

**micronnect**<sup>®</sup>

IP68/IP69K PLUG&SOCKET  
MICRO-CONNECTOR



Design and function in harmony

MADE IN ITALY

High-reliability  
electrical connections  
[www.techno.it](http://www.techno.it)

 **techno**<sup>®</sup>  
TECHNOLOGY & INNOVATION

# A connector which is unique on the market Why?

**micron.nect**, the new plug&socket circular connector is born, with a diameter of only 14mm and an IP68/IP69K protection rating.

Thanks to their designing skills and engineering knowledge, the members of Techno R&D team were able not to compromise the other technical characteristics of the product, that is to say 2 poles for the installation of flexible and rigid conductors up to 1.5 mm<sup>2</sup>, 10 A - 400 V and air gaps guaranteed for class 2 use.

## 1 MINIATURIZED



We have developed a connector with extremely compact overall dimensions.

**micron.nect** allows the connection between devices and instruments in very small places.

## 2 SUBMERSION AND HIGH PRESSURE WATER RESISTANT



We have realized this product with the most advanced technologies, using the best materials on the market.

**micron.nect** is reliable under extreme application conditions, including permanent water submersion (IP68) and high pressure water (IP69K).

## 3 SCREW WIRE CONNECTOR



We have designed a screw wire connector which is unique in terms of dimensions and it can be used with wires up to 1.5 mm<sup>2</sup>.

**micron.nect** is suitable for field wiring and it ensures maximum application versatility.

## WHEN DIMENSIONS MAKE THE DIFFERENCE

Compact screw wire connectors meet the most demanding needs of connection in small places.



# Ø 14 mm

14 mm



< 90 mm



## COMPARISON WITH OTHER PRODUCTS



TH381  
Ø 14 mm.



TH387  
Ø 23 mm.



TH405  
Ø 36.5 mm.



- installation costs  
**+ fast wiring**

Highest efficiency in installation and maintenance.

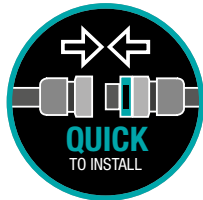
The plug&socket connector micron.nect guarantees flexibility and quickness in the configuration and connection of electrical devices.



# It's just a matter of time

## Reduction in the cost of the product installed

Plug & socket connector with quick push-pull locking system. An intuitive and functional tool suitable for quick connections and ideal to reduce installation and maintenance times compared to the ones needed for fixed wiring solutions (e.g. terminal blocks or cable glands).



### QUICK PUSH-PULL CONNECTION AND DISCONNECTION

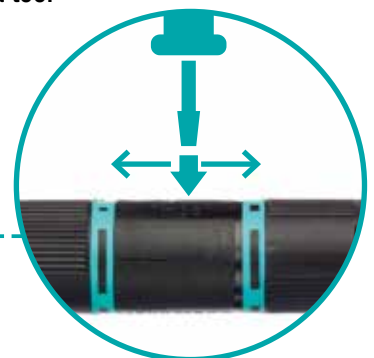


### 2 SOLUTIONS FOR THE DISCONNECTION

- \* **BY MANUAL PRESSURE**  
To disconnect the connector you just need to push the release button.



- \* **WITH A TOOL (SAFETY SYSTEM)**  
To disconnect the connector you need to use a tool (e.g. a flat-blade screwdriver). This solution guarantees that the connector is not removed accidentally and it is in compliance with the EN 61535 regulation.

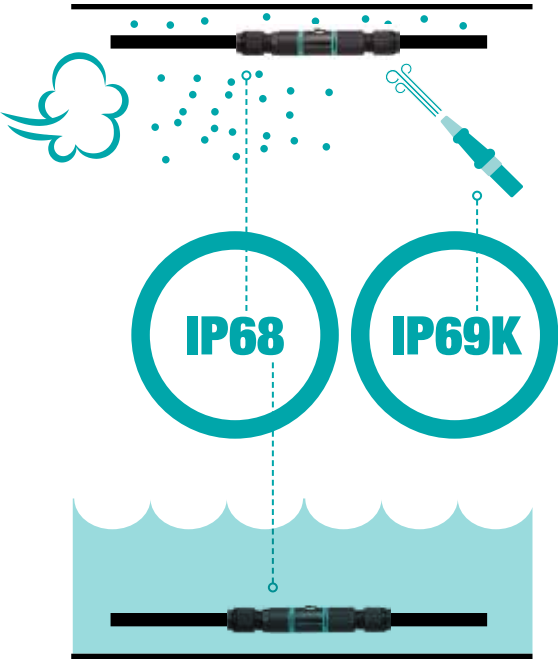


# Resistant to water submersion

micron.nect is designed to guarantee the highest reliability under severe application conditions and when there is damp, water, dusts and debris.



**Total protection  
AGAINST DUST**



**Total protection against the effects of  
PERMANENT SUBMERSION  
AND PRESSURE WATER**

Certified in compliance with EN 60529

**micron**nect

# A one-step molding solution?

## Higher reliability for the plant

### CO-INJECTION MOLDING OF GASKETS

The co-injection molding of the rubber and the technopolymer ensures perfect installation unlike ordinary connectors, where the detachment or the wrong position of the gaskets can compromise their reliability.

The rubber sticks chemically and mechanically to the plastic body and it guarantees efficient protection against water, debris and dust (IP68).



The particular design of the turret nut ensures better compression of the rubber. That means better resistance to water penetration and dust, and higher resistance when the wire is pulled.



Special anti-rotation system for the cable gland and the nut to improve resistance to vibrations and the loosening of the cable gland.



The co-injection molding of the gasket and the cable gland guarantees protection against water and dust, and ensures wire fastening. This way the use of rubber grippers on the cable is not needed. The installation is quicker and the error risk is reduced.



### QUICK INSTALLATION

Fewer parts to assemble



### HIGHER RESISTANCE TO EXTERNAL STRESSES

Chemical-mechanical adherence between plastic and rubber



### FEWER INSTALLATION MISTAKES

Anti-leakage gaskets



## **Screw wiring:** highest installation flexibility

Thanks to its screw wire terminals, micron.nect satisfies the need for maximum flexibility required by field wiring installations.

It can be used with flexible and rigid cables from 0.25 mm<sup>2</sup> to 1.5 mm<sup>2</sup>  
(Note: for use with cable of less or equal to 8.0 mm outer diameter)



# Minimum space, maximum solidity

## Excellent robustness performance



(8 Kg according to EN 61535)



The maximum attention to details, during the design phases, and the use of very high-quality materials make sure that our product can pass the laboratory tests and is certified according to the international standards.



### RESISTANT TO DISCONNECTION

#### Electrical continuity guarantee.

The special patented coupling system ensures the correct fastening between the plug and the socket. Its innovative design makes sure that the product can resist very high traction strength.

(\*) Before testing: the product has been tested in a climatic chamber (aging test) at -40°C for 2 hours.



(8 Kg according to EN 61984)



### RESISTANT TO CABLE TRACTION

#### Higher safety guarantee.

The combined action of the cable gland and the co-molded rubber ensures the fastening of the cable even under conditions in which the product is subject to vibrations or external mechanical stresses.



### RESISTANT TO CONNECTOR FLEXURE

#### micron.nect is robust despite its compact dimensions.

Reliability is an important factor also for compact solutions, which might look apparently weak. Subjected to bending with a weight of 5 kg, the IP68 resistance is guaranteed.

**micronnect**

# Ideal for any application in the field of illuminating engineering

micron.nect has all the characteristics to be used in various lighting applications where there is damp and water. Just a few examples are given below.



## ARCHITECTURAL LIGHTING

Connection of floodlights, facade and wall luminaires.



## LIGHTING IN WATER

micron.nect guarantees protection against external agents also in case of permanent submersion.



## PERFECT LED CONNECTION

micron.nect, the smallest screw wire connector on the market, is the ideal solution for the connection of LED lighting systems.



### STREET LIGHTING

micron.nect is suitable and useful for the connection of LED modules inside all sources of artificial light in the streets.



### INDOOR LIGHTING

micron.nect is also useful for the connection of indoor appliances where the dimensions of the connector are a very important factor.



### URBAN LIGHTING

micron.nect ensures the connection of urban luminaires, built-in and walk-over spotlights.



### ADVERTISING BILLBOARDS AND ROAD SIGNS.

micron.nect can be used to connect lighting panels and road lane light markers.

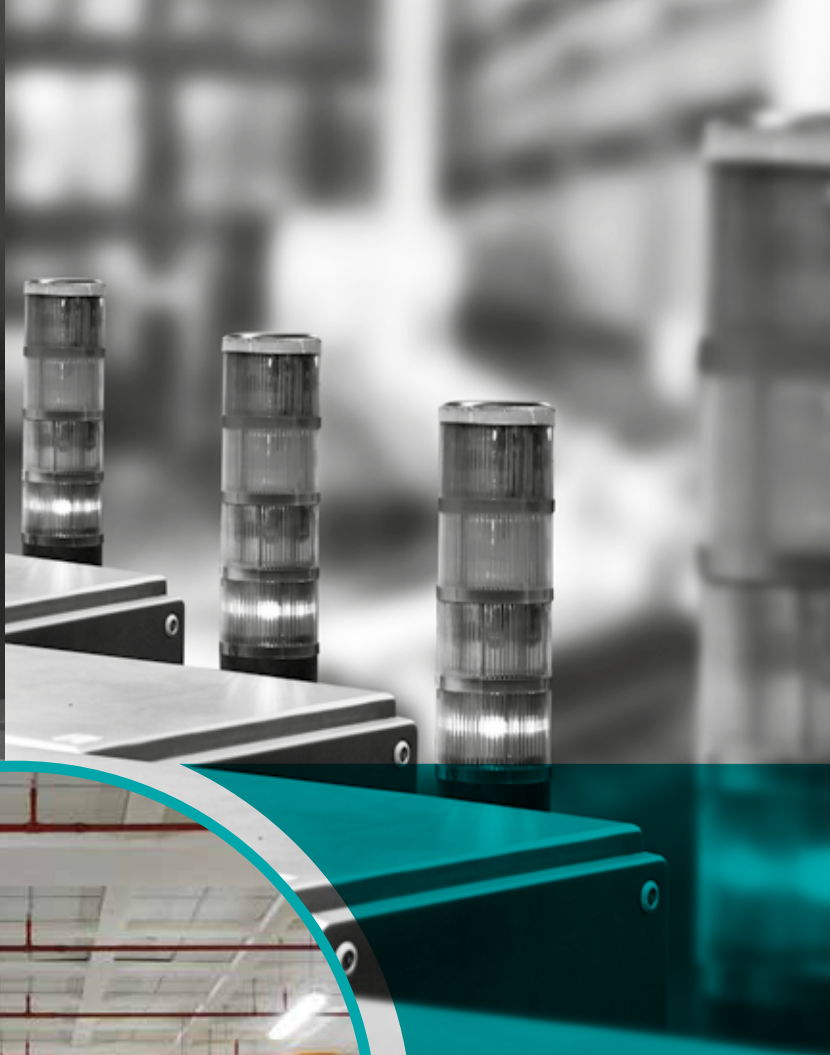


**micronnect**  
Applications  
for Class 2  
devices

Thanks to its technical characteristics, micron.nect is also ideal for the connection of class 2 electrical devices (double insulated).



# EXIT



# INDOOR



# Solutions High-reliability

We rely on excellent materials and production technologies.

We perform stress tests on our products according to test parameters which are higher than the ones required by the norm. This procedure allows us to obtain very high mechanical resistance to damp, water, dusts and highly toxic substances.

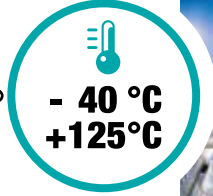
We use thermoplastic materials PA66 GF UL 94 V0/V2 (f1 - UL 746C). Below an incomplete list of some substances and their relative resistance (at room temperature) of the PA66 GF is given.

Substance	Resistant	Chemical formula	Applications
Acetylene	Yes	$C_2H_2$	Lighting devices, Welding and brazing plants
Ammonia	Yes	$NH_3$	Painting plants, plastic material production plants, paper and rubber industries
Methyl alcohol	Partially	$CH_3OH$	Solvents, reagents for industrial chemical processes
Benzene	Yes	$C_6H_6$	Drugs and colorants production, chemical compounds synthesis, industrial solvents
Calcium chloride in water-based solution (salt)	Yes	$CaCl_2$	Refrigerating plants, sewage disposal, oil and gas extraction wells
Chlorine	Partially	Cl	Swimming pools. Water purification plants
Diesel	Yes	-	Diesel engines. Transport. Heating plants
Fertilizers	Yes	-	Agriculture
Lubricating oils	Yes	-	Industrial machinery. Water plants
Petroleum	Yes	-	Fuels, transport, heating and energy production plants
Phosphate	Yes	-	Cleansers, fertilizers, food industry
Sea water	Yes	-	Marine environment

Contact our customer service to verify the resistance of micron.nect connector to its use under particular conditions according to customers specifications. The characteristics of TPE-S rubber: excellent resistance against UV rays, ozone and weather damage.

**Features and functionality guaranteed over time**

PA66 GF materials make the product crushproof also under extreme conditions.



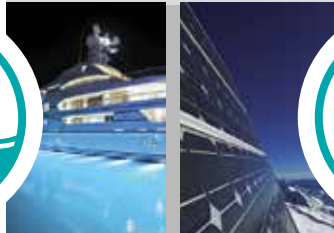
Resistance to external agents (EN 60529)  
In addition: ageing test in air with ozone concentrations (ISO 1431-1).

Halogen free. Realized with the use of materials which are in compliance with the most stringent regulations Reach/RoHS.



Produced with silicone free materials.

Resistant to corrosion in saline environment. Corrosion test (EN60068-2-11:2000). Duration 168 hours.



UV resistance testing according to EN60079-0. Method of exposure to laboratory light sources to verify weathering effects. Duration 1000 h. Insulation test at 3,75 KV.

Resistance to flame. Use of PA66 GF thermoplastic materials, fiber-glass reinforced UL94 V0/V2 (f1 - UL746C) Glow-wire 850°C/960°C.



Impact resistance (EN 62262:2002). IK06 (1 Joules) and IP68 Tests show positive results even after conditioning in hydrochloric acid (HCl) for 168 hours at 70°C. (pH 4,5 and pH 3,5).

**Upon request:**  
low-smoke materials,  
EMC materials,  
ammonium resistant materials.  
Research of materials and internal laboratory tests on customer request.

**SUBMIT YOUR NEEDS TO OUR COMPANY**

Special materials resistant to hydrocarbons and EMC materials. (I.S. Applications – Intrinsic safety).



We will give you consultation on specific materials such as low-smoke materials, EMC materials, ammonium resistant materials, etc.

**TRUSTWORTHY AND CERTIFIED**

Our products are certified by accredited organizations which operate internationally. You can obtain a reference everywhere in the world.



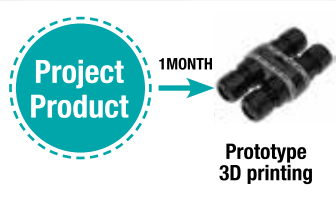
# Design, Manufacturing and Control in Italy.

## All that you can expect from Techno



**CONTACT US TO GET INFORMATION ABOUT OUR NEW PRODUCTS AND CUSTOMIZATION.**

**RELIABILITY. QUALITY. RESPONSIVENESS.**



**CELERITY**

Thanks to the fact that the development process and the manufacturing of new products are totally carried out in our company, we are able to meet deadlines and guarantee the quality and flexibility needed during the development and production phases.

**VERTICALIZATION**

The internal construction of molds intended for the molding of micro-objects with very low tolerances is our know-how, which gives our company a competitive advantage and allows us to meet the most stringent requests.



**COMPETENCE**

We design our products upon our customers request, putting our deep knowledge of development and production technologies as well as of electrical and mechanical regulations at their disposal, and meeting the expectations of the requested solutions in terms of quality, reliability and cheapness.

**100% QUALITY**

We have our own internal laboratory and we perform tests in critical environments. Our services include electrical, thermal and mechanical tests, dimensional testing, test on plastic materials and rubber, IP6x testing, UV and weathering tests carried out in a climatic room.



**FLEXIBILITY**

Molding in different colors.  
 Customized packaging and writings.  
 Assembly of connectors with cable and overmolding.  
 Hot-melt manufacturing.  
 We want to satisfy your needs with the highest degree of professionalism.

**RELIABILITY GUARANTEE**

Customized tests upon customers request. We perform stress tests on our products according to parameters which are higher than the ones requested by the norms.



**CUSTOMIZATION**

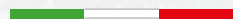
Customization service by means of laser marking systems.  
 We are able to offer customized productions marked with our customers brand upon their request.

**SERVICE AND RESPONSIVENESS**

Our customers must not wait. We offer them kindness and expertise, and we are always there to help them and listen to their requests. We provide advanced logistics which guarantees delivery times also within 24 hours.



MADE IN ITALY





CERTIFICATIONS



Our materials do not contain sulfur which negatively affects the LED lifespan.

**micron.nect - TH381 2-pole screw wire micro-connector**

**Characteristics and advantages**

- Miniaturization – a diameter of only 14 mm (2 poles)
- Screw connection for field wiring (M2 screws – max 0.2 Nm) and versatility guaranteed during installation
- Available with overmolded cable
- Tested and approved to resist dust and water (IP68 30 m / 1 h) and high pressure water (IP69K)

**Electrical characteristics**

• Voltage	<b>400 V AC/DC</b>
• Current	<b>10 A</b>
• Impulse withstand voltage	<b>4 kV</b>
• Contact resistance	<b>&lt;10 mΩ</b>
• Insulation resistance	<b>100 M Ohms</b>
• Number of poles	<b>2</b>
• Contact symbols	<b>1 – 2</b>
• Cable section min-max	<b>0.25 mm<sup>2</sup> – 1.5 mm<sup>2</sup></b>
	<i>compatible with flexible and rigid cable</i>
• Cable diameter min-max	<b>5.8 – 8.0 mm</b>
	<i>for cables with a diameter &lt; 5.8 mm, use the relative accessories</i>

SUITABLE FOR CLASS 2 APPLICATIONS (double insulated) MAX. 250 V AC.

**Materials**

• Plug&socket body	<b>PA66 GF UL94 V0 (f1) - GWT 960°C<sup>(1)</sup></b>
• Cable glands	<b>PA66 GF UL94 V2 (f1) - GWT 850°C<sup>(1)</sup></b>
• Gaskets	<b>TPE-S</b>
• Contacts	<b>silver-plated brass ( zinc-plated screws)</b>
• Corrosion resistance	<b>salt mist, 1000 hours, 5% salt solutions, 35°C EN60068-2-11 Test Ka; ISO6988 sulfur dioxide</b>
	<b>Halogen free – Silicone free</b>
• Properties	<b>PTI 175</b>
• Tracking index	<b>II</b>
• Overvoltage category	<b>2</b>
• Pollution degree	<b>2</b>

**Mechanical characteristics**

• Operating temperature	<b>-40°/+125°C</b>
• Protection degree	<b>IP68 (30m/1h) / IP69K</b>
• Operating cycles	<b>100 cycles</b>
• Impact resistance (IK)	<b>IK 06</b>

**Reference regulations EN 61984 / EN 61535**

<sup>(1)</sup> (f1): The material is in compliance with the requirements of UV resistance, installation resistance where there is water and submersion resistance as specified in UL 746C regulation.

Image	Code	Type	Cable min - max	Pieces/box
<b>Connector cable to cable</b>				
	THB.381.A2A.L	Plug	7.0 mm - 8.0 mm <sup>(3)</sup>	200
	THB.381.A2B.L	Plug (disconnection with a tool acc. EN 61535)	7.0 mm - 8.0 mm <sup>(3)</sup>	200
	THB.381.A2A	Plug	5.8 mm - 6.9 mm <sup>(4)</sup>	200
	THB.381.A2B	Plug (disconnection with a tool acc. EN 61535)	5.8 mm - 6.9 mm <sup>(4)</sup>	200
	THB.381.B2A.L	Socket	7.0 mm - 8.0 mm <sup>(3)</sup>	200
	THB.381.B2A	Socket	5.8 mm - 6.9 mm <sup>(4)</sup>	200
<b>Connector panel-mounted <sup>(1)</sup></b>				
	THB.381.N2A	Plug M16	-	200
	THB.381.N2B	Plug M16 (disconnection with a tool acc. EN 61535)	-	200
	THB.381.L2A <sup>(2)</sup>	Plug M11	-	200
	THB.381.L2B <sup>(2)</sup>	Plug M11 (disconnection with a tool acc. EN 61535)	-	200
	THB.381.P2A	Socket M16	-	200
	THB.381.M2A <sup>(2)</sup>	Socket M11	-	200
<b>Accessories</b>				
	6000448GT	Closure cap IP68 for socket	-	200
	6000447GT	Closure cap IP68 for plug	-	200
	6000473GT	Cable reduction	3.0 mm - 5.5 mm	200
	6000461GT	Cable reduction for 2-single pole cables	1.9 mm - 2.5 mm	200
	6000462KC	special spanner for quick installation	-	100

<sup>(1)</sup> Supplied with the fixing nut - <sup>(2)</sup> Only for plastic panels or Class III (SELV) devices - <sup>(3)</sup> Can be used with cable H07RN-F 2 x 1 mm<sup>2</sup>

<sup>(4)</sup> Can be used with cable H05RN-F 2 x 1 mm<sup>2</sup> and smaller cables.



We provide wired connectors with cable.  
Contact our Customer Service for more information.

# Welcome to a small world



## GET CONNECTED

Using an App for QR code reader  
and your smartphone camera.

**FIND OUT HOW AND WHERE TO BUY.**



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## CONTACT US BY PHONE



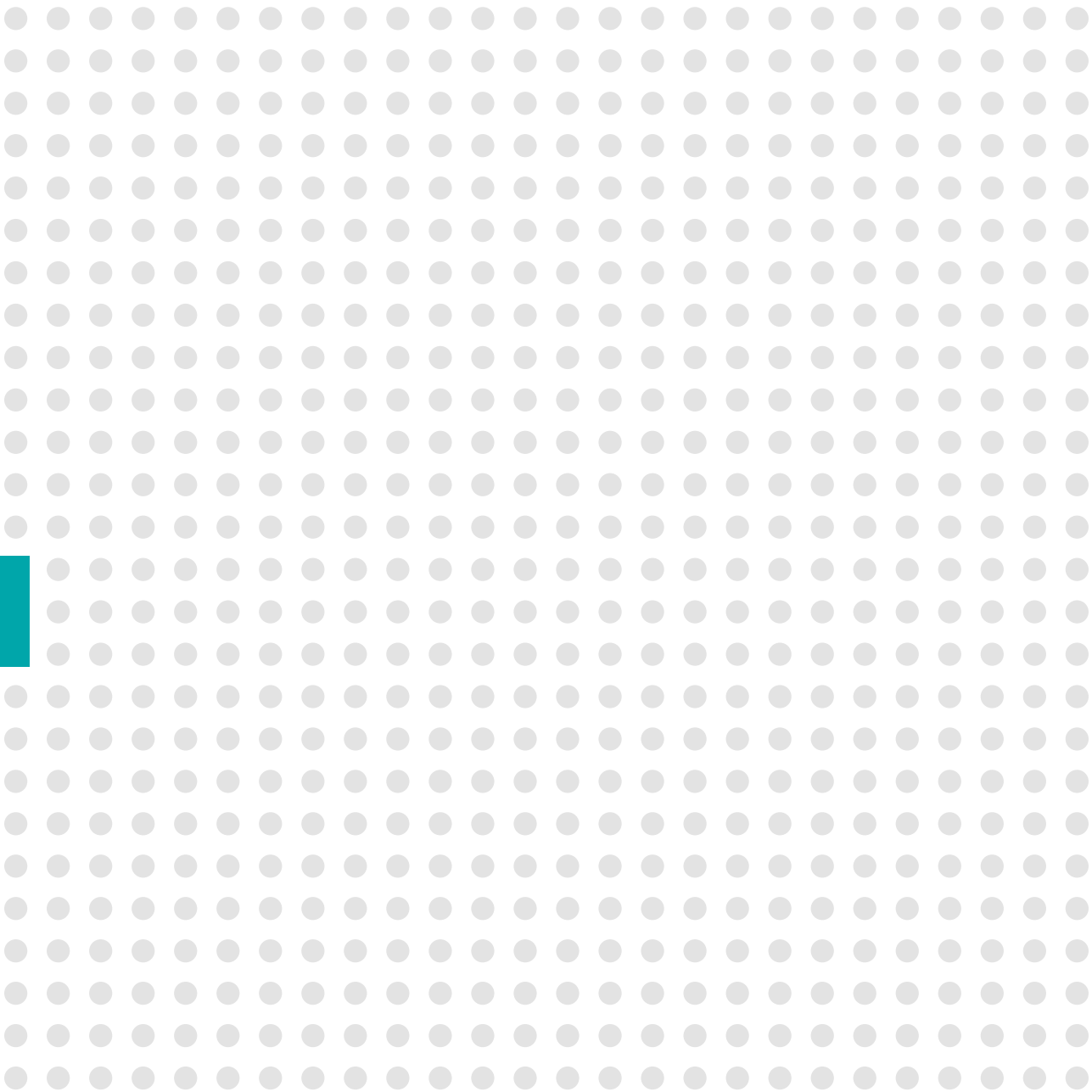
+39 031 97 64 45

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## CONTACT US BY EMAIL



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