Standard Contact Blocks

An almost unlimited number of circuit control options are possible using various combinations of contact blocks. 8 different "V" or "F" family modular blocks may be used with any operator in the Reliant 22, 2200 or 6000 series, depending on circuit requirements and operator design. The exclusive SNAP-BLOC design permits assembly without the use of tools – no screws or hardware to get lost. Choose either screw terminals or dual male .110"/.250" quick connect terminals. Plunger color indicates closure mode. The double break silver contacts are enclosed in a tough transparent polycarbonate housing, permitting visual inspection of contacts. Designed-in rocking action for long, reliable life; over several million operations in normal use. Operating temperature range: -25°C to +60°C. Storage temp. -40°C to +80°C.

Application Notes

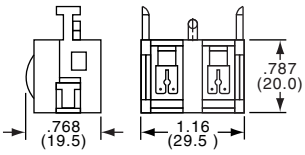
1. A total of 4 (2 upper and 2 lower) contact blocks may be stacked and snap-mounted in either the upper and/or lower position on the back on any Reliant 22, Series 4000 or 6000 operator.
2. In order to maintain optimum insulating distances when contact blocks are stacked, wiring connections should be in same polarity for operation above 300VAC.
3. Blocks may be prewired and snapped into place for easier assembly.
4. Remove blocks by simply prying tabs. Small screwdriver is all that is necessary.

F&V Contact blocks are UL recognized. File Number E-60363
CSA LR-20785-19 CE MARK

ELECTRICAL CONTACT RATINGS

Condition	Function	Standard Series (600 VAC Max.)		
AC Operation		120V	300V	600V
Inductive Loads	Make	30A	12A	6A
	Continuous	6A	6A	6A
.350 P.F. min.	Break	3A	1.2A	0.6A
Resistive Loads	Make, Continuous	6A	6A	6A
.750 P.F. min.	Carry & Break			
DC Operation				
Inductive &	Make	1.1A		
Resistive	Continuous Carry	6A	6A	6A
Loads	Break	1.1A		

F Series

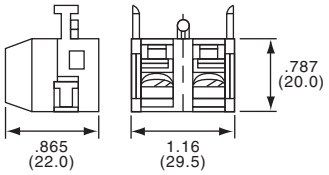


QUICK CONNECT

Tyco Electronics	Alcoswitch	Contacts	Plunger Color
1437612-9	F40	Normally Closed	Red
1-1437612-0	F50	Normally Open	Green
1-1437612-1	FA0	N.O. Early Make	Yellow
1-1437612-2	FR0	N.C. Late Break	Black

Note: FA0 and FR0 contacts "overlap."

V Series



SCREW TERMINAL

Tyco Electronics	Alcoswitch	Contacts	Plunger Color
1-1437612-3	V40	Normally Closed	Red
1-1437612-5	V50	Normally Open	Green
1-1437612-8	VA0	N.O. Early Make	Yellow
1-1437612-9	VR0	N.C. Late Break	Black

Note: "V" Series is available with gold plated contacts; order V40G, V50G, VA0G, VR0G. Note: VAO and VRO contacts "overlap."

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USA: 1-800-522-6752
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C. America: 52-55-5-729-0425
South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

Series 6000 and Reliant'22 Contact Selection

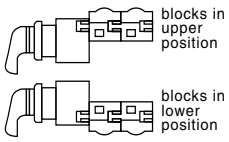
1. Determine how many contacts are required for the application, and what contact closure sequence is needed for each contact.
   a. 2-Position Operators: There are only two practical possibilities for contact closure sequence. Using "O" to indicate an open and "X" to indicate a closed contact, the options are shown in the table to the right. All Reliant 22 and Series 6000 2-position selection selector and keylock operators provide these options.
   b. 3-Position Operators: There are six practical possibilities for contact closure sequence. Using "O" to indicate an open contact, and "X" to indicate a closed contact, the options are shown in the table to the right. Four different cam types are available to provide various combinations of contact closure sequence. Cam Type 2 (see table below) provides the most popular closure sequence, and Cam Type 3 provides all six possibilities, depending on the contact block models chosen. Note that each operator has an upper and lower contact block location, and that the cam profiles are different for upper and lower locations, except for Cam Type 2.
2. Make a truth table similar to that shown in the example at the bottom of the page, in which each contact required by the circuit of the application is represented. Up to 12 contacts may be used for each operator, depending on the sequences required and the types of contact blocks chosen.
3. Refer to the contact sequence table (below). Find the cam type that will provide all of the required contact closure sequences, and note which contact block model will be needed for each circuit contact.
4. Now refer to the tables on pages I5-I6 for 22mm and pages I12-I13 for 30mm to find the operator model that has the cam type needed in the application and that provides the desired features with respect to action (maintained or momentary) type of actuator (lever or key), etc.

2 Position Operators	
0 left	1 right
O	X
X	O

3 Position Operators		
2 left	0 center	1 right
O	O	X
X	O	O
O	X	X
X	X	O
O	X	O
X	O	X

SELECTOR & KEYLOCK OPERATORS

ALCOSWITCH selector and keylock operators, in combination with the contact blocks listed on page I8, are designed to fulfill the circuit requirements of almost any 2- or 3-position control application. Each operator has two locations (upper and lower) into which contact blocks may be snap-mounted. Up to four contact blocks may be stacked in each location, the maximum number depending on the contact block models chosen and the contact closure sequences required. (Note: only one logic level block may be used in each location.)



CONTACT CLOSURE SEQUENCE CHART

Contact Blocks	2-Position Operators	3-Position Operators							
Model	CAM Type 1 upper & lower locations	CAM Type 2 upper location	CAM Type 2 lower location	CAM Type 3 upper location	CAM Type 3 lower location	CAM Type 4 upper location	CAM Type 4 lower location		
	0 1	2 0 1	2 0 1	2 0 1	2 0 1	2 0 1	2 0 1		
V40 or F40 Red	X 0	X 0 0	X 0 0	X 0 0	0 X 0	0 X X	X X 0		
V50 or F50 Green	0 X	0 0 X	0 0 X	0 0 X	0 0 X	X 0 0	0 0 X		
VA0 or FA0 Yellow	0 X*	0 X X	0 X X	0 X X	X 0 X	X 0 0	0 0 X		
VR0 or FR0 Black	X 0*	X X 0	X X 0	X X 0	X X 0	0 X X	X X 0		

X = Closed 0 = Open *VA0 and FA0 contacts overlap with VR0 and FR0 contacts between position of 2 position operators providing "Make Before Break" action.

Example: An "Off-On-Reset" circuit control requires a 3-position or 2-position keylock switch. The key is to be removable in the "OFF" and "ON" position and the "Reset" position must be momentary (spring return from right to center). All contacts are open in the "Off" position, and two contacts are closed in the "On" position. In the "Reset" position a third contact must close and one of the contacts in the "on" position must open. This contact closure sequence is shown by the following truth table:

Contact Number	Off (2)	On (0)	Reset (1)
1	O	X	X
2	O	X	O
3	O	O	X

Referring to the Contact Closure Sequence Table, it is seen that cam Type 3 provides these sequences. In addition, the contact block models that should be used are given; model VA0 (or FA0 for contact No. 1, to be installed in the upper contact block location; model V40 (or F40) for contact No. 2, to be installed in the lower contact block location; and model V50 (or F50) for contact No. 3, which may be used in either the upper or lower contact block location, behind one of the other two blocks. Reference to the operator model listings shows that model RM272 provides cam Type 3 and has desired momentary action and key removability.

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Joystick, 22mm

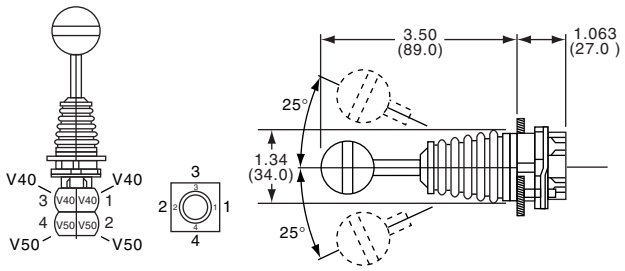
M25310

5 POSITION JOYSTICK (4 Action + Center-Off)

Metal Bushing
Maintained or momentary models, inherent design requires use of N.O. and N.C. contact blocks. Supplied with legend plate, and black knob. Contact blocks not supplied, order separately.
(See page I8.)

Tyco Electronics	Alcoswitch	Description					
1437609-2	M25310	Momentary, 3 Position	—	(ON)	OFF	(ON)	—
1437609-3	M25500	Maintained, 5 Position	ON	ON	OFF	ON	ON
1437609-4	M25510	Momentary, 5 Position	(ON)	(ON)	OFF	(ON)	(ON)
				(ON) indicates momentary position			

Note: All positions are mutually exclusive and action must pass through neutral for all changes of operator level.



CONTACT ARRANGEMENT

Contact blocks should be placed as shown. All contacts are held open in neutral position. Each numbered contact closed when activated. M25310 operators require one N.O. and one N.C. contact block, and M25500 and M25510 require two N.O. and two N.C. blocks.

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