OPERATING INSTRUCTIONS

NORDAC *connect*

BU 6200 GB

Getriebebau NORD

GmbH & Co. KG

1 General

NORDAC *connect* is a device that will switch ON or OFF one phase sequence in motors with ratings between 0.25 and 3.0 kW. Integrated in the terminal box of the motor, it ensures complete motor protection as well. With NORDAC *connect*, no extra components need to be provided in the switch cabinet with which to wire up the drive or to monitor its working. This is what makes NORDAC *connect* the perfect switchgear for many a drive which is operated on an autonomous basis, ensuring both effective control and absolute operational safety.

1.1 Instructions for safety and installation

Three-phase motors with a NORDAC *connect* motor switch are operational equipment for use in industrial power plant and are operated at voltages which on contact may cause serious injuries or even death.

CAUTION! DANGER!

WARNING

THESE DEVICES MUST BE EARTHED.

For the device to be operated safely, installation and initial start-up must be performed by qualified personnel in a workmanlike manner, with all of the directions mentioned in the present Operating Instructions being followed as specified.

In particular both the generally and locally applicable installation and safety regulations for any work on power installations (e.g. VDE) and the regulations concerning the professional use of tools and the use of any equipment for personal protection must be observed

The mains input terminals may be dangerously live even after the motor has stopped (e.g. as a result of an electronic signal disabling the [RUN] condition, or following a jamming of the drive). The motor being at rest does not mean that it is also electrically isolated from the mains.
Always use insulated screwdrivers in the terminal areas concerned.

Make sure that the source of input voltage is disconnected before you establish connections to the unit or change them.

Touching exposed or unconnected terminals may lead to serious injuries or even death!

European EMC Directive

If the instructions of the present manual regarding installation of the NORDAC *connect* switchgear are duly followed, the device will meet all of the EMC requirements defined in the applicable directive in accordance with the EN61800-3 product standard for motor-driven systems.

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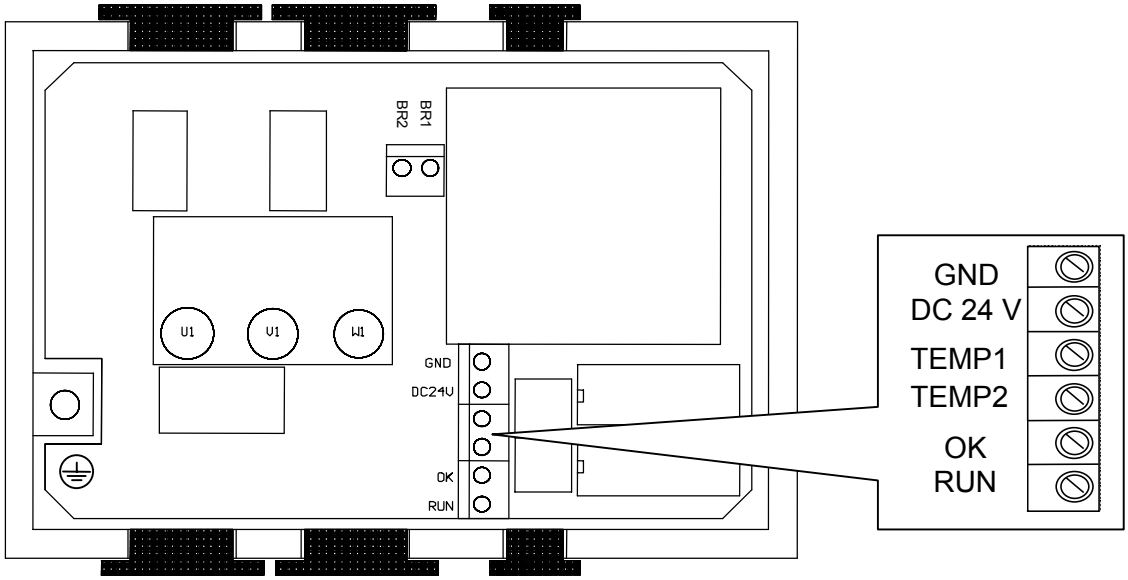
2 And this is how it works

- The NORDAC *connect* contains a power switch which, by providing a 24 V DC control signal [RUN], will cause the permanently applied voltage to be fed to the motor windings.
- At the same time, if there is a mechanical brake, it is lifted automatically via the integrated brake rectifier. The drive starts to run.
  When the control signal is removed, the power supply to the motor windings is cut off as well, and the mechanical brake takes hold again.
- All the time the drive is in operation the motor temperature is monitored by a thermal relay. In the event of a temperature fault, the NORDAC *connec*t will automatically switch off the drive and transmit a fault signal to the master control system (the [OK] signal changing to low).
- A reversal of the phase sequence is obtained by way of exchanging two input phases.

3 Connection



3.1 Power supply

Terminal	Clockwise rotation	Connection: Anti-clockwise rotation
U1	L1	L2
V1	L2	L1
W1	L3	L3

Use 4 mm ring tongues to connect the unit to the mains.

When you install the NORDAC *connect*, never do anything conflicting with the safety regulations !

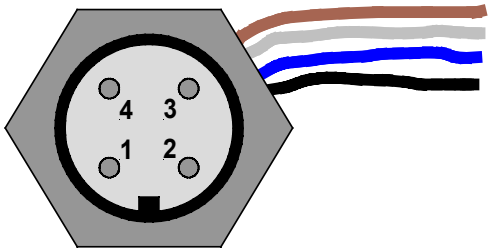
3.2 Control terminals

Terminal	Function
GND	0 V reference potential
DC 24 V	24 V_{DC} supply voltage
RUN	24 V_{DC} enable signal high = start , low = stop
OK	24 V_{DC} readiness-for-operation acknowledgement signal high = ready for operation, low = excess temperature

Maximum connection cross section: ...1.5 mm ^{2}

Optional: **M12** circular connector

If M12 system cables are used (e.g. when the switchgear is to be connected to a field bus subassembly), the NORDAC *connect* can be equipped with an optional M12 flush-mounting connector.
The M12 flush-mounting connector can be inserted in any of the four M25 cable entries.



Pin	Colour	Function
1	brown	24 V DC
2	white	RUN
3	blue	GND
4	black	OK

3.3 Thermal protection of the motor

To protect the motor from overheating, the motor winding is continuously monitored by a thermostat connected to the terminals TEMP1 and TEMP2. Whenever an overload or overtemperature condition occurs, the NORDAC *connect* will switch off the drive automatically.

If the enable signal [RUN] is not removed, the drive will start up again on its own when the motor temperature has sufficiently decreased.

To prevent the drive from restarting automatically, evaluation of the readiness-for-operation acknowledgement [OK] signal can be assigned to a control device (PLC).

3.4 Three-phase brake motors with a NORDAC *connect*

Whenever a three-phase brake motor is combined with a NORDAC *connect* motor switch, the wiring needed to connect the brake is taken care of at the factory.
The brakes used have got a coil voltage of 180 V DC. They are connected to terminals BR1 and BR2 .

4 Technical data

NORDAC *connect*			
Power terminals			
Mains voltage			3 AC 380 V ... 440 V ±10%, 47 to 63 Hz
Mains current			0.5...8.0 A
Motor rating	(kW)		0.25...3.0
4-pole three-phase standard motor	(hp)		$^1/_3$...4
Control terminals			
Supply voltage			U_{24V} 19 V...30 V I_{24V} < 50 mA + I_{OK} I_{24V} < 1A (short-circuit)
Control input (RUN)			$U_{RUN(AUS)}$ 0...5 V, I_{RUN} < 2 mA $U_{RUN(EIN)}$ 15..30 V, I_{RUN} < 20 mA
Output (OK)		OK	U_{OK}(high) U_{24V}
		Overtemperature	U_{OK}(low) high-impedance
			I_{OK}(max) 0...0,68A (short-circuit)

Type of enclosure:	IP55
Ambient temperature:	-10°C to +50°C

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