



VISUALIZED DIGITAL TIMER PAUSE / WORK

Type:
NHM52

THE INSTRUMENTS OF SERIES **NHM** ARE PAUSE / WORK DIGITAL TIMERS WIDE USABLE IN THE INDUSTRY FOR THEIR PROGRAMMABLE CHARACTERISTICS AND THE FLEXIBILITY OF THEIR EMPLOYMENT.

TIMER **NHM52** IS A CYCLICAL PAUSE / WORK THAT FINDS APPLICATION WHERE THERE IS THE NECESSITY TO EXECUTE CYCLES OF TWO ALTERNATED TIMINGS.

Bauform 72 x 72 mm



GENERAL CHARACTERISTICS

- Frontal keyboard in polycarbonate (antiscratch, antioil, antacid).
- IP65 protection degree
- Accessible parameters with key software
- Removable terminals connection.
- Execution DIN 72 x 72.
- Recessed assembly.
- Special retaining brackets.

PROGRAMMABLE PARAMETERS

- One Pause and one Work Set Point
- 4 Time Scales
- UP / DOWN Timing
- Memory
- Timing Start in Pause or in Work Mode
- START Input Selection
- Operating in Automatic or Single Cycle
- OUTPUT mode selection
- Cycles Predeterminator

DESCRIPTION OF THE OPERATION

In the Timer type **NHM** the choice of the scale time is valid for both the timing. Selecting the START departure in Pause or Work and the timing in UP or DOWN the instrument gets ready in order to work. In Automatic operation the timing begins to the input START closing. Between the two timings it is possible to execute a programmable intermediate time.

TECHNICAL CHARACTERISTICS

- | | |
|-------------------------------------|-----------------------------------------------------------|
| • POWER SUPPLY IN ALTERNATE CURRENT | : Single power 24 - 110 - 230 Vac (50 / 60 Hz). |
| • POWER SUPPLY IN DIRECT CURRENT | : Single power 24 Vdc |
| • POWER SUPPLY TOLERANCE | : +10% - 15%. |
| • ABSORPTION | : 2 W - 3 VA. |
| • OPERATING TEMPERATURE | : -5 °C + 55 °C. |
| • CLIMATIC CONDITIONS | : U.R. 95 % at 40 °C (without condensate). |
| • TIMING VISUALIZATION | : 5 digits, 14mm high |
| • TIMINGS SCALES | : 999h59m - 9h59m59s - 9m59s99c - 999s99c |
| • START INPUT | : programmable as Continuous; Impulsive, Start/Stop |
| • AUXILIARY INPUTS POWER SUPPLY | : 24 Vdc - 80 mA available on terminals. |
| • COMMAND INPUTS | : 1 Start - 1 Reset Timing - 1 Inhibit Timing (Inhibit). |
| • OUTPUTS | : 2 relays with operating contacts; capacity 2A - 250Vac. |
| • RELAY RESET | : manual |
| • PROGRAMMED DATA MEMORY | : static (without battery) |

DESCRIPTION OF THE FRONTAL KEYBOARD

 **YELLOW**

The key '**LEFT ARROW**' in normal operating phase visualizes, blinking, all the programmings executed without the limitation of the insertion code. The time of scansion of the programmings is given from the pressure of the same key. It exits automatically from this phase after 5 sec of the last pressure of the same key.
In programming phase it moves the cursor of the figure towards left of a step, than at the beginning it is on the right side first one on the. At the end it resumes from the first one to right.

 **YELLOW**

The key '**UP ARROW**' in normal operating phase it enter and exit to the Cycle Predeterminator.
In programming phase it increases the value of the blinking figure.

 **BLUE**

The key '**PRG**' pressed for 2 sec. allows to enter in the programming phase, visualizing on display C.0000.
In the programming phase, pressing key 'PRG' impulsively, it exits from the programming phase. The instrument exits automatically from the programming phase, 60 sec. after the pressure of the last key.

 **RED**

The key '**ENT/RES**' in normal phase of counting has the 'RESET' function, with the modalities to it attributed in the programming phase.
In programming phase it confirms and memorizes the visualized data and passes to the successive function. If it has arrived to list end it resumes from the beginning.

INPUTS / OUTPUTS DESCRIPTION

DC POWER SUPPLY
(inputs 7 - 8)

24VDC Power Supply Input of the instrument.

AC POWER SUPPLY
(inputs 5 - 6)

AC Power Supply Input of the instrument; it can be to 24 - 110 - 230 VAC in according to demand.

24 VDC – 80mA
(inputs 9 - 10)

24 VDC - 80 mA auxiliary Power Supply that the instrument supply to feed the Encoder and amplified proximity.

START
(inputs 11)

START Input that execute the timing starting as the programming mode; it's configurable in Positive (PNP) or Negative (NPN) logic by the dip switches on the rear.

RESET
(inputs 12)

RESET Input that execute the timing reset; it's configurable in Positive (PNP) or Negative (NPN) logic by the dip switches on the rear.

INHIBIT
(inputs 13)

INHIBIT Input that execute the timing Inhibit; it's configurable in Positive (PNP) or Negative (NPN) logic by the dip switches on the rear.

RL1
(inputs 1 - 2)

Output of Relay RL2, connected to the operation of the WORK timing. The Common, normally Close and normally Open contacts are available.

RL2
(inputs 3 - 4)

Output of Relay RL1, connected to the operation of the PAUSE timing. The Common, normally Close and normally Open contacts are available.

DESCRIPTION OF THE LED'S OPERATION

LED 1

It comes activated during the PAUSE timing.

LED 2

It comes activated during the WORK timing.

SET POINTS PROGRAMMING

For SET POINTS programming access, proceed as follow:

- Press key 'PRG' in impulsive mode; on display appears:

00020
P.

P. = Time of PAUSE, programmable between 1 cent of second and 999h59m (depending on the programmed scale). If programmed = 0 it automatically reprograms itself to 1 sec.

00020
L.

L. = Time of WORK, programmable between 1 cent of second and 999h59m (depending on the programmed scale). If programmed = 0 it automatically reprograms itself to 1 sec.

Key **ENT** confirms the data and passes to the successive programming. In order to exit the programming, press key **PRG**.

PROGRAMMING OF THE OPERATION PARAMETERS

The programmable parameters are divided in two groups and protect with a 4 figures code.

In order to approach the programming, proceed in the following way:

- Press key **PRG** for about 2 sec. On the display appears:

C. 0000

GROUP 1 : insert code **2357** and press **ENT**.

t. 99.9

t.i. = Intermediate Time, programmable between 0.0 and 99.9 sec. This time comes executed, if programmed various from 0, between the PAUSE time and the WORK time). During the execution of this time the output is not active.

SCL. 1

SCL. = Time Scale. Selection of the maximum time scale of the timing. It's possible to choose between 4 different time scales:

1 = 9m59s99c - 2 = 9h59m59s - 3 = 999h59m - 4 = 999s99c

Cn UP
Cn dn

Count UP / DOWN / Superior.

Count = Up: the timer gets ready to visualize the timing in increasing way (UP), starting from zero up to the programmed value of set point.

Count = dn: the timer gets ready to visualize the timing in decreasing way (DOWN), starting from the programmed value of set point to zero.

Str. P.
Str. L.

Start in PAUSE or in WORK mode.

Str. = P. : the cycle starts executing the PAUSE time

Str. = L. : the cycle starts executing the WORK time

PROGRAMMAZIONE DEI PARAMETRI DI FUNZIONAMENTO

The programmable parameters are divided in two groups and protect with a 4 figures code.


In order to approach the programming, proceed in the following way:

- Press key **PRG** for about 2 sec. On the display appears:

C. 0000

GROUP 3 : insert code **3210** and press **ENT**.

9999
c.

c. = CYCLES PREDETERMINATOR, programmable between 0 and 9999; with this parameter is possible to program how many cycles of PAUSE/WORK the instrument must execute. At the end of the cycles number, the sequence comes interrupt. To restart the sequence it is necessary to reset the predeterminator. If the value is programmed = 0 the function is excluded and the sequence goes to infinite. Pressing the  key the display shows the decreasing value of the predeterminator; pressing another time the key the display shows the current timing.

PROGRAMMING OF THE OPERATION PARAMETERS

The programmable parameters are divided in two groups and protect with a 4 figures code.

In order to approach the programming, proceed in the following way:

- Press key **PRG** for about 2 sec. On the display appears:

C. 0000

GRUPPO 2 : insert code **2413** and press **ENT**.

MEM.on

MEM.of

Active or excluded memory.

This parameter allows to program the saving of the current counter value during the power off the instrument.

MEM.on. = memorization of the count during the power off. When power on the instrument the display will visualize the last present value in the power off phase.

MEM.of. = excluded memorization of the count; every time that the instrument comes powered off and then powered on the count comes lost and the instrument restart always from the initial condition.

RES.on

RES.of

RESET Key ON / OFF; this programming enables and disables the RESET function of frontal key RES during the operation of the timing.

RES.on = RESET function of key RES **enabled**

RES.of. = RESET function of key RES **disabled**

In C.

In I.

In S.

Programming of the START Input.

This programming allows to Start the timing in three different modes:

In. I. = Impulsive Mode; the timing starts with the impulsive closing of the START input.

In. C. = Continuously Mode; the timing starts with the closing of the START input; the timing is interrupted every time the START input comes opened.

In. S. = Start/Stop Mode; the timing starts with the impulsive closing of the START input and it stops to the subsequent closing. Closing another time the input the timing resume and it stops to the subsequent closing.

CYL. A.

CYL. U.

Programming of the PAUSE/WORK Cycle in Automatic or Single mode

This parameter allows to program the execution of the PAUSE/WORK Cycle in Continuous mode (AUTOMATIC) or in Single mode (UNIQUE). With the AUTOMATIC programming the cycle goes to infinite (or for many cycles how many have been programmed with the programming under code 3210); with the Single programming (UNIQUE) the cycle is executed one time only and restart after a reset.

CYL. A. = execution of the cycle timing in continuous mode.

CYL. U. = execution of the cycle timing one time only.

Ou.P.

Ou.P.

Programming of the OUTPUT RL1. This parameter allows to activate the RL1 relay during the timing or at the end of the timing.

Ou.P. = Activation of the RL1 relay during the timing

Ou.P. = Activation of the RL1 relay at the end of the timing

AP. P.

AP. r.

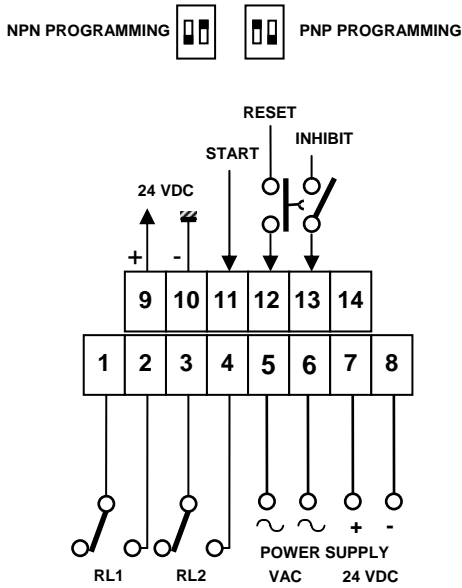
Activation mode of the programmed parameters.

With this programming is possible to activate the executed programmings directly to the exit of the programming or, when exited of the programming, after a RESET (with frontal key or from rear input)

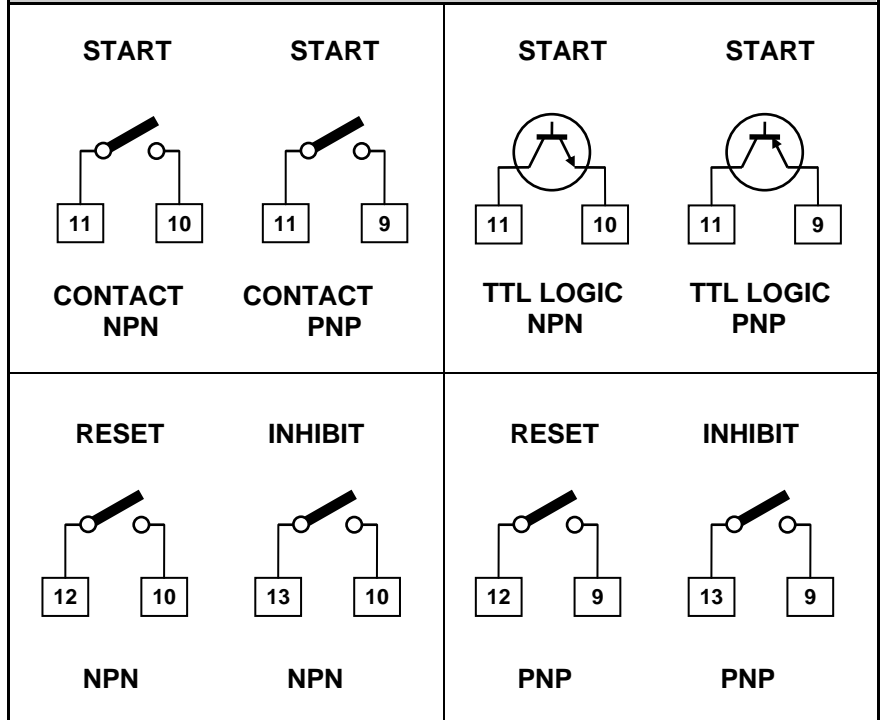
A.P. = P. Activation of the parameters to the exit of the programming.

A.P. = r. Activation of the parameters to the exit of the programming after a RESET.

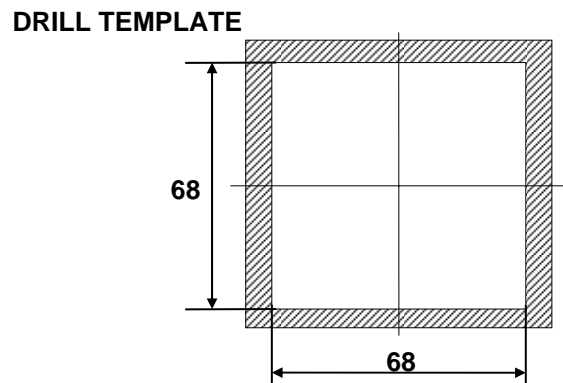
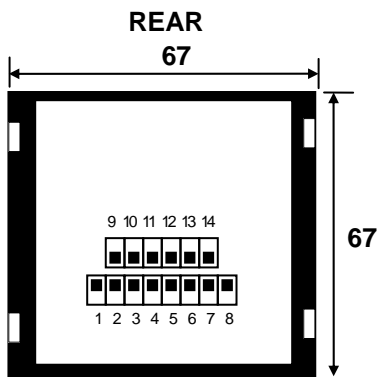
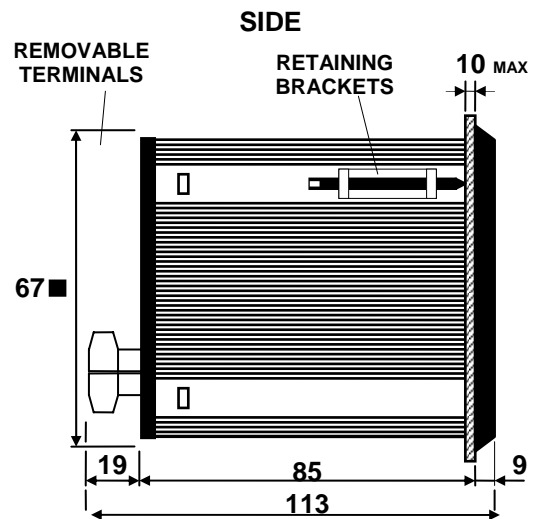
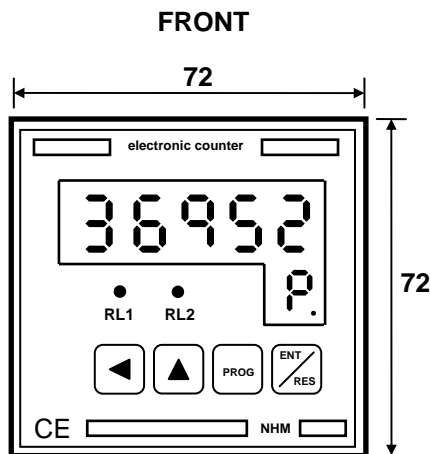
CONNECTIONS



INPUT SIGNALS



OVERALL DIMENSIONS



ACS Control System GmbH
 Lauterbachstr. 57 1/2
 84307 Eggenfelden - Germany
 Tel : ++49 8721 9668-0
 Fax : ++49 8721 9668-30
<http://www.acs-controlsystem.de>

