

# SmartLevel™ RSLC88 SmartRelay



**Reliance®**  
A PRODUCT OF CLARK-RELIANCE

## STORAGE and HANDLING

The Reliance® SmartLevel™ RSLC88 SmartRelay meets or exceeds all applicable specifications when shipped from the factory. All parts must be inspected upon receipt to ensure that no damage has been incurred during transit. If damage has occurred, a claim should be filed with the carrier immediately.

## GENERAL INSTALLATION

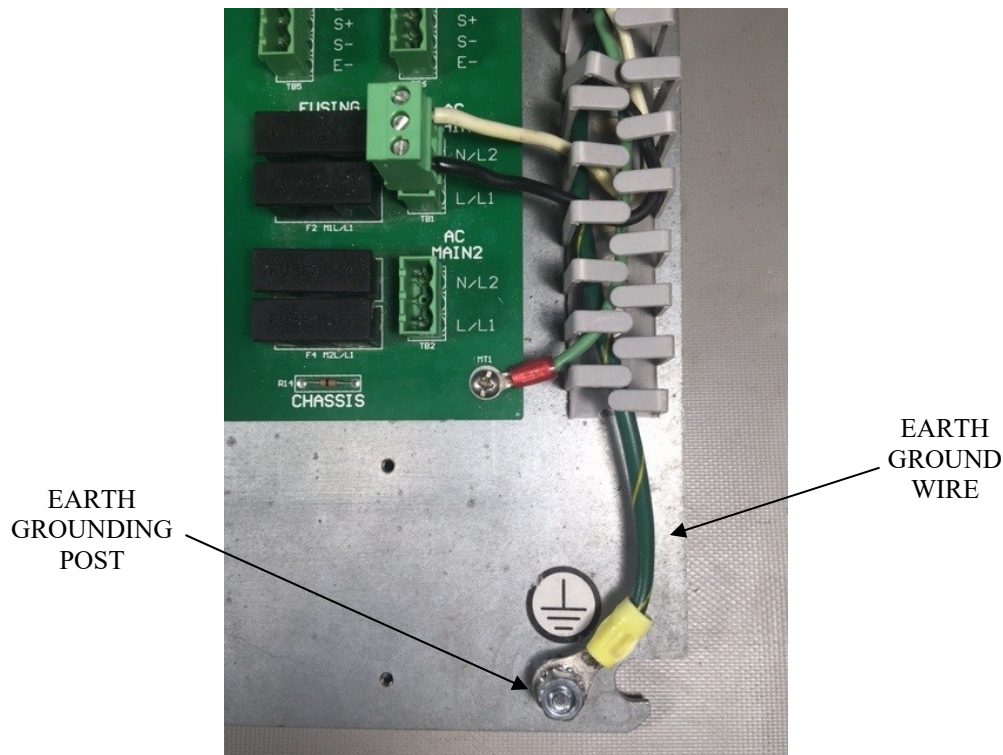
### CAUTION:



Before installation or any servicing inside a SmartLevel system enclosure, mains power should be removed from the system and appropriately locked-out at the external source! Also verify that any electrically connected control instrumentation, if any, is properly set or bypassed! All installation steps should be performed by a qualified technician and should be executed in accordance with all applicable national and local codes. Read the entire IOM before proceeding.



ALL configurations of the RESC-XX SmartLevel systems MUST BE properly EARTH GROUNDED on the grounding stud on the lower right corner of the RSLC13 Motherboard mounting panel assembly to ensure safety. See FIGURE 1.



**FIGURE 1 – Earth Grounding**

**CAUTION:** The RSLC88 SmartRelay can be installed in any of the vertical peripheral I/O slots in any SmartLevel system, see FIGURE 2. Before installing or removing the SmartRelay, ( or any plugin card within the system ), all power applied to the system should be turned OFF to avoid any possible damage. Extra care should be taken to assure that any installed card is fully seated in its connector and completely engaged and locked in its mechanical support rail(s) before re-applying power.

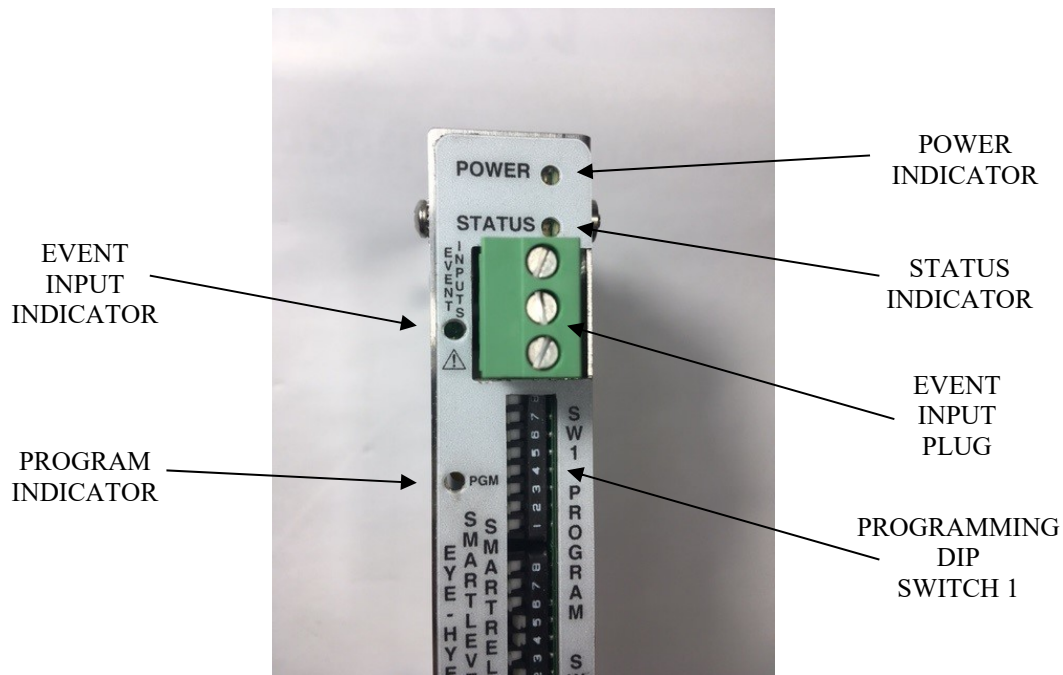
INSTALLED  
RSLC88  
SMARTRELAY  
IN VERTICAL  
PERIPHERAL  
SLOT



**FIGURE 2 – SmartRelay installed in Motherboard**

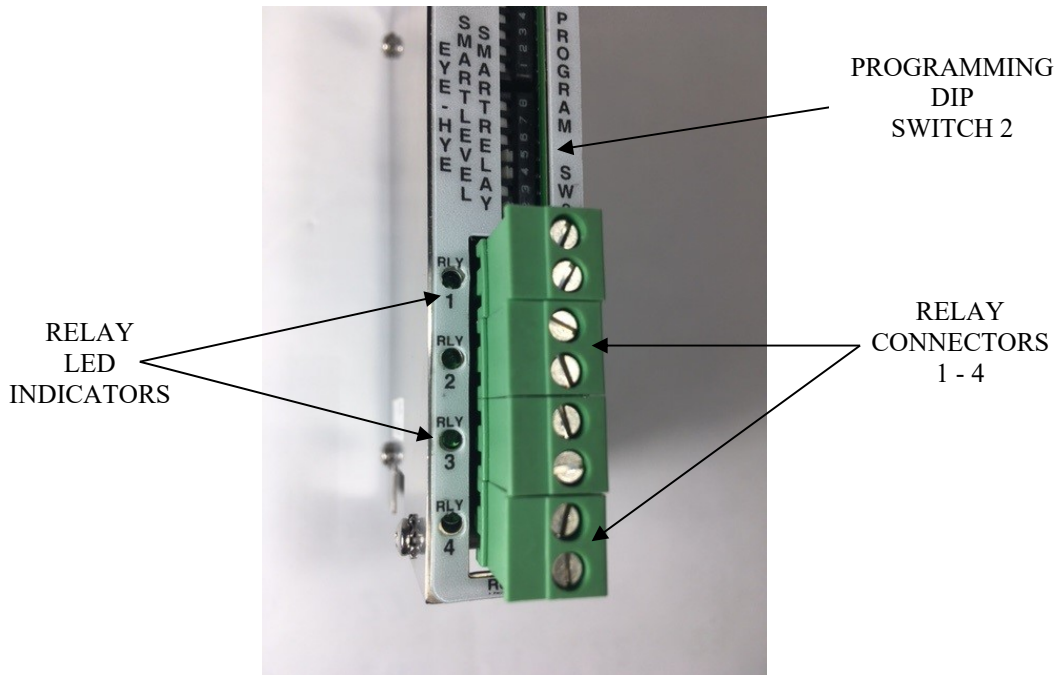
### FEATURES

The RSLC88 SmartRelay option adds advance PLC type control of (4) separate relays that can be programmed to open or close per measurement and/or operational conditions of the system. All relays are electrically isolated from the system and can be connected to external instrumentation or control equipment inputs for indication and/or control. See FIGURES 3 and 4 for a diagram of the front panel controls, indicators, and I/O connectors.



**FIGURE 3 – Top of Front Panel**

There are (3) methods for programming the SmartRelay. The simplest, covered herein, is the STANDALONE method using its front panel DIP switches. Here (2) MODES, BASIC and ADVANCED, allow either a simple DIRECT assignment of a single System Condition OR a FUNCTION of one or more System Condition(s) to any single relay.



**FIGURE 4 – Bottom of Front Panel**

In BASIC MODE, the relays can be easily programmed to indicate the direct level/status of any single Probe Module Channel, System Error, Blowdown, Water over Steam, or an EVENT input condition. In ADVANCED MODE, they can be programmed to indicate specific Conditional Functions, such as 2 OF 3 VOTING logic, BOOLEAN OR, BOOLEAN AND, and HOLD ON EVENT. In addition to programming a simple BASIC direct or ADVANCED Conditional Function, the relays can also be simultaneously programmed to be asserted in either Normally Open or Normally Closed, INVERTED, contact forms AND with NO or variable DELAY timing.

## **OPERATION**

After installing the RSLC88 SmartRelay in any vertical peripheral slot in any of the systems Motherboards, the RSLC28 Main 12 channel for probe channels 1-12 or the RSLC41 24 probe channel Expansion Board, the SmartLevel system can be powered by either the RSLC25 Universal AC and/or the RSLC91 24VDC Power Supplies. Normal operation can then be verified by observing the GREEN indication of both the POWER and STATUS LED indicators on the SmartRelay's front panel, see FIGURE 3. The RSLC88 SmartRelay is now ready to be programmed. While programming, the YELLOW PROGRAM INDICATOR LED on the front panel will LIGHT/FLASH and go OFF after the last System Condition is ENTERED. Other aspect regarding the installation, operation, and maintenance of the overall system can be found in the SmartLevel's System IOM, document R500.E249.

## **SMARTRELAY PROGRAM DEFAULTS**

The SmartRelays are shipped with Relays 1 – 4 programmed in BASIC MODE, assigning Relay Outputs 1–4 to Probe Channels 1–4, respectfully, as the DEFAULT, unless specific programming is requested by the customer. Confirmation of the programmed DEFAULT or any customer programmed settings, can be verified by following the instructions in the SYSTEM TESTING section.

## GENERAL DIP SWITCH PROGRAMMING

The functions performed by the DIP switches can be broken up into the following 5 operational categories: the Operating Modes, the Relay Assignment, the Relay Assertions, ( DELAY, INVERT or, HOLD ), the Functions, and the System Conditions themselves. The 5 groups are as follows.

Group 1:	DIP SW1-8:	Operating Mode	RUN / RESET
	DIP SW1-7:	Operating Mode	AUTO / MANUAL
	DIP SW1-6:	Operating Mode	RUN / STROBE ENTRY
Group 2:	DIP SW1-5:	Relay Assignment	R1    1 – 4
	DIP SW1-4:	Relay Assignment	R0
Group 3:	DIP SW1-3:	Relay Assertion, Delay	D1    None, 3, 10, or 20 seconds
	DIP SW1-2:	Relay Assertion, Delay	D0
	DIP SW1-1:	Relay Assertion, Contact	S1    INVERT ON/OFF
	DIP SW2-8:	Relay Assertion, Hold	S0    Event HOLD ON/OFF
Group 4:	DIP SW2-7:	Function	P1    BASIC OR ADVANCED FUNCTIONS
	DIP SW2-6:	Function	P0
Group 5	DIP SW2-5	Condition	F4    (24) Individual Probe Channel, Errors,
	DIP SW2-4	Condition	F3    Blowdown, Water over Steam, EVENT
	DIP-SW2-3	Condition	F2    Input, Power Fail, User Program, and
	DIP SW2-2	Condition	F1    EOP.
	DIP SW2-1	Condition	F0

## OVERALL DIP SWITCH PROGRAMMING CHART

With the DIP switch operational categories fully defined, all the settings that correspond to their individual and grouped operation programming actions can be details in the following chart in FIGURE 5.

## BASIC DIRECT RELAY PROGRAMMING

The BASIC or simplest way to program a Relay is to directly assign a single Relay Output to a single System Condition. This is easily done by performing the following steps with DIP switches SW1 and SW2. Follow the assignments of the DIP switch settings using FIGURE 6 as a reference. The example shown below will change the DEFAULT or previously setup program for Relay 1, closing its contact when Probe Channel 10 detects Water, with NO Delays or Holds. **NOTE** that NON-Probe Channel System Conditions can also be programmed in addition to Probe Channels.

**NOTE:** DIP switches are considered a “1” or **OFF** in the **LEFT** position and a “0” or **ON** in the **RIGHT** position.

**ALSO NOTE:** All the information to completely program the relay is entered in a single step or DIP switch setting sequence, shown as follows.

- 1.) Enter RUN MODE by placing DIP SW1-8, RST, to the LEFT.
- 2.) Enter MANUAL MODE by placing DIP SW1-7, A/M, to the RIGHT.
- 3.) Select RELAY 1 by placing DIP SW1-5, R1, to the RIGHT and  
DIP SW1-4, R0, to the RIGHT.
- 4.) Select NO DELAY by placing DIP SW1-3, D1, to the LEFT and  
DIP SW1-2, D0, to the LEFT.

PROGRAMMING ASSIGNMENTS																
RST	A/M	SEL	R1	R0	D1	D0	S1	S0	P1	P0	F4	F3	F2	F1	F0	FUNCTION
0																HARDWARE RESET
1																HARDWARE RUN
	0															MANUAL/PROGRAM MODE
	1															AUTO/DEFAULT MODE
		0														PROGRAM RELAY STROBE
		1														PROGRAM RELAY RUN
			0	0												ASSIGN RELAY 1
			0	1												ASSIGN RELAY 2
			1	0												ASSIGN RELAY 3
			1	1												ASSIGN RELAY 4
					0	0										3 SECOND DELAY
					0	1										10 SECOND DELAY
					1	0										20 SECOND DELAY
					1	1										NO ACTIVATION DELAY
							0									INVERT OUTPUT
							1									NORMAL OUTPUT
								0								HOLD ALL RELAYS ON EVENT ON (*)
								1								HOLD ALL RELAYS ON EVENT OFF (*)
									0	0						ADD 2OF3 VOTING FUNCTION
									0	1						ADD "OR" FUNCTION
									1	0						ADD "AND" FUNCTION
									1	1						NOP
											0	0	0	0	0	CLEAR ALL ASSIGNMENTS
											0	0	0	0	1	ASSIGN CHANNEL 1 (*)
											0	0	0	1	0	ASSIGN CHANNEL 2 (*)
											0	0	0	1	1	ASSIGN CHANNEL 3 (*)
											0	0	1	0	0	ASSIGN CHANNEL 4 (*)
											0	0	1	0	1	ASSIGN CHANNEL 5 (*)
											0	0	1	1	0	ASSIGN CHANNEL 6 (*)
											0	0	1	1	1	ASSIGN CHANNEL 7 (*)
											0	1	0	0	0	ASSIGN CHANNEL 8 (*)
											0	1	0	0	1	ASSIGN CHANNEL 9 (*)
											0	1	0	1	0	ASSIGN CHANNEL 10 (*)
											0	1	0	1	1	ASSIGN CHANNEL 11 (*)
											0	1	1	0	0	ASSIGN CHANNEL 12 (*)
											0	1	1	0	1	ASSIGN CHANNEL 13 (*)
											0	1	1	1	0	ASSIGN CHANNEL 14 (*)
											0	1	1	1	1	ASSIGN CHANNEL 15 (*)
											1	0	0	0	0	ASSIGN CHANNEL 16 (*)
											1	0	0	0	1	ASSIGN CHANNEL 17 (*)
											1	0	0	1	0	ASSIGN CHANNEL 18 (*)
											1	0	0	1	1	ASSIGN CHANNEL 19 (*)
											1	0	1	0	0	ASSIGN CHANNEL 20 (*)
											1	0	1	0	1	ASSIGN CHANNEL 21 (*)
											1	0	1	1	0	ASSIGN CHANNEL 22 (*)
											1	0	1	1	1	ASSIGN CHANNEL 23 (*)
											1	1	0	0	0	ASSIGN CHANNEL 24 (*)
											1	1	0	0	1	ASSIGN MODULE/PERIPHERAL ERROR
											1	1	0	1	0	ASSIGN BLOW/DOWN
											1	1	0	1	1	ASSIGN WATER OVER STEAM ERROR
											1	1	1	0	0	TRACK EVENT INPUT
											1	1	1	0	1	RELAY TEST/POWER FAIL
											1	1	1	1	0	USER PROGRAM
											1	1	1	1	1	EOP ( END OF PROGRAM )

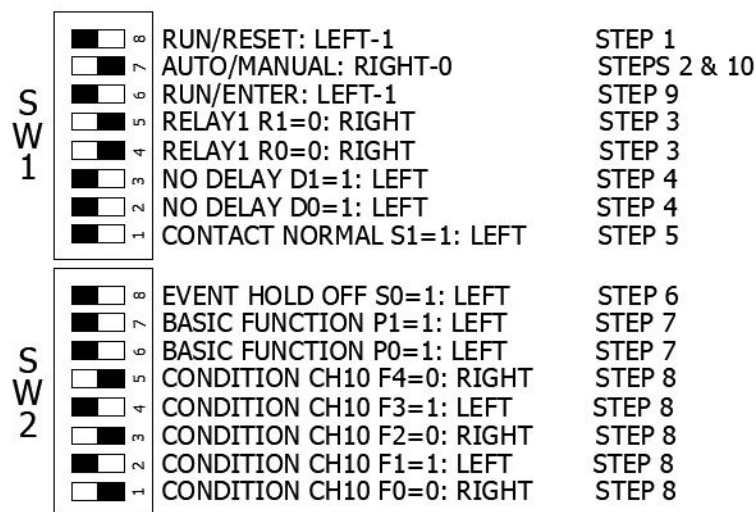
**FIGURE 5 – SmartRelay Programming DIP Switch Assignment Chart**

- 5.) Select the contact to CLOSE/NORMAL when actuated by placing DIP SW1-1, S1, to the LEFT.
- 6.) Select OFF for RELAY HOLD ON EVENT, by placing DIP SW2-8, S0, to the LEFT.



- 7.) Select BASIC OPERATION for FUNCTION, by placing DIP SW2-7, P1, to the LEFT and DIP SW2-6, P0, to the LEFT.  
DIP SW2-2, F1, to the LEFT, and DIP SW2-1, F0, to the RIGHT.
- 8.) Select Probe Channel 10 as the CONDITION, by placing DIP SW2-5, F4, to the RIGHT, DIP SW2-4, F3, to the LEFT, DIP SW2-3, F2, to the RIGHT, DIP SW2-2, F1, to the LEFT, and DIP SW2-1, F0, to the RIGHT
- 9.) ENTER the program by sequentially placing DIP SW1-6, SEL, to the RIGHT **AND THEN BACK** to the LEFT position. **NOTE** that the YELLOW PGM LED, on the front panel, will temporarily light during the program entry.
- 10.) Enable the program by returning DIP SW1-7, A/M, back to AUTO MODE, by placing it to the LEFT.

( BLACK INDICATES POSITION OF SWITCH BAT HANDLE )



**FIGURE 6 – PROGRAMMING DIP SWITCHES SW1 & SW2**

Programming the Relays can be simplified by figuring how you want each Relay programmed and entering the sequence of DIP switch settings in a SMARTRELAY PROGRAMMING WORKSHEET, or an equivalent, one for each Relay. See FIGURE 17 for a blank worksheet that can be copied and used as needed.

An example of a completed worksheet can be seen in FIGURE 7 for the programming of the previous example where Relay 1's contact was programmed to close, with No Delays or Holds, when Probe Channel 10 detected water. Each of its Step Columns show a sequence of DIP switch settings starting from all the DIP Switches on DIP Switch 1 & 2 positioned in the OFF or LEFT positions, where Step Column 1 shows the transition of DIP Switch 1-7 from LEFT to RIGHT to set SmartRelay up for programming in the MANUAL MODE, also shown in Steps 1 & 2 in FIGURE 6.

Next, since we are programming a simple BASIC setup, we can select several features at once, as shown in Step Column 2 of FIGURE 7. Here we are programming the Relay, Delay, Contact action, Hold on Event, and System Condition all as a single BASIC operation, all at once, with the DIP switch settings positioned as shown. Note that this performs Steps 3, 4, 5, 6, 7, and 8 in FIGURE 6, all at the same time.

Now that all the BASIC programming information is SET by the DIP switches, we can now ENTER or STROBE-IN the program by toggling the position of DIP switch SW1-6, Step Column 13 in FIGURE 7, to the RIGHT/OFF position AND THEN BACK LEFT in the OFF position. This sequence performs Step 9 in FIGURE 6.

Finally, we can RUN the entered program by positioning DIP switch SW1-7, Step Column 14, to the LEFT/RUN position performing the sequence in Step Column of FIGURE 7 and Step 10 in FIGURE 6. **NOTE** that the **YELLOW PROGRAM INDICATOR LED** on the front panel will **LIGHT** and go **OFF** after the program is **ENTERED**.

### SMARTLEVEL SMARTRELAY PROGRAMMING WORKSHEET

SYSTEM INFO:  
PROGRAM FUNCTION:  
DATE:

R1 Basic PC:10 No Delay, Invert, or Hold

SW 1	8	1																	RUN/RESET-LEAVE IN RUN MODE	
	7	1	0																1	AUTO/MANUAL MODE
	6	1																0→1		TOGGLE TO ENTER SETUP
	5	1		0																RELAY NUMBER: 1
	4	1		0																
	3	1		1																
	2	1		1																DELAY ( NONE, 3, 5, OR 10 SECONDS ): NONE
	1	1		1																CONTACT ASSERTION ( NORMAL OR INVERT ): NORMAL
SW 2	8	1		1																HOLD RELAYS ON EVENT [ OFF/ON ]: OFF
	7	1		1																FUNCTION FOR 2OF3 VOTING,
	6	1		1																BOOLEAN OR/AND, OR BASIC: BASIC
	5	1		0																
	4	1		1																INPUT
	3	1		0																ASSIGNMENT(S): PROBE CHANNEL 10
	2	1		1																
1	1		0																	
STEP	START	1	2	3	4	5	6	7	8	9	10	11	12	13	14	CIRCLE STEPS USED				
F U N C T I O N	E M M N A O T N D E U E R A L	B A S A D E S V T I A U C N P C E D 1	E S N E T T E U R P	B A S A D E S V T I A U C N P C E D 2	E S N E T T E U R P	B A S A D E S V T I A U C N P C E D 3	E S N E T T E U R P	B A S A D E S V T I A U C N P C E D 4	E S N E T T E U R P	B A S A D E S V T I A U C N P C E D 5	E S N E T T E U R P	E O P	E S N E T T E U R P	E A M N U O T T D E O E R	NOTES:					
C O M M E N T S																				

**FIGURE 7**  
**Completed Programming Worksheet for Basic Programming of Relay 1, with No Delays, Inverts or Holds, measuring water on Probe Channel 10.**

### ADVANCED RELAY PROGRAMMING

Where BASIC Relay programming programs only a single System Condition, ADVANCED programming programs a FUNCTION and also allows entering multiple Probe Channels OR other System Conditions to satisfy the FUNCTION. The (3) functions allowed here are the 2 OF 3 VOTING LOGIC, the BOOLEAN OR, and the BOOLEAN AND. **NOTE** that NON-Probe Channel System Conditions can also be programmed in addition to Probe Channels and that the **YELLOW PROGRAM INDICATOR LED** on the front panel will **FLASH** and go **OFF** after the **LAST** System Condition is **ENTERED**.

The 2 OF 3 VOTING LOGIC is pretty straightforward. After assigning this FUNCTION, (3) Probe Channels are entered in succession. The command automatically terminates the number of System Conditions entries after the third one is entered, allowing for the entire command to be ENTERED or STOBED-IN AND programming control can be returned to the RUN MODE. Note that this command ALWAYS requires (3) System Conditions. Typically, these are Probe Channels, **BUT** they can also be any other System Condition, if desired.

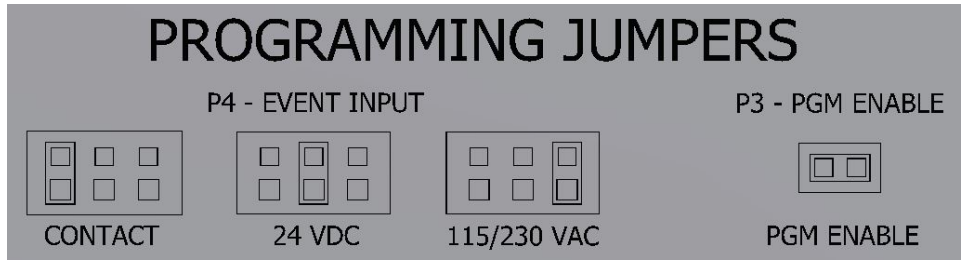
The BOOLEAN OR and BOOLEAN AND FUNCTIONS basically follow the entry of the 2 OF 3 VOTING LOGIC entry, EXCEPT they allow the entry of any (2) to (5) System Conditions. A BOOLEAN OR FUNCTION asserts the programmed Relay when ANY of it programmed System Conditions are active. A BOOLEAN AND FUNCTION asserts the programmed Relay when ALL of the entered System Conditions are



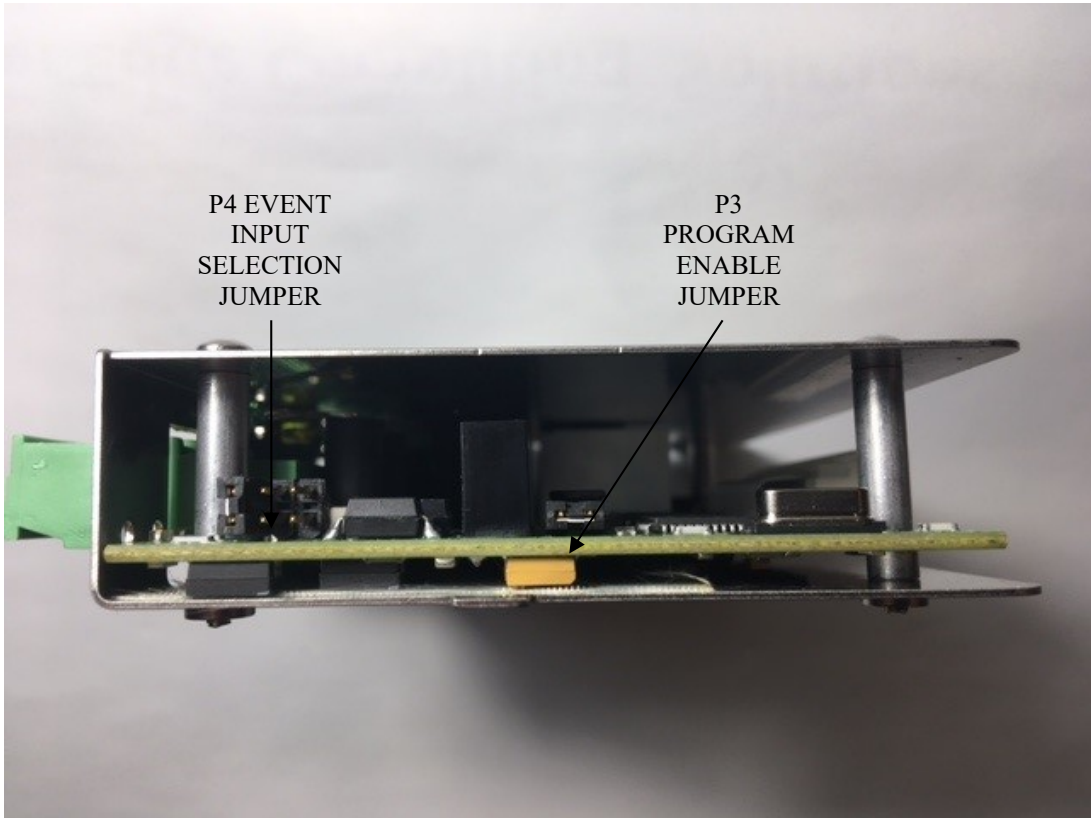








**FIGURE 11 – EVENT INPUT & PROGRAMMING LOCKOUT JUMPERS SETTINGS**



**FIGURE 12 – EVENT INPUT & PROGRAMMING LOCKOUT JUMPER LOCATIONS**

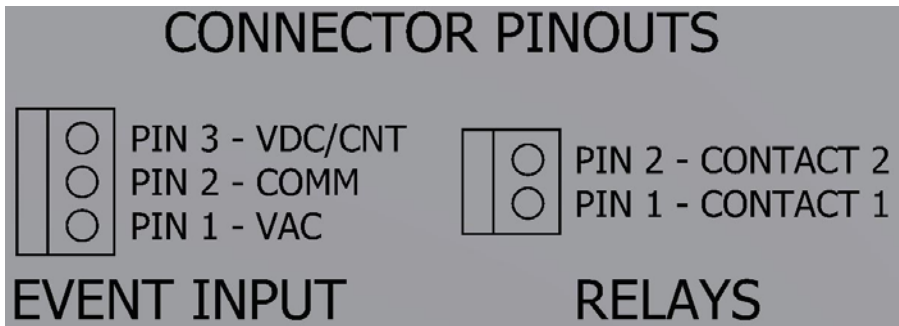
**PROGRAMMING LOCKOUT FEATURE**

Re-programming or making any additions or changes to any of the existing SmartRelay programs can be locked-out or disabled by removing the programming jumper on P3. To DISABLE programming, simply store the jumper on only one of the pins.

**INPUT AND OUT CONNECTOR PINOUTS**

Pinout connections for each Relay output and the EVENT INPUT are shown in FIGURE 13. NOTE that each relay has only 2 contact connections and can be programmed as either FORM A, Normally OPEN contacts, or as FORM B, Normally CLOSED contacts, by using the INVERT function.





**FIGURE 13 – RELAY OUTPUT & EVENT INPUT CONNECTIONS**

### USING THE HOLD ON EVENT FUNCTION

The HOLD ON EVENT Function can be very useful as it allows the programmed Relay output contacts to remain in their previous or pre-HOLD state while the EVENT INPUT is Active or ON and returns them to their real-time Advanced Function state when the EVENT INPUT negates or goes OFF. One of its best uses is to HOLD a relay in a known state while a Blowdown is performed. Here, a momentary contact pushbutton switch can be connected to the EVENT INPUT, set for a Contact Input, and the button can be pressed and HELD during the 1 or 2 minutes Blowdown to HOLD the Relays contacts during the operation. FIGURE 14 is an example of the Relay programming that Holds Relay 2's contact CLOSED during a Blowdown procedure. For this example, it is assumed that the 2 OF 3 Voting Logic condition was met, ( 2 of the 3 probe channels in water ), before the Event Input was asserted or the button pressed.

### SMARTLEVEL SMARTRELAY PROGRAMMING WORKSHEET

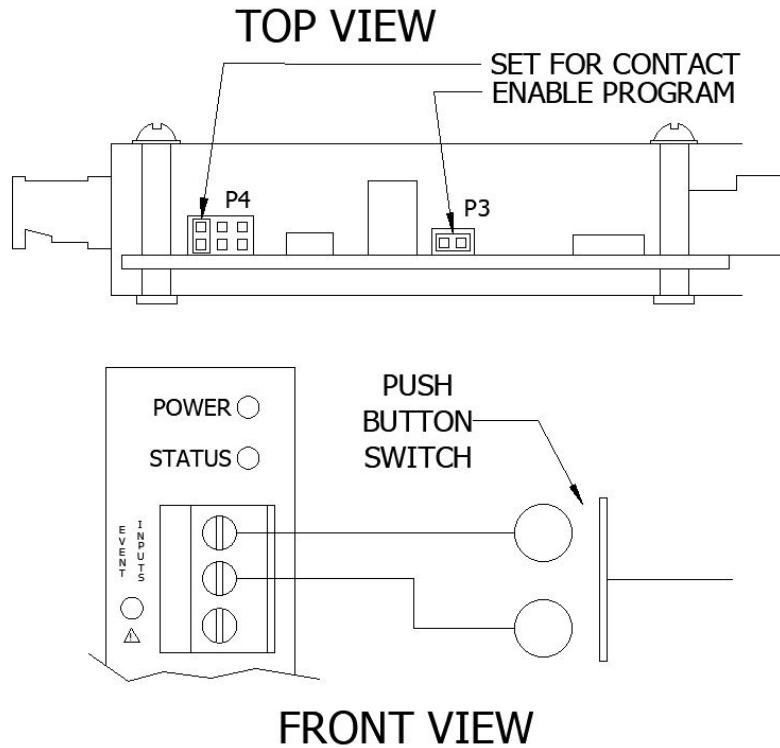
SYSTEM INFO: \_\_\_\_\_  
 PROGRAM FUNCTION: R2 Advanced 2OF3VL PC:1,2,3, 3 Sec Delay, No Invert, and Hold on Event ON  
 DATE: \_\_\_\_\_

STEP	START	1	2	3	4	5	6	7	8	9	10	11	12	13	14	NOTES	
SW1	8	1														RUN/RESET-LEAVE IN RUN MODE	
	7	1	0												1	AUTO/MANUAL MODE	
	6	1			0→1											0→1	TOGGLE TO ENTER SETUP
	5	1		0													RELAY NUMBER: 2
	4	1		1													DELAY ( NONE, 3, 5, OR 10 SECONDS ): 3 SECONDS
	3	1		0													CONTACT ASSERTION ( NORMAL OR INVERT ): NORMAL
	2	1		0													HOLD RELAYS ON EVENT ( OFF/ON ): ON
	1	1		1													FUNCTION FOR 2OF3 VOTING, BOOLEAN OR/AND, OR BASIC: 2OF3VL
SW2	8	1															INPUT ASSIGNMENT(S): PROBE CHANNELS 1, 2, & 3
	7	1															
	6	1															
	5	1		0		0		0								1	
	4	1		0		0		0								1	
	3	1		0		0		0								1	
2	1		0		1		1								1		
1	1		1		0		1								1		
<div style="display: flex; justify-content: space-between;"> <span>STEP</span> <span>START</span> <span>1</span> <span>2</span> <span>3</span> <span>4</span> <span>5</span> <span>6</span> <span>7</span> <span>8</span> <span>9</span> <span>10</span> <span>11</span> <span>12</span> <span>13</span> <span>14</span> <span>CIRCLE STEPS USED</span> </div>																	
FUNCTION		EMM NAO TND EUE RAL	BAS ADE SVT IAU CNP C E D 1	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 2	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 3	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 4	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 5	ES NE TT EU RP	ES NE TT EU RP	ES NE TT EU RP	ES NE TT EU RP	EAM NUO TTD EOE R	NOTES: Momentary N. O. pushbutton switch is connected across pins 2 & 3 of the EVENT INPUT to be PRESSED DURING a Column Blowdown to HOLD the contacts for Relay 2 CLOSED during the operation.
COMMENTS																	

**FIGURE 14**

**Completed Programming Worksheet for Advanced 2 OF 3 VOTING LOGIC, Programming of Relay 2, with a 3 Second Delay, No Invert, Hold On Event ON, on Probe Channels 1, 2, & 3, with a N.O. momentary pushbutton switch, connected to pins 2 and 3 of the Event Input, to HOLD Relay 2 contacts CLOSED during a Column Blowdown**

**FIGURE 15** shows the P3 EN PGM, P4 EVENT INPUT SELECT, the and the push button connection to the Event Input.



**FIGURE 15**

**Momentary normally open pushbutton connected to the Event Input to HOLD the programmed relay contacts in their pre-HOLD input state**

**SYSTEM TESTING**

System testing of the RSLC88 SmartRelay is suggested to verify that ALL the utilized relays have been programmed as desired. This can easily be accomplished by using the PROBE TEST DIP switches on the RSLC28 Main SmartLevel Motherboard, to simulate any Probe Channel input. A jumper or an applied AC/DC voltage can be applied, per the P4 EVENT Input jumper selection, to check the EVENT INPUT operation indicated by the GREEN EVENT LED. Any RSLC23 Probe Module or system peripheral set in the RESET State can be used to simulate a System Error. BLOWDOWN can be simulated by setting DIP switches SW1-2 FACTORY and SW1-7 MANUAL MODE on any RSLC23 Probe Module in the DOWN position, causing its BLOWDOWN and WATER SENSE outputs to FLASH. **NOTE: Be sure to RETURN ANY DIP switch used for testing and/or simulating a System Condition to its NORMAL operating position after testing!**

**ROUTINE MAINTENANCE**

Aside from routine maintenance required and stipulated in the SmartLevel’s IOM, R500.E249, the following items can be periodically inspected.

- 1) Visually inspect the connection and integrity of ALL the Earth grounds within the system. It is imperative that this be maintained for safety.
- 2) Visually inspect all LED indicators for proper and desired operation and indication.
- 3) Periodically inspect all electrical connections and make sure they are free of any corrosion and are secure.
- 4) Inspect and maintain the integrity of the enclosure components to keep all electronics from the ingress of moisture.





**FIGURE 16 – Typical REESC-12 SmartLevel System with the RSL88 Smart Relay and the AC/DC power supply options installed.**

# SMARTLEVEL SMARTRELAY PROGRAMMING WORKSHEET

SYSTEM INFO:  
PROGRAM FUNCTION:  
DATE:

STEP	START	1	2	3	4	5	6	7	8	9	10	11	12	13	14	CIRCLE STEPS USED	NOTES:	
S W 1	8	1															RUN/RESET-LEAVE IN RUN MODE	
	7	1	0												1		AUTO/MANUAL MODE	
	6	1												0→1			TOGGLE TO ENTER SETUP	
	5	1															RELAY NUMBER:	
	4	1																
	3	1																DELAY ( NONE, 3, 5, OR 10 SECONDS ):
	2	1																CONTACT ASSERTION ( NORMAL OR INVERT ):
	1	1																HOLD RELAYS ON EVENT ( OFF/ON ):
	8	1																FUNCTION FOR 2OF3 VOTING,
	7	1																BOOLEAN OR/AND, OR BASIC:
	6	1																
	5	1												1				INPUT
	4	1												1				ASSIGNMENT(S):
	3	1												1				
2	1												1					
1	1												1					
STEP	START	( 1 )	( 2 )	3	4	5	6	7	8	9	10	11	12	13	( 14 )			
F U N C T I O N		EMM NAO TND EUE RAL	BAS ADE SVT IAU CNP C E D 1	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 2	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 3	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 4	ES NE TT EU RP	BAS ADE SVT IAU CNP C E D 5	ES NE TT EU RP	E O P	ES NE TT EU RP	EAM NUO TTD EOE R			
C O M M E N T S																		

FIGURE 17 – Blank Programming Worksheet





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#### **REPLACEMENT PARTS WARNING**

THE USE OF NON-ORIGINAL EQUIPMENT MANUFACTURER PARTS ( SUCH AS GASKETS, PROBES, MODULES, ETC. ), WILL VOID AND AGENCY APPROVAL ( FM, UL, CAS, CRN, ABS, ETC. ), PRESSURE, TEMPERATURE, ELECTRICAL RATING, AND WARRANTY OF THE EQUIPMENT. CLARK-RELIANCE REQUIRES THE USE OF OEM PARTS FOR ALL REPAIRS IN/ON THIS PRODUCT IN ORDER TO MAINTAIN PLANT AND PERSONNEL SAFETY AND RELIABLE OPERATION.

CONSULT THE FACTORY OR YOUR LOCAL CLARK-RELIANCE REPRESENTATIVE WITH ANY QUESTIONS. PLEASE HAVE THE MODEL NUMBERS AND/OR REFERENCE DRAWING NUMBERS AVAILABLE WHEN CALLING. YOU CAN ALSO CONTACT US AT OUR WEBSITE [www.relianceboilertrim.com](http://www.relianceboilertrim.com) OR [RelianceAppEng@clark-reliance.com](mailto:RelianceAppEng@clark-reliance.com).