

Custom Engineered Solutions Innovation in Switching



All data and figures used in that Product Overview show examples of our engineering performance and may be used as a guideline only. It is strongly recommended that specific operating conditions are clarified with Johnson Electric before individual application.

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About Johnson Electric

Johnson Electric is one of the world's largest providers of motors, solenoids, microswitches, human machine interfaces, flexible printed circuits and control systems. Our technology leadership, application expertise and global footprint make Johnson Electric the ideal partner for custom product development projects. Johnson Electric is an international company that is committed to making our customers successful by providing product differentiation and supply chain excellence.

Switches Mission

To create, design and produce innovative switch systems & solutions that complement motion systems.

Specialized Switching Solutions

Custom Engineered Solutions at Johnson Electric means much more than conceptual design. The combined expertise and innovative power of our experts create products that meet the market and financial goals of our customers.



We are specialists

In switching solutions & systems for:

- HVAC
- Home Technologies
- Beverage Dispensing Systems
- Infrastructure Equipment & Security
- Forklift Trucks, Material Handling & Specialized Vehicles
- Power & Garden Tools
- Automotive
- Specialized Applications

Approval Certificates

Johnson Electric products meet International standards according to customer needs.



Brands

Our product range consists of different brands. Each brand specializes in particular areas. The Johnson Electric house of brands is the safe choice for specialized switching solutions.





▶ Laser soldering



▶ Environmentally friendly potting



▶ End of line testing

Excel in Execution

Johnson Electric's customers expect the highest standards of quality and performance. We work not only to meet those expectations but also to exceed them through continuous cycles of learning.

Partnering Skills

Johnson Electric provides you with the complete switching solution that you are looking for, removing the need to interface with multiple suppliers of switches, electronics, printed circuit boards, mechanical parts and actuators. Our engineering, production and sales specialists support your project team wherever you are in the world.

Engineering Skills

Our skilled engineering team relies on fully equipped laboratories and the following expertise:

- Haptics design
- CAD artwork
- CAE simulation & optimization
- Material analysis
- Rapid prototyping
- Tool engineering
- Electronics development
- Reliability & approval testing
- Production preparation process

▶ Electronic development



▶ Analytical simulations & optimization



▶ Material analysis



▶ Rapid prototyping





High tech processing

Our production facilities use the latest machinery and technology capabilities

- Twin-shot plastic molding
- High speed die-cutting
- Automatic assembly of leads & cables
- OEM crimp tools for connector assembly
- Solder & solderless connection technologies
- Laser soldering on flexible printed circuits and leadframe
- Automatic or manual assembly
- Embedded solutions with customized harnesses and connectors
- Assembly of auxiliary parts for actuation and fixing
- Potting and overmolding with polymer
- One piece flow production
- Specific end of line testing



- Robust brake pedal assembly for specialized vehicles

► Testing



► Process engineering



► Tool design & manufacturing



► Assembly & final testing



HVAC – Heating, Ventilation, Air Conditioning

Functional Reliability

Highly reliable switching solutions for building automation and HVAC. Used as power switches and position sensors in boilers, valves, air dampers, flaps, control panels, and electric actuators. Environmentally protected from heat, dust and humidity. Custom engineered solutions for the world's leading HVAC manufacturers.



Precision electromechanics

- Electric actuator position controls subsystem
- Low actuating force – high precision



Highest environmental protection

- IP67 sealed switch solutions
- ATEX (IEC 60079-11) capable
- Precision sensing



Highest current in smallest space

- Boiler power switches
- Rotary or pushbutton switch solutions
- Made for ease of integration

Our Performance & Technology Approach

- User interface solutions
- Precision solutions for position sensing
- Subsystems with cable harness, PCB, FPC, customized plastic & metal parts
- Customized systems with actuators, flaps & valves

► Microswitches



► Sealed microswitches



► Power switches



► PCB solutions without or with actuators



Home Technologies – White Goods & Appliances

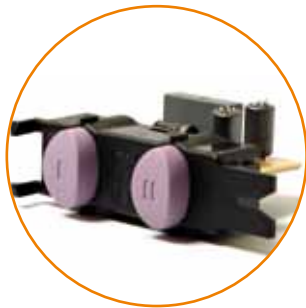
Switching, Sensing, Comfort

Switching solutions designed specifically for use in White Goods & Appliances, such as washing machines, dryers, dishwashers, refrigerators, ranges, range hoods, vacuum cleaners and many small appliances. Our switching systems & solutions offer unique haptics & design, aid in energy saving and meet the specific market standards & approval requirements.



Intelligence

- Energy saving products
- Auto power-off technology
- Exceeds EuP requirements



Emotion

- Designed to make appliances more attractive
- Custom engineered color & haptics
- Integration of electronics



Specialization

- Solutions for range hoods & white goods
- Rocker, push button or slide mechanism
- Design, color & haptics

Our Performance & Technology Approach

- Application specific haptics
- Internationally approved, GWIT IEC 60335-1 Ed. 4 compliant
- Customized solutions with harness, PCB, FPC and custom engineered components
- Intelligent auto power-off technology that removes any stand-by losses

► Microswitches



► Momentary switches



► Manually op. switches



► Auto power-off



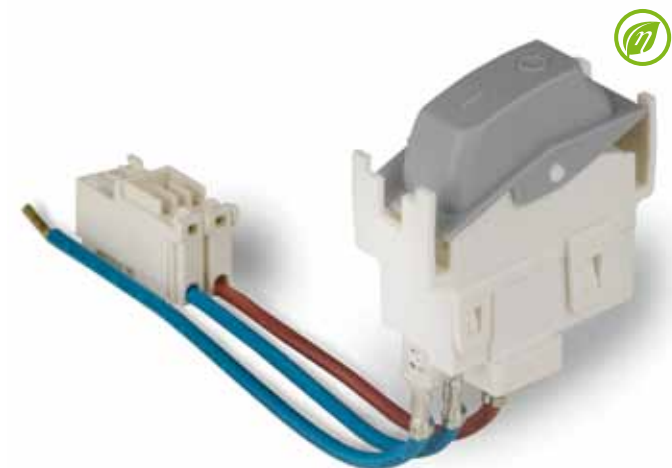
► Customized systems & solutions



Beverage Dispensing Systems

Switching, Sensing, Comfort

Johnson Electric switching systems are used for coffee grinding, whipping milk, cleaning valves, ejecting filter sets, detecting fluid levels and during self cleaning processes. Our subsystems with actuators and switches control and dispense ingredients and intelligent (green) switches help to save energy and remove stand-by losses.



TIPPMATIC means Green

- Intelligent auto power-off series
- Full functionality of power switch
- Exceeds Eco Design Directive requirements



TIPPMATIC Technology

- Intelligent pushbutton switches
- Energy savings by auto shut-off
- Single & double disconnect



Microswitch subsystems

- Integration of actuators
- Custom made specific parts
- Meet specific appliance standards

Our Performance & Technology Approach

- User interface switches & subsystems
- Custom engineered design, color & haptics
- Microswitch subsystems for actuator switching & position sensing
- Intelligent auto power-off technology that avoids any stand-by losses

► Microswitches



► Sealed microswitches



► Manually op. switches



► Microswitch subsystems



► Auto power-off technology



Infrastructure Equipment & Security

Compact, Robust, Safe

Reliable switching solutions for building automation, circuit breakers and smart metering, specially designed for the rapidly growing demands of these market segments. Johnson Electric switching systems & solutions are always the safe choice for applications.



Sensing

- Application specific auxiliary switches
- Highest reliability for circuit breakers



Application tolerance friendly

- Position sensing & actuator switching
- High inrush currents capable
- Long overtravel



User interface

- User friendly design & haptics
- Embedded electronics & piezo switches
- Easy to design into controls

Our Performance & Technology Approach

- Highest current in the smallest package
- Reliable switching after periods of inactivity
- Contact systems capable for AC & DC loads as well as both high & low currents
- Subsystems with harness, PCB, FPC, electronics and custom engineered components

► Microswitches



► Sealed microswitches



► Special switches



► Piezo electronic switches



► Tailor-made solutions



Forklift Trucks, Material Handling & Specialized Vehicles

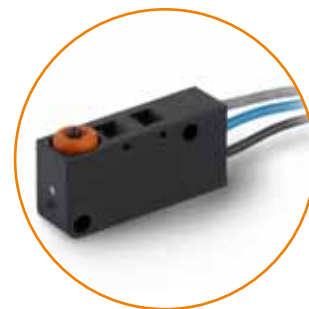
Best Performance

Switching solutions designed specifically for use in severe environments. In dust, heat or high humidity, Johnson Electric systems are reliable task masters whether in: drive controls, cockpits, panels, cabin doors, transmitting positional signals to pedals or detecting the position of major parts. Leading brands rely on our expertise.



Heavy duty capability

- Application tolerance friendly
- Highly stable switch mechanism
- Unaffected by aggressive substances



Robustness

- IP67 waterproof & sealed from cement dust
- Salt spray protected
- High electrical rating



Compactness

- iF product design award
- One of the smallest E-Stops in the World
- Approved EN 60947-1, -5-1, -5-5

Our Performance & Technology Approach

- Human Machine Interface solutions for cabin & cockpit
- Highly reliable, environmentally protected microswitches
- Resistant to heat, shock, vibration, cement dust, water, gasoline, oil, battery acid etc.
- Switching systems combined with harness, connectors and customized parts

▶ Microswitches



▶ Sealed microswitches



▶ Highly robust switches



▶ Microswitch subsystems



▶ HMI solutions



Power & Garden Tools

Powerful and Highly Reliable

Johnson Electric has long experience in professional switch applications with the highest functional reliability and protection against severe surrounding conditions in harsh environments. Consequentially our focused solutions are used in chainsaws, trimmers, cutters, grinders, drills, and lawn-mowers for switching, sensing, and safety functions.



Solutions for cordless tools

- DC trigger switches
- Sealed switch mechanism
- Low and high current differentiation



Solutions for power tools

- Embedded harness & electronics
- Completely sealed units



Solutions for gasoline tools

- Sealed IP67
- Resistant to oil & gasoline
- Highly resistant to heat, shock & vibration

Our Performance & Technology Approach

- Application specific haptics
- Environmentally protected solutions
- Custom engineered subsystems with harness, electronics, and tailor-made components
- Switching solutions for gasoline & electric driven tools, DC & AC, high & low current

► Push button switches



► Microswitches



► Sealed microswitches



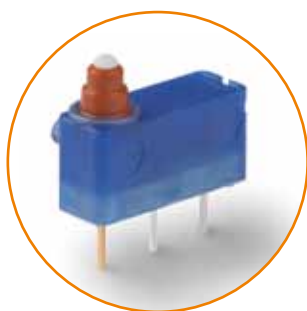
► Customized microswitch solutions



Automotive Switching Solutions

Comfort, Safety, Reliability

High tech switching solutions specifically designed for selective automotive applications that guarantee comfort & safety everyday. Our solutions are used in interior lights, dashboards, hood latches, tailgate handles, door locks, and closure systems. Environmental protection combined with resistance to shock & vibration ensures the highest reliability and long life.



Stable characteristics over life

- Integration in closure systems & multiple automotive applications
- Long overtravel compensates tolerances in application



Minimal installation space

- Robust switches with cable harness
- Precision snap-action mechanism
- Potted or overmolded cable entry



User Interface Solutions

- Customized design & haptics
- Switches signal currents & high lamp loads



Aligned switch solutions

- Robust & application tolerance friendly
- Custom engineered bracket & fixation

Our Performance & Technology Approach

- Application specific haptics for user interfaces
- Embedded solutions with switches, harness, boards, and custom engineered components
- Solder & solderless connection methods
- Polymer overmolding & potting technologies

► Pushbutton switches



► Sealed microswitches



► Custom engineered solutions



Automotive Door Lock & Closure Systems

Simplifies your system design

Johnson Electric sets the standards in custom engineered subsystems combining switches, actuators, flexible circuit boards, connectors, and tailored housings for closure systems in global automotive platforms. Our solutions meet both comfort and safety requirements amongst other things such as highest functional reliability, optimized weight, reduced operating noise and the essential electric needs of the latch.



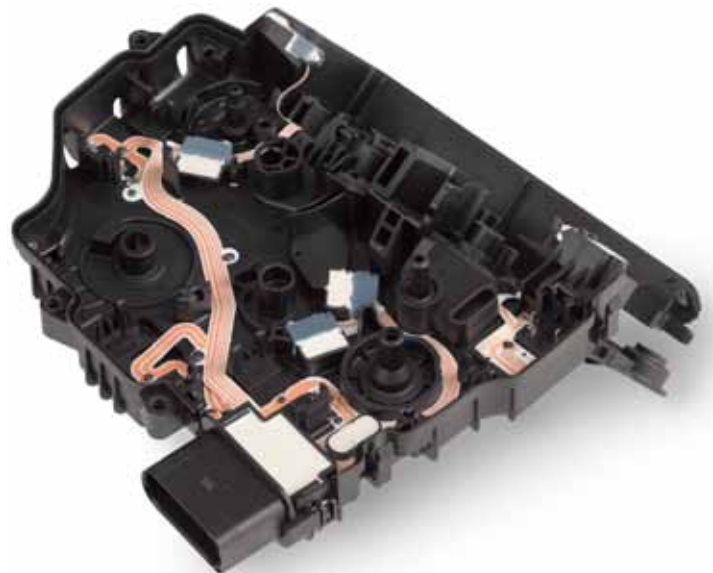
Power closure systems

- Multiple connection technologies
- Optional embedding of actuators



Systems for hood latches & tailgate handles

- Application tolerance friendly
- Unit completely sealed IP67



Door lock subsystems

- Weight optimization by FPC technology
- Laser soldering on FPC
- Crimping on FPC

Our Performance & Technology Approach

- Complex plastic housings & high tech metal die-casting parts
- Various connection technologies: PCB, FPC, leadframe, solder & solderless termination
- Laser soldering on leadframe & FPCs
- Integration of switches, connectors, motor terminals and motors in one latch system

► Switches for closure systems



► Switches for hood latch & tailgate handle



► Closure systems



Further Focus Applications

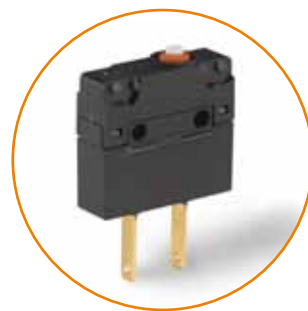
Easy Solution

Johnson Electric also focus on dedicated applications in other industry segments, such as Business Equipment, Gaming, Vending, Ticketing, and Healthcare & Medical. We continue to discover opportunities for product and customer value enhancement. Our depth of application knowledge allows our switching solutions to be tailored towards future customer requirements.



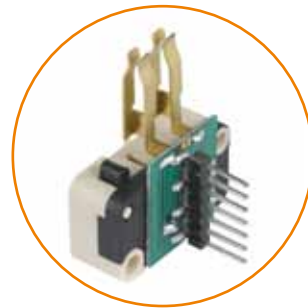
Ease of connection

- Sealed microswitch subsystem with cable harness & integrated electronic components
- ISO 13485 manufacturing capability



Ease of termination

- Environmental protected IP67
- High temperature version 120°C



Ease of integration

- Integrated PCB & connector unit
- Quick termination

Our Performance & Technology Approach

- Application tolerance friendly solutions
- Microswitch subsystems with cable harness and connectors
- Custom engineered solutions with electronics and application specific components
- Highly resistant solutions for use in severe environments

▶ Microswitches



▶ Sealed microswitches



▶ Microswitch subsystems



▶ Special components

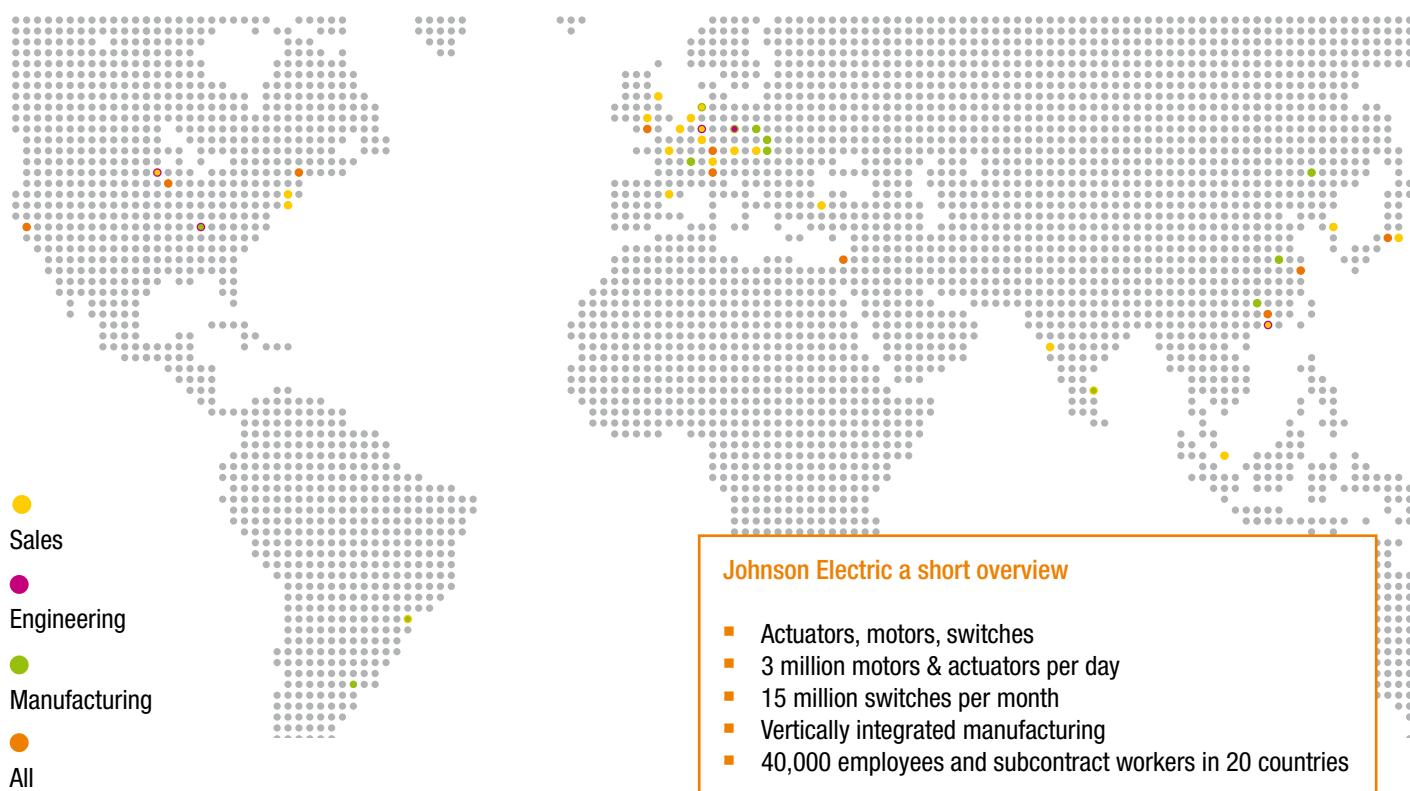


▶ Special switch solutions



Expertise – Competency – Progress

The Johnson Electric name embodies 50 years of experience in the development and manufacture of electromechanical systems for motion applications. Long term partnerships at customer and supplier level, local presence and worldwide round the clock support are significant success factors.



As a Johnson Electric customer, you benefit from highly flexible resources in development and manufacture. Experienced teams of development and production engineers ensure the success of your product with solutions which are worthy of the title “best in class”. Johnson Electric customers benefit from the latest manufacturing technologies and efficient, modular product designs create a basis for flexibility and economy from small batches to large production volumes.

Johnson Electric provides a total life cycle solution, combining global manufacturing with regional technical and commercial support.

We look forward to hearing from you!