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# HERMETICALY SEALED RELAYS FOR AUTOMOTIVE AND RAILWAYS APPLICATIONS

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# HERMETICALLY SEALED TIME DELAY RELAYS ON OPERATE AND ON RELEASE

| DESIGNATION TYPE | DESCRIPTION | APPLICABLE STANDARD |
|---|---|---|
| TERS | TIME DELAY RELAY | NF 62 003 |
| THLAO<br>THM<br>THLOR | TIME DELAY RELAY<br>TIME DELAY RELAY<br>TIME DELAY RELAY | NF 62 003<br>NF 62 003<br>NF 62 003 |
| TETP | TIME DELAY RELAY | |




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# SUMMARY

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# TIME DELAY RELAY

SERIES
TETP

## GENERAL CHARACTERISTICS

This serie of timer in hermetically sealed metal can,for rugged environmental conditions, is specifically designed to the supply voltage in use for rail applications.

It include different type of operations,time delay on operate, on release, fixed time or adjustable by means of resistor or build in potentiometer.

| | |
|---|---|
| Size (mm) | : 25,8 x 25,8 x 25,7 max |
| Mass | : 50 g max |
| Timing range | : 100 ms to 1 800 s |
| Finish | : Tin plated |
| Mating socket | : SRETP 40X for mounting styles 2, 10<br>STF 410 for mounting styles keying system |

## OPERATING CONDITIONS

Input characteristics

| | |
|---|---|
| Supply voltage | : see HOW TO SPECIFY page 81 |
| Supply current | : < 5 mA à 110 Vdc |
| Control voltage | : Maximum supply voltage during 20 ms min. |
| Recycle time | : 100 ms mini |

Output characteristics

| | |
|---|---|
| Load current | : see HOW TO SPECIFY page 81 |
| Current limitation | : I max + 10% |
| Accuracy | : see HOW TO SPECIFY page 81 |

Protections

Against bounces time power on + V power
Against power supply polarity reversal

| | | |
|---|---|---|
| Against power | : < 10 ms | |
| Against voltage transient : | 700 v | 10 / 5 000 µs |
| | 1 500 V | 0,1 / 50 µs |

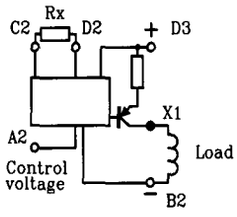
## ENVIRONMENTAL CONDITIONS

| | |
|---|---|
| Temperature range | : see HOW TO SPECIFY page 81 |
| Dielectric strenght | |
| Between all contacts and case | : 1 000 V rms |
| Insulation resistance | : > 1 000 Mégohm 500 Vdc |
| Vibrations all axis | : 20 g 50 to 3 000 Hz |
| ( only mounting styles 2, 3 to 10 ) | |
| Shocks | : 100 g 11 ms |
| Hermeticity | : in accordance NFC 20 717<br>Test QC method 2 |

## FUNCTION

When the timer is connected as shown in functional drawing.
It switches the load current as in the timing diagrams.

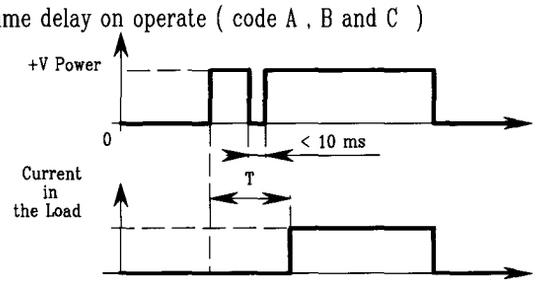
## FUNCTIONAL DRAWING



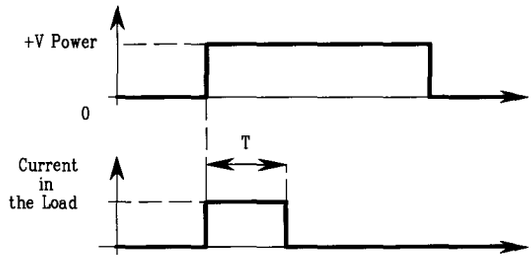

Output 4,6 and 8

## TIMING DIAGRAMS

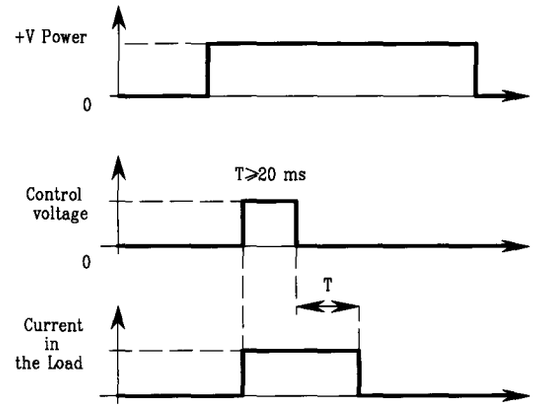
-Time delay on operate ( code A , B and C )



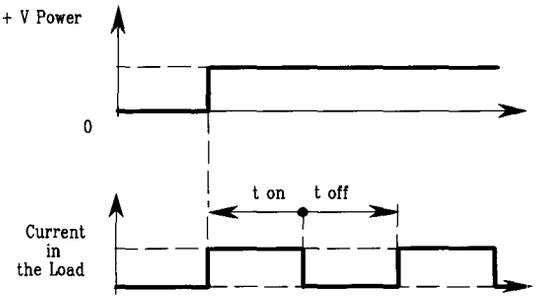

-Time delay on release ( code D and E )




-Time delay on release with positive control ( code J, L and M )




-Repeat cycle ( code R )







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## HOW TO SPECIFY

T E T P 6 * **** * * * * *

Time delay

Output

| | OUTPUT |
|---|---|
| 2 | Load connected to 0 V Power and Output<br>Current in load Is = 250 mA<br>Supply voltage 17 to 33 V |
| 4 | Load connected to 0 V Power and Output<br>Current in load Is = 150 mA<br>Supply voltage 25 to 45 V |
| 5 | Load connected to 0 V Power and Output<br>Current in load Is = 100 mA<br>Supply voltage 32 to 60 V |
| 6 | Load connected to 0 V Power and Output<br>Current in load Is = 50 mA<br>Supply voltage 77 to 137 V |
| 8 | Load connected to 0 V Power and Output<br>Current in load Is = 100 mA<br>Supply voltage 50 to 90 V |

Key 1 Key 2 Key 3
only for code T
see page 83

Mounting style and Header type
see page 82 and 83

| CODE | MOUNTING | HEADER |
|---|---|---|
| A | 1 | E |
| B | 2 | B |
| F | 2 | A |
| G | 3 | A |
| K | 10 | B |
| T | 18 | B |
| U | 25 | B |

Type of operation

A : Fixed time on operate
B : Adjustable with externale resistor on operate , ratio 10
C : Adjustable with externale potentiometer on operate , ratio 10
D : Fixed time on release
E : Adjustable with externale resistor on release, ratio 10
J : Fixed time on release with positive control
L : Adjustable with external resistor on release with positive control , ratio 10
M : Adjustable with external potentiometer on release with positive control , ratio 10
R : Repeat cycle , t on/t off=1

External resistor determination

$$Rx = 10\ K\left(\frac{\text{required time}}{\text{minimum time}} - 1\right)$$

$$\text{Minimum time} = \frac{\text{maximum time defined in the time code}}{10}$$

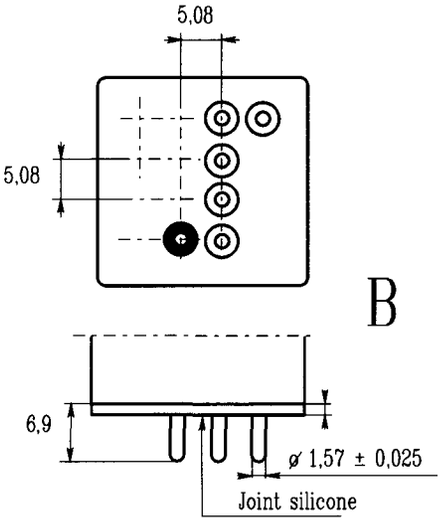
Accuracy and temperature range

| CODE NUMBER | ACCURACY | TEMPERATURE RANGE |
|---|---|---|
| A | ± 10% | - 20 °C to + 70 °C |
| B | ± 10% | - 40 °C to + 85 °C |
| D | ± 5% | - 20 °C to + 70 °C |
| E | ± 5% | - 40 °C to + 85 °C |

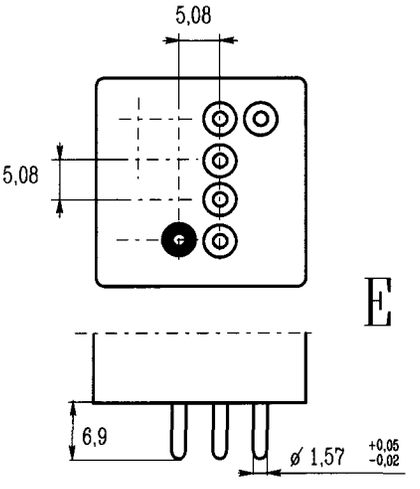
Time code

Four coded digits with the following meaning
-first three digits, base time in millisecondes
-last digit, number of zéro to add time
ex : 300 ms : code 3000
3 s : code 3001

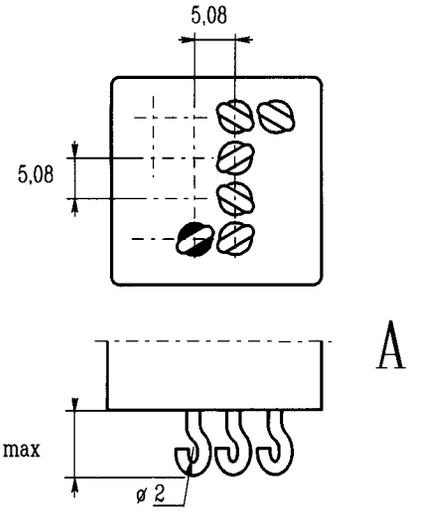
## HEADER TERMINAL STYLES




GOLD PLATED PINS
PLUG-IN ON SOCKET



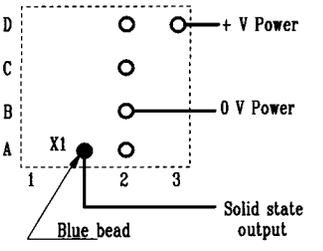

TINED TERMINAL
PCB mounting



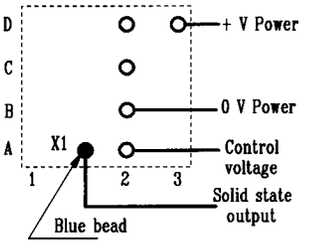

SOLDER HOOKS

All header terminal styles use the six terminals pattern

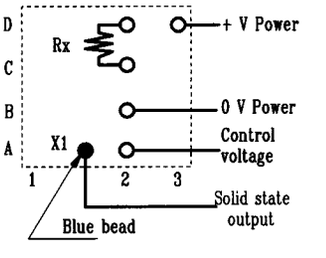
## CIRCUIT DIAGRAM
terminal view




FIXED TIME
or with potentiometer

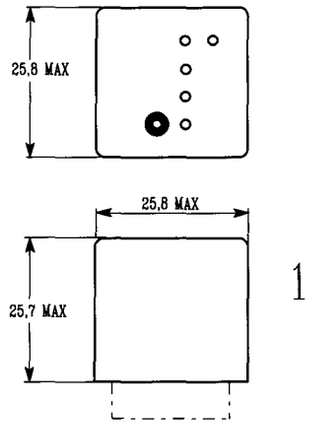



FIXED TIME
or with potentiometer

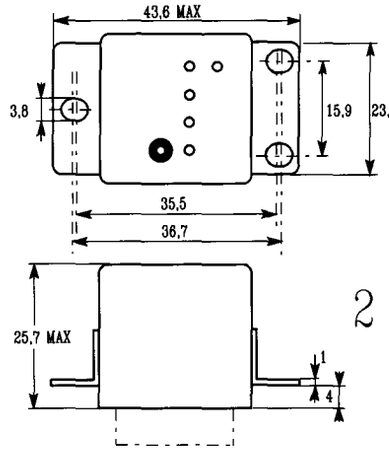



ADJUTABLE
WITH EXTERNAL RESISTOR

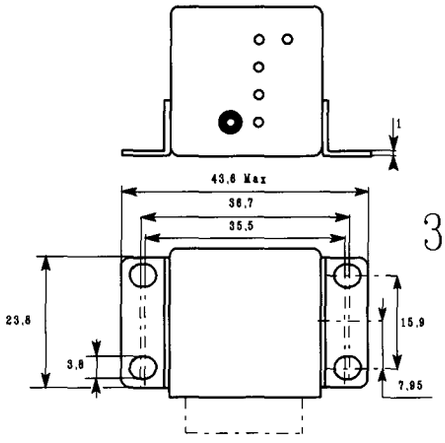
## MOUNTING STYLES



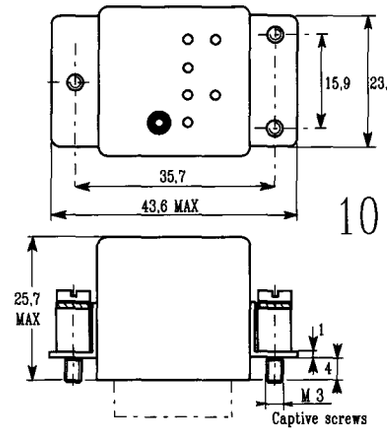

1




2

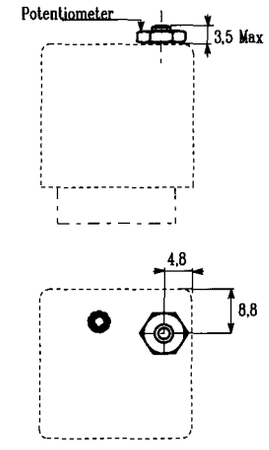


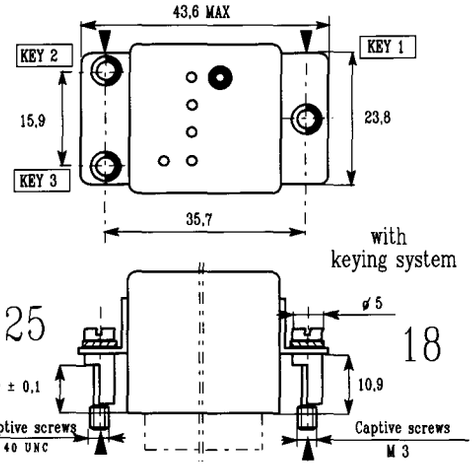

3

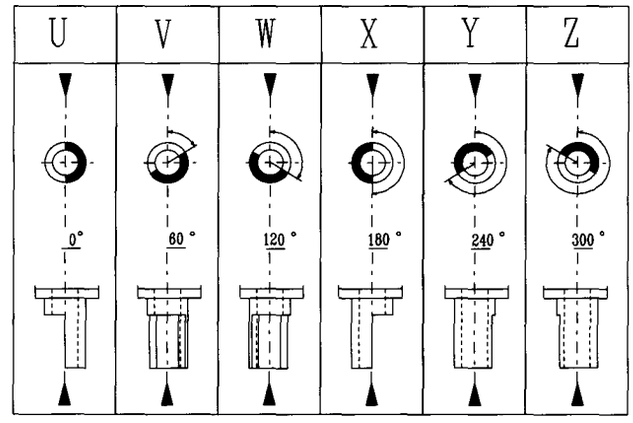



10

Potentiometer location for all mounting styles




Coupling torque 0,45 m.N

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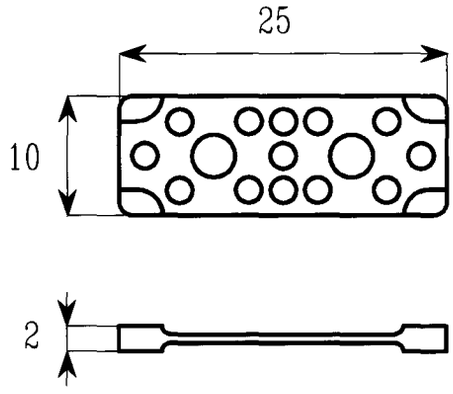
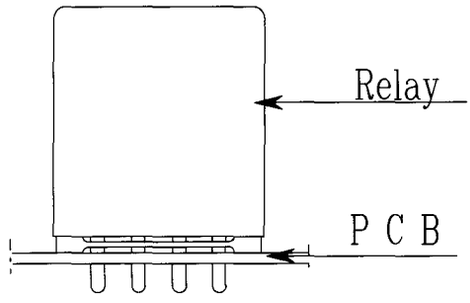
# MOUNTING PAD FOR PRINTED CIRCUIT BOARD

MOUNTING PAD
564 2204




This mounting pad is designed to assist cleaning and soldering relays mounted on PCB.

For use with terminal styles E , H, J or K

- 1 mounting pad for 2 pole relays
- 2 mounting pads for 4 pole relays
- 3 mounting pads for 6 pole relays

Temperature rating : continuous −65° C to +125° C

short term 270° C during 30 s





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