

Metal Screened Cables for EMC Application



Electromagnetic compatibility (EMC) protection

Electromagnetic compatibility (EMC) protection ensures that electric equipment, appliances, and instruments work correctly while under the influence of electromagnetic fields from e.g.:

- **other electric appliances,**
- **live electric cables,**
- **lightning,**
- **static electricity.**

Protection is achieved by screening the cable with a metal screen and designing electric circuits so that they are less sensitive to electric and magnetic fields. Separating electric circuits is another

simple way of reducing the risk of electronic interference.

In short, all forms of interference created by current and voltage, such as electric and magnetic fields, are considered electromagnetic interference (EMI) or electronic interference which may interrupt or destroy electronic devices. The denser the screen, the higher the degree of interference protection. The density of the screen provides secure operational transfer of energy, signals, and impulses.

EMC in industry

In connection with the development of hi-tech equipment more and more units produce interference or EMI in the power circuit. This interference can be remedied by using EMC screen cables.

These cables are characterised by having a concentric screen made of aluminium foil, copper belts or a mesh screen made of multiple-wire copper.

EMC cables are used, e.g., in office facilities, hospitals, agriculture and industry where machines, process facilities or important electronic equipment is used.





Selection of EMC cables

Selection of cables with electromagnetic compatibility protection.

| IMAGE | PRODUCT NAME | CPR CLASS | VOLTAGE | MIN INSTALLATION |
|---|-------------------|-----------|---------|------------------|
|  | EQLO | Dca | 300/500 | -15°C |
|  | SIGNAALKABEL 2500 | Cca | 300/500 | -20°C |
|  | EQFR-EMC PURE | Dca | 300/500 | -15°C |
|  | MCCMO-HF C-PRO | Cca | 450/750 | -15°C |
|  | FXQJ-EMC PURE | Dca | 0,6/1 | -20°C |
|  | MCCMK-HF C-PRO | Cca | 0,6/1 | -15°C |
|  | AXQJ-EMC PURE | Dca | 0,6/1 | -20°C |
|  | AXCCMK-HF C-PRO | Cca | 0,6/1 | -15°C |
|  | FIRETUF FRHF-EMC | - | 0,6/1 | -15°C |
|  | M-FLEX HCH | Cca | 300/500 | -15°C |
|  | HULTOFLEX EMC | Cca | 0,6/1 | -20°C |

| EMC RATING | DESCRIPTION |
|------------|---|
| Good | Installation cable for fixed indoors and outdoors use |
| Good | Signalling cable for fixed indoors and outdoors use |
| Very good | Signalling cable for fixed indoors and outdoors use |
| Very good | Signalling cable for fixed indoors and outdoors use |
| Very good | Copper power cable for fixed indoors and outdoors use |
| Very good | Copper power cable for fixed indoors and outdoors use |
| Very good | Aluminium power cable for fixed indoors and outdoors use |
| Very good | Aluminium power cable for fixed indoors and outdoors use |
| Very good | Fire resistant copper power cable |
| Good | Flexible control cable |
| Very good | Symmetrical copper power cable for industrial installations |

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Installation of EMC cables

The EMC screen requirement means that impedance must be less than 100 mOhm/m in the entire frequency area of up to 100MHz. EMC cable design is constructed with a symmetrical core and a dense concentric screen. The screen offers extra low transfer impedance and low resistance.

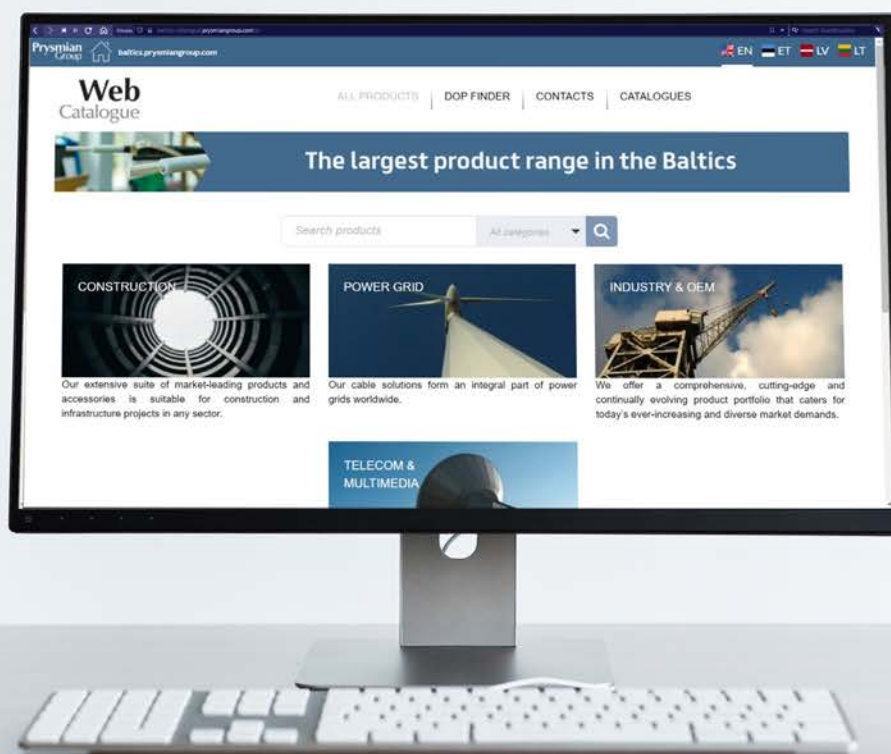
It is important that EMC cables are handled correctly during installation so that the screen remains dense for the entire length of the cable. If the cable is bent more than allowed there is a significant risk that the screen will open. For movable installations chose screened cables that remain stable which ensures that screen contact in fittings etc. is not damaged when the cable is twisted and pulled. In corrosion risk environments you must chose cables suited for that environment.

Also, it is important that cable ends are in full contact and do not break the screen. Endings of cable screen must be done in low-impedance equipment.

If the screen is broken in connections, e.g. in safety switches or during transition from fixed installation to movable cable, the connections must be made according to the high frequency principle. You achieve the best cable endings by using EMC fittings where the screen has 360° contact, EMC approved multiconnectors or if the screen is mounted on the bottom of a safety switch with an insulation grip surrounding the cable.

Web Catalogue

Our products are within a click's reach wherever and whenever you need. Complete with all relevant data about our cables, Web Catalogue is the tool for cables:
baltics-catalogue.prysmiangroup.com



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