

# OTTO<sup>®</sup>

## OFF-ROAD



## CONTROLS SOLUTIONS



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880

Dust, wind, water, sand, temperature extremes, shock and vibration are no match for OTTO's line of switches, grips and joysticks. OTTO controls are used all over the world in off-road vehicles and machinery made for industrial, construction, agriculture, utilities and other markets.

OTTO designs and manufactures precision switches, grips, joysticks, operator control modules, CAN based products, and custom solutions. OTTO's products perform in some of the toughest industries where high performance and reliability are essential.

Visit [www.otto-controls.com](http://www.otto-controls.com) for further information.



**COMMERCIAL GRIPS**

G3-A SMALL UNIVERSAL GRIP ..... 4  
 G3-B MEDIUM UNIVERSAL GRIP ..... 5  
 G3-C GRIP ..... 6  
 G3-CK GRIP ..... 7  
 G3-D GRIP ..... 8  
 G3-E GRIP ..... 9  
 G3-M GRIP ..... 10  
 CONTOUR GRIP ..... 11

**HALL EFFECT JOYSTICKS**

JH JOYSTICK ..... 12  
 JHL JOYSTICK ..... 13  
 JHM MEDIUM JOYSTICK ..... 14  
 JHS SINGLE AXIS JOYSTICK ..... 16  
 JHT MINIATURE JOYSTICK ..... 17

**HALL EFFECT GRIPS & JOYSTICKS**

HJLG3 JOYSTICK WITH GRIP OPTIONS .... 18  
 HJMG3 JOYSTICK WITH GRIP OPTIONS... 19

**HALL EFFECT TECHNOLOGIES**

HTL/HTLT LINEAR FINGER JOYSTICK ..... 20  
 HTW PROPORTIONAL THUMBWHEELS .... 21  
 HPW SINGLE AXIS PADDLE ..... 22

**ELECTROMECHANICAL SWITCHES**

LP3/LP5 ILLUMINATED AND SEALED  
 PUSHBUTTONS ..... 23  
 LP30M SEALED, ILLUMINATED  
 PUSHBUTTONS ..... 24  
 LP7-D/LP9 SEALED, ILLUMINATED  
 DOME PUSHBUTTONS ..... 25  
 P3 SEALED SNAP-ACTION  
 PUSHBUTTONS ..... 26  
 P5 ALTERNATE ACTION PUSHBUTTONS .. 27  
 P7 SUBMINIATURE PUSHBUTTONS ..... 28  
 P7-D SEALED DOME PUSHBUTTONS ..... 29  
 P9 SEALED DOME PUSHBUTTONS ..... 30  
 TK TACTILE MINI TRIM SWITCHES ..... 31  
 T3 MINIATURE TOGGLE SWITCHES ..... 32  
 SEALED TOGGLES & TOGGLE GUARDS ... 33  
 P6-4 WATERTIGHT LIMIT SWITCHES ..... 34  
 K SERIES SEALED ROCKER SWITCHES ... 35  
 K1S SEALED ROCKER SWITCHES ..... 36

**OTHER TECHNOLOGIES**

CAPACITIVE TOUCH SENSOR SWITCHES... 37  
 OPERATOR CONTROL MODULE (OCM) .... 38  
 OTTO CANbus SOLUTIONS ..... 39



The G3-A Universal Grip offers control functions in a smaller grip size yet offers many standard faceplate options. OTTO can also customize the grip to your unique needs. Ergonomic, modular design enables multiple switch configurations – quickly and without tooling changes.

Either install a G3 on a panel as a fixed control grip or combine with an OTTO Hall effect joystick (JH, JHL, JHM) for a complete operator control solution. The grips are compatible with OTTO's standard pushbuttons, rockers, toggles and Hall effect switches.



G3-A Small Universal Grips

The small G3-A Universal Grips feature:

- 17 standard pre-tooled faceplate configurations
- Field replaceable faceplates
- Left- or right-handed
- Modular design reduces the need for tooling changes
- Can be mounted on an OTTO joystick



# G3-B MEDIUM UNIVERSAL GRIP

**COMMERCIAL GRIPS**

The G3-B Universal Grips offer basic controls functions or higher switch content depending on the application requirements with many standard faceplate options. OTTO can also customize the grips to your unique needs. Ergonomic, modular design enables multiple switch configurations – quickly and without tooling changes.

Either install a G3 on a panel as a fixed control grip or combine with an OTTO Hall effect joystick (JH, JHL, JHM) for a complete operator control solution. The grips are compatible with OTTO's standard pushbuttons, rockers, toggles and Hall effect switches.

The medium G3-B Universal Grips feature:

- 11 standard pre-tooled faceplate configurations
- Large grip handle for high switch content
- Field replaceable faceplates
- Left- or right-handed
- Modular design reduces the need for tooling changes
- Can be mounted on an OTTO joystick



G3-B Medium Universal Grips



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880

G3-C grips build on the functionality of the G3-A and G3-B grips with additional features, such as a Z-axis option, trigger switches, operator touch sensing and keypads available on the side or on the faceplate.



The G3-C Grips feature:

- Grip Touch Switch option senses presence of the operator's hand on the grip
- 13 standard faceplate designs—incorporate up to 8 control switches
- Multiple trigger options on the back of the grip handle: pushbutton, thumbwheel and trigger switches
- Z-axis option with +/-25° rotation
- Field replaceable grip handle
- Left- or right-handed
- Compatible with JH, JHL and JHM series Hall effect joysticks
- Accommodates a full line of OTTO pushbuttons, rockers, toggles and Hall effect switches



G3-CK grips are the most versatile Universal Grips and are ideal for high-performance vehicles and machinery applications.

Like the G3-C, these grips have:

- Grip Touch Switch option, which senses presence of operator's hand on the grip
- Z-axis option with +/-25° rotation
- Compatible with JH, JHL and JHM series Hall effect joysticks
- Accommodates a full line of OTTO pushbuttons, rockers, toggles and Hall effect switches
- Field replaceable grip handle
- Left- or right-handed

Additional options include:

- Three trigger switch selections for the back of the grip handle: single, dual momentary and dual maintained trigger
- Faceplate keypad can have up to 8 buttons; side keypad can have up to 10 buttons
- Back-lit faceplate and side keypad options

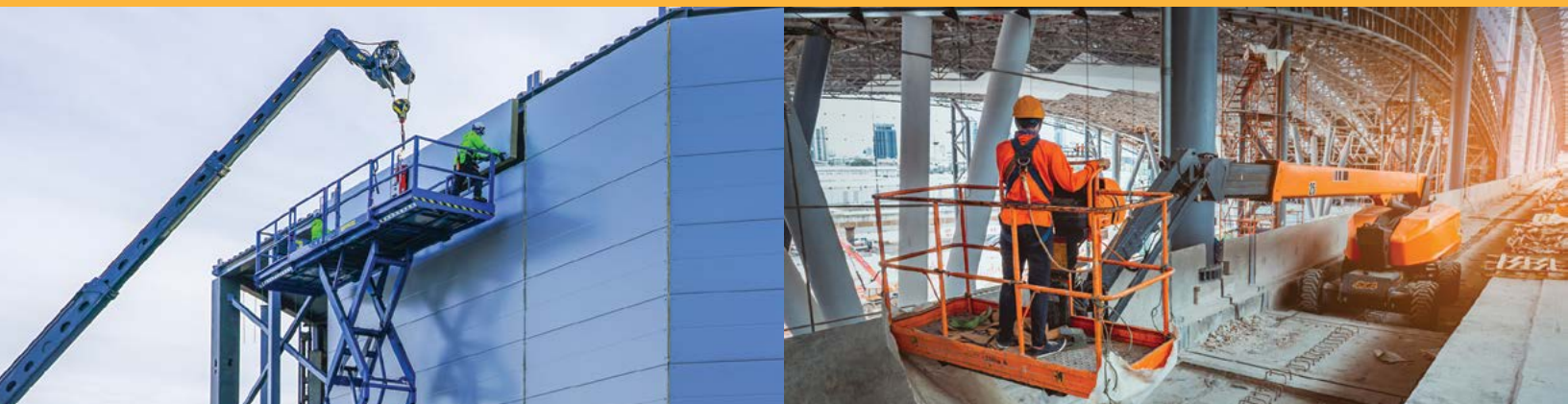


Rugged, ergonomically designed G3-D grips can be configured with a rocker switch or a pushbutton on the top of the grip. These grips are well suited for industrial, utility and construction applications such as aerial work platforms, telehandlers, trenchers and track trucks.



The G3-D Grips feature:

- Operator presence trigger option can help prevent inadvertent actuation
- Mount from top or bottom
- Can be assembled with a JHL or JHM joystick with gating options, including single axis, dual axis, friction held and omni-directional
- Optional rocker or pushbutton on grip top
- Switches sealed to IP68S
- RoHS compliant





Multi-function, compact G3-E grips can be mounted on a joystick or operate standalone. Off-road, construction and forestry are among the demanding applications where these grips shine.

The G3-E Grips feature:

- Choose from left- and right-handed versions—or install both on the same control seat
- Select 5 or 7 momentary pushbuttons and a proportional Hall effect rocker
- Variety of rocker output options
- Switches have a 3 million cycle life
- Switches sealed to IP68S
- RoHS compliant



G3-M medium sized, ergonomic grips offer flexible, customizable design for a multitude of rugged operator control applications.



The G3-M Grip features:

- Choose from 25 standard faceplates; custom designs available
- Field replaceable grip handle
- Comes with or without trigger
- Can be panel mounted or combined with JH, JHL and JHM series Hall effect joysticks
- Accommodates a wide variety of OTTO pushbuttons, rockers, toggles and Hall effect switches
- Left- or right-handed



# CONTOUR GRIP

## COMMERCIAL GRIPS

OTTO's ergonomically designed Contour Grip™ is customizable: Create your own switch configurations on the front, side and back. The grips may be panel mounted as a fixed control grip or mounted onto a JH, JHL or JHM joystick.

The Contour Grips feature:

- Ergonomic design reduces muscle strain and fatigue
- Left-handed, right-handed or universal orientation
- Available with low to high switch content



The JH Series joystick utilizes contactless Hall effect technology and is just as rugged as a traditional 4-way hydraulic joystick. Combine the JH joystick with a G3 series grip for a complete operator control solution.



JH Large Joystick  
shown with G3-A  
Universal Grip

The JH Hall Effect Joysticks feature:

- Single axis, dual axis or z-axis
- Up to 15 million cycle mechanical life
- Multiple output options and configurations: CANopen, J1939, USB, Ethernet, and analog
- Outstanding EMI/RFI immunity
- Redundant options available
- Rugged design for demanding applications
- Can support numerous OTTO grips



The JHL is an economical, Hall effect joystick for hard-driving applications. Combine the top-mount JHL joystick with a G3 series grip for a complete operator control solution.

The JHL Hall Effect Joysticks feature:

- Available as a joystick only, with a ball handle or G3 Series grip
- Multiple gating options and various output configurations, including single or dual analog output, CANopen and CANbus J1939
- Redundant options available
- Outstanding EMI/RFI immunity
- Electronics sealed to IP68S
- Up to 6 million cycle mechanical life
- Can support numerous OTTO grips



JHL shown with  
Ball Actuator



The JHM medium joysticks offer full-function operator control with contactless Hall effect technology. Shorter behind-panel depth allows for mounting in an armrest or on a panel.



The JHM Joysticks feature:

- Choose from a variety of handle and switch options
- Up to 10 million operational cycles in all directions
- Multiple output configurations: CANopen, CANbus J1939, USB, PWM, and analog
- Can support numerous OTTO grips
- Variety of gating options
- Electronics sealed to IP68S
- RoHS compliant



# JHM MEDIUM JOYSTICK

**HALL EFFECT  
JOYSTICKS**



Handle Style 12  
Standard Blank



Handle Style 21  
with Hall Effect  
Rocker



Handle Style 31  
with Pushbutton, Half  
Boot



Handle Style 32  
with 2 Pushbuttons



Handle Style 41  
with Lockout Handle



Handle Style 51  
with Rocker and  
Operator Presence



Handle Style 61  
with Rocker and  
5 Switches



Handle Style 71  
with Ball Handle



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880

The JHS is a compact, single axis, return-to-center or friction hold joystick using Hall effect contactless sensing.



JHS-F Single Axis  
Friction Hold Joystick

The JHS Single Axis Joysticks feature:

- Return-to-center or friction hold (JHS-F) options
- Rugged, compact design
- Electronics sealed to IP68S
- Excellent proportional control
- Outstanding EMI/RFI immunity
- Redundant output available
- RoHS compliant





# JHT MINIATURE JOYSTICK

**HALL EFFECT  
JOYSTICKS**

JHT miniature Hall effect joysticks are ideal in places requiring precision control yet are tight on space. Applications include robotics, hydraulic controls, construction equipment, Belly boxes, and security and surveillance cameras.

The JHT Miniature Joysticks feature:

- Z-axis model of the JHT allows for a 60-degree rotational movement at the top of the joystick
- Compact design for armrest and panel mounting
- Contactless, analog output Hall effect technology
- 5 million operational cycles in all directions
- Electronics sealed to IP68S
- Single axis, gated or omni-directional
- PWM output option
- Optional pushbutton switch(es) available
- RoHS compliant



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880

# HJLG3 JOYSTICK WITH GRIP OPTIONS

The **HJLG3** series pairs a high-performance, cost-effective JHL joystick with a G3 series grip to create a complete operator control solution. These combinations serve off-road, agriculture, construction, material handling, industrial equipment and other heavy-duty markets.

The HJLG3 Series features:

- Armrest or panel mounting
- Numerous faceplates accommodate OTTO pushbuttons, rockers, toggles and Hall effect switches
- Multiple analog and digital outputs
- Standard gating options: single axis, single axis with center detent, dual axis and omnidirectional
- Z-axis options for HJLG3-C and HJLG3-CK
- Contactless Hall effect technology
- Electronics sealed to IP68S
- RoHS compliant



**HJLG3-A**  
JHL with  
G3-A Grip

**HJLG3-B**  
JHL with  
G3-B Grip

**HJLG3-C**  
JHL with  
G3-C Grip

**HJLG3-CK**  
JHL with  
G3-CK Grip

**HJLG3-D**  
JHL with  
G3-D Grip

**HJLG3-M**  
JHL with  
G3-M Grip



# HJMG3 JOYSTICK WITH GRIP OPTIONS

**HALL EFFECT  
GRIPS & JOYSTICKS**

The HJMG3 is a top-mount JHM medium Hall effect joystick with a variety of grip, faceplate, output and gating options. It can be configured for specialized equipment requiring high switch content, as well as for machines needing only basic functions.

The HJMG3 Series features:

- Designed for armrest and panel mounting
- Grip options: G3-A, G3-B, G3-C, G3-CK, G3-D and G3-M
- Analog and digital control output options
- Redundant sensors available
- Variety of gating options
- Electronics sealed to IP68S
- RoHS compliant



**HJMG3-A**  
JHM with  
G3-A Grip

**HJMG3-B**  
JHM with  
G3-B Grip

**HJMG3-C**  
JHM with  
G3-C Grip

**HJMG3-CK**  
JHM with  
G3-CK Grip

**HJMG3-D**  
JHM with  
G3-D Grip

**HJMG3-M**  
JHM with  
G3-M Grip



# HTL / HTLT LINEAR FINGER JOYSTICK

HTL series finger joysticks perform like a full-size, dual axis joystick, yet are in a miniature package that can be mounted in control handles, grips, armrests and handles. Choose from 2-way, 4-way and 360° styles.



HTL2 with Tall  
Concave Stadium  
Style Button



HTL4 with Bat  
Handle Style Button



HTL4 with  
Castle Style  
Button



HTL2 with Low  
Profile Button



HTLT4 with  
Center Pushbutton

The HTL Joysticks feature:

- Proven, contactless analog output Hall effect technology
- Programmable sensors with built-in temperature compensation ensure consistent and repeatable operation
- Excellent tactile feel for improved operator control
- Dusttight or watertight per IP68S
- Variety of output configurations

The HTLT is a 2-way or 4-way finger joystick with a pushbutton option. It features:

- One/two axis gated or 360°
- Optional pushbutton
- Dusttight or watertight per IP68S
- 3.3V SPI output option
- Single or redundant analog output options
- Threaded case



# HTW PROPORTIONAL THUMBWHEELS

**HALL EFFECT  
TECHNOLOGIES**

The HTW series Hall effect proportional output thumbwheel is a spring return-to-center, or friction-held, single axis thumbwheel with an actuator that provides linear change in voltage output in either direction from the center.

The HTWM is a miniature version of the HTW with shorter behind-panel depth.

The HTWS is a subminiature, spring return-to-center, single axis thumbwheel with flow-through design. A linear change in voltage output corresponds to actuator movement in either direction from center.

The HTWF is a single axis, friction hold actuation thumbwheel.

The HTW Series features:

- HTW, HTWM and HTWF have rocker switch-style mounting; HTWS has an integrated snap-in retaining feature and sealing boot option
- Electronics sealed to IP68S
- RoHS compliant



HTW  
Knurled Wheel



HTWF Friction  
Paddle Wheel



HTWM  
Paddle Wheel



HTWS  
Knurled Wheel



HTWS  
Paddle Wheel



HTWS  
Paddle Wheel  
with Seal Boot



HTWS  
Thumb Paddle Wheel  
with Seal Boot



The HPW series, designed for grip, armrest and panel mounting, offers a self-centering single axis actuator that provides linear change in voltage output in either direction from center.



Paddle Style



Lever Style



Ergonomic  
Lever Style

The HPW Series features:

- 14 output options
- Options include increasing or decreasing voltage output in either direction (from center position to the full travel position) with single or dual outputs.
- Proven, contactless analog output Hall effect technology
- Up to 5 million cycles cycle life
- Electronics sealed to IP68S
- RoHS compliant



# LP3 / LP5 ILLUMINATED AND SEALED PUSHBUTTONS

**ELECTROMECHANICAL  
SWITCHES**

LP3 pushbuttons are momentary action, and the LP5 pushbuttons are alternate action. Both have rugged, sealed construction with the added benefit of reliable LED illumination. These precise, snap-action switches are designed for off-road, material handling, industrial controls and other demanding commercial applications.

LP3 and LP5 Pushbuttons feature:

- LED lighted with ability to accommodate 2, 6, 12 and 24VDC power and includes reverse voltage protection
- Watertight to IP68S or moistureproof and dusttight to IP64
- Vandal-resistant options available (aluminum or stainless steel)
- Quick disconnect terminals
- 15/32", 5/8" or 3/4" thread, press fit and dome case options
- RoHS compliant



LP3 Illuminated Momentary Action Pushbuttons



LP5 Illuminated Alternate Action Pushbuttons



LP3S Shorter Behind Panel Illuminated Pushbuttons



# LP30M SEALED, ILLUMINATED PUSHBUTTONS

LP30M pushbuttons are precision, snap-action switches, featuring rugged, sealed construction with LED illumination in a large, 30mm diameter button. This momentary switch is available as normally open (NO) or two circuit.



LP30M Pushbuttons feature:

- Choose from low-profile or concave-style buttons in translucent white, red or amber, with or without legends/icons
- LED lighted with ability to accommodate 2, 12, and 24VDC power; includes reverse voltage protection
- Standard mounting styles and electrical ratings; contact OTTO for custom configurations
- Available in standard and low operating force utilizing OTTO's quality precision snap-action switch mechanism
- Watertight to IP68S or dusttight and moistureproof to IP64
- Sealed terminals protect the contact area from harsh environments and solder flux on both sealed and unsealed models
- Standard M30X 1.5 threaded case





# LP7-D / LP9 SEALED, ILLUMINATED DOME PUSHBUTTONS

**ELECTROMECHANICAL  
SWITCHES**

LP7-D and LP9 illuminated dome pushbuttons are quality precision switches designed for panels, control grips, computers, instruments, heavy equipment and other applications calling for attractive, yet highly ruggedized pushbuttons that can withstand shock and vibration.

LP7-D and LP9 Pushbuttons feature:

- Flush and raised round buttons with glossy or matte finish, or raised square in matte
- Variety of colors
- LED illuminated with ability to accommodate 2 and 12VDC power
- Short behind-panel depth
- Watertight to IP68S or dusttight to IP64
- RoHS compliant

## LP7-D Illuminated Series



## LP9 Illuminated Dome Series



Flush Dome



Flush Dome  
Full Illumination Style



Flush Dome  
Full Illumination Style  
With Legend



Raised Dome



Raised Dome  
Full Illumination Style



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880

# P3 SEALED SNAP-ACTION PUSHBUTTONS



## P3 Sealed Snap-Action Pushbuttons feature:

- Button sealed with patented “rolling sleeve” for long life and smooth operation
- Contact area sealed at button and terminals
- Positive tactile feedback
- Engraved buttons and bezels available
- 1 million mechanical cycle life
- Watertight to IP68S available in all versions
- IP69K available in non push-pull versions
- RoHS compliant

## P3-D Sealed Dome Pushbuttons feature:

- Choose from two contoured dome style buttons
- Double-break momentary action
- Withstands extreme shock and vibration
- Positive tactile feedback
- Moistureproof and dusttight to IP64
- Watertight to IP68S and IP69K available
- Engraved and printed buttons available
- RoHS compliant



P3-D Sealed Flush Dome  
Momentary Action  
With Legend



P3-D Sealed Flush Dome  
Momentary Action



# P5 ALTERNATE ACTION PUSHBUTTONS

**ELECTROMECHANICAL  
SWITCHES**

P5 quality precision, snap-action switches are designed for panels, instruments and other demanding applications where attractive, rugged pushbuttons are required.

P5 Pushbuttons feature:

- Alternate action switch function
- Button sealed with “rolling sleeve” for long life and smooth operation
- Contact area sealed at case and terminals
- Choose from 9 button and 3 bezels; engraved buttons available
- Moistureproof and dusttight to IP64 and MIL-PRF-8805 Design 2 or watertight to IP68S
- P5 handles logic level up to 10 amps; P5-D/P5-V up to 5 amps
- P5-V: security (aluminum) and vandal-resistant (stainless steel) case and button
- RoHS compliant



P5-1



P5-3



P5-4



P5-6



P5-D Alternate Action  
Flush Dome



P5-V High Profile  
Flat Button



P5-V High Profile  
Curved Button



# P7 SUBMINIATURE PUSHBUTTONS

P7 pushbuttons, incorporating OTTO's patented double-break design, are miniature to allow for numerous switches to fit within a faceplate or small panel space.

P7 Pushbuttons feature:

- Button sealed with “rolling sleeve” for long life and smooth operation
- Snap-action design offers low contact resistance (less than 25mΩ)
- Metal switch housing
- 6 circuit variations
- Positive tactile feedback
- Variety of mounting styles
- Qualified to MIL-PRF-8805/110
- Moistureproof and dusttight to IP64 and MIL-PRF-8805 Design 2 or watertight to IP68S and MIL-PRF-8805 Design 3
- RoHS compliant



# P7-D SEALED DOME PUSHBUTTONS

P7-D sealed dome pushbuttons are double-break, momentary switches, offering excellent mechanical and electrical performance while operating in severe conditions.



P7-D Pushbuttons feature:

- Flush or raised round button in glossy finish; raised square button in matte finish
- Choose from variety of colors
- 6 circuit variations
- Positive tactile feedback
- Variety of mounting styles
- 2 million operations cycle life at logic level
- Constructed in accordance with MIL-PRF-8805/110 (no QPL)
- Dusttight to IP64 and MIL-PRF-8805 Design 2, or watertight to IP68S
- RoHS compliant



# P9 SEALED DOME PUSHBUTTONS

P9 sealed dome pushbuttons are quality-precision switches with double-break momentary action. They're designed for panels, control grips, computers, instruments, heavy equipment and other demanding applications requiring attractive, rugged pushbuttons.



P9 Pushbuttons feature:

- Flush and raised dome styles in gloss or matte finish in various colors
- Standard and small bezel versions
- All-plastic housing and button construction
- Threaded body or snap-in panel mounting
- Positive tactile feedback contact on snap-action models
- Moistureproof and dusttight to IP64 or watertight to IP68S and IP69K
- 1.25 million mechanical cycle life
- RoHS compliant



# TK TACTILE MINI TRIM SWITCHES

**ELECTROMECHANICAL  
SWITCHES**

The **TK** is a tactile switch with positive click action that indicates actuation to the operator. It's ideal for grip applications in off-road, material handling and aircraft.

TK Tactile Mini Trims feature:

- Logic level, normally open
- Shorter behind panel, nearly 2/10" shorter than OTTO T4-T Mini Trim
- 4-way or 4-way with center pushbutton momentary toggle action
- Panel sealed to IP64, IP68S or unsealed
- Wire leads or Molex® connector
- RoHS compliant



With Molex® Connector

With Wire Leads



# T3 MINIATURE TOGGLE SWITCHES

These miniature toggles are rugged, highly reliable switches offering positive detent action for safe switching operation in military and commercial applications. The T3 series has OTTO unique contact actuation and is an excellent choice for switching loads from logic level up to 5 amps.



T3-3  
Style



T3-4  
Style



T3-1  
Style



T3-5  
Style



T3-9  
Style



T3-2  
Style



T3-8  
Style



T3-8  
Style



T3-6  
Style



T3-7  
Style

T3 Miniature Toggle Switches feature:

- Positive tactile response helps prevent operating errors
- Shorter behind-panel depth
- Superior wiping action keeps contacts clean
- Toggles with 15/32" bushings meet MIL-DTL-83731
- More contact/terminal plating choices
- Highly reliable, simpler design, fewer parts
- Black matte finish available
- RoHS compliant





# SEALED TOGGLE SWITCHES AND TOGGLE GUARDS

**ELECTROMECHANICAL  
SWITCHES**

OTTO's toggle switches are rugged, high-performance sealed switches designed to withstand extreme shock, vibration and other severe conditions in heavy equipment, industrial control, marine and appliance applications.

Sealed Toggle Switches feature:

- 2- and 3-position, momentary and maintained action
- Switches up to 16 amps
- Positive detent, non-teasible contact transfer
- Choice of terminal styles
- Black matte finish available
- UL recognized and CSA certified
- Sealed to IP68S and IP68K
- RoHS compliant



Custom T7 with Flat Bat Handle



T71 – Narrow, Single Pole



T7 - Double Pole with Bushing Seal



Toggle Guards

Toggle guards with spring-loaded covers feature:

- For 2- and 3-position switches with 15/32" threaded bushing and slotted or flat keyways
- MS approved and QPL'd choices
- Molded plastic cover comes in multiple colors
- Bracket is black, painted steel
- Optional panel seal available



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880

# P6-4 WATERTIGHT LIMIT SWITCHES

P6-4 series switches are commercial-grade limit switches that are watertight and designed for extreme temperature ranges and harsh environments.



P6-4 Roller Plunger  
Actuator Style



P6-4 Ball Plunger  
Actuator Style



P6-4 Ball Plunger  
Actuator Style  
with Screw Terminals

**P6-4 Series Switches feature:**

- Sealed watertight to IP68S and IP69K
- One-piece stainless-steel housing
- Choice of ball or roller plunger actuation
- Three connection method options: solder or screw terminal, plus flying wire leads
- Configurable as single pole and double pole, plus single throw and double throw
- -55°C to +105°C operating temperature range



# K SERIES SEALED ROCKER SWITCHES

**ELECTROMECHANICAL  
SWITCHES**

K series rockers are rugged, high-performance switches designed to withstand extreme shock, vibration and other severe conditions in heavy equipment, marine, appliance and industrial control applications. They fit in standard panel openings for drop-in replacement of panel sealed and unsealed switches.

K Series Rockers feature:

- Incandescent, LED and neon illuminated or non-illuminated versions
- 2- and 3-position, momentary, and maintained action
- Snap-in feature accommodates a wide range of panel cutouts
- UV and solvent resistant
- Custom legends available
- UL recognized and CSA certified
- Ignition protected
- Sealed to IP68S and IP69K
- RoHS compliant



K1 Sealed Single Pole Rockers



K3 Sealed Rockers



K5 Sealed Rockers



# K1S SEALED ROCKER SWITCHES

The **K1S** is the industry's smallest, IP68S sealed contacts, logic level rocker offering a 1M cycle life in a short behind panel, snap-in package. It is available as a single or double pole, maintained or momentary action, in either 2 or 3 position. The K1S is the market's only true ON-ON-ON rocker and is perfect for use as a Forward-Neutral-Reverse (FNR) switch.



K1S Rockers



K1S FNR Large Rockers



K1S Standard  
FNR Rocker

K1S Rocker  
with Black Boot



K1S FNR Rocker  
with Clear Boot



## K1S Rockers feature:

- Shorter behind-panel length
- True ON-ON-ON triple throw switch options
- Single or double pole
- 73 standard legends or create your own
- Switch contacts sealed to IP68S
- Sealed boot options
- High cycle life, 1 million cycles
- Maintained or momentary action
- Two sizes of rocker styles: standard and large
- RoHS compliant



CS series capacitive touch sensor switches offer unobtrusive styling for control functions. The switch changes output level with the presence of a finger or gloved/ungloved hand, making it ideal for use as an on-off switch.

CS Series Capacitive Touch Sensor Switches feature:

- Two standard shapes; custom options available
- Active low output
- No moving parts to wear out
- Wide operating temperature range
- Completely sealed to IP68S and IP69K
- RoHS compliant



Capacitive Switch  
Concave Button  
CS-1



Capacitive Switch  
Raised Button  
CS-2



# OPERATOR CONTROL MODULE (OCM)

OTTO's Operator Control Modules (OCM) combine joystick and keypad functionality into one active assembly, making it a great multi-use device for a variety of functions.



OCM with Keypad and Hall Effect Controls

Operator Control Modules feature:

- CANbus output
- Indicator lights
- Backlit keypad
- Hall effect controls
- Custom design options



Small OCM with Keypad



Small OCM with Touch Pad



### CANopen or J1939

CAN (also referred to as CANbus or CAN bus) is a network system used in many everyday systems consisting of products with multiple microcontrollers that need to communicate with each other. CAN is implemented in the hardware microcontrollers located in the joystick or the grip handle and allows for fewer direct wire connections.

The CAN Keypad features:

- J1939 or CANopen
- Integral Deutsch® type connector
- Separate input and output connector for easy daisy-chain
- 3 RGB LEDs per button
- Software controllable LED color and brightness
- Custom legends available
- High performance encoder with pushbutton feature
- Easy snap-in design



CAN Keypad



CAN Rocker with Legends

The CAN Rocker features:

- J1939 or CANopen
- Fully Sealed to IP68S
- Integral Deutsch® type connector
- RGB LEDs
- Software controllable LED color and brightness
- Custom legends and button colors available
- Field interchangeable rocker buttons
- Redundant switch contacts
- Easy snap-in design



# OTTO®

## VERTICALLY INTEGRATED MANUFACTURING AND VALUE ADDED CAPABILITY

For more than 60 years, OTTO has been designing and manufacturing precision switches and operator controls for the most demanding applications. OTTO has a broad range of standard and custom products, including traditional snap action switches, Hall effect technology and grips. OTTO excels in providing value-added services to meet our customers' needs by managing every phase of the project from conceptual design to finished product. Onsite capabilities and expertise include product engineering, 3D printing, injection molding, stamping, milling, machining and full quality testing.

Complete custom interfaces incorporate various control products plus LED indicators, keypads/touchpads, cable assemblies and additional electronic circuitry. From a basic switch to a sophisticated panel assembly integrating many components, the array of possibilities is endless.



Far Part 145  
Repair Station



EASA Part 145



ISO 14001:2015  
ISO 9001:2015



AS9100:2016



A2LA  
ISO/IEC 17025

Corporate Headquarters  
2 East Main Street  
Carpentersville, IL 60110

847.428.7171  
info@ottoexcellence.com  
www.otto-controls.com

Follow us on:



@OTTO.Controls



Contact Powell for more information [www.powell.com](http://www.powell.com) | [ottoinfo@powell.com](mailto:ottoinfo@powell.com) | (800) 235-7880