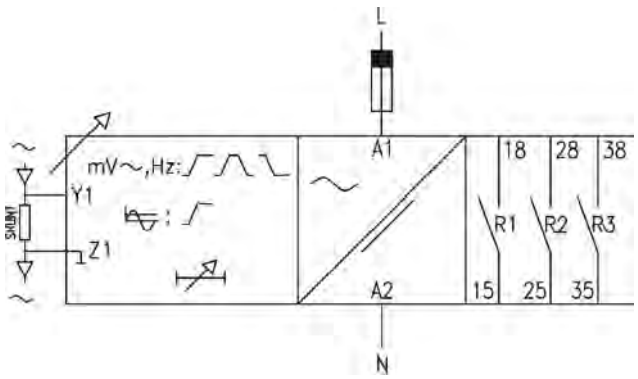
DISIBEINT

SAC

CONTROL AND VISUALIZATION OF AC CURRENT IN SINGLE PHASE LINES BY EXTERNAL SHUNT

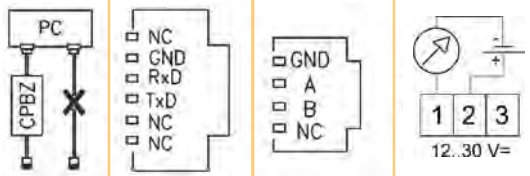
Function	Current relay for AC single phase lines. Performs the control of the current, the frequency and the DC voltage component running through a shunt connected at a line independent of the supply voltage.
Operating mode	Configurable by the user. Each one of the available relays it is assigned with its own operating mode for one or more magnitudes, reacting by the first one which is produced.
Current control	· Operativity by max. and/or min. current. At each case, adjustment for detection and/or for release. · RMS reading value.
Frequency control	· Adjustable from 43..70 Hz. · Operativity by max. and/or min. 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 VAC. · Operativity by maximum DC component. Adjustment for detection and/or for release.
Shunt	It can be used three values of shunt: 50 mV, 60 mV and 100 mV.
Timer	· Associable to the detection and/or to the release of whichever relay. · Adjustable from 0,01s..999,9h · Repeating precision ±30 ppm
Resolution	1 mV
Current precision	Taken over the read value: 1%
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 screens: · CURRENT: Current across the shunt (mA, A or kA, according to the range) · FREQUENCY: Frequency in the line (Hz) · DC COMPONENT: Component of the DC voltage in the line (VDC)
Top of scale	This option sets the maximum value of the choosen magnitude.
Offset	It can be applied a correction factor of the read current in front of an standard instrument.
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 (current, 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 equipment and CPBZ programming interface. - By a RS232 connection (optional). - By a RS2485 connection and SBAZ converter (optional).
Range	[V10] 1..100 mV AC

Connection diagram



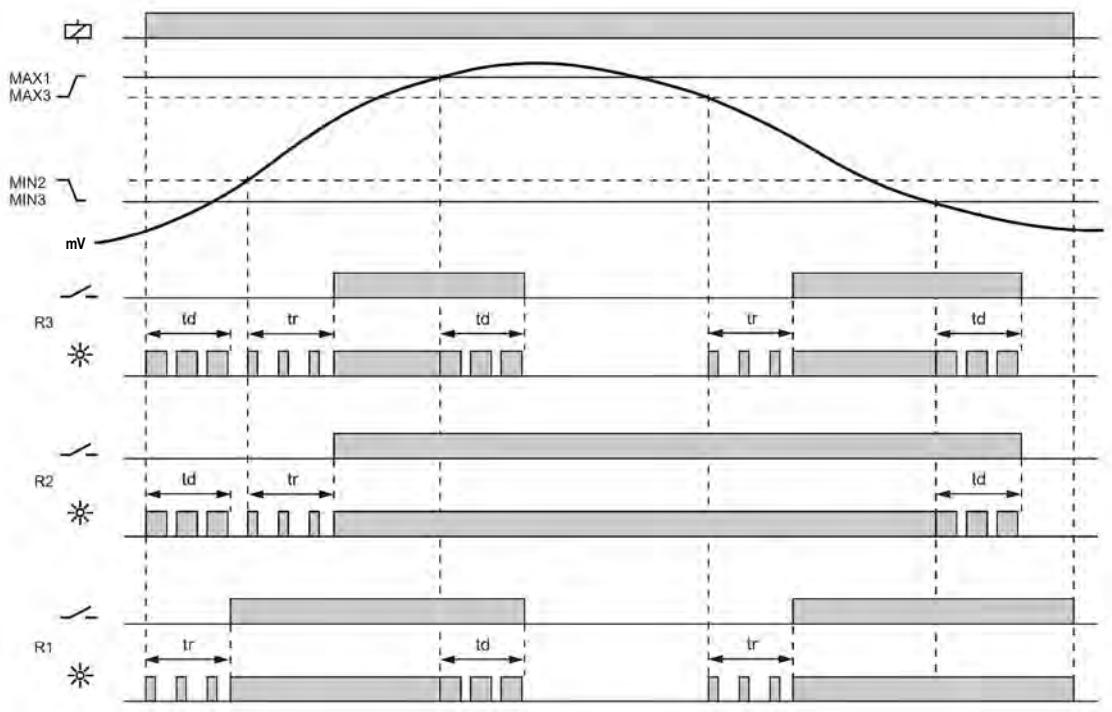
Communication (According options)

Standard	RS232	RS485	4-20 mA
Code 0	Code 3	Code 8	Code 4



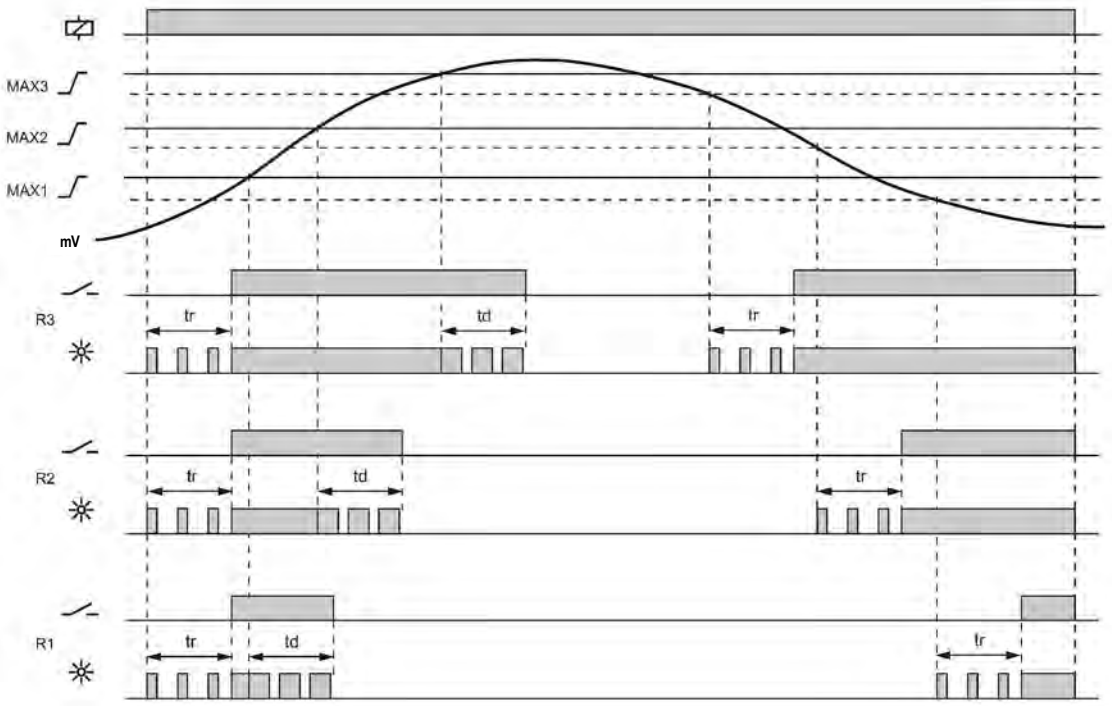
Control of maximum/minimum current, alarm for maximum and alarm for minimum

In this application a current threshold is controlled (maximum/minimum) by means of the relay R3.
Relay R1 is set for the detection of an alarm of maximum current and R2 for a minimum one.
Settings available in program 1 for relays R1, R2 and R3. Parameters must be adapted to the installation.



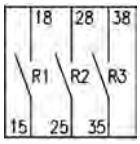
Scaling control of maximum current

In this application, three different set points of maximum current are controlled, assigning each one to a different relay.
Settings available in program 2 for relays R1, R2 and R3. Parameters must be adapted to the installation.



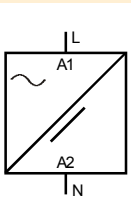
Output relays

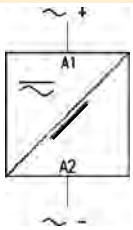
		SAC
Resistive load	AC	6 A / 240 V
	DC	6 A / 24 V
Inductive load	AC	3 A / 240 V
	DC	3 A / 24 V
Mechanical life		> 10^6 oper.
Max. mech. operations		18.000 operations / hour
Electric life at full load		360 operations / hour
Contact material		AgSnO Alloy
Operating voltage		240 VCA (85 ºC)
Voltage between contacts		1000 VAC
Voltage coil/contact		4000 VAC
Isolation resistance		> 100 MΩ (500 VDC)
Indication		1 red led per relay



Supply voltage

	SAC			
	AC		AC - DC	
Supply voltage code	[024] .. [440]		[903]	[904]
Galvanic isolation	4000 V		2500 V	
Frequency	50 Hz	60 Hz	-	
Operating margins	+10% -15%		15-70 V	60-240 V
Consumption	2,5 VA		3,5 W	3,1 W
Startup time	100 ms	96,6 ms	< 525 ms*	< 135 ms*
Deteccion time	25 ms	21,6 ms	115 ms	110 ms
Reset	> 1 network cycle and/or -30% of the nominal voltage		>70 ms* and/or -30% of the nominal voltage	
Indication	Green led			





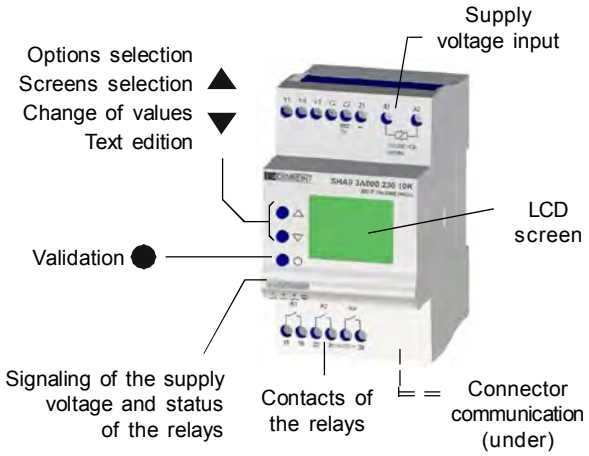
* In the worst of the cases

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 - Transparent
Buttons, connector, clamp	Technyl - Dark blue
Connector's terminals	Brass
Screws torque	0,8 Nm

Dessigned and manufactured under EEC normative.
Directives referred:
Electromagnetic compatibility: EMC 2004/108/EEC.
Low voltage: LVD 2006/95/EEC.
Hazardous substances: 2011/65/EEC
Plastics: UL 91 V0

Parts of the equipment



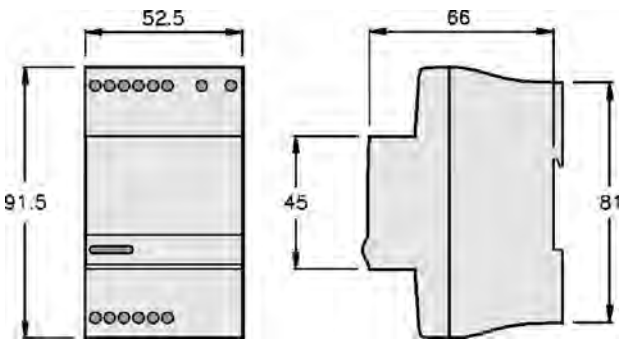
Order code

	Control - Interface	Number of relays	Type of relays	Communication	Version	Supply	Range
SAC	9 - With display Default languages: · Spanish · English · French · Catalan (Other on request)	0 - No relays 3 - 3 relays	0 - No relays A - SPST NO	0 - No bus 4 - 4-20 mA 3 - RS232 8 - RS485	00..99	[024] 24 VAC [110] 110..125 VAC [230] 220..240 VAC [400] 380..415 VAC [440] 440 VAC [903] 15..70 VAC/DC [904] 60..240 VAC/DC	[V10] 1..100 mV
	Q - Without display Without communication						
	U - Without display Communication RS232 / RS485	(By default, 3)	(By default, A)	(By default, 0)	(By default, 00)		

To compose a reference, select one option of each one of the columns. Example: SAC9 3A000 400 V10

Dimensions

SAC



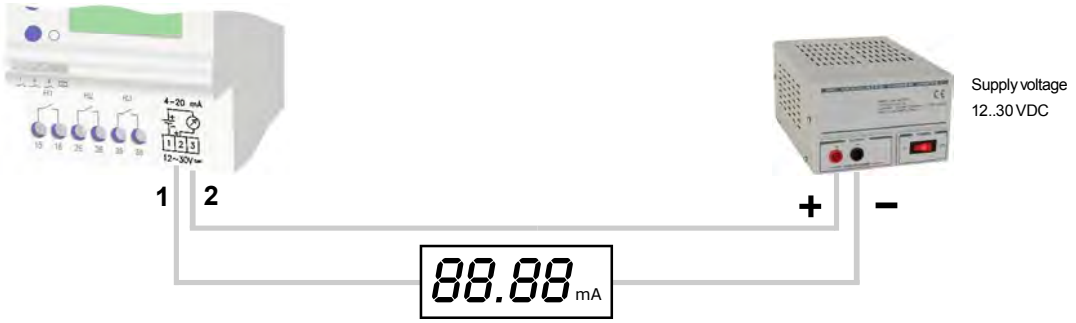
GENERAL CHARACTERISTICS OF THE DIGITAL CONTROL RELAYS	
User's manual	For a wide knowledgment of the options offered by the digital control relays, the own User's Manual for each model must be read. Although an issue is given with every purchased equipment, a copy can be donwloaded in our web site (www.disibeint.com).
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	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.
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.
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 SAC	
Alarm by frequency deviation	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	
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).




CURRENT LOOP 4-20 mA



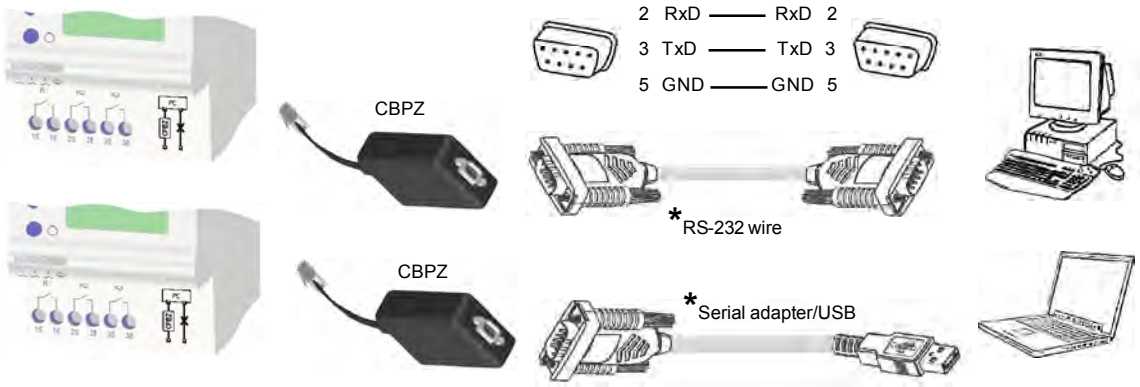
OUTPUTS COMMUNICATIONS

REMOTE PROGRAMMING FROM PC

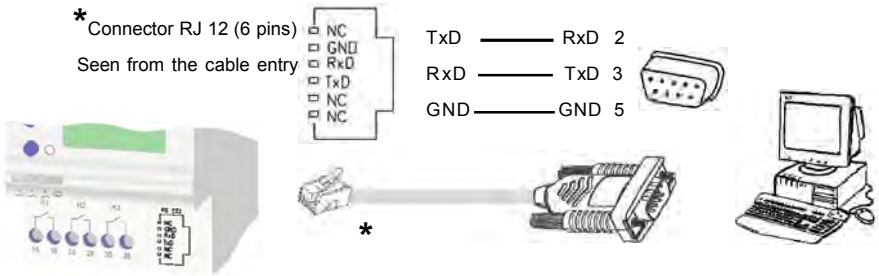
ACCESSORIES

CBPZ	SBAZ
 Interface for remote programming from a PC. It allows the connection between whichever digital relay not provided with bus and a PC. Not required for devices provided with bus RS232, RS485 or with 4-20mA output.	 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.

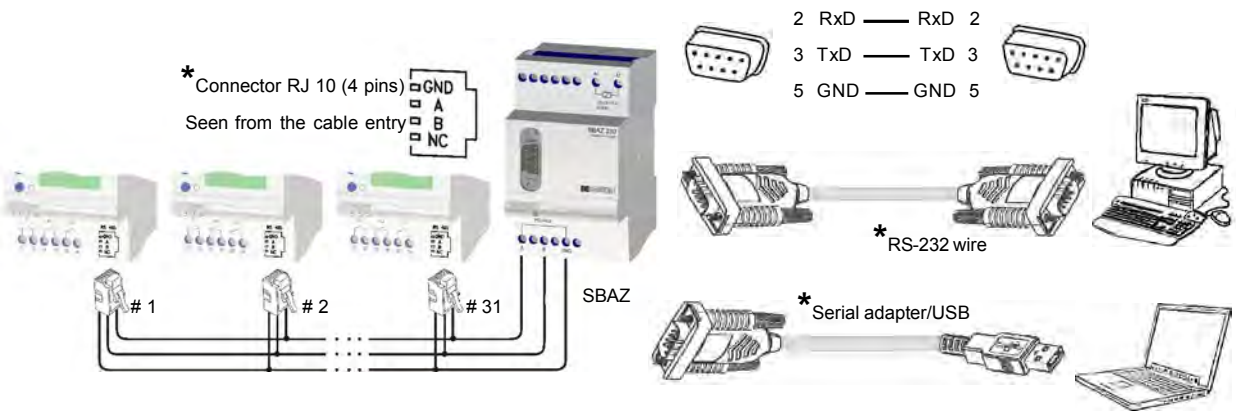
STANDARD MODE



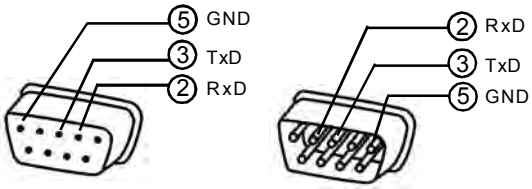
RS232 COMMUNICATION



RS485 COMMUNICATION



* Disibeint not supply cables or connectors. You can find these products in stores specializing in computer equipment.



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