

KONČAR

ELECTRONICS AND
INFORMATICS

DC Connecting/ terminal field KONDC-SP/PP

The KONDC-SP/PP DC Connecting/terminal field is an integral part of the 660 V DC power distribution system in rectifier stations for public electric urban transport. Its primary function is to electrically interconnect feeder and return panels within the system.

KEY FEATURES:

- Motorized panel disconnector for safe and efficient operation
- Built-in interlocks ensuring secure operation and safe panel management, while allowing DC distribution adjustments in accordance with the rectifier station configuration
- Integrated PLC programmable controllers providing protection for equipment and personnel against failures and operational errors
- Intuitive control and monitoring, with voltage and total panel current measurement displayed on the front panel
- Modular design allowing for easy installation alongside existing feeder and return panels, ensuring seamless electrical interconnection

The KONDC-SP/PP DC Connecting/terminal fields are housed in a metal enclosure, with a design that enables system expansion by side-mounting to feeder or return panels within the rectifier station.

The terminal field is used to interconnect two feeder panels, while the connecting field can be configured as either left or right-sided, depending on whether it connects to a feeder or return panel.

The DC Connecting/terminal fields are housed in self-standing metal enclosures with front access to all equipment. Control of the integrated panel disconnector, system status monitoring, and current/voltage measurement are performed safely via dedicated buttons and indicators on the front panel, which includes LED indicators, a voltmeter, and an ammeter.

For maintenance and servicing, access to the disconnector and control, monitoring, and protection equipment is provided by

*Connecting and
terminal field
cabinets*



opening the panel door.

The upper section of the connecting field, located behind the front door, houses the central PLC controller, which manages panel control, monitoring, and protection. This section also contains: protective MCB breakers for 48 V DC and 24 V DC auxiliary power supplies, signal terminal blocks for diagnostics and alerts and signal relays and contactors for disconnector operation. The central PLC controller automates disconnector operation based on signals received from DC feeder and return panels within the rectifier station.

The upper section of the terminal field contains: protective MCB breakers for 48 V DC and 24 V DC auxiliary power supplies, signal terminal blocks, signal relays, and contactors for disconnector operation.

The motorized disconnector is positioned in the lower section of both the connecting and terminal fields. Copper busbars enable electrical interconnection with feeder and return panels within the rectifier station. Connections can be made directly via busbars or through appropriate cables.

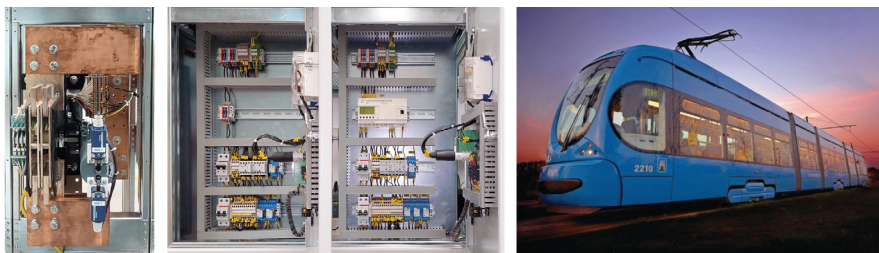
The disconnector is equipped with an operational interlock linked to the switching states of the feeder and return panels, enhancing personnel safety during maintenance. Adjacent to the disconnector, the system includes: measurement shunts for precise current measurement, measuring transducers for voltage and current monitoring on the busbars.

The field assembly also includes a negative busbar for measurement and protection purposes. At the bottom of the field, a grounding busbar is installed for enhanced system safety.



*Connecting and
terminal field busbars*

KONDC-SP/PP DC Connecting/terminal field



TECHNICAL SPECIFICATIONS	
	KONDC-SP/PP DC Connecting/terminal field
Voltage	
Contact network voltage	660 - 750 VDC
Auxiliary DC power supply (control & protection)	48 VDC
Auxiliary DC power supply (signaling)	24 VDC
Busbar current capacity	4000 A
Nominal ratings	
Nominal voltage (Un) / upper nominal voltage (UNe)	750 VDC / 900 VDC
Nominal insulation voltage (UNm)	1200 VDC
Nominal short-time withstand current (INcw)	50 kA / 250 ms, 70 kA peak
Nominal short-circuit current (INss)	50kA
Peak short-circuit current (INss)	70 kA
Contact network peak time constant (TNc)	31.5 ms
Nominal operating current of main busbars (SP)	4000 A
Nominal operating current of main busbars (PP)	4000 A
Disconnectors & switching equipment	
Connecting field disconnector	Motorized disconnector STOL4021-MO-R-048DC-2-8-A, Ith = 4000 A, INe = 4000 A, UNe = 1800 V
Terminal field disconnector (right/left)	Motorized disconnector STOL4021-MO-R/L-048DC-2-8-A, Ith = 4000 A, INe = 4000 A, UNe = 1800 V
General data	
Protection & test functions	Protection against operational errors, testing of auxiliary voltage presence
Control & monitoring	Busbar voltage and current monitoring, PLC
Local disconnector control	Operated via push buttons and insulated rods, with magnetic interlocks preventing incorrect operations
Local equipment status indication	Voltmeter, ammeters, LED indicators, schematic diagram
Remote monitoring & control signals	Volt-free relays for remote integration
Compliance with standards	HRN EN 50123-6
Cooling method	Natural convection cooling
Environmental conditions	Storage temperature: -20°C to +70°C, operating temperature: 0°C to +40°C, maximum operating altitude: 1000 m
Relative humidity (non-condensing)	Up to 90% at 30°C
Mechanical protection rating	Front & rear IP20, side panels IP30
Colour	Light gray front surface, RAL 7035
Dimensions (width x depth x height)	450 x 1500 x 2200 mm
Weight	350 kg