SAFRAN ELECTRONICS & DEFENSE AVIONICS USA LLC

SERIES 90 TELLITE SWITCH

SAFRAN

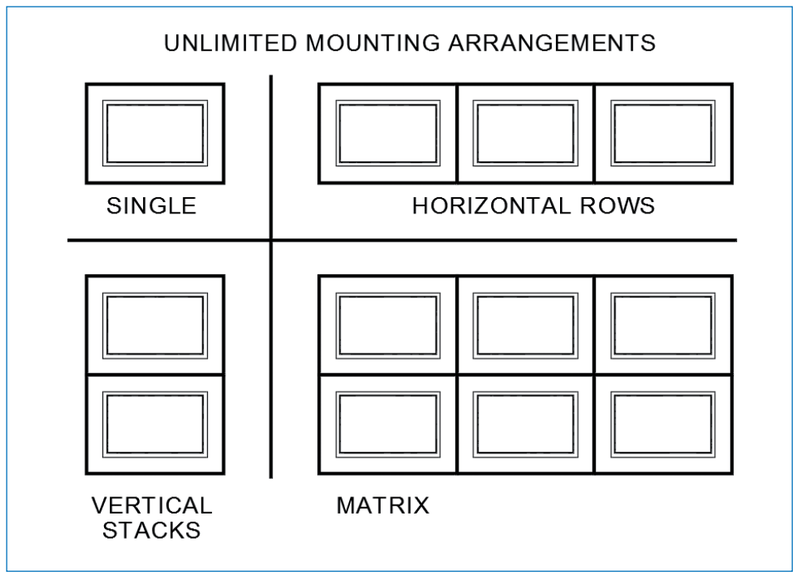
SERIES 90E FEATURES

The Series 90 Tellite units are miniature, two-lamp lighted push-button switches and/or word indicator lights with capacity for up to three lines of legend in a compact area. They feature flush-to-the-panel mounting and rectangular lens configuration with word indication by means of two separate standard lamps. The lamps and/or lens assembly may be installed or removed from the panel front without the use of any tools.

Units are available from 2PDT in some versions to 4PDT, in either momentary or alternate switch action. Holding coil units are also available for electrical interlock.

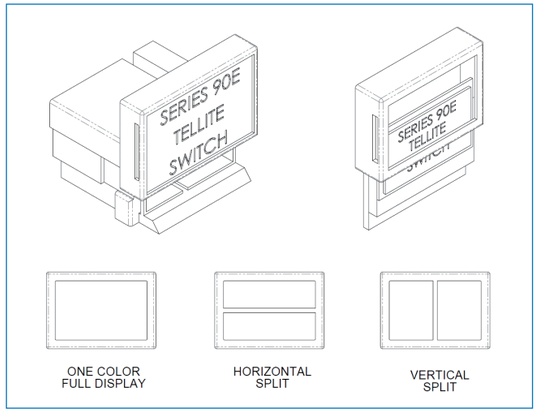
UNIQUE MOUNTING HAS NO LOOSE HARDWARE

The mounting is designed as an integral part of the main housing and consists of special mounting sleeves located in opposite corners. Removing the front-end assembly gives access to the screw heads which cam the mounting sleeves in position to contact the rear of the panel. Hard mounting is attained, yet no screw heads show from the panel front; there is no loose or special mounting hardware; and the mounting is completely contained within the outline dimensions of the unit's front face.



NO TOOLS REQUIRED FOR LAMP REPLACEMENT

Lamp replacement is accomplished from the panel front without the use of any tools. The light capsule, which holds the lamps and front lens, is held to the unit housing by spring clips which allow it to be removed for quick and easy lamp replacement



REMOVABLE LENS ASSEMBLY

Once the light capsule has been disengaged from the housing, the lens assembly is readily removed. This permits easy changing of display arrangement, color filter, or legend configuration. Simply slide the holder up, which frees the lens, diffuser, and color filter.

VERSATILE DISPLAY ARRANGEMENT

Word indication may be presented on a full, horizontally, or vertically split display screen. The full display one-color has the added feature of two-lamp reliability. The horizontal or vertical split is made possible by the unique design of the light capsule wherein one lamp illuminates each half of the display, thus providing two indications in the same unit. Colored display is achieved through the use of color filters. Color coded indication - two separate colors illuminating the full display screen - is available. A process in which SAFRAN Electronics & Defense pioneered is that of engraving on the reverse side of the lens. This avoids the usual problem of legends being effaced through normal wear.

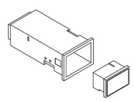
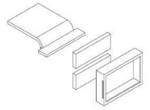
SERIES 90H

The Series 90H Tellite Switch is **the military version of the Series 90E**, and it meets the requirements of MIL-PRF-22885/58. The package size, mounting method, and wire terminations are the same as the Series 90E. The following is a cross reference of the Mil-Spec part numbers and the 90H part numbers. Refer to subsequent pages for further definition of part number designations.

MIL-SPEC Part No.	SAFRAN Part No.
M22885/58-01 (X)	90HA1C2J1 ( ) L1N1
M22885/58-02 (XX)	90HA1C2J2 ( ) L2N1
M22885/58-03 (XX)	90HA1C2J3 ( ) L3N1
M22885/58-04 (X)	90HA1C3J1 ( ) L1N1
M22885/58-05 (XX)	90HA1C3J2 ( ) L2N1
M22885/58-06 (XX)	90HA1C3J3 ( ) L3N1
M22885/58-07 (X)	90HA1C4J1 ( ) L1N1
M22885/58-08 (XX)	90HA1C4J2 ( ) L2N1
M22885/58-09 (XX)	90HA1C4J3 ( ) L3N1
M22885/58-10 (X)	90HA1C5J1 ( ) L1N1
M22885/58-11 (XX)	90HA1C5J2 ( ) L2N1
M22885/58-12 (XX)	90HA1C5J3 ( ) L3N1

SERIES 90E ORDERING INFORMATION

90EA1C2F3J2(AB)L2N1R16 ON/OFF

SERIES	BASIC UNITS	LAMPS	COLOR FILTERS	DISPLAY SCREEN	FRONT LENS AND ENGRAVING
90E	A1C2	F3	J2(AB)	L2	N1R16 ON/OFF
TELLITE SWITCH	 HOUSING AND LIGHT CAPSULE 2 PTD MOM. ACTION	2 EA. 28 VOLT LAMPS	1 EA. AMBER 1 EA. BLUE	 HORIZONTAL SPLIT	

CODED CALL-OUT PROVIDES EASY ORDERING

The completed unit, including the engraved inscription, may be ordered by a single coded call-out. This system eliminates the need for individually ordering each item required for a completed unit, which in turn would necessitate the customer having to assemble the items once received. The engraving service eliminates the customer's need for in-house engraving equipment or additional sub-contracting.

CODED CALL-OUT SYSTEM

Each item required for a completed unit is assigned a code number. By selecting the code number call-out for each item required and then placing these in alphabetical sequence following the series number **«90E»** a completed unit call-out is derived.

ELIMINATION OF ITEMS

Where one or more items comprising a completed unit are not required, omit the call-out for that item.

ORDERING SEPARATE ITEMS

Where separate items are required, precede an item's call-out with the basic **«90E»** to obtain the correct order number for that item. Lamps, when ordered separately, are always considered 1 each rather than the 2.

BASIC UNITS CODE NUMBERS

SWITCH CHARACTERISTICS	SWITCH UNIT	HOLDING COIL UNIT			
		6 Volt	12 Volt	28 Volt	48 Volt
2PDT Momentary	A1C2	A3C2	A4C2	A2C2	A5C2
4PDT Momentary	A1C3	A3C3	A4C3	A2C3	A5C3
2PDT Alternate	A1C4	------	------	------	------
4PDT Alternate	A1C5	------	------	------	------

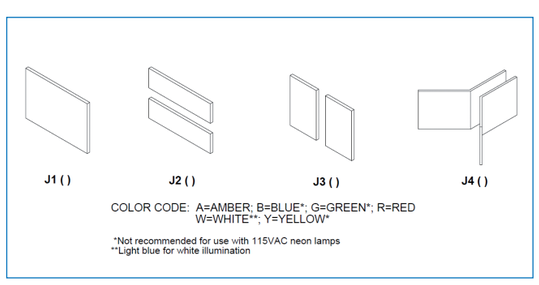
LAMP CODE NUMBERS

6 Volt	12 Volt	28 Volt	28 Volt Long Life	115 Volt Neon W/ Resistor	115 Volt Neon No Resistor
F1	F2	F3	F14	F4	F10

Lamp size: T-1 3/4 midget flanged base

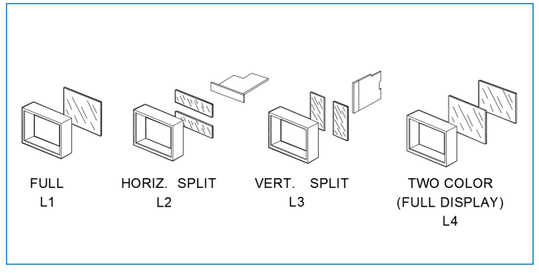
COLOR FILTER CODE NUMBER

To order a color filter for a specific display arrangement, use the code numbers shown for that display, followed by the color code letter desired in parentheses. In a horizontal split, the first color code denotes the top half of the display; the second color denotes the bottom half. In a vertical split, the first color code denotes the color for the left half of the display; the second color code denotes the color for the right half. For the 2-color full display, the first color code denotes the color to be used with the left lamp; the second color code denotes the color for the right lamp, as viewed from the panel front.



DISPLAY SCREEN CODE NUMBER

The code number includes the holder and dividers, where applicable. Full displays or horizontally or vertically split displays are available. The coded part number, **«L1»** etc., also includes the holder for the lens assembly.



NON-ENGRAVED LENS

When a non-engraved lens is required, the code number **«N1»** is used, eliminating the remaining part of the engraved lens call-out.

SEPARATE ENGRAVED LENSES

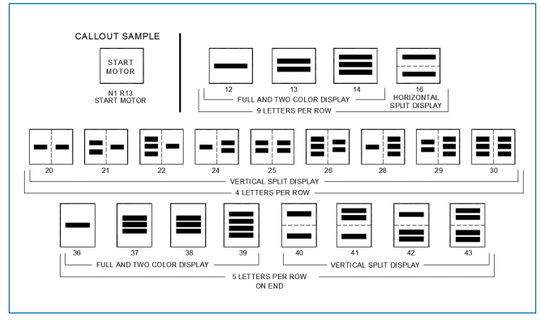
Where separate engraved lenses are required, precede the front lens and engraving code number call-out with the basic **«90E»**.

ENGRAVING SPECIFICATIONS

Engraving of the 90E Series lens produces letters 0.110 inch in height, with a 0.017 inch stroke. Letters are filled with special black filler.

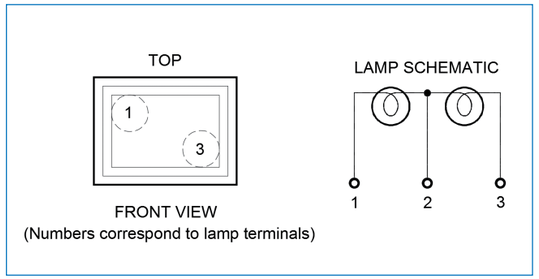
FRONT LENS AND ENGRAVING CODE NUMBER

The front lens with required engraving is ordered by following the call-out **«N1R»** with the engraving configuration number as selected below. After this, the actual wording is added, using commas between rows of wording and a straight vertical line between splits.



SERIES 90E TERMINAL I.D. & PANEL CUTOUT

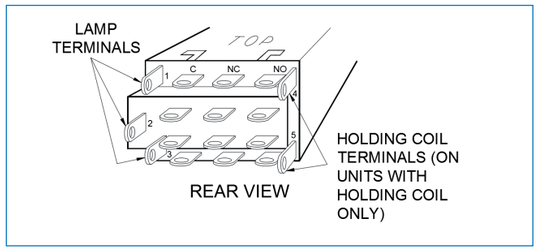
LAMP LOCATION AND LAMP TERMINAL IDENTIFICATION



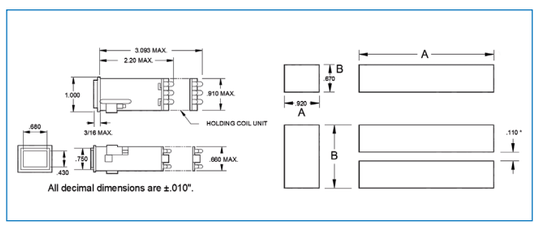
SWITCH TERMINAL IDENTIFICATION

NOTES:

1. On 2 PDT switches, switch terminals are furnished in center only.
2. Terminals will accept two No. 20 AWG wire leads.
3. Electrical ratings: 3 amps resistive, 1 ½ amps inductive, 1 amp lamp load.
4. Holding coil power requirement: Maximum 3 watts.



Outline Dimensions and Panel Cutout



NOTES:

1. The unit will mount in panels 3/32" to 3/16" thick. For units to fit other panel thicknesses, contact the factory.
2. When mounting unit on end, the side marked "top" is on the left as viewed from the front of the panel.

PANEL CUT-OUT DIMENSIONS IN INCHES (±0.10)

NO. OF UNITS IN ROW	1	2	3	4	5	6	7	8
Horizontal Row "A"	.920	1.925	2.930	3.935	4.940	5.945	6.950	7.955
Vertical Row "B"	.670	1.425	2.180	2.935	3.690	4.445	5.200	5.955

*For matrix arrangement, allow .110" in panel between cut-outs for adjacent horizontal or vertical rows.

SERIES 90K FEATURES

SERIES 90K

The Series 90K Tellite units are available in three versions as an indicator-lite only, switch-lite, or switch-lite with holding coil. Package sizes of each version are shown in the dimensional drawings on page 8. Units are available with a choice of wiring terminals. All units may be specified with solder lugs or plug-in connector pins. In addition, indicator-lite only units may be specified with screw-type terminals. Each unit incorporates mounting tabs that provide a positive hard mount after inserting the unit through the panel cutout from the panel front. Captive mounting screws inside the unit cam out these mounting tabs and tighten them up against the back of the panel.

No external hardware required.

GENERAL

Basic Unit Types Available
Indicator-Lite, Switch-Lite, Switch-Lite with Holding Coil. Press to test indicator.

Switch Configurations and Actions
2PDT or 4PDT, momentary or alternate action

Lamp Types/Number of Lamps/ Voltage
Two T-1 ¾ incandescent 6, 12, or 28 volt based lamps (115 VAC neon lamps available)

Lamp Circuits Available
Common ground

Display Screen Arrangements
Full display, two-way vertical or horizontal split, two-color full display

Color Control Method
Slab filter in yellow, amber, red, green, blue, and white. Projected color (silicone rubber bulb boots) also available

Lens Types Available
Lighted letters or lighted background, letters either legible or not when unit is unlighted

Engraving Size
0.110" high with .017" stroke (standard)

Relamping
Front of panel without tools

Mounting Panel Thickness
1/32" to 3/16"

Mounting Method
Hard mount from front of panel with integral mounting nuts

Wiring Terminations
Switch: double turret, connector pins. Indicator: solder lugs, connector pins, screw type

Wire Sizes
Screw type and solder lug terminals accept up to 2 #20 gauge wires. Connector pin type terminals accept #20 through 28 gauge wires

Optional Features Available
Control Circuits, Drip Proof Seal, RFI Screen, Spacer Barriers, Switch Guard, Panel Plug, Crimp Tool, Locator, Removal Tool

ELECTRICAL AND MECHANICAL CHARACTERISTICS

Operation
Momentary or Alternate

Action
Snap-action

Contacts
2PDT or 4PDT

Contact Ratings
3 amps resistive @115 to 250 VAC: 3 amps resistive, 1.5 amps inductive (minimum – 10mA @ 5V)

Contact Resistance
50 Milliohms @ 6 VDC and 100 ma

Operation Force
64 oz. max

Feel
Tactile

Mechanical Life
100,000 cycles
(on and off = 1 cycle)

Electrical life
100,000 cycles

Stroke
0.125" nominal

Tease proof
Yes, 100%

Holding Coil Nominal Voltage
6, 12, 28 and 48 VDC

Holding Coil, Min. Hold-In Voltage
50% of nominal rating

Holding Coil, Max. Drop-Out Voltage
40% of nominal rating

Holding Coil Power
3 watts, max.

ENVIRONMENTAL

Operating Temperature Range
-55°C to +85°C

Terminal Strength
5 lbs. parallel and perpendicular per MIL-STD-202, Method 211, Cond. A

Actuator and Stop Strength
25 lbs. for 1 minute

Thermal Shock
-55°C to +85°C per MIL-STD-202, Method 107B, Cond. A

Dielectric Strength
1000 volts, per MIL-STD-202, Method 301

Insulation Resistance
500VDC for 1 minute, 1000 megohms minimum per MIL-STD-202, Method 302, Cond. B

Shock
50 G's, per MIL-STD-202, Method 202B

Vibration
10 G's of 10 to 500Hz, per MIL-STD-202, Method 204A, Cond. A

Salt Spray
48 hours, per MIL-STD-202, Method 101B, Cond. B

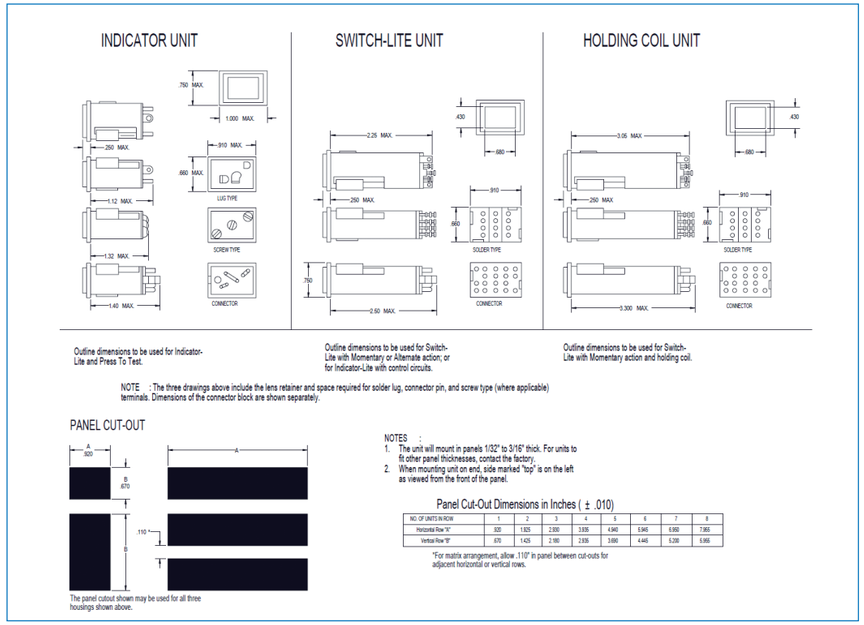
Moisture Resistance
10 cycles at 90% to 98% relative humidity, per MIL STD-202, Method 106B

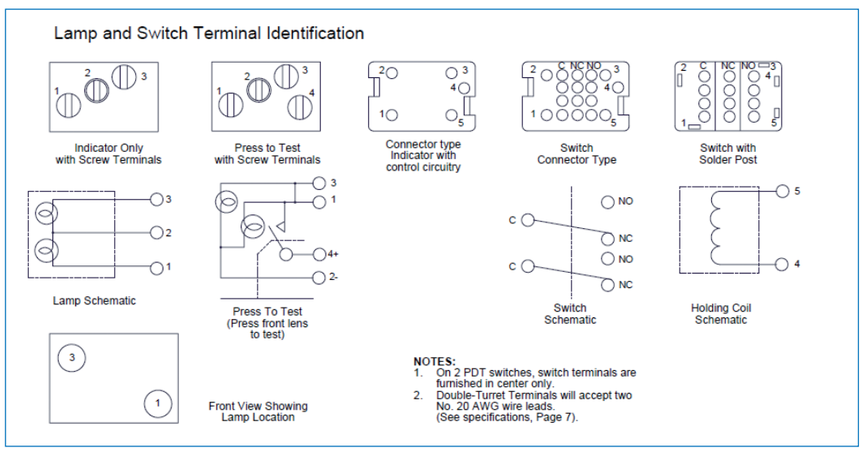
Sand and Dust
6 hours, per MIL-STD-202, Method 110, Cond. B

Overload
50 cycles at 6 amps, 28 VDC

RFI, EMI
70 DB minimum relative attenuation in the frequency range of 10K Hz to 10,000 MHz, per MIL-STD-285.

SERIES 90K FEATURES

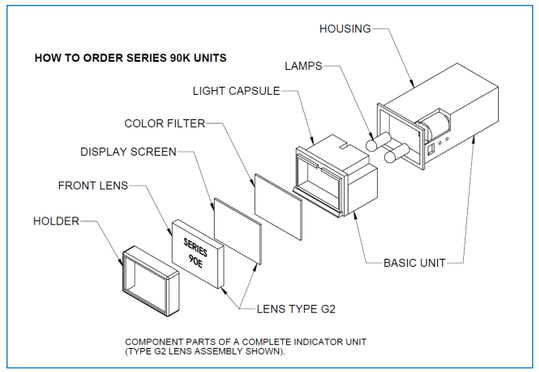




SERIES 90K ORDERING INFORMATION

90KA1C2D1F1G2H1J1(R)L1N1R120FF

90K	☐	A1C2	D1	E1	F1	G1	H1	J1( )	L1	N1	R1	ON OFF
Series Number	Basic Unit Variation	Basic Unit	Terminals	Control Circuits	Lamps	Lens Type	RFI Screen	Color Filters	Display Screen	Front Lens	Legend Configura-tion	Legend Wording



COMPONENT PARTS OF A COMPLETE INDICATOR UNIT (TYPE G2 LENS ASSEMBLY SHOWN).

ELIMINATION OF ITEMS

Where one or more items comprising a complete unit are not required, omit the code number for that item.

ORDERING SEPARATE ITEMS

When separate items are required, precede an item's code number with the basic **«90K»** to obtain the correct order number for that item. Lamps, when ordered separately, are always considered 1 each rather than 2.

BASIC UNIT VARIATIONS

Variations of the basic unit, such as units with connector pins, may be specified in this space. Future expansions of the line, which will be described in Supplement Sheets to this Catalog, may also be specified here, if applicable.

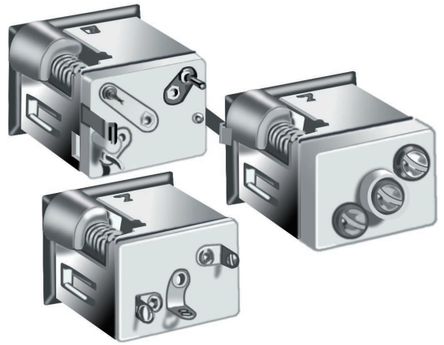
Complete Switch-Lite and Indicator-Lite assemblies may be ordered using a single coded part number. Each item required for a complete assembly has been assigned a code number and is described on the following pages. By selecting the part number code for each item desired, and then placing these numbers in alphabetical sequence immediately following the series number **«90K»**, a complete part number is formulated. Above is the code number sequence to be used in ordering.

BASIC UNIT CODE NUMBERS

Basic Unit Type	Indicator or SwitchLite Code	Holding Coil Unit Order Code			
		6 Volt	12 Volt	28 Volt	48 Volt
Indicator Only (U.L.approved)	A1				
2PDT Momentary Switch	A1C2	A3C2	A4C2	A2C2	A5C2
Momentary 4PDT Alternate	A1C3	A3C3	A4C3	A2C3	A5C3
2PDT Alternate Switch	A1C4				
4PDT Alternate Switch	A1C5				
Press to Test (Indicator Only)	A6D2				

SERIES 90K TERMINALS, CONTROL CIRCUITS & LAMPS

90KA1**D1E1F1**G2H1J1(R)L1N1R120FF



TERMINALS

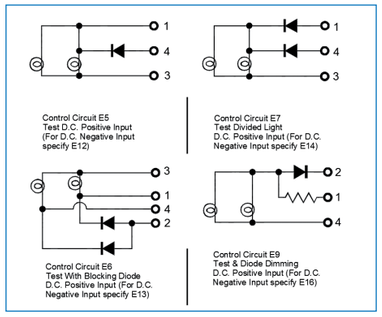
Series 90K units are available with a choice of wiring terminals. All units may be specified with solder lugs or plug-in connector pins. In addition, Indicator-Lites may be specified with screw-type terminals. To specify the proper terminals, insert the appropriate code number in the basic ordering sequence.

CODE	TERMINAL
D1	Solder Lug
D2	Screw Type (Indicator Only)
D3	Connector Pin

CONTROL CIRCUITS (INDICATORS ONLY)

Special circuits which provide master lamp test and dimming capabilities are available as an integral part of the basic unit. These circuits eliminate the need for external circuitry and are available in four standard circuits which provide positive and negative test inputs for all full display screen styles. Other control circuits are available on request.

NOTE: The indicator only units with control circuits are the same package size as switch-lite units.



LAMPS

Series 90K units accept two T-1 3/4 midget flanged base lamps. To specify, insert the appropriate code number in the basic ordering sequence.

NOTE: LED's are available upon request.
Please contact a Safran representative.

CODE	LAMP
F1	6 Volt Incandescent
F2	12 Volt Incandescent
F3	28 Volt Incandescent
F14	28 Volt Long Life Incandescent
F4	115 Volt Neon With Resistor (*)
F10	115 Volt Neon Without Resistor (for use with external resistor)*

**Recommended for use with red or amber color filters only.*

SERIES 90K LENS TYPE & RFI SCREEN

90KA1C2F1**G1H1**J1(R)L1N1R120FF

LENS TYPE

Series 90K units are available with four types of lenses, each producing a different type of legend display. To order, use the appropriate **«G»** code number from those described below.

LENS TYPE CODE	DESCRIPTION
G1	Lighted Letters: Letters appear white on a black background until illuminated, and then letters appear in color, background remains black.
G2 (*)	Lighted Background: Letters appear black on a white background until illuminated and then background appears in color, letters remain black.
G3	Lighted Letters: Letters are not legible until illuminated and then letters appears in color, background is black.
G4	Lighted Background: Letters are not legible until illuminated, then background appears in color, letters are black.

**This is the most commonly used and preferred type of lens for most applications.*

RFI SCREENS

The passage of radiated and/or conducted RFI through panel cutouts can be reduced by the fine mesh, metal RFI screen, which is mounted between the lamps and display screen of the light capsule. RFI is grounded by electrical contact from the screen to the unit housing to the panel.

Available for full, horizontal and vertical split displays. To order RFI screens for complete units, insert the code number shown below, according to the screen configuration, into the basic ordering sequence.

CODE NUMBER	DESCRIPTION
H1	Full Display RFI Screen
H2	Horizontal Split Display RFI Screen
H3	Vertical Split Display RFI Screen

To order RFI screens as separate parts, consult factor for ordering information.

SERIES 90K COLOR FILTERS

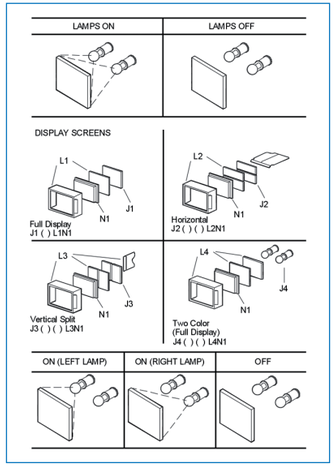
90KA1C2D1E1F1G1H1J1(R)L1N1R120FF

TRANSMITTED COLOR (SLAB FILTERS)

To order a color slab filter for a Series 90K unit for a specific display arrangement, use the code numbers shown at the right for the desired display, followed by the color code letter desired in parenthesis. In a horizontal split, the first color code denotes the top half of the display; the second color denotes the bottom half. In a vertical split, the first color code denotes the color for the left half of the display; the second color code denotes the color for the right half, as viewed from the front.

The code number includes the holder and dividers, and spacers where applicable. Full displays or horizontally or vertically split displays, and two color full displays, are available. The coded part number, **«L1»**, etc., also includes the holder for the lens assembly.

Note: The display screen illustration at the right is provided as an example only. It illustrates the Series 90K; the series 90E and 90H use slightly different parts, but the part number codes are the same.



PROJECTED COLOR (TWO COLOR FULL DISPLAY)

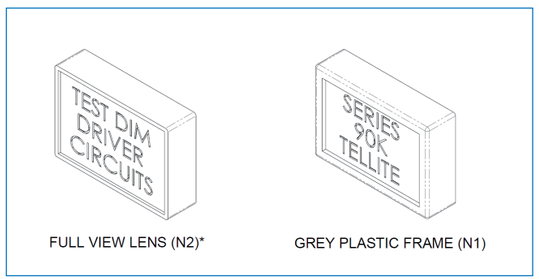
Two colored lamp filters (silicone rubber bulb boots) are required for each unit. Use the color code described in this sequence: the first color code denotes the color to be used with the left lamp; the second color code denotes the color for the right lamp, as viewed from the panel front. These codes should be preceded by the code **«J4»**.
Example: J4 (RG) would produce a red and green indication in a full two-color display.

LENS FRAME

Select the lens most suited to your application and add the appropriate order code, N1 or N2, to the part number in the proper sequence. When ordering N2 lens for the Series 90K, omit the **«G»** lens type code and the **«L»** display screen code, since the N2 lens is available only in the G2 type lens. The standard color for the frame on the N1 lens is gray. Other frame colors such as black, red, white, etc., are available on special order. The standard color for the N2 lens is white, which is used with color filters. Other colors for the lens itself, for use without color filters, are available, such as red, yellow, green, etc. on special order. Also white and colored lenses with concave front surfaces are available on special order. Consult the factory for ordering information on special front lens colors and shapes.

Color Code	Description
(A)	Amber
*(B)	Blue
*(G)	Green
(R)	Red
*(W)	White +
*(Y)	Yellow

**Not recommended for use with 115 VAC neon lamps.*
+Light blue bulb is used for white illumination.

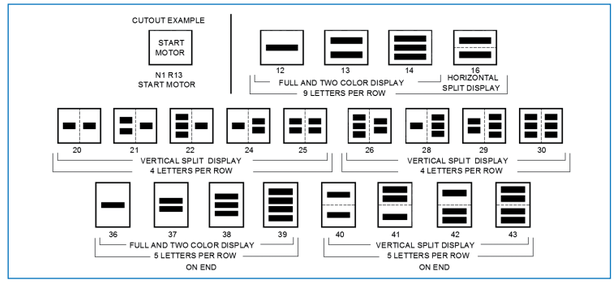


FULL VIEW LENS (N2)* GREY PLASTIC FRAME (N1)

For representation only

SERIES 90K LEGEND CONFIGURATIONS & CRIMP-TYPE TERMINALS

90KA1C2D1E1F1G1H1J1(R)L1N1R120FF

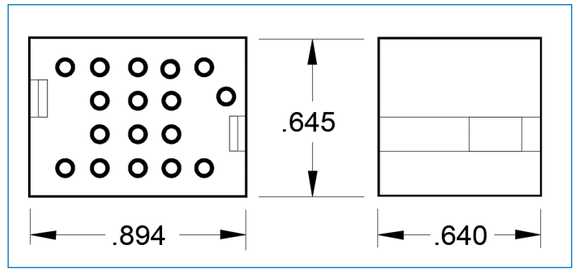


LEGEND CONFIGURATION

Engraving of the Series 90 unit lenses produces letters 0.110 ± 0.010 inch in height, with a 0.017 ± 0.005 inch stroke. Letters are filled with special black filler. To specify the engraving, add the letter «R» to the part ·number following the front lens code. The **«R»** code is then followed by the number or the engraving configuration desired, as shown in the illustration to the left. Use commas to separate rows of wording and a straight vertical line to separate splits.

CRIMP-TYPE TERMINALS

A standard connector block, which accepts crimp-type terminals is available for Series 90K units. This connector quickly snaps over the Series 90K connector pin terminals and offers the advantages of fast installation and replacement, as well as simplified wiring. To order the connector block, specify Safran Electronics & Defense part number **901K-600**.



CRIMP TOOL AND LOCATOR

A standard MS3191 crimp tool and a special Safran Electronics & Defense locator are used to attach each terminal to its wiring. These items are available from Safran Electronics & Defense. Part number **800-3191** is for the crimp tool itself. Part number **800-3191-L20** covers the Safran Electronics & Defense locator only, which must be ordered even if you have your own crimp tool. (Part Number **800-3191-L20-2** is required when using **800-CT20-2** terminals). These tools are not required if the terminals are to be soldered.

CRIMP-TYPE TERMINALS

The crimp-type terminals used to wire the terminal blocks are also ordered as a separate item. These terminals are packaged in plastic bags, 25 terminals to the bag. Each bag of 25 terminals may be ordered by using the part number **800-CT20**. (Takes on #20, 22, or 24 gauge wire or two #24 gauge wires.) Part Number **800-CT20-2** takes one #26 or #28 gauge wire.

Terminals can be shipped from stock prior to shipment of the units. This permits advance attachment of the terminals to the wires and speeds installation when units arrive.

REMOVAL TOOL

Crimp terminals may be quickly removed from the connector block by using the Safran Electronics & Defense Removal Tool. To order, specify Safran Electronics & Defense part number **800-P2**.

SERIES 90C FEATURES

The Series 90C Tellite Switch units are ruggedly packaged in stainless-steel housings to assure long-term wearability and resistance to environmental extremes. Their double-turrent, hot-tin dipped switch terminals provide for fast and reliable wiring. They mount firm and flush-to-the-panel by means of an integral flange and a pressure spring-clip arrangement. No external mounting hardware is required. Installation is through the panel cutout from the panel front. Package size is shown in the dimensional drawings below.

SPECIFICATIONS

SWITCH MODULE (SPST or 2PST and SPDT or 2PDT, with momentary or alternate action).

Electrical :

- 5.0 amps @ 125 VAC or 250 VAC
- 5.0 amps @ Resistive Loads of 30 Vdc
- (@sea-level and 50,000 feet)
- Inductive Loads
  - 3.0 amps @ sea level
  - 2.5 amps @ 50,000 feet
- Inrush Loads - 24 amps (max)

Terminals :

- Double-Turrent, Hot-Tin Dipped.

Character Size :

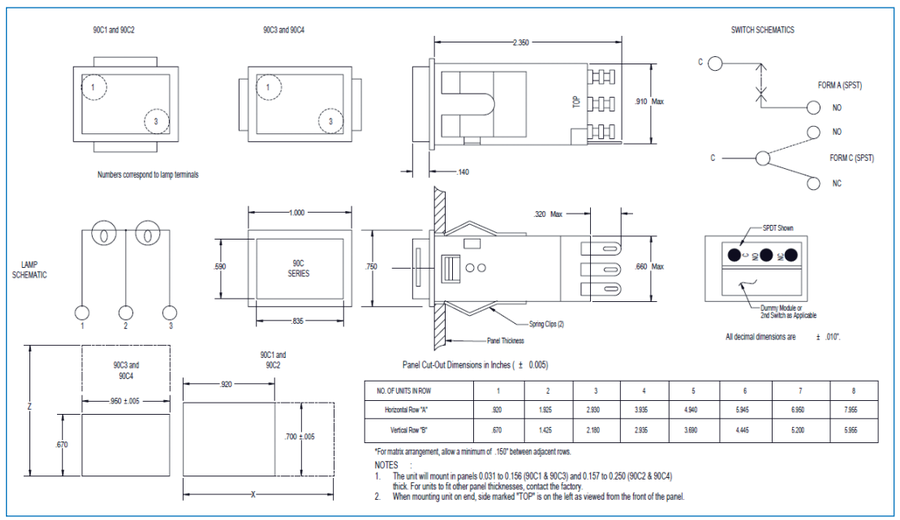
- 0.110 inch high with a 0.017 inch stroke. Units mount flush with the panel.

Mounting :

- No special brackets required

Lamps :

- Two T-1 3/4 inch midget flanged base.



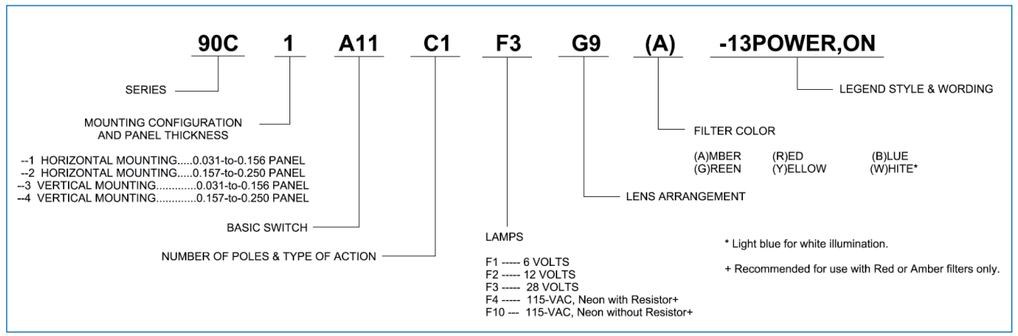
NO. OF UNITS IN ROW	1	2	3	4	5	6	7	8
Horizontal Row "A"	.920	1.925	2.930	3.935	4.940	5.945	6.950	7.955
Vertical Row "B"	.670	1.425	2.180	2.935	3.690	4.445	5.200	5.955

*For matrix arrangement, allow a minimum of .150" between adjacent rows.

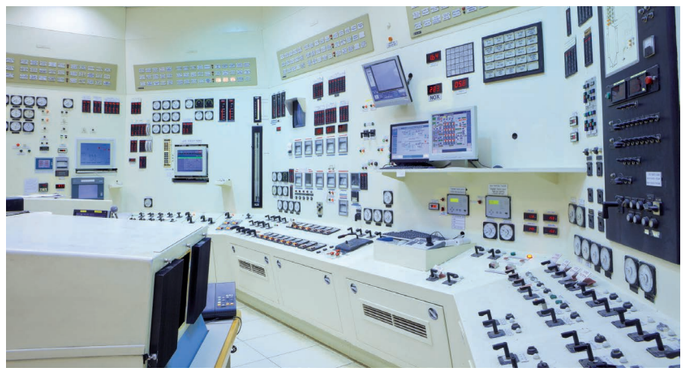
NOTES :
1. The unit will mount in panels 0.031 to 0.156 (90C1 & 90C3) and 0.157 to 0.250 (90C2 & 90C4) thick. For units to fit other panel thicknesses, contact the factory.
2. When mounting unit on end, side marked "TOP" is on the left as viewed from the front of the panel.

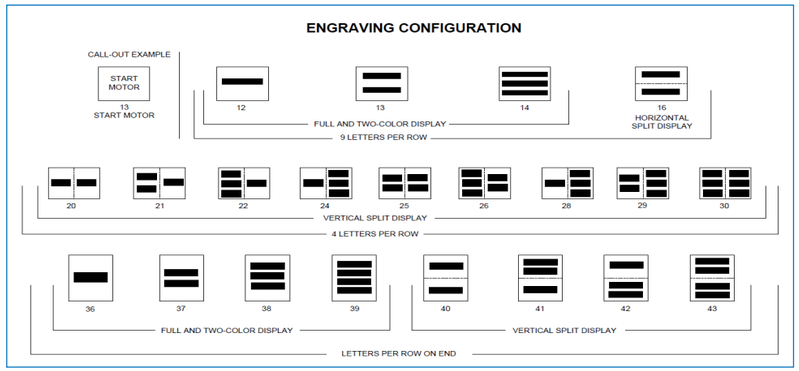
SERIES 90C ORDERING INFORMATION

90C1A11C1F3G9(A)13POWER,ON



SWITCH CHARACTERISTICS		
Form C (SPDT)	SPDT Mometary	A3C1
	2PDT Mometary	A3C2
	SPDT Alternate	A3C3
	2PDT Alternate	A3C4
	Indicator Only	A0C5





OPTICAL ACCESSORIES FOR SERIES 90E, 90H, 90K & 90C

DRIP-PROOF SEAL

An easily installed, effective barrier that prohibits the entrance of liquids, or foreign matter through panel openings, without affecting visibility of legends or ease of switching. Assembly consists of a diaphragm, which slips over the basic unit from the back, and a seal that fits over the front of the unit to provide an effective seal.

Order as part number **90□-502**.

NOTE: Insert the letter in place of the box to indicate the proper Series for the part ordered.

SPACER BARRIERS

Spacer Barriers are available for vertical mounting with basic 90 units. As a safety precaution, the barriers preclude the possibility of inadvertently switching two adjacent units at the same time. For design purposes, barriers are available in a variety of colors as listed.

How to Order: Select vertical (short) barriers from the tables below, according to the desired colors. Two are required for one unit (and one for each additional unit if rows are used).

Vertical Barriers for Horizontal Rows (Mount on Sides)	
Part Number	**Color**
90□535G	Gray
90□535B	Black
90□535W	White
90□535R	Red

NOTE: Barriers are 0.125 inch thick. The added space required for barriers must be allowed for in the preparation of panel cutouts. Allow 0.340 inch for the first unit and 0.125 inch for each additional unit in a matrix.

SWITCH GUARD

Positive protection against accidental switch actuation is provided by this spring-loaded, clear plastic cover. The spring holds the cover over the switch face at all times. To gain access to the switch face to actuate the switch, the cover must be raised by deliberate action.

How to Order: Switch Guards may be ordered separately by specifying Part Number **90K-19**.

How to install: The installation of a Switch Guard can be quickly accomplished in the field. To install, remove the unit light capsule, loosen the mounting screws sufficiently to provide space between the frame of the switch unit and the panel front. Slip the Switch Guard onto the frame from the bottom of the frame. Tighten mounting screws securely and replace the light capsule.

PANEL PLUGS

Panel plugs may be used to cover panel cutouts for Series 90 units, attractively covering cutouts which have been provided for future expansion, or which have been created by design changes. Each plug will fit any single cutout measuring 0.920x0.670 inch. Plugs may also be inserted into vertical or horizontal rows of units to cover spaces allotted for one or several units. Dimensions of plug face are 0.75x1.00 inch.

How to Order: Panel plugs may be ordered in various colors by using the part numbers shown below.

Safran Part Number	Color
90□542-1	Black
90□542-2	Red
90□542-3	Gray
90□542-4	White
90□542-5	Blue
90□542-6	Yellow
90□542-7	Green

Qualification to MIL-PRF-22885/58

The Series 90 Tellite Switches have been granted qualification approval to MIL-PRF-22885/58. To order MIL-PRF-22885/58 qualified units, the part number should include the letter “H” after the series number 90.

The list of Safran military specification part numbers for the 90H series is listed on page 3 of this catalog. Should you have a need for more information on these Military Qualified Products, please consult your Safran representative or call the factory.

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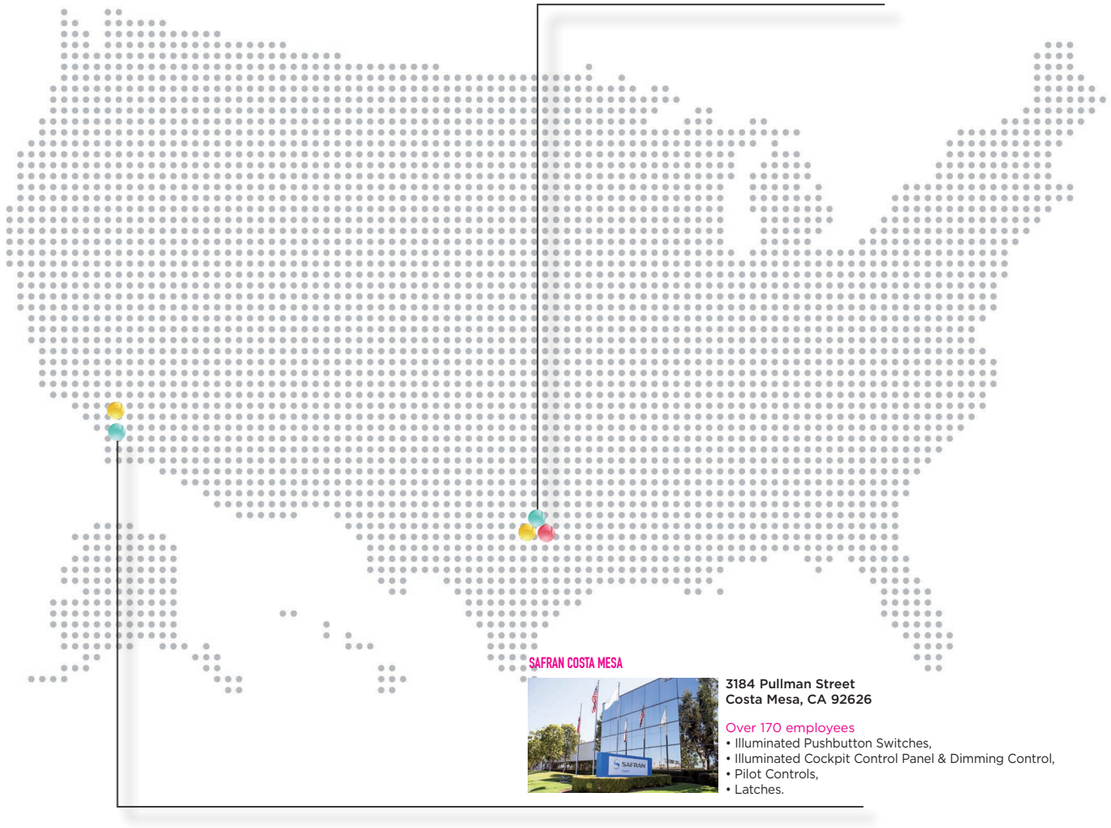

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Publication director: Cassandra Pereira
Editor in Chief: Roi Rivera, Minh Nguyen
Design and production: alain à l'autre
Photo credit: Safran Avionics, Fotolia, Safran, Shutterstock, DR
Printed in: United States by Digital Corporate Companies Inc.
October 2016

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