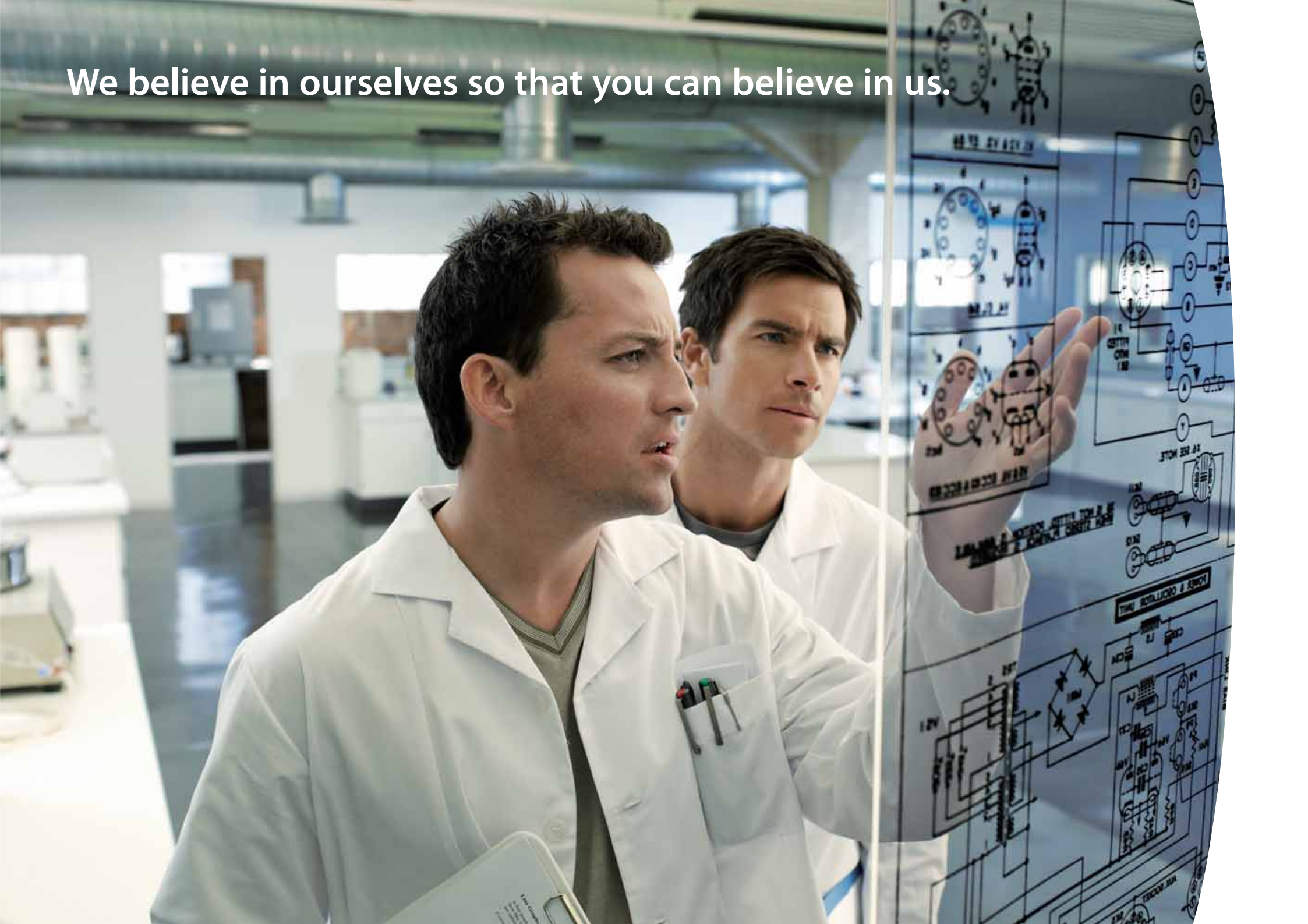




*Microelettrica Scientifica*

A new way of envisioning the future.

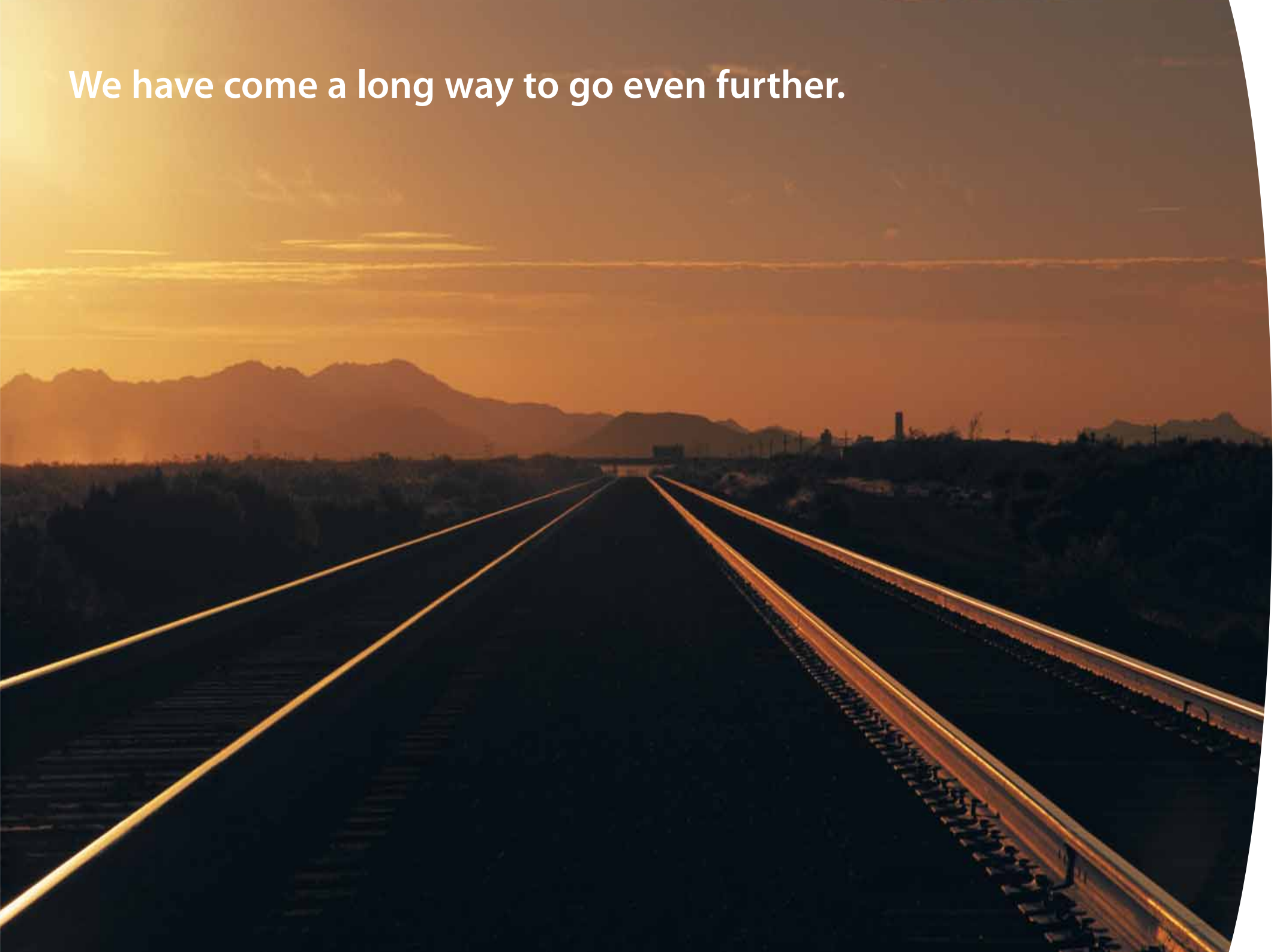
We believe in ourselves so that you can believe in us.



They say that if you want something done right, you have to do it yourself. That's why, for more than 50 years, we have been engineering and developing our products autonomously together with our clients, and we manufacture them exclusively in our plants. In this era of globalisation, it may seem strange. But it works. In fact, it works so well that we are and we continue to be a world leader in electronic and electromechanical components for rail, urban mobility and industrial applications.



**We have come a long way to go even further.**



Over 50 years of history to create an image of seriousness, competence, quality and reliability, recognised and respected worldwide. Since our first laboratory in the heart of Milan to our current global industrial network, scenarios, objectives and perspectives have changed. But the will to stand out and establish ourselves with our own forces and resources is still as strong as the first day we set out.



#### '50s to '60s

1953 - Founded

#### '70s to '80s

1970 - Resistors added to product portfolio

1975 - First electronic protection relay

1980 - First Railway on Board contactors "LT" and strip element resistors

1985 - Move in new Rozzano premises

#### '90s to today

1990 - First major contracts on European market

1997 - Establishment of Microener

1999 - Establishment of Microdigit s.r.l. and MS Resistances

2001 - Establishment of Microelettrica USA

2002 - Establishment of new Lacchiarella facility

2003 - Establishment of Microelettrica South Africa and acquisition of Power Devices

2005 - 70% Knorr Bremse takeover

2007 - 100% Knorr Bremse takeover

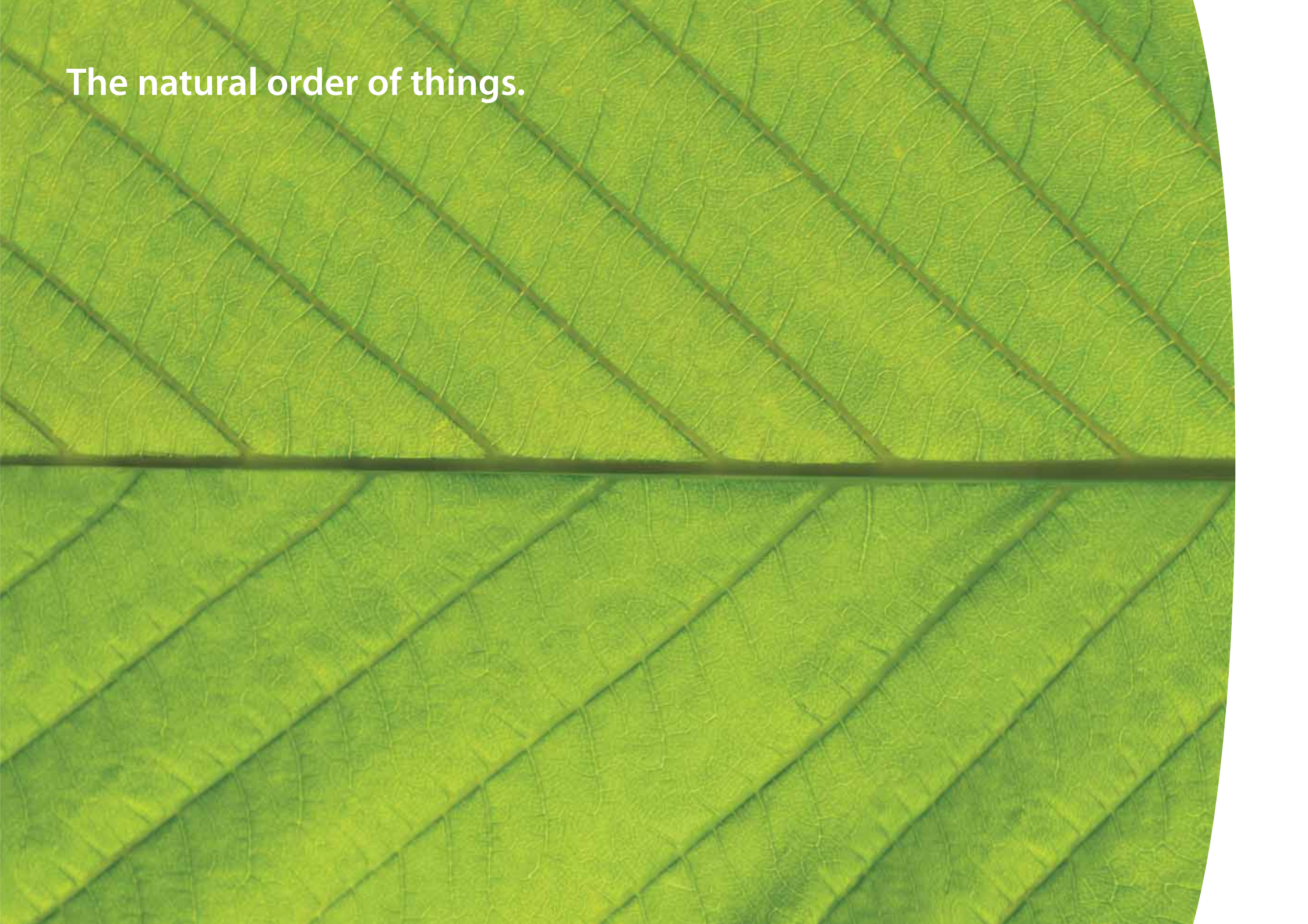
2008 - Re-merge of Microdigit

2009 - Acquisition of Officine De Zan S.r.l.

2009 - Acquisition of EMC Traction S.r.l.

As of 2005 Microelettrica Scientifica is a member of Knorr-Bremse Group, the German world leader in rail and commercial vehicles braking systems.

The natural order of things.



Microelettrica is structured on Product Divisions (product management, engineering, validation, purchasing, production) and Cross Division Functions (regional sales, quality coordination, sourcing, etc) deployed over 10 Facilities. While core activities are concentrated in Italy, 6 foreign subsidiaries or localizations ensure our Global Presence together with a network of over 30 commercial partners.

**PRODUCT DIVISIONS**

- SWITCHES** Contactors and Disconnectors for all applications
- RESISTORS** Power Resistors for vehicles and stationary application
- ELECTRONICS** Digital and Analogic Relays and Transducers
- EMC TRACTION** DC High Speed Circuit Breakers and DC Switchgears

**CROSS DIVISION FUNCTIONS**

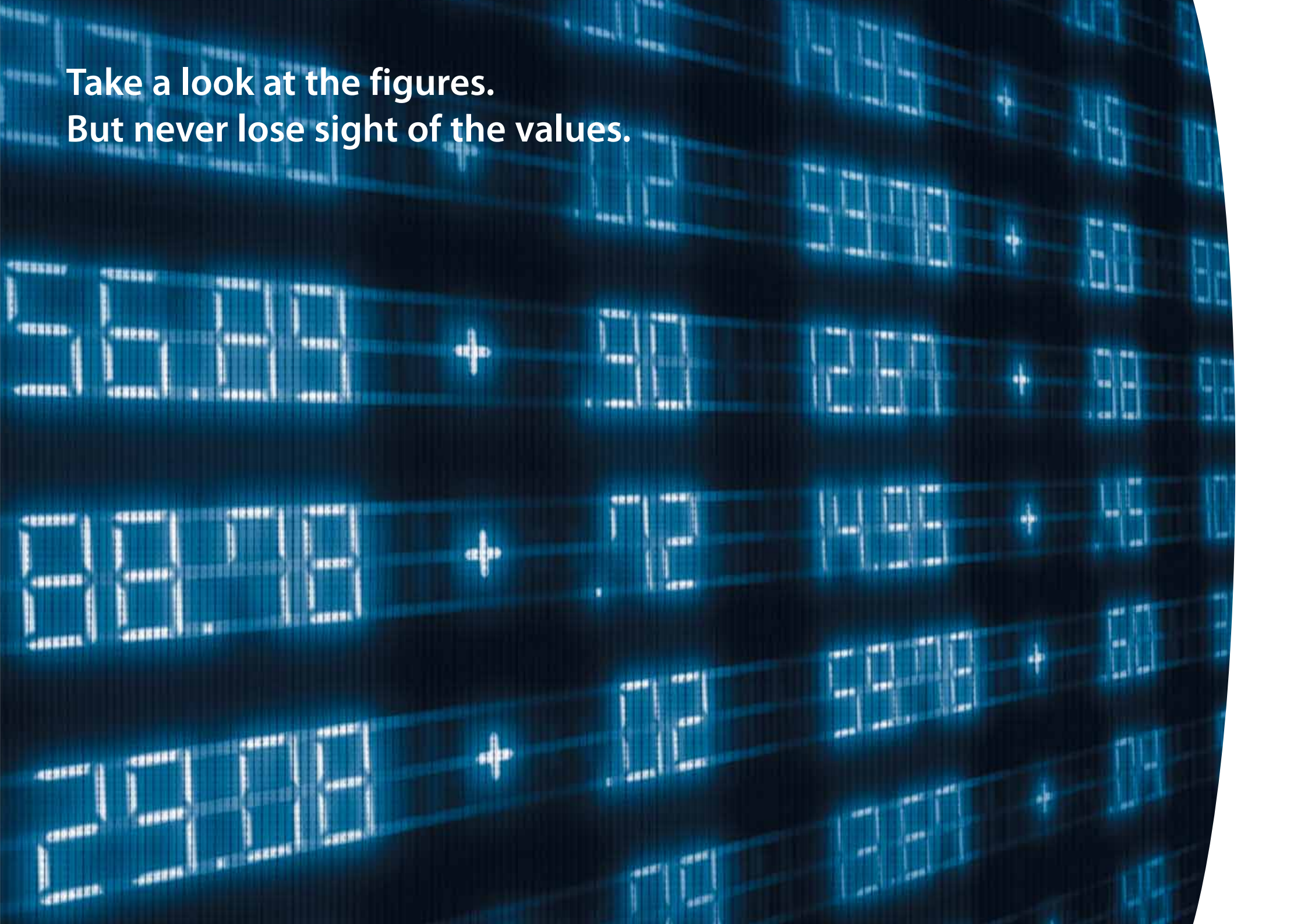
- SALES & MARKETING** Based on regional Area sales managers and local partners
- AFTERMARKET** Parts, kits, maintenance, service and customized solutions
- QUALITY** Central coordination of all production and sites
- SOURCING** Strategic purchasing control for all products

**NON-ITALIAN LOCATIONS**

- MICROELETTRICA-USA, LLC**, subsidiary for North America
- MS SOUTH AFRICA PTY, LTD**, holding subsidiary for South Africa MS Group
- MS RESISTANCES SA**, subsidiary for industrial resistors in France
- MICROENER SA**, subsidiary for relays sales in France
- MS SZO** Localization within Knorr-Bremse Suzhou (China)
- MS IND** Localization within Knorr-Bremse India (Delhi)



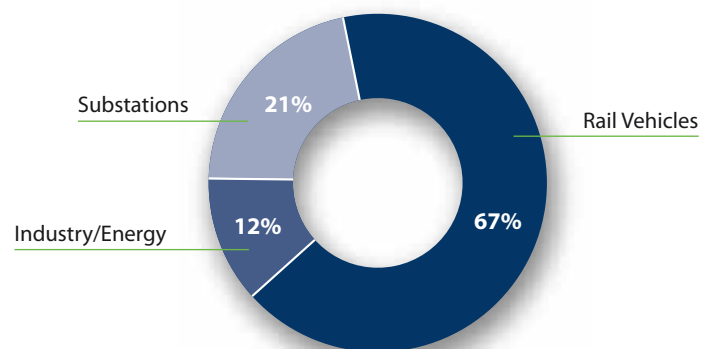
Take a look at the figures.  
But never lose sight of the values.



Our steadily increasing results reflect our passion for quality and work, the continuous attention paid to the needs of our clients and the technological excellence of an organisation that is and will continue to be a leader.

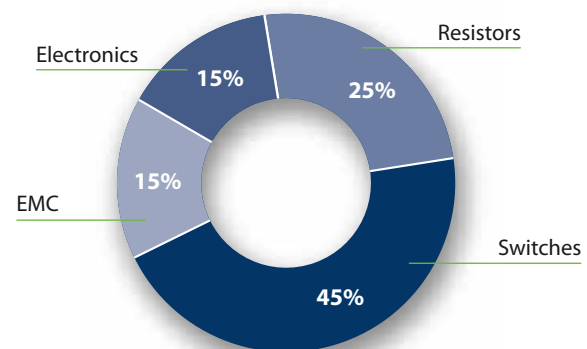
|                     | 2006            | 2007            | 2008            | 2009            |
|---------------------|-----------------|-----------------|-----------------|-----------------|
| Consolidated Sales: | 46,7 Euro Mill. | 52,5 Euro Mill. | 60,6 Euro Mill. | 66,3 Euro Mill. |
| Total Headcounts:   | 255             | 264             | 285             | 305             |

**Markets sales distribution 2009**



Sales by segment

**Product sales 2009**



Sales by products division



Where everyone else sees a limit,  
we see an opportunity.



Not even the most demanding, innovative and complex electrical applications can put us off. We consider them a challenge. We study them with enthusiasm. We fulfil them accurately.



### Rail Vehicles

Contactors, disconnectors, DC highspeed circuit breakers, power resistors, high voltage transducers, frames.  
Highly customized components for all classes of electric vehicles (Tramways and LRVs, Metros and EMUs, Locos, HST, etc).  
30 years of experience and global references in traction and auxiliary supplies for rail-on-board applications.  
Customized integration in multifunctional units.



### DC Traction Substations

DC Highspeed circuit breakers, contactors, disconnectors, power resistors, transducers and protection relays.  
Custom designed metalclad DC switchgear including all above components, rectifiers and control compartments.



### Energy

High voltage resistors and microprocessor based protection relays.  
Custom designed and standardized solutions available. 30 years of experience in engineering and manufacturing special solutions for the most demanding customer requirements.



### Industry

Contactors, disconnectors, DC high speed circuit breakers, power resistors, protection relays.  
Customized electromechanical and electronic components for motor, crane and generator control, as well as DC industrial application.  
50 years of experience from the single components to the full switchgear.

# Reliability and customization: an endless source of savings.

Engineered and constructed to operate reliably and last long, Microelettrica Scientifica products are the first choice of those who demand exceptional performance in a standard product customized to project specific requirements.

## Contactors

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5 highly customizable product lines for on board and stationary applications. Up to 4000V DC or AC, from 40 to 6000A per pole. Normally open, normally closed, changeover poles in single and multipole configurations.



## Disconnectors

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2 flexible/modular product lines for on board and stationary applications. Up to 4000V DC or AC, from 800 to 6000A per pole. Normally open, normally closed, changeover poles in single and multipole configurations.



## DC High Speed Circuit Breakers

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6 product families for on board and stationary applications, up to 4000V. Thermal current rating from 2000 to 10000A, dual voltage arc chutes possible. Optional metal-enclosure / Mono- and bidirectional trip setting available.



### DC Switchgears

Metalclad switchgear compartments for DC substations. Breaker compartment, Rectifier compartment, Control & protection relay compartment. Customized engineering and full turnkey switchgear supply.



### Resistors

8 application lines for on board and stationary use. Stationary applications (Neutral Grounding, Filter, Load Bank, etc) mostly standardized. On Board applications (Braking, Control) are custom designed for each vehicle.



### Relays

5 product platforms for stationary applications, with infinite customization possibilities. Quick application configuration and relay customization service with in-house firmwaring. Control software for relay communication.



### Transducers

4 product lines for on board and stationary applications. High voltage metering of DC and AC catenary or 3<sup>rd</sup> rail supply with energy measurement. DC Voltage transducers for rail substation use.



An industrial network ready to meet new needs.



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 E-Mail: info@emctraction.it

**Officine De Zan S.r.l.**

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 E-Mail: commerciale@dezan.it

**Microelettrica Scientifica USA****MicroEner****MS Resistances****Microelettrica Scientifica S.p.A. - Rozzano****Microelettrica Scientifica S.p.A. - Lacchiarella****EMC Traction S.r.l.****Officine De Zan S.r.l.****Knorr-Bremse India Private Ltd. (productive localization)****Microelettrica Scientifica (PTY) Ltd.****Knorr-Bremse Systems for Rail Vehicle (Suzhou) Co. Ltd. (productive localization)****MicroEner**

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 E-Mail: sales@msresistances.com

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 E-Mail: mssa@microelettrica.com

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 E-Mail: ms.india@microelettrica.com

**Knorr-Bremse Systems****for Rail Vehicle (Suzhou) Co. Ltd.**

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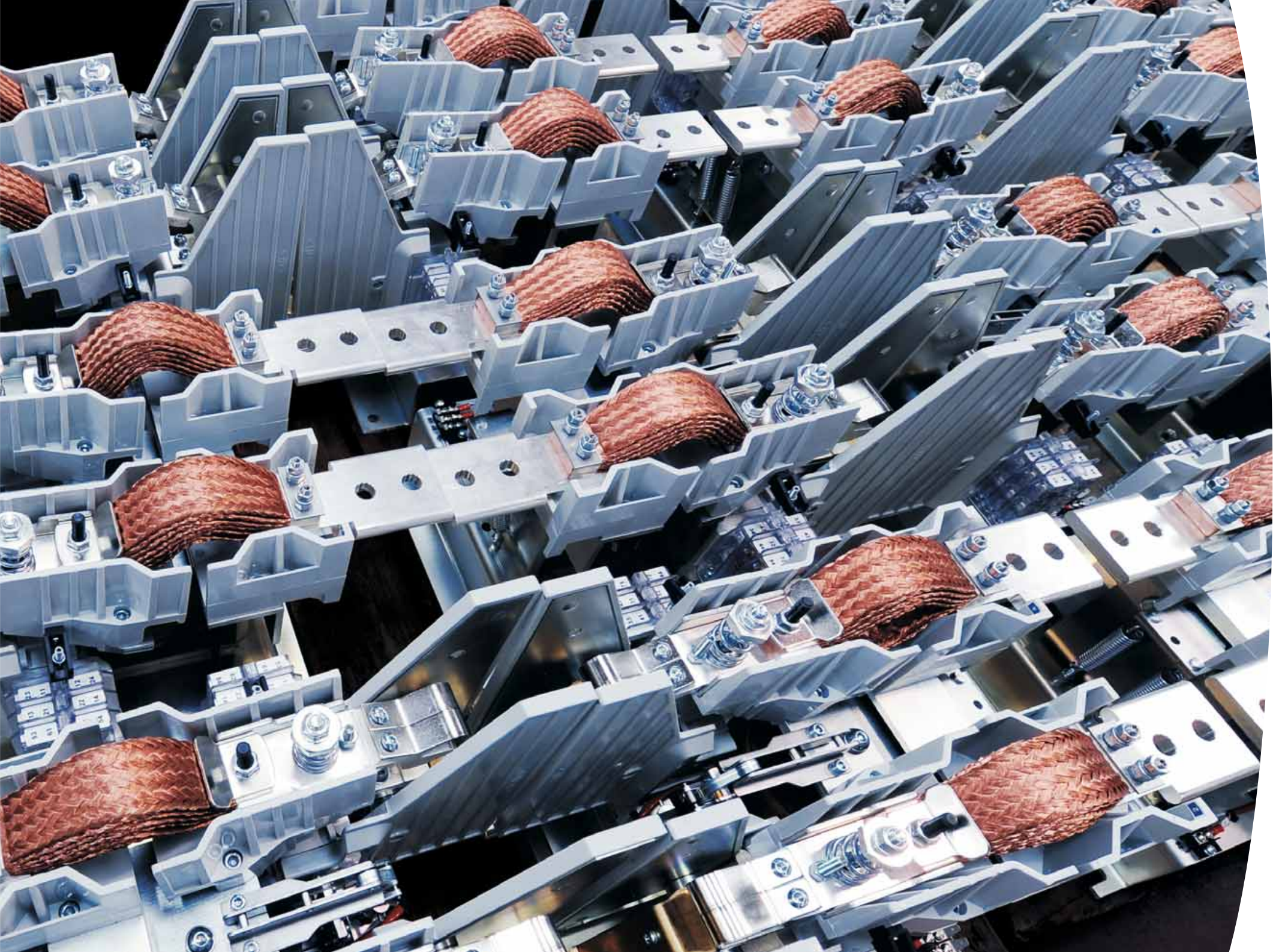
## Quality is a state of mind. And we never forget it.

At times, the word “quality” can seem empty and lacking in meaning. But when it comes down to hard facts, Quality is the only thing that counts. Client satisfaction is guaranteed by our ISO 9001:2008 Quality System certification. Our plants in Rozzano and Lacchiarella are both IRIS certified.



## In order to maintain credibility, you must have a clean conscience.

The Environmental Management System with ISO 14001-2004 certification and the Environmental Policy regulations are the foundation of our commitment to guarantee safety in the workplace and minimize the external impact of our industrial activities.



## SALES NETWORK

## Your specialists in electronic and electromechanical components.

The Microelettrica Scientifica sales network serves the entire world.

To find and contact our Agent nearest you, visit [www.microelettrica.com/en/salesmarketing/salesnetwork.jsp](http://www.microelettrica.com/en/salesmarketing/salesnetwork.jsp)



## AFTERMARKET SERVICES

## Always loyal to those who have placed their trust in us.

Microelettrica Scientifica provides a wide range of aftermarket services to ensure the reliability and endurance of its products throughout the operational lifetime.

- Parts List and Service Manuals
- Spare Parts Offer
- Field Service, scheduled maintenance, repair service periodic checks
- Customized solutions: IFU and customized contactors



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*Microelettrica Scientifica*

