

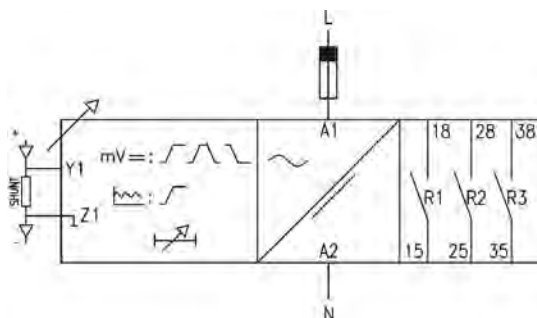
## SAD



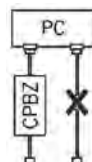
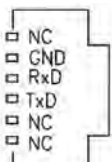
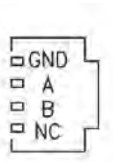
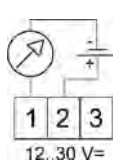
### CONTROL AND VISUALIZATION OF THE CURRENT IN DC LINES BY EXTERNAL SHUNT

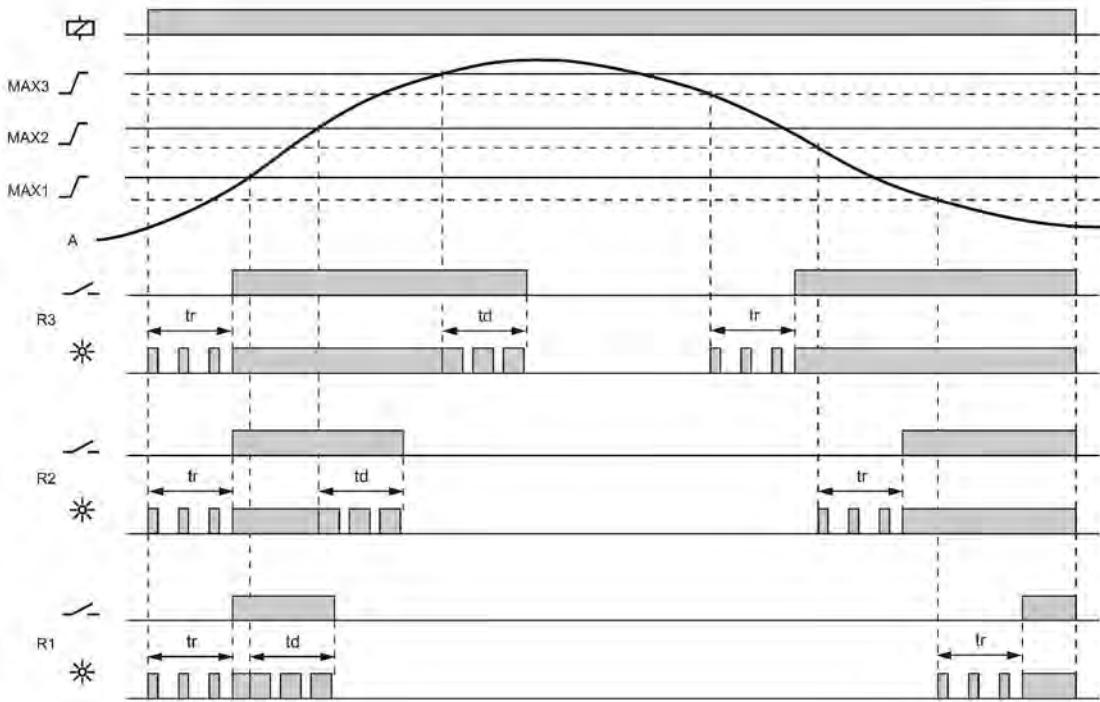
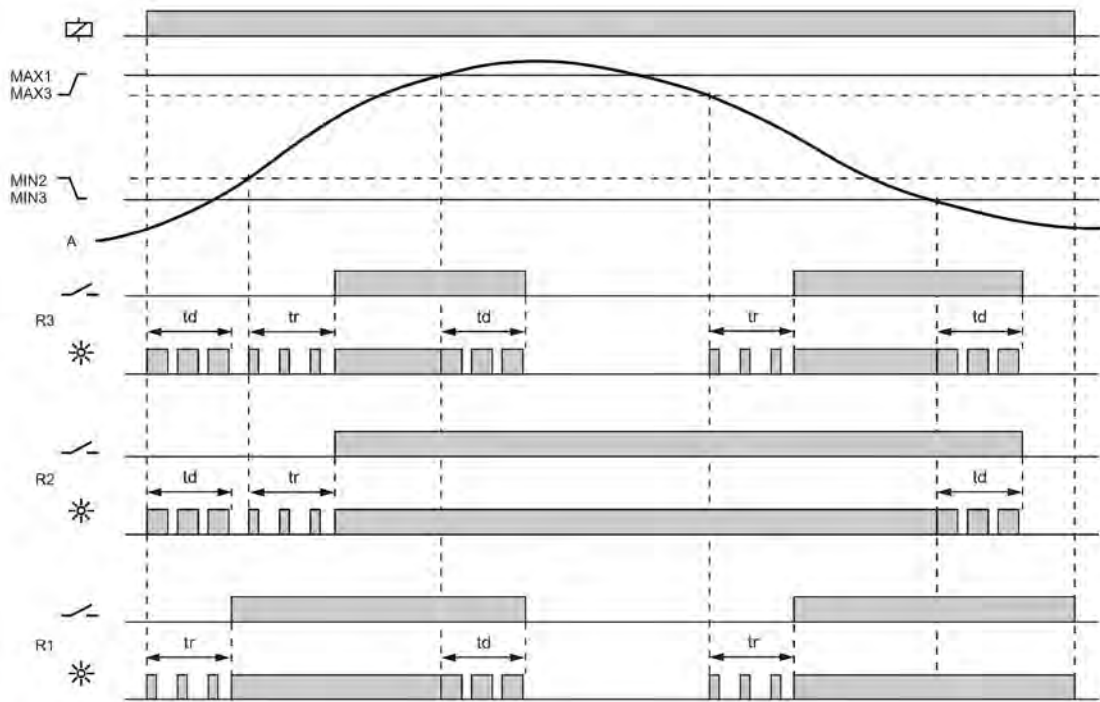
Function	Current relay for DC lines. Performs the control of the current and the ripple running through a shunt connected to a line independent from the supply voltage.
Operating mode	Configurable by the user. Each one of the available relays it is assigned with its own operating mode for one or more magnitudes, reacting by the first one which is produced.
Current control	· Operativity by max. and/or min. voltage. At each case, adjustment for detection and/or for release. · Medium reading value.
Ripple control	· Operativity by maximum ripple voltage. 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 $\pm 30$ ppm
Resolution	From 0,001..0,1 according to the range.
Repeating 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: · MAGNITUDE: Current (mA, A or kA) or Voltage (mV, V). · VOLTAGE: Voltage through the shunt (mV DC). · RIPPLE: Ripple voltage standing in the line (mV DC).
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 measured current 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 set different communication ways with a computer (see the last page, too): - 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 DC

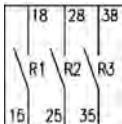
Connection diagram

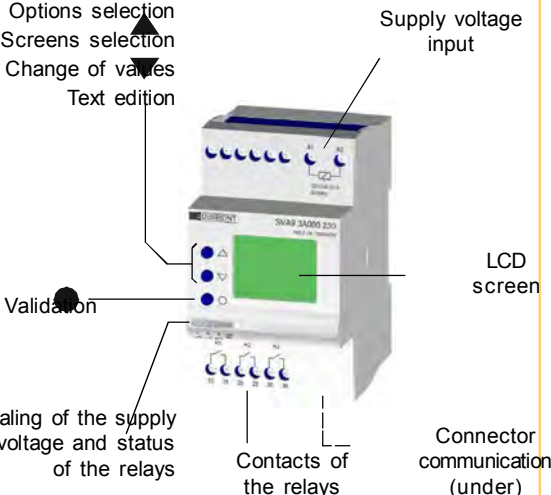


Communication (According options)

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

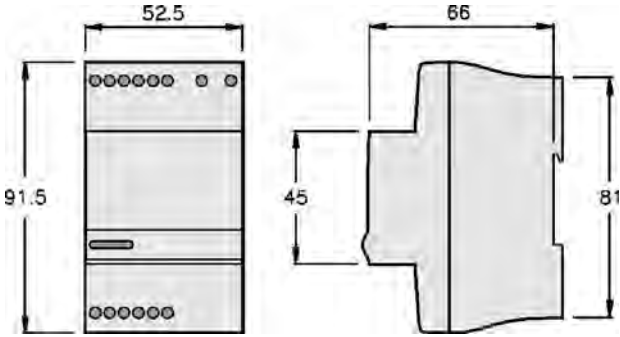


			SAD		
Output relays					
	Resistive load	AC	6 A / 240 V		
		DC	6 A / 24 V		
	Inductive load	AC	3 A / 240 V		
		DC	3 A / 24 V		
	Mechanical life		> 10 <sup>6</sup> oper.		
	Max. mech. operations		18.000 operations / hour		
	Electric life at full load		360 operations / hour		
	Contact material		AgSnO Alloy		
	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			
Supply voltage	Alimentation code		[024]..[440]	[903]	[904]
	Galvanic isolation		4000 V	2500 V	
	Operating margins		+10% -15%	15..70 V	60..240 V
	Consumption		2,6 VA	3,5 W	3,1 W
	Start-up time		75 ms	< 515 ms	< 115 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 case				

Constructive and environmental data	Voltage phase-neutral	300 V	Parts of the equipment		
	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	Cycloly - 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	SAD	Control - Interface	Number of relays	Type of relays	Communication	Version	Supply	Range
		With display Default languages: · Spanish · English · French · Catalan (Other on request)  Q - Without display Without communication  U - Without display Communication RS232 / RS485	0 - No relays 3 - 3 relays  (By default, 3)	0 - No relays A - SPST NO  (By default, A)	0 - No bus 4 - 4-20 mA 3 - RS232 8 - RS485  (By default, 0)	00..99  (By default, 00)	[024] 24 VAC [110] 110..125 VAC [230] 220..240 VAC [400] 380..415 VAC [440] 440 VAC [903] 15..70 VCA/CC [904] 60..240 VCA/CC	[V10] 1..100 mV

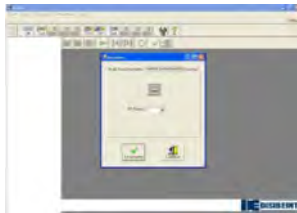
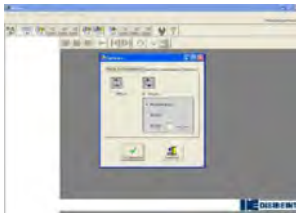
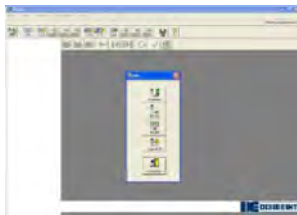

To compose a reference, select one option of each one of the columns. Example: SAD9 3A000 400 V10

Dimensions	SAD	
		

## GENERAL CHARACTERISTICS OF THE DIGITAL CONTROL RELAYS

User's manual	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 equipment, 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 programmes	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 backlihgthed 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

deCom	<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, grouped 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>	   
-------	---	---

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.

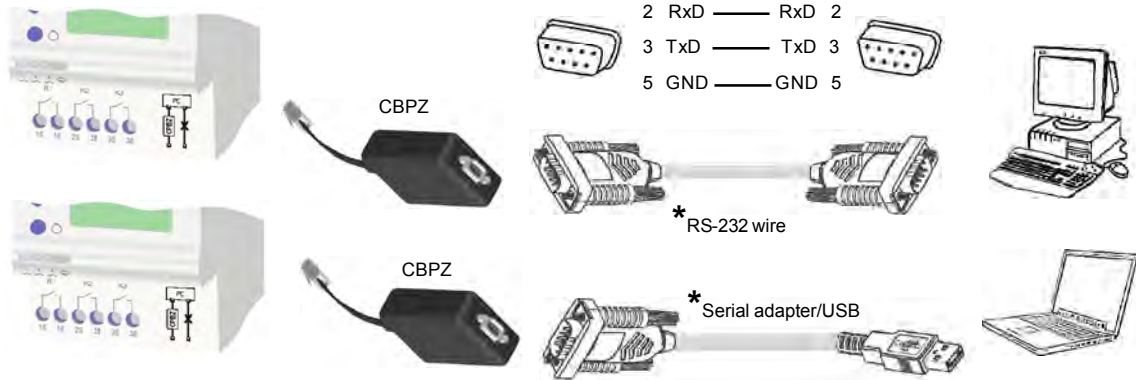
SBAZ



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.

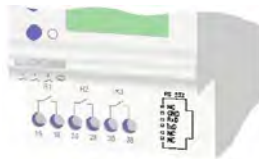
OUTPUTS COMMUNICATIONS  
OUTPUTS COMMUNICATIONS FROM PC

STANDARD MODE



REMOTE PROGRAMMING  
RS232 COMMUNICATION

\* Connector RJ 12 (6 pins)  
Seen from the cable entry

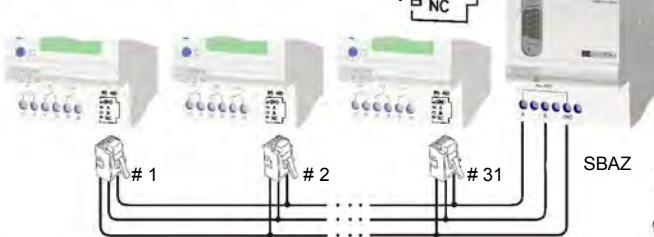


TxD — RxD 2  
RxD — TxD 3  
GND — GND 5

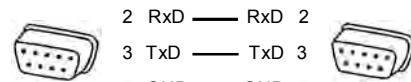


RS485 COMMUNICATION

\* Connector RJ 10 (4 pins)  
Seen from the cable entry



2 RxD — RxD 2  
3 TxD — TxD 3  
5 GND — GND 5



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

