DISIBEINT

SVO9 1B001 904

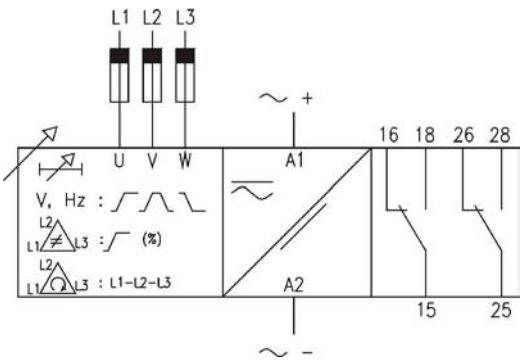
CONTROL AND MONITORING OF VOLTAGE, PHASE AND FREQUENCY IN THREE-PHASE LINES WITHOUT NEUTRAL

Function	Voltage relay for three phase without neutral lines. Control of an auxiliary voltage.
Operating mode	Low voltage detection, phase shift and phase sequence. The factory settings are framed in the left column. Further possible configuration by the user.
Voltage control -20% +2%	· Operating margin: 312..490 VAC. · Operation by undervoltage between phases. Separate display L1-L2, L1-L3 and L2-L3. In each case, adjustment to the detection and / or replacement. · Possible maximum control. Configurable. · RMS read value.
Control of phase cycle Act	Is detected only when starts up the equipment or when the phase voltage is applied.
Control of unbalance between phases 15,0% det 13,0% rep	· Adjustable between 0 and 100%. · Unique adjust for all phases.
Control of frequency Desact	· Option disabled by factory · Possible control by maximum and/or minimum. Configurable · Adjustable to 43..70 Hz. · If the frequency varies by a magnitude that the team loses the precision required for a normal working mode, it switches to alarm mode (See page 4 for more information). State of relay contacts.
State of relay contacts	ATTENTION: This option modifies the state of the relay, so it could have undesirable effects if you have any device connected to the relay contacts.
Timer 1,5s det 2,5s rep	· Adjustable to 0,01s..999,9h · Repeatibility ±30 ppm
Voltage precision	· For L1-L3 and L2-L3: A 50Hz: 0,8% · A 60Hz: 1,0% to read. · For L1-L2: A 50Hz: 0,9% · A 60Hz: 1,1% to read.
Frequency precision	0,3% to read.
Display to read value	EThe value of the magnitudes read is displayed using the following status displays: · VOLTAGE L1-L3: Voltage between L1 and L3 · VOLTAGE L2-L3: Tensión between L2 and L3 · VOLTAGE L1-L2: Tensión between L1 and L2 · FREQUENCY: Frequency of the network · ǂ |Li-Lj|: Unbalance between phases · PHASE CYCLE: Phase sequence
Output relay	1 DPDT (double commuted).
Output 4-20 mA (OPTIONAL)	Is assigned to any of the measured variables (voltage L1-L2, L2-L3 voltage, L1-L3 voltage, frequency, unbalance between phases) to be transmitted via a 4-20 mA current loop. Can coexist with the relays. Precision: 1% additional to read value.
PC communication	Its possible establish different types of communication with a computer (see last page): - By telephone connector that incorporates the standard equipment and the programming interface CPBZ.
Supply	[904] 60..240 VDC/VAC

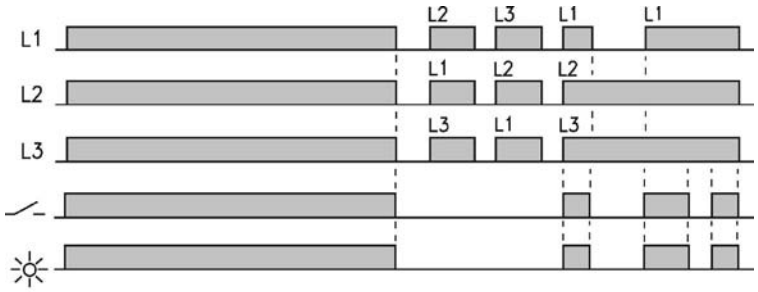
Range

Code	-18%	Nominal	+18%
[115]	90,20	110..125	147,50
[230]	180,40	220..240	283,20
[400]	311,60	380..415	489,70

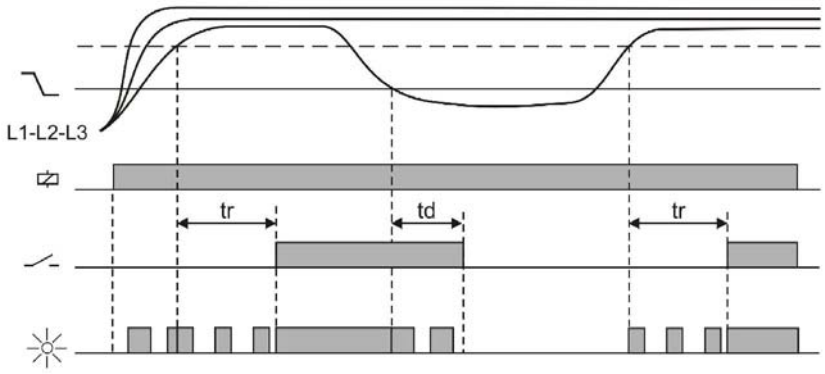
Connection diagram



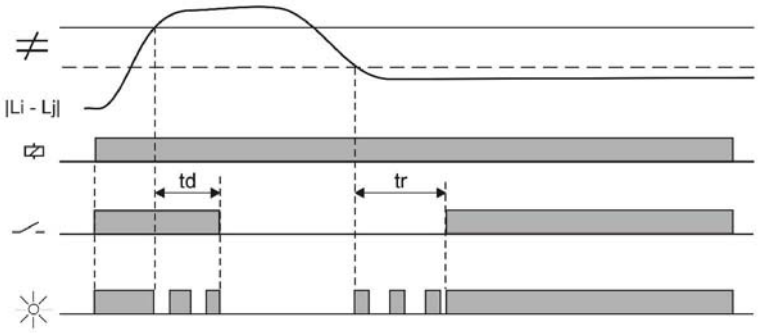
Phase sequence



Control of the voltage among phases



Unbalance among phases and between phase and neutral



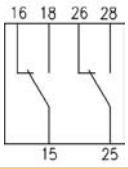
td = Delay on detection // **tr** = Delay on release

RELAY 1

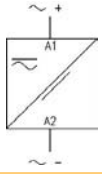
	115	230	400
DEF. OPERATING MODE =			
V |Li-Lj| DETEC / MIN (Vac) =	*92*	*184*	*320*
V |Li-Lj| RELEASE / MIN (Vac) =	*94*	*187*	*326*
≠ MAX |Li-Lj| *DETEC / MAX* =		*15,0 %*	
≠ MAX |Li-Lj| *RELEASE / MAX* =		*13,0 %*	
ESTATE CONTACT =		ON	
DETECTION TIMER =		*1.5 s*	
RELEASE TIMER =		*2.5 s*	

ALARM ESTATE	= OFF
V |Li-Lj| MAXIMUM	= DISABLED
V |Li-Lj| MINIMUM	= ENABLED
≠ MAX |Li-Lj| MAXIMUM	= ENABLED
FRECUENCIA MAXIMUM	= DISABLED
FREQÜENCY MINIMUM	= DISABLED
PHASES CYCLE	= ENABLED
DETECTION MODE	= DELAYED
TIME RANGE DETEC.	= SECONDS
RELEASE MODE	= DELAYED
TIME RANGE RELEASE	= SECONDS

Output relays

		SVO
		
Resistive load	AC	6 A / 240 V
	DC	6 A / 24 V
Inductive load	AC	3 A / 240 V
	DC	3 A / 24 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 ºC)
Voltage between contacts		1000 VAC
Voltage coil/contact		4000 VAC
Isolation resistance		> 100 MΩ (500 VDC)
Indication		1 red led per relay

Supply voltage

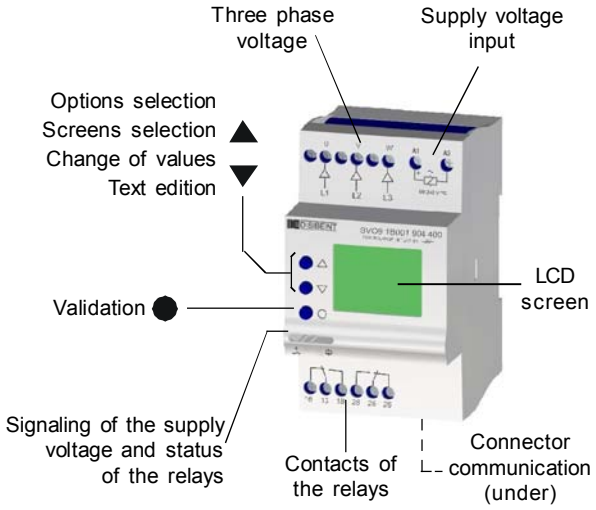
	AC/DC
	
Supply code	[904]
Galvanic isolation	2500 V
Frequency	-
Operating margins	3,1 W
Consumption	60-240 V
Time startup	< 135 ms*
Reset	>70 ms* and/or -30% of the nominal voltage
Indication	Green led

* In the worst cases models

Constructive and enviromental 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..+80ºC
Operating temperature	-20..+50ºC
Humidity	< 95% HR
Housing	Cycoloy - Light grey
Leds window	Lexan - Transparente
Buttons, connector, clamp	Technyl - Dark blue
Connector's terminals	Brass
Screws torque	0,8 Nm
Norms	Dessigned and manufactured under EEC normative. Electromagnetic compatibility, directives 89/366/EEC and 92/31/EEC. Electric safety, directive 73/23/EEC. Plastics: UL 91 V0

Parts of the equipment



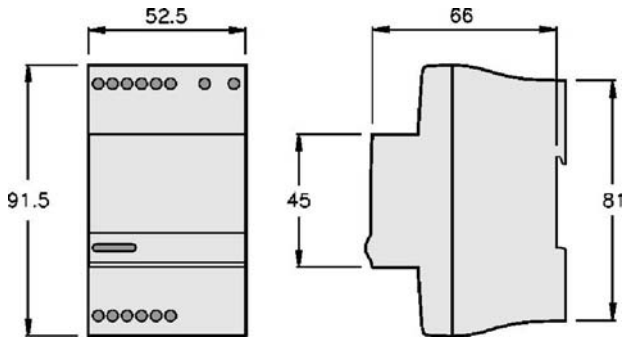
Order code

	Control - Interface	Number of relays	Type of relays	Communication	Version	Supply	Range
SVO	9 - With display. Default languages: · Spanish · English · French · Catalan (Other on request)	1 - 1 relay	B - DPDT	0 - Without bus	01	[904] 60..240 VAC/VDC	[115] 90..148 VAC [230] 220..240 VAC [400] 380..415 VAC

To compose a reference, select one option of each one of the columns. Example: SVO9 1B001 904 400

Dimensions

SVO



GENERAL CHARACTERISTICS OF THE DIGITAL CONTROL RELAYS

User's manual	For a wide knowledgment 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 donwloaded in our web site (www.disibeint.com).
How to programm	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.
Types of screens	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. Screens menus: Group of screens related under the same concept and that can contain whichever type of the screens previously described.
Interactive menus	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.
Changing values	The screens for changing the values contain the margins betwen 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.
User's programms	Two different default programms are given with pre-set options and parameters, in order to facilitate the satrt-up of the relay. Most of the times, these parameters must be adjusted to fit the relay to the characteristics of the . The user can create his own programm and store it into the relay.
Display lighting	The display remains backlihghted 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.
Value added	- 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

SPECIFIC CHARACTERISTICS FOR THE MODEL SVO

Alarm by frequency deviation Desact	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 requency is deviated in ± 0,4 Hz during the detection process, and of ± 0,3 Hz during the releas 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.

PC COMMUNICATION

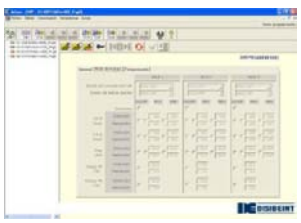
	CBPZ	Adaptador Serie/USB
		
Function	Interface for remote programming from a PC.	Communication Adapter between RS232 port and USB
Operating mode	It allows the connection of whichever standard digital relay not provided neither with communication bus nor with 4-20mA output, to a PC through the RS232 port.	DISIBEINT not supply this product. You can find it in specialty stores supplies.

deCom

· Communication and programming soft-ware 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, gruoped 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).



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