DISIBEINT

# PHBA
# DHBA

## TACHOMETER RELAY

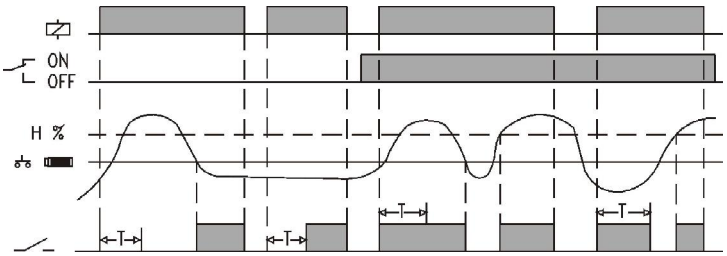
| | |
|---|---|
| Field of application | Control of the minimum revolutions in motors, turbines, etc. Special for very low revolutions. |
| Measurement | Revolutions per minute (RPM) |
| Operating principle | **Passive monitoring -** Selector " " in position OFF. When the supply voltage is connected starts the time pre-set in the TIME button. Once the time has elapsed, if the RPM do not exceed the pre-set value in the RPMxSCALE button, the relay operates instantaneously and does not release until the RMP exceeds in 8% of the pre-set value. When RPM descends below the pre-set value, the relay operates and does not release until the RPM exceeds in 8% the pre-set value.<br><br>**Active monitoring -** Selector " " in position ON. When the supply voltage is connected the relay operates instantaneously and starts the time pre-set in the TIME button. Once the time has elapsed, if the RPM do not exceed the value pre-set in the RPMxSCALE button, the relay releases and does not operate until the RPM exceed in 8% the pre-set value. On the contrary, if when the initial time has elapsed the RPM exceed the pre-set value, the relay remains operated. When RPM descends below the pre-set value, the relay releases and does not operate until the RPM exceeds in 8% the pre-set value. |
| Reversing contacts | By means of a switch placed in the front ( ) |
| Leds indication | Power on: Green / Input pulse: Yellow / Relay on: Red |
| Hysteresis | 8%, fix. |
| Detection time | It is the interval between two consecutive pulses. |
| Minimum pulse | 2 ms |
| Timing | Adjustable from 0,5 to 10 s. It operates only when applying the supply voltage. |
| Time regulation | Fix input voltage of 24 VAC/DC (terminals 11-9 in PHBA and A3-A4 in DHBA).<br>Standard input voltage of 230V. For other AC voltages, see the table 'Reference'. |

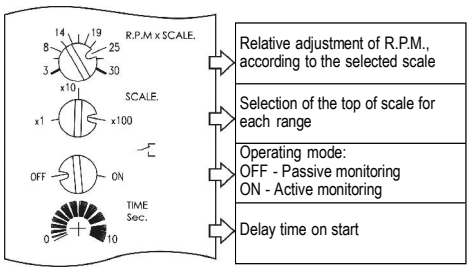
**Reference**

| HOUSING | | FUNCTION | | OUTPUT | | VOLTAGE | | RANGES | |
|---|---|---|---|---|---|---|---|---|---|
| P | Plug-in | H B | Tachometer relay | A | SPDT | 024 | 24 VAC | 3K | 3..30 rpm |
| D | DIN rail | | | | | 048 | 24 VAC | | 30..300 rpm |
| | | | | | | 110 | 110..125 VAC | | 300..3000 rpm |
| | | | | | | 230 | 220..240 VAC | | |

To compose the reference, select one option of each column. Example: **PHBA 024 3K**

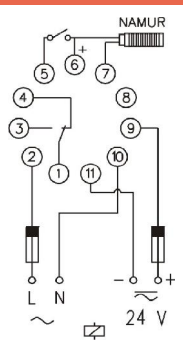
**Operating diagram**



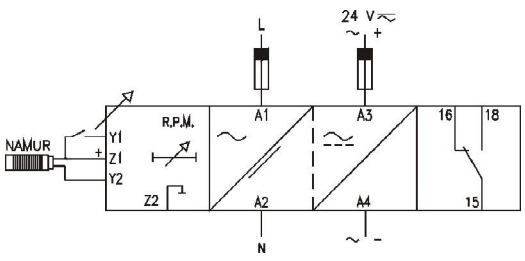




**Connection diagram**

PHBA



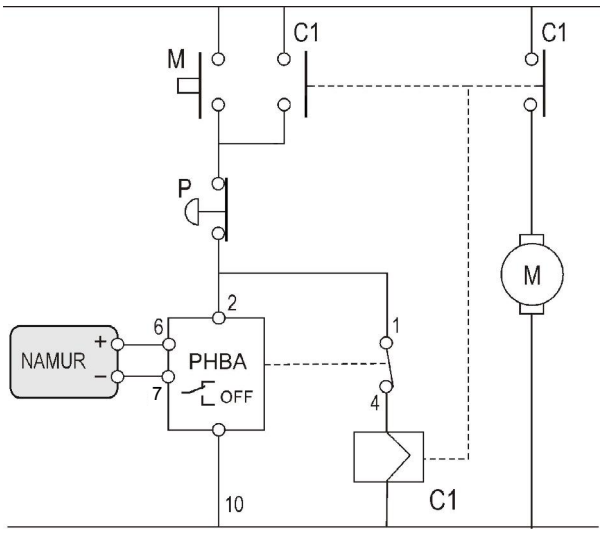

DHBA



Connection exemples

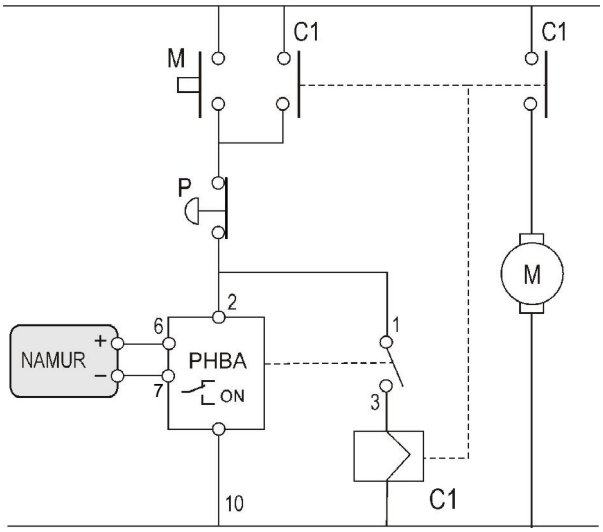
## Passive monitoring

The selector for reversing relay ( ) must be in OFF position

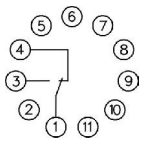
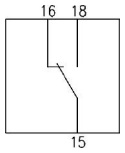



## Active monitoring

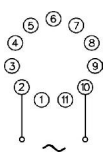
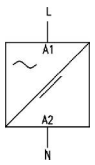
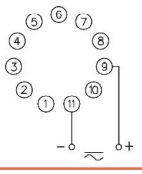
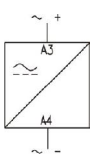
The selector for reversing relay ( ) must be in ON position



## Output relays

| | | PHBA | DHBA |
|---|---|---|---|
| | |  |  |
| Resistive load | AC | 10 A / 250 V | 10 A / 250 V |
| | DC | 0,4 A / 200 V | 0,4 A / 200 V |
| | | 10 A / 24 V | 10 A / 24 V |
| Inductive load | AC | 5 A / 250 V | 5 A / 250 V |
| | DC | 5 A / 24 V | 5 A / 24 V |
| Mechanical life | | > 30 x $10^6$ operations | > 30 x $10^6$ operations |
| Max. switching rate, mech. | | 72.000 operations / hour | 72.000 operations / hour |
| Electrical life at full load | | 360 operations / hour | 360 operations / hour |
| Contact material | | AgNi 90/10 | AgNi 90/10 |
| Maximum voltage | | 440 VAC | 440 VAC |
| Operating voltage | | 250 VAC | 250 VAC |
| Volt. between changeovers | | 2500 VAC | 2500 VAC |
| Voltage between contacts | | 1000 VAC | 1000 VAC |
| Voltage coil/contact | | 5000 VAC | 5000 VAC |
| Distance coil/contact | | 10 mm | 10 mm |
| Isolation resistance | | > $10^4$ MΩ | > $10^4$ MΩ |

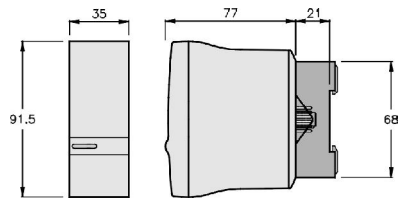
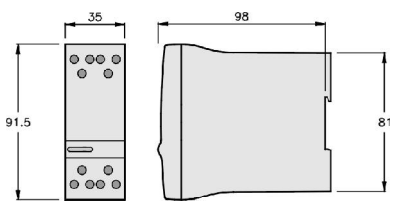
## Supply

| | AC | | ACDC | |
|---|---|---|---|---|
| | PHBA | DHBA | PHBA | DHBA |
| |  |  |  |  |
| Galvanic isolation | Yes | | No | |
| Frequency | 50 / 60 Hz | | - | |
| Operating margins | ±10% -15% | | ±10% | |
| Positive | - | | Terminal 2 | Terminal A1 |
| Protected polarity | - | | Yes | |

## Constructive and anviromental data

| | PHBA | DHBA |
|---|---|---|
| Voltage phase-neutral | 300 V | 300 V |
| Overvoltage category | III | III |
| Rated impulse voltage | 4 kV | 4 kV |
| Pollution degree | 2 | 3 |
| Protection | IP 20 B | IP 20 |
| Approximate weight | 250 g | 280 g |
| Storage temperature | -50ºC +85ºC | -50ºC +85ºC |
| Operating temperature | -20ºC +50ºC | -20ºC +50ºC |
| Humidity | 30~85% HR | 30~85% HR |
| Housing | Cycoloy - Light grey | Cycoloy - Light grey |
| Socket | Lexan - Light grey | - |
| Leds cover | Lexan - Transparent | Lexan - Transparent |
| Button, terminal block, clip | Technyl - Dark blue | Technyl - Dark blue |
| Pins of the socket | Nickel-plated brass | - |
| Pins of the terminal block | - | Brass |
| Approvals | Designed and manufactured under EEC standards.<br>Electromagnetic compatibility , directives 89/366/EEC and 92/31/EEC.<br>Electric safety, directive 73/23/EEC.<br>Plastics: UL 91 V0 | |

## Dimensions

| PHBA | DHBA |
|---|---|
|  |  |



DISIBEINT ELECTRONIC SL
Segle XX, 91
E08032-Barcelona
T: +34 934 330 370
F: +34 934 354 532
www.disibeint.com
disibeint@disibeint.com