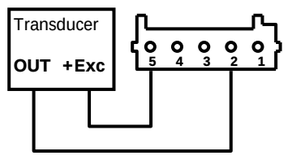


AMMETER DC
SHUNT (50, 60, 100 mV)

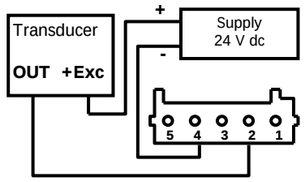


TRANSDUCERS (SIGNAL mA)

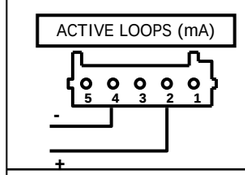
FEEDED BY PICA100-P



WITH EXTERNAL SUPPLY

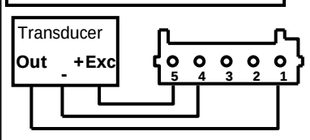


ACTIVE LOOPS (mA)

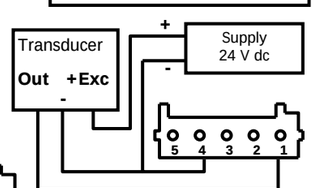


TRANSDUCERS (SIGNAL V)

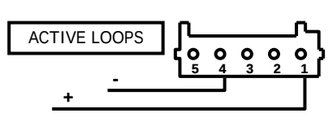
FEEDED BY PICA100-P



WITH EXTERNAL SUPPLY



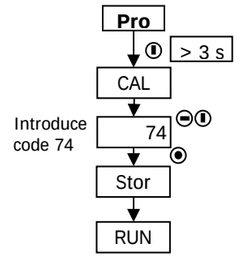
ACTIVE LOOPS



GENERAL PROGRAMMING DIAGRAM

Keyboard detail (bottom view)

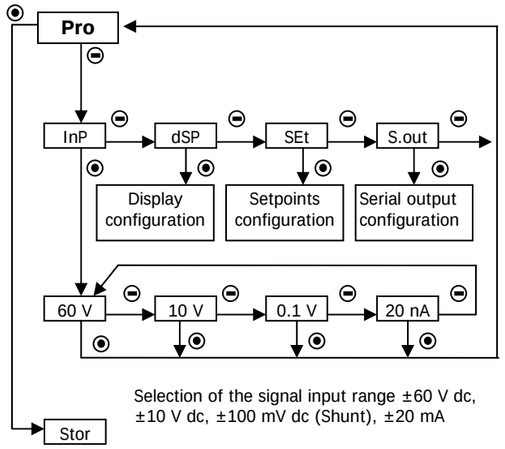
Return to factory default configuration



(1) If all the parameters are locked out, **dAtA** is displayed

PROGRAMMING MENUS DETAILS

1.0 INPUT TYPE CONFIGURATION



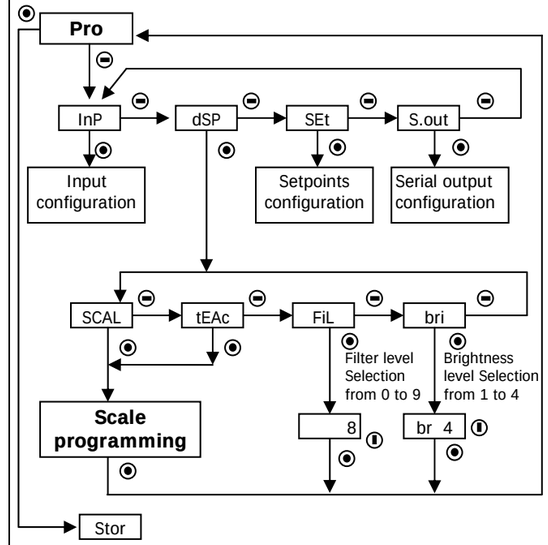
Selection of the signal input range ±60 V dc, ±10 V dc, ±100 mV dc (Shunt), ±20 mA

Teach method: This system allows, in InP 1 and InP 2 to visualise the real value of electric signal generated by the sensor in a given condition and to validate it by pressing on the key ⊙.

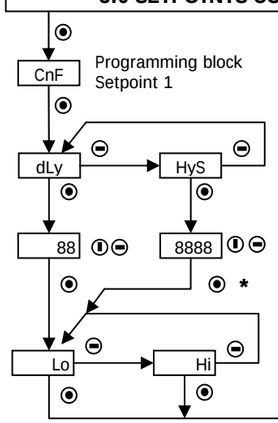
NOTE: Make sure that InP 1 and InP 2 are neither equals nor nearby, being more convenient to situate them as far as possible in each programmed segment.

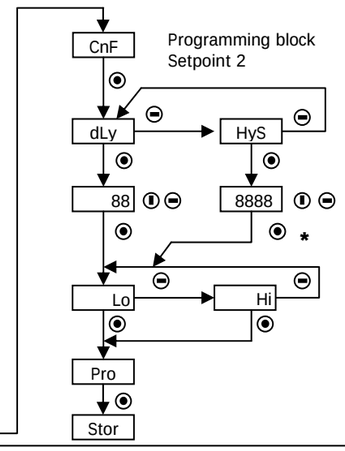
2.0 DISPLAY CONFIGURATION

(SCALE, FILTER AND BRIGHTNESS LEVEL)



3.0 SETPOINTS CONFIGURATION





2.1 DISPLAY PROGRAMMING

SCALE PROGRAMMING

Edición / Visualización InP1 / dSP1

InP1 → 8888 * → dSP1 → 8888 * → 8888

Edition / Visualization decimal point Is moved with: ⊖

Edition / Visualization InP2 / dSP2

⊙ ⊙ Enter > 3 s

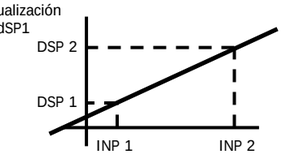
Edition / Visualization InP3 / dSP3

Edition / Visualization InP16 / dSP16

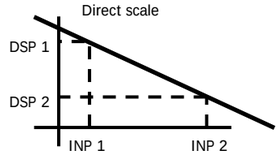
Pro → Stor

If the 15 ramps are not needed press ⊖ during more than 3 s. after having entered the value of the last desired DSP

Linear processes

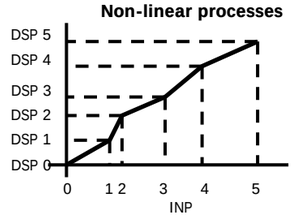


Direct scale



Inverted scale

Non-linear processes



In non-linear processes it is possible to program up to 16 points input-display. Each two points are connected by a straight line and the whole is a curve that represents the relationship between the input value and the display value.
In order to obtain more accuracy in the measuring it is recommended to program the highest possible number of points and reduce the segment length.
Input values must always be programmed in an increasing or decreasing order. Avoid assigning two different display values to two equals input values.
Display values can be entered in any order and even be repeated for different inputs.
Below the first point programmed, the relationship established between the two first points of the scale is followed. Above the last point programmed, the relationship established between the two last points of the scale is followed.

* DISPLAY VALUE EDITION

When entering to edit a value in the display the left digit will start to blink and by pressing the ⊙ key it will be possible to modify its value.
By pressing the ⊖ key the intermittency will be shifted to the right and will come back to the left after the last digit on the right, once the desired value is on the screen, to validate press on the ⊙ key.

3.1 SETPOINTS PROGRAMMING

MENU USER PROG.

* 8888 Edition / Visualization Setpoint 1

* 8888 Edition / Visualization Setpoint 2

Stor

5.0 PARAMETERS LOCKOUT MENU

CodE → 8888 → CHAn

Introduce the secret code to acceed this routine (from factory the code is 0000)
If you have forgotten your secret code proceed to return to the factory default programming that will allow you thanks to the code 0000 to have access to the parameters lockouts. **You will lose your personal configuración.**

CHAn → no → YES → * 8888

Allows changing the secret code selecting YES

ALL → no → YES

Total lockout of the parameters

inP → 0 → 1

RUN

Selective lockout of the different menus.
0= open
1= locked out

Edition / Visualization dSP — DISPLAY menu Lockout

Edition / Visualization C.SP.1 — Run mode menu Lockout SETPOINT1

Edition / Visualization V.SP.1 — Value menu Lockout SETPOINT1

Edition / Visualization C.SP.2 — Run mode menu Lockout SETPOINT2

Edition / Visualization V.SP.2 — Value menu Lockout SETPOINT2

Edition / Visualization S.Out — Serial output menu Lockout

Edition / Visualization TArE — TARE key Lockout

Stor

4.0 RS 485 OUTPUT PROGRAMMING

RS4P Serial output Programming

If you have the RS4P option, consult the enclosed manual.

Transmission speed selection from 1200 to 19200 BAUD

bAUd → 1.2 → 2.4 → 4.8 → 9.6 → 19.2

Adr

Instrument address selection from 00 to 99
The 00 address only admits commands that must not give answer

88

Prot

Transmission protocol selection
1= ASCII, 2= ISO1745, 3= MODBUS-RTU

1 → 2 → 3

dLY

Selection of response time delay in ms.

0 → 30 → 60 → 100 → 300

Pro → Stor

TECHNICAL SPECIFICATIONS

INPUT SIGNAL
- Configuration ..... asymmetric differential

Process input	**Voltage**	**Current**
• Voltage	±10 V DC	±20 mA DC
• Resolution max.	1 mV	1 µA
• Input impedance	1 MΩ	12,1 Ω
• Excitation	20 V± 5 V @ 30 mA	
• Error max	± (0.1% of the reading +3 digits)	

Volts / Millivolts input
- Voltage ..... ±60 V, ±10 V, ±100 mV
- Resolution max ..... 10 mV, 10 mV, 0,1 mV
- Input impedance ..... 1 MΩ, 1 MΩ, 100 MΩ
- Error max ..... ± (0.1% of the reading +3 digits)

MAX applicable input signal
- Process mA ..... ±24 mA
- Process V ..... ±12 V
- Volts ..... 60 V

MAX. continuous Overload 60 V, 10 V inputs ..... 80 V
MAX. continuous Overload mV input ..... 50 V
MAX. continuous Overload V mA input ..... 50 mA

DISPLAY
- Principal ..... -1999/ +9999, 4 digits 8 mm
- Decimal point ..... programmable
- LEDs ..... 2 for functions and 2 for outputs
- Display rate ..... 5/ s
- Overflow indication ..... -ouE ouE

CONVERSION
- Technique ..... Sigma/ Delta
- Resolution ..... (±15 bit)
- Rate 25/s
- Temperature coefficient ..... 100 ppm/ ºC
- Warm up time ..... 15 minutes

RELAYS
- 2 SPST Relays (mounted) ..... 5 A @ 250 Vac /30 Vdc

POWER SUPPLY
- PICA100-P ..... 85 VAC – 265 VAC / 100 VDC – 300 VDC
- PICA100-P6 ..... 21 VAC – 53 VAC / 10,5 VDC – 70 VDC
- Consumption 5W

FUSES (DIN 41661) - Not included
- PICA100-P ..... F 0.2 A / 250 V
- PICA100-P6 ..... F 1 A / 250 V

FILTER P
- Cut—off frequency ..... from 0,4 Hz to 0.004 Hz
- Slope ..... 20 dB/decade

ENVIRONMENTAL
- Operating temperature ..... -10 ºC a +60 ºC
- Storage temperature ..... -25 ºC a +85 ºC
- Relative humidity non condensed ..... <95 % a 40 ºC
- Max. altitude ..... 2000 meters
- Sealed front panel IP65

DIMENSIONS
- Dimensions ..... 48 x 24 X 100 mm
- Panel cutout ..... 45 X 22 mm
- Weight ..... 100 g
- Case material ..... polycarbonate s/UL 94 V-0

DECLARATION OF CONFORMITY

CE

Manufacturer: DITEL - Diseños y Tecnología S.A.
Adress: Travessera de les Corts, 180
08028 Barcelona
ESPAÑA
Declares, that the product:
Description: Digital panel meter multifunction
Model: **PICA100-P**
Conforms with the directives: EMC 89/336/CEE
LVD 73/23/CEE

EN 61000-6-2	Generic immunity	
EN 61000-4-2	Electrostatic discharge Air discharge 8kV Contact discharge 4kV	Criteria B
EN 61000-4-3	Electromagnetic fields RF 10V/m	Criteria A
EN 61000-4-4	Fast transients Power supply Lines 2 kV Signal Lines 1 kV	Criteria B
EN 61000-4-5	Surge AC DC 1 kV L/N 0,5 kV 2 kV L,N/Ground 0,5 kV 1 kV Signal Lines and ground	Criteria B
EN 61000-4-6	RF conducted interferences 10 V rms	Criteria A
EN 61000-4-11	Voltage dips and interruptions 30% reduction 0,5 period 66% reduction 5 per. y 50 per	Criteria B Criteria C
EN 61000-6-3	Generic emission EN 55022/ CISPR22	
EN 61010-1	General safety Installation category II Pollution degree 2 Conductive pollution excluded Insulation type Enclosure: Double Inputs/Outputs: Basic	

Date: 05-07-2005
Signed: José Manuel Edo

In order to guarantee the technical specifications of the instrument it is recommendable to check its calibration on a regular basis to be defined in accordance with the ISO9001 norms and the criteria of use of each application. The instrument calibration will have to be done by an accredited laboratory or directly by the manufacturer.

This manual does not represent a contractual commitment. All the information included in this manual can be modified without notice.

3 Years Warranty

The instruments are warranted against defective materials and workmanship for a period of three years from date of delivery.

If a product appears to have a defect or fails during the normal use within the warranty period, please contact the distributor from which you purchased the product.

This warranty does not apply to defects resulting from action of the buyer such as mishandling or improper interfacing.

The liability under this warranty shall extend only to the repair of the instrument. No responsibility is assumed by the manufacturer for any damage which may result from its use.

5 FREE Extended Years Warranty

All the DITEL products benefit from an unlimited and unconditional warranty of THREE (3) years from the date of their purchase. Now you can extend this period of warranty up to FIVE (5) years from the product commissioning, only by fulfilling a form.

Fill out the form you have received with the instrument or visit our website:
http://www.ditel.es/warranty

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www.ditel.es

DITEL

ECF

Code: 30727258 Edition: 18-12-2006