DESCRIPTION

DIGITAL INDICATOR for operating as an industrial visualizer or repeater controled through Ethernet network and **MODBUS TCP/IP** comunications protocol.

5-digit indicator with **14mm** digit height, it has 6 adjustable display brightness levels and is also configurable in 3 colors.
AC/DC power supply for a wide range of voltages and fully programmable through 3 frontal keys.

The **MICRA-NE** is compatible with industrial applications that run over an Ethernet network to display data from other instruments of KOSMOS series, that have Ethernet output, or any other device that supports the MODBUS TCP/IP protocol.

The indicator can be configured to work as a CLIENT or SERVER.

Programmed as "**CLIENT**" the instrument requests to other device, at configurable time intervals, the variable to visualize. It also provides, in case of KOSMOS series indicators, automatic device detection, preconfigured MODBUS addresses for visualizing 4 of the most common variables and decimal point configuration. To communicate with other devices or for a different variable, the MODBUS address must be manually entered in each case.

In both cases, data can be displayed in decimal format or hexadecimal format (divided in 2 or 4 parts) and with configurable decimal point, as well.

Programmed as "**SERVER**" the instrument operates under other device requests displaying received data from that one until a new message reception. Supports MODBUS functions of read n words, write n words, write one word and force coil (to change brightness level and color), displaying numeric variables in ASCII, WORD or FLOAT format, or up to 5-character ASCII messages with a decimal point.

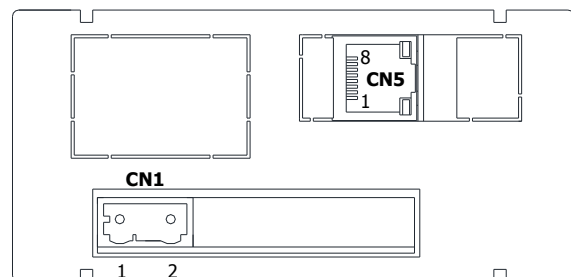It supports ICMP protocol.

DIMENSIONS AND MOUNTING

Dimensions .... 96 x 48 x 60 mm (1/8 DIN).
Panel cutout .... 92 x 45 mm.
Weight .... 160g.
Case material .... UL 94 V-0 polycarbonate

Instruments include a sealing gasket and 2 fixing clips for frontal and rear panel installation.
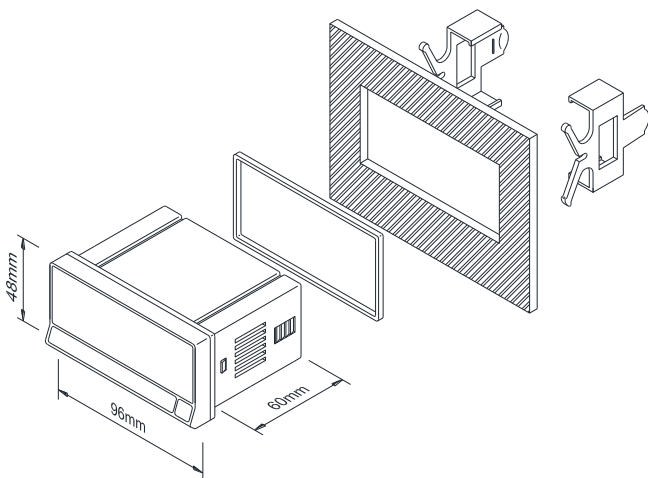
CONNECTIONS

Rear view

CN1	POWER SUPPLY	
1	V AC / V DC	
2	V AC / V DC	
CN5	**ETHERNET**	
PIN	NAME	DESCRIPTION
1	+Tx	+ Data transmission
2	-Tx	- Data transmission
3	+Rx	+ Data reception
4	N.C.	Not connected
5	N.C.	Not connected
6	-Rx	- Data reception
7	N.C	Not connected
8	N.C.	Not connected

ORDERING CODES

MICRA-NE: .... 85-265V AC 50/60Hz and 100-300V DC
MICRA-NE6: .... 22-53V AC 50/60Hz and 10.5-70V DC

TECHNICAL SPECIFICATIONS

SPECIAL FUNCTIONS
Return to factory configuration.
MAC adress visible in programm.

POWER SUPPLY
MICRA-NE: .... 80-265 V AC 50/60 Hz and 100-300 V DC
MICRA-NE6: .... 22-53 V DC 50/60 Hz and 10.5-70 V DC
Consumption (both models) 5W

FUSES (DIN 41661) (not included)
MICRA-NE: .... F0.5A / 250V
MICRA-NE6: .... F2A / 250V

DISPLAY
Type .... 5 digits 14mm, RED LED
Numeric display range .... -99999÷99999
Supported ASCII characters 74
Decimal point .... Configurable / automatic
LEDs 4
    Amber (permanent) .... Network linked
    Green (flashing) .... Network activity
    Red .... 2 for indications (depending on application)
Reading interval (as CLIENT) .... 0.1s to 9.9s (configurable)
Data absence indication .... "**- - - - -**"
Positive display overrange indication:
(in WORD and FLOAT modes) .... "**OUEr**"
Negative display overrange indication:
(in WORD and FLOAT modes) .... "**-OUEr**"

NET INTERFACE
Interface .... 10/100 BASE-T
Protocols .... ARP, MODBUS TCP/IP, ICMP
Connector RJ45

ENVIRONMENTAL CONDITIONS
Operating temperature .... -10ºC ÷ +60ºC
Storage temperature .... -25ºC ÷ +85ºC
Relative humidity (non-condensing) .... <95% @ 40ºC
Maximum altitude 2000m
Frontal protection degree IP65

TABLE OF SUPPORTED ASCII-HEXADECIMAL CHARACTERS

20 (space)	39 (9)	4C (L)	59 (Y)	69 (i)	76 (v)
2B (+)	3D (=)	4D (M)	5A (Z)	6A (j)	77 (w)
2D (-)	41 (A)	4E (n)	5B ([)	6B (k)	77 (w)
2E (.)	42 (B)	4F (O)	5D (])	6C (L)	79 (y)
30 (0)	43 (C)	50 (P)	5F (_)	6D (m)	7A (z)
31 (1)	44 (D)	51 (q)	61 (a)	6E (n)	7C (|)
32 (2)	45 (E)	52 (r)	62 (b)	6F (o)	DC (o)
33 (3)	46 (F)	53 (S)	63 (c)	70 (P)	DF (o)
34 (4)	47 (G)	54 (T)	64 (d)	71 (q)	F0 (≡)
35 (5)	48 (H)	55 (U)	65 (e)	72 (r)	
36 (6)	49 (I)	56 (U)	66 (f)	73 (S)	
37 (7)	4A (J)	57 (W)	67 (g)	74 (t)	
38 (8)	4B (H)	58 (H)	68 (h)	75 (u)	

OPERATION SAMPLES

"CLIENT" configuration

MICRA-NE → Request / ← Response → Visualizer

MICRA-NE → Request / ← Response → HMI device

"SERVER" configuration

PLC — HMI device — PC
Ethernet
MICRA-NE — MICRA-NE
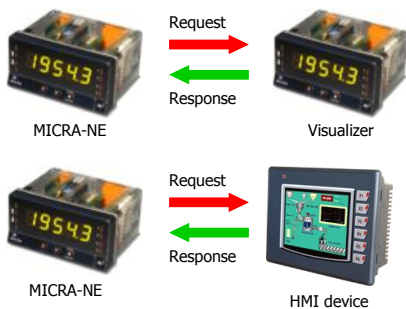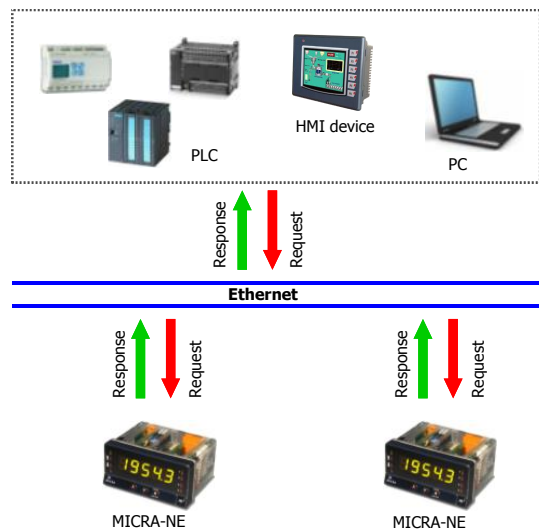
In "**CLIENT**" mode the MICRA-NE makes reading requests.
In "**SERVER**" mode, the MICRA-NE responds to write, read or force coil commands.

NOTE:
For direct connection between dispositives use crossover Ethernet cable.
For connection to a '*Hub*' or a '*Switch*' use standard Ethernet cable.