

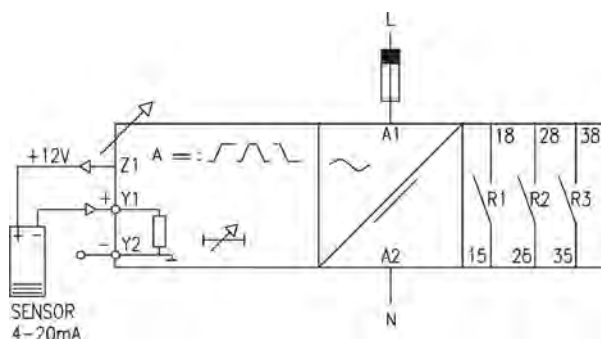
## SAJ

## CONTROL, SUPPLY AND VISUALIZATION OF 4-20 mA CURRENT LOOP



Function	Current relay for 4-20 mA current loop. Provides supply voltage to the current loop, displays its value translated to significant real magnitudes and allows the controls of different set points.																						
Operating mode	Configurable by the user. Each one of the available relays it is assigned with its own operating mode, related with the value of the current running along the loop.																						
Loop control	· Operativity by maximum and/or minimum voltage. At each case, adjustment for detection and/or for release. · Medium reading value.																						
Timing	· Associable to the detection and/or to the release of whichever relay. · Adjustable from 0,01s..999,9h · Repeating precision $\pm 30$ ppm																						
Reading magnitude	To facilitate the lecture of the reading value, it can be selected which magnitude and which unit that value is preferred to be displayed with: <table border="1" data-bbox="395 792 916 1081"> <thead> <tr> <th>Magnitude</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>TEMPERATURE</td> <td><math>^{\circ}\text{C}</math> · <math>^{\circ}\text{K}</math> · <math>^{\circ}\text{F}</math></td> </tr> <tr> <td>RESISTANCE</td> <td><math>\Omega</math> · <math>\text{K}\Omega</math></td> </tr> <tr> <td>VOLTAGE</td> <td><math>\text{V}</math> · <math>\text{mV}</math></td> </tr> <tr> <td>CURRENT</td> <td><math>\text{A}</math> · <math>\text{mA}</math></td> </tr> <tr> <td>FREQUENCY</td> <td><math>\text{Hz}</math> · <math>\text{kHz}</math></td> </tr> <tr> <td>CAPACITY</td> <td><math>\text{L}</math> · <math>\text{daL}</math> · <math>\text{hL}</math></td> </tr> <tr> <td>VOLUME</td> <td><math>\text{m}^3</math> · <math>\text{cm}^3</math></td> </tr> <tr> <td>PRESSURE</td> <td><math>\text{k/cm}^2</math> · <math>\text{bar}</math> · <math>\text{mbar}</math> · <math>\text{psi}</math> · <math>\text{m.c.a.}</math></td> </tr> <tr> <td>PROPORTION</td> <td>%</td> </tr> <tr> <td>WINDSPEED</td> <td><math>\text{m/s}</math> - <math>\text{kmh}</math></td> </tr> </tbody> </table>	Magnitude	Units	TEMPERATURE	$^{\circ}\text{C}$ · $^{\circ}\text{K}$ · $^{\circ}\text{F}$	RESISTANCE	$\Omega$ · $\text{K}\Omega$	VOLTAGE	$\text{V}$ · $\text{mV}$	CURRENT	$\text{A}$ · $\text{mA}$	FREQUENCY	$\text{Hz}$ · $\text{kHz}$	CAPACITY	$\text{L}$ · $\text{daL}$ · $\text{hL}$	VOLUME	$\text{m}^3$ · $\text{cm}^3$	PRESSURE	$\text{k/cm}^2$ · $\text{bar}$ · $\text{mbar}$ · $\text{psi}$ · $\text{m.c.a.}$	PROPORTION	%	WINDSPEED	$\text{m/s}$ - $\text{kmh}$
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Repeating precision	0,01																						
Current precision	Taken over the read value: 1%																						
Display of the reading value	The value of the read magnitudes is displayed by means of the following status screens: · CURRENT: Current running along the loop (mA DC) · MAGNITUDE: Value of the current, translated to the real reading value.																						
Minimum value	This option sets the minimum value of the choosen magnitude, and it is associated to the 4 mA value.																						
Top of scale	This option sets the maximum value of the choosen magnitude, and it is associated to the 20 mA value.																						
Offset	It can be applied a correction factor of the read current in front of a standard instrument.																						
Output relay	From 1..3 independent relays, SPST NO. By default, we supply three relays.																						
4-20 Output	It is assigned to whichever of the measured magnitudes (temperature, resistance, voltage, current, frequency, capacity, volume, proportion) 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 RS485 connection and SBAZ converter (optional).																						
Range	[A02] 4..20 mA																						

Connection diagram



## Communication (According options)

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

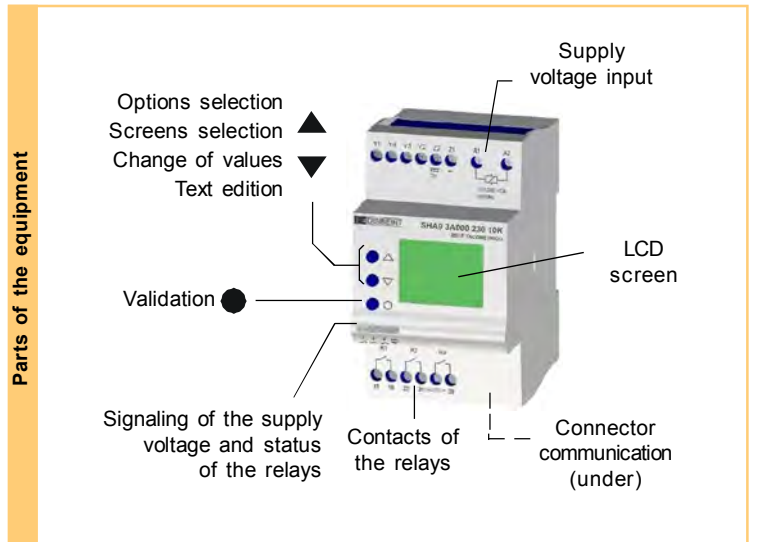
		SAJ	
Output relays	Resistive load	AC	6 A / 240 V
		DC	6 A / 24 V
	Inductive load	AC	3 A / 240 V
		DC	3 A / 24 V
	Mechanical life		> 10 <sup>6</sup> oper.
	Max. mech. operations		18.000 operations / hour
	Electric life at full load		360 operations / hour
	Contact material		AgSnO Alloy
	Operating voltage		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	

		SAJ		
		AC	AC - DC	
Supply voltage				
	Supply voltage code		[024] .. [440]	[903] [904]
	Galvanic isolation		4000 V	2500 V
	Frequency		50/60 Hz	-
	Operating margins		+10% -15%	15-70 V 60-240 V
	Consumption		2,5 VA	3,5 W 3,1 W
	Startup time		75 ms	< 525 ms* < 135 ms*
	Detection time		40 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

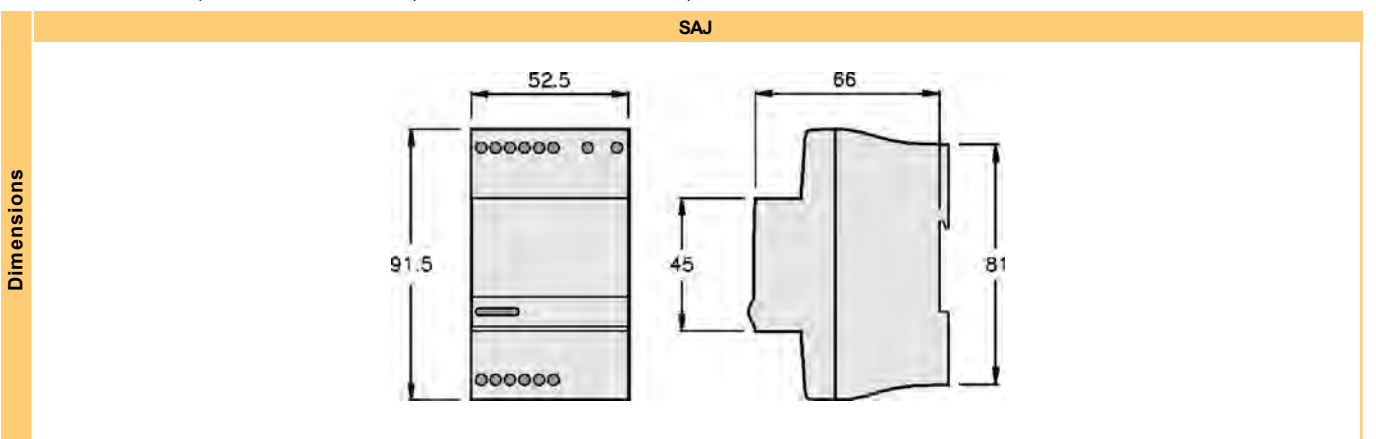
Voltage phase-neutral	300 V
Overvoltage category	III
Shock voltage	4 kV
Pollution degree	2 (EN61010)
Protection	IP 20
Approx. weight	280 g
Store temperature	-30..+80°C
Operating temperature	-20..+50°C
Humidity	< 95% HR
Housing	Cycloy - Light grey
Leds window	Lexan - Transparent
Buttons, connector, clamp	Technyl - Dark blue
Connector's terminals	Brass
Screws torque	0,8 Nm

Designed 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



Order code	Control - Interface		Number of relays	Type of relays	Communication	Version	Supply	Range
	9 -	(Other on request)						
SAJ	With display	Default languages: · Spanish · English · French · Catalan	0 - No relays	0 - No relays	0 - No bus 3 - RS232 4 - 4-20 mA 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/VDC [904] 60..240 VAC/VDC	[A02] 4..20 mA
	Q -	Without display Without communication	3 - 3 relays	A - SPST NO				
	U -	Without display Communication RS232 / RS485		(By default, 3)	(By default, A)	(By default, 0)	(By default, 00)	

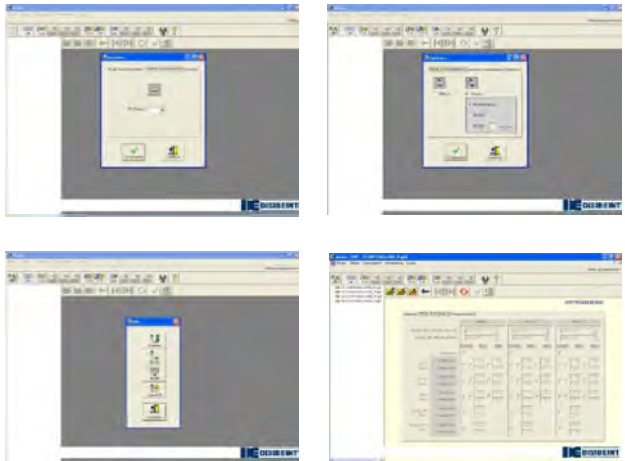
To compose a reference, select one option of each one of the columns. Example: SAJ9 3A000 400 A02



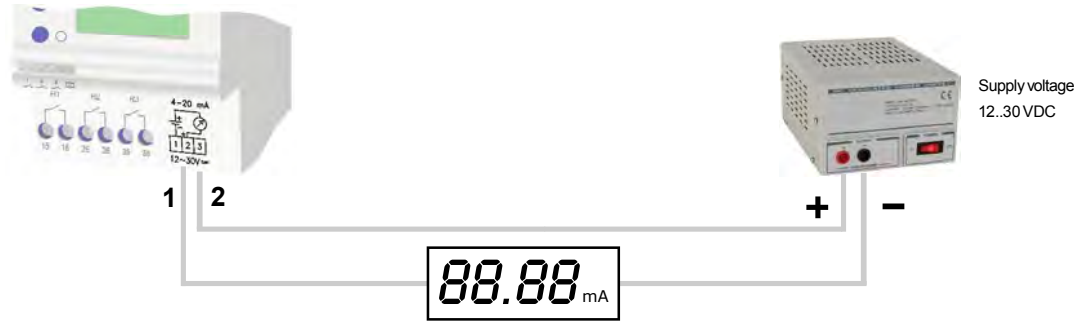
### GENERAL CHARACTERISTICS OF THE DIGITAL CONTROL RELAYS

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 downloaded in our web site ( <a href="http://www.disibeint.com">www.disibeint.com</a> ).
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 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.
User's programm	Two different default programm 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 backlighthted 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	<ul style="list-style-type: none"> <li>- Four languages available in each relay</li> <li>- Graphic bar for the intuitive visualization of the displayed value</li> <li>- Historical control of the maximum values obtained by the relay</li> <li>- Screen's refresh selectable between 1 and 8 times per second</li> <li>- Possibility of locking the keyboard to avoid any undesired modification</li> <li>- Complementary timing functions</li> </ul>

### PC COMMUNICATION

<p>deCom</p> <ul style="list-style-type: none"> <li>· Communication and programming software for the digital control relays.</li> <li>· It allows the interactivity between the different types of communication: through the CBPZ interface, RS232 or RS485.</li> <li>· It displays the complete data related to the relay, gruoped by concepts and easing the intuitive programming.</li> <li>· It has control tools to do not exceed the operating margins of each model according to its range.</li> <li>· It is provided with templates to facilitate the programming of each model.</li> <li>· It allows to store the own settings.</li> </ul> <p>Windows XP operative system (.NET Framework required).</p>	
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CURRENT LOOP 4-20 mA



ACCESSORIES

CBPZ



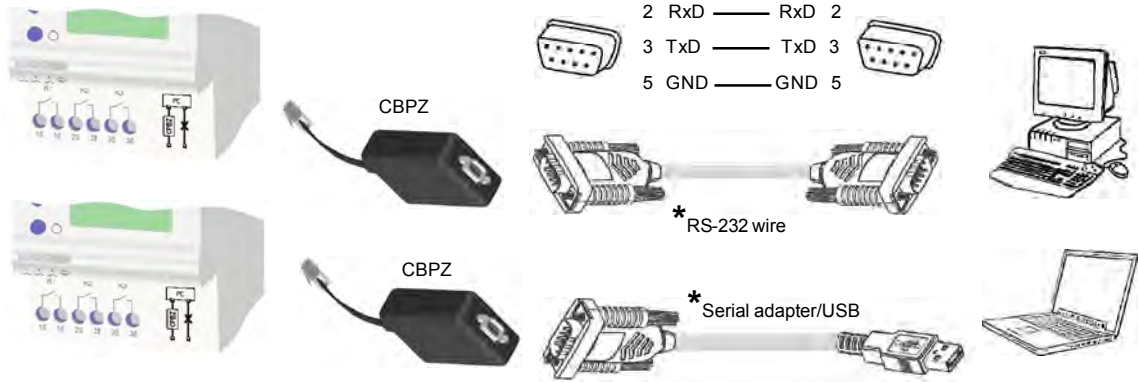
Interface for remote programming from a PC.  
It allows the connection between whichever digital relay not provided with bus and a PC.  
Not required for devices provided with bus RS232, RS485 or with 4-20mA output.

SBAZ

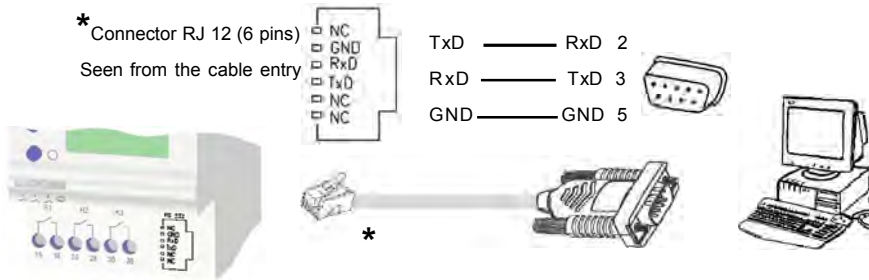


RS485 to RS232 signal converter for the remote programming or for the data capture and visualization from a PC.  
It allows the connection of up to 31 digital control relays provided with RS485 communication bus, to get a unique codified RS232 output.

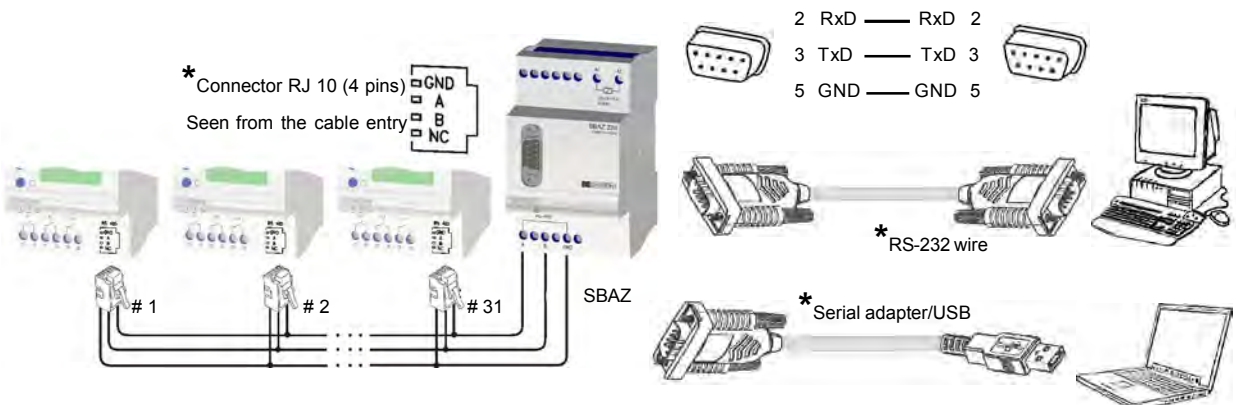
OUTPUTS COMMUNICATIONS  
STANDARD MODE



REMOTE PROGRAMMING  
RS232 COMMUNICATION



RS485 COMMUNICATION



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

