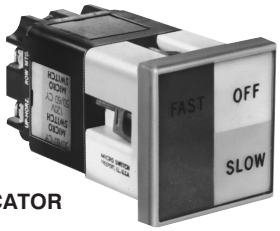
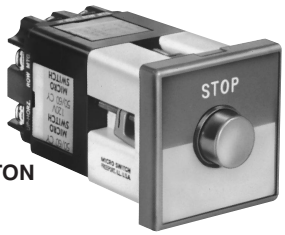
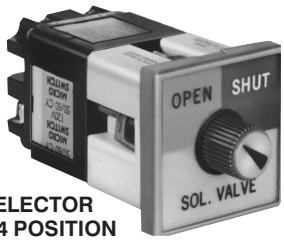


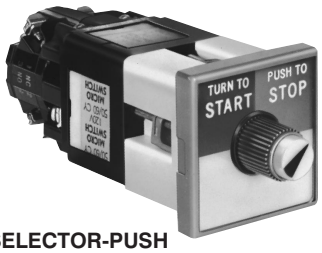
INDICATOR



PUSHBUTTON



SELECTOR
2-3-4 POSITION



SELECTOR-PUSH
2-3-4 POSITION

MULTI-LIGHT OILTIGHT CONTROLS

CMC square, multi-light controls are ideal for process control panels. They are available with selector, pushbutton, and select-or-push actuators, and mechanical or electronic duty contact blocks.

- Indicators, pushbuttons, selectors, and selector-push units
- Mechanical and electronic duty contact blocks
- Contact blocks tandem mount behind operator
- More circuitry control than with any other control by using four plunger adapter kit
- Legend plates with legending in square or diagonal formats
- Bright, lighted displays with good contrast for easy identification
- Square shape is compatible with other panel controls
- Rotary cam-actuated contact blocks
- NEMA 13, oiltight and dusttight
- CSA certified no. LR57326
- UL listed file no. E37138

TABLE OF CONTENTS

CMC Multi-light Oiltight Controls

Contact Blocks

- PTC heavy duty and electronic duty contact blocks
- Tandem mounting in any combination up to four contact blocks per operator. (Two blocks on spring return devices.)
- Exclusive four plunger adapter kit may be used with selector and selector-push units for greater circuit flexibility.

HEAVY DUTY UL/CSA Listed

Heavy duty contact blocks contain fine silver, butting-type contacts. Terminals are angled 30° for easy screwdriver access to terminal screws. Screws contain self-lifting pressure plates for easy wiring. Holds bare wires of 12 to 16 gauge, either singly or two wires of same or adjacent size. Crimp on spade or ring lugs can be used. Base of contact block has marked pad for pencil identification of the control from back of panel.

TWO CIRCUIT BLOCKS ORDER GUIDE

Butting Contacts			Silver Catalog Listing	Gold Plated Catalog Listing
	Description	Symbol		
	1 NC-1 NO		PTC**B**	PTC**T**
	1 NO		PTC**D**	
	1 NC		PTC**E**	
	1 NO-1 NO		PTC**F**	
	1 NC-1 NC		PTC**G**	
For AC use only. For use with 909 pushbuttons.	Overlapping LONC-ECNO		PTC**J**	
For other applications contact MICRO SWITCH.	Sequencing ECNO-NO		PTC**K**	

LO = late opening EC = early closing

FOUR CIRCUIT BLOCKS ORDER GUIDE

Butting Contacts			Silver Catalog Listing	Gold Plated Catalog Listing
	Description	Symbol		
	2NC-2NO		PTC**C**	PTC**W**
	1 NC 1 NO		PTC**H**	
	1 NC 1 NO		PTC**U**	

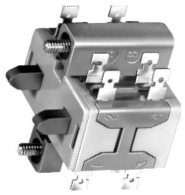
ELECTRICAL RATINGS

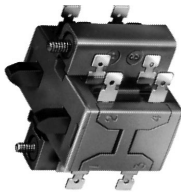
Continuous Current 10 Amps. Carry	AC Volts 35% Power Factor				DC Volts Inductive Load	
	120	240	480	600	125	250
Normal Inrush Current in Amps.	60	30	15	12	—	—
Normal Break Current in Amps.	6	3	1.5	1.2	2.2	0.55

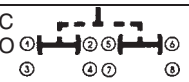
ELECTRONIC DUTY

Electronic duty contact blocks contain sliding contacts for reliable operation on electrical loads where thermal cleaning action is not present. These blocks are offered with silver contacts for low energy applications or gold contacts for solid state millivolt and milliamp dry circuits. Terminals are combination .187 x .021 inch quick connect plated for soldering.

SILVER **GOLD**





Sliding Contacts		Silver Catalog Listing	Gold Catalog Listing
Description	Symbol		
4NC-4NO		PTC**L**	PTC**P**
2NC 2NO	 (Left half of 2 plunger version.)	PTC**M**	PTC**R**
2NC (Right half 2NO of 2 plunger version.)		PTC**N**	PTC**S**

ELECTRICAL RATINGS

Standard Duty Sliding Silver Contacts				
Continuous Current 5 Amps. Carry	AC Volts 35% Power Factor		DC Volts Inductive Load	
	120	220	125	250
Normal Inrush Current in Amps.	30	15	—	—
Normal Break in Amps.	3	1.5	1.1	.5

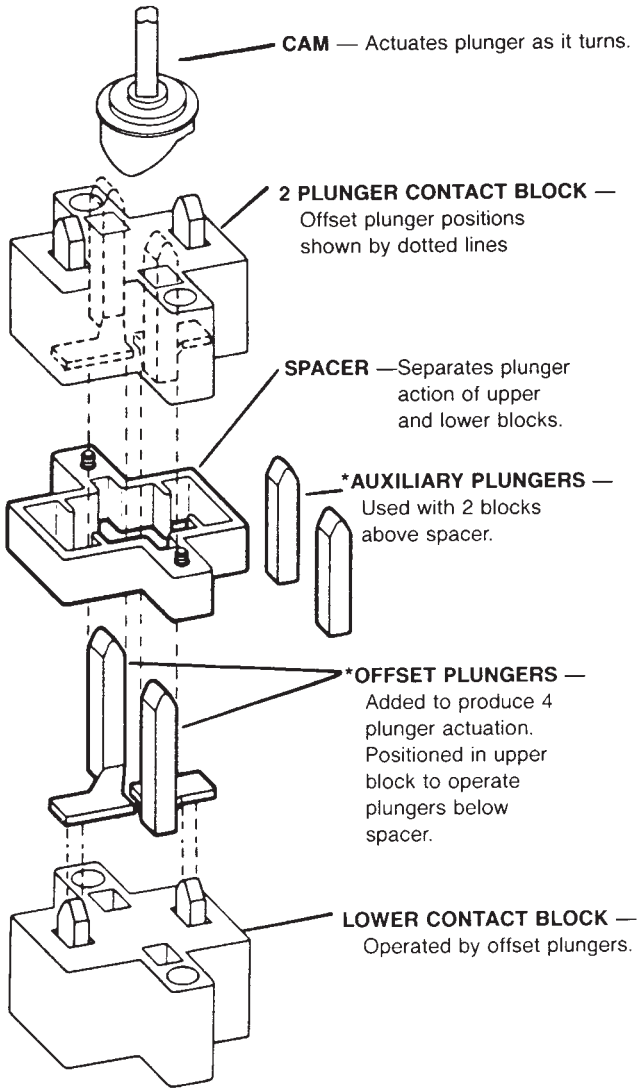
Gold Contacts	
Maximum Volts	Maximum Resistive Loads in Amps.
28 VDC	1 Amp. Resistive
125 VAC	.5 Amp Resistive
Initial contact resistance—.006 ohm average	

Four Plunger Adapter Kit

- Exclusive four plunger actuation for selector and selector-push units.
- Affords more circuit sequencing possibilities by using all four points on the cam.
- Any combination of heavy duty and electronic duty contact blocks (up to four) may be used per operator.

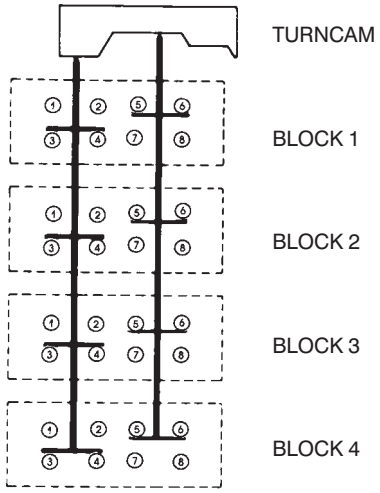
Catalog Listing
PTCA

* 4 Plunger Adapter Kit (Catalog Listing PTCA) includes two sets of auxiliary and offset plungers. One set is .200 inch longer than the other set in order to match the variation in 2-circuit and 4-circuit block depth.

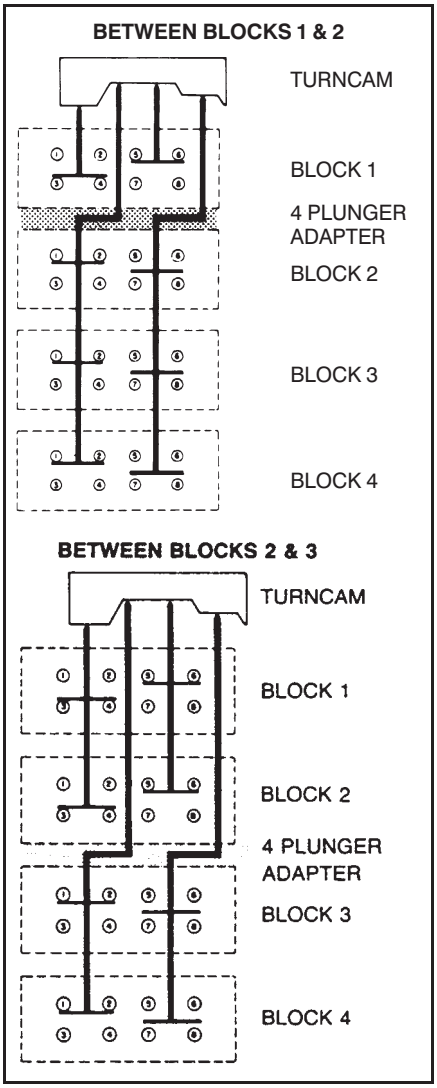


CIRCUIT SEQUENCING CONTROL COMPARISON

2 PLUNGER ACTUATION

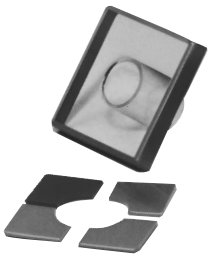


4 PLUNGER ACTUATION



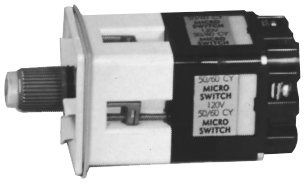
Ordering Guidelines

COVER PLATE INSERTS + **LEGEND PLATE** + **OPERATOR** + **BLOCKS** = **COMPLETE UNIT**



P. 12

P. 12



Pushbuttons P. 7
Selectors P. 8
Selector Push P. 10

P. 4

A complete CMC control includes:

- A cover plate with snap-in inserts
- A legend plate
- An operator
- Contact block(s)

To aid you in ordering, refer to the Legend Order Sheet (page 17) and CMC Specification Sheet (page 21). These forms are available from your nearest MICRO SWITCH Sales Office.

Use the Specification Sheet to order CMC units furnished to you:

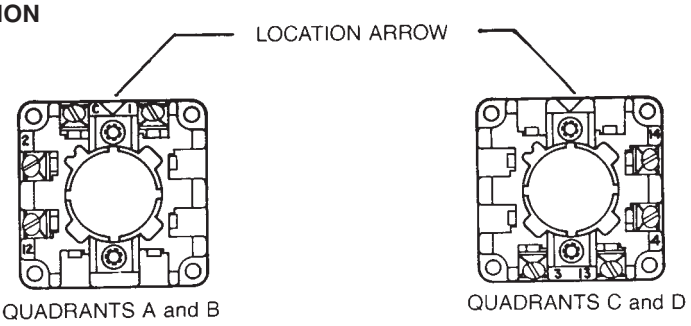
1. Completely assembled, tested, and tagged with your tag number.
2. With all components packed in one box and tagged.
3. As individual components, each packed in its own box.

TERMINAL CONSTRUCTION FOR LAMP OPERATION

4 Terminal Construction

Four terminal construction provides two separate leads for each lamp in the two lamp CMC units. For electrical clearance, four terminal units require .969″ (24,6mm) minimum spacing on all sides.

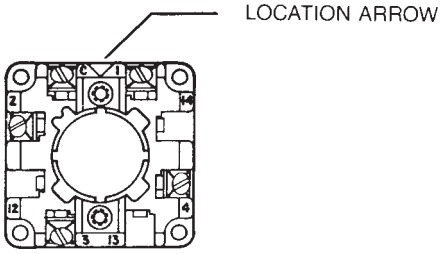
C & 1—Lamp 1
2 & 12—Lamp 2 — Lighted quadrants A & B
3 & 13—Lamp 1
4 & 14—Lamp 2 — Lighted quadrants C & D

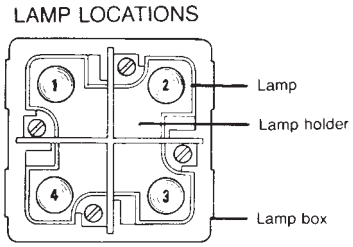


5 Terminal Construction

Five terminal construction uses a common terminal (C). Minimum center mounting is possible with five terminal construction. Units may be placed adjacent to one another within .344″ (8,74mm) in either horizontal or vertical rows.

C—Common
1—Lamp 1
2—Lamp 2
3—Lamp 3
4—Lamp 4

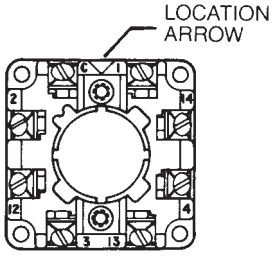




8 Terminal Construction

Eight terminal construction provides two separate leads for each lamp. For electrical clearance, eight terminal units require .969″ (24,6mm) minimum spacing on all sides.

C & 1—Lamp 1
2 & 12—Lamp 2
3 & 13—Lamp 3
4 & 14—Lamp 4



Terminal construction applies to indicators, pushbuttons, selectors, and selector-push modules.
For LED line voltage applications – Terminals C, 12, 13, 14 are connected to outer shell of lamp socket.
– Terminals 1, 2, 3, 4 are connected to inner pin of lamp socket.

Multi-Light Oiltight Controls

CMC Series

Indicators and Pushbuttons

- Suitable for use in NEMA 13 enclosures.

Indicator

- Four lighted quadrants
- Two or four transformers, 120 or 240 VAC
- Jumpers available for low voltage applications.
- Resistor boards available for 24V or 48V supply
- Each lamp individually controlled
- Cover plates, color inserts, and legend plates are ordered separately.

Pushbutton

- Actuate up to four 2-plunger contact blocks in any combination
- Lighted and unlighted versions available
- Two or four transformers, 120 or 240 VAC
- Jumpers available for low voltage applications
- Resistor boards available for 24V or 48V supply
- Each lamp individually controlled.
- Cover plates, color inserts, and legend plates are ordered separately

INDICATOR CATALOG LISTING

908AAA--

PUSHBUTTON CATALOG LISTING

909AAA--
Gray Button

909BAA--
Black Button

ORDER GUIDE

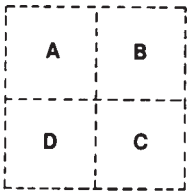
Complete the last two blanks of the catalog listing with the terminal number, which is colored in the table at the right.

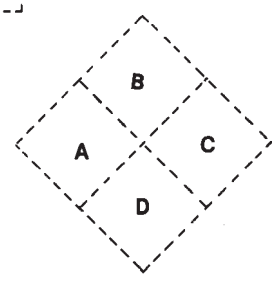
Order incandescent cover plate, color inserts, and legend plate separately from page 12.

Order LED lamps and color inserts separately.
6VAC/DC - Page 14
24VAC/DC - Page 15

Contact blocks may be ordered separately from page 4.

QUADRANT AREAS





908AAA--, 909AAA--, 909BAA--
67 —Unlighted
FOUR TERMINAL UNITS use with 2 lamps
95 —120 VAC transformers (2) and No. 755 lamps in quadrants A & B, nothing in quads C & D
96 —120 VAC transformers (2) and No. 755 lamps in quadrants C & D, nothing in quads A & B
97 —Line voltage jumpers in quadrants A & B, no lamps, nothing in quads C & D. Can be used with incandescent or LED bulbs.
98 —Line voltage jumpers in quadrants C & D, no lamps, nothing in quads A & B. Can be used with incandescent or LED bulbs.
38 —120 VAC transformers (2) in quadrants A & B. Quadrants C & D unlighted. For use with 6 volt LED lamps and color inserts. Order from page 14.
FIVE TERMINAL UNITS use with 4 lamps
01 —120 VAC transformers (4) and (4) No. 755 lamps
02 —240 VAC transformers (4) and (4) No. 755 lamps
03 —Line voltage jumpers (4)—Less lamps[1]. Can be used with incandescent or LED bulbs.
40 —48 volt resistors (4) and (4) No. 1819 lamps
05 —24 volt resistors (4) and (4) No. 756 lamps
15 —120 VAC transformers (4). For use with 6 volt LED lamps and color inserts. Order from page 14.
16 —240 VAC transformers (4). For use with 6 volt LED lamps and color inserts. Order from page 14.
EIGHT TERMINAL UNITS use with 4 lamps
51 —120 VAC transformers (4) and (4) No. 755 lamps
52 —240 VAC transformers (4) and (4) No. 755 lamps
53 —Line voltage jumpers (4) less lamps[1]. Can be used with incandescent or LED bulbs.
90 —48 volt resistors (4) and (4) No. 1819 lamps
50 —24 volt resistors (4) and (4) No. 756 lamps
55 —120 VAC transformers (4). For use with 6 volt LED lamps and color inserts. Order from page 14.
56 —240 VAC transformers (4). For use with 6 volt LED lamps and color inserts. Order from page 14.

[1] See Page 23 for 2-28 volt lamp recommendations.

Selector Units

CMC SELECTORS

- Suitable for use in NEMA 13 enclosures.
- Accepts 4 plunger adapter kit

Example: **910** **A** **E**

Operator

910 —Grey knob
913 —Black knob

Selector Action

2 Positions	3 Positions	4 Positions
A —Pos. 1, 2 **E** —Pos. 2, 3 **H** —Pos. 3, 4 **L** —Pos. 4, 1	**B** —Pos. 1, 2, 3 **F** —Pos. 2, 3, 4 **J** —Pos. 3, 4, 1 **M** —Pos. 4, 1, 2	**C** —Pos. 1, 2, 3, 4 no stop **D** —Pos. 1, 2, 3, 4 stop between 1 and 4 **G** —Pos. 2, 3, 4, 1 stop between 2 and 1 **K** —Pos. 3, 4, 1, 2 stop between 3 and 2 **N** —Pos. 4, 1, 2, 3 stop between 3 and 4
U —Pos. 9, 12 o'clock **V** —Pos. 12, 3 o'clock **W** —Pos. 3, 6 o'clock **X** —Pos. 6, 9 o'clock	**P** —Pos. 9, 12, 3 o'clock **R** —Pos. 12, 3, 6 o'clock **S** —Pos. 3, 6, 9 o'clock **T** —Pos. 6, 9, 12 o'clock	**Y** —Pos. 9, 12, 3, 6 o'clock. No. stop. **Z** —Pos. 9, 12, 3, 6 o'clock. Stop between 6 and 9

Cam

Insert cam code from chart below.

1. Match your circuit requirements in one cam code column in the chart below. *

2. Develop the catalog listing of the unit, including the shaded letters of the cam code configuration selected in step 1 from the chart below.

3. Consider position number 1 as the furthest counter-clockwise device position. Order contact block(s) and adapter kit as indicated in the left hand column of the cam code selection chart.

"X" — Circuit Closure
"O" — Circuit Open

CAM CODE SELECTION CHART *

		2-Pos.		3-Position				4-Position			
	Cam:	**E**	**E**[5]	**D**	**G**	**F**	**H**	**H**	**A**	**F**	**G**
Turn Cam:	**Orientation:**	**1**	**2**	**1**	**3**	**1**	**4**	**1**	**2**	**2**	**1**
Contact[1] **Block**	**Device Positions:**	1 2	1 2	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
	Terminals										
PTC**C** 	1-2 (NC) 3-4 (NO) 5-6 (NC) 7-8 (NO)	X O O X X O O X	O X X O O X X O	X O O O O X O O X X O O	X X O O O X O X X X O O	O X O X O O O X O O O X	O X O O O X O O O X O O	X O O O O X O O O O X O O O O X	O O X X O X O O X X O O O O O X	X O X O O O O X X O X O O X O O	O X X X X O O O X X O X O O X O
 PTC**B**	1-2 (NC) 3-4 (NO)	X O O X	O X X O	X O O X O O	X X O X O O	O X O O O X	O X O X O O	X O O O O O O X	O O X X O O O X	X O X O O X O O	O X X X O O X O
 Rev. PTC**B**	3-4 (NO) 1-2 (NC)	O X X O	X O O X	O O X O O X	O O X O X X	X O O O X O	O O X O O O	O X O O O O X O	O X O O X X O O	O O O X X O X O	X O O O X X O X
4-Plunger Adapter Kit PTC**A**[2]		**For circuits below — Use 4 plunger adapter kit and at least 1 block from above**									
PTC**C** 	1-2 (NC) 3-4 (NO) 5-6 (NC) 7-8 (NO)			O X O O O O O O O O X O	X X X O O O X O X O X O	X O X O X O X O X O O O			X O O X O O X O O X X O X O O O	O X O X X O O O O X O X O O O X	X O X X O X O O X X X O O O O X
 PTC**B**	1-2 (NC) 3-4 (NO)			O X O O X O	X X X O X O	X O X O O O			X O O X X O O O	O X O X O O X O	X O X X O O O X
 Rev. PTC**B**	3-4 (NO) 1-2 (NC)				O O O X O X	O X O X O X			O O X O O X X O	X O O O O X O X	O X O O X X X O

Notes:

[1] Order contact blocks separately from page 4. Alternative contact blocks are shown also. When alternative contact blocks are used, their sequencing is the same as their portion of contact block PTCC.

[2] Adapter kit PTCA requires contact blocks *both* before and after the adapter spacer. Up to two blocks may be added *both* before and after the adapter. PTCA is explained on page 5.

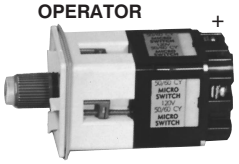
[3] Contact block PTCB may be mounted with its location arrow and that of the operator aligned or reversed; i.e., the block may be turned 180° so location arrows do not match.

[4] Use up to 4 contact blocks with maintained forms and up to 2 with spring return forms.

[5] For use with 2 position clockwise spring return selector only.

Selector Units

COVER PLATE INSERTS + LEGEND PLATE + OPERATOR + BLOCKS = COMPLETE UNIT


A

Operator[3,4] Function
A – Maintained
B – Clockwise spring return from left (2 and 3 pos)
C – Counterclockwise spring return from right (2 and 3 pos)
D – Clockwise and counterclockwise spring return to center from left and right (3 pos)
F – Uni-rotational clockwise (4 pos. only, no stop)

01

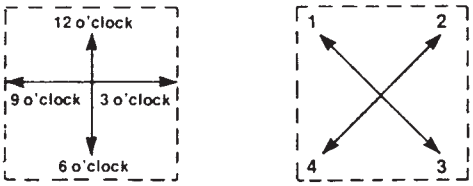
Lamp Terminals and Service	
67 – Unlighted **4 Terminal** **95** – (2) 120 V transformers and (2) No. 755 lamps in quadrants A & B only. **96** – (2) 120 V transformers and (2) No. 755 lamps in quadrants C & D only. **97** – (2) line voltage jumpers in quadrants A & B. No lamps. **98** – (2) line voltage jumpers in quadrants C & D. No lamps. Line voltage jumper versions can use incandescent or LED lamps.	**5 Term. 8 Term.** **01 51** (4) 120 V trans. and (4) No. 755 lamps **02 52** (4) 240 V trans. and (4) No. 755 lamps **05 50** (4) 24 V resistors.(4) No. 756 lamps **40 90** (4) 48 V resistors.(4) No. 1819 lamps **03 53** (4) line voltage jumpers. No lamps.
LED Lamp Terminals and Service	
4 Terminal **38** – (2) 120 V transformers in quadrants A & B **97** – (2) line voltage jumpers in quadrants A & B. No LED. **98** – (2) line voltage jumpers in quadrants C & D. No LED. Order LEDs, color inserts and covers from pages 14-15.	**5 Term. 8 Term.** **15 55** (4) 120V transf. **16 56** (4) 240 V transf. **03 53** (4) line voltage jumpers. No LED.

1

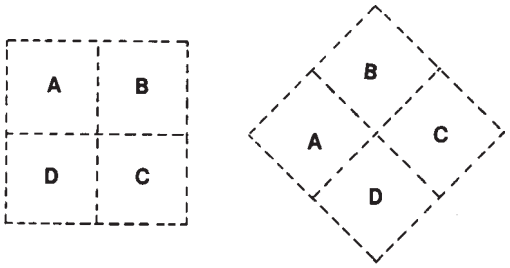
Cam Orientation
Insert the cam orientation code from the shaded area of the chart on the facing page. The area is labeled orientation and it must be from the same column as the cam.

Order cover plates, color inserts, and legend plates separately from page 12.

DEVICE POSITIONS



QUADRANT AREAS



* This chart lists only a few of the unlimited number of switch versions available.

Definition:
Spring return is the direction the knob is turned by the internal spring force when the operator releases the knob. For example, on a two position clockwise spring return device, the knob is turned from position 2 to position 1 by the operator. When the operator releases the knob, it spring returns to position 2 in a clockwise direction.

Multi-Light Oiltight Controls

Selector - Push Units

CMC SELECTORS

- Suitable for use in NEMA 13 enclosures.
- Accepts 4 plunger adapter kit

Example:

911 **A** **G**

Operator

911 —Grey knob
914 —Black knob

Selector Action

2 Position	3 Position	4 Position
A – Pos. 1, 2 **E** – Pos. 2, 3 **H** – Pos. 3, 4 **L** – Pos. 4, 1	**B** – Pos. 1, 2, 3 **F** – Pos. 2, 3, 4 **J** – Pos. 3, 4, 1 **M** – Pos. 4, 1, 2	**C** – Pos. 1, 2, 3, 4 no stop **D** – Pos. 1, 2, 3, 4 stop between 1 and 4 **G** – Pos. 2, 3, 4, 1 stop between 2 and 1 **K** – Pos. 3, 4, 1, 2 stop between 3 and 2 **N** – Pos. 4, 1, 2, 3 stop between 3 and 4
U – Pos. 9, 12 o'clock **V** – Pos. 12, 3 o'clock **W** – Pos. 3, 6 o'clock **X** – Pos. 6, 9 o'clock	**P** – Pos. 9, 12, 3 o'clock **R** – Pos. 12, 3, 6 o'clock **S** – Pos. 3, 6, 9 o'clock **T** – Pos. 6, 9, 12 o'clock	**Y** – Pos. 9, 12, 3, 6 o'clock. No. stop. **Z** – Pos. 9, 12, 3, 6 o'clock. Stop between 6 and 9

Turn Cam Configuration

Insert the turn cam comfiguration code from the shaded area of the chart below.

1. Match your circuit requirements in one cam code column in the chart below. *

2. Develop the catalog listing of the unit, including the shaded letters of the cam code configuration selected in step 1 from the chart below.

3. Consider position number 1 as the furthest counter-clockwise device position. Order contact block(s) and adapter kit as indicated in the left hand column of the cam code selection chart.

''X'' — Circuit Closure
''O'' — Circuit Open

CAM CODE SELECTION CHART *

	Number of Positions:		2-Positions						3-Positions				4-Positions	
	Turn Cam:	Configuration:	B	J	G	G	G	R	L	K	G	A	R	L
		Orientation:	3	1	1	3	1	1	1	4	1	1	1	1
		Push Cam Code:	YA	TC	BB	FB	TB	FB	MA	ED	MC	MD	BC	VB
		Device Positions:	1 2	1 2	1 2	1 2	1 2	1 2	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3 4	1 2 3 4
Contact[1,2] block	Terminal	Condition												
PTC**C**	1-2	Free	O X	X O	O X	X X	O X	X X	X O O	X X O	O X X	X O O	X X X X	X O O O
		Depress	O O	O O	O X	X O	O X	O X	X O O	X X O	O O X	O O O	O X X X	O O O O
	3-4	Free	O O	O O	X O	O O	X O	O O	O O O	O O O	X O O	O O X	O O O O	O O O O
		Depress	X X	X X	X O	O X	X O	X O	O O X	O O X	X O O	O X X	X O O O	X O O O
	5-6	Free	X O	X O	X X	O X	X X	X X	O O X	O O X	X X O	O X X	X X X X	O O X O
		Depress	O O	X O	X O	O X	O O	X O	O O X	O O X	X O O	O X O	X X O X	O O O O
	7-8	Free	O X	O O	O O	X O	O O	O O	O O O	O O O	O O X	X O O	O O O O	O O O O
		Depress	O X	O X	O X	X O	X X	O X	X O O	X O O	O O X	X O O	O O X O	O O X O
4-Plunger Adapter Kit[3] PTC**A**			**For circuits below — Use 4 plunger adapter kit and at least 1 block from above**											
PTC**C**	1-2	Free	—	O X	X O	—	X O	X X	O X O	O X X	X O X	X X O	X X X X	O X O O
		Depress	—	O O	O O	—	O O	O O	O X O	O X X	O O O	X O O	X O X X	O O O O
	3-4	Free	X O	O O	O X	—	O X	O O	—	—	O X O	O O O	O O O O	O O O O
		Depress	X X	X X	X X	—	X X	X X	—	—	O X O	O O X	O X O O	O X O O
	5-6	Free	X X	O X	—	X O	X X	—	—	X O O	X X X	O O X	X X X X	O O O X
		Depress	O O	O X	—	O O	X O	—	—	X O O	O X O	O O X	X X X O	O O O O
	7-8	Free	O O	O O	—	O X	O O	—	O O O	O O O	—	O X O	O O O O	O O O O
		Depress	X O	X O	—	X X	O X	—	O X O	O X O	—	X X O	O O O X	O O O X

Notes:

[1] Order contact blocks separately from page 4. Only PTCC contact blocks are charted. All other contact block alternatives may be substituted for portions of PTCC circuitry.

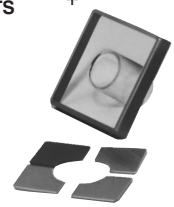
[2] Contact block PTCB, with its location arrow aligned with the operator, provides the circuitry equivalent to 1-2 and 7-8 of the PTCC block. When PTCB is reversed (turned 180°), so location arrows do not align with operator, the circuitry obtained is equivalent to 3-4 and 5-6 of the PTCC block. PTCD with arrows aligned, provides same circuit as 7-8 of PTCC block. When reversed (arrows not aligned), the circuit obtained is equivalent to 3-4 of PTCC block. PTCE with arrows aligned, provides same circuit as 1-2 of PTCC block. When reversed (arrows not aligned), the circuit obtained is equivalent to 5-6 of PTCC block.

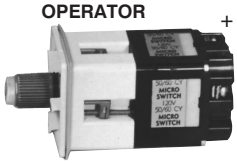
[3] PTCA is explained on page 5.

[4] Use up to 4 contact blocks with maintained forms and up to 2 with spring return forms.

Selector-Push Units

COVER PLATE INSERTS + LEGEND PLATE + OPERATOR + BLOCKS = COMPLETE UNIT




A

Operator Function
A – Maintained
B – Clockwise spring return from left (2 and 3 pos)
C – Counterclockwise spring return from right (2 and 3 pos)
D – Clockwise and counterclockwise spring return to center from left and right (3 pos)
F – Uni-rotational clockwise (4 pos. only, no stop)

01

Lamp Terminals and Service	
67 – Unlighted **4 Terminal** **95** – (2) 120 V transformers and (2) No. 755 lamps in quadrants A & B only. **96** – (2) 120 V transformers and (2) No. 755 lamps in quadrants C & D only. **97** – (2) line voltage jumpers in quadrants A & B. No lamps. **98** – (2) line voltage jumpers in quadrants C & D. No lamps. Line voltage jumper versions can use incandescent or LED lamps.	**5 Term. 8 Term.** **01 51** (4) 120 V trans. and (4) No. 755 lamps **02 52** (4) 240 V trans. and (4) No. 755 lamps **05 50** (4) 24 V resistors. (4) No. 756 lamps **40 90** (4) 48 V resistors. (4) No. 1819 lamps **03 53** (4) line voltage jumpers. No lamps.

LED Lamp Terminals and Service	
4 Terminal **38** – (2) 120 V transformers in quadrants A & B **97** – (2) line voltage jumpers in quadrants A & B. No LED. **98** – (2) line voltage jumpers in quadrants C & D. No LED. Order LEDs, color inserts and covers from pages 14-15.	**5 Term. 8 Term.** **15 55** (4) 120V transf. **16 56** (4) 240 V transf. **03 53** (4) line voltage jumpers. No LED.

1

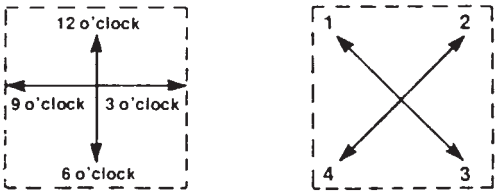
TurnCam Orientation
Insert the cam orientation code from the shaded area of the chart on the facing page.

BB

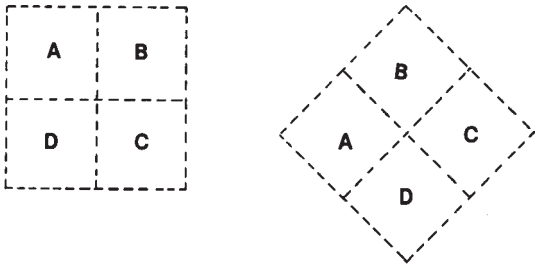
Push Cam Code
Insert the push cam code from the shaded area of the chart on the facing page.

Order cover plates, color inserts, and legend plates separately from page 12.

DEVICE POSITIONS



QUADRANT AREAS



*This chart lists only a few of the unlimited number of the switch versions available.

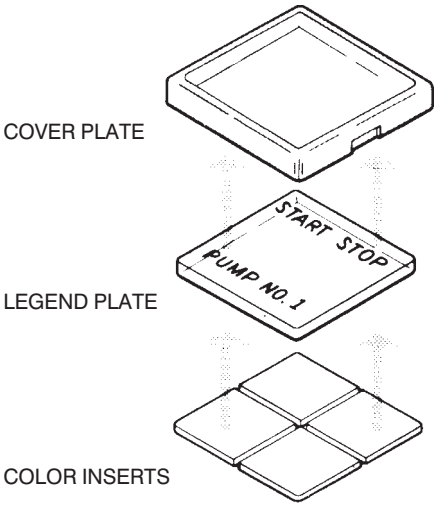
Definition:
Spring return is the direction the knob is turned by the internal spring force when the operator releases the knob. For example, on a two position clockwise spring return device, the knob is turned from position 2 to position 1 by the operator. When the operator releases the knob, it spring returns to position 2 in a clockwise direction.

Cover Plates, Color Inserts, and Legend Plates

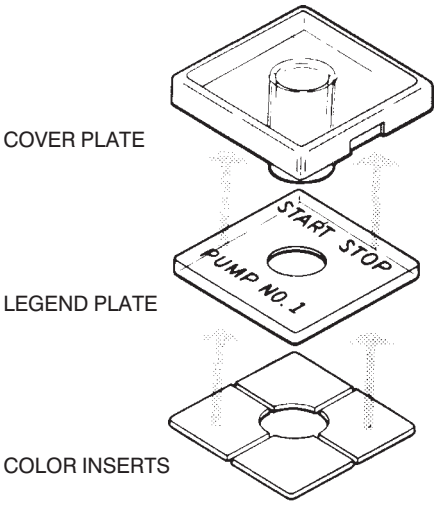
FAST ASSEMBLY LEGEND DISPLAY

The four selected color inserts snap into the legend plate. This sub-assembly then snaps into the cover plate to complete the front-of-panel assembly.

FOR INDICATORS



FOR OPERATOR INDICATORS



COVER PLATES AND COLOR INSERTS

Cover plates and color inserts are offered together in one package under a single catalog listing. The four color inserts can be positioned in any of the four quarters of the total display area.

Any color combination you desire is included in this chart. The chart is arranged in the following order: 4 same colors, 3 + 1 colors, 2 + 2 colors, 2 + 1 + 1 colors, and 1 + 1 + 1 + 1 colors.

The cover plates listed in the tables have a gray painted edge. Plates with edges other than gray may be ordered by substituting any of the following four digits in place of the first four digits in the tables. Example: 906A — gray edge or 906E — black edge. Listings are completed from the next page.

Edge Color	Indicator	Operator-Indicator
Gray	906A_ _	906B_ _
Chrome	906C_ _	906D_ _
Black	906E_ _	906F_ _
Unpainted	906G_ _	906H_ _
Red	906J_ _	906K_ _
White	906N_ _	906P_ _

CMC LEGEND PLATES

Legend plates are transparent plastic parts on which word messages are displayed.

BLANK PLATES

Blank legend plates are available for customers preferring to do their own hot stamping, etching, engraving, or silk screening of legend plates. Drafting mylar or film positives can also be positioned on the legend plate for custom panel appearance.

LEGENDED

Legend plates are offered with lettering positioned horizontally, vertically, or diagonally — in combinations of black and white lettering — in combinations of three different type sizes — and the message the customer specifies. (See character count chart, page 16.) These plates are ordered on Custom Legend Form on page 22.

See completed sample page 17.

LEGEND CONTRAST

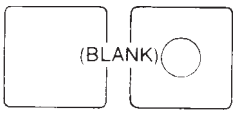
For maximum visibility in both the lighted and unlighted condition, the chart below is recommended as a guide.

Color Snap in Inserts	Legend Lettering	
	White	Black
Amber	X	X
Blue	X	
Green	X	
Red	X	
White		X
Yellow		X

BLANK LEGEND PLATES

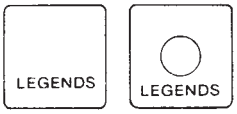
INDICATOR OPERATOR

907AYY100 **907BYY100**



LEGENDED PLATES

907AUS **907BUS**



Gray Cover Plate and Color Insert Color Guide / Incandescent Lamps

COLOR CODE: A—Amber B—Blue G—Green R—Red W—White Y—Yellow K—Black

Cover Plate & Color Inserts For Indicator Units Only	Color Code	Cover Plate & Color Inserts For Operator Indicator Units
906 AAF	AAAA	906 BAF
906 AAD	BBBB	906 BAD
906 AAC	GGGG	906 BAC
906 AAA	RRRR	906 BAA
906 AAE	WWWW	906 BAE
906 AAB	YYYY	906 BAB
906 AEH	AAAB	906 BEH
906 AEK	AAAG	906 BEK
906 AEJ	AAAR	906 BEJ
906 AED	AAAW	906 BED
906 AFG	AAAY	906 BFG
906 AFD	BBBA	906 BFD
906 AFC	BBBG	906 BFC
906 AFA	BBBR	906 BFA
906 AEE	BBBW	906 BEE
906 AFB	BBBY	906 BFB
906 AEZ	GGGA	906 BEZ
906 AEX	GGGB	906 BEX
906 AEG	GGGR	906 BEG
906 AEY	GGGW	906 BEY
906 AEW	GGGY	906 BEW
906 AER	RRRA	906 BER
906 AEP	RRRB	906 BEP
906 AEO	RRRG	906 BEO
906 AEC	RRRW	906 BEC
906 AEN	RRRY	906 BEN
906 AEM	WWWA	906 BEM
906 AEF	WWWB	906 BEF
906 AEA	WWWG	906 BEA
906 AEL	WWWR	906 BEL
906 AEB	WWWY	906 BEB
906 AFE	YYYA	906 BFE
906 AEU	YYYB	906 BEU
906 AET	YYYG	906 BET
906 AES	YYYR	906 BES
906 AEV	YYYW	906 BEV
906 ABN	AABB	906 BBN
906 ABM	AAGG	906 BBM
906 ABL	AARR	906 BBL
906 ABP	AAWW	906 BBP
906 AJF	AAKK	906 BJF
906 ABQ	AAYY	906 BBQ
906 ABH	BBGG	906 BBH
906 ABC	BBRR	906 BBC
906 ABK	BBWW	906 BBK
906 AJD	BBKK	906 BJD
906 ABF	BBYY	906 BBF
906 ABB	GGRR	906 BBB
906 ABJ	GGWW	906 BBJ
906 AJC	GGKK	906 BJC
906 ABE	GGYY	906 BBE
906 ABD	RRWW	906 BBD
906 AJA	RRKK	906 BJA
906 ABA	RRYY	906 BBA
906 AJE	WWKK	906 BJE
906 ABG	WWYY	906 BBG
906 AJB	YYKK	906 BJB
906 AGZ	AABG	906 BGZ
906 AGX	AABR	906 BGX
906 AGY	AABW	906 BGY
906 AHL	AABY	906 BHL
906 ADG	AAGR	906 BDG
906 ADW	AAGW	906 BDW
906 AHK	AAGY	906 BHK
906 ADX	AARW	906 BDX
906 AHJ	AARY	906 BHJ
906 AHM	AAWY	906 BHM
906 AGV	BBAG	906 BGV
906 AGS	BBAR	906 BGS
906 AGW	BBAW	906 BGW
906 AHF	BBAY	906 BHF
906 AGR	BBGR	906 BGR
906 AGU	BBGW	906 BGU
906 ADS	BBGY	906 BDS
906 ADR	BBRW	906 BDR
906 AGP	BBRY	906 BGP

Cover Plate & Color Inserts For Indicator Units Only	Color Code	Cover Plate & Color Inserts For Operator Indicator Units
906 AGT	BBWY	906 BGT
906 AGN	GGAB	906 BGN
906 ADU	GGAR	906 BDU
906 AGO	GGAW	906 BGO
906 AHG	GGAY	906 BHG
906 AGK	GGBR	906 BGK
906 ADV	GGBW	906 BDV
906 AGL	GGBY	906 BGL
906 ADT	GGRW	906 BDT
906 ADN	GGRY	906 BDN
906 AGM	GGWY	906 BGM
906 AGE	RRAB	906 BGE
906 AGC	RRAG	906 BGC
906 AGF	RRAW	906 BGF
906 AHH	RRAY	906 BHH
906 ADL	RRBG	906 BDL
906 AGD	RRBW	906 BGD
906 ADZ	RRBY	906 BDZ
906 AGB	RRGW	906 BGB
906 ADO	RRGY	906 BDO
906 AGA	RRWY	906 BGA
906 ADY	WWAB	906 BDY
906 ADH	WWAG	906 BDH
906 ADF	WWAR	906 BDF
906 AHE	WWAY	906 BHE
906 ADK	WWBG	906 BDK
906 ADM	WWBR	906 BDM
906 ADE	WWBY	906 BDE
906 ADB	WWGR	906 BDB
906 ADD	WWGY	906 BDD
906 ADA	WWRY	906 BDA
906 AHC	YYAB	906 BHC
906 AHB	YYAG	906 BHB
906 AHA	YYAR	906 BHA
906 AHD	YYAW	906 BHD
906 ADP	YYBG	906 BDP
906 ADJ	YYBR	906 BDJ
906 AGJ	YYBW	906 BGJ
906 ADC	YYGR	906 BDC
906 AGH	YYGW	906 BGH
906 AGG	YYRW	906 BGG
906 AKF	KKYG	906 BKF
906 AKG	KKYB	906 BKG
906 AKH	KKYW	906 BKH
906 AKJ	KKYA	906 BKJ
906 AKK	KKGB	906 BKK
906 AKL	KKGW	906 BKL
906 AKM	KKGA	906 BKM
906 AKN	KKBW	906 BKN
906 AKP	KKBA	906 BKP
906 AKR	KKWA	906 BKR
906 AKA	KKRY	906 BKA
906 AKB	KKRG	906 BKB
906 AKC	KKRB	906 BKC
906 AKD	KKRW	906 BKD
906 AKE	KKRA	906 BKE
906 ACF	ABGR	906 BCF
906 ACJ	ABGW	906 BCJ
906 ACN	ABGY	906 BCN
906 ACH	ABRW	906 BCH
906 ACL	ABRY	906 BCL
906 ACP	ABWY	906 BCP
906 ACG	AGRW	906 BCG
906 ACK	AGRY	906 BCK
906 ACO	AGWY	906 BCO
906 ACM	ARWY	906 BCM
906 ACD	BGRW	906 BCD
906 ACA	BGRY	906 BCA
906 ACE	BGWY	906 BCE
906 ACC	BRWY	906 BCC
906 ACB	GRWY	906 BCB

Additional variations with black inserts are available.

LED Cover Plates and Color Inserts

Cover plates, LEDs, and color inserts are offered together in one package under a single catalog listing. The four color inserts can be positioned in any of the four quarters of the total display area.

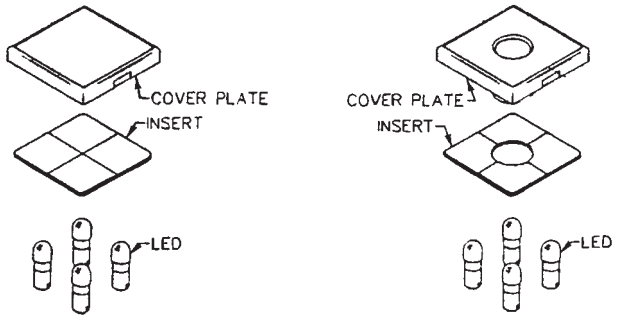
The cover plates listed in the tables have a gray painted edge. Plates with edges other than gray may be ordered by substituting any of the adjacent four digits in place of the first four digits in the tables. Example: 905A — gray edge or 905E — black edge.

Edge Color	Indicator	Operator-Indicator
Gray	905A _ _ _	905B _ _ _
Chrome	905C _ _ _	905D _ _ _
Black	905E _ _ _	905F _ _ _
Unpainted	905G _ _ _	905H _ _ _
Red	905J _ _ _	905K _ _ _
White	905N _ _ _	905P _ _ _

6 VAC/VDC LEDs, GRAY COVER PLATE AND COLOR INSERT ORDER GUIDE

COLOR CODE: G—Green R—Red W—White Y—Yellow K—Black

Cover Plate & Color Inserts For Indicator Units Only	Color Code	Cover Plate & Color Inserts For Operator Indicator Units
905 AAA1	RRRR	905 BAA1
905 AAB1	YYYY	905 BAB1
905 AAC1	GGGG	905 BAC1
905 ABA1	RRYY	905 BBA1
905 ABB1	RRGG	905 BBB1
905 ABD1	RRWW	905 BBO1
905 ABE1	YYGG	905 BBE1
905 ABG1	YYWW	905 BBG1
905 ABJ1	GGWW	905 BBJ1
905 ACB1	RGYW	905 BCB1
905 ADA1	RYWW	905 BDA1
905 ADB1	RGWW	905 BDB1
905 ADC1	RYYG	905 BDC1
905 ADD1	YGWW	905 BDD1
905 ADN1	RYGG	905 BDN1
905 ADO1	RRYG	905 BDO1
905 ADT1	RGGW	905 BDT1
905 AEA1	GWWW	905 BEA1
905 AEB1	YWWW	905 BEB1
905 AEC1	RRRW	905 BEC1
905 AEG1	RGGG	905 BEG1
905 AEL1	RWWW	905 BEL1
905 AEN1	YRRR	905 BEN1
905 AEO1	GRRR	905 BEO1
905 AES1	RYYY	905 BES1
905 AET1	GYYY	905 BET1
905 AEV1	YYYW	905 BEV1
905 AEW1	YGGG	905 BEW1
905 AEY1	GGGW	905 BEY1
905 AFK1	GGGK	905 BFK1
905 AFL1	RKKK	905 BFL1
905 AGA1	RRYW	905 BGA1
905 AGB1	RRGW	905 BGB1
905 AGG1	RYYW	905 BGG1
905 AGH1	GYYW	905 BGH1
905 AGM1	YGGW	905 BGM1
905 AHN1	YYGK	905 BHN1
905 AHO1	YGGK	905 BHO1
905 AHP1	GGWK	905 BHP1
905 AHQ1	RWWK	905 BHQ1
905 AHS1	GWWK	905 BHS1
905 AHT1	RGGK	905 BHT1
905 AHY1	YYWK	905 BHY1
905 AJA1	RRKK	905 BJA1
905 AJB1	YYKK	905 BJB1
905 AJC1	GGKK	905 BJC1
905 AKA1	RYKK	905 BKA1
905 AKB1	RGKK	905 BKB1
905 AKD1	RKKW	905 BKD1
905 AKE1	YGKK	905 BKE1
905 AKH1	RKKW	905 BKH1
905 AKL1	GKKW	905 BKL1
905 ALH1	RGWK	905 BLH1
905 ALN1	RGYK	905 BLN1
905 ALQ1	YKWW	905 BLQ1



Above listings include gray cover plate, 4 color inserts and one to four 6 VAC/DC LEDs for all lighted quadrants. (R,G,Y). Black (K) and White (W) color inserts are normally not lighted so LEDs are not included.

LED Cover Plates and Color Inserts

Cover plates, LEDs, and color inserts are offered together in one package under a single catalog listing. The four color inserts can be positioned in any of the four quarters of the total display area.

The cover plates listed in the tables have a gray painted edge. Plates with edges other than gray may be ordered by substituting any of the adjacent four digits in place of the first four digits in the tables. Example: 905A — gray edge or 905E — black edge.

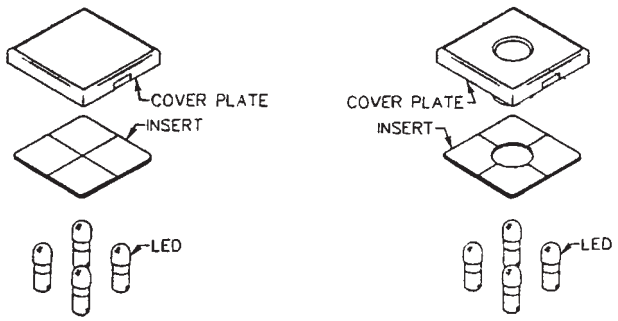
Edge Color	Indicator	Operator-Indicator
Gray	905A _ _ _	905B _ _ _
Chrome	905C _ _ _	905D _ _ _
Black	905E _ _ _	905F _ _ _
Unpainted	905G _ _ _	905H _ _ _
Red	905J _ _ _	905K _ _ _
White	905N _ _ _	905P _ _ _

24 VAC/VDC LEDs, GRAY COVER PLATE AND COLOR INSERT ORDER GUIDE

COLOR CODE: G—Green R—Red W—White Y—Yellow K—Black

Cover Plate & Color Inserts For Indicator Units Only	Color Code	Cover Plate & Color Inserts For Operator Indicator Units
905 AAA2	RRRR	905 BAA2
905 AAB2	YYYY	905 BAB2
905 AAC2	GGGG	905 BAC2
905 ABA2	RRYY	905 BBA2
905 ABB2	RRGG	905 BBB2
905 ABD2	RRWW	905 BBD2
905 ABE2	YYGG	905 BBE2
905 ABG2	YYWW	905 BBG2
905 ABJ2	GGWW	905 BBJ2
905 ACB2	RGYW	905 BCB2
905 ADA2	RYWW	905 BDA2
905 ADB2	RGWW	905 BDB2
905 ADC2	RYYG	905 BDC2
905 ADD2	YGWW	905 BDD2
905 ADN2	RYGG	905 BDN2
905 ADO2	RRYG	905 BDO2
905 ADT2	RGGW	905 BDT2
905 AEA2	GWWW	905 BEA2
905 AEB2	YWWW	905 BEB2
905 AEC2	RRRW	905 BEC2
905 AEG2	RGGG	905 BEG2
905 AEL2	RWWW	905 BEL2
905 AEN2	YRRR	905 BEN2
905 AEO2	GRRR	905 BEO2
905 AES2	RYYY	905 BES2
905 AET2	GYYY	905 BET2
905 AEV2	YYYW	905 BEV2
905 AEW2	YGGG	905 BEW2
905 AEY2	GGGW	905 BEY2
905 AFK2	GGGK	905 BFK2
905 AFL2	RKKK	905 BFL2
905 AGA2	RRYW	905 BGA2
905 AGB2	RRGW	905 BGB2
905 AGG2	RYYW	905 BGG2
905 AGH2	GYYW	905 BGH2
905 AGM2	YGGW	905 BGM2
905 AHN2	YYGK	905 BHN2
905 AHO2	YGGK	905 BHO2
905 AHP2	GGWK	905 BHP2
905 AHQ2	RWWK	905 BHQ2
905 AHS2	GWWK	905 BHS2
905 AHT2	RGGK	905 BHT2
905 AHY2	YYWK	905 BHY2

Cover Plate & Color Inserts For Indicator Units Only	Color Code	Cover Plate & Color Inserts For Operator Indicator Units
905 AJA2	RRKK	905 BJA2
905 AJB2	YYKK	905 BJB2
905 AJC2	GGKK	905 BJC2
905 AKA2	RYKK	905 BKA2
905 AKB2	RGKK	905 BKB2
905 AKD2	RKKW	905 BKD2
905 AKE2	YGKK	905 BKE2
905 AKH2	RKKW	905 BKH2
905 AKL2	GKKW	905 BKL2
905 ALH2	RGWK	905 BLH2
905 ALN2	RGYK	905 BLN2
905 ALQ2	YKWW	905 BLQ2



Above listings include gray cover plate, 4 color inserts and one to four 24 VAC/DC LEDs for all lighted quadrants. (R,G,Y). Black (K) and White (W) color inserts are normally not lighted so LEDs are not included.

Legend Plates

Three type sizes are offered in either black or white lettering for custom legends on blank legend plates. A guide to legend area character counting is shown in the chart below. Stay within the limits spelled out in the chart for number of lines and characters.

To order custom legend plates, Form 62098 is provided on page 22. See example of a completed form on page 17.

CATALOG LISTINGS

Indicator	Operator-Indicator
907 AUS	907 BUS

LEGEND STYLE AND SIZES

Sizes available in full capital alphabetic and numeric characters are:

9/64 .141″ 3,57mm A1 13/64 .203″ 5,16mm A1 5/16 .313″ 7.94mm A1

Characters available are:
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
. , ’ # / ( ) + – ’’ % &
0 1 2 3 4 5 6 7 8 9
½ ¼ ¾ ⅓ ⅔

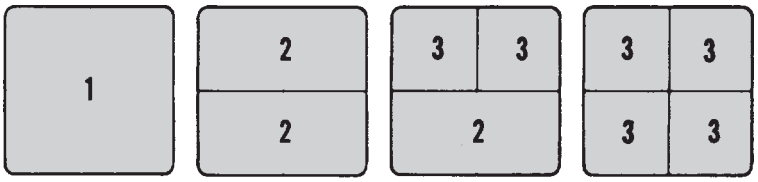
Additional characters available only in .141 (3,57) and .203 (5,16) sizes are:
* — ° → ∞ ‘‘ ’’ ⅛ ⅜ ⅝ ⅞
I II III IV V VI VII VIII IX X
Na Cl H_2O O_2

CUSTOM LEGEND AREAS

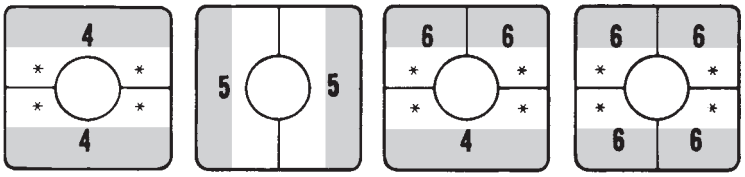
Form Number in Shaded Area	Letter Height	Max. No. of Characters Per Line (Include Spaces)	Max. No. of Lines of Each Shaded Area	Max. Total Characters Per Shaded Area
1	9/64	19	7	133
	13/64	13	6	78
	5/16	8	4	32
2	9/64	19	3	57
	13/64	13	3	39
	5/16	8	2	16
3	9/64	9	3	27
	13/64	6	3	18
	5/16	3	2	6
4	9/64	19	2*	38
	13/64	13	2*	26
	5/16	8	1	8
5	9/64	12	1	12
	13/64	8	1	8
	5/16	5	1	5
6	9/64	9	2*	18
	13/64	6	2*	12
	5/16	3	1	3
7	9/64	9	1	9
		7	2	14
	13/16	6	1	6
	Indicators Only	4	2	8
	5/16 Indicators Only	4	1	4
8	9/64	7	1	7
		5	2	10
	13/64	4	1	4

The shaded areas shown below indicate the selections available for division of the legend display area. After determining the form number, read the letter size, maximum number of characters and lines from the chart on the left.

INDICATORS 907 AUS

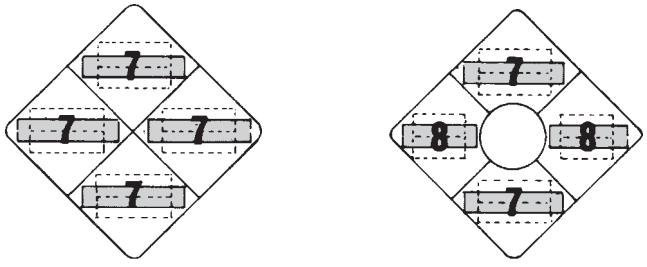


OPERATOR-INDICATORS 907 BUS



INDICATORS 907 AUS **OPERATOR-INDICATORS 907 BUS**

DIAGONAL LEGEND PLATES



NOTE: 2 LINE LEGENDS ARE 2 LETTERS SHORTER PER LINE THAN SINGLE LINE LEGENDS

* Legend plate areas 4 and 6 will accept a third line. Maximum number of characters is 5 for 9/64″ and 3 for 13/64″ where marked.

Legend Order Sheet

Completed Sample

FO-62098-F

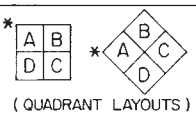
COORDINATED MANUAL CONTROL ORDER SHEET for CMC LEGEND PLATES

GUIDE to ARRANGEMENT of LEGENDS and CATALOG LISTINGS

Additional forms available from any MICRO SWITCH Branch Office. Specify FO-62098-F

CUSTOMER P. O. NO.

INSTRUCTIONS: 1. Extend lines to show QUADRANT (S) DIVISIONS.
2. Print REQUIRED legends in the diagrams below. *(Diagrams are ACTUAL size.)*
3. Fill in LETTER SIZE. *(9/64", 13/64", or 5/16")*
4. Check lettering *(BLACK or WHITE)* by *QUADRANT.
5. Fill in CATALOG LISTING and QUANTITY.



(QUADRANT LAYOUTS)

CUSTOMER ABC Co.

ADDRESS 100 N. 1st St.

CITY and STATE Nowhere, NV 89502

SHADED AREAS for FREEPORT USE ONLY			
S.W.O. NO. 1	TR C2	C O4	SCHED. DATE
S. O. NO. 5	ACCOUNT NO. 126-031 8		COMP. DATE

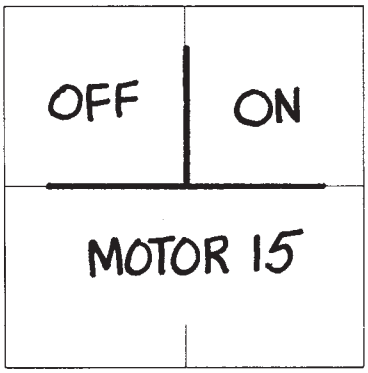
NOTE: Legends will be CENTERED within *QUADRANT (S) Specified.

INDICATOR DIAGRAMS
907 AUS

Use One Diagram in EACH Section

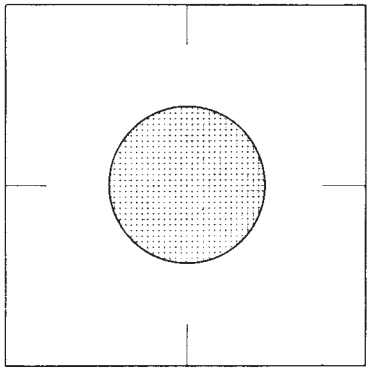
OPERATOR DIAGRAMS
907 BUS

Row 1

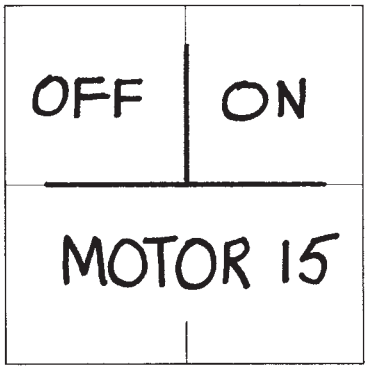


*QUADRANT	LETTER SIZE	BLACK	WHITE
A	13/64		✓
B	13/64		✓
C	13/64	✓	
D	13/64	✓	

CATALOG LISTING	PRODUCT CODE 3		
907 AUS			
ITEM NO.	LINE NO. 6	SCHED. NO. 7	QUANTITY 2 9

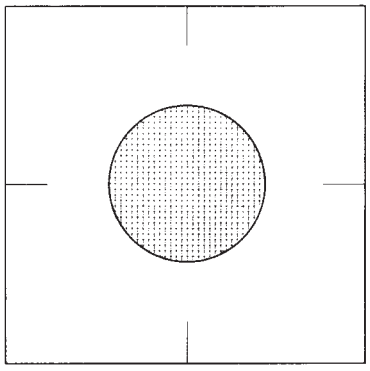


Row 2

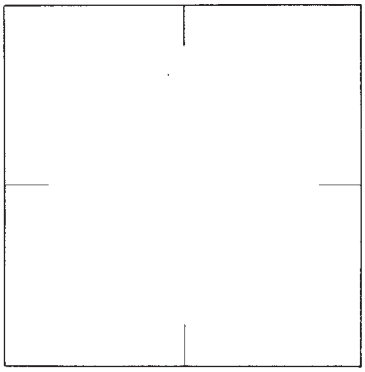


*QUADRANT	LETTER SIZE	BLACK	WHITE
A	5/16		✓
B	5/16		✓
C	5/16	✓	
D	5/16	✓	

CATALOG LISTING	PRODUCT CODE 3		
907 AUS			
ITEM NO.	LINE NO. 6	SCHED. NO. 7	QUANTITY 2 9

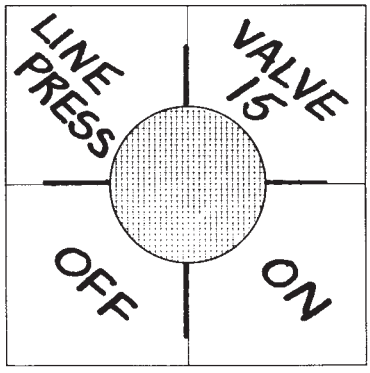


Row 3



*QUADRANT	LETTER SIZE	BLACK	WHITE
A	9/64		✓
B	9/64		✓
C	9/64		✓
D	9/64		✓

CATALOG LISTING	PRODUCT CODE 3		
ITEM NO.	LINE NO. 6	SCHED. NO. 7	QUANTITY 10 9

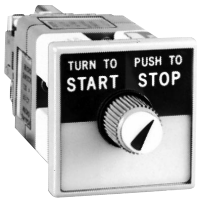
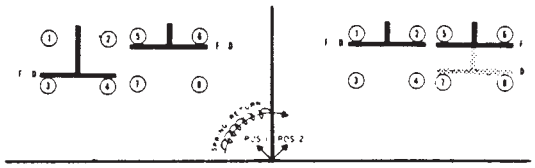
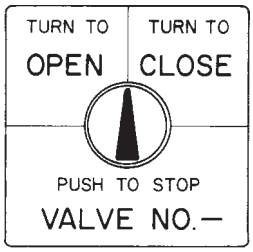
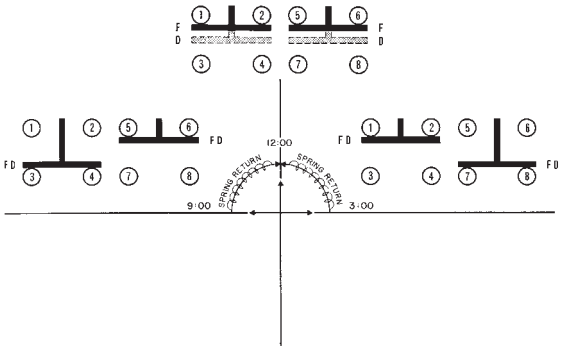
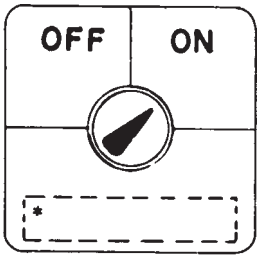
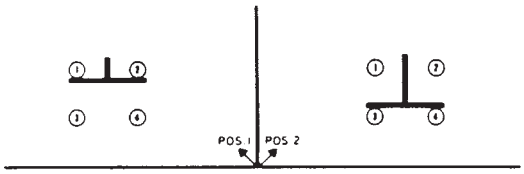
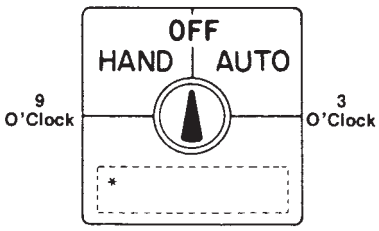
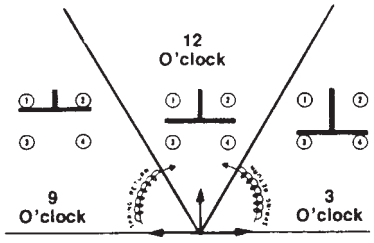


COMPLETED BY:

(Signature) (Date)

Page ____ of ____

Typical Applications

Type Of Unit	Schematic Circuit	Function
	 F = FREE = KNOB RELEASED D = DEPRESS = KNOB DEPRESSED	**START-STOP** Pos. 1—**TURN TO START** Circuit 3-4 closed Knob then spring returns to pos. 2 Pos. 2—**PUSH TO STOP** Opens stop circuit 5-6
12 o'clock 		**OPEN-STOP-CLOSE** 9:00 o'clock—**TURN TO OPEN** Closes circuit 3-4 and opens circuit 1-2 Open coil energizes and seals in. Knob spring returns to 12:00 o'clock 12:00 o'clock—**PUSH TO STOP** Opens common parallel-connected stop circuits 1-2 and 5-6 3:00—**TURN TO CLOSE** Closes circuit 7-8 and opens circuit 5-6 Close coil energizes and seals in. Knob spring returns to 12:00 o'clock.
Pos. 1 Pos. 2  *See Area 4, Page 16		**OFF-ON** Pos. 1—**OFF** (Maintained) Opens **ON** circuit 3-4 Pos. 2—**ON** (Maintained) Closes **ON** circuit 3-4
12 O'Clock  *Station Designation See area 4, Page 16		**CENTER NEUTRAL (Hand-Off-Auto)** Selector pointer between quadrants **9 o'clock HAND** Turn knob to 9 o'clock position to close circuit 1-2 which energizes solenoid **HAND.** Knob then spring returns to 12 o'clock position. **12 o'clock—OFF** (Maintained). All circuits are open. **3 o'clock—AUTO** Turn knob to 3 o'clock position to close circuit 3-4 which energizes solenoid **AUTO.** Knob then spring returns to 12 o'clock position.

Typical Applications

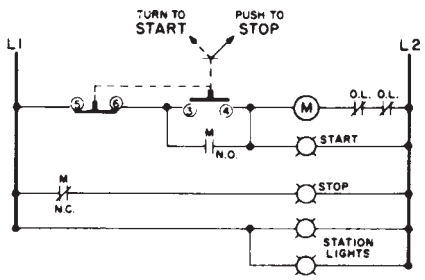
Circuits	Line Diagram	What To Order

Circuits

Circuit Notation	Device Position 1	Device Position 2	Connections Circuit	Connections Terminal
Free	X		Turn To Start	3-4
Depress	X			
Free	X	X	Push To Stop	5-6
Depress	X			

"X" indicates a circuit closure

Line Diagram



What To Order

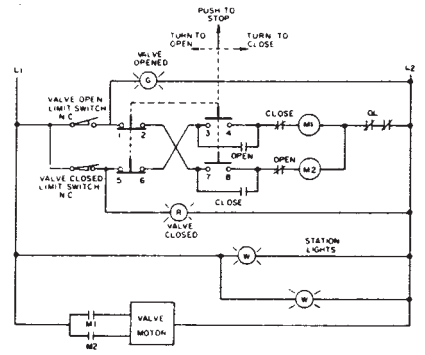
Indicator-Operator Assembly
1—**911AGB011BB,** 120 volts or
911AGB021BB, 240 volts
1—Contact Block—**PTCC**
Cover Plate and Color Inserts
1—**906BDB** 1 Red, 1 Green, 2 White
(See Page 13 for other color selections)
1—Legend plate **907 BUS**

Circuits

Circuit Notation	Device Position 1	Device Position 2	Device Position 3	Connections Circuit	Connections Terminal
Free		X	X	Push To Stop	1-2
Depress			X		
Free	X			Turn To Open	3-4
Depress	X				
Free	X	X		Push To Stop	5-6
Depress	X				
Free			X	Turn To Close	7-8
Depress			X		

"X" indicates a circuit closure

Line Diagram



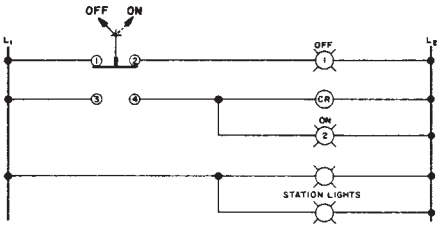
What To Order

Indicator-Operator Assembly
1—**911PGD011MC,** 120 volts,
5 terminal or **911PGD511MC,**
8 terminal.
1—Contact block **PTCC**
1—Cover plate and color inserts
906B--.
(See Page 13 for color selections)
1—Legend plate **907BUS**

Circuits

Device Position 1	Device Position 2	Connections Circuit	Connections Terminals
X		Off Maintained	1-2
	X	On Maintained	3-4

Line Diagram



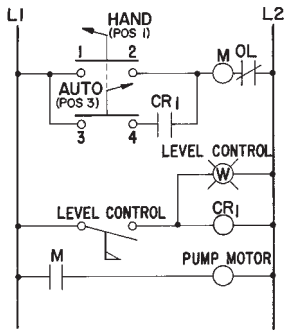
What To Order

Indicator-Operator Assembly
1—**910AEA011,** 120 volts or
910AEA021, 240 volts
1—Contact block **PTCH**
1—Cover plate and color inserts—
906B--
(See Page 13 for color selections)
1—Legend plate **907BUS**

Circuits

Device Position 9	Device Position 12	Device Position 3	Connections Circuit	Connections Terminal
X			Hand	1-2
		X	Auto	3-4

Line Diagram



What To Order

Indicator-Operator Assembly
1—**910PDD011,** 120 volts or
910PDD021, 240 volts
1—Contact Block—**PTCH**
1—Cover Plate and Color Inserts—
906B--
(See Page 13 for color selections)
1—Legend plate **907BUS**

Specification Sheet

Custom circuit control for selector and selector-push units

For assistance in determining your circuit requirements for selector and selector-push units, fill out a CMC Specification Sheet (shown here) and submit it to Senasys at support@senasys.com or Fax to (419) 818-0897 . Your circuit requirements will be analyzed, and the form will be returned to you filled out.

The completed form will include a catalog listing of the unit that will provide the control you require along with contact block catalog listings. The completed form will also include contact block terminal connections for wiring the circuits you specified. Additional forms (FO-62783-B) are available on request.

Follow these steps to fill out a Specification Sheet: (Refer to the example on this page.)

1. Mark an ''X'' where a circuit is to be closed under ''Device Position.'' The form may be used for any 2, 3, or 4 position unit. Cross out the unused position columns.

   1.1 For selector-push units, mark an ''X'' where circuit is closed in either (or both) the FREE and DEPRESS condition in each Device Position.

   1.2 For selectors, there is no DEPRESS knob function, and the DEPRESS lines should be crossed out.

2. Note under ''Circuit'' if any circuits are to be controlled with electronic duty contact blocks. Heavy duty contact blocks will be specified unless otherwise noted.

3. Indicate choice of construction details; i.e., 120 or 240 volt transformers, low voltage jumpers, 24 or 48 volt resistors. Check whether 4, 5, or 8 terminal construction is desired, maintained or spring return action, and other control specifications, if applicable.

NOTE: For 125VDC applications, use line voltage jumpers with customer supplied externally mounted dropping resistors. Lamp supply voltage must not exceed 28 volts.

CUSTOMER: ABC Company, 100 N. 1st Street, Anywhere, USA 89502

PROJECT:

UNIT OR TAG NO: HS-234-A

TYPE OF CONTROL: ☐ Indicator ☐ Pushbutton ☐ Selector ☒ Selector-push KNOB ☒ Gray ☐ Black ☐ Unlighted Unit

LAMP SUPPLY VOLTAGE: 120 VAC Trans. ☐ #755 ☒ L.E.D. | 240 VAC Trans. ☐ #755 ☐ L.E.D. | 24 VAC/DC ☐ #756/Res. ☐ L.E.D. | ☐ 48 VAC/DC w/resistor & #1819 | ☐ Line voltage jumpers; No lamps or LED's | Lamp Terminals ☐ 4 ☒ 5 ☐ 8

4 Position Units — Without Stops ☐ With Stop between Pos. ___ and Pos. ___

REMARKS:

1. Fill in type of control, lamp information, position requirements, contact block type, packing instructions and legend plate information.
2. Mark an "X" where a circuit is to be closed under "DEVICE POSITION". Cross out the unused position columns. (Applies to all CMC units except Indicators).
3. For Selector-Push units, mark with an "X" where circuit is closed in either (or both) the FREE and DEPRESS condition in each Device Position.
4. For Selectors there is no DEPRESS function. Cross out the DEPRESS lines.
5. For Pushbuttons, there is just one Device Position. Cross out positions 2, 3, and 4.

2 or 3 Position Units: ☐ Maintained ☐ Spring return (check one) ☐ From left (cw) ☐ From right (ccw) ☒ From left and right

Cross out unused device positions

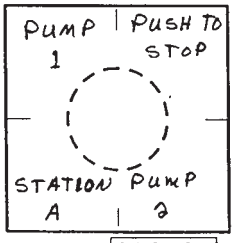
CONTACT BLOCK TYPE: ☒ Heavy duty (check one) ☐ Gold ☒ Silver ☐ Electronic duty (check one) ☐ Gold ☐ Silver

PACKING INSTRUCTIONS: ☐ 1. Individual components ☐ 2. Box and tag only * ☒ 3. Assemble, test, box and tag *

CIRCUIT	DEVICE POSITION 1	2	3	4	TERMINALS	BLOCK
1 Free	X					
1 Depress	X					
2 Free		X	X			
2 Depress			X			
3 Free			X			
3 Depress			X			
4 Free	X	X				
4 Depress	X					
5 Free						
5 Depress						
6 Free						
6 Depress						
7 Free						
7 Depress						
8 Free						
8 Depress						

NOTE: P = Parallel Wiring S = Series Wiring

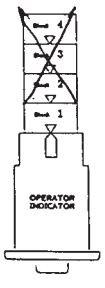
LEGEND PLATE (SHOW LEGEND DESIRED)



LEGEND NOTE: Extend lines to show Quadrant(s) Divisions. Legends will be centered within **Quadrant(s) specified

**Quadrant	CMC Legend Size	Black	White	Insert Color
A	9/64	X		Y
B			X	R
C	7	X		Y
D		X		W

COLOR CODE: A – Amber, B – Blue, G – Green, K – Black, R – Red, W – White, Y – Yellow



CATALOG LISTING	PRICE
Operator and/or indicator	
Block 1	
Block 2	
Block 3	
Block 4	
Adapter Kit	
Cover Plate and Inserts	
Legend	
Packaging & Tagging	
TOTAL PRICE *	

CATALOG LISTING *

QUADRANT LAYOUT: ** A B C D ; ** A B D C

Circle Cover Plate Edge Color: Gray, Chrome, Black, Unpainted, Red, White

S.W.O. NO.	TR	C	O	SCHED DATE	LINE NO.	PRODUCT CODE
	C					

S.O. NO.	ACCOUNT NO.	COMP. DATE	ITEM NO.	SCED. NO.	QUANTITY
	126-288				

COMPLETED BY: R. M. Olson (SIGNATURE) (DATE) Page ___ of ___

CUSTOMER:

PROJECT:

UNIT OR TAG NO:

TYPE OF CONTROL
- ☐ Indicator
- ☐ Pushbutton
- ☐ Selector
- ☐ Selector-push

KNOB ☐ Gray ☐ Black

☐ Unlighted Unit

4 Position Units — ☐ Without Stops ☐ With Stop between Pos. ___ and Pos. ___

LAMP SUPPLY VOLTAGE
- 120 VAC Trans. ☐ #755 ☐ L.E.D.
- 240 VAC Trans. ☐ #755 ☐ L.E.D.
- 24 VAC/DC ☐ #756/Res. ☐ L.E.D.
- ☐ 48 VAC/DC w/resistor & #1819
- ☐ Line voltage jumpers; No lamps or LED's

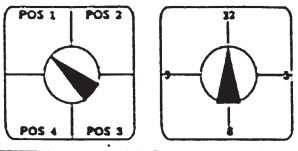
Lamp Terminals ☐ 4 ☐ 5 ☐ 8

REMARKS:

1. Fill in type of control, lamp information, position requirements, contact block type, packing instructions and legend plate information.
2. Mark an "X" where a circuit is to be closed under "DEVICE POSITION". Cross out the unused position columns. (Applies to all CMC units except Indicators).
3. For Selector-Push units, mark with an "X" where circuit is closed in either (or both) the FREE and DEPRESS condition in each Device Position.
4. For Selectors there is no DEPRESS function. Cross out the DEPRESS lines.
5. For Pushbuttons, there is just one Device Position. Cross out positions 2, 3, and 4.

2 or 3 Position Units
- ☐ Maintained
- ☐ Spring return (check one)
  - ☐ From left (cw)
  - ☐ From right (ccw)
  - ☐ From left and right

Cross out unused device positions



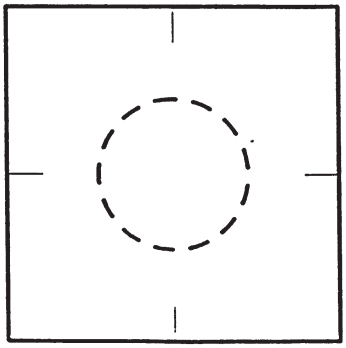
CONTACT BLOCK TYPE
- ☐ Heavy duty (check one) ☐ Gold ☐ Silver
- ☐ Electronic duty (check one) ☐ Gold ☐ Silver

PACKING INSTRUCTIONS
- ☐ 1. Individual components
- ☐ 2. Box and tag only *
- ☐ 3. Assemble, test, box and tag *

CIRCUIT	DEVICE POSITION 1	2	3	4	TERMINALS	BLOCK
1 Free						
1 Depress						
2 Free						
2 Depress						
3 Free						
3 Depress						
4 Free						
4 Depress						
5 Free						
5 Depress						
6 Free						
6 Depress						
7 Free						
7 Depress						
8 Free						
8 Depress						

NOTE: P = Parallel Wiring S = Series Wiring

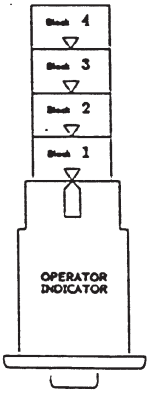
LEGEND PLATE
(SHOW LEGEND DESIRED)



LEGEND NOTE:
Extend lines to show Quadrant(s) Divisions. Legends will be centered within **Quadrant(s) specified

**Quadrant	CMC Legend Size	Black	White	Insert Color
A				
B				
C				
D				

COLOR CODE:
- A – Amber
- B – Blue
- G – Green
- K – Black
- R – Red
- W – White
- Y – Yellow



CATALOG LISTING	PRICE
Operator and/or indicator	
Block 1	
Block 2	
Block 3	
Block 4	
Adapter Kit	
Cover Plate and Inserts	
Legend	
Packaging & Tagging	
TOTAL PRICE *	

CATALOG LISTING *

QUADRANT LAYOUT

Circle Cover Plate Edge Color
Gray
Chrome
Black
Unpainted
Red
White

S.W.O. NO. 1	TR 2	C 4	SCHED DATE	LINE NO. 6	PRODUCT CODE 3	
S.O. NO. 5	ACCOUNT NO. 8		COMP. DATE	ITEM NO.	SCED. NO. 7	QUANTITY 9
	126-288					

COMPLETED BY: _____ (SIGNATURE) _____ (DATE) Page ___ of ___

FO-62098-F

COORDINATED MANUAL CONTROL ORDER SHEET for CMC LEGEND PLATES

GUIDE to ARRANGEMENT of LEGENDS and CATALOG LISTINGS

Additional forms available from any MICRO SWITCH Branch Office. Specify FO-62098-F

CUSTOMER P. O. NO.

INSTRUCTIONS:
1. Extend lines to show QUADRANT(S) DIVISIONS.
2. Print REQUIRED legends in the diagrams below. *(Diagrams are ACTUAL size.)*
3. Fill in LETTER SIZE. *(9/64", 13/64", or 5/16")*
4. Check lettering *(BLACK or WHITE)* by *QUADRANT.
5. Fill in CATALOG LISTING and QUANTITY.

*A B / D C *B / A C / D

(QUADRANT LAYOUTS)

CUSTOMER ____________________

ADDRESS ____________________

CITY and STATE ____________________

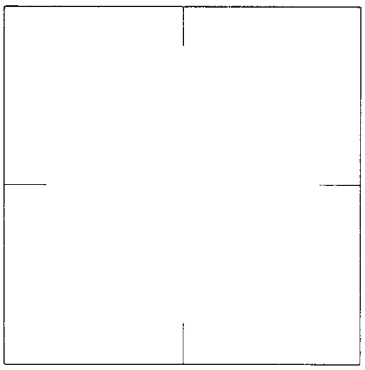
SHADED AREAS for FREEPORT USE ONLY			
S.W.O. NO. 1	TR C 2	C O 4	SCHED. DATE
S. O. NO. 5	ACCOUNT NO. 126-031 8		COMP. DATE

NOTE: Legends will be CENTERED within *QUADRANT(S) Specified.

INDICATOR DIAGRAMS
907 AUS

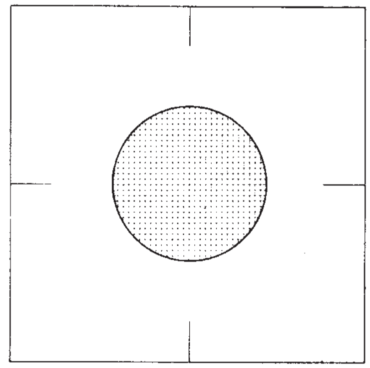
← Use One Diagram in EACH Section →

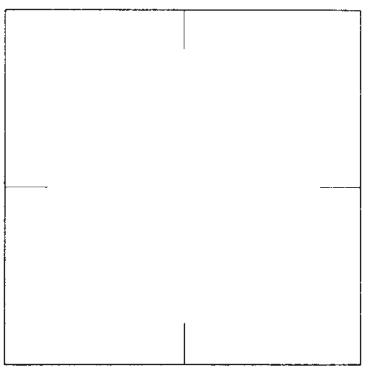
OPERATOR DIAGRAMS
907 BUS



*QUADRANT	LETTER SIZE	BLACK	WHITE
A			
B			
C			
D			

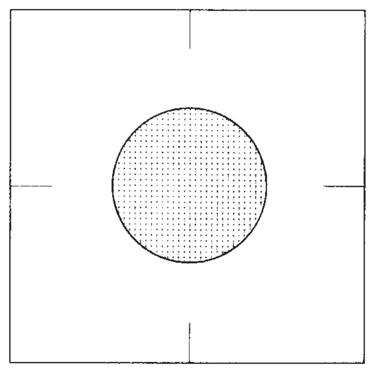
CATALOG LISTING		PRODUCT CODE 3	
ITEM NO.	LINE NO. 6	SCHED. NO. 7	QUANTITY 9

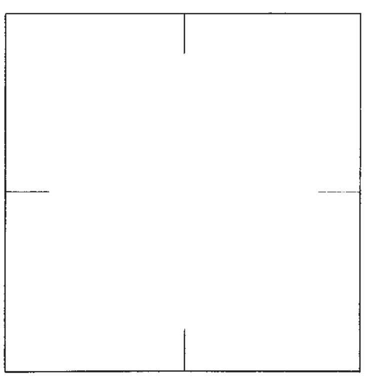




*QUADRANT	LETTER SIZE	BLACK	WHITE
A			
B			
C			
D			

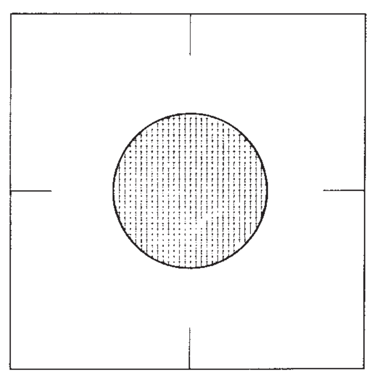
CATALOG LISTING		PRODUCT CODE 3	
ITEM NO.	LINE NO. 6	SCHED. NO. 7	QUANTITY 9





*QUADRANT	LETTER SIZE	BLACK	WHITE
A			
B			
C			
D			

CATALOG LISTING		PRODUCT CODE 3	
ITEM NO.	LINE NO. 6	SCHED. NO. 7	QUANTITY 9



COMPLETED BY:

____________________ (Signature) ____________ (Date) *Page* ____ *of* ____

Accessories

Not all of the accessories listed here are available from Senasys. Be sure to order from the suggested manufacturer for each accessory.

COLOR FILTERS FOR LAMPS

For use over type lamps as furnished with CMC transformer units. Projects color indicated when used with white color inserts and high ambient light level lamps shown at right.

Manufacturer	Color Lamp Filters		
APM, Englewood, N.J.	Amber 1813/8 A-2	Red 1813/8 R-4	Green 1813/8 G-1

LAMP INFORMATION

120 VAC and 240 VAC transformer units are equipped with four T-3 1/4 #755 lamps. The #755 lamp has a 6.3 volt rating and is readily obtainable from all industrial or automotive supply companies. These same units will accommodate the #1847 lamp. Replacement #755 lamps can be ordered as PTZ40.

24 volt or 48 volt resistor units are supplied with lamps. 48 volt units are equipped with GE #1819 lamps rated at 28 volts. 24 volt units are equipped with #756 lamps rated at 14 volts. Replacement #756 lamps can be ordered as PTZ66 and #1819 lamps can be ordered at PTZ67.

CMC units containing line voltage jumpers are not supplied with lamps. These units are designed for use with any 5 through 28 volt lamp listed.

If a lamp other than those listed is used, the lamp must be limited to 1 watt per quadrant.

T–3¼ LAMP INFORMATION

Lamp Type	Voltage	Current Amps	Life (Hrs)	Ambient Light Level	
				Medium 5-25 FT—C	High 24 FT—C and Up
1850	5.0	.09	1,500	X	
756	14.0	.08	15,000	X	
1819	28.0	.04	2,500	X	
1847	6.3	.15	5,000		X
47	6.3	.15	3,000		X
755	6.3	.15	20,000		X

T–3¼ LED INFORMATION

LED Color	Voltage V AC/DC	Current Amps (Nominal)	Luminous Intensity (MCD)
White/Yellow	6	.06	75
White/Yellow	24	.02	75
Green	6	.06	75
Green	24	.02	75
Red	6	.06	85
Red	24	.02	85

MCD – Millicandlea

QUICK CONNECTORS

Available from suppliers shown

FOR ELECTRONIC DUTY CONTACT BLOCKS (Either silver or gold contacts)

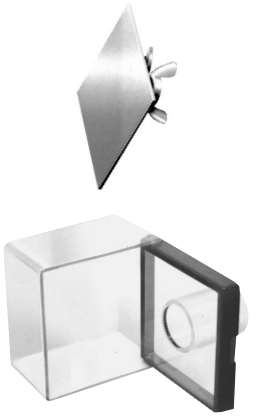
Manufacturer	Range of Wire Size	Straight—No Insulation	Flag
AMP	20-16	42452-1 or 42452-2	42486-1 or 42800-1
AMP	18-14	62016-2	

ENCLOSURES FOR CMC

Numerous panel manufacturers build cabinets, panelboards or enclosures for use with CMC.

PANEL PUNCH FOR CMC

A 2″ (50,8mm) square panel punch (Greenlee Model 731M) for CMC is manufactured by Greenlee Tool Co., Rockford, Illinois. Use in conjunction with a Greenlee No. 7646 hydraulic punch driver.



HOLE PLUG

Contains Oiltight Seal
2.25″ (57,2mm) + 2.25″ (57,2mm)
986CAA01 Gray

SWITCH GUARD

Guard consists of cover plate and transparent cover. Switch cannot be operated when cover guard is closed helping prevent accidental operation. Guard can be used on 909, 910 and 911 series operators. Extends 1.52 in. (38,5 mm) from panel.

Catalog Listing 986DAA01

Replacement Parts

Cover Plates		
Indicators	**Color**	**Operator-Indicators**
986 AAB 01	Gray	986 AAB 02
986 AAB 03	Black	986 AAB 04
986 AAB 05	Unpainted	986 AAB 06
986 AAB 09	Red	986 AAB 10
986 AAB 13	White	986 AAB 14
986 AAB 07	Chrome	986 AAB 08

Bulk Packed Cover Plates for Indicators Cover plates for 20 CMC indicators are offered.	**Bulk Packed Cover Plates for Operator-Indicators** Plates for 40 CMC operator-indicators are offered.
Specify in multiples of 20	**Specify in multiples of 40**
986 AAB 01-BP	986 AAB 02-BP
986 AAB 03-BP	986 AAB 04-BP
986 AAB 05-BP	986 AAB 06-BP
986 AAB 09-BP	986 AAB 10-BP
986 AAB 13-BP	986 AAB 14-BP
986 AAB 07-BP	986 AAB 08-BP

Individual Color Inserts for Incandescent
Each insert covers ¼ of total display — four required per CMC unit.

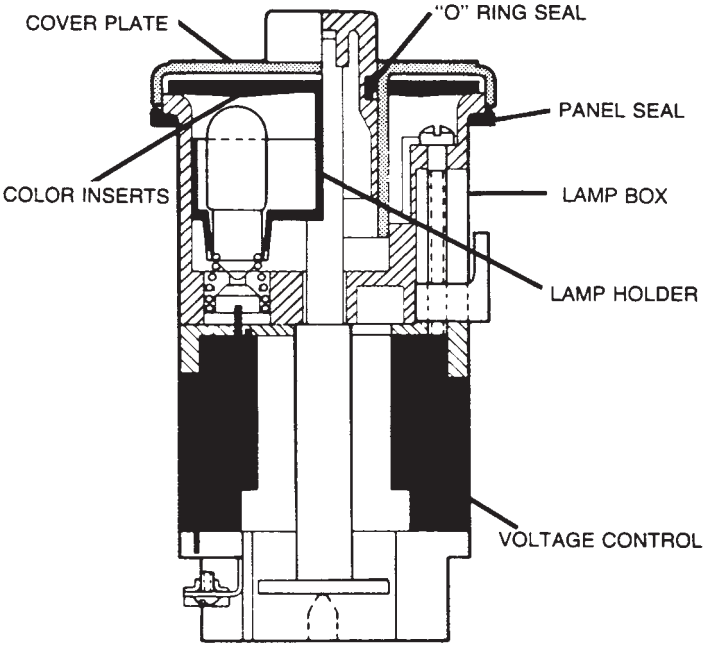
Indicators	Color	Operator-Indicators
986 AAA 01	Red	986 AAA 02
986 AAA 03	Yellow	986 AAA 04
986 AAA 05	Green	986 AAA 06
986 AAA 07	Blue	986 AAA 08
986 AAA 09	White	986 AAA 10
986 AAA 11	Amber	986 AAA 12
986 AAA 13	Black[3]	986 AAA 14

Bulk Packed for Indicators Individual color inserts (one color) for 5 CMC indicators are offered.	**Bulk Packed for Operator-Indicators** Color inserts (one color) for 10 CMC operator-indicators are offered.
Specify in multiples of 20	**Specify in multiples of 40**
986 AAA---BP	986 AAA---BP
Insert number of color above.	

Individual Color Inserts for LEDs		
Indicators	**Color**	**Operator-Indicators**
985AAA01	Red	985AAA02
985AAA03	Yellow	985AAA04
985AAA05	Green	985AAA06
986AAA09	White[2]	986AAA10
986AAA13	Black[3]	986AAA14

REPLACEMENT LAMPS

Industry No. Description	Voltage	Catalog Listing
755	6	PTZ40
756	12	PTZ66
1819	24	PTZ67
LED, Red	6VAC/DC	PTZ69
LED, Green	6VAC/DC	PTZ70
LED, Yellow	6VAC/DC	PTZ68
LED, Red	24VAC/DC	PTZ78
LED, Green	24VAC/DC	PTZ79
LED, Yellow	24VAC/DC	PTZ71



"O" Ring Seal For operator-indicators only
986 BAA 04

Panel Seal For all units
986 BAA 03

Lamp Holder	
908 Indicator Only	**909 thru 914 Operator-Indicators**
986 BAA 05	986 BAA 06

Lamp Box Without Lamp Hardware		
910 Selector Series	**911 Selector-Push Series**	**908 Indicators**
986 BAA 24	986 BAA 25	986 BAA 27

Voltage Control For Lamp
Individual Units
986 BAA 01
120 VAC transformer
986 BAA 02
240 VAC transformer
986 BAA 07
Low voltage jumper
986 BAA 08
48 volt resistor
986 BAA 14
24V resistor

Knobs[1]		
Replacement Knob Packet For	**910 Series Gray Knob**	**913 Series Black Knob**
Selector, Positions 1-2-3-4	986BAA15	986BAA20
Selector, Positions 9-12-3-6 o'clock	986BAA17	986BAA22
Replacement Knob Packet For	**911 Series Gray Knob**	**914 Series Black Knob**
Selector-push, Position 1-2-3-4	986BAA16	986BAA21
Selector-push, Positions 9-12-3-6 o'clock	986BAA18	986BAA23

Notes: 1, Knob packets include knob, shaft, and O-ring seal.
2, White inserts not recommended for illumination by LEDs.
3, Black inserts not suitable for illumination.

Multi-Light Oiltight Controls

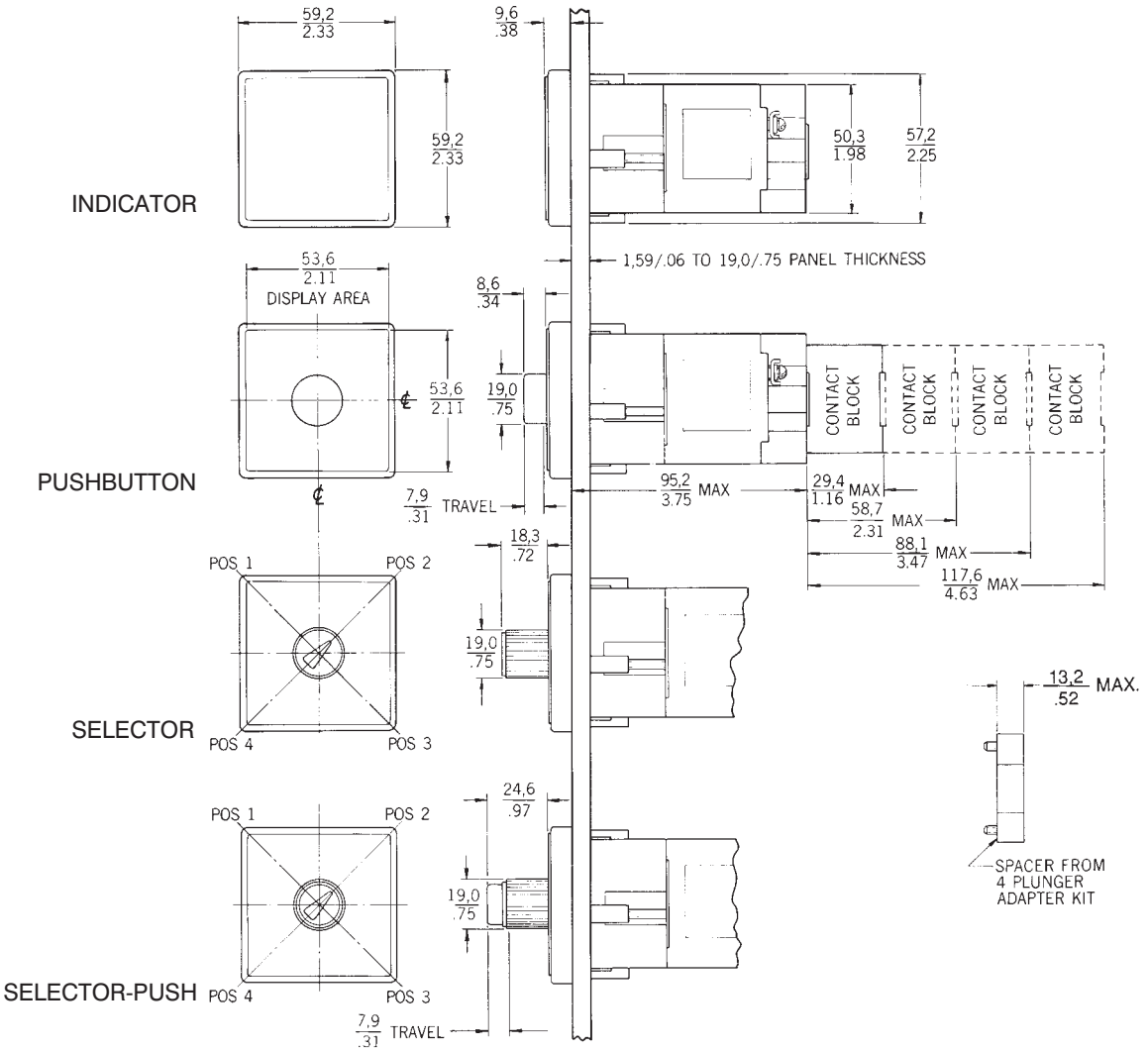
CMC Series

Mounting Dimensions

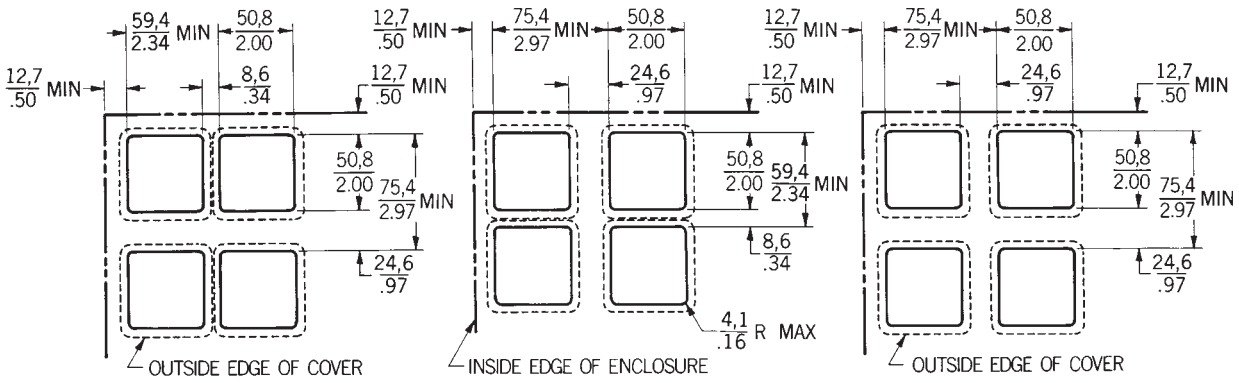
Note: The location arrow on the contact block must be lined up with the arow on the operator, except as noted for the PTCB block on the ordering pages.

CMC WEIGHT

Indicators and operator-indicators (includes cover plate, legend plate, and color inserts). With transformers — 14 oz. max. Without transformers — 7½ oz. max.
Contact blocks — 2 oz. each.
4-Plunger Adapter Kit — 1 oz.



PANEL CUTOUT RECOMMENDATIONS



HORIZONTAL MOUNTING
5 TERMINAL CONSTRUCTION

VERTICAL MOUNTING
5 TERMINAL CONSTRUCTION

HORIZONTAL or VERTICAL
8 TERMINAL CONSTRUCTION