1. Introduction

The aim of the following Technical Commercial Information is to notify the sales network and customers that as of September 1, 2015, orders for Vmax circuit breakers (all IEC versions fitted with EL actuator, up to 17 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:

- freestanding construction Vmax series 12 kV and 17,5 kV according to IEC STDs
- freestanding construction Vmax series 15 kV according to ANSI STDs
- removable construction Vmax/F series for UniGear 500 R panel (IEC)
- Vmax/L series withdrawal construction for UniGear 550 panel (IEC)
- Vmax/W series withdrawal construction 12 kV and 17,5 kV according to IEC STDs
- Vmax/W series withdrawal construction 15 kV according to ANSI 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 previous ones with some exception:

- Diagram 1VCD400151 (it supersedes 1VCD400065):
  - Fig. 31 of current diagram is equivalent to fig. 31 of the new diagram;
  - Fig. 32 of current diagram is equivalent to fig. 31+32 of the new diagram;
  - Fig. 31+33 of current diagram is equivalent to fig. 31+32+33 of the new diagram;
  - Fig. 34 of current diagram is equivalent to fig. 31+32 of the new diagram;
  - Fig. 31+35 of current diagram is equivalent to fig. 31+32+33 of the new diagram;

ABB S.p.A.
Power Products Division
Unità Operativa Sace-MV
### Electrical diagram no.

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aux. contacts</td>
<td>Calor Emag</td>
<td>Kraus &amp; Neimer</td>
</tr>
<tr>
<td>Electrical designation according to</td>
<td>IEC 61346</td>
<td>IEC 81346</td>
</tr>
</tbody>
</table>

#### Fixed construction
- Standard version with terminal box
- Special version with 58 pins plug
- /F and /FH versions

<table>
<thead>
<tr>
<th></th>
<th>1VCD400065</th>
<th>1VCD400151</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1VCD400087</td>
<td>1VCD400153</td>
</tr>
<tr>
<td></td>
<td>1VCD400103</td>
<td>1VCD400171</td>
</tr>
<tr>
<td>Withdrawable construction</td>
<td>1VCD400054</td>
<td>1VCD400155</td>
</tr>
</tbody>
</table>

See below pictures: (left side) Vmax 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.
Vmax 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)
- K&N auxiliary contacts wired to terminal box (see picture below on right left)

3. Price lists
Please refer to the Vmax series price list.

4. Availability
K&N auxiliary contacts are going to be fitted on Vmax series (together with wiring as for new electrical diagram) for order confirmation issued starting from 1st of September 2015.
K&N auxiliary contacts phase-out CE auxiliary contacts with relevant wiring and electrical diagrams. We reserve to confirm the order feasibility of Vmax only for limited quantities and for a restricted time (max. 2 months) if with CE auxiliary contacts.

5. Sales support tools
Attached to current Technical Commercial Information are the files relevant to:
- electrical diagrams of Vmax fitted with K&N auxiliary contacts
- instruction for wiring (at customer care) of K&N auxiliary contacts in Vmax freestanding construction

Detailed information will be available in the Vmax 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

ABB S.p.A.
Power Products Division
Unità Operativa Sace-MV

An ABB Group company
Capitale Sociale / Share Capital € 10,000,000.00 - I.V. / fully paid up
P. IVA / VAT: IT1166990156
Codice Fiscale / Fiscal Code: 0073540150
Registro della Imprese di Milano / Official Company Book: 00736410150
R.E.A. Milano 1510529

Una società del Gruppo ABB
Sede e stabilimenti:
Headquarter and factory:
Via Frati, 4
124044 Dalmine (BG)
Tel.: +39 035 6952 111
Fax: +39 035 6952 874

Sede legale:
Registered office:
Via Vittor Pisani, 16
120124 Milano

www.abb.it

Pag. 3/5
Electrical characteristics:
- insulation voltage (ref. VDE 0110 STDs, group C): 660 V AC, 800 V DC
- rated voltage: 24 V ... 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)

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

Francesco Serpellini  
Product Management Manager Indoor Apparatus  
ABB S.p.A.  
Power Products Division  
Unità Operativa Sace-MV

Stefano Larcan  
Product Marketing Manager Indoor Apparatus  
ABB S.p.A.  
Power Products Division  
Unità Operativa Sace-MV

An ABB Group company

Capitale Sociale / Share Capital: € 187,000,000 - i.v. / fully paid up
P. IVA / VAT: IT11989690155
Codice Fiscale / Fiscal Code: 0073610150
Registro delle Imprese di Milano / Official Company Book: 0073610150
R.E.A. Milano: 1513225

Page 4/5