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Product Focus: Control and Signaling Devices
What are Control and Signaling Devices?

Control and signaling devices (also known as pilot devices) refer to components such as pushbuttons, indicator lights, selector switches and visual and/or audible signaling devices. These are commonly used for automated processes and systems to control and monitor conditions for all types of equipment, processes and machinery.

Pilot devices also provide crucial control and indication to provide a safe work area for workers and to protect equipment. From emergency pushbuttons used to completely disable a machine, system or process in the event of an emergency, to indicators that provide local or remote indication of hazards, warnings or unsafe conditions, these devices play an important role in industrial automation.
**Pushbuttons**

A pushbutton is a mechanical device designed to activate an electrical circuit when operated. Pushbuttons are available with various mechanical and electrical configurations.

Today’s pushbuttons offer a range of sizes, configurations, and designs that are sure to fill the specific needs of your application. Specifications that might be considered when selecting a pushbutton include:

- **Barrel Size:** This is the pushbutton’s barrel diameter that determines the operator size and mounting through-hole dimension. Larger diameter devices are more easily seen and operated, while smaller devices fit in tighter spaces and offer higher density.

- **Action:** The action is the method the pushbutton uses to activate the electrical circuit. Action type examples include momentary, maintained, push-pull, twist to release, key operated, and combinations of these.

- **Contact Type:** Refers to the type of contact(s) installed in the pushbutton’s assembly, which can be normally open, normally closed, or a combination of both.

- **Operator Color:** Pushbutton operators are available in many static or illuminated colors to allow color coding for different functions.

- **Operator Size:** Pushbutton operators are available in various sizes, including oversized operators that are more visible and provide more surface to push.

- **Voltage Ratings:** Pushbuttons are designed to accommodate common AC or DC voltages to suit specific needs.

- **Agency Approvals:** Pushbuttons are designed to withstand a range of environments, from a general-purpose device to units that offer special ratings, such as IP69K-rated pushbuttons designed to be totally sealed and withstand harsh cleaning conditions to serve food, pharmaceutical and medical industries.
Switches

The purpose of a switch is similar to that of a pushbutton. A switch is normally a mechanical device designed to activate or deactivate an electrical circuit when operated. Most switches are designed with knobs, levers or as a joystick to perform simple multi-position actions.

Specifications that might be considered when selecting switches include:

• **Barrel Size:** This is the switch's barrel diameter that determines the operator size and mounting through-hole dimension. Larger diameter devices are more easily seen and operated, while smaller devices fit in tighter spaces and offer higher density.

• **Action:** The action is the method the switch uses to activate the electrical circuits. Action type examples include momentary (spring return), two (or more) position maintained, key operated, and combinations of these.

• **Contact Type:** Refers to the type of contact(s) installed in the switch assembly, which can be normally open, normally closed, or a combination of both.

• **Operator Color:** Switch operators may be available in illuminated colors to allow color coding for different functions.

• **Operator Type:** Switch operators are available in various shapes and styles to suit the application, such as knobs, levers and joysticks.

• **Voltage Ratings:** Switches are designed to accommodate common AC or DC voltages to suit specific needs.

• **Agency Approvals:** Switches are designed to withstand a range of environments, from a general-purpose device to units that offer special ratings, such as IP69K-rated pushbuttons designed to be totally sealed and withstand harsh cleaning conditions to serve food, pharmaceutical and medical industries.
Indicator Lights

Indicator lights are illuminated devices available in a variety of colors that are used in industrial, warehouse and many other applications to indicate system status or alarm conditions.

Specifications that might be considered when selecting indicators include:

- **Barrel Size:** This is the indicator's barrel diameter that determines the operator size and mounting through-hole dimension. Larger diameter devices are more easily seen, while smaller devices fit in tighter spaces and offer higher density.

- **Indicator Technology:** Indicators are available with incandescent or LED lamps. Incandescent is the traditional bulb with filament used for indication. LED lamps may be preferred because they provide brighter illumination, lower heat, lower consumption and longer life. However, LED lamps cost more than incandescent bulbs.

- **Lens Style and Color:** Indicators are available in many colors, allowing different conditions to be identified by the color. Indicator lens styles include dome shape, flat, smooth transparent lens, or frosted diffuser lens that provides even lighting.

- **Voltage Ratings:** Indicator lights are designed to accommodate common AC or DC voltages to suit specific needs.

- **Agency Approvals:** Indicator lights are designed to withstand a range of environments, from a general-purpose device to units that offer special ratings, such as IP69K-rated pushbuttons designed to be totally sealed and withstand harsh cleaning conditions to serve food, pharmaceutical and medical industries.
Visual Signaling Beacons

Visual signaling beacons provide illuminated status indication for machines, systems and processes. Modern designs and the latest LED technology provide exceptionally clear and bright signalling.

Specifications that might be considered when selecting a visual signaling device include:

- **Diameter**: The diameter of the beacon typically refers to the diameter size of the body, which is also the diameter of the lens. Body diameter is a matter of preference and visibility needs. For some models, the diameter of the mount is specified for the through-hole size required.

- **Indicator Technology**: The most common light technologies used for beacons include the traditional incandescent or halogen filament bulbs. Other options include LED or xenon lamps, which provide brighter illumination with lower power consumption and longer life.

- **Lens Color**: Beacon lenses are available in many colors, allowing different conditions to be identified by the color.

- **Light Function**: Beacon lights are available with a range of light functions that provide additional condition indication. For example, a permanent lit red beacon can indicate a condition that needs attention. However, a blinking red beacon can indicate a serious condition requiring immediate action. Functions available include permanent, blinking, flashing, and rotating modes.

- **Body Material**: Most beacons are constructed of materials such as ABS, polyamide and aluminum. The main consideration for body material depends on the environmental conditions where the beacon will be used.

- **Voltage Ratings**: Beacons are designed to accommodate common AC or DC voltages to suit specific needs.
Stacklights

Stacklights (aka signal towers) offer modular stackable components that provide illuminated and audible status indication for machines, systems and processes that can be seen and heard from a distance.

Specifications that might be considered when selecting a stacklight include:

- **Diameter**: Stacklights are available in a wide range of diameters, referring to the size of all the components, including base and light modules. Diameter preference usually depends on the desired visibility distance of the stacklight and its location.

- **Indicator Technology**: Stacklights are offered with a variety of light type choices, including traditional incandescent filament bulbs, or LED or xenon lamps, which provide brighter illumination with lower power consumption and longer life.

- **Lens Colors**: Stacklight elements are available in many colors, allowing the user to create their preferred stack arrangement; preassembled units offer typical industrial arrangements.

- **Light Function**: Stacklights are available with a range of light functions that provide additional condition indication. Examples of these functions include permanent, blinking, or flashing modes.

- **Tiers**: Pre-assembled stacklights are available in various tier levels of lights and colors; modular stacklights allow you to build a stacklight with your preferred tier levels.

- **Body Material**: Most stacklights are constructed of materials such as ABS, AES, polycarbonate and aluminum. The main consideration for body material depends on environmental conditions where the stacklight is located.

- **Voltage Ratings**: Stacklights are designed to accommodate common AC or DC voltages to suit specific needs.
Audible Signal Devices

Audible signal devices provide notification for machines, systems and/or process alarms and are useful where visual indications are insufficient or impractical.

Specifications that might be considered when selecting an audible signaling device include:

- **Decibel Levels**: Audible signaling devices are available in various decibel levels. Common decibel levels range between 80db to 108db; selection typically depends on current sound levels where the device will be installed. A noisy environment will require a higher decibel level.

- **Mount Types**: Various mounting types are available, including panel, bracket and surface mounting.

- **Tone Types**: Audible signaling devices are available with different tone types to best serve the application. The most common tone types include continuous, Intermittent, multi-tonal, pulse, or a combination of these.

Hazardous Control Stations

Hazardous location control stations are designed to contain and extinguish explosions, and prevent the igniting of external hazardous atmospheres by the enclosed arcing device. In sealed or unsealed enclosures, they offer a variety of pushbutton, pilot light and switch configurations.

Specifications that might be considered when selecting a hazardous control station include:

- **Configuration**: Typical configurations include single pilot light, single pushbutton, single selector switch, two pilot lights, two pushbuttons, or a combination of these.

- **Action**: The action is the method the pushbutton or switch uses to activate the electrical circuit. Action type examples include momentary, push-pull, twist to release, key operated, and combinations of these.

- **Legend Plate**: The legend plate provides quick reference about the purpose of the control station. Various pre-engraved legend plates are available with text such as; 1 - OFF - 2, AUTO - HAND, AUTO - OFF - HAND, CLOSE, DOWN, EMERGENCY STOP, RESET, and many more.

- **Color**: Pushbuttons, selector switches and indicators are available in many colors to allow color coding for different functions.
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- Drive accessories
- Soft starters up to 480A

Motors and Motor Controls

- DURAnest® variable frequency AC drives up to 300hp
- WEG CFW100 and CFW300 AC drives up to 5hp
- IronHorse® DC drives up to 3hp
- Cost-effective GS2 series VFDs up to 10hp
- Drive accessories
- Soft starters up to 480A

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- IronHorse® general purpose AC motors up to 300hp
- Electronic Overload Relays
- Stainless steel AC motors
- DC motors up to 2hp
- Marathon® inverter duty AC motors up to 100hp
- Compressor duty AC motors up to 5hp
- ODP motors
- 4-IN-1 motors
- Motor controls and contactors up to 300hp

Software

- Free PLC programming software (download)
- System configuration
- Free motion control software (download)
- Free C-more and C-more Micro HMI programming software (download)
- Free AC drive configuration and programming (built-in PLC) software (download)

Process

- Temperature controllers
- Digital panel meters
- Temperature sensors and transmitters
- Pressure sensors and gauges
- Level sensors and controllers
- Flow sensors and transmitters
- Signal conditioners
- Pipeline valves
- Current to pneumatic (I/P) transducers
- Timer relays, counters and tachometers
Michael in TAMPA, FL wrote:
“I have been purchasing electronic parts for over 10 years and the products and service I have received from Automation Direct have never disappointed me. I will continue to purchase from here, keep up the good work! I wish other vendors I have were as good as you.”

Dennis in BERLIN, CT wrote:
“Great company. Second to none. Excellent prices. When I first started to use AD prox switches I was warned that anything that low a price won’t last. That was 20 years ago. Since then two failures out 120 switches. This is a machine that runs 50 hours a week. I recommend their products to anybody. Pneumatic fittings are a bargain as well.”

Mike in EDMONTON, AB wrote:
“I’m an OEM and just started using the products. So far so good. Delivery was quick to Canada as well.”
Joseph in FAIRLAND, IN wrote: “Great web site. Everything is easy to find. I like the fact that you place PDF and information next to the product I am researching. This is very helpful in understanding all the details necessary to determine if the item I am looking at will work in my project. Large selection of Automation devices, quality products at affordable prices. I am a maintenance technician and purchase items for my home test bench to work out problems at home, as well as buying product for work projects.”

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<td>Digital Servo Drive</td>
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<td>100W Servo Motor with connectorized Leads</td>
<td>$322.00 SV1-201</td>
<td>$660.00 TLF-1A201-03620A</td>
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<td>Breakout Board Kit for CNI Control Interface</td>
<td>$84.00 ZL-SVC-BLS01 + ZL-RT650</td>
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<td>$56.00 SVC-FL-910</td>
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<td>Configuration Software</td>
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*SureServo Pro software is FREE when downloaded and is also available for $9.00 on a CD


**Motion Control**

- SureStep® drives and NEMA motors
- SureServo® drives and motors, up to 3kW
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- Photoelectric sensors
- Limit switches
- Precision limit switches
- NEMA limit switches
- Laser sensors
- Color and contrast sensors
- Area sensors
- Encoders
- Current and voltage sensors
- Pressure sensors and gauges
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- Liquid level sensors
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- Tachometers
- Motor control relays
- Force guided relays
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- Industrial managed and unmanaged Ethernet switches
- StrideLinx VPN routers and cloud services for secure remote access
- Pocket Portal IoT Bridge
- MQTT Gateways
- Modbus gateways
- Network adapters/converters
- Ethernet cables
- Power over Ethernet (PoE) switches

Communications

- KIL LARK® hazardous location control stations
- IDEM emergency stops
- Fuji®, Schmersal and Eaton metal/plastic 22 and 30mm pilot devices
- IP69K-rated selector switches, pilot devices and pushbuttons from Schmersal
- Hazardous Location Control Stations
- Capacitive Pushbutton Switches
- WERMA audible devices and visual signals
- WERMA and Patlite stacklights
- IP69K-rated Patlite stacklights
- Patlite signal towers and LED lighting
- Foot switches

Power Products

- Tubing, hose and fittings in a wide variety of configurations
- Air cylinders and position switches
- Solenoid valves
- Rodless air cylinders
- Modular solenoid valves (Ethernet or hardwired)
- Air preparation and air relief valves
- Pushbutton valves
- Total Air Prep (TAP) all-in-one units
- Rotary actuators and grippers
- Pressure switches, transmitters, and transducers
- Pneumatic pushbuttons and limit switches

Water (Potable) Components

- Regulators
- Solenoid valves in nylon or stainless steel bodies
- Hand valves
- Check valves
- Push-to-connect water fittings
- Lead-free brass fittings
- Tubing
- Hose
- Hose clamps

Pushbuttons, Switches and Lights

- Acme Electric®, Hammond and Jefferson Electric® transformers
- Rhino® DC power supplies and converters
- Mersen surge protectors
- Roxburgh and Eaton line filters and surge protectors
- Roxburgh power outlets
- ACME Electric encapsulated transformers
- Edison® power distribution blocks
- Bryant® electrical plugs, connectors and receptacles, and other wiring devices
- AcuAMP® AC current transformers
- Socomec multifunction power meters
- Trumeter graphical panel meters

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### Circuit Protection
- Eaton UL 489 miniature circuit breakers
- Fuji UL 489 molded case circuit breakers
- Eaton UL1077 supplementary protectors
- Edison fuses, fuse holders and fuse blocks
- Socomec, Gladiator® and Bryant® disconnect switches
- Bryant UL 508 manual motor controllers
- Socomec Manual Transfer Switches
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### Over 4222 NEMA Rated Enclosures

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