

Switchboard system

NorLine® 800



NORELCO

Nordic Electric Company

NorLine[®] 800

Switchboard system

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Overview

A modern switchboard system

NorLine 800 is a metal enclosed switchboard system for office, housing, commercial and industrial use:

- for main switchboards
- distribution switchboards
- air-conditioning/HVAC switchboards
- for centralizing telecommunication, computer, antenna and alarm systems

Stylish and versatile design

The modern NorLine 800 system can be built as:

- free standing switchboards, multi-cubicle type
- wall mounted switchpanels

The structural designs are durable and versatile:

- the modular profile-structured steel chassis is rigid and durable
- fixed motor control units and cable sections can be used
- special solutions for IT connections; antenna-, RJ- and telecommunication connectors



*NorLine free standing switchboard
600x1704mm fitted with protective door and
IT-connection field*

Savings in total costs

- the switchboards have been developed in co-operation with customers and they are practical and easy to install
- cabling can be done via cable sections
- the installation costs of the new switchboard generation are smaller
- changes and additions can be easily made at the site

NorLine is reliable and safe

- the switchboards are manufactured in conformance with EU-, IEC- and SFS- standards
- special attention is placed in the design of operational safety
- metal parts are manufactured of hot galvanized sheet steel. The unpainted parts are made of zinc coated sheet steel with AFP coating which prevents white rust and scratches

Compatible distribution and measuring switchboards

- Norelco has specialized solutions for all switchboard needs in low and medium voltage sector
- Norelco has a wide range of standard switchboards which have been developed to be used together with NorLine 800 switchboards.



NorLine switchboards can be equipped with e.G. circuit breakers, fuses, control equipment, power sockets, relays and other switch and control gear



NorLine can be equipped with a metering section and the switchboard can include e.G. separate generator and UPS sections in the same structure

NorLine 800 Technical Specifications

Type	NKC
Rated voltages	400V, 690 V
Standards	SFS-EN 61439-1, IEC 61439-1 SFS-EN 61439-2, IEC 61439-2 SFS-EN 61439-3, IEC 61439-3, SFS 6000
Rated currents	25 - 800A
AC test voltage	2000V
Short-circuit current	rated short time withstand current I_{CW} max. 25 kA (1 s) rated peak withstand current I_{pk} max. 52.5 kA
Enclosure class	IP20 or IP30 as standard, IP31 on demand
Surface treatment	multiphase pretreatment and epoxy powder coating at 220 °C
Standard colour	Norelco white, other colours on special order
Protection class	protection class I

Structural Components of System

Covers and doors

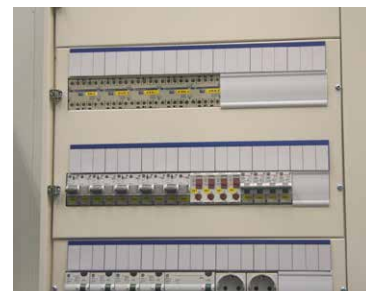
The unit module heights for different field widths have been listed in the table below and in the images next page. Covers are equipped with never-lost special screws. The covers of the terminal blocks and all other covers can be equipped with hinges and closing devices if necessary.

UNIT HEIGHT	150mm field	300mm field	450mm field	600mm field
140 mm	-	yes	yes	yes
280 mm	-	yes	yes	yes
420 mm	-	yes	yes	yes
560 mm	-	yes	yes	yes
1700 mm	shaft door	shaft door	-	-
1980 mm	shaft door	shaft door	-	-

NorLine cover sizes for various field widths

The standard covers have solutions for DIN equipment, door-mounting equipment, kWh-meters, RJ-connectors and telephone connectors.

The switchboards can furthermore be equipped with an external protective door that can be equipped with various type of latches and locks. The door is easy to add afterwards. The switchboard with a door is a stylish unit.



All covers, also DIN equipment covers, can be hinged

Structure

The enclosures of the NorLine 800 switchboard system are made of steel parts. The wide selection of standard metal parts can be utilized to build either wall-mounted or free-standing switchboards. Bigger switchboards are always designed and built as free-standing units. The NorLine 800 system has 7 different height modules.

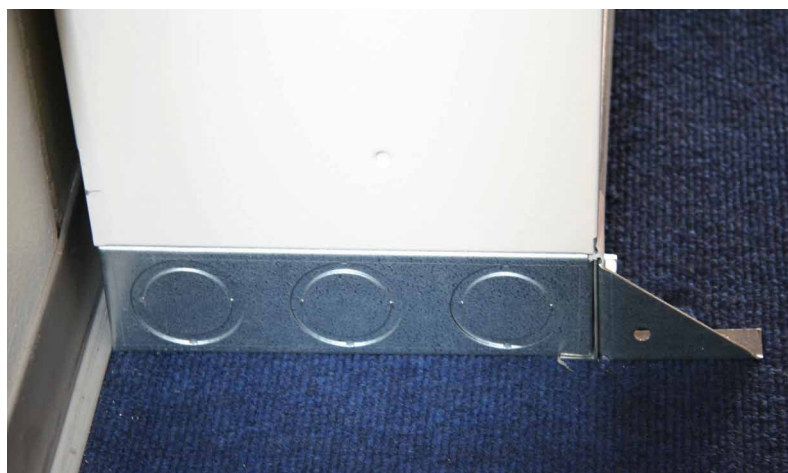
Structure height mm	Structure height mm	Field width mm	Structure type	Mounting type
444	120	450	wall-mounted	wall mounting
584	150	600	wall-mounted	wall mounting
864	150	600	wall-mounted	wall mounting
1144	150	600	wall-mounted	wall mounting
1424	150	600	wall-mounted	wall mounting
1704	210	600	wall-mounted	wall mounting
1774	210	600	free-standing on the floor	fixed on the floor
1984	210	600	wall-mounted	wall mounting
2054	210	600	free-standing on the floor	fixed on the floor

NorLine body types, heights and depths

The wall mounted switchboards have no separate fixing rails because the body is equipped with a fixed wall mounting part, which has fixing holes ready for easy wall fixing. The floor models are equipped with floor mounting pieces and wall mounting parts.



The wall mounted 600x724mm Norline distribution panel



The pedestal opens at the front and there are knock-out flanges on the side

Busbars

Main busbars are made of aluminum or copper. Both 4- or 5- busbar systems can be used.

Other structural parts

All cabling on the top the switchboard is made through multigate flanges. The cabling between sections is done through special plastic flanges in order to prevent the contact of cables with the body of the switchboard.

PVC-made dropping protection plates are used between the vertical units to prevent accidents that can occur when something drops to a live units. Free-standing switchboards have a pedestal that can be opened from the front side to facilitate the installation of cables.

IT connection field elements

Telecom and data connectors are installed into a 150mm wide field, which can be equipped for this purpose from top to bottom. The IT cabling can be done separately from the power cabling. The antenna, telecom and data connection fields can be equipped with lockable doors.

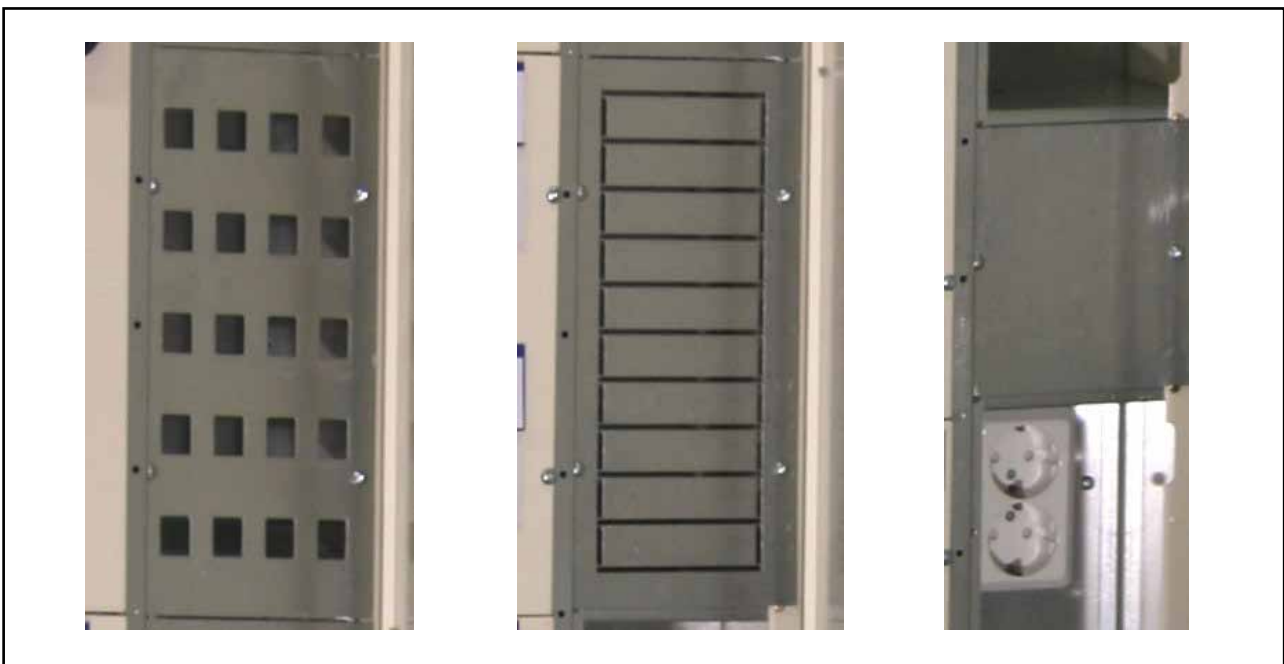
There are standard solutions for the following connector types:

- RJ connectors of practically any size, 20 connectors fit in one panel.
- telephone connectors, Krone LSA, 10 connectors fit in one panel.
- antenna branching connectors will be placed under blind panels

The IT field can also be equipped with:

- a shelf for e.g. modems
- wall socket

If there is a need for bigger size customer devices, they can be installed in the 445mm field next to the IT field.



RJ connector panel, telephone connection panel, antenna connector panel and socket outlet of an IT connection field

Installation and Maintenance

Mountability is always designed

The switchboards are manufactured according to the information provided by the customer defining e.g. the enclosure class, the numbers of incoming and outgoing cables and their types. The switchboards are equipped with feeder gaskets and cable terminals, based on this information. The cable type is always considered when dimensioning, so even an aluminum cable will have enough room for easy connection.

Cabling can be done from upside or from downside. To make installation and maintenance easier, NorLine 800 devices can be cabled with fixed unit outputs or cable vaults. A cable channel can be used to lead the cables easily straight to the connectors.

The switchboards are equipped with the safe comb-like PVC plastic dropping protection plates that add to safety, even when maintenance is needed in a live switchboard. For safety reasons the settings of the circuit breakers has been set to minimum values. Before commissioning please check the values and reset them when necessary.

Transport and Storage

Transport of the Switchboards

The switchboards are always packaged so that the handling of the switchboard on the site is as easy as possible. NorLine switchboards are transported in multiple units, when the total length of the switchboard is over 2.4 metres. When planning transport, space needed for projecting parts, such as latches and knobs has to be considered.

Connecting the Transport Cut-off

Connecting the transported units is done on site. In order to connect successfully, the floor has to be even with a deviation ± 1 mm/m. Connecting is simple with the provided connectors and bolt packs, but to avoid problems, please study the separate connecting instruction. The transport units are mechanically connected to each other at the top with transport connection pieces and on the bottom with floor installation brackets.

Storage of Switchboards on Site


If the equipment is not immediately installed on site, it is best kept in its plastic packaging. If it is stored a long time, the plastic packaging should be perforated in the lower part, to let the moisture get out. In this way the switchboards that are intended for indoor use don't get exposed to moisture. The equipment must not be kept outdoors, or in cold or moist places.

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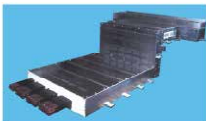
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