### SVH

## CONTROL AND VISUALIZATION OF VOLTAGE AND FREQUENCY IN AC SINGLE PHASE LINES

**Function**
Voltage relay for single phase lines in AC. Powered by its own supply voltage, it makes the control of the voltage, the frequency and the DC voltage component on the line.

**Operating mode**
Configurable by the user. Each one of the available relays it is assigned with its own operating mode for one or more magnitudes, reacting by the first one which is produced.

**Voltage control**
- Operating margin: ±18% of the nominal voltage.
- Operativity by maximum and/or minimum voltage. At each case, adjustment for detection and/or for release.
- Reading value RMS

**Frequency control**
- Adjustable from 43.70 Hz.
- Operativity by maximum and/or minimum frequency. At each case, adjustment for detection and/or for release.
- If the frequency changes in such a value that the relay loose the required precision for a normal operating mode, it switches to the alarm mode (See page 3 for detailed information).

**DC component control**
- Adjustable from 0..3 VCC.
- Operativity by maximum DC component. Adjustment for detection and/or for release.

**Timing**
- Associable to the detection and/or to the release of whichever relay.
- Adjustable from 0,01s...999,9h
- Repeating precision ±30 ppm

**Repeating precision**
Up to 48 VCA: 0,01 V
From 125 VCA: 0,1 V

**Voltage precision**
Taken over the read value:
A 50 Hz: 0,7 % - A 60 Hz: 0,8%

**Frequency precision**
Taken over the read value: 0,3%

**Display of the reading value**
The value of the read magnitudes is displayed by means of the following status screen:
- VOLTAGE: Voltage in the line (VAC)
- FREQUENCY: Frequency in the line (Hz)
- DC COMPONENT: Component of the DC voltage in the line (VDC)

**Output relay**
From 1..3 independent relays, SPST NO. By default, we supply three relays.

**Output 4-20 mA**
It is assigned to whichever of the measured magnitudes (voltage, frequency, DC component) to be transmitted through a 4-20 mA current loop, being able to coexist with the relays. Precision: 1% additional to the read value.
This kind of output is optional.

**PC communication**
It is possible to establish different types of communication with a computer (see also last page):
- By telephonic connector that incorporates standard device and CPBZ programming interface.
- By a RS232 connection (optional).
- By a RS2485 connection and SBAZ converter (optional).

**Range**
[8500] 8..500 VAC

**Supply voltage**
[024] 24 VAC
[110] 110..125 VAC
[230] 220..240 VAC
[400] 380..415 VAC

### Communication (According options)

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>RS232</th>
<th>RS485</th>
<th>4-20 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>Code 0</td>
<td>Code 3</td>
<td>Code 8</td>
<td>Code 4</td>
</tr>
</tbody>
</table>

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**Connection diagram**

![Connection diagram](image)
### Constructive and environmental data

**Output relays**
- Resitive load: AC 6 A / 240 V
- Inductive load: AC 3 A / 240 V
- Mechanical life: > 10^6 oper.
- Max. mech. operations: 18,000 operations / hour
- Electric life at full load: 360 operations / hour
- Contact material: AgSnO Alloy
- Operating voltage: 240 VCA (85 °C)
- Voltage between contacts: 1000 VAC
- Voltage coil/contact: 4000 VAC
- Isolation resistance: > 100 MΩ (500 VDC)
- Indication: 1 red led per relay

**Supply voltage**
- Galvanic isolation: Yes
- Frequency: 43.70 Hz
- Operating margins: ±18%
- Consumption: 2.5 VA
- Start-up time: 100 ms
- Detection time: 25 ms
- Reset: 1 network cycle or -30% of the nominal voltage
- Indication: Green led

**Other data**
- Voltage phase-neutral: 300 V
- Overvoltage category: III
- Shock voltage: 4 kV
- Pollution degree: 2 (EN61010)
- Protection: IP 20
- Approx. weight: 280 g
- Store temperature: -30..+80°C
- Operating temperature: -20..+50°C
- Humidity: < 95% HR
- Leds window: Cycoloy - Light grey
- Housing: Lexan - Transparent
- Connector's terminals: Brass
- Screws torque: 0.8 Nm
- Options selection
- Screens selection
- Change of values
- Text edition
- Validation
- Signaling of the supply voltage and status of the relays

**Device parts**
- Supply voltage input
- LCD screen
- Contacts of the relays
- Connector communication (under)

### Dimensions

**Order code**
- SVH

<table>
<thead>
<tr>
<th>Control - Interface</th>
<th>Number of relays</th>
<th>Type of relays</th>
<th>Communication</th>
<th>Version</th>
<th>Supply</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 - With display</td>
<td></td>
<td></td>
<td></td>
<td>0 - No relay</td>
<td>4 - No bus</td>
<td>[024] 24 VAC [110] 110..125 VAC [230] 220..240 VAC [400] 380..415 VAC [8500] 8..500 VAC</td>
</tr>
<tr>
<td>0 - No relays</td>
<td></td>
<td></td>
<td></td>
<td>0 - No relay</td>
<td>4 - No bus</td>
<td>[024] 24 VAC [110] 110..125 VAC [230] 220..240 VAC [400] 380..415 VAC [8500] 8..500 VAC</td>
</tr>
<tr>
<td>3 - 3 relays</td>
<td></td>
<td></td>
<td></td>
<td>A - SPST NO</td>
<td>3 - RS232</td>
<td>(By default, 3)</td>
</tr>
<tr>
<td>Q - Without display</td>
<td></td>
<td></td>
<td></td>
<td>0 - No relay</td>
<td>4 - No bus</td>
<td>(By default, 1)</td>
</tr>
<tr>
<td>U - Without display</td>
<td></td>
<td></td>
<td></td>
<td>3 - RS485</td>
<td>8 - RS485</td>
<td>(By default, 0)</td>
</tr>
</tbody>
</table>

To compose a reference, select one option of each one of the columns. Example: SVH9 3A800 400
For a wide knowledge of the options offered by the digital control relays, the own User’s Manual for each model must be read. Although an issue is given with every purchased device, a copy can be downloaded in our web site (www.disibeint.com).

The digital control relays can be indistinctly programmed either with the buttons placed in the front of the housing or with a personal computer. Please refer at the end of this page to learn more about the PC programming alternative.

Status: They show the actual values of the magnitudes controlled by the relay.
User: Where the user can write a customized text to help to the relay identification.
Options: For accessing to the menus for the options selection.
Informatives for values: They show the information of the different set parameters.
Change of value: For modifying the values of the different values.

Status: They show the actual values of the magnitudes controlled by the relay.
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Change of value: For modifying the values of the different values.

For an ease programming, into the menus only the options that can be set are the ones visible. The rest of the options are not visible. This feature is interactive, ie., it is produced automatically according whether other functions are activated or not.

The screens for changing the values contain the margins between such value can be adjusted. These margins can depend of other options and this is because different margins could be displayed according to other previous relations.

Provided by factory two programs with options and pre-configured settings for quick start-up team. In most cases, these parameters should be tweaked to suit the characteristics of each installation. The user can create your own program and store it on your computer.

The display remains backlit while it is accessed to the different screens. If any button is not pressed for longer than 30 seconds, the light turns off.

In order to turn the light on, it is enough to press any button only once.

Four languages available in each relay
- Graphic bar for the intuitive visualization of the displayed value
- Historical control of the maximum values obtained by the relay
- Screen’s refresh selectable between 1 and 8 times per second
- Possibility of locking the keyboard to avoid any undesired modification
- Complementary timing functions

This option affects to those relays with any voltage parameter activated. By default, this option is activated. Inhibits the activation of the relay in the state of alarm when the frequency is deviated in ± 0,4 Hz during the detection process, and of ± 0,3 Hz during the release process.

For this kind of deviation in the frequency, the operating precision is reduced. More the frequency in the net is deviated, worse precision when reading its voltage.

If this option is deactivated, you must remember that the reading precision of the voltage parameters decrease when the frequency gets deviations from its nominal values (50 Hz / 60 Hz). You must consider this reduction of precision when setting the values for detection and/or release.

- Communication and programming software for the digital control relays.
- It allows the interactivity between the different types of communication: through the CBPZ interface, RS232 or RS485.
- It displays the complete data related to the relay, grouped by concepts and easing the intuitive programming.
- It has control tools to do not exceed the operating margins of each model according to its range.
- It is provided with templates to facilitate the programming of each model.
- It allows to store the own settings.

Windows XP operative system (.NET Framework required).
### Interface for remote programming from a PC.
It allows the connection of whichever standard digital relay not provided neither with communication bus nor with 4-20mA output, to a PC through the RS232 port.

### RS485 to RS232 signal converter for the remote programming or for the data capture and visualization from a PC.
It allows the connection of up to 31 digital control relays provided with RS485 communication bus, to get a unique codified RS232 output.

### ACCESSORIES
- CBPZ
- SBAZ

### OUTPUT COMMUNICATIONS

**STAND AND MODE**
- RS232 COMMUNICATION
- RS485 COMMUNICATION

**REMOTE PROGRAMMING FROM PC**

**CURRENT LOOP 4-20mA**

**OUTPUTS COMMUNICATIONS**

- Supply voltage: 12..30 VDC
- Disibeint not supply cables or connectors. You can find these products in stores specializing in computer equipment.

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