

SAA

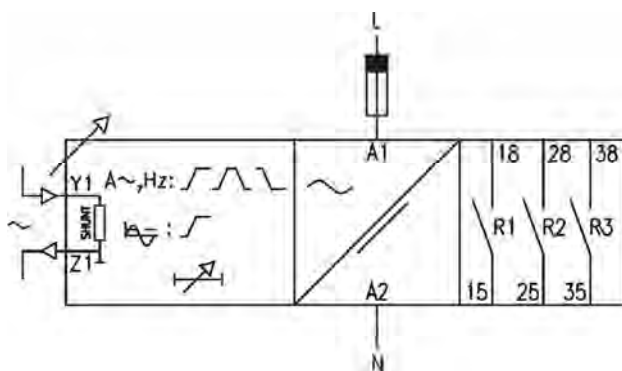


CONTROL AND VISUALIZATION OF CURRENT AND FREQUENCY IN AC SINGLE PHASE LINES



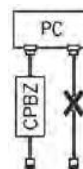
Function	Current relay for single phase lines in AC. Performs the control of the current, the frequency and the DC voltage component in a line independent from the supply voltage.																												
Operating mode	Configurable by the user. Each relay is assigned with its own operating mode for one or more magnitudes, reacting by the first one which is produced.																												
Current control	· Operativity by maximum and/or minimum current. 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 VDC. · Operativity by maximum DC component. Adjustment for detection and/or for release.																												
Timer	· Associable to the detection and/or to the release of whichever relay. · Adjustable from 0,01s..999,9h · Repeating precision ±30 ppm																												
Repeating precision	From 0,001 up to 0,1, according to the range																												
Current's 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 running along the line (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, and it is associated to the 20 mA value.																												
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 (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.																												
Operating margins according to the range	<table border="1"> <thead> <tr> <th>RANGE</th> <th>Minimum</th> <th>Maximum</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>[2MA]</td> <td>0,02</td> <td>2</td> <td>mAAC</td> </tr> <tr> <td>[A02]</td> <td>0,2</td> <td>20</td> <td>mAAC</td> </tr> <tr> <td>[A20]</td> <td>2</td> <td>200</td> <td>mAAC</td> </tr> <tr> <td>[1A]</td> <td>0,01</td> <td>1</td> <td>A AC</td> </tr> <tr> <td>[5A]</td> <td>0,05</td> <td>5</td> <td>A AC</td> </tr> <tr> <td>[10A]</td> <td>0,1</td> <td>10</td> <td>A AC</td> </tr> </tbody> </table>	RANGE	Minimum	Maximum	Units	[2MA]	0,02	2	mAAC	[A02]	0,2	20	mAAC	[A20]	2	200	mAAC	[1A]	0,01	1	A AC	[5A]	0,05	5	A AC	[10A]	0,1	10	A AC
RANGE	Minimum	Maximum	Units																										
[2MA]	0,02	2	mAAC																										
[A02]	0,2	20	mAAC																										
[A20]	2	200	mAAC																										
[1A]	0,01	1	A AC																										
[5A]	0,05	5	A AC																										
[10A]	0,1	10	A AC																										
Mounting	On DIN rail																												

Connection diagram

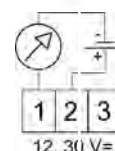


Communication (According options)

Standard
Code 0

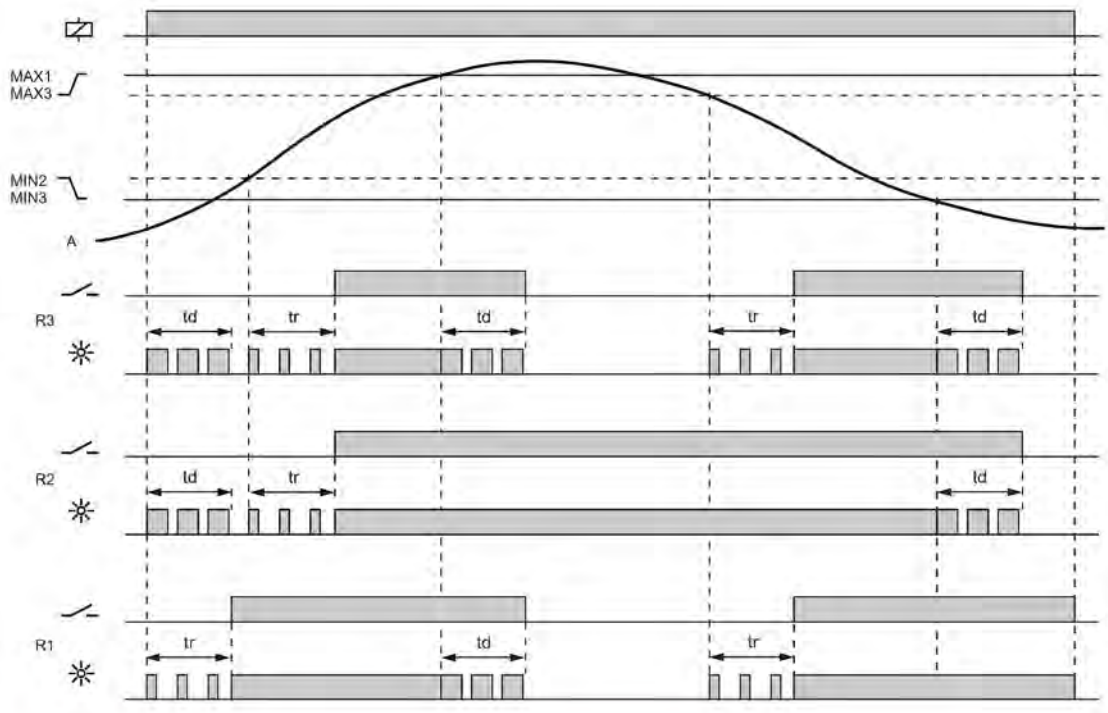


4-20 mA
Code 4



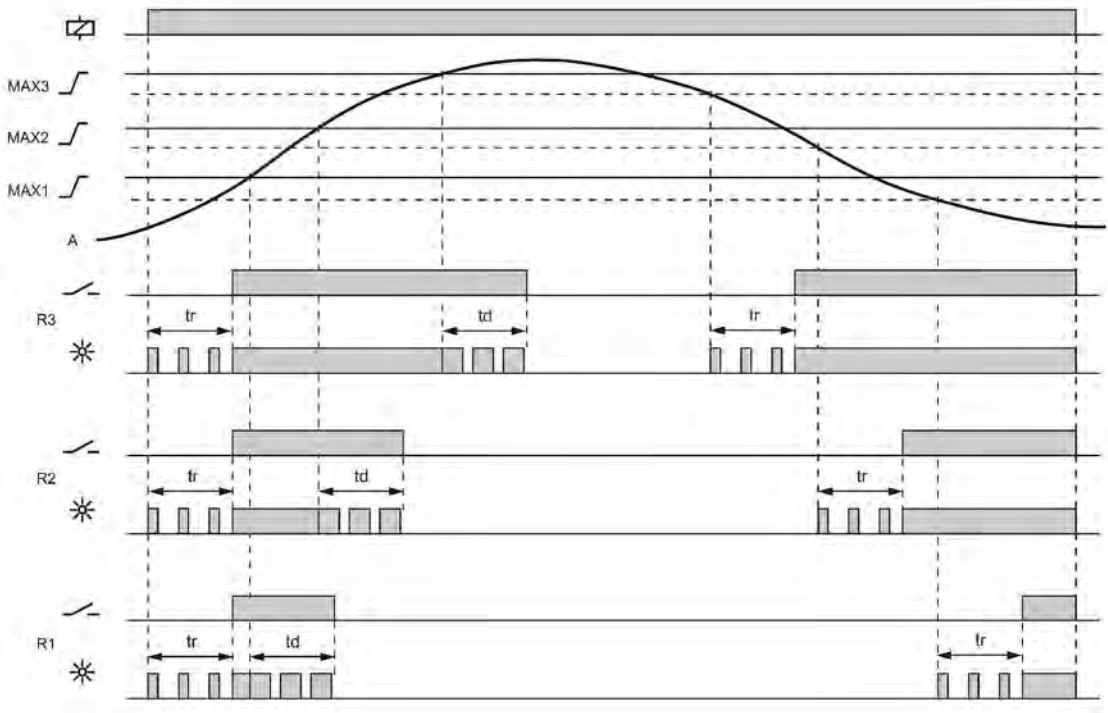
Control of maximum/minimum current, alarm for maximum and alarm for minimum

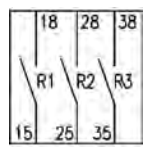
In this application a current threshold is controlled (maximum/minimum) by means of the relay R3. Relay R1 is set for the detection of an alarm of maximum current and R2 for a minimum one. Settings available in program 1 for relays R1, R2 and R3. Parameters must be adapted to the installation.

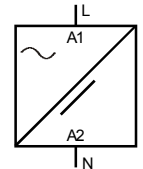
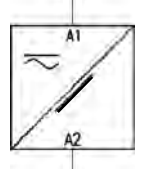


Scaling control of maximum current

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.



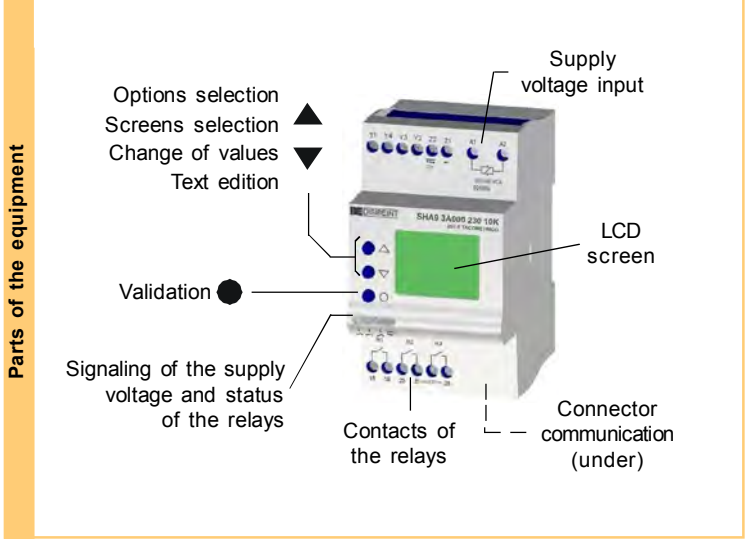
		SAA	
			
Output relays	Resistive load	AC	6 A / 240 V
		DC	6 A / 24 V
	Inductive load	AC	3 A / 240 V
		DC	3 A / 24 V
	Mechanical life		> 10 ⁶ oper.
	Max. mech. operations		18.000 operations / hour
	Electric life at full load		360 operations / hour
	Contact material		AgSnO Alloy
	Operating voltage		240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

		SAA	
		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*
Detection 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

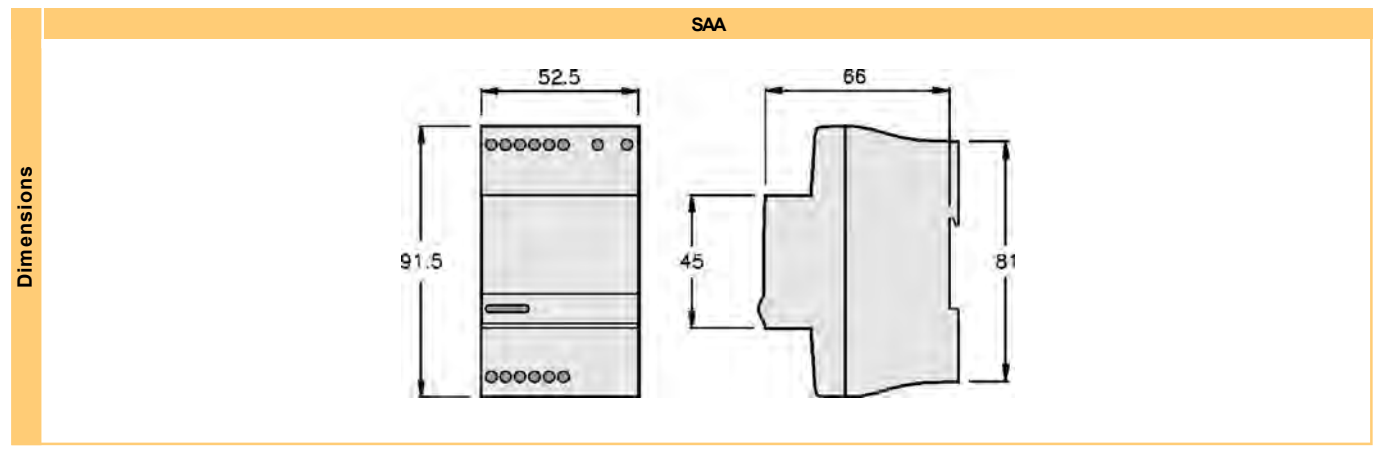
Constructive and environmental data		
Voltage phase-neutral		300 V
Overvoltage category		III
Shock voltage		4 kV
Pollution degree		2 (EN61010)
Protection		IP 20
Approx. weight		280 g
Store temperature		-30..+80°C
Operating temperature		-20..+50°C
Humidity		< 95% HR
Housing		Cycloley - Light grey
Leds 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
SAA	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	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	[2MA] 0,02..2 mA [A02] 0,2..20 mA [A20] 2..200 mA [1A] 0,01..1 A [5A] 0,05..5 A [10A] 0,1..10 A
	Q - Without display	(By default, 3)	(By default, A)	(By default, 0)			

To compose a reference, select one option of each one of the columns. Example: SAA9 3A000 400 5A



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 (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 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	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 backlighthed 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	<ul style="list-style-type: none"> - 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 SAA

Alarm by frequency deviation	<p>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 $\pm 0,4$ Hz during the detection process, and of $\pm 0,3$ Hz during the releas process.</p> <p>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.</p> <p>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).</p> <p>You must consider this reduction of precision when setting the values for detection and/or release.</p>
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