



NRS 5 - ... Non-explosive Contactor System



Certificate: ATEX



Use:

Non-explosive contactors are intended for local and remote control of electric drives of various machines and equipment with the control of the switched device operating parameters. Non-explosive contactors are intended for an environment with a methane explosion hazard or internal use in other than mine areas with a methane and dust explosion hazard. Non-explosive contactors are produced in many models which differ in supply voltage, switched output and designation. See the list of manufactured versions.

Description:

The non-explosive contactor consists of a non-explosive case divided to an instrument and terminal block part.

The instrument part houses electrical equipment and electronic components. It is equipped with a removable cover. On the cover there is a control panel with switches, pushbuttons and a sight glass. Under the sight glass there are LED signalling the switch status.

Power and signal cables brought in through non-explosive bushings are terminated in the terminal block part. The type of bushings (see technical parameters) and their number is different at various models. As standard, the contactor is equipped with five bushings. The connected device status signalling and the contactor remote control can be made as an intrinsically safe model.

Electrical equipment of the non-explosive contactor slightly differs at each version. The state of the cable and its integrity, grounding conductor integrity and ground lead are monitored at the power supply to the controlled equipment. Important operating parameters of connected equipment such as motor winding temperature, oil temperature and level etc. are usually also monitored.

Technical Parameters:

Model	I M2 Ex d I Otherwise according to the version
Supply voltage	3x500 V / AC, 660 V/AC 3x1000V / AC according to the ver.
Nominal current of auxiliary contacts	up to 63 A according to the version
Control voltage	24, 42, ... V (DC, AC) according to the version
Power bushing	NVGY40, cable ϕ 40-42 mm
Power bushing	PNV48, cable ϕ 14-27 mm
Power bushing	PNV32, cable ϕ 12-18 mm
Power bushing	NV32-52, cable ϕ 30-52 mm
Signal bushing	PNV32, cable ϕ 12-18 mm
Connected conductor cross-section	6 – 120 mm ² – power 0.2 – 4 mm ² – control
Temperature range	from -20 to 0°C From +40° according to the version
Relative humidity	95% without condensation
Dimensions including bushings	975 x 430 x 214mm
Weight	86-110 kg according to the version

From the electrical point of view there are two different types of contactors:

- reversing
- non-reversing

The contactor is initiated by the main switch. The contactor switch-on is blocked e.g. by an integrity monitor, winding temperature monitor, insulation status monitor. To check the function of monitors there are test switches on the case cover. The contactor can be controlled locally or remotely. The method of contactor local and remote control is described in detail in user manuals to specific versions. The contactor can also control subordinated devices such as lighting, horn etc. If a failure occurs on a controlled device or supply cable to this device during operation, the connected device is switched off.

The contactor status is signalled by LEDs visible through the sight glass. The following statuses are signalled:

- Voltage presence on the input
- Power output switching on
- End switch failure
- Bushing insulation status
- Network insulation status
- Cable integrity
- Thermal protection

The number and kind of signals are adjusted to individual contactor versions.

If the range of contactors given in the list of manufactured versions does not meet customer's requirements, it is possible to modify the NRS-5 circuit diagram according to customer's requirements upon agreement.

The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.



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Manufactured versions of the non-explosive contactor:

- NRS 5 -BA For local and remote control of 500 VAC motors up to the output of 30 kW for mine equipment with reversing and intrinsically safe remote control.	Model	I M2 Ex d[ia] I
	Nominal current	max 63A
	Number of power bushings	1
	Number of subordinated bushings	0
- NRS 5- BA 2 For local and remote control of 500 VAC electrical machines and other mine equipment up to the output of 10 kW with reversing and intrinsically safe remote control.	Model	I M2 Ex d[ia] I
	Nominal current	max 2 x 20A
	Number of power bushings	2
	Number of subordinated bushings	0
- NRS 5-BA 1000 For automatic control of 1000 VAC motors up to the output of 4 kW for driving a ventilator with intrinsically safe remote control.	Model	I M2 Ex d[ia] I
	Nominal current	max 16A
	Number of power bushings	1
	Number of subordinated bushings	0
- NRS 5-BA K-KO For automatic control of 500 VAC motor up to the output of 30 kW for the equipment for supporting walking in sloping areas with intrinsically safe remote control.	Model	I M2 Ex d[ia] I
	Nominal current	max 63A
	Number of power bushings	1
	Number of subordinated bushings	0
- NRS 5-BN For automatic control of 500 VAC motor up to the output of 30 kW for driving mine equipment with intrinsically safe remote control.	Model	I M2 Ex d[ia] I
	Nominal current	max 63A
	Number of power bushings	1
	Number of subordinated bushings	0
- NRS 5-BN-UVS-150 For local control of 500 VAC of electrical machines and other mine equipment with reversing.	Model	I M2 Ex d I
	Nominal current	max 63A
	Number of power bushings	4
	Number of subordinated bushings	0
- NRS 5 HAK For local and remote control of 500 VAC hydraulic generating unit.	Model	I M2 Ex d[ia] I
	Nominal current	max 63A
	Number of power bushings	2
	Number of subordinated bushings	0
- NRS 5 HAK/D For remote control of 500 VAC 22-37 kW electrical motor of a hydraulic unit with lighting and acoustic signalisation. The remote control is made as an intrinsically safe model.	Model	I M2(M1) Ex d[ia] I
	Nominal current	max 51A, 43A, 31A
	Number of power bushings	1
	Number of subordinated bushings	2
- NRS 5-S For remote control of 500 VAC 22-37 kW electrical motor of a hydraulic unit with lighting and acoustic signalisation. The remote control is made as an intrinsically safe model.	Model	I M2(M1) Ex d[ia] I
	Nominal current	max 63A
	Number of power bushings	1
	Number of subordinated bushings	1
- NRS 5-R For remote control of electrical machines e.g. 500 VAC 30 kW drives controlled by soft starts for continuous Engine commissioning with an intrinsically safe remote control.	Model	I M2 Ex d I
	Nominal current	max 50A
	Number of power bushings	1
	Number of subordinated bushings	0
- NRS KOM For local and remote control of 500 VAC electrical machines and other mine equipment.	Model	I M2 Ex d I
	Nominal current	max 32A, 1,5A
	Number of power bushings	1
	Number of subordinated bushings	1
- NRS 5-VY For remote control of 660 VAC railway point with reversing and with an intrinsically safe remote control.	Model	I M2(M1) Ex d[ia] I
	Nominal current	max 4A
	Number of power bushings	1
	Number of subordinated bushings	1

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