

V4 Subminiature Microswitches The Universal Switching Master





Global best seller

The V4 subminiature microswitch family stands for outstanding precision, high robustness, environmental protection and ease of integration in numerous applications in industry and automotive.

Its unique design makes it to the perfect choice for switching solutions that meet the market and financial goals of our customers. V4 is the successful story of a product range that offers unequaled opportunities. Come on and join this success.

V4 – Designed for your application needs

- Sealed IP67
- Extra robust design
- Precise snap-action mechanism
- Long mechanical & electrical life
- Wide range of variants
- Contacts for signal currents in logic circuits
- Contacts for high & inrush currents
- Unlimited variety of firm levers
- Extended overtravel variants
- Various termination technologies
- Flux-proof terminal entries
- Unaffected by manual soldering
- High temperature option
- Cable skirts in various sizes
- Cable entry to the left, right or bottom side
- Pre-wired standard versions
- Capable for assembly with various leads and cables
- Potted or overmolded cable entries
- Accessories like lug mounting frame and insulating sheet
- Fixing by mounting holes, side mounting, peg mounting option
- Approved to international standards
- GWIT compliant according to IEC 60335-1, 4th ed.
- Capable for installation in explosive gas atmospheres, zone 2, according to IEC 79-15
- Approved by leading automotive and industrial brands



Field-tested a million times

V4 is the microswitch solution that meet your requests



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.

We are specialists

In specialist microswitch solutions & subsystems for:

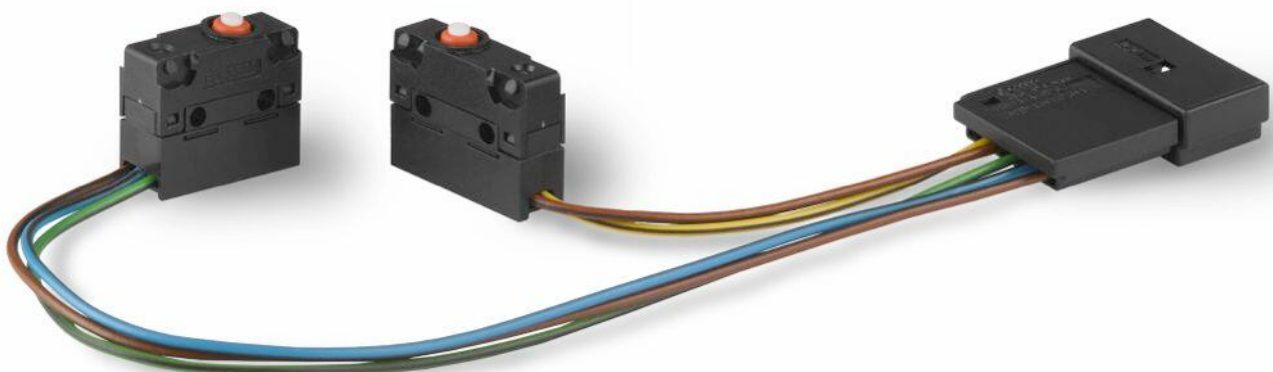
- HVAC
- Home Technologies
- Beverage Dispensing Systems
- Infrastructure Equipment & Security
- Material Handling Industry
- Power & Garden Tools
- Automotive
- Further Focus Applications

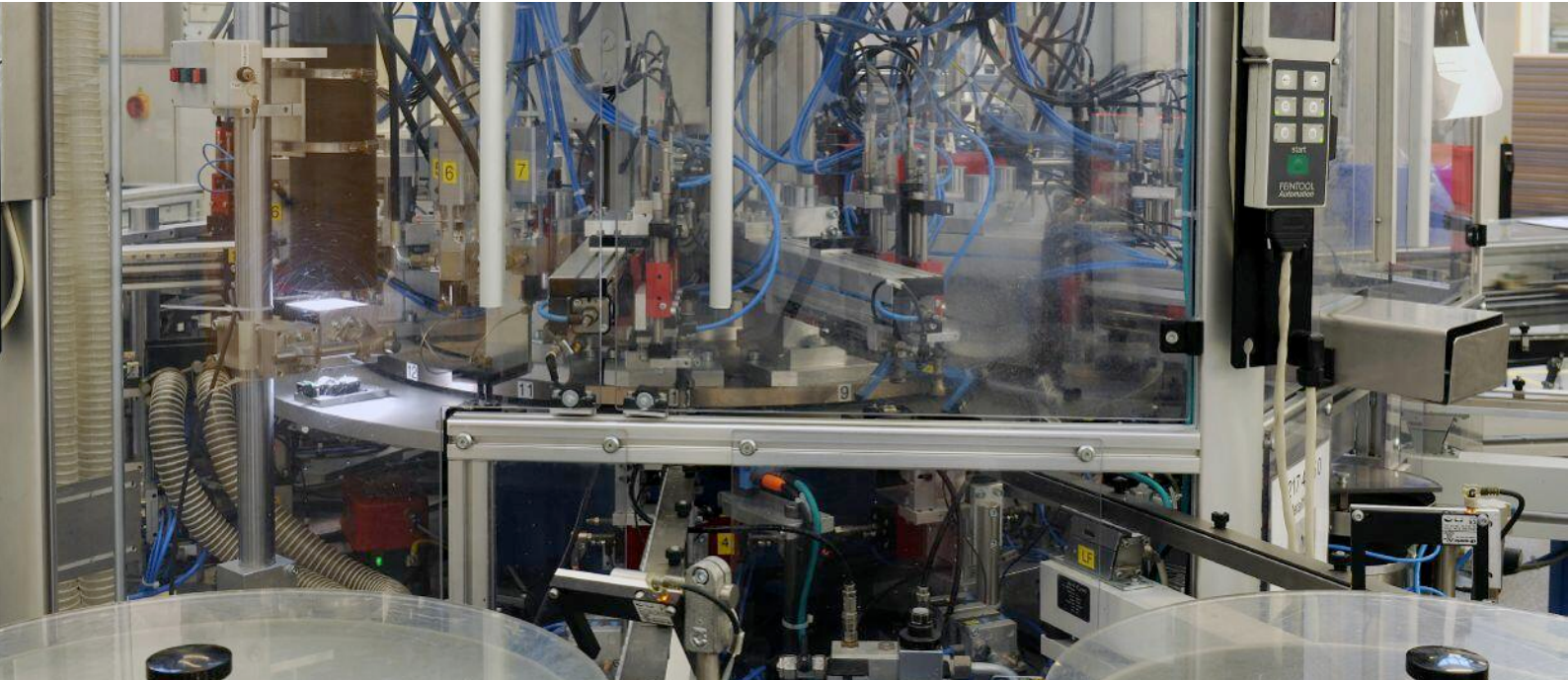


Partnering skills

There is no need to work with multiple suppliers of switches, cable harnesses, printed circuit boards, mechanical parts, and levers. Johnson Electric and our network of local value distributors provide you with the complete switching solution that you are looking for. Our engineering, production and sales specialists support your project team wherever you are.

- Samples from 1 piece up
- Small to medium quantities in different variants
- High volume series production





High tech processing in execution

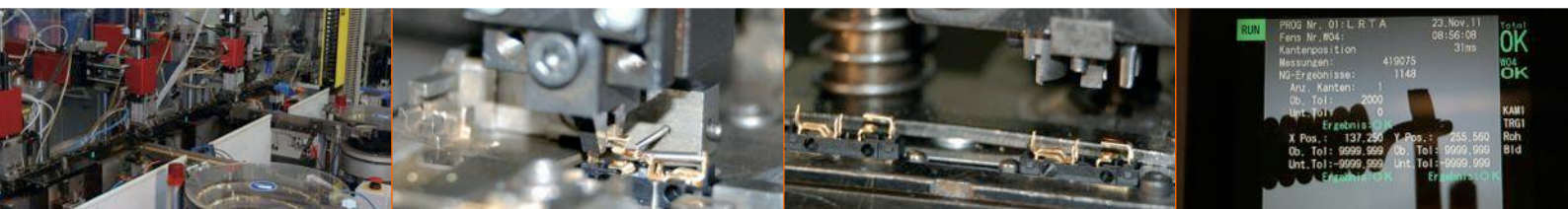
Johnson Electric's production facilities use the latest machinery and technology capabilities. Our production system has evolved from many years of manufacturing experience. Using innovative production engineering techniques to design balanced processes, the Johnson Electric Production System optimizes use of resources and maximizes efficiency and quality.

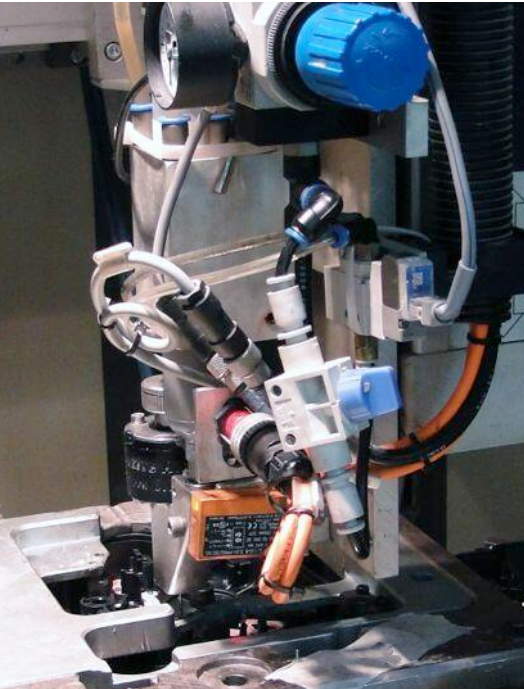
Our Performance & Technology Approach

- Zero defect approach
- High vertical integration
- Genba Kaizen in manufacturing and processing
- Utilization of latest soldering and solderless connection technologies
- Ecologically friendly product protection technologies

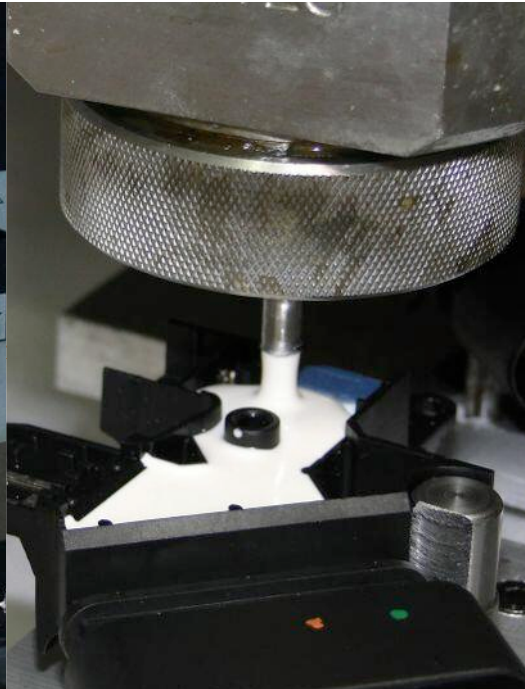


► Automated assembly systems for fast and reliable production of complex products

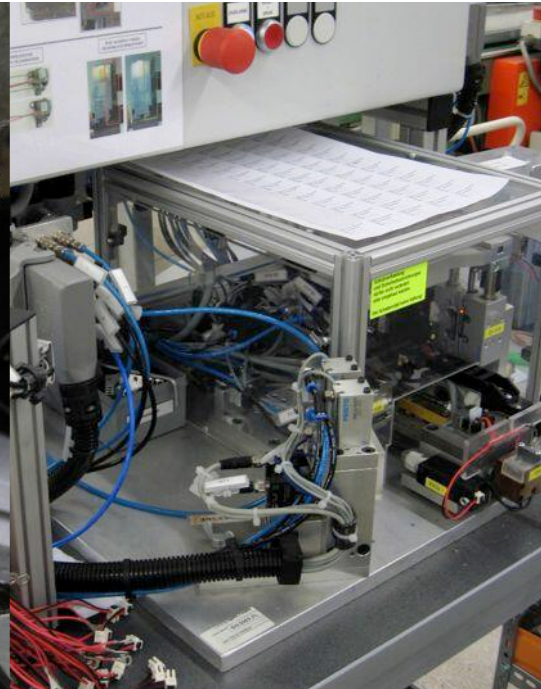




▶ Soldering



▶ Environmental-friendly potting



▶ End of line testing

High tech processing

- Twin shot plastic molding
- High speed die cutting
- Automatic and manual insert switch production
- Automatic assembly of leads & cables
- OEM crimp tools for connector assembly
- Automatic and manual soldering
- Solderless connection methods
- Embedding of customized harnesses, connectors and specialized parts
- Potting & overmolding with polymer
- Ecologically friendly technologies



Our Performance & Technology Approach

- Quality and reliability
- Environmental awareness
- Technology expertise
- Performance and safety
- Customer focus

- Made for limited installation space: V4NCS assembled with flat cable skirt K1 and potted leads, completely sealed IP67

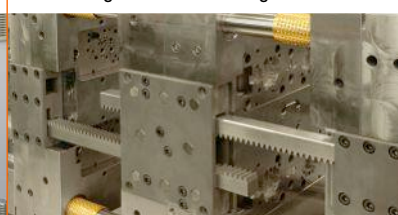
▶ Testing



▶ Process engineering



▶ Tool design & manufacturing



▶ Assembly & final testing





V4 insert microswitches – Switching, sensing, optimising

V4 subminiature microswitches offer highest performance, a wide range of different variants, contact materials, actuation forces, overtravels, terminals, levers and accessories. The V4 switch series stands for high functional reliability, outstanding quality and extra long life.



Precision, reliability, versatility

- V4NCS series



More application tolerance friendly

- V4NCB series with extended overtravel



International approvals

- V4NS series



Longest overtravel

- V4LS series with >2 mm overtravel

Our Performance & Technology Approach

- Sealed IP67 enclosure, flux-tight terminal entries
- Electrical rating 250VAC 5A max
- Ambient temperature -40°C to +85°C
- Mechanical life >2 million cycles
- Circuit change-over, normally closed or normally open
- Solder, PCB, 2.8 mm faston terminals, pre-wired versions
- Silver, gold plated silver, silver nickel alloy or gold crosspoint contacts
- Plunger, plain lever, simulated roller (cam follower), roller or ice break lever
- Optional high temperature 120°C, extended overtravel, ENEC, UL & CSA approvals



V4 pre-wired versions – Ease of assembly

Serving the unique needs of customer's applications is a top priority for our switch designers. Pre-wired V4 switches are versatile switching solutions that can be integrated easily in numerous industrial applications.



- V4NCS pre-wired, sealed IP67
- Extended overtravel & T120°C option



- V4NSUL pre-wired, sealed IP67
- UL, CSA & ENEC approval



Ease of integration in home appliances

- Application tolerance friendly due to long overtravel
- V4LS with >2 mm overtravel, cable skirt, potting, flying leads & connector
- UL, CSA & ENEC approved, compliant to glow wire test IEC 60335-1, 4th ed.

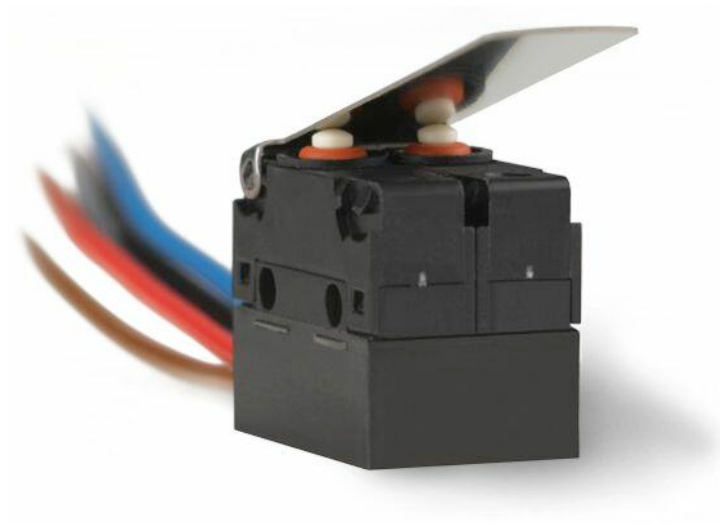
Our Performance & Technology Approach

- Perfect for customized assembly with numerous connectors
- Standard pre-wired with 500 mm long flying leads FLRY-A or AWG 22
- Features, variants and accessories as V4 insert microswitches
- Cable entry to side or optional to bottom
- Generally completely sealed IP67



V4 auxiliary actuators – Optimized to application

Johnson Electric sets the standards in custom engineered switching solutions that meet requirements such as best adjustment of tolerances, outstanding robustness and optimized operation. Indeed these solutions address the critical performance requirements for switches in the application.



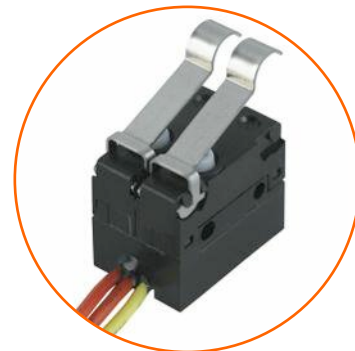
Special lever simplifies design

- Reliable simultaneous actuation
- Rugged double pole switch assembly incl. double cable skirt, wiring & potting



Best operation

- QA4 long overtravel actuator



Designed to application

- Double pole switch assembly with two separate simulated roller levers

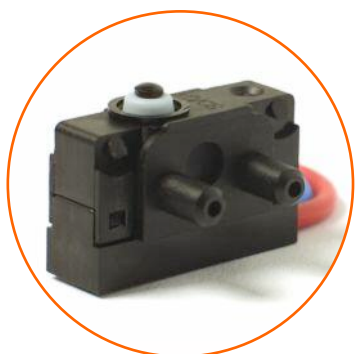
Our Performance & Technology Approach

- Wide range of auxiliary actuators
- Robust application tolerance friendly
- Sealed IP67 for severe environmental conditions
- Design & production of customized plastic and stainless steel levers
- Multiple switch packages with internal wiring, cable strain relief & potting



V4 value-added specialities – Smart solutions for comfort & safety

Specifically designed solutions for demanding industrial and automotive applications. These custom engineered solutions combine insert switches with customized parts, brackets, retainers, auxiliary actuators, and cable harnesses into tailor-made products for ease of integration.



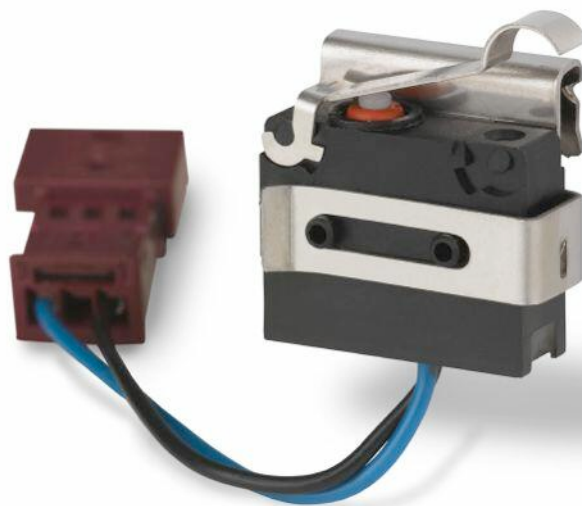
Form-fit assembly

- Side mounting peg solution with embedded cable skirt & harness



Quick connection

- Reliable decoupling of contact system from external termination
- High temperature version 120°C



High tech in cape hood latches

- Specialized assembly with retainer & cable harness
- Easy to adapt by specific designed stamping part
- Sealed cable entry to bottom
- IP6K7

Our Performance & Technology Approach

- Precision switch assemblies with cable harness, connectors, brackets, retainers etc.
- Integration of standard & customized components
- Polymer overmolding & potting technology
- Aligned to customers application



V4 assemblies with cable harness – Simplify your system design

Tailor-made design, optimized assembling, and user-friendly operation. These custom engineered solutions are designed to improve the performance of customer's applications to make them more successful on any given day.



Design specialties

- IP67 sealed cable outlet to both sides of the switch



Saves installation space

- Ultra flat cable skirt with potting
- IP67 pre-wired changeover switch



Robust fail-safe in all weathers

- V4NCS with customer-specific cable assembly
- Insulating tube potted in cable skirt
- Complete sealed IP67 & high temperature capable

Our Performance & Technology Approach

- Complex cable harness assemblies
- Specialized connectors, levers and customized parts
- Resistant to severe environmental conditions, shock, vibration, dust etc.
- Potted cable entries
- Sealed IP67



Highest reliability & longest life – Switch solutions that make the difference

Johnson Electric specialized switching solutions for use in extreme environmental conditions are reliable task masters. Robust, consistent, and unaffected by cement dust, heat or high humidity. Leading brands rely on our extensive experience.



Rugged steering control assembly for special purpose vehicles

- V4NCB sheathed cable assembly with flexible hose and circular connector
- Roller lever, ice break lever, retainer brackets
- Sealed IP67 for use in harsh environments

Our Performance & Technology Approach

- Complex custom engineered cable harness assemblies
- Specialized connectors, brackets, retainers, levers and customized parts
- Highest reliability in severe operating environments
- Units completely sealed IP67