



Variohm
Group

The Variohm Group offers customised products for sensing, motion and control.

1974 Foundation of Variohm Components

2003 Acquisition of Ixthus Instrumentation

2006 Foundation of Variohm Holdings

2007 Acquisition of Heason Technologies

2013 Acquisition of Herga Technology Ltd

2017 Variohm Holdings becomes part of  PLC: <http://www.discoverieplc.com>

2019 Acquisition of Positek Ltd

2020 Acquisition of Phoenix America LLC

2020 Acquisition of Limator GmbH

- **discoverIE is a specialist electronics company PLC:** <http://www.discoverieplc.com>
 - Designing, manufacturing & distributing customised electronic components
 - Supplying growth markets

- **FY19/20 revenues of over £460m**
 - Operating internationally – 23 countries
 - 4400 employees across the group

Target markets



- Transportation
 - Road, rail, air



- Medical
 - Control, monitoring & diagnostic



- Renewable energy
 - Wind, solar, tidal



- Industrial connectivity
 - Smart metering, communication, industrial control, 'Internet of Things'

The Variohm Group focusses on supplying bespoke solutions, providing our customers advantageous solutions for their products.

Today's economic climate requires:

- Quick development cycles
- Competitive products
- Products that suite perfectly
- Reliability



To support those requirements:

- Each company works with a great autonomy allowing them to respond with the flexibility of a midsize company, whilst at the same time, the group belonging discoverIE provides the structural background of a large scale business
- Continuous new product developments in close cooperation with customer base
- Wide range of products with an excellent flexibility in their existing designs
- Focus is manufacturing of custom-tailored solutions

The core capabilities through the companies within the group

Production

- Injection moulding
- Machine shops
- Magnetising
- Clean room
- Assembly

Engineering

- 3D Models
- Rapid prototyping
- Injection mould tool design and building
- PCB design
- SMD assembly
- Microcontroller based systems
- Electromechanical systems

Sourcing

- Decades of experience
- Specialised suppliers
- Close partnership on projects
- Implementation of contract manufacturing
- Supplier evaluation



The Variohm Group offers products around:

- Position sensing
- Temperature sensing
- Pressure sensing
- Force and Load sensing
- Foot switches
- Hand controls
- Air operated controls
- Positioning systems



Linear potentiometers

- 0-10...3000 mm measurement range
- Voltage divider principle
- Repeatability down to ± 0.01 mm
- Temperature range -40...150°C (175°C short term)
- Sealing up to IP67



Linear inductive sensors

- 0-2...1200 mm measurement range
- Analogue output signals
- Temperature range -40...125°C
- Sealing up to IP68 (submersible version)
- Intrinsically safe versions with ATEX & CSA approval



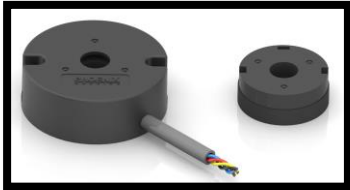
Cable extension transducers

- 0-38mm...43m measurement range
- Analogue and digital output signals
- Sealing up to IP68
- Intrinsically safe versions with CSA approval



Rotary hall effect sensors

- 0-30°...360° angle measurement range
- Temperature range -40...150°C
- Excellent customisation options
- Full contactless versions available



Magnetic Encoders

- Kits and modules
- Low and High Resolution
- Incremental and Absolute
- Full contactless versions available



Rotary inductive sensors

- 0-5°...160° angle measurement range
- Analogue output signals
- Temperature range -40...125°C
- Sealing up to IP68 (submersible version)
- Intrinsically safe versions with ATEX & CSA approval



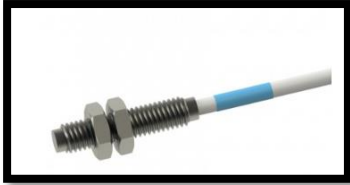
Inclinometer

- 0-30°...360° tilt angle measurement range
- Liquid based principle
- Analogue, Digital output signals or as display
- Outstanding resolution
- Excellent stability



Inductive tilt sensors

- 0- ±15°...±80° tilt angle measurement range
- Analogue output signals
- Temperature range -40...125°C
- Sealing up to IP68 (submersible version)
- Intrinsically safe versions with ATEX & CSA approval



Proximity sensors

- Solid state and non-contact design
- Machined and molded housing
- Custom specific packaging
- For use with permanent magnet target



Speed sensors

- Hall Effect sensors
- Machined and molded housing
- Custom specific housing options
- Use with multipole magnet wheel or trigger wheel



Multipole magnet rings

- Radial and Face multipole magnet rings
- Tight tolerances on pole location
- Ideal for use with sensor i.e. magnetic encoders
- Multiple magnetic material mixes for different field strengths



Proximity target magnets

- Using a proprietary high energy Neodymium-Iron-Boron compound
- Slide by or head on models
- Standard models are axially magnetised
- Wide range of constructions available



Custom moulded magnets

- Injection moulding with custom forms
- Several alloy compositions available
- Different Polymers for to mould with
- Temperature capability up to over 150°C is possible
- Typical tolerances are +/-0.003 in/in



NTC Thermistors

- Temperature ranges up to 250°C
- Resistance values range from 1k Ω @ 25°C to 100k k Ω @ 25°C
- Epoxy and glass encapsulated versions
- Tolerances between $\pm 0.1^\circ\text{C}$ over 0-70°C range and 10% at 25°C



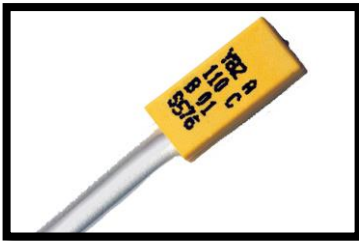
RTD Elements

- Temperature ranges up to 500°C, Cryogen version down to -200°C
- Typical PT100, PT1000; others on request
- Thin film construction
- Accuracy class A (F0.15) and B (F0.3)
- Typical dimensions around 2x2.3x1.1mm³



Temperature switches

- Temperature ranges from 45°C up to 200°C
- Normally open / Normally closed versions
- Up to 6,5 A
- Self holding resistor version
- Custom assemblies



Current sensitive thermal switches

- Temperature range 40...150°C
- Normally closed
- Up to 6,5 A
- Self holding resistor
- Excellent response time
- Custom assemblies



Temperature probes

- Temperature ranges from -96°C up to 350°C
- RTD or NTC based probes
- Screw type, Ring terminal, tubular probes
- Custom housings
- Wide range of cables options
- Custom connectors



Temperature transmitters

- Temperature range $-40\dots 150^{\circ}\text{C}$
- Analogue output signals
- Wide range of process connections
- Wide range of connector options



Industrial pressure transmitters

- 0-20 mbar up to 5000bar measurement range
- Analogue and digital output signals, incl. low energy
- Wide range of process connections
- Wide range of electrical connections
- Flush mount and level meter versions



Miniature pressure transmitters

- 0-600 mbar up to 500bar measurement range
- Analogue output signals
- Diameter down to 12 mm
- Hermetically welded stainless steel construction



Combined pressure- / temperature transmitters

- 0-0,6 bar up to 1000bar measurement range
- Temperature range -40...150°C
- Analogue output signals
- PT1000 or analogue output
- Integrated or exposed temperature probe



Differential pressure transmitter

- 0-250 Pa up to 5000 Pa measurement range
- Silicon-chip based principle
- Analogue output signals
- Accuracy between $\pm 1,5\%$ full stroke at room temperature
- PCB or DIN RAIL mount version



Pressure switches – low pressure

- 0-7 PA up to 8.3 bar switching range
- Mechanical switching-based principle
- Switching signals up to 25A, 250V
- Plastic housing
- Up to 20 Mio operation cycles



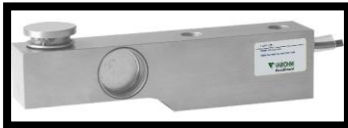
Pressure switches – high pressure

- 0-0,3 bar up to 350 bar switching range
- Mechanical switching-based principle
- Switching signals up to 5A, 250V
- Metal housing
- Up to 10 Mio operation cycles



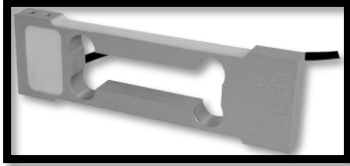
S-Type load cells

- 0-25kg up to 30t
- Accuracy class C3 and C4
- Temperature range -30...65°C
- Alloy steel and stainless steel construction
- Up to IP67 sealing
- Up to 10 Mio operation cycles



Shear beam load cells

- 0-5kg up to 30t
- Accuracy class C3 and C4
- Temperature range -30...65°C
- Alloy steel and stainless steel construction
- Up to IP68 sealing
- Up to 10 Mio operation cycles



Platform load cells

- 0-0,3kg up to 500kg
- Accuracy class C3, C4 and C5
- Temperature range -30...65°C
- Aluminum or stainless steel construction
- Up to IP68 sealing
- Up to 10 Mio operation cycles



Compression load cells

- 0-60kg up to 200t
- Accuracy class C3, C4 and C5
- Temperature range -30...65°C
- Stainless steel construction
- Up to IP68 sealing
- Up to 10 Mio operation cycles



General foot switches

- Plastic and metal housing
- Wide range of color and logo options
- Different switch functions
- USB option
- Analogue output versions



Industrial foot switches

- Single and multi pedal
- Wide range accessory options
- Low power and high current switching (up to 25A)
- Analogue output versions
- Wide range of switch functions
- Safety relevant functions
- Emergency stop versions
- Up to IPX7 sealing



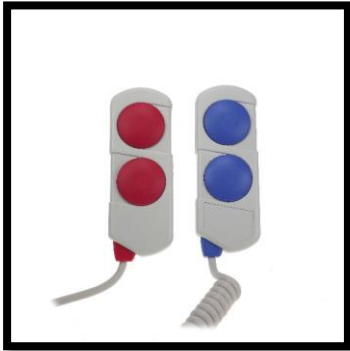
Medical Footswitches Design Platform

- Modular product line
- Single and multi pedal
- Wide range of color and logo options
- Different switch functions
- Up to IPX8 sealing
- Medical standard 60601 approved



Bluetooth medical foot switches

- Modular product line
- Single and multi pedal
- Wide range of color and logo options
- USB dongle option
- Analogue output version
- Redundant versions
- Up to IPX8 sealing
- Medical standard 60601 approved wireless system



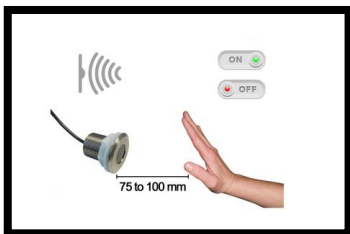
Electrical hand controls

- Different housing models
- Standard up to 8 functions
- Customisable membrane
- Low power switching and USB output
- Wide range of connectors
- Accessories i.e. hooks or holding magnets
- Up to IP68 sealing
- Medical standard 60601 compliant



Infrared hand controls

- Plastic or robust aluminum housing
- Standard up to 8 functions
- Safe line of sight operation
- Secure coded signals
- Receiver with integrated lens or optional with remote eye



Infrared Noncontact switch

- Plastic or robust aluminum housing
- Different switch functions
- Factory adjustable activation range



Air operating hand controls

- Different models
- Up to 6 switching channels
- Large button versions
- Wide range of colors and symbols
- Hand bellow version
- Push button versions
- Ideal for high humidity environment



Air operating foot switches

- Different foot switch models
- Plastic or metal housings
- Wide range of colors
- Ideal for high humidity environment
- Functional in systems with up to 75m tube length



Accessories for pneumatic systems

- Different tube diameters
- Multi-channel tubes
- Straight and curly tubes
- Tube diameter adapters
- Different bulkhead connectors
- Different tube connectors
- Internal bellows
- Complete system solutions



Air switches

- Compact design
- High sensitivity
- Different switch functions
- Redundant switch function
- Switch function up to 25A / 250V
- Different housings
- PCB mount versions



Bespoke positioning system supply

- Rotary Actuators
- Linear Positioning Systems
- Motion Platforms
- Drive & Control Chassis
- Motion Application Software
- Turn-Key, Bespoke Solutions



Motion Distribution

- Zero Backlash Gearing
- Leadscrews & Ballscrews
- Manual Positioning Stages
- Linear Actuators
- Servo Motors & Drives
- Ceramic Servo Motors
- Rotary & Linear Encoders
- Motion Controllers & HMIs



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