



# Safety - Reduce electromagnetic emissions with Canalis

Electromagnetic Compatibility (EMC) is the ability of electrical equipment to operate without generating electromagnetic interference that could affect human health or interfere with the proper operation of other equipments.

The electrical conductors generate magnetic fields in proportion to the distance between them. **The design of Canalis enables the significant reduction of electromagnetic emissions.**

The total length of the Canalis devices installed is equal to twice the distance around the world.

**x2**

**ECM emissions with Canalis**

Canalis KSA1000A = 1.2  $\mu\text{T}$  \*  
 Cable 300 mm<sup>2</sup> along a cable duct = 11.5  $\mu\text{T}$  \*  
 \* at 1 metre

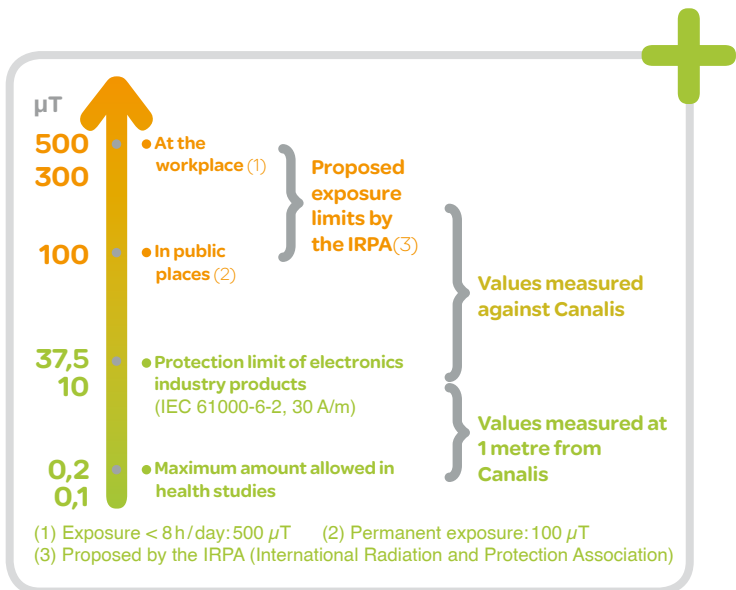
**÷10**

Schneider Electric, the market leader in busbar trunking systems, is backed by almost sixty years of experience (Canalis has been on the market since 1954).

**Canalis' steel casing** sharply reduces electromagnetic effects. The effectiveness of the shielding is thus better than aluminium casing (with an equal plate thickness).

According to the WHO (World Health Organization), exposure to electromagnetic fields can be hazardous to human health from 0.2  $\mu\text{T}$ , and even pose a risk of cancer over the long term. European standards impose limits of 0.2  $\mu\text{T}$  at 1 metre.

Cables: 7.35  $\mu\text{T}$   
 Canalis KTC1000: 0.40  $\mu\text{T}$

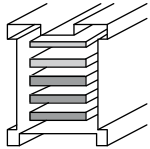


## Structures of the Canalis range



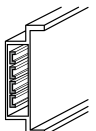
Canalis KBA / KBB

- > **Casing** in sheet steel pre-painted RAL9001 or RAL 9003.



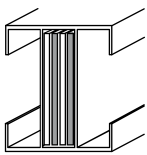
Canalis KS

- > **Conductors in aluminium**, equipped with bimetal silver plated copper contacts.



Canalis KN

- > **Protective earth (PE)** in a section 50% higher than those of the phases.



Canalis KT

- > **The mechanical and electrical assembly** ensures the continuity of the PE protective conductor.

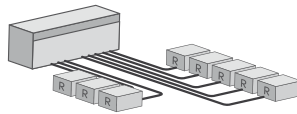
## With Canalis, an installation with no surprise...

- Originally mounted conductors,
- quality and installation safety guaranteed by the construction,
- electromagnetic emissions independent of the implementation.

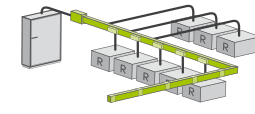
## ... and enhanced performance

- The neutral conductor, if not used, and if connected to the ground, reinforces the shield and further reduces electromagnetic emissions,
- The protection is particularly effective thanks to the short distance between the conductors and the shielding produced by the steel casing,
- the implementation in proximity to the communication networks is made more reliable by the reduction of the interference between strong and weak currents.

### A cable outlet for each user station

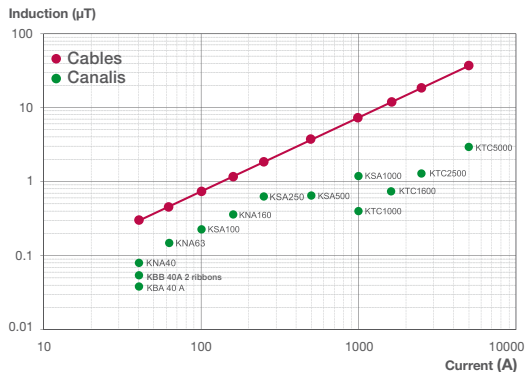


### One Canalis for several user stations



## Magnetic induction \*

### Comparison between Canalis and cables on cable duct



\* measured at 1 m from cables of 240 mm<sup>2</sup> (1 to 4 cables per phase depending on the caliber), 25 mm spacing between the cables placed in identical triangles L1-L2-L3 along a mesh cable duct.

## Canalis avoids the disadvantages associated with cable ducts, and reduces the risk of bad EMC

### The electromagnetic emissions vary according to:

- the position of the cables against each other (in the case of multiphase distribution),
- the distance between the cables,
- positioning of the cables on a flat-bed or in a delta arrangement,
- positioning of the cables in a cable duct,
- the type of cable: copper or aluminium,
- the type of cable duct: mesh or perforated sheet,
- the mode of assembly of the elements of the cable duct.

All these factors show that the implementation of cable ducts generate uncontrolled and higher electromagnetic emissions.

With the prefabricated Canalis busbar trunking, electromagnetic emissions are controlled and independent of the implementation. Canalis helps reduce the effects of EMC on people and electrical equipment.



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