

# Manual Switches

## Pushbutton Switches and Indicators

### BARRIER MOUNT



Mounting barriers attach to either the long or short sides of the housing. They have spring clips which grip the panel. Mounting barriers also separate display screens

to protect against inadvertent operation. Multiple units can be attached together in a strip and snapped into a panel slot; or they can be mounted individually.

### FEATURES

- Easy-to-assemble modules provide thousands of display/control combinations
- Up to 4 incandescent lamps
- 1, 2, 3, or 4-section display
- Transmitted or projected color
- Integral hold-in coil option provides remote released contacts. Pull-in coils (flange mount only) enable remote actuation
- Switch guard accessory.

### CHANGE LAMPS OR FILTERS FROM PANEL FRONT



**Without tool.** Remove display screen/lampholder assembly from 2C200 operator-indicator (or 2F200 indicator). Unit is keyed to maintain proper orientation when replacing. Use only flange base T-1¼ lamps with 2C200 and 2F200 devices.

### LAMPS AND FILTERS

Order lamps and filters for projected color from page 111.

### FLANGE MOUNT



Flange mount units have mounting clips ready-attached to the housing. They can be individually installed or replaced; and

enable use of an overlay panel, if desired. Groupings can be separated by optional spacing barriers.

### MODULES ASSEMBLE EASILY

All modules are ordered as separate items which snap together for easy assembly.

Pushbuttons

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### BARRIER MOUNT MODULES

Barrier mount assemblies are identical in panel appearance. Operator-indicator housings have spring clips for attaching to the long or short side of the housing. This feature is not provided with indicator housings.

Barriers are necessary for mounting. They can be specified for attachment to the long or short side of the housing, as stated in the order guides.

### BARRIER MOUNT HOUSING ORDER GUIDE

See "Application Data" for typical bailing circuits for coil-equipped modules.

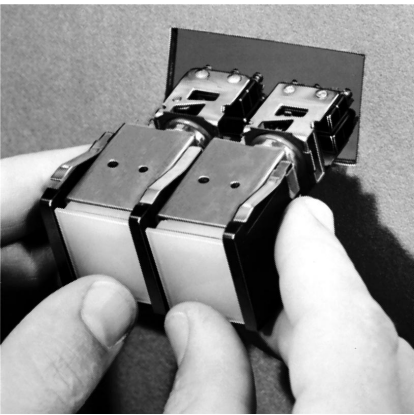
| Barriers Attach On:    | No. of Lamp Sockets  | Tool Not Required  |                |
|------------------------|----------------------|--------------------|----------------|
|                        |                      | Operator-Indicator | Indicator Only |
| Long Sides of Housing  | 2 (A & C)<br>4 (A-D) | 2C207<br>2C209     |                |
| Short Sides of Housing | 2 (A & C)<br>4 (A-D) | 2C201<br>2C203     | 2F203          |

### MOUNTING BARRIER ORDER GUIDE

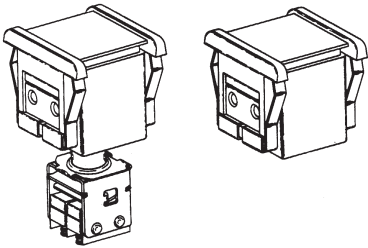
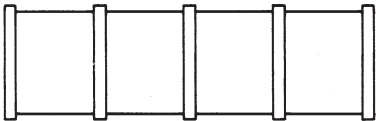
For strip mounting, specify one more barrier than the number of units in the group.

| Mounting Barrier Type | For Panel Thickness        | Catalog Listings |       |
|-----------------------|----------------------------|------------------|-------|
|                       |                            | Gray             | Black |
| Attach to Long Sides  | .06-.19 in. (1,52-4,83 mm) | 2B2              | 2B4   |
| Attach to Short Sides | .06-.19 in. (1,52-4,83 mm) | 2B1              | 2B3   |

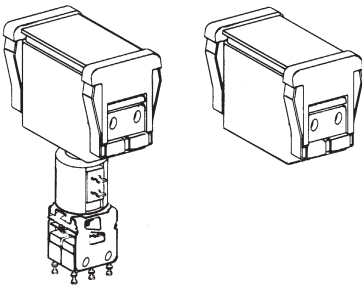
Note: Panels .19 in. (1,52 mm) thick require the .06-.19 in. (1,52-4,83 mm) type barriers.



Barriers on long sides



Barriers on short sides



# Manual Switches

## Pushbutton Switches and Indicators



Flanges on long sides

### FLANGE MOUNT MODULES

Flange mount assemblies are identical in panel appearance. Operator-indicator housings have spring clips for switch modules attachment (not provided with indicator housings).

Barriers are not required, since the panel mounting clips are ready-attached to flange sides of the housings. However, spacing barriers can be used for color-coding. They also aid in preventing inadvertent operation of two screens with one push.

Mounting dimensions on page 114.



### FLANGE MOUNT HOUSING ORDER GUIDE

See "Application Data" for typical bailing circuits for coil-equipped modules.

| Flanges On:           | No. of Lamp Sockets | Tool Not Required  |                |
|-----------------------|---------------------|--------------------|----------------|
|                       |                     | Operator-Indicator | Indicator Only |
| Long Sides of Housing | 2 (A & C)           | 2C204              |                |
|                       | 4 (A-D)             | 2C206              | 2F206          |



### SPACING BARRIER ORDER GUIDE

For .06-31 in. (1,5-7,9 mm) thick panels.

| Spacing Barrier Type    | Catalog Listings |       |
|-------------------------|------------------|-------|
|                         | Gray             | Black |
| For Long Flange Housing | 2B9              | 2B18  |

Pushbuttons

# Manual Switches

## Pushbutton Switches and Indicators

### SWITCH MODULES



Interchangeable type 2D switch modules attach to spring clips on the bottom of operator-indicator housings. There is a wide selection of circuitry, electrical ratings, operating actions and terminations.

For mounting dimensions, see page 115.

### SM SUBMINIATURE MULTI-SPDT SWITCH MODULES



Momentary action



Alternate action

SM switch modules offer a choice of two momentary action styles, one with a pronounced touch-feedback, the other with low operating force for rapid repeat ac-

tion. Also available with alternate-action and combination momentary/alternate action modules. Extra length turret solder terminals.

#### ELECTRICAL RATING

Silver contacts:

30 VDC: 5 amps res. sea level or 50,000 ft,  
3 amps ind. sea level, 2.5 amps 50,000 ft.  
Max. inrush, 24 amps.

UL and CSA rating for basic switch: 5  
amps, 125 or 250 VAC.

Gold contacts:

30 VDC: 0.5 amp ind., 1 amp res., sea level  
and 50,000 ft. Max. inrush, 2 amps.

### SM SWITCH MODULE ORDER GUIDE

| No. of SPDT Circuits | Momentary Action Touch-Feedback Type Silver Contacts | Alternate Action Low Force Type Silver Contacts |
|----------------------|--|---|
| 1                    | 2D100  | 2D118   |
| 2                    | 2D2  | 2D26  |
| 4                    | 2D9  | 2D33  |

### V3 COMPACT SPDT/DPDT SWITCH MODULES



#### ELECTRICAL RATING

30 VDC: 10 amps ind.\* sea level, 6 amps ind.,\* 50,000 ft. Motor load, 6 amps.\*\* UL and CSA rating for basic switch: 10 amps, 1/3 Hp, 125 or 250 VAC; 1/2 amp, 125 VDC; 1/4 amp, 250 VDC.

\* Inductive currents in accordance with AN3179.

\*\* Motor load rating based on starting current.

#### V3 SWITCH MODULE ORDER GUIDE

| No. of SPDT Circuits | Momentary Action |
|----------------------|------------------|
| 1                    | 2D70             |
| 2                    | 2D72             |

V3 switch modules have screw terminals with lockwashers. Quick-connect terminals (not shown) are also available. When used with short-flange operator indicators, add spacing barriers to prevent interference.

# Manual Switches

## Pushbutton Switches and Indicators

### ONE-PIECE DISPLAY SCREEN OPTIONS



Single-section

These translucent solid color display screens are single-section/one piece construction

### SINGLE-SECTION/ ONE-PIECE SCREENS ORDER GUIDE

|        | Standard |
|--------|----------|
| Red    | 2A1      |
| Yellow | 2A2      |
| Green  | 2A3      |
| White  | 2A5      |



KEY SLOT FACES SIDE OF HOUSING SHOWING CATALOG LISTING (ABOVE LAMP TERMINALS "A" AND "B")

### THREE-PIECE DISPLAY SCREEN OPTIONS



Single-section

These screens have transparent colored or colorless caps, transparent colorless legend inserts and translucent colored bases.

### SINGLE-SECTION/THREE-PIECE SCREENS ORDER GUIDE

| Color  | Colorless Caps |
|--------|----------------|
| Red    | 2A81           |
| Yellow | 2A82           |
| Green  | 2A85           |
| White  | 2A70           |
| Amber  | 2A114          |

**NOTE:**  
Add -L to catalog listing if button is to be legended.



2V10 CAP\*



2V9 INSERT\*

\*Order for replacement only



### TWO, THREE AND FOUR-SECTION DISPLAY SCREENS

Dotted lines show 3-section base configuration



Silicone rubber baffles prevent light spillage from one section to another. Screen caps and legend inserts are transparent colorless. Bases are translucent colored.

For more information on 2, 3, and 4-section display screens, contact the MICRO SWITCH Application Center.

Pushbuttons

**Honeywell**

FO-62308-H

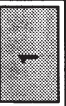
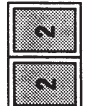






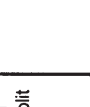
**SERIES 2A, 2L, and 2W  
LEGEND ORDER SHEET/PRODUCT SPECIFICATION**

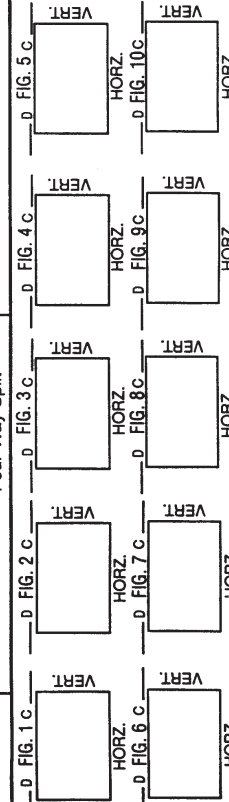
ACCOUNT NO. 126-284 Pg      of       
1. Complete ORDER SHEET for EACH NEW or REPEAT ORDER.  
2. For each different legend, fill in a Diagram below as follows:

- Determine proper orientation of the legend (HORIZONTAL or VERTICAL).
- For SPLIT SCREEN ORDER, draw line(s) to show where the split occurs and indicate BASE COLOR for each section.
- PRINT or TYPE the required legend in the diagrams provided.
- Fill in QUANTITY and FIGURE NO. in the columns to the right.
- Indicate keyed corner on all 2L listings.

| Form No Shaded Area | HORIZONTAL            |                       |                       |                       | VERTICAL              |                       |                       |                       |   |   |   |   |   |   |   |   |
|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|---|---|---|---|---|---|---|
|                     | 1                     | 2                     | 3                     | 4                     | 1                     | 2                     | 3                     | 4                     |   |   |   |   |   |   |   |   |
| TYPE SIZE           | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA | MAX. CHAR./LINE /AREA |   |   |   |   |   |   |   |   |
| 5/64                | 12                    | 5                     | 6                     | 5                     | 12                    | 2                     | 6                     | 2                     | 8 | 6 | 4 | 6 | 8 | 3 | 4 | 3 |
| 7/64                | 9                     | 4                     | 4                     | 4                     | 9                     | 2                     | 4                     | 2                     | 6 | 5 | 3 | 5 | 6 | 2 | 3 | 2 |
| 9/64                | 7                     | 3                     | 3                     | 3                     | 7                     | 1                     | 3                     | 1                     | 5 | 4 | 2 | 4 | 5 | 2 | 2 | 2 |
| 13/64               | 5                     | 2                     | 2                     | 2                     | 5                     | 1                     | 2                     | 1                     | 3 | 3 | 1 | 3 | 3 | 1 | 1 | 1 |
| 5/16                | 3                     | 1                     | 1                     | 1                     | 3                     | 1                     | 1                     | 1                     | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 |

|                          |   |   |
|--------------------------|---|---|
| LEGEND AREAS             | Full Face   |  |
|                          | Vertical Two Way Split  |  |
|                          | Horizontal Two Way Split  |  |
|                          | Three Way Split   |  |
| Full Face                |  |   |
| Vertical Two Way Split   |  |   |
| Horizontal Two Way Split |  |   |
| Three Way Split          |  |   |
| Four Way Split           |  |   |



|                          |                   |
|--------------------------|-------------------|
| Catalog Listing          |                   |
| Customer P.O. No.        | Customer Dwg. No. |
| MICRO SWITCH Sales Order | Schedule No.      |

Customer: \_\_\_\_\_  
Address: \_\_\_\_\_

| Quantity Ordered | Fig No. | Size | Ink Color |     | Customer Part Number |
|------------------|---------|------|-----------|-----|----------------------|
|                  |         |      | BLK       | WHT |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |
|                  |         |      |           |     |                      |

NOTE: Round, three and four-way splits are not available on 2W Series Display Screens. Only black and white type is available.

**A3**  
Modified Gothic

Modified Gothic lettering (A thru Z), numerals (0 thru 9) and Symbols below available in 5/64, 7/64, 9/64, 13/64 and 5/16.

| STANDARD SYMBOLS AVAILABLE |   |   |   |   |   |   |   |   |   |               |
|----------------------------|---|---|---|---|---|---|---|---|---|---------------|
| .                          | , | : | ; | ! | ? | ' | - | " | / | ( ) * &       |
| \$                         | ¢ | # | % | o | + | - | ± | + | x | = ≠ ∞ ∇       |
| →                          | ↔ | ↕ | ← | ↗ | ↘ | ↙ | ↚ | ↛ | ↜ | 1/4 1/3 2/3 @ |

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_



# Manual Switches

## Pushbutton Switches and Indicators

### LEGEND INFORMATION

Honeywell MICRO SWITCH Division provides legend service on the inserts supplied with three-piece screens only. To specify your needs, add -L to the catalog listings (example: 2A81-L) and use Legend Order Sheet (Form FO-62308), shown on facing page. Reproduce it on your office copier.

On any one insert, only one size of type is provided in either black or white. After legending, the insert is assembled to the display screen. The type face used is "Modified Gothic".

### SCREEN/LEGEND COLORS

The chart below shows recommended display screen and legend color combinations for optimum legibility.

| Screen Color | Legend Lettering |       |
|--------------|------------------|-------|
|              | Black            | White |
| Red          |                  | x     |
| Green        |                  | x     |
| Yellow       | x                |       |
| Amber        | x                | x     |
| White        | x                |       |

### LAMPS

T-1¼ incandescent lamps are available from MICRO SWITCH in 28 volt versions.

Use of neon lamps is not recommended. Light output is approximately 30% of an incandescent lamp. Also, a neon lamp will not illuminate blue or green filters or display screens due to the absence of these colors from the neon light spectrum.

### LAMP POLICY

The 28 volt lamps are offered as a convenience to customers. Honeywell MICRO SWITCH Division does not extend any warranty as to such lamps, and cannot guarantee to provide lamps from specific manufacturers. Any technical or quality questions regarding such lamps should be directed to the lamp manufacturer.

### COLOR FILTERS FOR PROJECTED COLOR

Projected color is achieved by using white buttons and color filters over clear lamps. When lamps are lighted, white button takes on color projected by the filters.

Filters used with type 2C200 and 2F200 housings (no-tool relamping) slip over lamp sockets in lampholder.

### LAMP ORDER GUIDE

| Catalog Listing | Base Style | Type No. | Rating |      |               | Life/Voltage† |                      |
|-----------------|------------|----------|--------|------|---------------|---------------|----------------------|
|                 |            |          | Volts  | Amps | Life in Hours | Volts         | Expected Life (Hrs.) |
| 2E1             | Flange     | 327      | 28     | .040 | 1000          | 24.0          | 7,500                |
|                 |            |          |        |      |               | 26.0          | 2,800                |
|                 |            |          |        |      |               | 30.0          | 400                  |

† These are experimental continuous life test results supplied by a lamp manufacturer for reference only. Intermittent operation may reduce these figures as much as 50%. Ratings are based on median values of current and life.

Wattage should not exceed 2.4 watts (2 lamps) per switch, for continuous illumination.

### FILTER ORDER GUIDE

| Filter Style                      | Red  | Green | Amber | White* |
|-----------------------------------|------|-------|-------|--------|
| For Type 2C200 and 2F200 Housings | 2G12 | 2G14  | 2G16  | 2G17   |

\* Has blue tint to compensate for high yellow content of incandescent lamps at low voltages.

# Manual Switches

## Pushbutton Switches and Indicators

### SWITCH GUARD ACCESSORY

A hinged cover on the switch guard helps avoid inadvertent operation of the display screen. It is installed in place of the transparent slide-on cap furnished with three-piece screen. Note: When used with pull-in coil devices, specify the 2C200 operator-indicator housings which have the no-tool relamping feature.



Key:  $\frac{0,0}{0.00} = \frac{\text{mm}}{\text{inches}}$



Barrier mount assembly with guard installed. (Can also be used with all flange mount units.)



Guard requires a "lift-to-push" response to operate switch normally.

Order Catalog Listing **2H20**



# Manual Switches

## Pushbutton Switches and Indicators

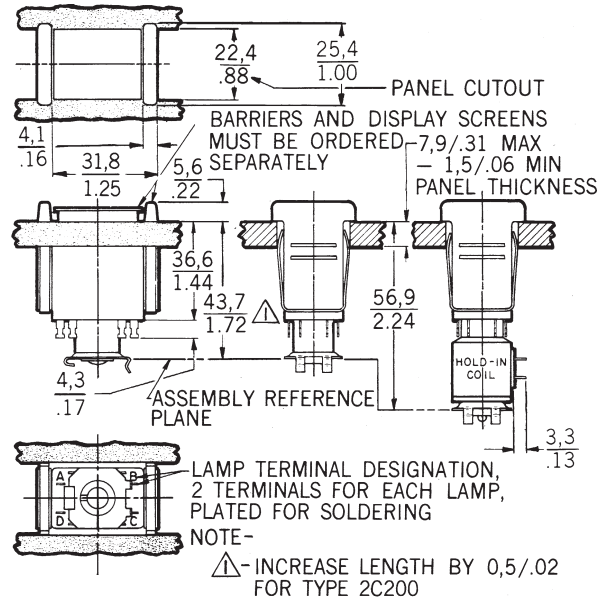
Series 2

### MOUNTING DIMENSIONS (For reference only)

#### Long barrier operator-indicators



#### Short barrier operator-indicators

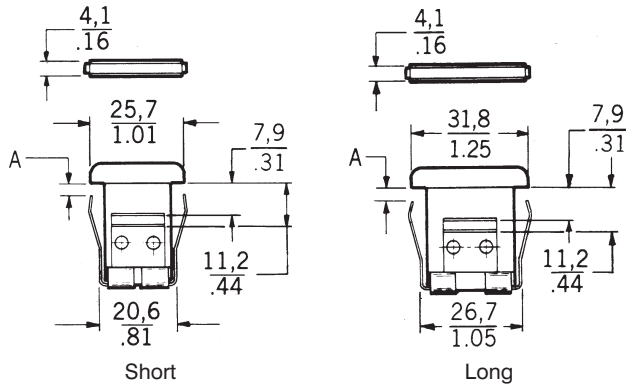


#### Short barrier indicators

#### Long barrier indicators



#### Mounting barriers



Key: 0,0 = mm  
0.00 = inches.

| A       | Panel Thickness  |
|---------|------------------|
| 1,5/.06 | 1,5-4,81/.06-.19 |
| 4,6/.18 | 4,8-7,9/.19-.31  |

Pushbuttons

#### Length Of Panel Cutout\*

| Type of Indicator or Operator-Indicator |     | Number of Units |       |       |        |        |        |        |
|---|-----|-----------------|-------|-------|--------|--------|--------|--------|
|   |     | 1               | 2     | 3     | 4      | 5      | 6      | 7      |
| Short Barrier                           | mm  | 36,09           | 68,00 | 99,87 | 131,72 | 163,60 | 195,48 | 227,36 |
|   | in. | 1.421           | 2.677 | 3.932 | 5.186  | 6.441  | 7.696  | 8.951  |
| Long Barrier                            | mm  | 30,00           | 55,78 | 81,58 | 106,34 | 133,12 | 159,90 | 184,68 |
|   | in. | 1.181           | 2.196 | 3.212 | 4.226  | 5.241  | 6.256  | 7.271  |

\*Nominal dimensions, ±0,25 mm/0.10 in. (In 5% of the cases, the cutout will be undersized for the build-up of assembled units and will require enlargement.)

# Manual Switches

## Pushbutton Switches and Indicators

Series 2

### MOUNTING DIMENSIONS (For reference only)

#### Long flange operator-indicators



#### Long flange indicators



#### Spacing barriers



Key: 0,0 = mm  
0.00 = inches.

#### Length Of Panel Cutout\*

Add 4,19 mm / .165 in. to length for each optional spacing barrier used.

| Type of Indicator or Operator-Indicator |     | Number of Units |       |       |        |        |        |        |
|---|-----|-----------------|-------|-------|--------|--------|--------|--------|
|   |     | 1               | 2     | 3     | 4      | 5      | 6      | 7      |
| Long Flange                             | mm  | 27,94           | 55,75 | 83,57 | 111,36 | 139,17 | 166,98 | 194,77 |
|   | in. | 1.1             | 2.195 | 3.290 | 4.384  | 5.479  | 6.574  | 7.668  |

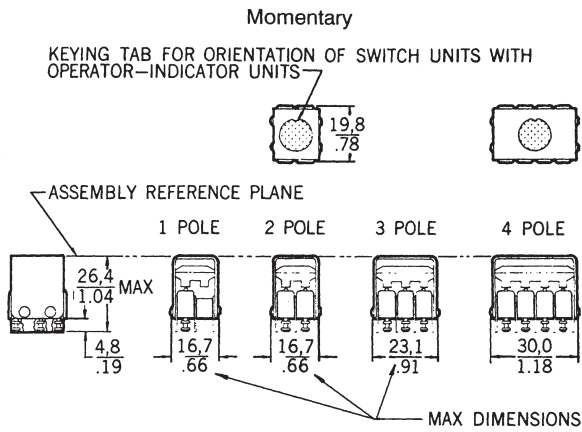
\*Nominal dimensions,  $\pm 0,25$  mm / 0.10 in. (In 5% of the cases, the cutout will be undersized for the build-up of assembled units and will require enlargement.)

# Manual Switches

## Pushbutton Switches and Indicators

### MOUNTING DIMENSIONS (For reference only)

#### SM Switch Modules



NOTE -  
 1-'T2' TERMINALS ARE PLATED FOR SOLDERING  
 2-SWITCHES DO NOT NECESSARILY OPERATE SIMULTANEOUSLY



NOTE -  
 1-'T2' TERMINALS ARE PLATED FOR SOLDERING  
 2-SWITCHES DO NOT NECESSARILY OPERATE SIMULTANEOUSLY

#### V3 Switch Modules



Pushbuttons

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

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