

# TL4024

## Safety Interlock Switch with Guard Door Locking

- High locking force of 1,500 N (337 lb.) locks guard door shut until machine is safe to enter
- IP67 (NEMA 6) enclosure withstands water washdown
- Door and lock monitoring—the TL4024 has a total of 4 contacts: 2 N/C safety + 1 contact for door position monitoring + 1 contact for lock monitoring
- Unlocking is possible with a back load on the door to satisfy the demands of high cycle time applications
- Narrow profile enables mounting to 2 in. square tubing or in applications with space restrictions
- Rotatable head—the rotatable head provides 8 actuator entry positions to satisfy most installation requirements
- Optional key release—this option on power-to-unlock models allows manual unlocking of the guard door
- Optional slide bolt with integral door handle aids installation on sliding and swinging guard doors
- Two LED (red/green) status indicators on the lid may be wired to suit the application
- A Rapid Delivery Product: Select models are available for shipment today or within 3 to 5 days



Conforms to EN60947-5-1, EN1088, EN ISO 13849-1  
UL and C-UL listed  
DGV approved

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## Specifications

Electrical	
Safety Contacts:	2 N/C
Auxiliary Contacts:	1 N/O + 1 N/C 1 N/O + 1 N/O
Switching Ability	AC: 230 V – 4 A DC: 24 V – 4 A
Safety Contact Material:	Silver alloy with gold flash
Minimum Current:	12 V 10 mA, 24 V 1 mA
Solenoid Supply Voltage:	24 VAC/DC or 110 VAC (all -15% / +10%)
Solenoid Power:	8 W
Solenoid Rating:	100% duty
Mechanical	
Mounting:	Any position
Mounting Hardware:	4 x M5 screws (not supplied)
Min Operating Radius:	Approximately 300 mm (12 in.) with 90-degree actuator
Max Holding Force:	1500 N (337 lb.)
Max Actuation Speed:	20 m/min.
Case Material:	Anodized die-cast alloy
Actuator Material:	Stainless steel
Wiring Entry:	3 x 0.5 in. NPT
Weight:	800 g (28 oz.)
Color:	Red
Mechanical Life:	1 x 10 <sup>6</sup> minimum
Environmental	
Protection:	IP67 (NEMA 6)
Operating Temperature:	-20 to 80°C (-4 to 176°F)
Cleaning:	Water washdown
Compliance	
Standards:	EN60947-5-1, EN1088, EN ISO 13849-1
Approvals/Listings:	CE marked for all applicable directives, UL and C-UL, DGV

Specifications are subject to change without notice.  
Note: The safety contacts of the STI switches are described as normally closed (N/C)—i.e., with the guard closed, actuator in place, and the machine able to be started.

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## Operation

The head may be rotated in 90 degree increments to give 8 possible entry points.



### Flat Actuator

Flexible rubber mounting bushings allow for some actuator flexibility.



### Flexible 1 Actuator

15 degree flexibility may be adjusted with the set screw.



### 90-Degree Actuator

Flexible rubber mounting bushings allow for some actuator flexibility.



### Flexible 2 Actuator

15 degree flexibility may be adjusted with the set screw.



### Optional Slide Bolt

- Allows easy installation of switch on machine guards
- Actuator included (order switch separately)
- Integral handle included
- Robust for use with heavy doors
- Slotted hole in bolt permits attaching multiple padlocks
- Yellow color for easy recognition



### Optional Key Release

A key release unit is easily attached to the TL4024 to provide emergency override of the switch locking mechanism by a qualified, responsible person.



### Optional SLD Series

Optional switch locking devices are available. See accessories section for details.



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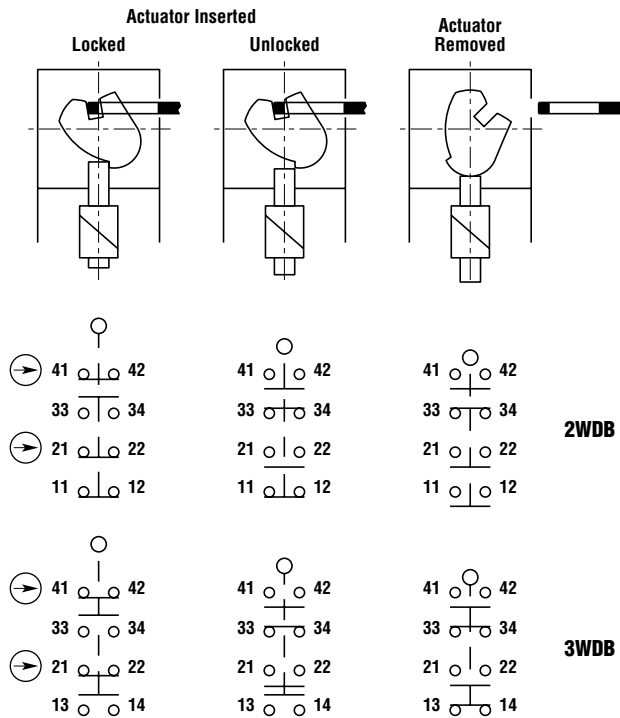
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## Operation (continued)

### Contact Arrangements

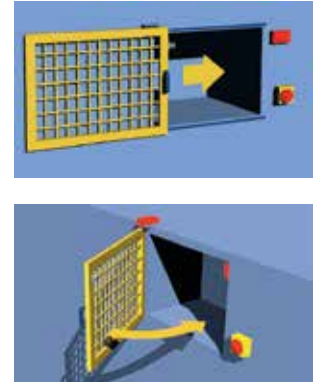
#### With Door Contact PLUS With & Without Back Load Unlocking

**2WDB** 2 positively driven N/C contact + 1 N/O + 1/NC as door contact  
**3WDB** 2 positively driven N/C contact + 1 N/O + 1/NO as door contact



## Applications

Typical applications are on sliding guard doors and swinging guard doors that must remain locked until a signal is applied to the internal solenoid that unlocks the guard door.



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## Application Monitoring Units



### SR223SMT Timer Unit

Used with the TL4019 for machines with constant overrun. Gives a timed delay to the lock/release signal. Failsafe and adjustable to a range of times from 1.0 seconds up to 31 seconds.



### SR125SMS45 Stop Motion Sensing Unit

Used with the TL4019 for machines with inconstant or variable overrun. Senses back EMF of AC or DC motors. Failsafe and adjustable to a range of 0.01 V to 0.10 V.



### Safety Monitoring Relay Units

Safety monitoring relays ensure a maximum level of safety by monitoring all wiring in the safety circuit, including switches and contactors. Any fault and the power to the machine is switched off. A variety of safety monitoring relay units are available.



For information on these Safety Monitoring Relays, see page I1.

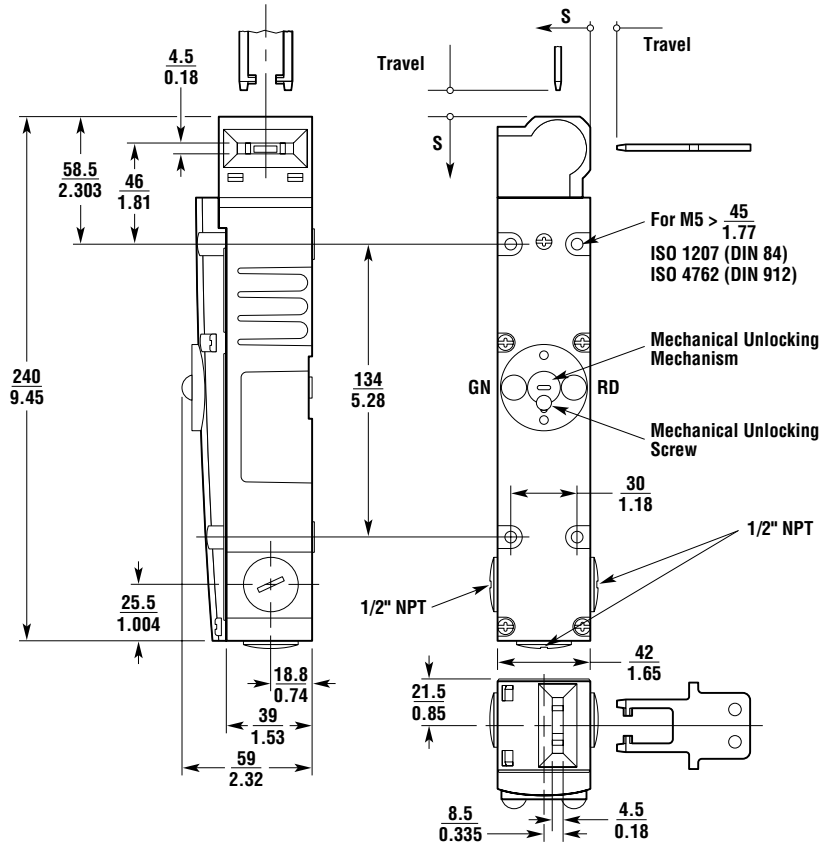
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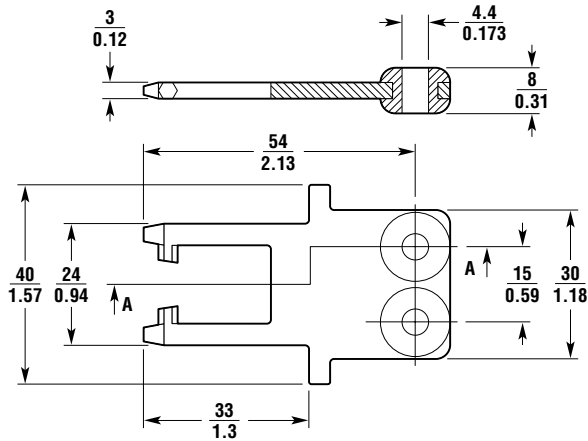
## Dimensions

(mm/in.)

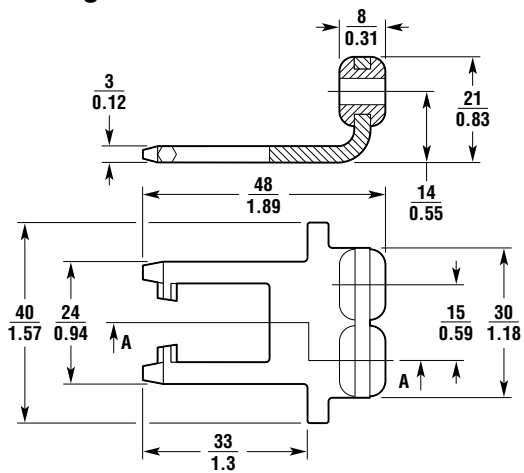
### TL4024



### Flat Actuator



### 90-degree Actuator



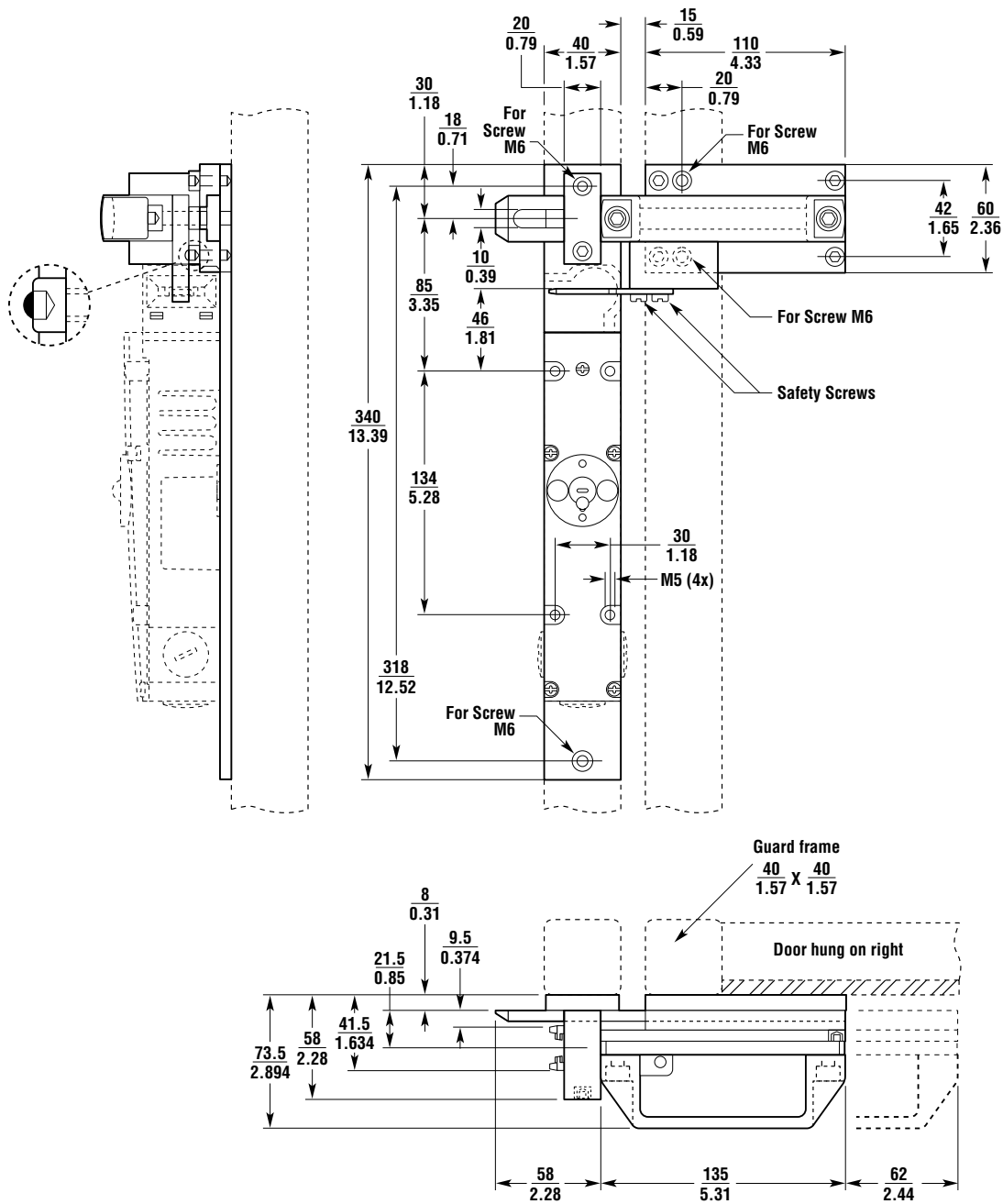
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## Dimensions (continued)

(mm/in.)

### Optional Metal Slide Bolt for TL4024



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## Ordering

Model	Solenoid	Contacts	Wiring Entry	Part No.
<b>Power to Unlock (with door contact)</b>				
TL4024-10242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0010
TL4024-10242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0110
TL4024-11102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0020
TL4024-11102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0120
TL4024-10243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0030
TL4024-10243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0130
TL4024-11103TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0040
TL4024-11103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0140
TL4024-10242SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1110
TL4024-11102SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1120
TL4024-10243SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1130
TL4024-11103SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1140
<b>Power to Unlock (with door contact) (with back load unlocking)</b>				
TL4024-30242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0410
TL4024-30242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0510
TL4024-31102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0420
TL4024-31102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0520
TL4024-30243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0430
TL4024-30243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0530
TL4024-31103TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0440
TL4024-31103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0540
TL4024-30242SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1180
TL4024-31102SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-1190
TL4024-30243SKM w/key (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1510
TL4024-31103SKM w/key (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-1520
<b>Power to Lock (with door contact)</b>				
TL4024-20242TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0050
TL4024-20242SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0150
TL4024-21102TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0060
TL4024-21102SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-0160
TL4024-20243TM (flat actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0070
TL4024-20243SM (90-degree actuator)	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0170
TL4024-21103TM (flat actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0080
TL4024-21103SM (90-degree actuator)	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-0180
<b>Switch Only Models (no actuator and no adapter included)</b>				
<b>Power to Unlock (with door contact)</b>				
TL4024-10242	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-2010
TL4024-11102	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-2020
TL4024-10243	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-2030
TL4024-11103	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-2040
<b>Power to Unlock (with door contact) (with back load unlocking)</b>				
TL4024-30242	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-2410
TL4024-31102	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-2420
TL4024-30243	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-2430
TL4024-31103	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-2440
<b>Power to Lock (with door contact)</b>				
TL4024-20242	24 VAC/DC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-2050
TL4024-21102	110 VAC	2 N/C + 1 N/O + 1 N/C	3 x 0.5 in. NPT conduit	44535-2060
TL4024-20243	24 VAC/DC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-2070
TL4024-21103	110 VAC	2 N/C + 1 N/O + 1 N/O	3 x 0.5 in. NPT conduit	44535-2080

Accessories	Model No.
<b>Standard Actuators with Rubber Bushing</b>	
Replacement flat actuator RB for TL4024	44535-0700
Replacement 90-degree actuator RB for TL4024	44535-0710
<b>Overtravel Actuators with Rubber Bushing</b>	
Replacement flat actuator OTRB for TL4024	44535-0720
Replacement 90-degree actuator OTRB for TL4024	44535-0730

Accessories	Model No.
<b>Flexible Actuators</b>	
Replacement flex 1 actuator for TL4024	44535-0750
Replacement flex 2 actuator for TL4024	44535-0760
<b>Slide Bolts</b>	
Bracket with handle for right-hung door for TL4024 (yellow)	44535-8000
Bracket with handle for left-hung door for TL4024 (yellow)	44535-8010
<b>Miscellaneous</b>	
Key lock release for TL4024 (2 keys included)	44535-0802
Spare keys for key lock above (44535-0802) for TL4024	44535-0812
Spare keys for key lock (44535-0800, no longer available)	44535-0810
Unique key lock release for TL4024 (2 unique keys included)	44535-0820
Replacement head for TL4024 (Not available for 44535-0470, 0570, 1570)	44535-0740

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- Amplified Photomicrosensors • Measurement Sensors
- Ultrasonic Sensors • Vision Sensors

**Industrial Components**

- RFID/Code Readers • Relays • Pushbuttons & Indicators
- Limit and Basic Switches • Timers • Counters • Metering Devices
- Power Supplies

**Safety**

- Laser Scanners • Safety Mats • Edges and Bumpers • Programmable Safety Controllers • Light Curtains • Safety Relays • Safety Interlock Switches



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.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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