

You can find the following brands through **A&C Solutions**:



Hummel



Provertha



Binder



Shield



Techno



JST



Higo



Zierick



Amphenol



Essentra



Glenair



Stocko

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Other available editions:



Main folder



Railway folder



E-bikes folder



Lighting folder



**SOLUTIONS**  
assembly & connectors

FOR AUTOMATION,  
MOTION & CONTROL



FIELDBUS CONNECTORS



HYBRID CONNECTORS



HARSH ENVIRONMENT CONNECTORS



DISTRIBUTION BOXES

## SOLUTIONS DESIGNED AROUND YOUR BUSINESS

A&C Solutions is a connector & harness distribution specialist that offers a tailor made solution to any application and delivers high quality supply chain services to its customers anywhere in the world.



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### *Connector specialist for Automation, Motion & Control*

A&C Solutions specialises in connector solutions for Automation, Motion & Control. For any type of application operating within automated machinery & equipment or motion & control systems, A&C Solutions works together with its customers to select the right connector solution.

Within industries like food processing, where hygiene and cleanliness is paramount, connectors must be able to withstand rigorous high pressure and high temperature wash-down procedures. In other industries like agricultural technology where dust and dirt can be an issue, connectors need to be designed in a way that external influences don't stand any chance of penetrating the application. For these and other related industries, A&C Solutions offers an extensive range of high performing connector solutions from pioneer brands in their line of business. This complete range includes a wide variety of IP69K stainless steel connector designs, fieldbus connectors with various mounting

possibilities, the latest hybrid connectors for high speed data transmission, smart locking systems for a quick and secure locking, customized distribution boxes and high-quality D-sub connectors with endless layout possibilities.

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### *Your partner in customization & logistics*

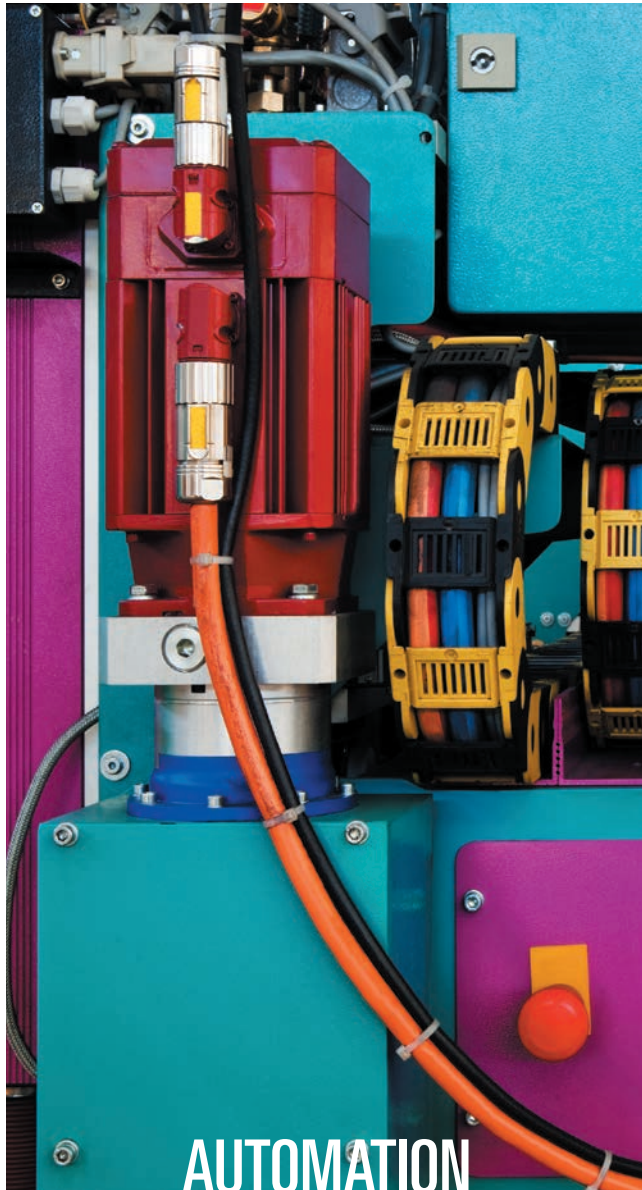
Besides the broad scope of connector solutions, A&C Solutions can also further assist you with designing your connector into a customized cable assembly. Also when you require a tailor made connector solution, you can count on the flexibility and the short lead times to bring your project to a successful end.

Besides this, A&C Solutions works with you to reduce your stock and to ensure a timely delivery of each consignment. And of course, you can always rely on A&C Solutions' on-going stock for a large part of the conventional connector solutions used in Automation, Motion & Control applications, delivered to you within 24 hours. Altogether, this makes A&C Solutions a real partner for this industry.





# CONNECTOR SOLUTIONS FOR AUTOMATION, MOTION & CONTROL



Hummel offers a wide variety of circular connectors designed to meet the requirements of applications for rough, industrial environments. They are resistant to vibration loads and guarantee a protection of IP67/IP69K.

## *Signal & Power connectors*

Signal & Power connectors from Hummel offer you a broad scope of possibilities in designs, contacts and materials. You can choose from M16, M23 and M27 as a straight, right angle, distribution and panel mount connector design with 3 to 28 poles and rated currents going from 5A to 28A. M16 and M23 connectors are also available as overmolded version.



## *M40 connector series*

The largest connector design within Hummel's connector range is the M40 series. This series is available in both 3+2+PE and 4+3+PE and can handle rated currents from 28A up to 55A.







# HUMMEL

## *Stainless Steel connectors*

Hummel leads the way when it comes to stainless steel connectors (AISI 316 L). The range includes all regular M16, M23 and M40 designs and contact layouts. With an IP69K protection, this connector range is the perfect match for any type of food processing application. Stainless steel connectors are already available in small quantities and can be delivered to you quickly.



## *Twintus connectors*

The Hummel Twintus perfectly responds to the increasing miniaturization in the drive technology. Despite its small dimensions (height 21 mm, width 41 mm) and a mounting flange of only 20 mm to 25 mm, Twintus offers a high power density. It is possible to combine 3-18 pole inserts of the M16 series for power and/or signal transmissions. An integrated seal in the flange also guarantees an IP67 degree of protection. Twintus is available as a M16/M12 version.

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## *TWILOCK locking system*

The TWILOCK system is a simple and highly reliable quick-release fastening system for circular M16 and M23 plug-in connectors and the Twintus plug-in system from Hummel. TWILOCK is resistant to vibration loads and guarantees protection of IP67/IP69K (mated). It only takes one slight twist to lock and unlock the connector, making it easy for one-hand assembly and for use in places that are difficult to access or have limited space available.



## *M23 RJ45 connectors*

Hummel's range of M23 RJ45 connectors is perfect for rough environments and is designed in a way that it offers a simple and reliable connector solution. The design allows for terminated patch cables and also integrates a coupler to accommodate the use of universal patch cables. Because of the integrated cable strain relief, the connector also ensures an IP67/IP69K protection at all times. Altogether, this makes the range ideally suitable for any type of robust application.



### *M23 hybrid connector*

Hummel recently completed its M23 range with a hybrid connector series offering a fully integrated solution for Industrial Ethernet applications. This extraordinary hybrid connector allows for the simultaneous transmission of power, signals and Ethernet and can easily reach a speed of 500 Mbits/s. This is achieved thanks to the possibility to connect individual shieldings separately, thereby preventing cross talking. The M23 hybrid connector combines data transmission per CAT 5e standards with high power processing up to 28A and 630V. At the same time it is resistant to vibration loads, guarantees an IP67/IP69K protection and allows for compatibility with any type of housing and locking system (including TWILOCK quick connect system).



### *M23 Fast Ethernet PoE*

The M23 Fast Ethernet PoE connector combines power and data transmission up to Gigabit rate. This multibus II-compatible connector series provides a unique configuration of 4 Twinax inserts and 12 additional contacts for maximum power density in an M23 housing. The smart end-to-end shielding of data inserts prevents cross talking from occurring. This connector also offers an IP67 rate of protection in mated condition and is ideal for use in rough, industrial environments.



Provertha specialises in high-quality D-sub and M12 connectors for the safe & secure data and signal transfer in industrial networks and automation applications with extremely high requirements. The versatile range of connector designs together with more than 200 different types of hoods, intelligent locking systems and a complete program for field bus systems (Profibus, CAN bus and Profinet) make Provertha a valued partner in the European industrial automation industry.



## *Endless hood possibilities*

With more than 20 different types of D-sub hood systems, Provertha ensures the right hood for every application. The range includes a great variety of D-sub (metalized) plastic hoods and (robust full-metal) die-cast hoods with a 45°, 90°, 180° cable exit option as well as one, two or three cable exits for field bus applications. Provertha's range of hoods are especially known for their fast and easy mounting due to their practical design and a minimum number of parts involved. A leading example of this is the innovative QuickMount D-sub hood system where locking screws are already pre-mounted to enable a simple, secure and quick field assembly.

## *Quick Lock system*

The innovative Quick Lock system for D-sub connectors with its push-pull system ensures an easy, fast and secure locking of D-sub cable connectors to its mating connector. This system allows a fast and comfortable one-hand assembly with blind mating even in places that are difficult to access.



## *D-sub connectors*

D-sub connectors from Provertha offer sustainable, gold-plated contacts available:

- in three quality classes, ranging from 50 to 500 mating cycles
- as a filtered, high density, mixed layout & power D-sub connector design
- with turned, IDC or stamped contacts

To further simplify the soldering of wires, Provertha's D-sub connectors are all equipped with pre-tinned contacts.





*M12 D-code connector*



*M12 connector range*



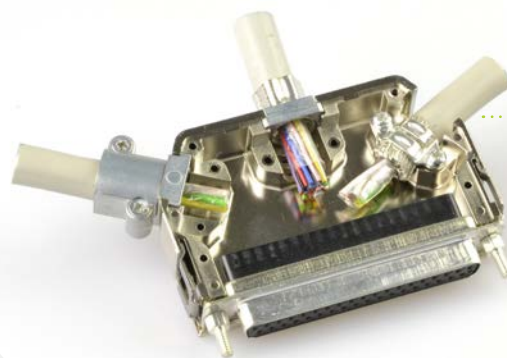
*M12 B-code connector*



*Angled M12 D-code connector*

## *M12 A/B/D/X code connectors*

Provertha offers the smallest M12 A,B,D and X code connectors for secure field connections in CAN-Bus, Profinet and Profibus applications. These robust connections are IP67 protected and guarantee a function-safe data transmission due to a special 360° EMI/RFI crimp flange system that ensures a vibration and torsion free cable strain relief. The full-metal housing prevents damage under harsh environmental conditions. M12 connectors enable a fast and fail-safe assembly in the field due to pre-mounted sub-assemblies. The M12 range is available in a straight and angled version and is certified according to NFF, DIN EN 61373 and DIN EN 61076-2-101.



## *Multiple cable clamp and cable entry possibilities*

With Provertha, it is up to you to determine the right positioning of the cable entry and the most suitable cable clamp. To create an effective strain relief, Provertha offers three types of cable clamp solutions, e.g. an internal, external and a 360° EMI/RFI crimp flange. The internal cable clamp provides a compact shielding and a great deal of flexibility, allowing you to use any size of cable diameter. The external cable clamp as well as the 360° EMI/RFI crimp flange (cable diameter 4mm - 16mm) ensure the safest cable shielding and therefore guarantee the highest reliability.



*Bus connector with internal cable clamp*

*Bus connector with external cable clamp including crimp flange*

*Plug & play M12 connector*

*Combined plug & play connector with external cable clamp version including crimp flange*

## ***Busconnectors***

Provertha offers a complete bus connector range for CAN-bus and Profibus networks. The plug & play bus plug series guarantees a function- and fail-safe bus connection within seconds. The CAN-bus connector program provides both internal and external cable clamp versions. Due to their full-metal housing with 360° EMI/RFI shielding, models with internal cable clamp are ideally suited for safe field assembly in harsh environments. Versions with external cable clamps also accommodate special cables with larger diameters such as drag chain cabling. For applications with elevated requirements on cable strain relief and shield connection, Provertha also offers CAN bus connectors with a crimp flange.

Bus connectors are available in either an axial (180 ° cable outlet to plug direction), compact (90 °) or special (35 °) version and feature a completely shielded zinc die-cast housing. Bus termination is done through an externally controllable, robust switch lever.



# BINDER



## *Power connectors*

The 692/693 power connector range is one of the leading series within Binder. These robust, screw locking machine connectors are designed for rated currents up to 16A and offer an IP67 protection degree. They are available with solder, screw or crimp terminals and VDE, SEV and UL approval. Binder power connectors are widely used within many types of applications like instrumentation, medical, machine tools and robotics.

The strength of Binder's power and sensor connectors is the huge variety of available options and designs, all according to various standards (IP67/IP68/IP69K).



M12



M8

M5

## *M5, M8 and M12 Sensor connectors*

The Binder sensor connector range comprises different types of M5, M8 and M12 connectors. These connectors are either IP67 or IP68 protected and are available in shielded and unshielded versions. They have a compact design and are available as cable, panel-mount and flange connectors. With standard screw termination on the M5, M8 and M12 products, sensor connectors ensure rational and economic system wiring. With a range of compatible connectors, sockets and accessories, Binder sensor connectors can be flexibly configured, making them suitable for a wide range of requirements in the field of automation technology.

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## *M12 X-code connectors*

The Binder M12 X-code connectors transmit data up to 10 Gbit/s and are therefore ideal to use for industrial network applications in harsh environments. The high bandwidth is guaranteed by isolating the four pairs from one another with an X-shaped shield. The M12 X-coding conforms to IEC 61076-2-109 to ensure connector compatibility throughout the world. The series consists out of overmolded male M12 double-ended cordsets, male M12 to male RJ45 CAT6A cordsets and a field-attachable connector with IDC termination to ensure an easy assembly to a customized cable.



## *M12 S & T-code connectors*

Binder's M12 S & T-code connectors are one of the latest additions to the M12 product range. The S & T-coding are there to eliminate any possibility of mismatching with other M12 connectors. These IP67 connectors can handle up to 12 A per contact and are therefore ideally suited for power supplies in automation network environments.



## *NCC connector*

The Binder NCC 770 series offers the perfect solution for applications within measurement and control, medical and machine building industries that need to guarantee a protection degree of IP67 at all times. With a unique sealing mechanism hidden inside the connector, the contact elements are protected against water, dirt and foreign particles, even when they are not mated. Meanwhile, the contact elements remain touch proof, meaning that they are also protected against manipulation. The NCC connector has a bayonet locking and offers a cable outlet of 2,5 - 8mm. The connector is easy to assemble and has >5000 mating cycles.



## *HEC connector*

The HEC 696 connector combines its hybrid (signal & power) features with a tough character. It perfectly meets the growing degree of automation within applications operating in harsh environments like agriculture, building machines and traffic and signalling technology. Binder's HEC connector is resistant against climatic influences, industrial and chemical substances. With a guaranteed IP68 and IP69K degree of protection, the HEC connector is able to withstand powerful high-pressure and high-temperature water jets. A 3-point bayonet locking mechanism ensures a safe, secure and fast locking and prevents any wrong connection from occurring. The HEC connector design is further completed with crimp contacts to ensure a secure, vibration-proof contact.

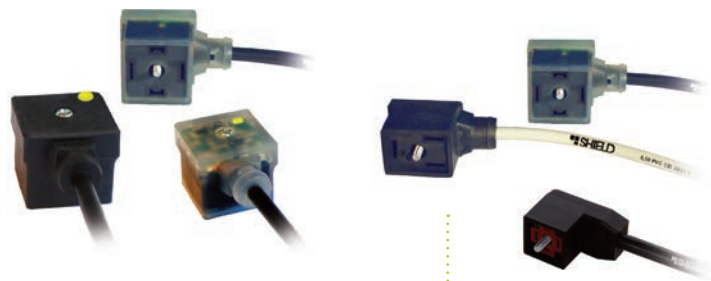
# SHIELD



Shield offers a wide range of M8/M12 connectors, middle power connectors, electrovalve connectors and distribution boxes. The strength of Shield mainly lies in their ability to design customized solutions. The short lead times, the possibility of having small customized lots and the extensive range of special cables make Shield a popular brand within A&C Solutions' portfolio.

## Spiderboxes

A spiderbox is commonly used within hydraulic applications and is seen as the most suitable connector solution to effectively reduce the quantity of wires directed towards the mainboard. Shield allows a great deal of freedom to build customized spider boxes. These can vary from very simple connections to complex bonded junctions that can be wired, overmolded and assembled with shielded or unshielded cables. Shield's spiderboxes can link up to 20 cable connections. Standard and custom built-in circuits are available to meet customers' needs.



## Electrovalve connectors

Electrovalve connectors (DIN 43650) with built-in gaskets are available as screw and molded version. With a PUR connector housing, these connectors are perfectly resistant to oil. A great variety of circuit board solutions can be integrated depending on the customer's requirements.



## Distribboxes

Distribution boxes with IEC 61076-2 M8 and/or M12 sockets are used more and more frequently in the connectivity industry. They can be applied in numerous fields such as industrial hydraulic, pneumatic and electrical automation, lighting systems, trucks and construction equipment.

Shield offers various top and side mounting (spider) distribution boxes with M8 and/or M12 sockets. These space saving distribboxes are available in double or triple line and can include 2 up to 15 sockets with 1 to 3 signals each. On request LED signaling can be included. Shield's range of distribution boxes are ideal to connect sensors and actuators.

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### *Electronic box for lighting information*

Shield's distribox can also be used for lighting arrows or coloured signals. This compact, weightless distribox is waterproof and offers a high efficiency and low consumption.

### *Circular M8/M12 connectors*

M8 and M12 connectors are available with Shield in both screw and molded version and can be provided upon request with different special cables. M8 connectors range from 3 to 5 poles, M12 connectors reach up to 12 poles. The whole range has an integrated anti-vibration system and complies with various IEC standards.



### *Middle power connectors*

Wide choice of circular angled or straight 7/8 inch middle power connectors with shielded or unshielded cables and current ratings up to 12A, 600V. Within this range, Shield allows a high level of customization when it comes to cable material, gender configuration and number of poles (from 2 to 25). 7/8 inch connectors are mostly used for small motors or distribution boxes.



### *Magnetic switches*

Shield offers a great variety of magnetic switches with top or side assembly versions for motion & control applications that involve a cylinder. These switches either have a reed or an electronic control system and can easily be fixed with different brackets on any type of magnetic cylinder. Depending on the customer's preference, the reed switches are available with either open or closed contacts and can be delivered with direct cable or with an M8 plug.



# TECHNO



Techno is fully dedicated to the design and in-house development of innovative injection moulded connector solutions for waterproof applications. One of the leading series within Techno is the xDRY range, containing a mix of fixed and plug & socket connectors, that offers a quick installation and an IP68 degree of protection at all times. Part of the range even has an extra anti-condensation shield. This shield prevents moisture condensation, which runs through the cable, from entering the connector, thereby protecting applications in critical conditions of use.



*Plug & socket connector*

With a threaded locking nut and special designed gaskets, this plug & socket connector ensures a safe locking and a maximum protection of your application.



*Junction connector*

available as anti-condensation version



*In-line cable joiner*

available as anti-condensation version/moulded cable

*Plug & socket connector*

available as panel mount/  
moulded cable version

*Tube connector*

Tube connectors offer interchangeable terminal blocks allowing for maximum user flexibility. They are also perfectly resistant to humidity, chlorine and fluctuations in temperature (-50°C up to +110°C).



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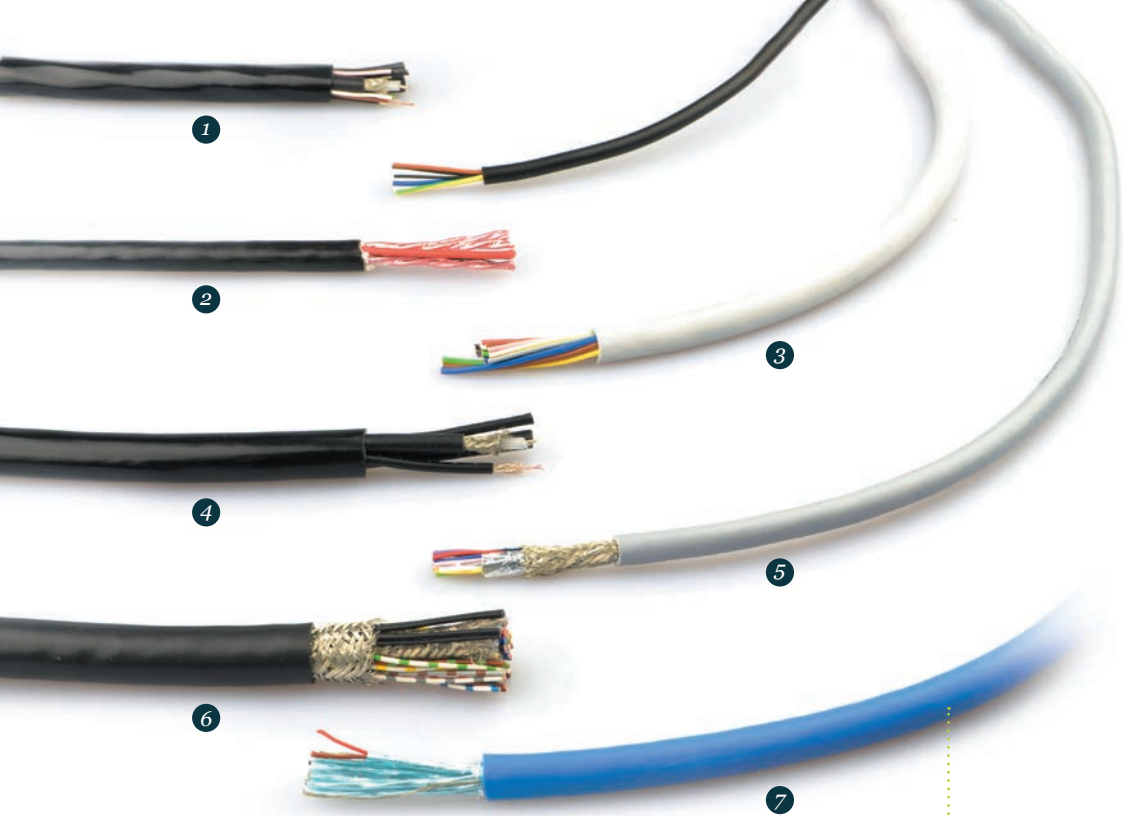


# SPECIAL CABLES

A&C Solutions can also be your partner when it comes to your special cable needs. The range of special cable services go from simply printing the outer jacket with your company name to the complete assembly of a customized cable according to your requirements.

A&C Solutions manufactures hybrid cables of 0,05mm<sup>2</sup> to 10mm<sup>2</sup> with a maximum outside diameter of 30mm. For the insulation of your cable, you can choose from the following materials:

- All types of PVC: flame retardant, oil resistant etc.
- PE / PP / PPE / XL-PE
- TPE-E, ideal as chain cable or spiral cable
- TPE-V, mainly used for cables in the food industry and also medical industry
- PUR, also available in version flame retardant and low smoke zero Halogen



- 1 Hybrid cable with 6 data wires and RG 58 & RG 174
- 2 Twisted pairs, individually shielded together with power supply wires
- 3 Combination of different wire sizes
- 4 Coax cable with 6 x RG 174
- 5 Shielded, twisted pairs
- 6 Hybrid cable with different wire sizes, some are separately shielded
- 7 Twisted pairs, individually shielded

# CABLE HARNESSES



When you need to design your connector into a cable assembly, A&C Solutions can provide you with an interesting alternative to do this in-house at attractive conditions.

A&C Solutions works with various, certified (ISO9001) production locations in Eastern Europe and China. These plants are specialised in cable assemblies and are fully equipped with the latest technology to ensure optimal cost-efficiency.

Being a connector distributor, A&C Solutions is able to offer you the best match in custom assembly because it has:

- the stock
- the right knowledge
- the right connector tooling
- and the best price

This means that by assembling your connector with A&C Solutions, you will decrease your direct- and indirect costs substantially and at the same time you are assured that your connector is assembled according to your specifications.



*Electric container spreaders*



*Agricultural machinery*



*Production site China*



*Agricultural machinery*



*Measurement & Control*



*Measurement systems*



*Motor drives*



*Power supply*