Technical Commercial Information

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Title: **New auxiliary contacts and electrical diagrams for VD4 series up to 24 kV**

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1. Introduction

The aim of the following Technical Commercial Information is to notify the sales network and customers that as of May 2, 2014, orders for VD4 circuit breakers (all IEC versions fitted with EL actuator, up to 24 kV) will be loaded and delivered with Kraus&Naimer auxiliary contacts.
Electrical diagram of circuit-breaker will be updated due to the introduction of new types of auxiliary contacts and electrical designations according to IEC 81346.

2. Product

This Technical Commercial Information applies to the following series of circuit breakers:

a) freestanding construction VD4 series, 12 .. 24 kV according to IEC STDs fitted with EL actuator
b) withdrawable construction VD4/P - VD4/W - VD4/SEC - VD4/Z8 - VD4/ZS8 - VD4/ZT8 series 12 .. 24 kV according to IEC STDs fitted with EL actuator
c) special versions according to GOST STDs

Please see below the table with the correspondence between the electrical diagrams with Kraus&Naimer (hereinafter called K&N) auxiliary contacts and Calor Emag (hereinafter called CE) auxiliary contacts.

New electrical diagrams are interchangeable with previuous ones with some exception:

- 1VCD400151 (it supersedes 1VCD400046 and 1VCD400099):
  I. fig. 31 + fig. 32 are equivalent to fig.34 of previous electrical diagrams
  II. there are no fig.33 and fig.35 as for previous electrical diagrams
- 1VCD400153 (it supersedes 1VCD400064 e 1VCD400182): there are no fig.33 and fig.35 as for previous electrical diagrams.

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	Number of electrical diagram	
	actual	new
Auxiliary contacts manufacturer	Calor Emag	**Kraus & Neimer**
Electrical designations according to	IEC 61346	**IEC 81346**

Low-mid duty range up to 24 kV		
Freestanding construction		
Standard version with terminal box	1VCD400046	1VCD400151
Special version with plug 64 pins	1VCD400055	1VCD400152
Special version with plug 58 pins	1VCD400064	1VCD400153
Special version with truck	1VCD400078	1VCD400154
Withdrawable construction		
Version for ABB UniGear / UniSec panel and PowerCube cassette (manually operated truck)	1VCD400047	1VCD400155
Version for ABB UniGear panel and PowerCube cassette (motorized truck)	1VCD400048	1VCD400156
Version for ABB Z8-ZS8-ZT8 (manually operated truck)	1VCD400080	1VCD400158
Version for ABB Z8-ZS8-ZT8 (motorized truck)	1VCD400085	1VCD400159

High duty range up to 17.5 kV		
Freestanding construction		
Standard version 40 kA with terminal box	1VCD400046	1VCD400151
Standard version 50 kA with terminal box	1VCD400099	1VCD400151
Special version 40 kA with plug 64 pins	1VCD400055	1VCD400152
Special version 50 kA with plug 64 pins	1VCD400181	1VCD400152
Special version 40 kA with plug 58 pins	1VCD400064	1VCD400153
Special version 50 kA with plug 58 pins	1VCD400182	1VCD400153
Withdrawable construction		
Version 40 kA for ABB UniGear panel and PowerCube cassette (manually operated truck)	1VCD400047	1VCD400155
Version 50 kA for ABB UniGear panel and PowerCube cassette (manually operated truck)	1VCD400100	1VCD400155
Version 40 kA for ABB UniGear panel and PowerCube cassette (motorized truck)	1VCD400048	1VCD400156
Version 50 kA for ABB UniGear panel and PowerCube cassette (motorized truck)	1VCD400102	1VCD400156

See below pictures: (left side) VD4 withdrawable construction, pole distance 150 mm, fitted with K&N auxiliary contacts and standard cord with plug 58 pins; (right side) detail of K&N auxiliary contacts

VD4 freestanding construction are available with 2 alternative completion (please specify which one at the order stage):

- K&N auxiliary contacts not wired (wiring is at customer care) (see picture below on left side; "orange" terminal box is only for other electrical accessories)
- K&N auxiliary contacts wired to terminal box (see picture below on right left)

3. Price lists

Please refer to the VD4 series price list.

4. Availability

K&N auxiliary contacts are going to be fitted on VD4 series (together with wiring as for new electrical diagram) for order confirmation issued starting from 2nd of May 2014.
K&N auxiliary contacts phase-out CE auxiliary contacts with relevant wiring and electrical diagrams.
We reserve to confirm the order feasibility of VD4 only for limited quantities and for a restricted time (max. 2 months) if with CE auxiliary contacts.

5. Sales support tools

Detailed information will be available in the VD4 catalogue, instruction manual and order form which are currently being updated.
Attached to current Technical Commercial Information are the files relevant to:

- electrical diagrams of VD4 fitted with K&N auxiliary contacts
- instruction for wiring (at customer care) of K&N auxiliary contacts in VD4 frestanding construction

See below the main characteristics of K&N auxiliary contacts.

Kraus & Naimer auxiliary contacts conform to the following standards/regulations/directives:

- IEC 62271-100
- IEEE C37.54
- EN61373 cat.1 class B / vibration test
- EN61373 cat.1 class B / shock test
- Germanish Loyd regulation / vibrations envisaged by the shipping registers
- UL 508
- EN 60947 (DC-21A DC-22A DC-23A AC-21A)
- RoHS Directive
-

Electrical characteristics:

insulation voltage (ref. VDE 0110 STDs, group C):	660 V AC, 800 V DC
rated voltage:	24V ... 660 V
test voltage:	2 KV per 1 min
maximum rated current:	10 A - 50/60Hz
breaking capacity:	Classe 1 (IEC 62271-1)
number of contacts:	10 / 16 / 20 (*)
contact travel:	90°
actuating force:	0,6 Nm
resistance:	< 6,5 mΩ
storage temperature:	-30 °C ... +120 °C
operating temperature:	-20 °C ...+70 °C (-30° acc. ANSI 37.09)
contact overtemperature:	10 K
mechanical life:	30.000 mechanical operation
degree of protection:	IP20
cable cross-section:	1 mm^2

(*) Remark: shunt tripping release and/or additional shunt tripping release use 1 and/or 2 contacts (normally open), thereby reducing the number of auxiliary contacts available.

Additional requirements (ref. IEC 60947)

Rated voltage Un		Breaking capacity (10000 interruptions)
220 V AC	cosϕ = 0.70	20 A
220 V AC	cosϕ = 0.45	10 A
24 V DC	1 ms	12 A
	15 ms	9 A
	50 ms	6 A
60 V DC	1 ms	10 A
	15 ms	6 A
	50 ms	4.6 A
110 V DC	1 ms	7 A
	15 ms	4.5 A
	50 ms	3.5 A
220 V DC	1 ms	2 A
	15 ms	1.7 A
	50 ms	1.5 A
250 V DC	1 ms	2 A
	15 ms	1.4 A
	50 ms	1.2 A

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