

Kabeldon low voltage switchgear system

2007, edition 1



ABB

Modern distribution technology from ABB Kabeldon

Kabeldon low-voltage distribution systems feature small dimensions, flexibility, safety, reliability and clear layout.

The distribution board may be planned with the Connect IT program, which is available free.

It is a simple matter to wire up the distribution board and put it into service. In indoor electrical rooms, the busbar system can also be mounted on the wall. However, we recommend an enclosed distribution board located outside both for safety and to save valuable indoor space.

Among other things, the distribution boards satisfy the requirements of:

IEC 60439 Low-voltage switchgear and controlgear assemblies

Part 1: Type-tested and partially type-tested assemblies.

Part 5: Particular requirements
"Assemblies for power distribution in public network".

For assemblies intended to be installed outdoors in public places cable distribution cabinets (CDCs) for power distribution in networks.

IEC 60947 Low-voltage switchgear and controlgear;

Part 1: General rules.

Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units.

Some typical applications for Kabeldon IP-system:

Utilities

- electricity distribution in low voltage networks
- substations and cable distribution cabinets

Roads

- street and road lighting; traffic lights

Railways

- electricity supply for railways, trams, underground trains



Buildings

- distribution boards for hospitals, hotels, food shops, offices, etc.

Ports and airports

- electricity supply for boats and ships
- electricity supply for aircraft on the ground

Sports installations

- floodlighting for football and sports stadiums
- lighting for jogging tracks, control panels for ski-lifts, etc.

Construction sites

- temporary electricity supply
- central electric heating
- distribution boards for cranes and other equipment

Temporary activities

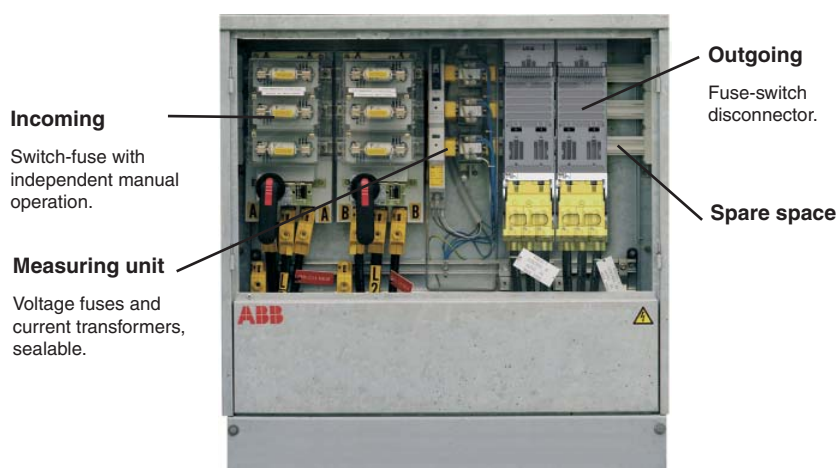
- electricity supply for street markets, travelling exhibitions, circuses, fairgrounds, etc.

Communication systems

- enclosures for fibre-optic networks
- enclosures for antenna systems and cable TV
- terminal strips for telephony

Industry/agriculture

- distribution boards to supply standby power to various types of industrial firms

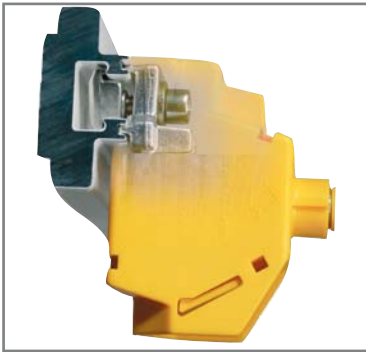


Kabeldon IP-system

The system consists of a unique, touch-proof busbar system which is combined with a broad range of switching devices and connections.

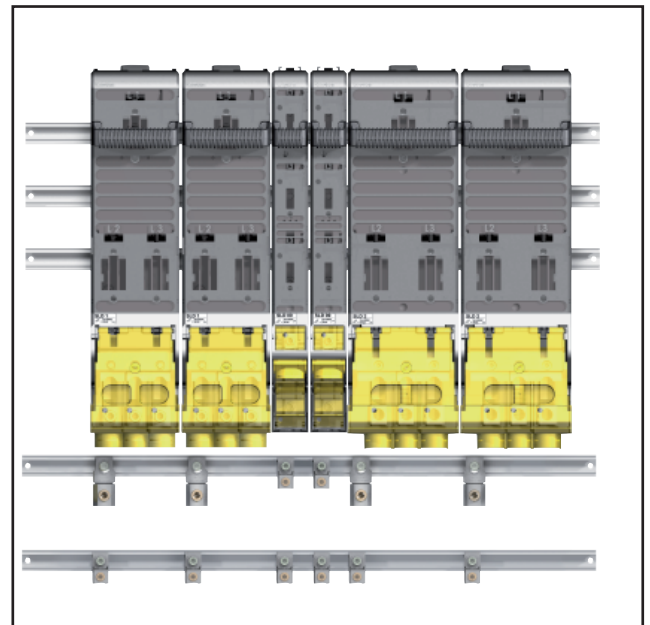
Features of the Kabeldon IP-system are its simplicity and reliability. These are the most important factors when you want to achieve low operating costs and high delivery reliability in a distribution system.

- Busbars of continuously-extruded aluminium sections, insulated with a layer of polyamid.
- The busbar has a touch-proof contact slot. This ensures safety regardless of where on the busbar the switching device will be placed.
- Switching devices are available for both diazed and blade fuses.



- The switching devices can be arranged in any order, regardless of rated current
- All parts, busbars and devices, fulfil IP2X protection in accordance with IEC 60529^{*)}.
- Switching devices 100-1600 A.
- It is easy to add new switching devices to existing distribution boards.
- Switching devices are mounted on and connected to the busbar system in the same operation.

- Switching devices can be connected when the system is live.
- Always voltage-free ("dead") when changing fuses.
- Busbars are available with rated currents from 400 to 1600 A.
- Switching devices, connectors and busbars combine to form a modular system. Each module is 12.5 mm. The modular system makes planning easier.
- The compact design of the switching devices makes them suitable for use in many different types of distribution boards.
- All switching devices have a utilisation category so that they can be used in cable distribution cabinets, substations and other distribution boards.



^{*)} IP2X is defined as:



Rugged, corrosion-resistant enclosures

Since the 1930s we have been manufacturing cable distribution cabinets.

The latest generation of cable distribution cabinets was developed based on our long experience of systems for demanding environments. At the same time, they satisfy current requirements for long life with undiminished safety and low operating and maintenance costs.

In Scandinavia, where snow is commonly cleared with snowploughs and where the temperature in winter can drop to $-25\text{ }^{\circ}\text{C}$ or lower, stability and surface treatment must be of the highest class. Resistance to external impact tests with 150 Nm according to standard IEC 60439-5.

In addition, good ventilation is essential to disperse heat during the summer and to eliminate condensation.

Enclosures

Enclosure series CDC and SDC are made of hot-dip galvanized sheet steel and are built to these standards:

ISO 1461, IEC 60439-1, IEC 60439-5.

Both CDC and SDC are developed in close collaboration with users. The enclosures satisfy the demands of the network companies and the contractors for simplicity and flexibility. They can also be used for broadband systems using fibre-optic cables.

The degree of protection is IP34D.



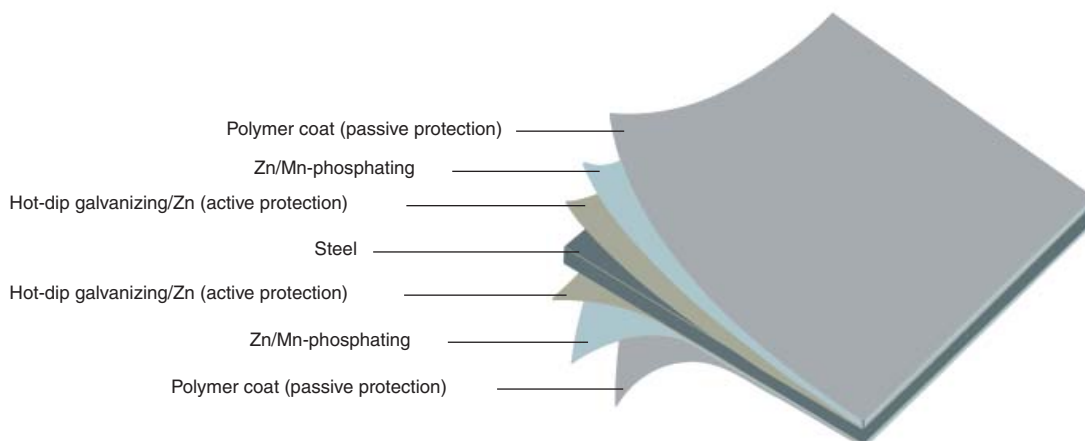
Surface treatment

CDC and SDC enclosures are made of sheet steel and are protected against corrosion by hot-dip galvanizing according to ISO 1461. For parts that are buried in the ground, the corrosion protection has been reinforced with a polymer coating. To make sure that the polymer coat adheres to the hot-dip galvanized surface, it has undergone zinc/manganese phosphating.

The above treatment gives excellent protection against corrosion, so that the life of the enclosures is long in the most commonly occurring environments for outdoor enclosures.



Six protective coats for outstanding corrosion protection of steel in the ground



Connect IT planning program

The *Connect IT* planning program is a Windows®-based planning program for cable distribution cabinets, service distribution boards and other applications based on the range of switching devices, busbar systems and enclosures.

Connect IT makes it easy to design an electrical distribution board and to obtain details of its components as follows:

- Enclosures with accessories
- Busbar system
- Switching devices and connection
- Own hardware added, e.g. fuses

Connect IT also generates information for ordering, planning and documentation.

- A single-line diagram, to which addresses, cable data and other details can be added.
- A front panel sketch, which can be used as a basis for component mounting.

Connect IT runs in a 32-bit environment and therefore requires Windows® 98/2000/XP or NT.

Connect IT offers great scope to freely create any desired combination of switching devices and enclosures. The work is done quickly and simply, with the aid of a picture and text.

A customer database can be linked to the program, so that it is well-suited to be used for tendering.

Step by step

Your starting point when making up a distribution board is to think about the required functions of the board, the relevant loads and other local conditions.

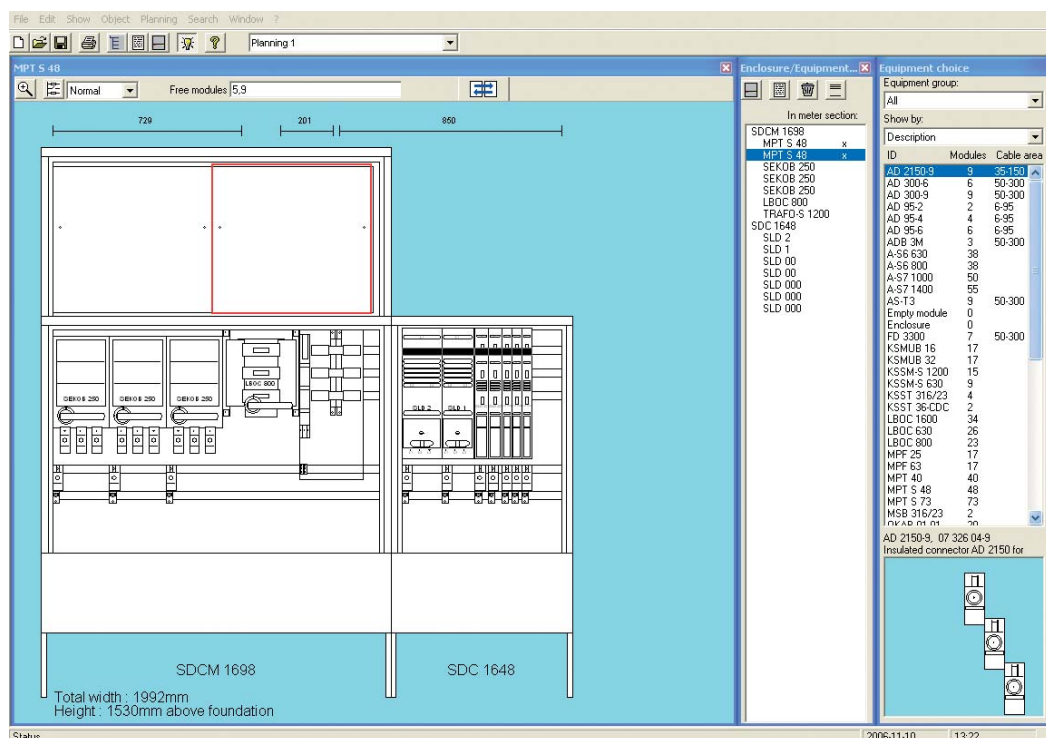
You collect the necessary basic data and article designations from a data base included in the program. You then set to work and methodically design your distribution board on screen. The whole task is logical and easy to follow at a glance. Once you have designed the board, you pick out an enclosure with room for the equipment you have selected, preferably one that will have enough space for later extensions.

Complete documentation

When you have made your design, it will be documented in the form of a SingleLine Diagram, Front Plan and Material Assembly. Then all you have to do is place your order!

- A distribution board can start off as a simple sketch on a piece of paper or a traditional drawing.
- The *Connect IT* program data base enables you to build the distribution board step by step.
- Finally, you equip the board with the required switches, accessories, etc.
- *Connect IT* gives you all the necessary documentation, both on screen and on paper.

Connect IT also could be loaded from our home page: www.abb.se/kabeldon



Front panel sketch of complete cabinet created in *Connect IT*.

Reference pictures

Electricity distribution



Cable distribution cabinet, Sweden



Cable distribution cabinet on an oil drilling Stavanger, Norway.



CDCM 420 for feeding and measuring of automatic equipment to traffic signals in Malmö, Sweden.



Cable distribution cabinet for street lighting box installed outside the Governor's Palace in Alexandria, Egypt.



Lighting distribution board, Riga, Latvia.

Reference pictures

Electricity distribution



Distribution board 1600 A at an industry.



Cable distribution cabinets used as electricity and fibre optic networks (access network).



TFO-room in Trondheim, Norway.



Busbars and devices are used in network and substation distribution boards.



Pole-mounted cable distribution cabinet with cable duct to the ground.



Safe switchgear with busbars and devices, Kabeldon IP-system.



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