Technical Commercial Information

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Division: Power Products

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Title: New auxiliary contacts and electrical diagrams for HD4 series

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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 September 15, 2015, orders for HD4 circuit breakers (all versions fitted with ESH actuator, up to 36 kV) will be loaded and delivered with Kraus&Naïmer 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) HD4 - /GT series freestanding construction, from 12 kV to 36 kV, all ratings
b) HD4/P - /MV - /I2 - /US - /SEC - /GT/P series withdrawable construction, from 12 kV to 36 kV, all ratings

Please see below the table with the correspondence between the electrical diagrams with Kraus&Naïmer (hereinafter called K&N) auxiliary contacts and the current auxiliary contacts. New electrical diagrams are interchangeable with previous ones.
<table>
<thead>
<tr>
<th>Electrical diagram no.</th>
<th>Current</th>
<th>Kraus&amp;Neimer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aux. contacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical designation according to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEC 61346</td>
<td>IEC 81346</td>
<td></td>
</tr>
<tr>
<td>Fixed construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1VCD400005</td>
<td>1VCD400192</td>
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<tr>
<td>1VCD400006</td>
<td>1VCD400196</td>
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<tr>
<td>1VCD400112</td>
<td>1VCD400195</td>
<td></td>
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<tr>
<td>Withdrawable construction</td>
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<td>1VCD400007</td>
<td>1VCD400197</td>
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<tr>
<td>1VCD400111</td>
<td>1VCD400198</td>
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<td>1VCD400008</td>
<td>1VCD400199</td>
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</tr>
<tr>
<td>1VCD400009</td>
<td>1VCD400202</td>
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</tr>
</tbody>
</table>

See below pictures: (left side) HD4 withdrawable construction, pole distance 150 mm, fitted with K&N auxiliary contacts; (right side) detail of K&N auxiliary contacts.
3. Price lists
Please refer to the HD4 series price list.

4. Availability
K&N auxiliary contacts are going to be fitted on HD4 series (together with wiring as for new electrical diagram) for order confirmation issued starting from 15th of September 2015.
K&N auxiliary contacts phase-out current auxiliary contacts with relevant wiring and electrical diagrams.
We reserve to confirm the order feasibility of HD4 only for limited quantities and for a restricted time (max. 2 months) if with current auxiliary contacts.

5. Sales support tools
Attached to current Technical Commercial Information are the files relevant to:
- electrical diagrams of HD4 fitted with K&N auxiliary contacts
Detailed information will be available in the HD4 catalogue, instruction manual and order form which are currently being updated.
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 mm²

(*) 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)

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<table>
<thead>
<tr>
<th>Voltage (V)</th>
<th>Cosφ</th>
<th>Breaking capacity (10000 interruptions)</th>
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<tbody>
<tr>
<td>220 V AC</td>
<td>0.70</td>
<td>20 A</td>
</tr>
<tr>
<td>220 V AC</td>
<td>0.45</td>
<td>10 A</td>
</tr>
<tr>
<td>24 V DC</td>
<td></td>
<td>12 A</td>
</tr>
<tr>
<td>50 ms</td>
<td>9 A</td>
<td></td>
</tr>
<tr>
<td>60 V DC</td>
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<td>10 A</td>
</tr>
<tr>
<td>15 ms</td>
<td>6 A</td>
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<tr>
<td>1 ms</td>
<td>7 A</td>
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<tr>
<td>110 V DC</td>
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<td>4.6 A</td>
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<tr>
<td>15 ms</td>
<td>4.5 A</td>
<td></td>
</tr>
<tr>
<td>50 ms</td>
<td>3.5 A</td>
<td></td>
</tr>
<tr>
<td>220 V DC</td>
<td></td>
<td>2 A</td>
</tr>
<tr>
<td>1 ms</td>
<td>1.7 A</td>
<td></td>
</tr>
<tr>
<td>50 ms</td>
<td>1.5 A</td>
<td></td>
</tr>
<tr>
<td>250 V DC</td>
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<td>2 A</td>
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<tr>
<td>1 ms</td>
<td>1.4 A</td>
<td></td>
</tr>
<tr>
<td>50 ms</td>
<td>1.2 A</td>
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</tbody>
</table>

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