

# Betriebsanleitung

## Leistungsschalter für Motorschutz

> 8523/8



## 1 Inhaltsverzeichnis

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## 2 Allgemeine Angaben

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### 2.1 Hersteller

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### 2.2 Angaben zur Betriebsanleitung

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### 2.3 Konformität zu Normen und Bestimmungen

Die Konformität zu Normen und Bestimmungen kann den entsprechenden Zertifikaten und der Herstellererklärung (z.B. EU-Konformitätserklärung) entnommen werden. Diese Dokumente können auf unserer Homepage [www.r-stahl.com](http://www.r-stahl.com) abgerufen werden.





### 3 Verwendete Symbole

|   |   |
|---|---|
|  | <b>Sicherheitshinweise</b><br><b>Nichtbeachtung kann zu Sachschäden, schweren Verletzungen oder zum Tod führen.</b><br>Die Sicherheitshinweise dieser Betriebsanleitung und auf dem Gerät sind unbedingt zu beachten! |
|  | <b>Warnzeichen</b><br>Gefahr durch explosionsfähige Atmosphäre!   |
|  | <b>Warnzeichen</b><br>Gefahr durch spannungsführende Teile!   |
|  | <b>Hinweis</b><br>Diese Grafik kennzeichnet wichtige Zusatzinformationen, Tipps und Empfehlungen.   |

### 4 Allgemeine Sicherheitshinweise

#### 4.1 Aufbewahrung der Anleitung



Die Betriebsanleitung ist sorgfältig zu lesen und am Geräteeinbauort aufzubewahren. Für den ordnungsgemäßen Betrieb sind alle der Lieferung beigelegten Dokumente sowie die Betriebsanleitungen der anzuschließenden Geräte zu beachten.

|  |  |
|--|--|
|  <b>WARNUNG</b> |  |
|                 | <b>Geräte nur für den zugelassenen Einsatzzweck verwenden!</b><br>► Für Schäden, die durch fehlerhaften oder unzulässigen Einsatz sowie durch Nichtbeachtung dieser Betriebsanleitung entstehen, übernehmen wir keine Haftung.<br>► Das Gerät darf nur im unbeschädigten Zustand betrieben werden. |
|  <b>WARNUNG</b> |  |
|                 | <b>Kein unbefugtes Arbeiten am Gerät!</b><br>Installation, Instandhaltung, Wartung und Störbeseitigung dürfen nur von dazu befugtem und entsprechend geschultem Personal durchgeführt werden.  |

#### Beachten Sie Folgendes bei Installation und Betrieb:

- Beschädigungen können den Explosionsschutz aufheben
- Nationale und örtliche Sicherheitsvorschriften
- Nationale und örtliche Unfallverhütungsvorschriften
- Nationale und örtliche Montage- und Errichtungsvorschriften
- Allgemein anerkannte Regeln der Technik
- Sicherheitshinweise dieser Betriebsanleitung
- Kennwerte und Bemessungsbetriebsbedingungen der Typ- und Datenschilder
- Zusätzliche Hinweisschilder auf dem Gerät

## 4.2 Umbauten und Änderungen

|  |   |
|--|---|
|  <b>WARNUNG</b> |   |
|                 | <b>Umbauten und Änderungen am Gerät sind nicht zulässig!</b><br>Für Schäden, die aus Umbauten und Änderungen entstehen, übernehmen wir weder Haftung noch Gewährleistungsverpflichtungen. |

## 4.3 Sonderausführungen

Sonderausführungen können bei zusätzlichen/abweichenden Bestelloptionen von den hier beschriebenen Darstellungen abweichen.

## 5 Bestimmungsgemäße Verwendung

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Die Leistungsschalter für Motorschutz der Reihe 8523 sind mit einem fest eingestellten Kurzschluss Schnellauslöser und einem am Schalter einstellbaren, thermischen Überstromauslöser bestückt.

Sie dienen zum Schutz und Schalten explosionsgeschützter, elektrischer Motoren.

Als „unvollständige Ex-Betriebsmittel“ müssen sie in ein gesondert bescheinigtes Gehäuse der Zündschutzart „Erhöhte Sicherheit“ eingebaut werden. Der Einbau muss von einem anerkannten Sachverständigen überprüft werden.

Sie sind für den Einsatz in explosionsgefährdeten Bereichen der Zonen 1 und 2 zugelassen.

Besondere Eigenschaften des Leistungsschalters für Motorschutz sind:

- x Phasenausfallempfindlichkeit gemäß IEC/EN 60947
- x Temperaturkompensation innerhalb der Umgebungstemperatur
- x Freiauslösung
- x Trenneigenschaften
- x Hauptschalter und NOT-AUS-Eigenschaften in Verbindung mit dem entsprechenden Vorsatz
- x Beliebige Gebrauchslage

## 6 Technische Daten

| <b>Ausführung</b>                      | <b>8523/8</b>   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|--|---|---------------------|--|-------------------|-----------------------------|------------------|-----------------------------|-----------------|------------------------------|------------------|------------------------------|--|----------|--|----------|--|----------|--|-----------------|--------|-----------------|--------|-----------------|--------|-----------------|--------|--|----|---|----|---|----|---|----|---|--------|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|----|----|--------|--|--|--|--|----|----|----|----|--------|--|--|----|----|----|----|---|----|--------|--|--|----|----|----|----|---|----|---------|----|----|----|----|----|----|---|----|---------|----|----|----|----|----|----|---|----|---------|----|----|----|----|----|----|---|----|---------|----|----|----|----|----|----|---|----|
| <b>Explosionsschutz</b>                |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Global (IECEX)                         |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Gas und Staub                          | IECEX BVS 08.0039 U<br>Ex db eb IIC Gb<br>Ex db eb I Mb   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Europa (ATEX)                          |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Gas und Staub                          | DMT 01 ATEX E 153 U<br>⊕ II 2 G Ex db eb IIC Gb<br>⊕ I M2 Ex db eb I Mb   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| <b>Elektrische Daten</b>               |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Bemessungs-<br>betriebsspannung        | max. 690 V AC, 50 / 60 Hz   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Minimale Spannung                      | 12 V AC   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Bemessungs-<br>betriebsstrom           | 0,1 A ... 22,5 A, abhängig vom gewählten Einstellbereich  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Schaltleistung                         | abhängig vom gewählten Einstellbereich (AC)   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|  | <table border="1"> <tr> <td>230 V</td> <td>400 V</td> <td>500 V</td> <td>690 V</td> </tr> <tr> <td>7,0 kW</td> <td>12,4 kW</td> <td>16,0 kW</td> <td>22,0 kW</td> </tr> </table>  | 230 V               | 400 V  | 500 V             | 690 V                       | 7,0 kW           | 12,4 kW                     | 16,0 kW         | 22,0 kW                      |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 230 V                                  | 400 V   | 500 V               | 690 V  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 7,0 kW                                 | 12,4 kW   | 16,0 kW             | 22,0 kW  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Thermischer<br>Überstromauslöser       | einstellbar am Schalter; abhängig vom Einstellbereich   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Elektromagnetischer<br>Schnellauslöser | <table border="1"> <tr> <th>Strombereiche</th> <th>Ansprechwert ab Werk eingestellt</th> </tr> <tr> <td>0,16 A ... 0,63 A</td> <td>7,5 ... 12,0 I<sub>n</sub></td> </tr> <tr> <td>0,63 A ... 2,5 A</td> <td>9,0 ... 14,0 I<sub>n</sub></td> </tr> <tr> <td>2,5 A ... 6,3 A</td> <td>10,0 ... 15,0 I<sub>n</sub></td> </tr> <tr> <td>6,3 A ... 22,5 A</td> <td>12,5 ... 17,5 I<sub>n</sub></td> </tr> </table>   | Strombereiche       | Ansprechwert ab Werk eingestellt   | 0,16 A ... 0,63 A | 7,5 ... 12,0 I <sub>n</sub> | 0,63 A ... 2,5 A | 9,0 ... 14,0 I <sub>n</sub> | 2,5 A ... 6,3 A | 10,0 ... 15,0 I <sub>n</sub> | 6,3 A ... 22,5 A | 12,5 ... 17,5 I <sub>n</sub> |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Strombereiche                          | Ansprechwert ab Werk eingestellt  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 0,16 A ... 0,63 A                      | 7,5 ... 12,0 I <sub>n</sub>   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 0,63 A ... 2,5 A                       | 9,0 ... 14,0 I <sub>n</sub>   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 2,5 A ... 6,3 A                        | 10,0 ... 15,0 I <sub>n</sub>  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 6,3 A ... 22,5 A                       | 12,5 ... 17,5 I <sub>n</sub>  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Kurzschlusschutz                       | <table border="1"> <tr> <td rowspan="3">Einstellbereich bis</td> <td colspan="8">Größter Bemessungsstrom der Kurzschlusssicherung, wenn I<sub>CC</sub> &gt; I<sub>CS</sub></td> </tr> <tr> <td colspan="2">230 V AC</td> <td colspan="2">400 V AC</td> <td colspan="2">500 V AC</td> <td colspan="2">690 V AC</td> </tr> <tr> <td>I<sub>CS</sub></td> <td>gG, aM</td> <td>I<sub>CS</sub></td> <td>gG, aM</td> <td>I<sub>CS</sub></td> <td>gG, aM</td> <td>I<sub>CS</sub></td> <td>gG, aM</td> </tr> <tr> <td></td> <td>kA</td> <td>A</td> <td>kA</td> <td>A</td> <td>kA</td> <td>A</td> <td>kA</td> <td>A</td> </tr> <tr> <td>0,16 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0,25 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0,40 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0,63 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1,00 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1,60 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2,50 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>40</td> <td>10</td> </tr> <tr> <td>4,00 A</td> <td></td> <td></td> <td></td> <td></td> <td>60</td> <td>16</td> <td>10</td> <td>16</td> </tr> <tr> <td>6,30 A</td> <td></td> <td></td> <td>75</td> <td>25</td> <td>40</td> <td>25</td> <td>3</td> <td>25</td> </tr> <tr> <td>9,00 A</td> <td></td> <td></td> <td>65</td> <td>32</td> <td>30</td> <td>32</td> <td>3</td> <td>32</td> </tr> <tr> <td>12,50 A</td> <td>75</td> <td>40</td> <td>55</td> <td>40</td> <td>25</td> <td>40</td> <td>3</td> <td>40</td> </tr> <tr> <td>16,00 A</td> <td>65</td> <td>50</td> <td>40</td> <td>50</td> <td>20</td> <td>50</td> <td>2</td> <td>50</td> </tr> <tr> <td>20,00 A</td> <td>55</td> <td>63</td> <td>25</td> <td>63</td> <td>15</td> <td>63</td> <td>2</td> <td>50</td> </tr> <tr> <td>22,50 A</td> <td>50</td> <td>63</td> <td>15</td> <td>63</td> <td>15</td> <td>63</td> <td>2</td> <td>50</td> </tr> </table> | Einstellbereich bis | Größter Bemessungsstrom der Kurzschlusssicherung, wenn I <sub>CC</sub> > I <sub>CS</sub> |                   |                             |                  |                             |                 |                              |                  | 230 V AC                     |  | 400 V AC |  | 500 V AC |  | 690 V AC |  | I <sub>CS</sub> | gG, aM | I <sub>CS</sub> | gG, aM | I <sub>CS</sub> | gG, aM | I <sub>CS</sub> | gG, aM |  | kA | A | kA | A | kA | A | kA | A | 0,16 A |  |  |  |  |  |  |  |  | 0,25 A |  |  |  |  |  |  |  |  | 0,40 A |  |  |  |  |  |  |  |  | 0,63 A |  |  |  |  |  |  |  |  | 1,00 A |  |  |  |  |  |  |  |  | 1,60 A |  |  |  |  |  |  |  |  | 2,50 A |  |  |  |  |  |  | 40 | 10 | 4,00 A |  |  |  |  | 60 | 16 | 10 | 16 | 6,30 A |  |  | 75 | 25 | 40 | 25 | 3 | 25 | 9,00 A |  |  | 65 | 32 | 30 | 32 | 3 | 32 | 12,50 A | 75 | 40 | 55 | 40 | 25 | 40 | 3 | 40 | 16,00 A | 65 | 50 | 40 | 50 | 20 | 50 | 2 | 50 | 20,00 A | 55 | 63 | 25 | 63 | 15 | 63 | 2 | 50 | 22,50 A | 50 | 63 | 15 | 63 | 15 | 63 | 2 | 50 |
| Einstellbereich bis                    | Größter Bemessungsstrom der Kurzschlusssicherung, wenn I <sub>CC</sub> > I <sub>CS</sub>  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|  | 230 V AC  |                     | 400 V AC   |                   | 500 V AC                    |                  | 690 V AC                    |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|  | I <sub>CS</sub>   | gG, aM              | I <sub>CS</sub>  | gG, aM            | I <sub>CS</sub>             | gG, aM           | I <sub>CS</sub>             | gG, aM          |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|  | kA  | A                   | kA   | A                 | kA                          | A                | kA                          | A               |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 0,16 A                                 |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 0,25 A                                 |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 0,40 A                                 |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 0,63 A                                 |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 1,00 A                                 |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 1,60 A                                 |   |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 2,50 A                                 |   |                     |  |                   |                             |                  | 40                          | 10              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 4,00 A                                 |   |                     |  |                   | 60                          | 16               | 10                          | 16              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 6,30 A                                 |   |                     | 75   | 25                | 40                          | 25               | 3                           | 25              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 9,00 A                                 |   |                     | 65   | 32                | 30                          | 32               | 3                           | 32              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 12,50 A                                | 75  | 40                  | 55   | 40                | 25                          | 40               | 3                           | 40              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 16,00 A                                | 65  | 50                  | 40   | 50                | 20                          | 50               | 2                           | 50              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 20,00 A                                | 55  | 63                  | 25   | 63                | 15                          | 63               | 2                           | 50              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| 22,50 A                                | 50  | 63                  | 15   | 63                | 15                          | 63               | 2                           | 50              |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|  | I <sub>CS</sub> = Bemessungsbetriebskurzschlussausschaltvermögen<br>I <sub>CC</sub> = prospektiver Kurzschlussstrom am Einbauort  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
|  | Wahl der Versicherungen beim Einsatz der 8523/8 Komponenten.<br>Bereiche ohne Angaben können mit bis zu 100kA ohne Versicherung betrieben werden  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |
| Auslöseklasse                          | 10 A  |                     |  |                   |                             |                  |                             |                 |                              |                  |                              |  |          |  |          |  |          |  |                 |        |                 |        |                 |        |                 |        |  |    |   |    |   |    |   |    |   |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |  |  |        |  |  |  |  |  |  |    |    |        |  |  |  |  |    |    |    |    |        |  |  |    |    |    |    |   |    |        |  |  |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |         |    |    |    |    |    |    |   |    |

|                                       |   |
|---------------------------------------|---|
| <b>Zusatzrüstung</b>                  |   |
| Hilfskontakte                         | wahlweise: ohne; 1 Ö + 1 S; 2 Ö + 2 S   |
| Bemessungs-<br>betriebsspannung $U_e$ | max. 500 V AC   |
| Bemessungs-<br>betriebsstrom          | AC 15: 24 V / 2,5 A    230 V / 2 A    400 V / 1 A<br>DC 13: 24 V / 2,5 A    60 V / 2,5 A    110 V / 0,6 A    220 V / 0,25 A   |
| Bemessungs-<br>betriebsstrom mind.    | 24 V DC: 5 mA<br>12 V DC: 10 mA   |
| <b>Unterspannungsauslöser</b>         |   |
| Funktion                              | bei Spannungsunterbrechung löst der Leistungsschalter aus; dadurch wird der ungewollte Wiederanlauf, z. B. eines Motors, verhindert   |
| Anzug                                 | $\geq 0,85 \times U_c$  |
| Abfall                                | $0,7 \dots 0,35 \times U_c$   |
| <b>Leistungsaufnahme</b>              |   |
| Anziehen                              | 0,9 VA  |
| Halten                                | 0,9 VA  |
| <b>Arbeitsstromauslöser</b>           |   |
| Funktion                              | dient zum Fernauslösen des Leistungsschalters; Fernauslösung durch Anlegen der Betätigungsspannung  |
| Anzug                                 | $\geq 0,85 \times U_c$  |
| <b>Leistungsaufnahme</b>              |   |
| Anziehen                              | 24 ... 60 V: 14,4 ... 90 VA; 110 ... 240 V: 13 ... 61 VA; 220 ... 415 V: 17,6 ... 62,3 VA   |
| <b>Umgebungsbedingungen</b>           |   |
| Umgebungstemperatur                   | -20 °C ... +40 °C   |
| <b>Mechanische Daten</b>              |   |
| Gehäusematerial                       | Epoxidharz oder Polyesterharz   |
| Gewicht                               | 8523/81: 1400 g<br>8523/82: 1800 g  |
| Hauptkontakte                         | 3-polig   |
| Mechanische Lebensdauer               | $10^5$ Schaltspiele   |
| Stoßfestigkeit nach                   | IEC 6068-2-6  |
| Sinusstoß                             | 15 g (11 ms)  |
| Anschluss                             | Hauptkontakte 1,5 ... 6 mm <sup>2</sup> feindrätig<br>1,5 ... 10 mm <sup>2</sup> eindrätig<br>Hilfskontakte 0,75 ... 1,5 mm <sup>2</sup> feindrätig<br>0,75 ... 2,5 mm <sup>2</sup> eindrätig |

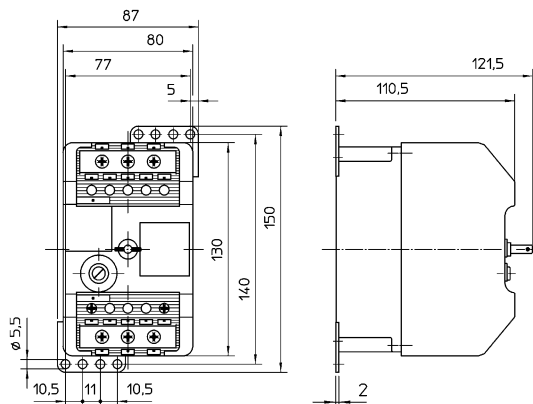
## 7 Transport und Lagerung

- ▶ Transport und Lagerung sind nur in Originalverpackung gestattet.
- ▶ Die Geräte sind trocken und erschütterungsfrei zu lagern.

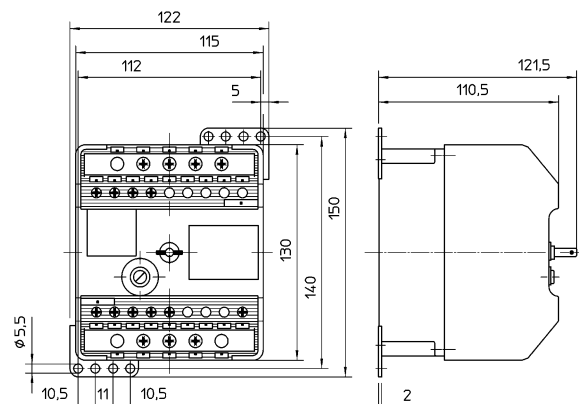
## 8 Installation

### 8.1 Maßangaben / Befestigungsmaße

Maßzeichnung (alle Maße in mm) - Änderungen vorbehalten





8523/81  
Leistungsschalter für den Motorschutz,  
Baugröße 1, ohne Hilfskontakte



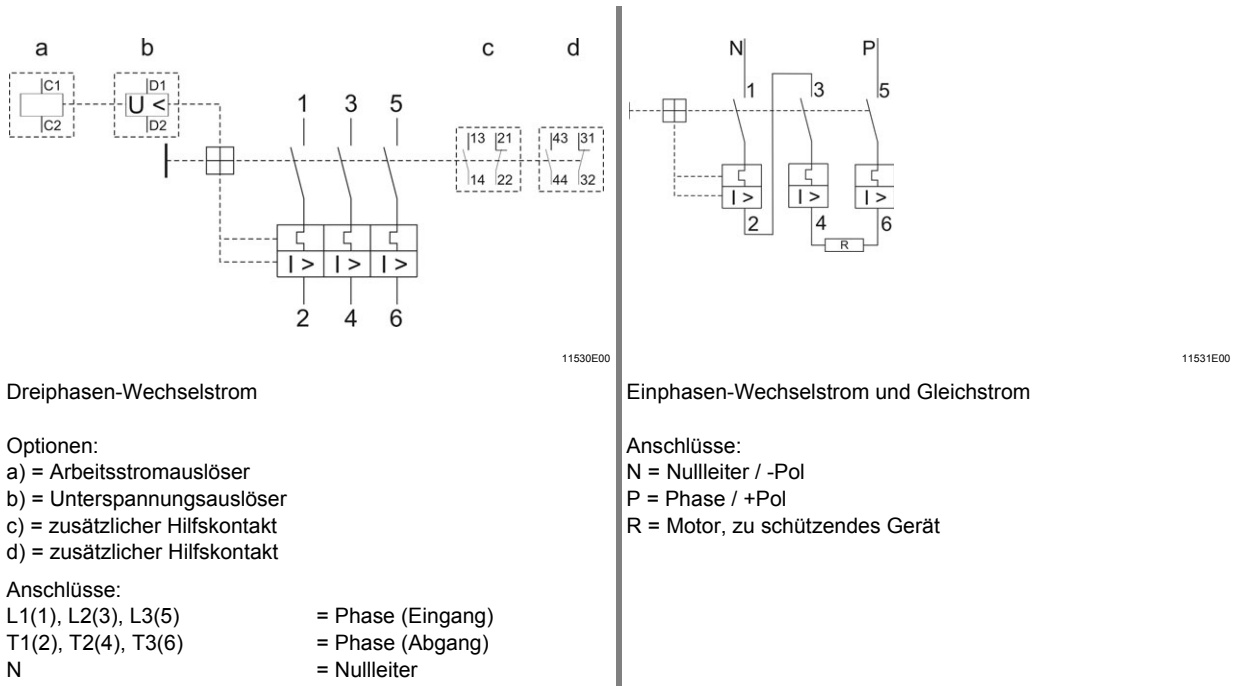
8523/82  
Leistungsschalter für den Motorschutz,  
Baugröße 2, mit Hilfskontakten

### 8.2 Einbaubedingungen Netzanschluss

|  <b>WARNUNG</b> |   |
|---|---|
|                | <p><b>Nicht korrekt installierte Komponenten!</b></p> <ul style="list-style-type: none"> <li>▶ Bei nicht korrekt installierten Komponenten ist der Explosionsschutz nicht mehr gewährleistet.</li> <li>▶ Installation strikt nach Anleitung und unter Berücksichtigung der nationalen Sicherheits- und Unfallverhütungsvorschriften (z. B. IEC/EN 60079-14) durchführen.</li> </ul> |

- ▶ Bei einem Bemessungsbetriebsstrom  $\geq 15,5$  A ist ein Direktanschluss **nur** mit wärmebeständiger Leitung ( $> 85$  °C Beständigkeit) zulässig
- ▶ Leiteranschluss mit besonderer Sorgfalt durchführen.
- ▶ Leiterisolation muss bis an die Klemme heranreichen.
- ▶ Leiter darf beim Abisolieren nicht beschädigt werden.
- ▶ Leitungen und Art der Verlegung so auswählen, dass die maximal zulässigen Leitertemperaturen nicht überschritten werden.

Geräteschaltplan mit Anschlussbezeichnungen und möglichen Ausführungen a), b), c) oder d) und Anschlüssen.



### 8.3 Einbaubedingungen Netzanschlussquerschnitte

**⚠️ WARNUNG**

**EX** **Nicht korrekt installierte Komponenten!**

- ▶ Bei nicht korrekt installierten Komponenten ist der Explosionsschutz nicht mehr gewährleistet.
- ▶ Bei Verwendung von Aderendhülsen müssen diese unbedingt mit geeignetem Werkzeug aufgebracht werden.

- ▶ Es können 1 und 2 Leiter unter eine Anschlussklemme installiert werden.
- ▶ Beide Leiter müssen den gleichen Querschnitt aufweisen sowie aus dem gleichen Material bestehen.
- ▶ Leiter können ohne besondere vorbereitende Maßnahmen angeschlossen werden.

|                       | Hauptkontakt-Klemmen  | Hilfskontakt-Klemmen   |
|-----------------------|---|--|
| eindrätig             | <br>11532E00<br>2 x 1,5 ... 10 mm <sup>2</sup><br>2 x AWG 16 to 8 | <br>11533E00<br>2 x 0,75 ... 1,5 mm <sup>2</sup><br>2 x AWG 18 to 13 |
| fein- oder mehrdrätig | <br>11534E00<br>2 x 1,5 ... 6 mm <sup>2</sup><br>2 x AWG 16 to 10 | <br>11535E00<br>2 x 0,75 ... 1,5 mm <sup>2</sup><br>2 x AWG 18 to 16 |
| zulässige Drehmomente | 1,8 ... 2,0 Nm  | 1 ... 1,2 Nm   |

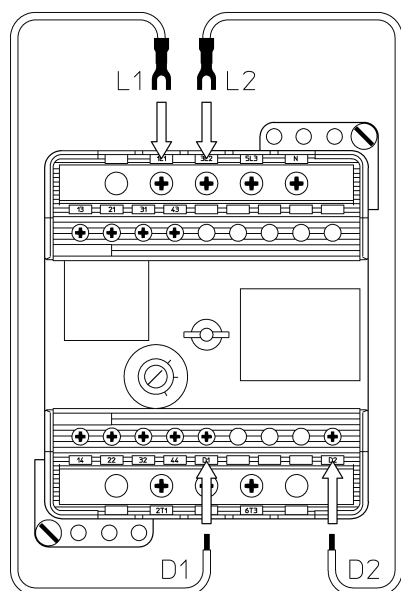


## 8.4 Vorsicherung bei Hilfsstromkreisen

- ▶ Grundsätzlich sind Hilfsstromkreise mit 10 A gG gegen Kurzschluss abzusichern.

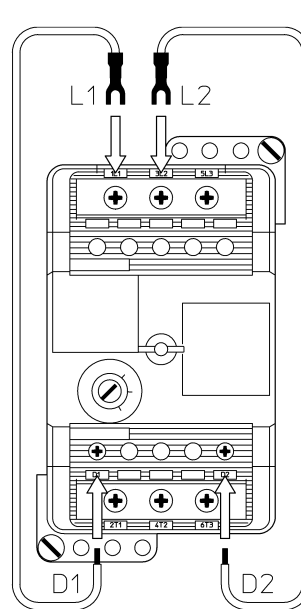
### Ausnahme:

- ▶ Unterspannungsauslöser wird direkt an die Hauptkontaktklemmen des Leistungsschalters angeschlossen.
- ▶ Absicherung ist nicht notwendig.



Gerätetypen  
8523/82

09140E00



Gerätetypen  
8523/81

09029E00

## 9 Inbetriebnahme

### ⚠ WARNUNG





#### Gerät vor der Inbetriebnahme überprüfen!

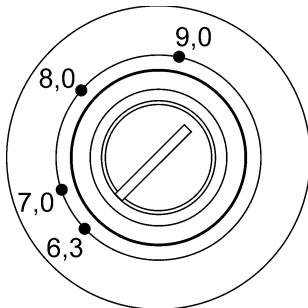
Um einen ordnungsgemäßen Betrieb sicherzustellen, muss das Gerät vor der Inbetriebnahme überprüft werden.

#### Stellen Sie vor der Inbetriebnahme sicher, dass:


- ▶ keine Komponenten beschädigt sind
- ▶ das Gerät vorschriftsmäßig installiert ist
- ▶ sich keine Fremdkörper im Gerät befinden
- ▶ alle lösbaren Verbindungen fest angezogen sind
- ▶ die vorgeschriebenen Anzugsdrehmomente eingehalten sind
- ▶ der Anschluss ordnungsgemäß ausgeführt ist

## 9.1 Einstellung des thermischen Überstromauslösers



|  <b>WARNUNG</b> |  |
|--|--|
|                 | <p><b>Explosionsgefahr durch Überhitzung des Motors!</b></p> <ul style="list-style-type: none"> <li>▶ Tod oder schwerste Verletzungen drohen.</li> <li>▶ Thermischen Überstromauslöser gemäß den technischen Daten des Motors einstellen.</li> </ul> |







Mit einem geeigneten Schraubendreher kann der gewünschte Stromwert eingestellt werden. Die offene Seite des Schlitzes zeigt auf den eingestellten Stromwert (siehe Zeichnung für Beispiel-Nennstrom 6,3 A).

|   |  |
|---|--|
|  | <p>Bei anderen vom Standard abweichenden Umgebungstemperaturen oder auch bei unterschiedlichen Umgebungstemperaturen zwischen Motor und Leistungsschalter ist das Auslöseverhalten zu prüfen und gegebenenfalls die Stromeinstellung zu korrigieren.</p> |
|---|--|

## 10 Instandhaltung, Wartung und Störbeseitigung

|  <b>WARNUNG</b> |  |
|--|--|
|                 | <p><b>Gefahr durch unbefugte Arbeiten am Gerät!</b></p> <ul style="list-style-type: none"> <li>▶ Verletzungen und Sachschäden drohen.</li> <li>▶ Montage, Installation, Inbetriebnahme, Betrieb und Wartung dürfen ausschließlich von dazu befugtem und entsprechend geschultem Personal durchgeführt werden.</li> </ul> |

|  <b>WARNUNG</b> |  |
|--|--|
|                 | <p><b>Gefahr durch spannungsführende Teile!</b></p> <ul style="list-style-type: none"> <li>▶ Schwerste Verletzungen drohen.</li> <li>▶ Alle Anschlüsse und Verdrahtungen spannungsfrei schalten.</li> <li>▶ Anschlüsse gegen unbefugtes Schalten sichern.</li> </ul> |

|  <b>WARNUNG</b> |  |
|--|--|
|                 | <p><b>Kurzschluss im Stromkreis!</b></p> <ul style="list-style-type: none"> <li>▶ Nach mehrmaligem Kurzschluss im Stromkreis ist die druckfeste Kapselung nicht mehr gewährleistet.</li> <li>▶ Nach einem Kurzschluss im Stromkreis Funktion des Gerätes testen.</li> <li>▶ Gegebenenfalls das komplette Gerät austauschen.</li> </ul> |

## 10.1 Regelmäßige Wartungsarbeiten

- ▶ Art und Umfang der Prüfungen den entsprechenden nationalen Vorschriften (z. B. IEC/EN 60079-17) entnehmen.
- ▶ Die Fristen so bemessen, dass entstehende Mängel in der Anlage, mit denen zu rechnen ist, rechtzeitig festgestellt werden.

### Im Rahmen der Wartung prüfen:

- ▶ Leitungen auf festen Sitz.
- ▶ Gerät auf sichtbare Schäden.
- ▶ Einhaltung der zulässigen Temperaturen gem. IEC/EN 60079-0.
- ▶ Bestimmungsgemäße Funktion.
- ▶ Rückstellfunktion des Schaltgriffes.




## 11 Reinigung

- ▶ Reinigung mit einem Tuch, Besen, Staubsauger o.Ä.
- ▶ Bei feuchter Reinigung Wasser oder milde, nicht scheuernde, nicht kratzende Reinigungsmittel verwenden.
- ▶ Niemals aggressive Reinigungsmittel oder Lösungsmittel verwenden.

## 12 Entsorgung

- ▶ Beachten Sie die nationalen Vorschriften zur Abfallbeseitigung.

## 13 Zubehör und Ersatzteile

|  <b>WARNUNG</b> |   |   |          |               |
|--|---|---|----------|---------------|
|                 | <b>Kein Explosionsschutz bei falschem Zubehör!</b>  |   |          |               |
|  | Es dürfen nur Original-Zubehörteile und Original-Ersatzteile der Firma R. STAHL verwendet werden. |   |          |               |
| Bezeichnung  | Abbildung   | Beschreibung  | Art.-Nr. | Gewicht<br>kg |
| Leitungsbrücke   | <br>04951E00   | für Unterspannungsauslöser, Länge: 400 mm<br>(zwei Brücken notwendig) | 147121   | 0,019         |

## 14 Auslösekennlinien

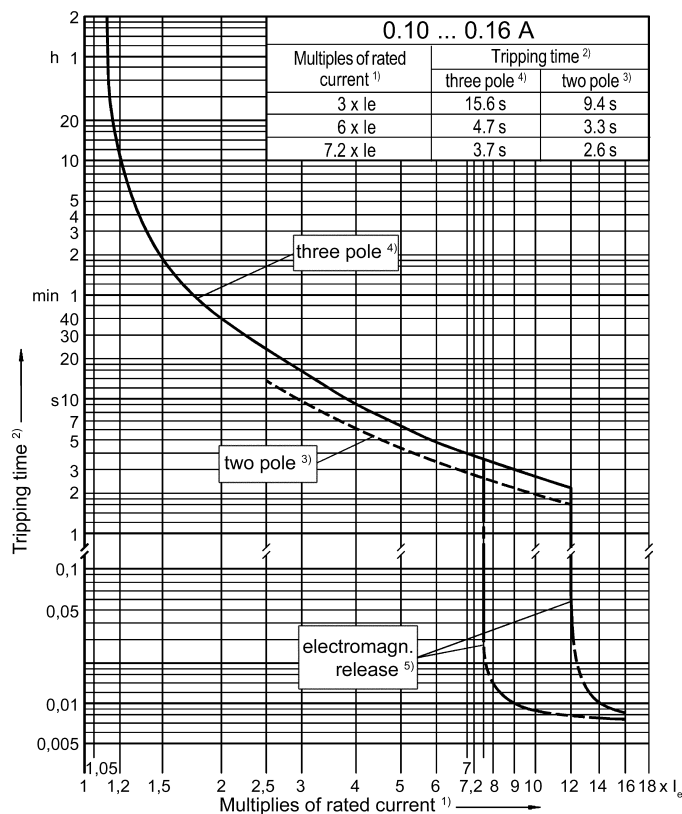
Die Auslösekennlinien beziehen sich auf 3-polige Belastung aus kaltem Zustand bei einer Raumtemperatur von +20 °C auf beliebiger Skalenmarke.

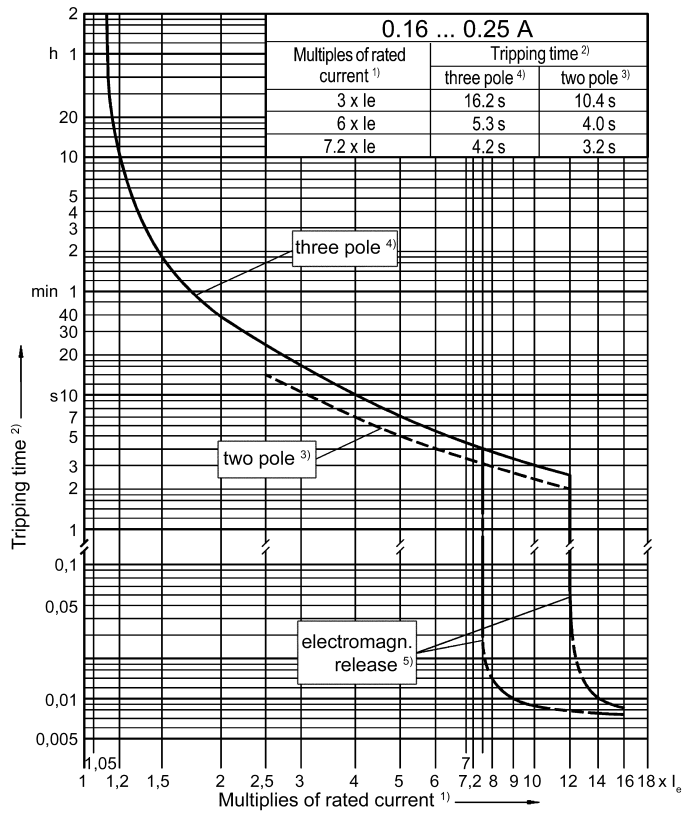
Die Abweichung der Auslösezeit (ab 3-fachem Einstellstrom) beträgt nach IEC/EN 60079-14 max. ±20 %.

Die nachfolgend dargestellten Auslösekennlinien zeigen die Auslösezeit in Abhängigkeit von dem Stromverhältnis  $I_a/I_e$ .

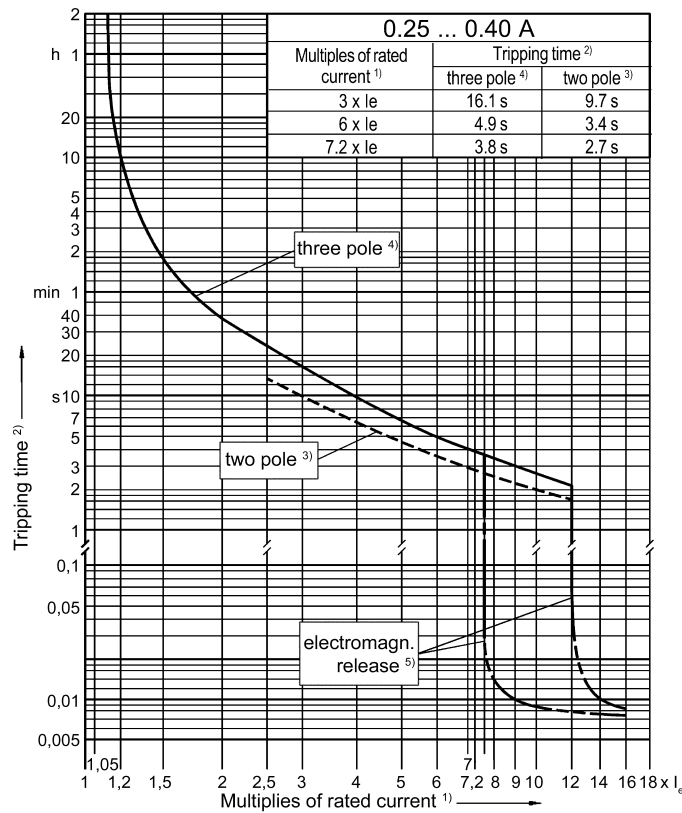
Legende:

- 1) Vielfaches vom Nennstrom
- 2) Auslösezeit
- 3) 2-polig
- 4) 3-polig
- 5) Elektromagnetische Auslösung

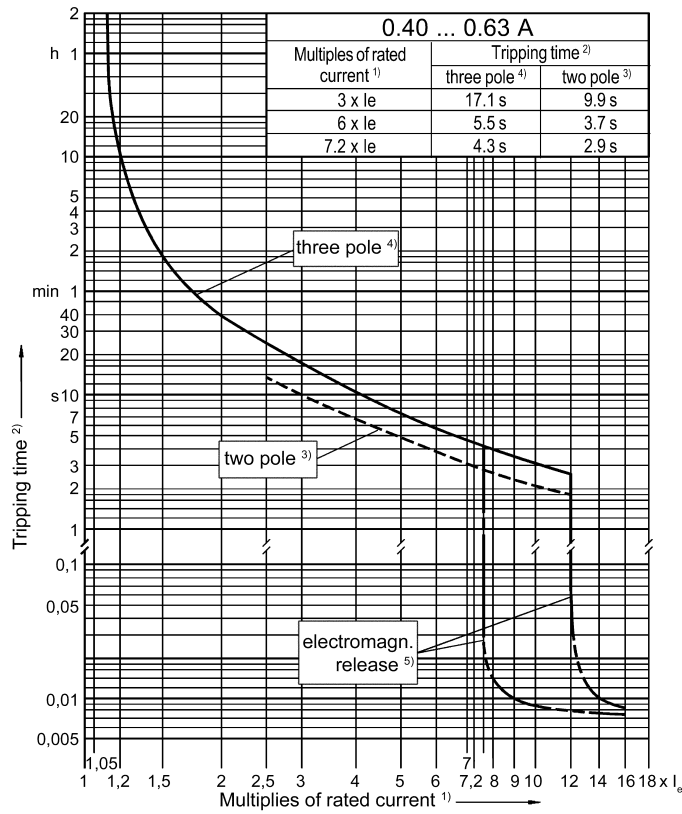




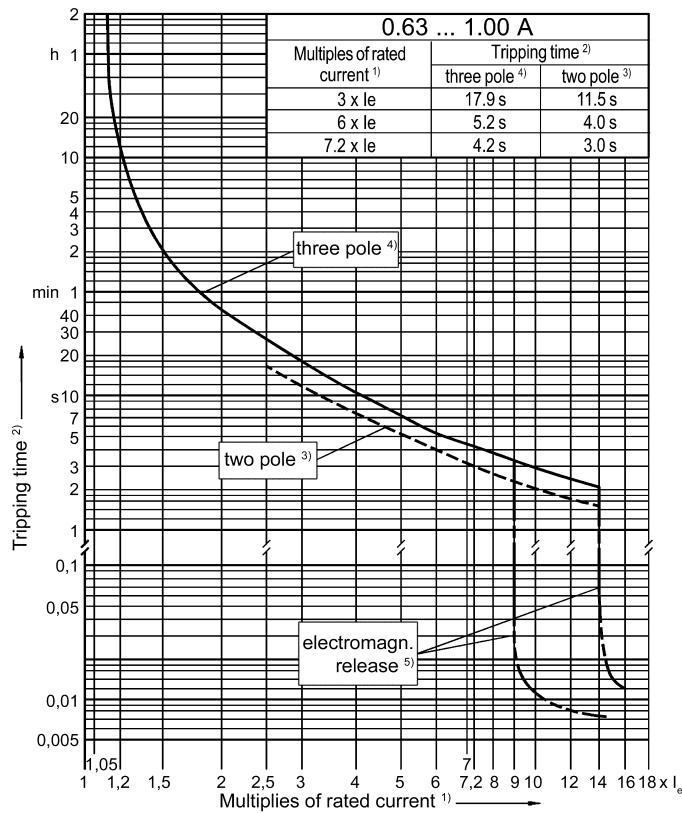
05931E00



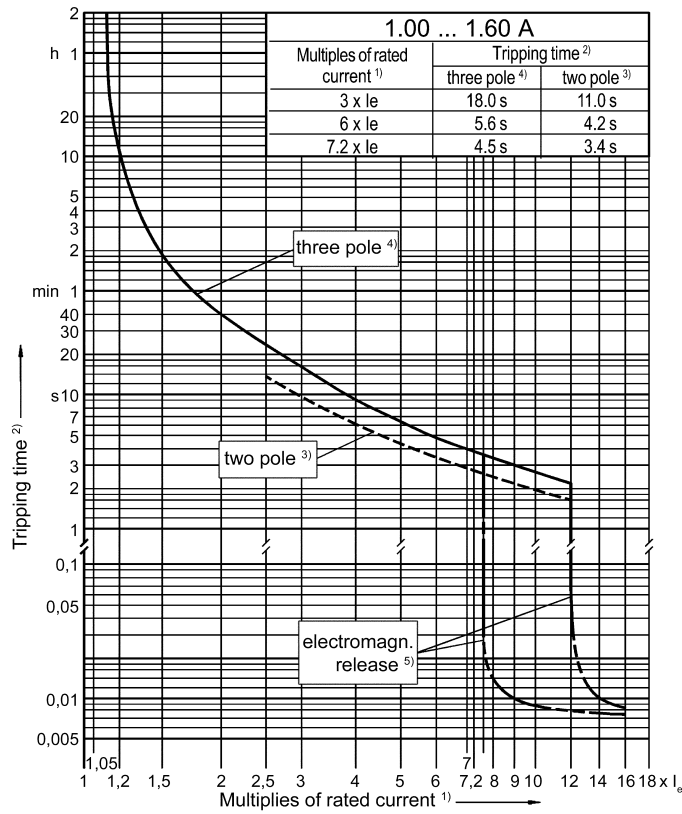
05932E00



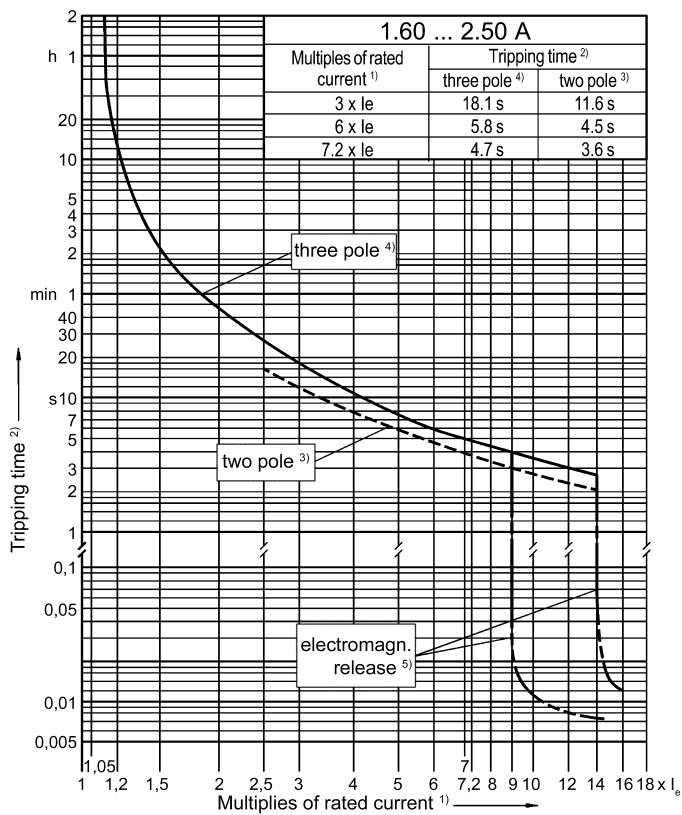
05937E00



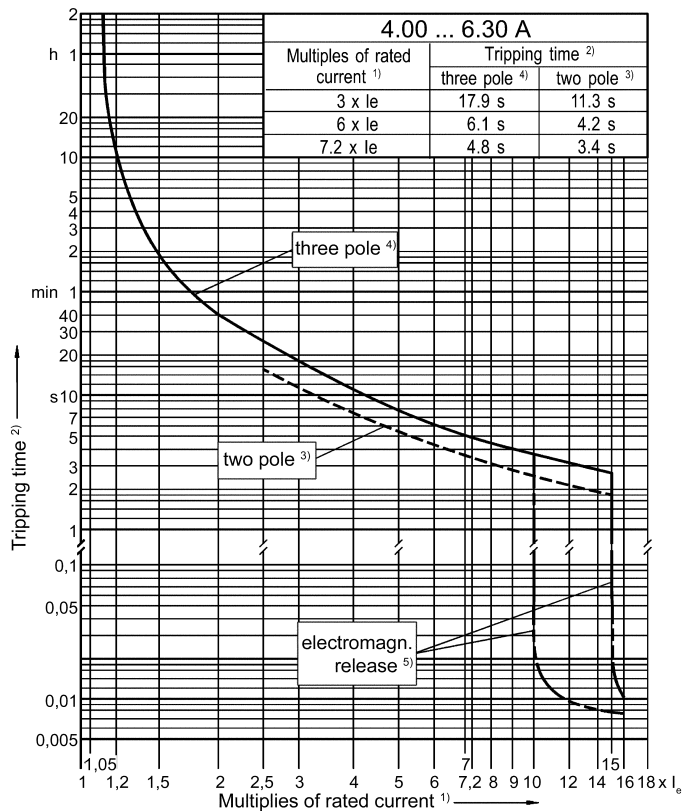
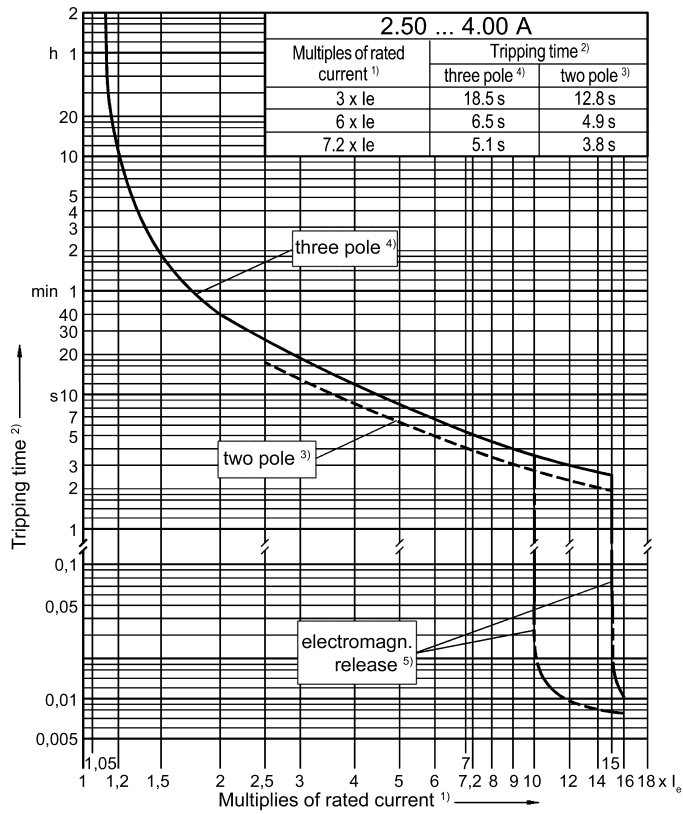
05938E00



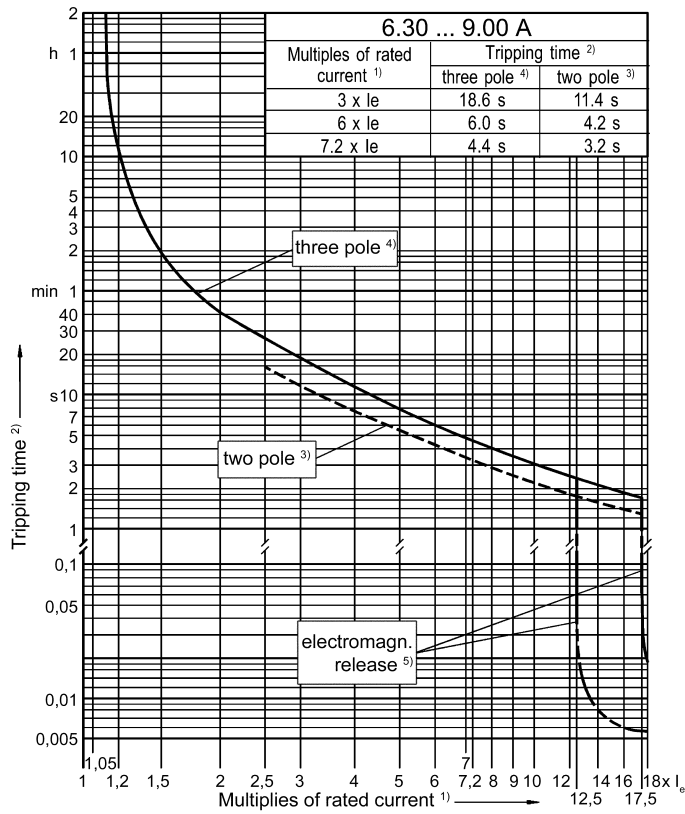
05939E00



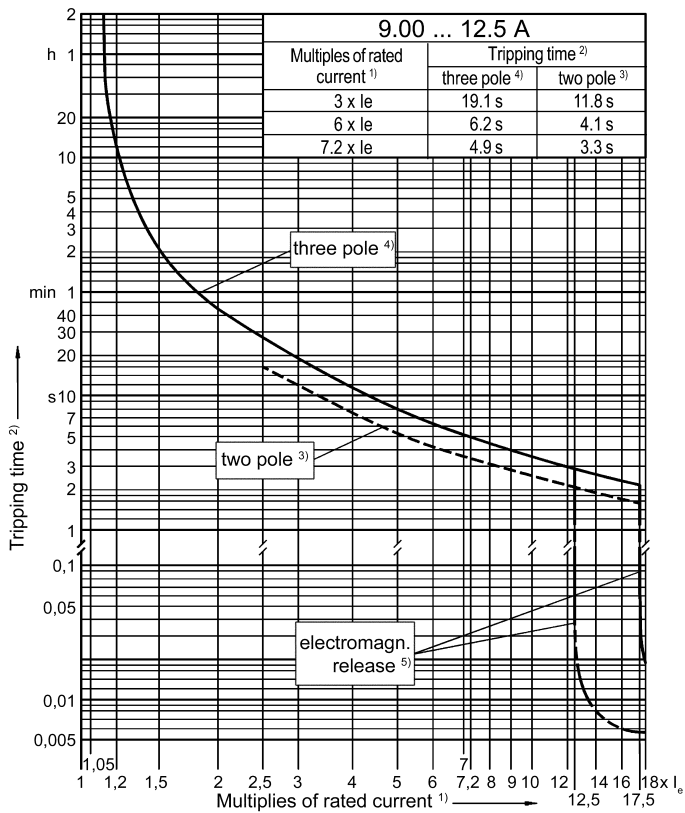
05940E00



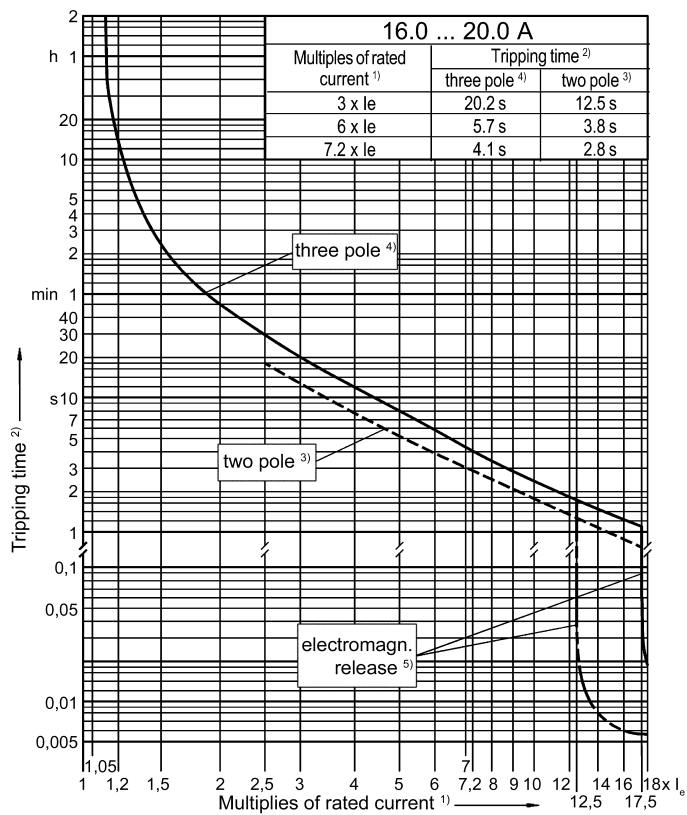
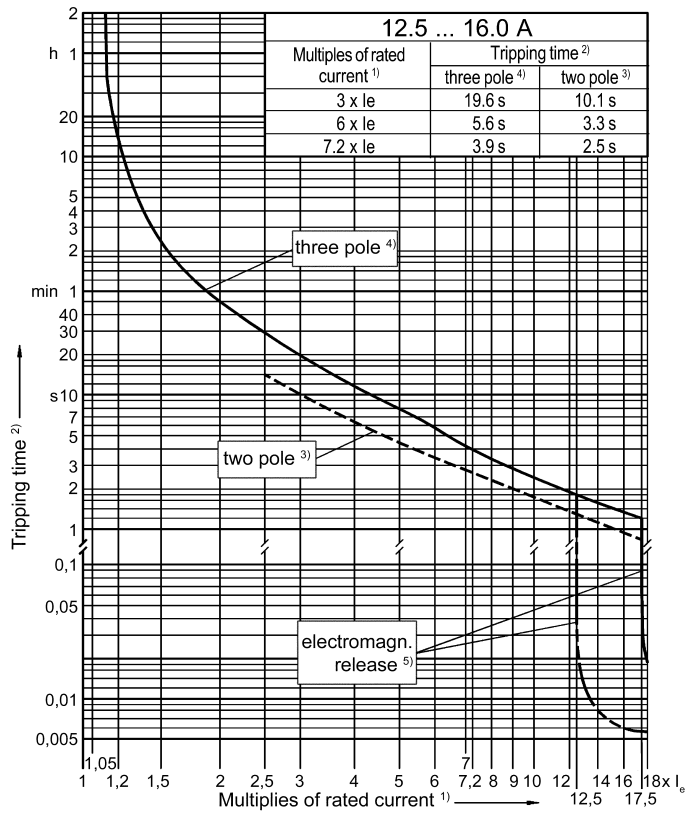


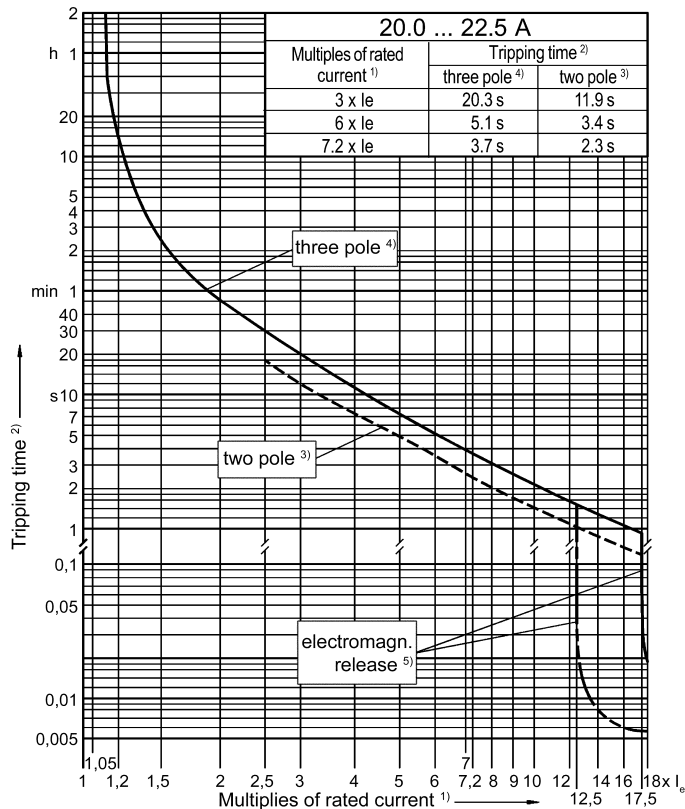


05943E00



05944E00

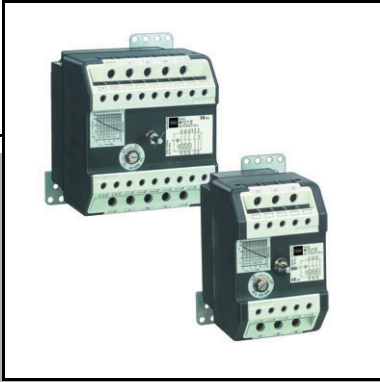




05947E00

- ☞ Leistungsschalter (Motorschutzschalter) für Motoren mit Käfigläufer sind so auszuwählen, dass die Auslösezeit bei 3-poliger Belastung nicht größer ist als die auf dem Prüfschild der Maschine angegebene Erwärmungszeit  $t_E$ .  
 (Die Auslösezeit ist der Kennlinie für das Verhältnis  $I_A/I_N$  der zu schützenden Maschinen zu entnehmen.)
- ☞ Die Zuordnung der Auslösezeiten  $t_A$  zu den relativen Ansprechströmen  $I_A/I_N$  soll einerseits die sichere Abschaltung innerhalb der Erwärmungszeit ( $t_A \leq t_E$ ) gewährleisten, andererseits jedoch auch noch einen sicheren Hochlauf des Motors bei betriebswarmem Auslöser ermöglichen.
- ☞ In der IEC/EN 60079-7 ist festgelegt, dass die Erwärmungszeit  $t_E$  nicht kürzer als 5 Sekunden sein darf.





# Operating Instructions

## Motor protection circuit-breaker

> 8523/8



## 1 Contents

---

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|------|--|----|
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## 2 General Information

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### 2.1 Manufacturer

R. STAHL Schaltgeräte GmbH  
 Am Bahnhof 30  
 74638 Waldenburg  
 Germany

Phone: +49 7942 943-0  
 Fax: +49 7942 943-4333  
 Internet: [www.r-stahl.com](http://www.r-stahl.com)  
 E-Mail: [info@stahl.de](mailto:info@stahl.de)





### 2.2 Information regarding the Operating Instructions

ID-No.: 146710 / 8523612300  
 Publication Code: 2018-07-02·BA00·III·en·08

### 2.3 Conformity with Standards and Regulations

Conformity with standards and regulations is specified in the corresponding certificates and the Manufacturer's Declaration (EU Declaration of Conformity). These documents can be downloaded from our homepage [www.r-stahl.com](http://www.r-stahl.com).



### 3 Symbols Used

|   |   |
|---|---|
|  | <p><b>Safety Instructions</b><br/> <b>Non-observance can result in damage to equipment, serious injuries or death.</b><br/>                 The safety instructions contained in these operating instructions and affixed to the device must be observed!</p> |
|  | <p><b>Warning symbol</b><br/>                 Danger due to explosive atmosphere!</p>   |
|  | <p><b>Warning symbol</b><br/>                 Danger due to live parts!</p>   |
|  | <p><b>Note</b><br/>                 This graphic marks important additional information, tips and recommendations.</p>  |

### 4 General Safety Instructions

#### 4.1 Operating Instructions Storage



Read these operating instructions carefully and store them near the installation place. For correct operation, please observe all other documents enclosed in this delivery and the operating instructions of the equipment to be connected.

|   |   |
|---|---|
| <b>⚠ WARNING</b>  |   |
|  | <p><b>Use the devices only for their intended purpose!</b></p> <ul style="list-style-type: none"> <li>▶ We cannot be held liable for damage caused by incorrect or unauthorized use or by non-observance of these operating instructions.</li> <li>▶ Use the device only if it is undamaged.</li> </ul> |
| <b>⚠ WARNING</b>  |   |
|  | <p><b>Any unauthorized work on the device is prohibited!</b><br/>                 Installation, maintenance, overhaul and repair may only be carried out by appropriately authorized and trained personnel.</p>   |

**Observe the following information during installation and operation:**

- ▶ Any damage can invalidate the explosion protection
- ▶ National and local safety regulations
- ▶ National and local accident prevention regulations
- ▶ National and local assembly and installation regulations
- ▶ Generally recognized technical regulations
- ▶ Safety instructions in these operating instructions
- ▶ Characteristic values and rated operating conditions on the rating plates and data plates
- ▶ Additional information plates fixed directly to the device

## 4.2 Alterations and Modifications

|  <b>WARNING</b> |   |
|--|---|
|                 | <b>Alterations and modifications to the device are not permitted!</b><br>We shall not accept any liability or warranty obligations for damage resulting from alterations and modifications. |

## 4.3 Special Versions

In case of additional/different order options, special versions may differ from the description given here.

## 5 Intended Use

---

The motor protection circuit breakers of Series 8523 are equipped with a non-adjustable fast short-circuit release and a thermal overcurrent release adjustable at the switch.

They are used for protecting and switching explosion-protected electric motors.

As "incomplete Ex equipment", they must be installed in a specially certified enclosure of type of protection "increased safety". The installation must be checked by a recognized expert.

They are certified for use in hazardous areas of Zones 1 and 2.

Special characteristics of the motor protection circuit breaker:

- X Phase failure sensitivity according to IEC/EN 60947
- X Temperature compensation within the ambient temperature range
- X Trip-free release
- X Isolating characteristics
- X Main switch and EMERGENCY-STOP characteristics in connection with the appropriate actuator
- X Can be fitted in any operating position



## 6 Technical Data

|                             |  |                              |                                 |         |                 |        |                 |        |    |
|-----------------------------|--|------------------------------|---------------------------------|---------|-----------------|--------|-----------------|--------|----|
| <b>Version</b>              | <b>8523/8</b>  |                              |                                 |         |                 |        |                 |        |    |
| <b>Explosion protection</b> |  |                              |                                 |         |                 |        |                 |        |    |
| Global (IECEX)              |  |                              |                                 |         |                 |        |                 |        |    |
| Gas and dust                | IECEX BVS 08.0039 U<br>Ex db eb IIC Gb<br>Ex db eb I Mb  |                              |                                 |         |                 |        |                 |        |    |
| Europe (ATEX)               |  |                              |                                 |         |                 |        |                 |        |    |
| Gas and dust                | DMT 01 ATEX E 153 U<br>⊕ II 2 G Ex db eb IIC Gb<br>⊕ I M2 Ex db eb I Mb  |                              |                                 |         |                 |        |                 |        |    |
| <b>Electrical data</b>      |  |                              |                                 |         |                 |        |                 |        |    |
| Rated operational voltage   | max. 690 V AC, 50 / 60 Hz  |                              |                                 |         |                 |        |                 |        |    |
| Minimal voltage             | 12 V AC  |                              |                                 |         |                 |        |                 |        |    |
| Rated working current       | 0.1 ... 22.5 A dependent on adjustment range   |                              |                                 |         |                 |        |                 |        |    |
| Switching capacity          | dependent on adjustment range (AC)   |                              |                                 |         |                 |        |                 |        |    |
|                             | 230 V  | 400 V                        | 500 V                           | 690 V   |                 |        |                 |        |    |
|                             | 7.0 kW   | 12.4 kW                      | 16.0 kW                         | 22.0 kW |                 |        |                 |        |    |
| Thermal overcurrent trip    | Adjustable at switch; dependent on adjustment range  |                              |                                 |         |                 |        |                 |        |    |
| Electromagnetic fast trip   | Adjustment range   |                              | Threshold values set at factory |         |                 |        |                 |        |    |
|                             | 0.16 A ... 0.63 A  | 7.5 ... 12.0 I <sub>n</sub>  |                                 |         |                 |        |                 |        |    |
|                             | 0.63 A ... 2.5 A   | 9.0 ... 14.0 I <sub>n</sub>  |                                 |         |                 |        |                 |        |    |
|                             | 2.5 A ... 6.3 A  | 10.0 ... 15.0 I <sub>n</sub> |                                 |         |                 |        |                 |        |    |
|                             | 6.3 A ... 22.5 A   | 12.5 ... 17.5 I <sub>n</sub> |                                 |         |                 |        |                 |        |    |
| Short circuit protection    | Adjustment range up to   |                              |                                 |         |                 |        |                 |        |    |
|                             | Highest rated current of the short circuit fuse if I <sub>CC</sub> > I <sub>CS</sub>   |                              |                                 |         |                 |        |                 |        |    |
|                             | 230 V AC   |                              | 400 V AC                        |         | 500 V AC        |        | 690 V AC        |        |    |
|                             | I <sub>CS</sub>  | gG, aM                       | I <sub>CS</sub>                 | gG, aM  | I <sub>CS</sub> | gG, aM | I <sub>CS</sub> | gG, aM |    |
|                             | kA   | A                            | kA                              | A       | kA              | A      | kA              | A      |    |
|                             | 0.16 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 0.25 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 0.40 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 0.63 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 1.00 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 1.60 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 2.50 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 4.00 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 6,30 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 9.00 A   |                              |                                 |         |                 |        |                 |        |    |
|                             | 12.50 A  | 75                           | 40                              | 55      | 40              | 25     | 40              | 3      | 40 |
|                             | 16.00 A  | 65                           | 50                              | 40      | 50              | 20     | 50              | 2      | 50 |
|                             | 20.00 A  | 55                           | 63                              | 25      | 63              | 15     | 63              | 2      | 50 |
|                             | 22.50 A  | 50                           | 63                              | 15      | 63              | 15     | 63              | 2      | 50 |
|                             | I <sub>CS</sub> = rated short-circuit breaking capacity<br>I <sub>CC</sub> = projected short-circuit current at mounting location          |                              |                                 |         |                 |        |                 |        |    |
|                             | Selection of pre-fuses for use with 8523/8 components.<br>Areas without specifications can be operated at up to 100 kA without a pre-fuse. |                              |                                 |         |                 |        |                 |        |    |
| Tripping class              | 10 A   |                              |                                 |         |                 |        |                 |        |    |

|                                    |   |
|------------------------------------|---|
| <b>Accessories</b>                 |   |
| Auxiliary contacts                 | Options: none; 1 NC + 1 NO; 2 NC + 2 NO   |
| Rated operational voltage $U_e$    | max. 500 V AC   |
| Rated operational current          | AC 15: 24 V / 2.5 A    230 V / 2 A    400 V / 1 A<br>DC 13: 24 V / 2.5 A    60 V / 2.5 A    110 V / 0.6 A    220 V / 0.25 A   |
| Rated operational current at least | 24 V DC: 5 mA<br>12 V DC: 10 mA   |
| <b>Undervoltage trip</b>           |   |
| Function                           | When power is lost, circuit-breaker trips; this prevents unwanted restarting, e.g. of a motor   |
| Pick-up voltage                    | $\geq 0.85 \times U_c$  |
| Drop-out                           | $0.7 \dots 0.35 \times U_c$   |
| <b>Power input</b>                 |   |
| Inrush                             | 0.9 VA  |
| Holding                            | 0.9 VA  |
| <b>Shunt release</b>               |   |
| Function                           | For remote tripping of circuit-breakers by applying actuating voltage   |
| Pick-up voltage                    | $\geq 0.85 \times U_c$  |
| Power input                        |   |
| Inrush                             | 24 ... 60 V: 14.4 ... 90 VA; 110 ... 240 V: 13 ... 61 VA; 220 ... 415 V: 17.6 ... 62.3 VA   |
| <b>Ambient conditions</b>          |   |
| Ambient temperature                | -20 °C ... +40 °C   |
| <b>Mechanical data</b>             |   |
| Enclosure material                 | Epoxy resin or polyester resin  |
| Weight                             | 8523/81: 1400 g<br>8523/82: 1800 g  |
| Main contacts                      | 3-pole  |
| Mechanical life                    | $10^5$ operations   |
| Impact strength to                 | IEC 6068-2-6  |
| Sine wave impact                   | 15 g (11 ms)  |
| Connection                         | Main contacts    1.5 ... 6 mm <sup>2</sup> finely stranded<br>1.5 ... 10 mm <sup>2</sup> solid<br>Auxiliary contacts 0.75 ... 1.5 mm <sup>2</sup> finely stranded<br>0.75 ... 2.5 mm <sup>2</sup> solid |

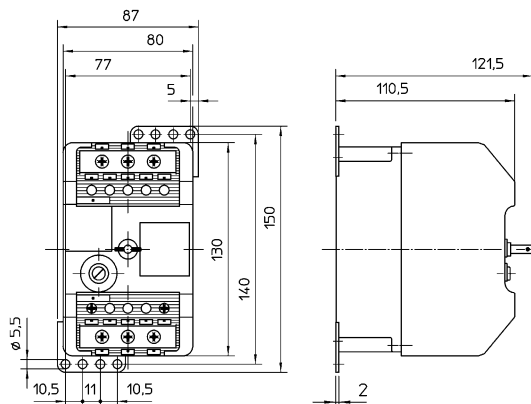
## 7 Transport and Storage

- ▶ Transport and storage are only permitted in the original packaging.
- ▶ The devices must be stored in a dry place and vibration-free.

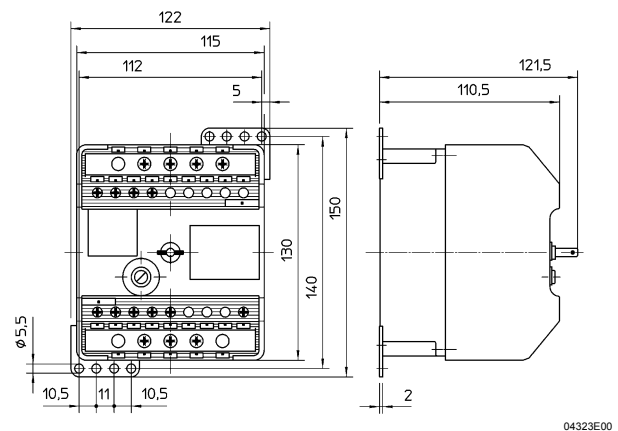
## 8 Installation

### 8.1 Dimensional Data / Fastening Dimensions

Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



8523/81  
Circuit-breaker for motor protection,  
Module width 1, without auxiliary contacts

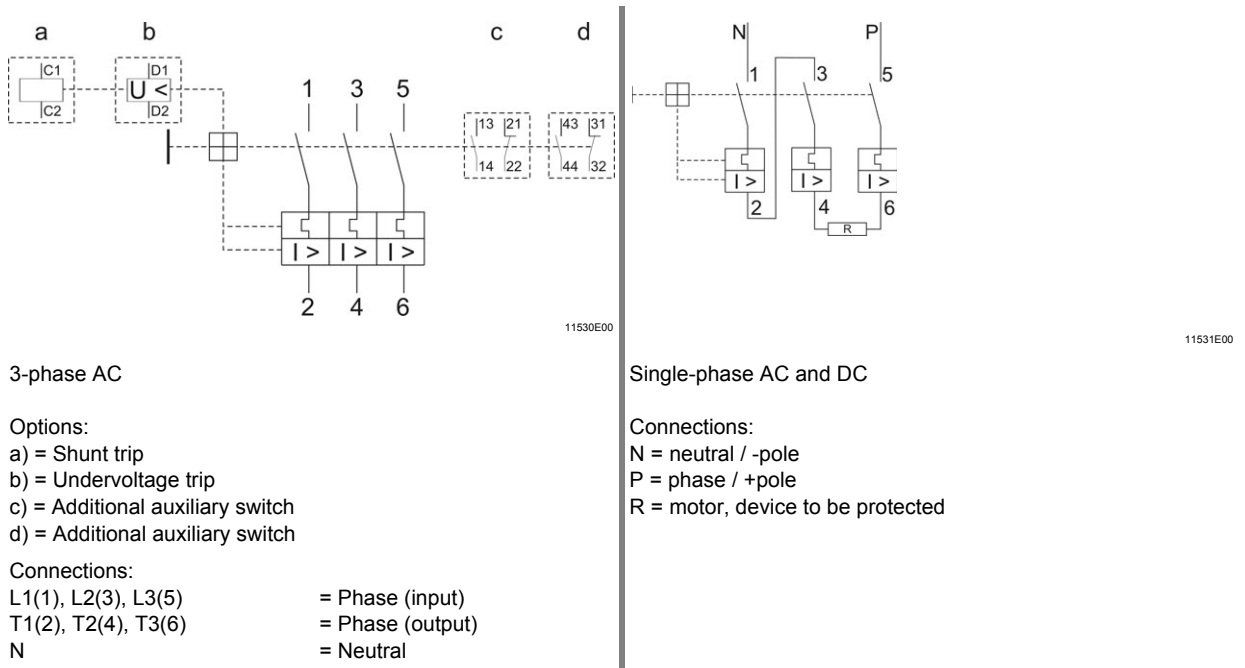


8523/82  
Circuit-breaker for motor protection,  
Module width 2, with auxiliary contacts

### 8.2 Installation Conditions for Electrical Connection

| ⚠ WARNING   |   |
|---|---|
|   | <p><b>Incorrectly installed components!</b></p> <ul style="list-style-type: none"> <li>▶ If the components are installed incorrectly, explosion protection is no longer guaranteed.</li> <li>▶ Carry out installation strictly according to the instructions and national safety and accident prevention regulations (e.g. IEC/EN 60079-14).</li> </ul> |
| <ul style="list-style-type: none"> <li>▶ In case of a rated operational current of <math>\geq 15.5</math> A, a direct connection is <b>only</b> permitted with heat-resistant cables (resistant up to <math>&gt; 85</math> °C).</li> <li>▶ Be especially careful when connecting the cable.</li> <li>▶ The conductor insulation must reach to the terminal.</li> <li>▶ The conductor itself must not be damaged when removing the insulation.</li> <li>▶ Select the cables and the mode of running them in a way that the maximum permitted cable temperature is not exceeded.</li> </ul> |   |

Circuit-breaker connection diagram with connection references, options a), b), c) or d) and connections.



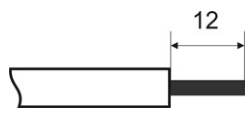
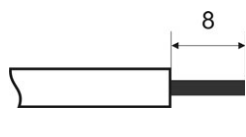
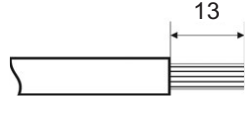
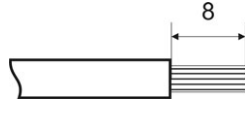
### 8.3 Installation Conditions for Electrical Connection Cross-Sections

**⚠ WARNING**

**Incorrectly installed components!**

- ▶ Explosion protection cannot be guaranteed any more if the components are incorrectly installed.
- ▶ When terminal sleeves are fitted, they must be gas-tight and applied with a suitable tool.

- ▶ 1 or 2 cables may be connected to a single terminal.
- ▶ If the conductors are single-wire, both must have the same cross-section and be of the same material.
- ▶ Cables can be connected without any special preparation.

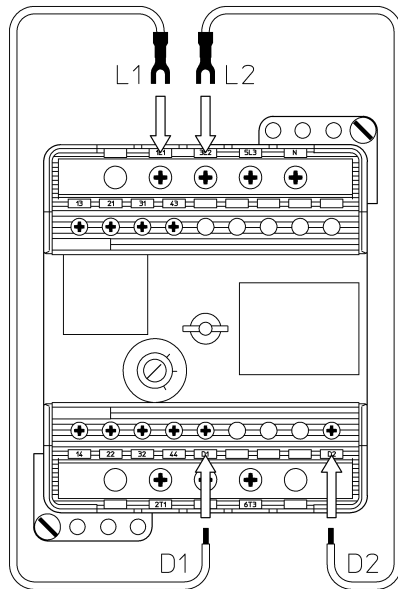
|                         | Main contact terminals   | Auxiliary contact terminals  |
|-------------------------|--|--|
| single-wire             | <br><small>11532E00</small> | <br><small>11533E00</small> |
|                         | 2 x 1.5 ... 10 mm <sup>2</sup><br>2 x AWG 16 to 8  | 2 x 0.75 ... 1.5 mm <sup>2</sup><br>2 x AWG 18 to 13   |
| fine- or multi-stranded | <br><small>11534E00</small> | <br><small>11535E00</small> |
|                         | 2 x 1.5 ... 6 mm <sup>2</sup><br>2 x AWG 16 to 10  | 2 x 0.75 ... 1.5 mm <sup>2</sup><br>2 x AWG 18 to 16   |
| permitted torques       | 1.8 ... 2.0 Nm   | 1 ... 1.2 Nm   |

## 8.4 Back-up Fuses for Auxiliary Circuits

- ▶ As a general rule, auxiliary circuits must be protected by a 10 A gL fuse.

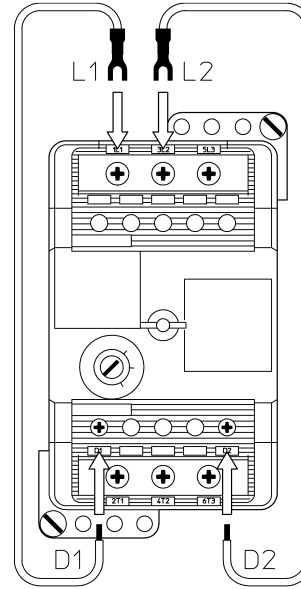
### Exception:

- ▶ An undervoltage trip is connected to the circuit-breaker main contact terminals.
- ▶ No back-up fuse is required.



Types  
8523/82

09140E00



Types  
8523/81

09029E00

## 9 Putting into Service

### ⚠ WARNING



#### Check the device before commissioning!

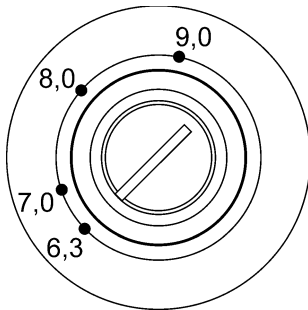
To ensure the correct operation, check the device before commissioning.

#### Before commissioning, ensure that:

- ▶ no components are damaged
- ▶ the device has been installed according to regulations
- ▶ there are no foreign bodies inside the device
- ▶ all screws and nuts have been firmly tightened
- ▶ the prescribed tightening torques have been observed
- ▶ connection has been made correctly

## 9.1 Setting the Thermal Overcurrent Trip


| <b>⚠ WARNING</b>  |   |
|---|---|
|  | <p><b>Risk of explosion due to overheating of the motor!</b></p> <ul style="list-style-type: none"> <li>▶ Risk of death or severe injuries!</li> <li>▶ Set the thermal overcurrent release according to the technical data of the motor.</li> </ul> |




11478E00


The required current value can be set by using a suitable screwdriver.


The open end of the slot shows the set current value (see drawing for sample rated current of 6,3 A).

| <b>NOTE</b>   |   |
|---|---|
|  | <p>If ambient temperatures differ from standard values, or between motor and circuit-breaker, the trip response must be checked – and the current setting changed if necessary.</p> |

## 10 Maintenance, Overhaul and Repair

| <b>⚠ WARNING</b>  |  |
|---|--|
|  | <p><b>Risk due to unauthorized work being performed on the device!</b></p> <ul style="list-style-type: none"> <li>▶ Risk of injury and damage to equipment.</li> <li>▶ Assembly, installation, commissioning, operation and maintenance must only be carried out by appropriately authorized and trained personnel.</li> </ul> |

| <b>⚠ WARNING</b>  |  |
|---|--|
|  | <p><b>Danger due to live parts!</b></p> <ul style="list-style-type: none"> <li>▶ Risk of severe injuries.</li> <li>▶ All connections and wiring must be disconnected from the power supply.</li> <li>▶ Secure the connections against unauthorized switching.</li> </ul> |

| <b>⚠ WARNING</b>  |   |
|---|---|
|  | <p><b>Short circuit in the circuit!</b></p> <ul style="list-style-type: none"> <li>▶ After multiple short circuits in the circuit, the flameproof enclosure is no longer guaranteed.</li> <li>▶ After a short circuit in the circuit, check the functionality of the device.</li> <li>▶ Replace the entire device, if necessary.</li> </ul> |

## 10.1 Regular Maintenance Work

- ▶ Consult the relevant national regulations (e.g. IEC/EN 60079-17) to determine the type and extent of inspections.
- ▶ Plan the intervals such that any expected defects in the equipment are detected promptly.

### To check as part of maintenance:

- ▶ Check if the cables are clamped properly.
- ▶ Inspect the device for signs of visible damage.
- ▶ Compliance with the permitted temperatures in accordance with IEC/EN 60079-0.
- ▶ Make sure that the device is used according to its designated use.
- ▶ Make sure the operating handle can be reset.




## 11 Cleaning

- ▶ Clean with a cloth, brush, vacuum cleaner or similar items.
- ▶ When cleaning with a damp cloth, use water or mild, non-abrasive, non-scratching cleaning agents.
- ▶ Never use aggressive cleaning agents or solvents.

## 12 Disposal

- ▶ Observe the national waste disposal regulations.

## 13 Accessories and Spare Parts

|  <b>WARNING</b> |   |   |          |              |
|--|---|---|----------|--------------|
|                 | <b>If wrong accessories are used, explosion protection cannot be guaranteed!</b>    |   |          |              |
|  | Use only original R. STAHL accessories and spare parts.                             |   |          |              |
| Designation  | Illustration  | Description                             | Art. no. | Weight<br>kg |
| Jumper   |  | for undervoltage release, length 400 mm | 147121   | 0.019        |

## 14 Tripping Characteristics

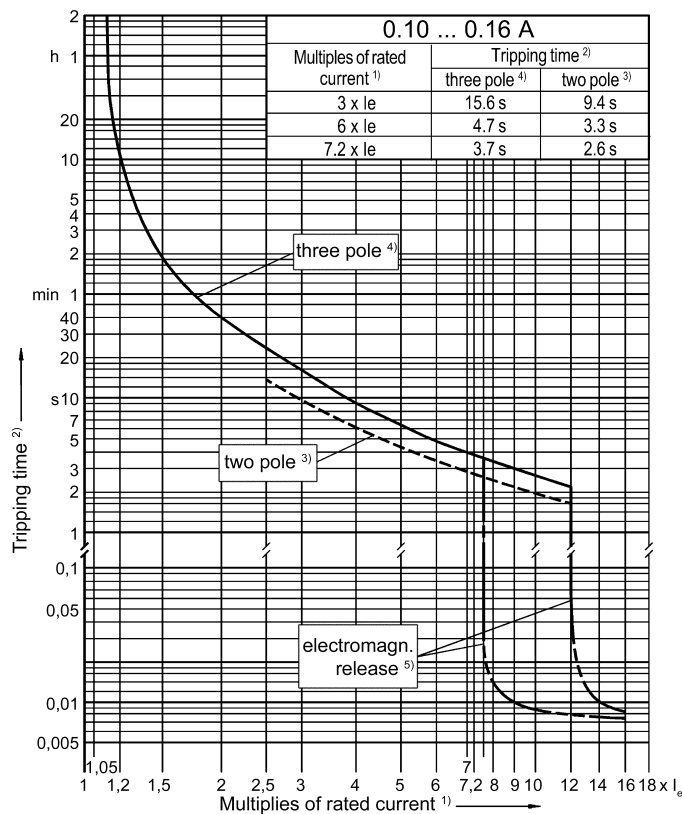
The tripping characteristic curves refer to a 3-pole load from cold state at an ambient temperature of +20 °C and any position.

The deviation of the tripping time (from a current three times higher than the rated current) is  $\pm 20\%$  maximum according to IEC/EN 60079-14.

The following tripping characteristic curves show the tripping time as a function of the current ratio  $I_a/I_e$ .

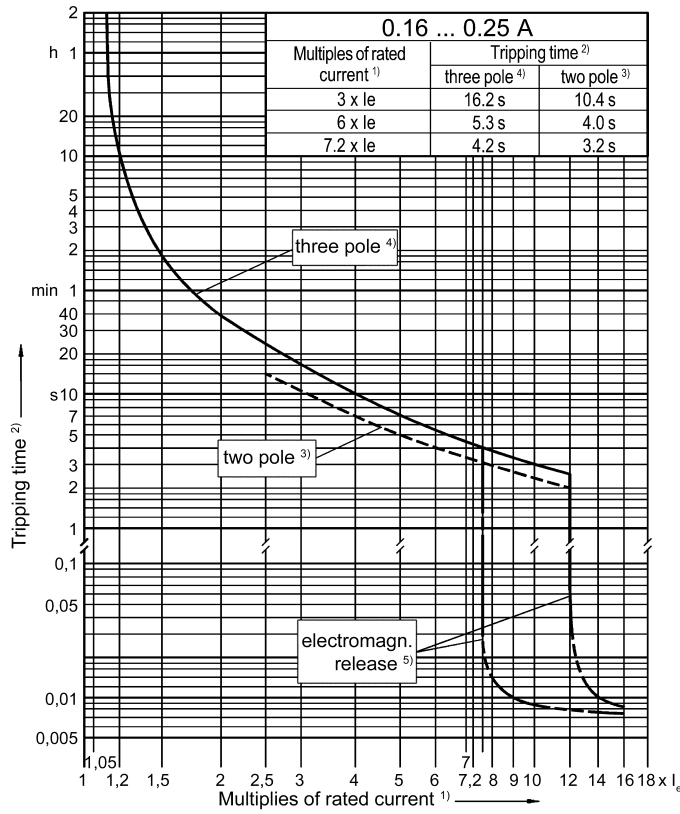
Legend:

- 1) Multiples of the rated current
- 2) Tripping time
- 3) 2-pole
- 4) 3-pole
- 5) Electromagnetic tripping

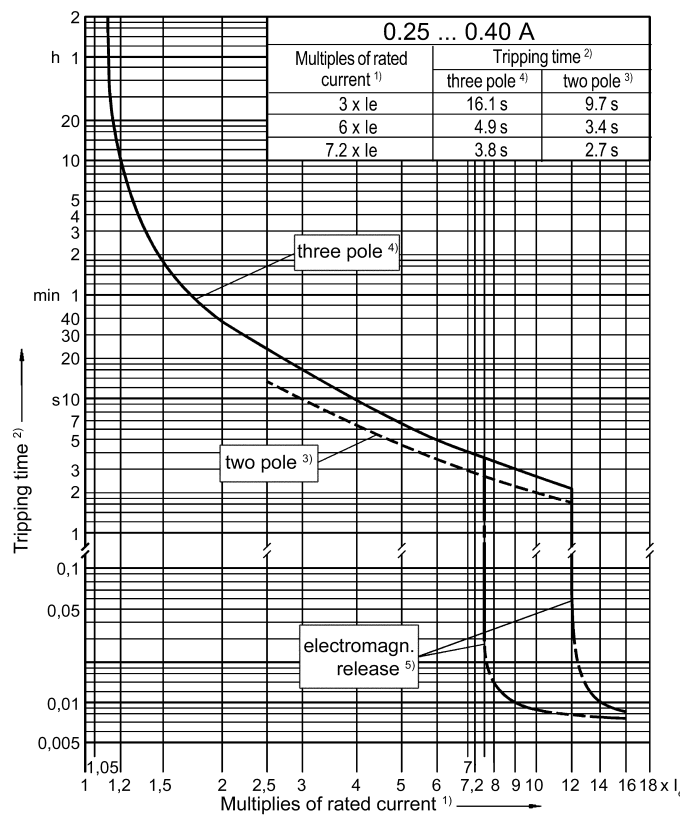


05930E00

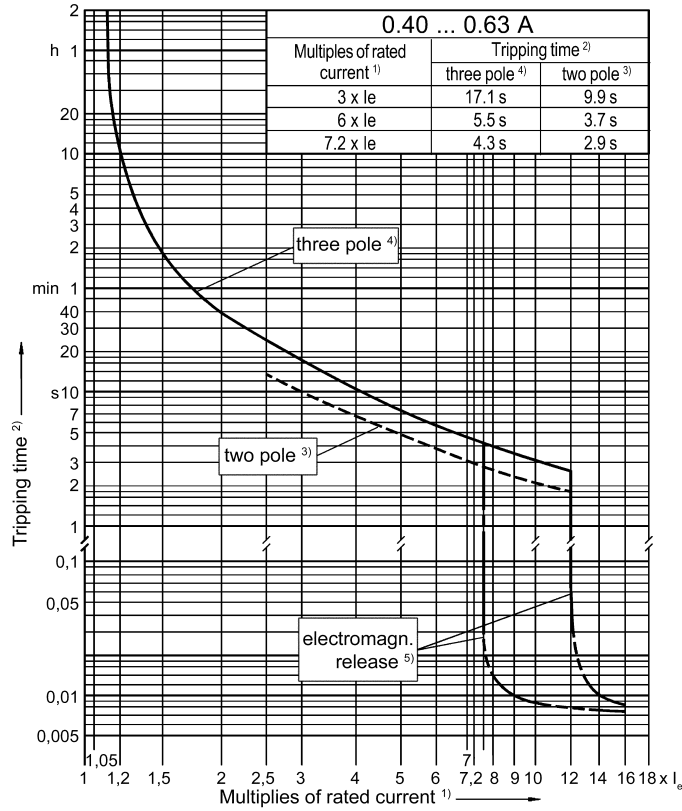




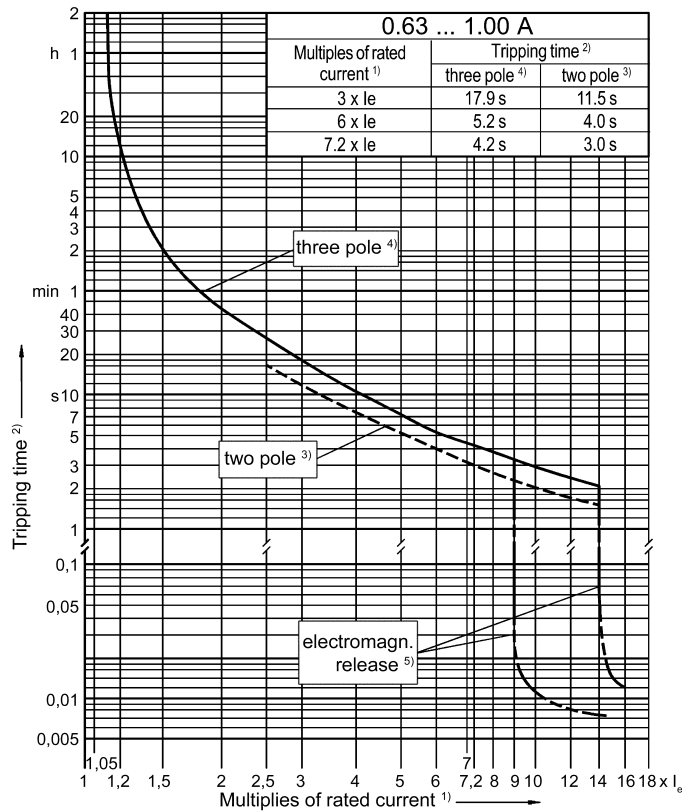
05931E00



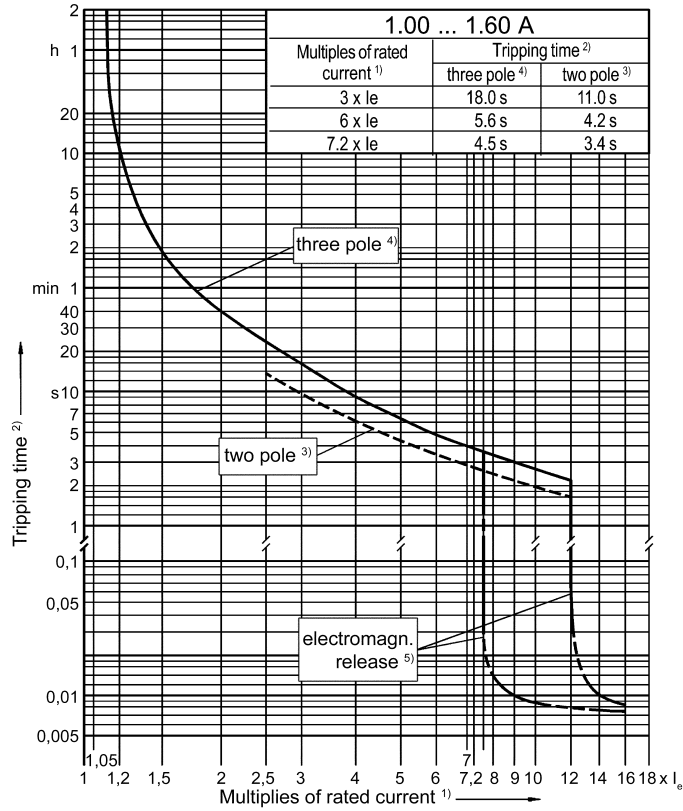
05932E00



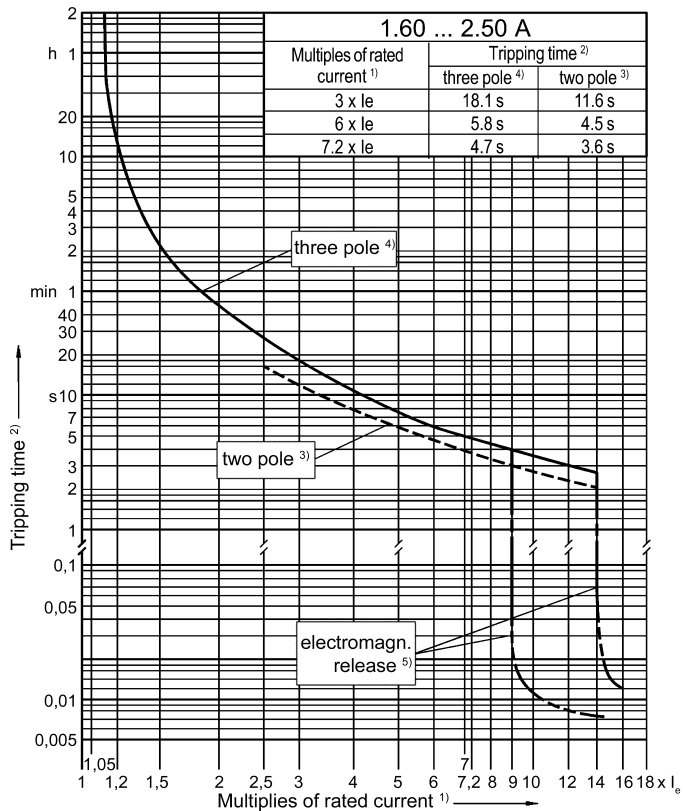
05937E00



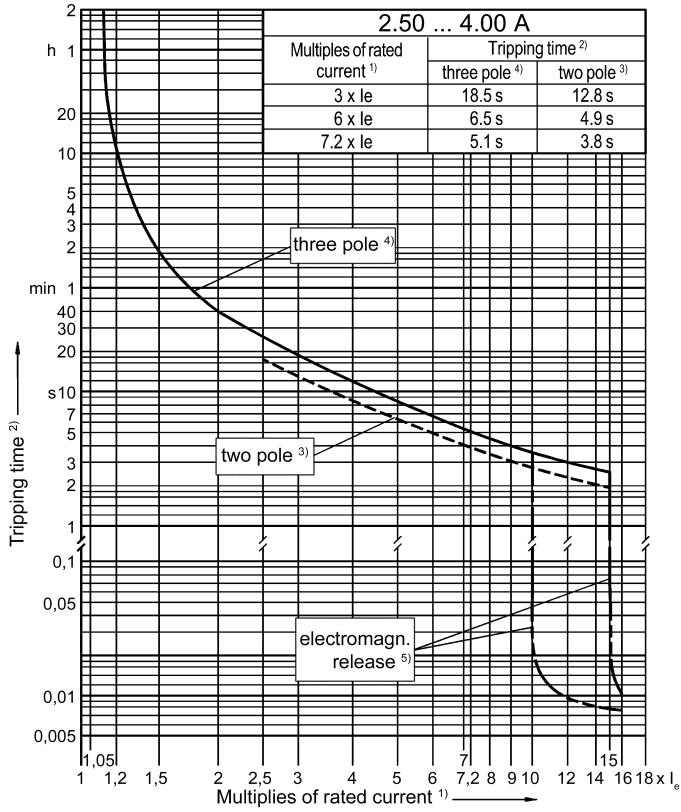
05938E00



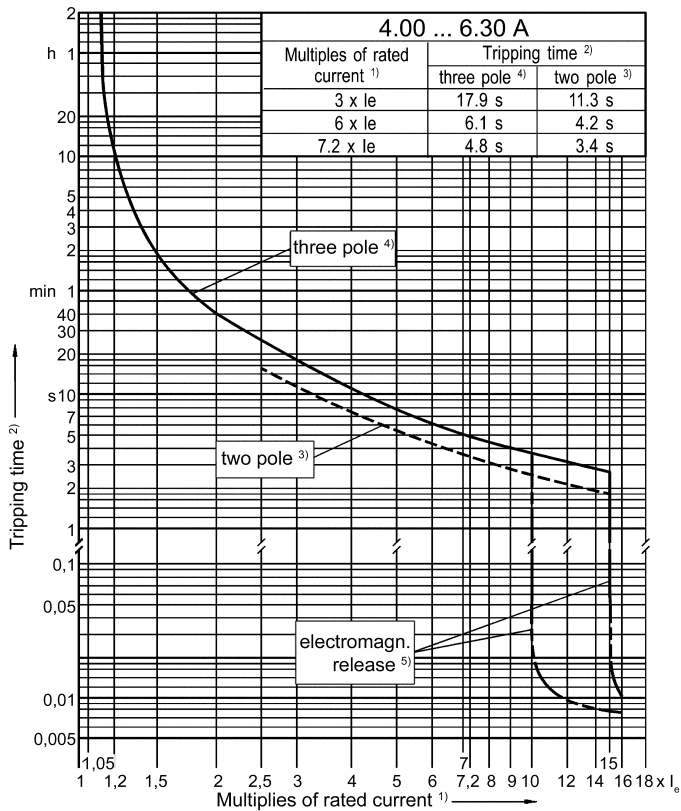
05939E00



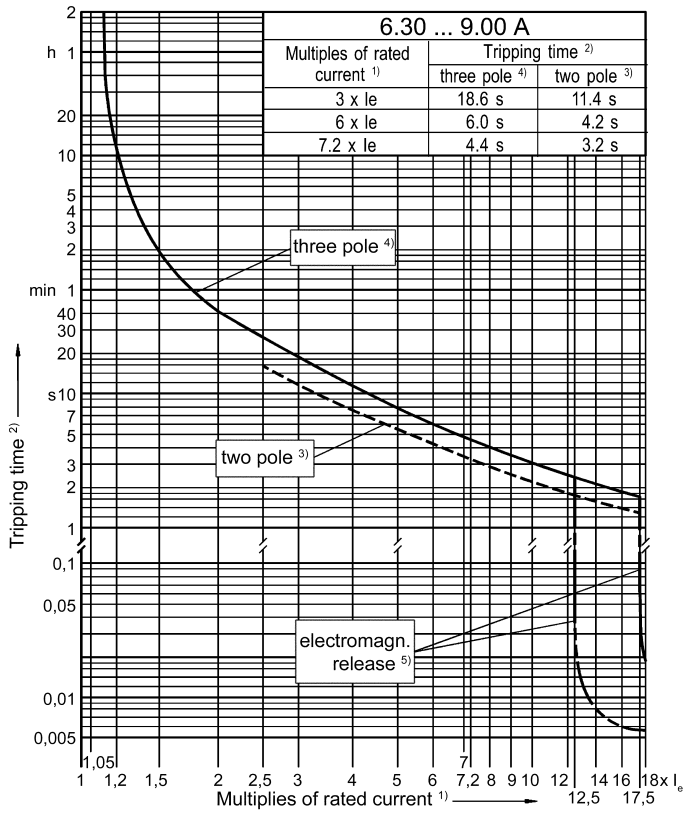
05940E00



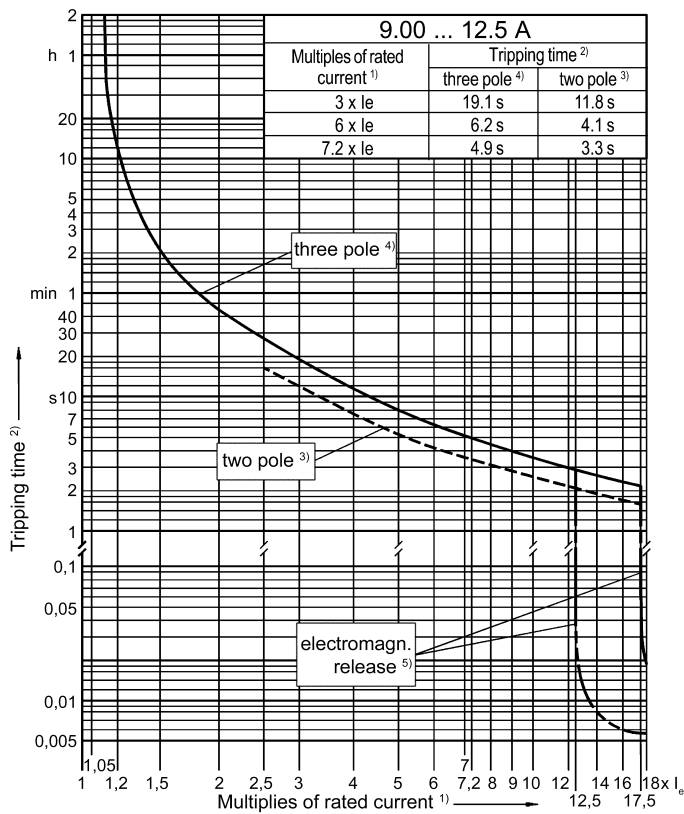
05941E00



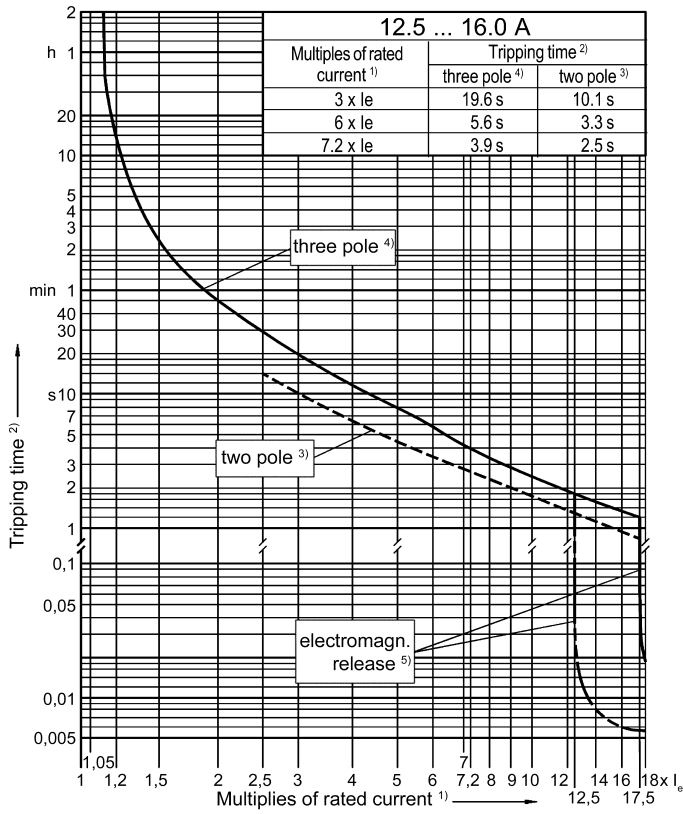
05942E00



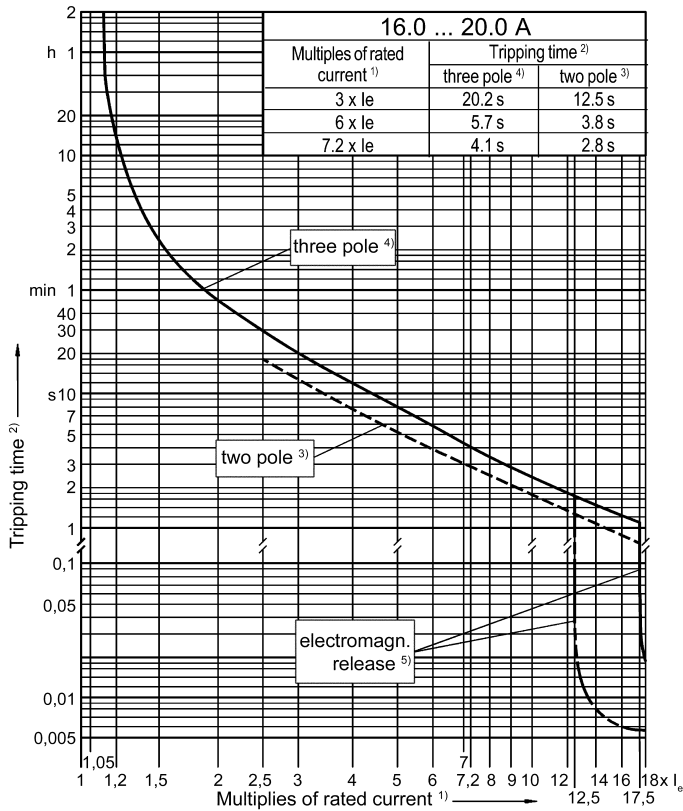
05943E00



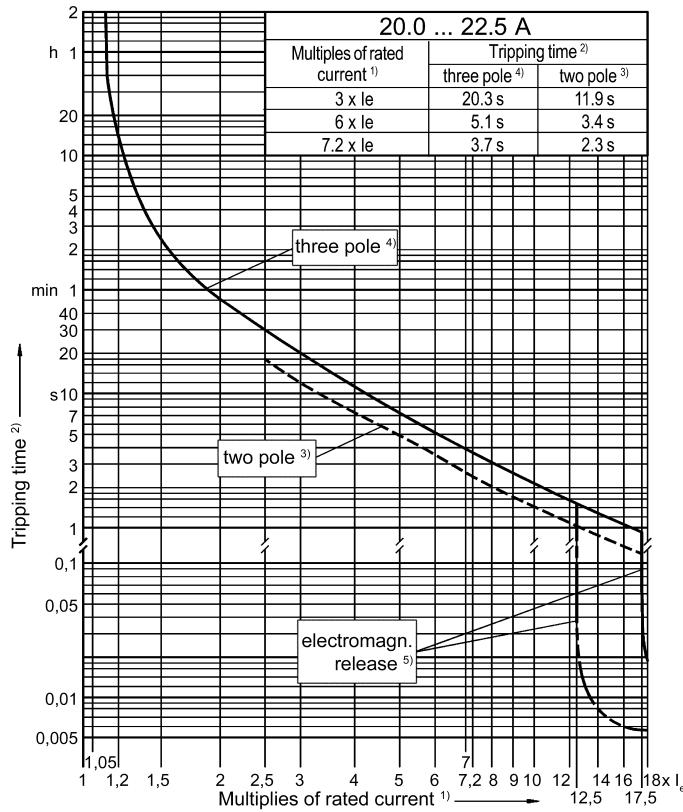
05944E00



05945E00



05946E00



05947E00

- ☞


Circuit-breakers (motor protection switches) for squirrel cage motors must be so selected that the tripping time with 3-pole loading is not greater than the warm-up time  $t_E$  given on the machine test plate.  
(The tripping time should be taken from the  $I_A/I_N$  ratio curve of the machine to be protected.)
- ☞


The value for tripping time  $t_A$  relative to the ratio of operating currents  $I_A/I_N$  should not only guarantee safe switch-off within the warm-up time ( $t_A \leq t_E$ ) but also still enable the motor to run up to speed safely when the trip is at operating temperature.
- ☞


IEC/EN 60079-7 specifies that the warm-up time  $t_E$  shall not be shorter than 5 seconds.



**Konformitätsbescheinigung**  
*Attestation of Conformity*  
*Attestation Écrite de Conformité*




**R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany**  
erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt: **Leistungsschalter für Motorschutz**  
*that the product: Motor protection circuit-breaker*  
que le produit: *Disjoncteurs moteurs*

Typ(en), type(s), type(s): **8523/8**

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.  
*is in conformity with the requirements of the following directives and standards.*  
*est conforme aux exigences des directives et des normes suivantes.*

| Richtlinie(n) / Directive(s) / Directive(s)   |                        | Norm(en) / Standard(s) / Norme(s)   |
|---|------------------------|---|
| 2014/34/EU  | <b>ATEX-Richtlinie</b> | EN IEC 60079-0:2018   |
| 2014/34/EU  | <i>ATEX Directive</i>  | EN 60079-1:2014   |
| 2014/34/UE  | <i>Directive ATEX</i>  | EN IEC 60079-7:2015 + A1:2018   |
| Kennzeichnung, marking, marquage:   |                        |  <b>II 2 G Ex db eb IIC Gb</b><br><b>I M2 Ex db eb I Mb</b> <span style="float: right;"><b>NB0158</b></span> |
| EU Baumusterprüfbescheinigung:<br><i>EU Type Examination Certificate:</i><br><i>Attestation d'examen UE de type:</i>  |                        | <b>DMT 01 ATEX E 153 U</b><br>(DEKRA Testing and Certification GmbH,<br>Dinnendahlstraße 9, 44809 Bochum, Germany, NB0158)  |
| Produktnormen nach Niederspannungsrichtlinie:<br><i>Product standards according to Low Voltage Directive:</i><br><i>Normes des produit pour la Directive Basse Tension:</i> |                        | EN 60947-1:2007 + A1:2011 + A2:2014<br>EN 60947-2:2017 + A1:2020<br>EN IEC 60947-4-1:2019   |
| 2014/30/EU  | <b>EMV-Richtlinie</b>  | Nicht zutreffend nach Artikel 2, Absatz (2) d).   |
| 2014/30/EU  | <i>EMC Directive</i>   | <i>Not applicable according to article 2, paragraph (2) d).</i>   |
| 2014/30/UE  | <i>Directive CEM</i>   | <i>Non applicable selon l'article 2, paragraphe (2) d).</i>   |
| 2011/65/EU  | <b>RoHS-Richtlinie</b> | EN IEC 63000:2018   |
| 2011/65/EU  | <i>RoHS Directive</i>  |   |
| 2011/65/UE  | <i>Directive RoHS</i>  |   |

Spezifische Merkmale und Bedingungen für den Einbau siehe Betriebsanleitung.  
*Specific characteristics and how to incorporate see operating instructions.*  
*Caractéristiques et conditions spécifiques pour l'installation voir le mode d'emploi.*

Waldenburg, 2021-05-31

Ort und Datum  
*Place and date*  
*Lieu et date*

i.V.

  
**Holger Semrau**  
**Leiter Entwicklung Schaltgeräte**  
*Director R&D Switchgear*  
*Directeur R&D Appareillage*

i.V.

  
**Jürgen Frejmüller**  
**Leiter Qualitätsmanagement**  
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*Directeur Assurance de Qualité*