



DRIVES & MOTORS

Connectivity and Filtering Solutions for Variable Speed Drives



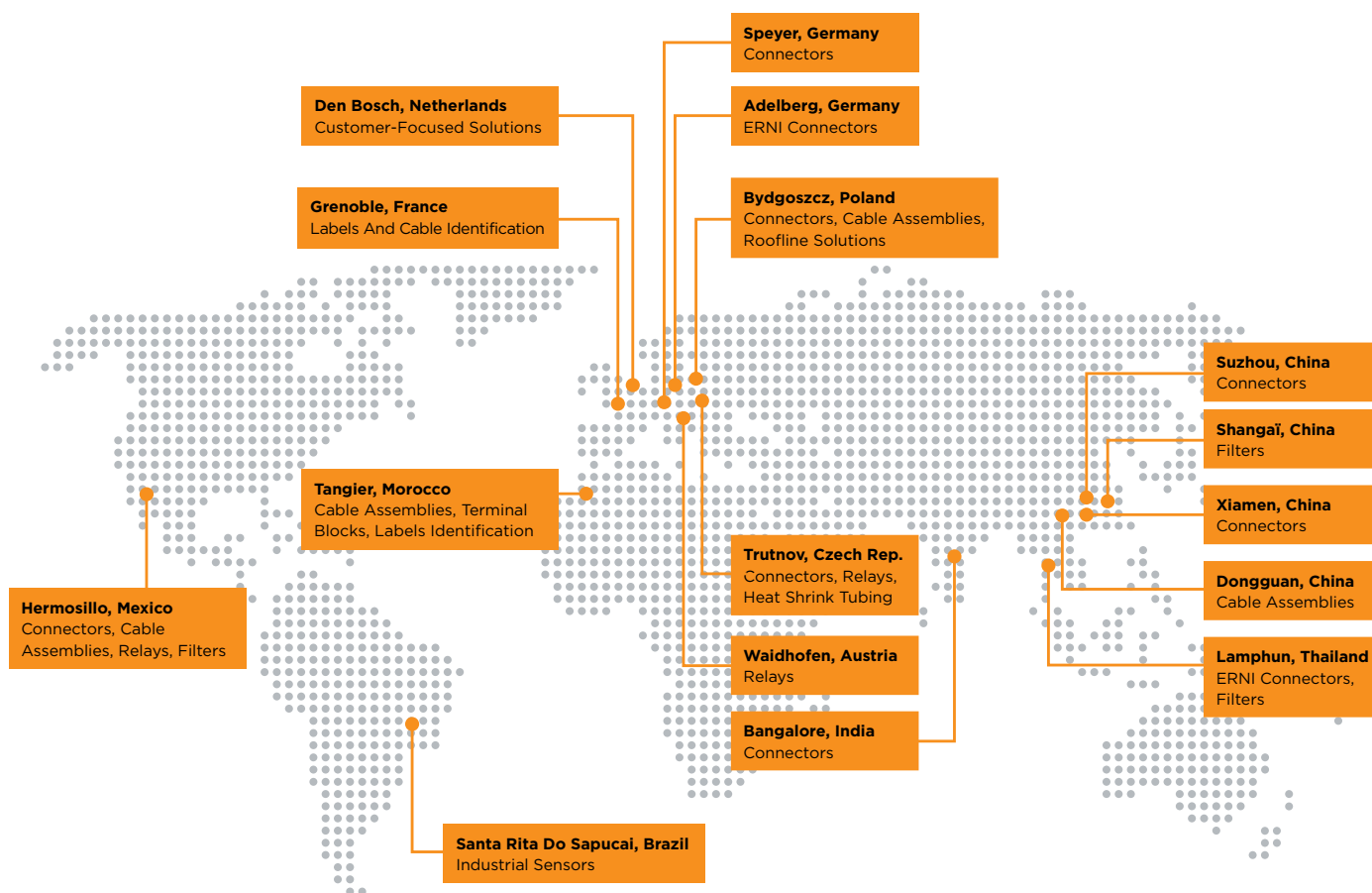
LET'S CREATE THE CONNECTIONS THAT COUNT.

TE Connectivity (TE) is a \$16 billion global leader in connectivity. The company designs and manufactures components at the heart of electronic connections for the world's leading industries, including automotive, energy and industrial, broadband communications, consumer devices, healthcare, and aerospace and defense. TE's long-standing commitment to innovation and engineering excellence helps its customers solve the needs for more energy efficiency, always-on communications, and ever-increasing productivity. With nearly 90,000 employees in more than 50 countries, TE makes connections the world relies on to work virtually flawlessly every day.

To connect with the company, visit te.com.

EVERY VISION IS MORE THAN JUST A COLLECTION OF GOOD IDEAS.

Connecting and Protecting the Flow of Power, Data, and Signal in Automation



Industrial Products Main manufacturing locations

Industrial production is increasingly driven by higher automation, improved safety, and greater energy efficiency. You can count on TE to work with you every step of the way to develop solutions for your production processes. TE designs and manufactures components and solutions that connect and help protect the flow of power, data, and signal — in many parts of our lives. We support smarter, faster, better technologies to connect materials to end products. This has made us a globally successful company — a world leader in automation and control technology. When it comes to providing the perfect solution, we meet every challenge.

Our broad electromechanical and electronic product portfolio covers your needs in a wide variety of production environments, ranging from simple machinery equipment to

fully integrated factory automation and process solutions. Our trained, skilled engineers are driven to create something brilliant with you, and our outstanding customer support results in an extraordinary customer experience.

With TE as your innovation partner, you'll find everything you need to create and operate a cost-efficient and highly reliable production process. We are at our best when we work with your early design product and process management teams to get the job done right from the start. We also offer continuous improvement programs that give you a real competitive advantage. Because you can't achieve greater productivity and efficiency without better connectivity.

Visit te.com to call, live chat, or email a product specialist today about your vision and connectivity needs.

SMART TECHNOLOGY FOR MOTOR CONTROL.

TE's advanced connectivity and filtering solutions support the performance, efficiency, and reliability of variable speed drives—contributing to smarter, more energy-efficient industrial systems.

Variable speed drives (VSDs) are playing an increasingly critical role in today's smart factories and intelligent buildings. As industries move toward greater automation, the ability to precisely regulate motor speed is key to improving energy efficiency, reducing operating costs, and increasing system responsiveness. Whether used in HVAC systems, industrial production lines, or commercial equipment, VSDs help optimize performance while adapting to varying load conditions.

As the demand for faster, more compact, and more efficient drive systems continues to grow, so does the need for highly reliable electrical and signal connections. High-speed data transmission, secure power interfaces, and robust filtering solutions are essential to maintain system integrity and reduce electromagnetic interference — especially in dense, high-performance environments.

At TE, we are committed to supporting your evolving application needs by offering connectivity and sensor solutions designed specifically for VSD environments. Our portfolio includes advanced relays, board-to-board connectors, and EMI/EMC filters that help maximize signal integrity and energy efficiency. We collaborate closely with VSD manufacturers to develop custom, future-ready solutions — empowering you to meet market demands with reliable, compact, and scalable designs. Together, we enable next-generation drives that are smarter, more efficient, and more competitive.



TE PROVIDES INDUSTRY-LEADING SOLUTIONS FOR VARIABLE SPEED DRIVES.

From the Printed Circuit Board (PCB) level to the production line, in challenging production conditions, almost anywhere in the world.



TECHNOLOGY NEEDS AND TE ELECTRICAL SOLUTIONS

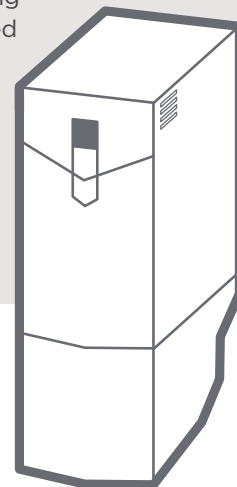
WHAT YOU NEED	WHY YOU NEED IT	HOW TE CAN HELP
Energy Efficiency & Sustainability	VSD manufacturers prioritize sustainable materials and energy efficient components to reduce losses.	TE is reducing CO ₂ emissions by replacing intensive materials, enabling sustainable alternatives, and guiding greener decisions through its sustainability product scorecard and innovative material strategies.
EMC and Power quality compliance	Input & Output filtering to reduce interference with surrounding equipment and meet electromagnetic compatibility standards	TE's Schaffner and Corcom filters offer compact, highperformance single and three phase EMI filters, active and passive power quality filters, chokes for input and output protection of variable frequency drives to meet international safety, EMC and power quality regulations.
Predictive Maintenance	To reduce unplanned downtime and protecting both drives and motors from failure	TE's portfolio meets the growing demand for high-performance communication connectors that combine robustness with the transmission of real-time data to central monitoring systems.
Functional Safety	Advanced safety functions require more sophisticated drive control	TE provides a wide range of board-to-board connectors to connect optional safety modules and connectors (such as Mini I/O). This allows closed-loop feedback from an encoder, for example.
Decentralized Drives architecture	To reduce panel space, simplify the cabling and enhance modularity for flexible machine design	TE's connectivity solutions are designed for rugged, compact, and high-speed conditions to support distributed power, real-time communication, and harsh environmental conditions.

VARIABLE SPEED DRIVES

Variable speed drives, also known as variable frequency drives (VFDs) or inverters, enable precise control over the speed and torque of electric motors. Unlike fixed-speed setups, VSDs allow for adjustable motor speeds, enhancing energy efficiency and facilitating tailored performance for diverse applications. By varying the frequency and voltage supplied to the motor, VSDs offer flexibility, energy savings, and improved process control, making them significant in industries ranging from manufacturing to HVAC systems.

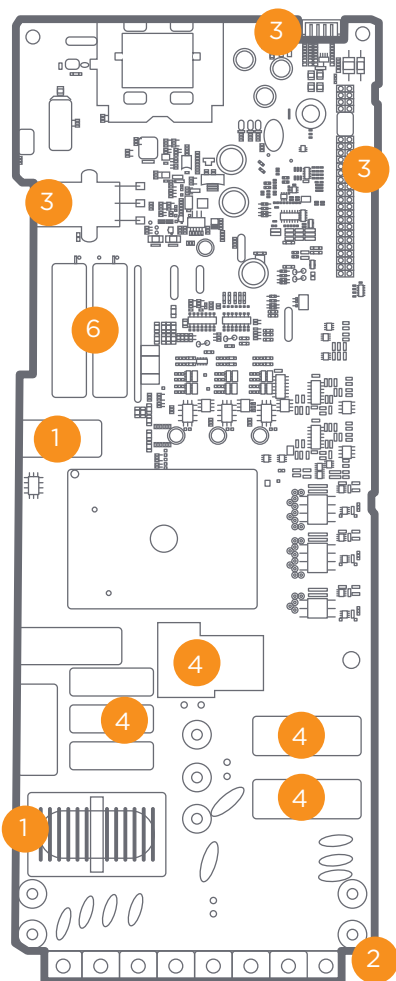
Range of VSDs can go from small size (few kW) to very high power range (Megawatts) for mining, petrochemical or large-scale manufacturing industries.

There is a growing demand for decentralized architectures placing drives closer to motors – reduces panel space, simplifies cabling, and enhances modularity for flexible machine design. This increases the need for modular machine solutions and compact and rugged connectors that allow miniaturization.

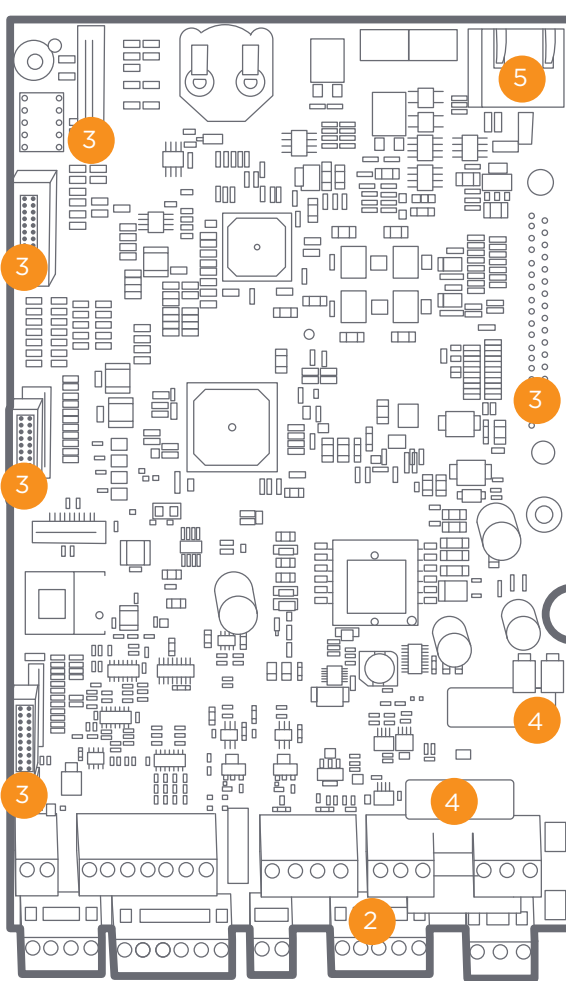


VARIABLE SPEED DRIVE TEARDOWN : INTERNAL COMPONENT

POWER BOARD:



CONTROL BOARD:

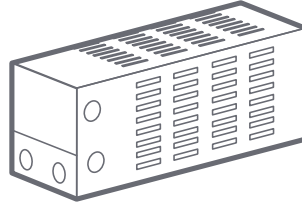


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|-----------------------|-----------------------------|----------------------------|
| 1 EMC/EMI CHOKES | 3 BOARD-TO-BOARD CONNECTORS | 5 COMMUNICATION CONNECTORS |
| 2 I/O TERMINAL BLOCKS | 4 RELAYS | 6 POWER RESISTORS |

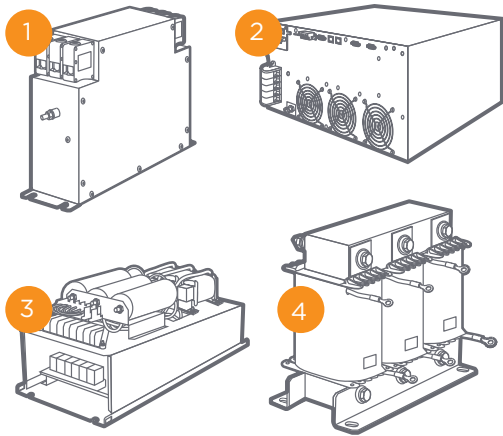
VARIABLE SPEED DRIVES

VARIABLE SPEED DRIVE TEARDOWN : EXTERNAL COMPONENT

BRAKING RESISTORS

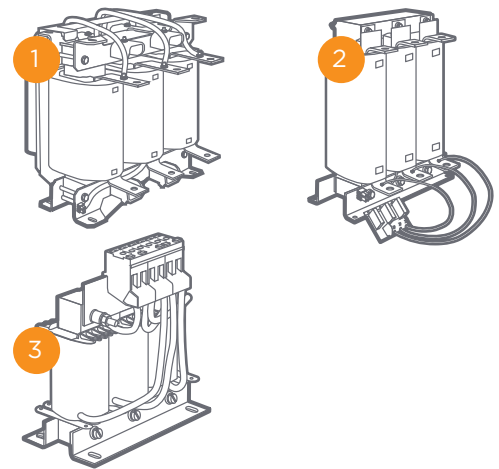


INPUT FILTERS & POWER QUALITY PRODUCTS



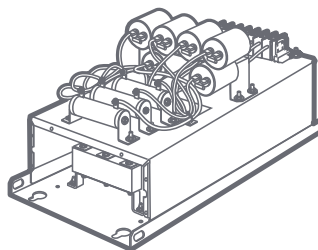
- 1 3 PHASE EMC/RFI FILTERS
- 2 ACTIVE HARMONIC FILTERS
- 3 PASSIVE HARMONIC FILTERS
- 4 INPUT CHOKES/REACTORS

OUTPUT FILTERS & REACTORS



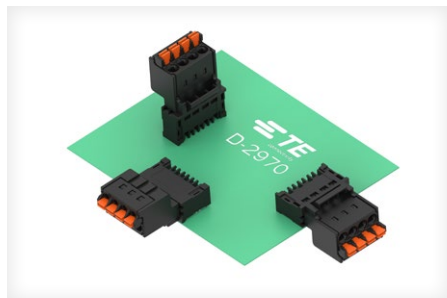
- 1 SINUS/SINE WAVE FILTERS
- 2 OUTPUT FILTERS
- 3 OUTPUT CHOKES/REACTORS

LCL FILTER FOR AFE MOTOR DRIVES



AFE: ACTIVE FRONT END

INPUT/OUTPUT TERMINAL BLOCKS



Specially tailored for power connections in a small space.

BENEFITS:

- Efficient, reliable, and safer connectivity
- Excellent resistance to vibration and shock
- High-temperature versions available
- Extensive portfolio of designs for application flexibility
- Easier installation and maintenance

TE featured products:

Dynamic X950 Spring-Clamp Connector
Dynamic D-2970 Push-In Connector
Euro Style Terminal Blocks
Europa Terminal Blocks

PCB CONNECTORS



Highly reliable connectivity and high contact density for board-to-board and wire-to-board connections.

BENEFITS:

- Small size to occupy as little space as possible on the PCB
- Design flexibility via a comprehensive portfolio
- Reliable performance
- Modular design capability
- Reliable connectivity

TE featured products:

ERNI MicroSpeed Connectors
ERNI SMC Connectors
ERNI MicroCon Connectors
ERNI MicroStac® Connectors
ERNI Power Taps
AMPMODU Connectors
AMPMODU Mini VP Connectors
AMPMODU Micro Stack Connectors
Micro-MaTch Connectors

COMMUNICATION CONNECTORS



Supporting rugged standard data connectivity.

BENEFITS:

- Functionality in harsh and rugged environments
- Highly reliable rugged and cost-effective design
- Easier installation
- Large portfolio of styles and designs
- Small footprint that provides flexibility

TE featured products:

Mini I/O Connectors
RJ45 Connectors
Industrial USB Connectors

EMC/RFI POWER FILTERS



Wide range of single-phase and three-phase EMC/EMI filters available.

BENEFITS:

- High performance
- Compact design
- Variety of terminal connection options
- Certified to meet ratings
- Meets local and international standard

TE featured products:

Corcom EMI Single-Phase Filters

Corcom 3-Phase Power Filters

Schaffner EMC/EMI 3-Phase Filters

Schaffner EMC/EMI 3-Phase Filters With Neutral

POWER QUALITY FILTERS



Wide range of power quality filters and input/output chokes.

BENEFITS:

- High performance
- Compact design
- Variety of terminal connection options
- Certified to meet ratings
- Meets local and international standard

TE featured products:

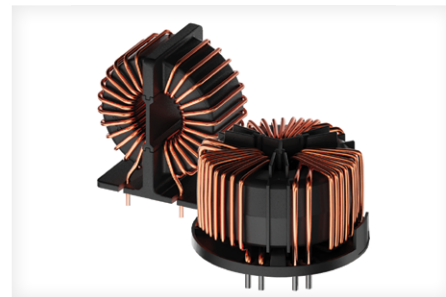
Schaffner Harmonic Filters (Passive and active)

Input chokes/reactors

Output chokes/reactors

LCL filters for AFE

EMC/EMI CHOKES



Current-compensated chokes with nanocrystalline core and ferrite core options. Offering standardized and customer-specific solutions and full engineering support.

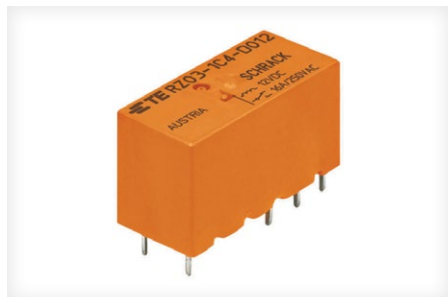
BENEFITS:

- Cost-effective PCB designs for up to 100 A with forced cooling
- EIS (electrical insulation system E332676) for currents > 20 A acc. to UL 1446
- Compact size and light weight
- Low magnetic leakage flux
- Excellent winding insulation
- Standardized foot print
- Broad range of inductance ratings
- Custom-specific versions on request

TE featured products:

Schaffner EMC/EMI Chokes

RELAYS



High variety of problem-solvers from low load to high current switching.

BENEFITS:

- Broad portfolio
- UL- and VDE-certified products
- Redundant production lines to help secure supply
- Excellent endurance in harsh environments
- European-based manufacturing

TE featured products:

SCHRACK RT Power PCB Relays

SCHRACK RZ Power PCB Relays

T9G Power Relays

T92 Power Relays

POWER RESISTORS



Helping to enable high-precision electronics, plus board-circuit control and safety stop.

BENEFITS:

- More reliable, high-performance solutions
- Cost-effectiveness
- Broad portfolio of size and style options
- Wide tolerance range

TE featured products:

Cement Housed Power Resistors

BRAKING RESISTORS



Braking resistors for harsh environmental conditions and high-power requirements.

BENEFITS:

- High power and high temperature tolerance
- Different housing and mounting styles to support compact and ergonomic system design
- Product compliances that allow for safer operation in your application

TE featured products:

Chassis Mount Resistors

Wire-Wound Power Resistors

SWITCHES



Reliable, high-performance solutions designed to withstand extreme shock, vibration, temperature, and altitude.

BENEFITS:

- Cost-effective
- Broad offering of PCB and panel mount options from DIP and tactile to power toggle/rocker and emergency stop switches
- Broad portfolio of switches and switch accessories available, including knobs, caps, boot seals, and hardware

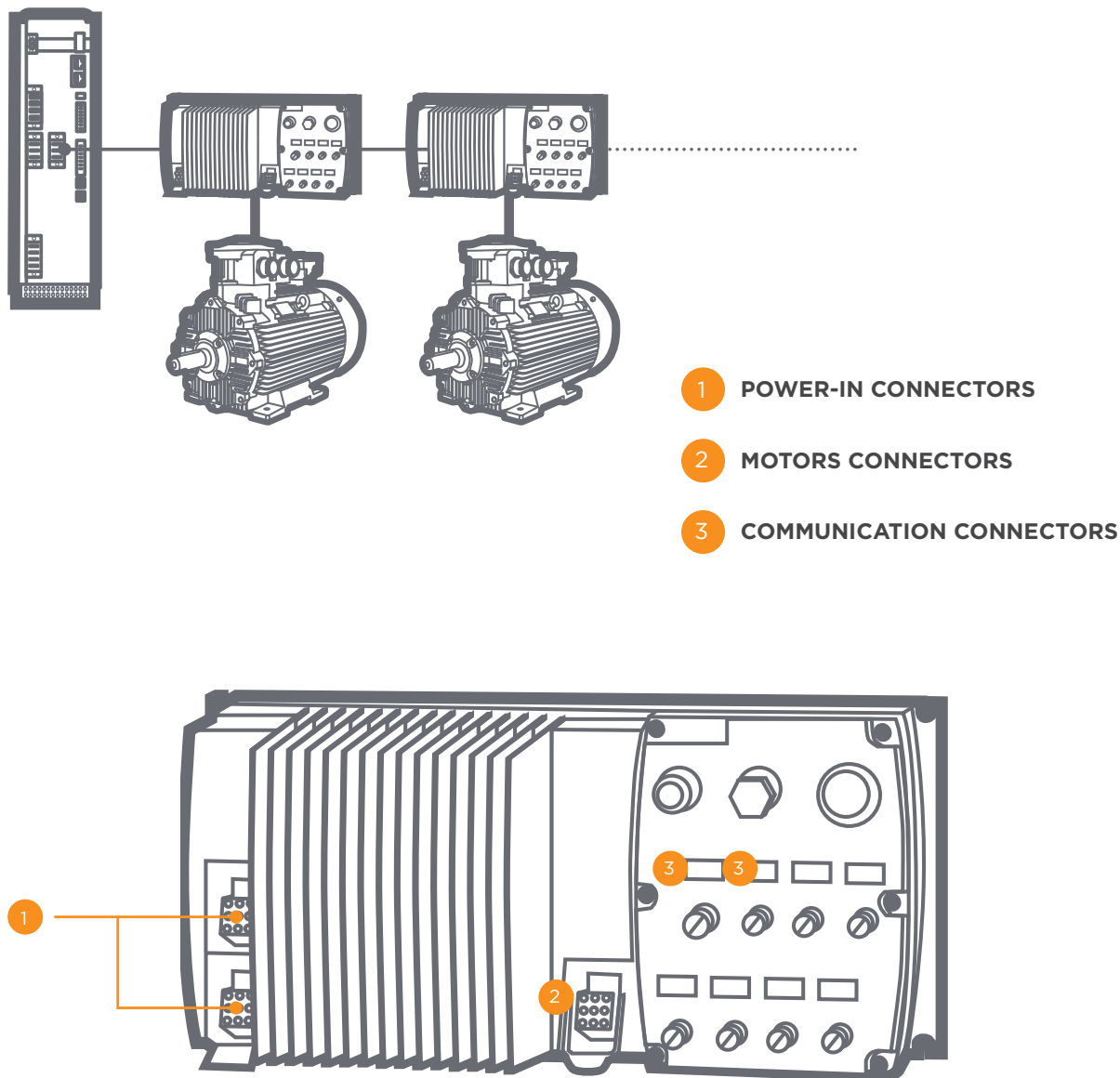
TE featured products:

[Switches](#)

DECENTRALIZED VARIABLE SPEED DRIVES

Decentralized variable speed drives bring control directly to the machine, mounting near or on the motor to simplify wiring, reduce cabinet space, and boost installation flexibility. Ideal for modular automation, they enable faster commissioning, lower energy losses, and real-time diagnostics—making them a key solution for efficient, Industry 4.0-ready systems.

DECENTRALIZED DRIVE



HEAVY-DUTY CONNECTORS



Designed to transmit power, data, and signal in the toughest of conditions.

BENEFITS:

- Multiple options to meet application needs more accurately
- Flexible designs so customers can create a DIY interface for their equipment
- An industry standardized interface combined with TE's global footprint to help reduce customers' supply chain risks

TE featured products:

HDC Connectors

HYBRID CIRCULAR CONNECTORS (INTERCONTEC)



Reliable performance under harsh conditions.

BENEFITS:

- Quick and easy installation thanks to plug-and-play SpeedTec locking system
- Special crown clamp that provides virtually tool-free shield termination
- Helps save installation space, time, and cost via power, signal, and data in one connector
- High EMC/EMI standard thanks to 360 shielding, along with rugged shock- and vibration-resistant design
- Sealed solutions IP66/67 or higher

TE featured products:

INTERCONTEC Connectors

COMMUNICATION AND I/O CONNECTORS



Helping to enable rugged and reliable data connectivity.

BENEFITS:

- Design that is functional in harsh and rugged environments
- Small size that provides flexibility
- Easier installation
- Available hybrid solutions

TE featured products:

Mini I/O Connectors

M8/M12 Connectors

CONNECT WITH US.

Get answers to your questions now.

TE has a breadth of products to solve your application demands. Learn more about variable speed drives or servo motors and drives, or request a sample or drawing. We make it easy to connect with our experts and are ready to provide the support you need, including:

- [Motion and drives product information](#)
- [Discussions with TE engineers and product experts](#)
- [Project consultations](#)
- [TE design resources](#) and [tools](#)

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BROCHURE

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