



SIRIUS Compact load feeder DOL starter 690 V 24 V AC/DC 50...60 Hz 0.1...0.4 A  
IP20 Connection main circuit: plug-in, without terminals Connection auxiliary circuit:  
screw terminal

|                                                               |                                                                                                                                                                                                                                   |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                            | SIRIUS                                                                                                                                                                                                                            |
| product designation                                           | compact starter                                                                                                                                                                                                                   |
| design of the product                                         | direct starter                                                                                                                                                                                                                    |
| product type designation                                      | 3RA61                                                                                                                                                                                                                             |
| <b>General technical data</b>                                 |                                                                                                                                                                                                                                   |
| product function control circuit interface to parallel wiring | Yes                                                                                                                                                                                                                               |
| product extension auxiliary switch                            | Yes                                                                                                                                                                                                                               |
| power loss [W] for rated value of the current                 |                                                                                                                                                                                                                                   |
| • at AC in hot operating state                                | 0.01 W                                                                                                                                                                                                                            |
| • at AC in hot operating state per pole                       | 0.01 W                                                                                                                                                                                                                            |
| • without load current share typical                          | 2.9 W                                                                                                                                                                                                                             |
| insulation voltage rated value                                | 690 V                                                                                                                                                                                                                             |
| degree of pollution                                           | 3                                                                                                                                                                                                                                 |
| surge voltage resistance rated value                          | 6 000 V                                                                                                                                                                                                                           |
| maximum permissible voltage for protective separation         |                                                                                                                                                                                                                                   |
| • between main and auxiliary circuit                          | 400 V                                                                                                                                                                                                                             |
| • between auxiliary and auxiliary circuit                     | 250 V                                                                                                                                                                                                                             |
| • between control and auxiliary circuit                       | 300 V                                                                                                                                                                                                                             |
| degree of protection NEMA rating                              | other                                                                                                                                                                                                                             |
| shock resistance                                              | a=60 m/s <sup>2</sup> (6g) with 10 ms per 3 shocks in all axes                                                                                                                                                                    |
| vibration resistance                                          | f= 4 ... 5.8 Hz, d= 15 mm; f= 5.8 ... 500 Hz, a= 20 m/s <sup>2</sup> ; 10 cycles                                                                                                                                                  |
| mechanical service life (operating cycles)                    |                                                                                                                                                                                                                                   |
| • of the main contacts typical                                | 10 000 000                                                                                                                                                                                                                        |
| • of auxiliary contacts typical                               | 10 000 000                                                                                                                                                                                                                        |
| • of the signaling contacts typical                           | 10 000 000                                                                                                                                                                                                                        |
| electrical endurance (operating cycles) of auxiliary contacts |                                                                                                                                                                                                                                   |
| • at DC-13 at 6 A at 24 V typical                             | 30 000                                                                                                                                                                                                                            |
| • at AC-15 at 6 A at 230 V typical                            | 200 000                                                                                                                                                                                                                           |
| type of coordination                                          | continuous operation according to IEC 60947-6-2                                                                                                                                                                                   |
| reference code according to IEC 81346-2                       | Q                                                                                                                                                                                                                                 |
| Substance Prohibitance (Date)                                 | 05/01/2012                                                                                                                                                                                                                        |
| SVHC substance name                                           | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7<br>Lead titanium zirconium oxide - 12626-81-2<br>6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol - 119-47-1 |
| Net Weight                                                    | 1.405 kg                                                                                                                                                                                                                          |
| <b>Ambient conditions</b>                                     |                                                                                                                                                                                                                                   |
| installation altitude at height above sea level maximum       | 2 000 m                                                                                                                                                                                                                           |
| ambient temperature                                           |                                                                                                                                                                                                                                   |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> <li>• during transport</li> </ul>                                                                                                                                                                               | -20 ... +60 °C<br>-55 ... +80 °C<br>-55 ... +80 °C |
| relative humidity during operation                                                                                                                                                                                                                                                                       | 10 ... 90 %                                        |
| <b>Main circuit</b>                                                                                                                                                                                                                                                                                      |                                                    |
| number of poles for main current circuit                                                                                                                                                                                                                                                                 | 3                                                  |
| adjustable current response value current of the current-dependent overload release                                                                                                                                                                                                                      | 0.1 ... 0.4 A                                      |
| formula for making capacity limit current                                                                                                                                                                                                                                                                | 120 x I <sub>e</sub>                               |
| formula for limit current breaking capacity                                                                                                                                                                                                                                                              | 100 x I <sub>e</sub>                               |
| yielded mechanical performance for 4-pole AC motor <ul style="list-style-type: none"> <li>• at 400 V rated value</li> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>                                                                                                              | 0.09 kW<br>0.12 kW<br>0.18 kW                      |
| operating voltage at AC-3 rated value maximum                                                                                                                                                                                                                                                            | 690 V                                              |
| operational current <ul style="list-style-type: none"> <li>• at AC at 400 V rated value</li> <li>• at AC-3 at 400 V rated value</li> <li>• at AC-43 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul> | 0.4 A<br>0.4 A<br>0.3 A<br>0.32 A<br>0.35 A        |
| operating power <ul style="list-style-type: none"> <li>• at AC-3 at 400 V rated value</li> <li>• at AC-43 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>                                           | 0.09 kW<br>90 W<br>120 W<br>180 W                  |
| no-load switching frequency                                                                                                                                                                                                                                                                              | 3 600 1/h                                          |
| operating frequency <ul style="list-style-type: none"> <li>• at AC-41 according to IEC 60947-6-2 maximum</li> <li>• at AC-43 according to IEC 60947-6-2 maximum</li> </ul>                                                                                                                               | 750 1/h<br>250 1/h                                 |
| <b>Control circuit/ Control</b>                                                                                                                                                                                                                                                                          |                                                    |
| type of voltage                                                                                                                                                                                                                                                                                          | AC/DC                                              |
| control supply voltage 1 at AC <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 50 Hz</li> <li>• at 60 Hz rated value</li> <li>• at 60 Hz</li> </ul>                                                                                                                          | 24 V<br>24 ... 24 V<br>24 V<br>24 V                |
| control supply voltage frequency <ul style="list-style-type: none"> <li>• 1 rated value</li> <li>• 2 rated value</li> </ul>                                                                                                                                                                              | 50 Hz<br>60 Hz                                     |
| control supply voltage 1 at DC rated value                                                                                                                                                                                                                                                               | 24 V                                               |
| control supply voltage 1 at DC                                                                                                                                                                                                                                                                           | 24 ... 24 V                                        |
| holding power <ul style="list-style-type: none"> <li>• at AC maximum</li> <li>• at DC maximum</li> </ul>                                                                                                                                                                                                 | 2.8 W<br>2.9 W                                     |
| <b>Auxiliary circuit</b>                                                                                                                                                                                                                                                                                 |                                                    |
| number of NC contacts for auxiliary contacts                                                                                                                                                                                                                                                             | 1                                                  |
| number of NO contacts for auxiliary contacts                                                                                                                                                                                                                                                             | 1                                                  |
| number of NO contacts of instantaneous short-circuit trip unit for signaling contact                                                                                                                                                                                                                     | 1                                                  |
| number of CO contacts of the current-dependent overload release for signaling contact                                                                                                                                                                                                                    | 1                                                  |
| operational current of auxiliary contacts at AC-12 maximum                                                                                                                                                                                                                                               | 10 A                                               |
| operational current of auxiliary contacts at DC-13 at 250 V                                                                                                                                                                                                                                              | 0.27 A                                             |
| <b>Protective and monitoring functions</b>                                                                                                                                                                                                                                                               |                                                    |
| trip class                                                                                                                                                                                                                                                                                               | CLASS 10 and 20 adjustable                         |
| operating short-circuit current breaking capacity (I <sub>cs</sub> ) <ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>                                                                                                                                                            | 53 kA                                              |

|                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>                                                                                                                                                                                                                 | 3 kA<br>3 kA                                                                                                                                       |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                    |                                                                                                                                                    |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                                                                                                                                                                                                                                                      |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                 | 0.4 A<br>0.4 A                                                                                                                                     |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                              | contacts 21-22, 13-14, 43-44 Q600 / A600, contacts 77-78 R300 / B300, contacts 95-96-98 R300 / D300                                                |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                          |                                                                                                                                                    |
| <b>product function short circuit protection</b>                                                                                                                                                                                                                                                                         | Yes                                                                                                                                                |
| <b>design of short-circuit protection</b>                                                                                                                                                                                                                                                                                | electromagnetic                                                                                                                                    |
| <b>design of the fuse link</b>                                                                                                                                                                                                                                                                                           |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the auxiliary switch required</li> <li>• for short-circuit protection of the signaling switch of the short-circuit release required</li> <li>• for short-circuit protection of the signaling switch of the overload release required</li> </ul> | fuse gL/gG: 10 A<br>6A gL/gG/400V<br>4A gL/gG/400V                                                                                                 |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                |                                                                                                                                                    |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                 | any                                                                                                                                                |
| <b>mounting position recommended</b>                                                                                                                                                                                                                                                                                     | vertical, on horizontal standard DIN rail                                                                                                          |
| <b>fastening method</b>                                                                                                                                                                                                                                                                                                  | screw and snap-on mounting                                                                                                                         |
| <b>height</b>                                                                                                                                                                                                                                                                                                            | 170 mm                                                                                                                                             |
| <b>width</b>                                                                                                                                                                                                                                                                                                             | 45 mm                                                                                                                                              |
| <b>depth</b>                                                                                                                                                                                                                                                                                                             | 165 mm                                                                                                                                             |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                            |                                                                                                                                                    |
| <b>product component removable terminal for main circuit</b>                                                                                                                                                                                                                                                             | Yes                                                                                                                                                |
| <b>product component removable terminal for auxiliary and control circuit</b>                                                                                                                                                                                                                                            | Yes                                                                                                                                                |
| <b>type of electrical connection</b>                                                                                                                                                                                                                                                                                     |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> </ul>                                                                                                                                                                                                | plug-in without terminals<br>screw-type terminals                                                                                                  |
| <b>type of connectable conductor cross-sections for main contacts</b>                                                                                                                                                                                                                                                    |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with core end processing</li> </ul>                                                                                                                                                                                                            | 2x (1.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup><br>2x (1.5 ... 6 mm <sup>2</sup> )                                                          |
| <b>type of connectable conductor cross-sections</b>                                                                                                                                                                                                                                                                      |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts               <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for auxiliary contacts</li> </ul>                                                                 | 0.5 ... 4 mm <sup>2</sup> , 2x (0.5 ... 2.5 mm <sup>2</sup> )<br>0.5 ... 2.5 mm <sup>2</sup> , 2x (0.5 ... 1.5 mm <sup>2</sup> )<br>2x (20 ... 14) |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                               |                                                                                                                                                    |
| <b>proportion of dangerous failures</b>                                                                                                                                                                                                                                                                                  |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• with low demand rate according to SN 31920</li> <li>• with high demand rate according to SN 31920</li> </ul>                                                                                                                                                                    | 40 %<br>50 %                                                                                                                                       |
| <b>B10 value with high demand rate according to SN 31920</b>                                                                                                                                                                                                                                                             | 3 000 000                                                                                                                                          |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b>                                                                                                                                                                                                                                                     | 100 FIT                                                                                                                                            |
| <b>IEC 61508</b>                                                                                                                                                                                                                                                                                                         |                                                                                                                                                    |
| T1 value for proof test interval or service life according to IEC 61508                                                                                                                                                                                                                                                  | 20 a                                                                                                                                               |
| <b>Electrical Safety</b>                                                                                                                                                                                                                                                                                                 |                                                                                                                                                    |
| <b>protection class IP on the front according to IEC 60529</b>                                                                                                                                                                                                                                                           | IP20                                                                                                                                               |
| <b>touch protection on the front according to IEC 60529</b>                                                                                                                                                                                                                                                              | finger-safe                                                                                                                                        |
| <b>Communication/ Protocol</b>                                                                                                                                                                                                                                                                                           |                                                                                                                                                    |
| <b>product function bus communication</b>                                                                                                                                                                                                                                                                                | No                                                                                                                                                 |
| <b>protocol is supported</b>                                                                                                                                                                                                                                                                                             |                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• AS-Interface protocol</li> <li>• IO-Link protocol</li> </ul>                                                                                                                                                                                                                    | No<br>No                                                                                                                                           |
| <b>product function control circuit interface with IO link</b>                                                                                                                                                                                                                                                           | No                                                                                                                                                 |
| <b>Electromagnetic compatibility</b>                                                                                                                                                                                                                                                                                     |                                                                                                                                                    |
| <b>conducted interference</b>                                                                                                                                                                                                                                                                                            |                                                                                                                                                    |

|                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• due to burst according to IEC 61000-4-4</li> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul> | 4 kV main contacts, 2 kV auxiliary contacts<br>4 kV main contacts, 2 kV auxiliary contacts<br>2 kV main contacts, 1 kV auxiliary contacts<br><br>0.15-80Mhz at 10V |
| field-based interference according to IEC 61000-4-3                                                                                                                                                                                                                                                         | 10 V/m                                                                                                                                                             |
| electrostatic discharge according to IEC 61000-4-2                                                                                                                                                                                                                                                          | 8 kV                                                                                                                                                               |
| conducted HF interference emissions according to CISPR11                                                                                                                                                                                                                                                    | 150 kHz ... 30 MHz Class A                                                                                                                                         |
| field-bound HF interference emission according to CISPR11                                                                                                                                                                                                                                                   | 30 ... 1000 MHz Class A                                                                                                                                            |
| <b>Supply voltage</b>                                                                                                                                                                                                                                                                                       |                                                                                                                                                                    |
| Supply voltage required Auxiliary voltage                                                                                                                                                                                                                                                                   | No                                                                                                                                                                 |
| <b>Display</b>                                                                                                                                                                                                                                                                                              |                                                                                                                                                                    |
| number of LEDs                                                                                                                                                                                                                                                                                              | 2                                                                                                                                                                  |
| <b>Approvals Certificates</b>                                                                                                                                                                                                                                                                               |                                                                                                                                                                    |
| General Product Approval                                                                                                                                                                                                                                                                                    | EMV                                                                                                                                                                |



|                   |                   |                      |       |                 |
|-------------------|-------------------|----------------------|-------|-----------------|
| Functional Safety | Test Certificates | Maritime application | other | Dangerous goods |
|-------------------|-------------------|----------------------|-------|-----------------|



[Type Test Certificates/Test Report](#)



[Confirmation](#)

[Transport Information](#)

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|--------------------|
| <b>Environment</b> |
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[Environmental Conformations](#)

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| <b>Further information</b> |
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Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RA6120-1AB33>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-1AB33>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

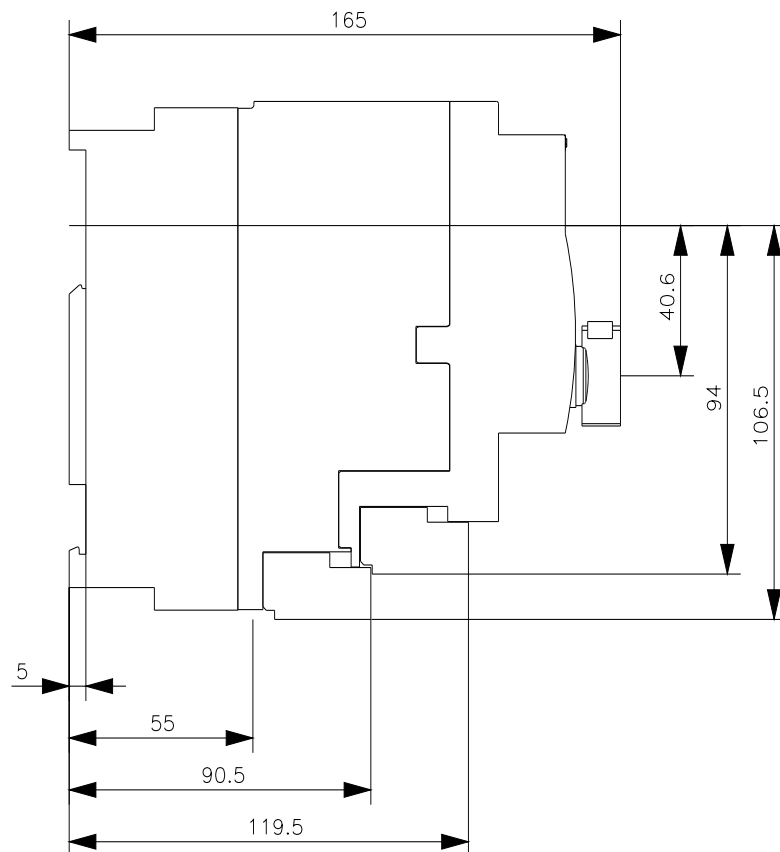
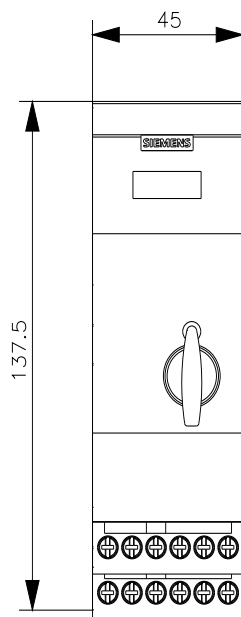
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RA6120-1AB33&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-1AB33&lang=en)

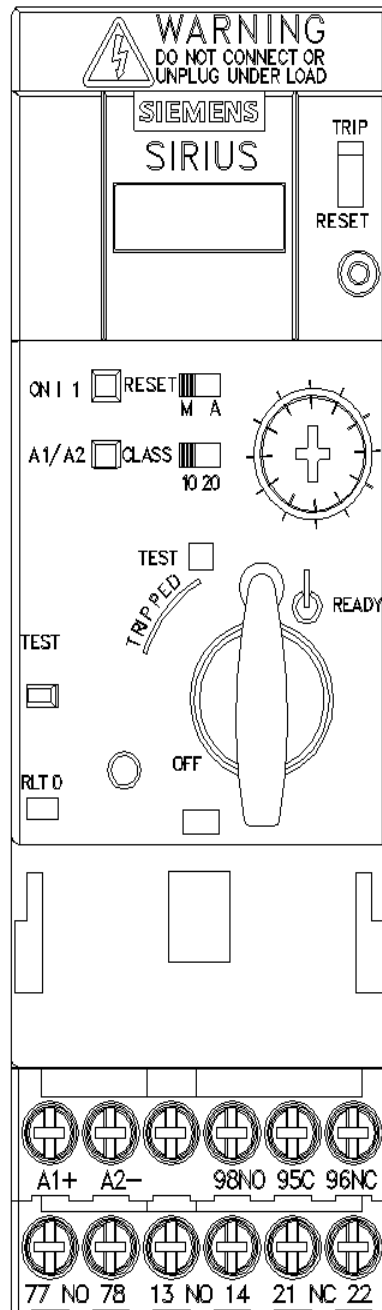
Cax online generator

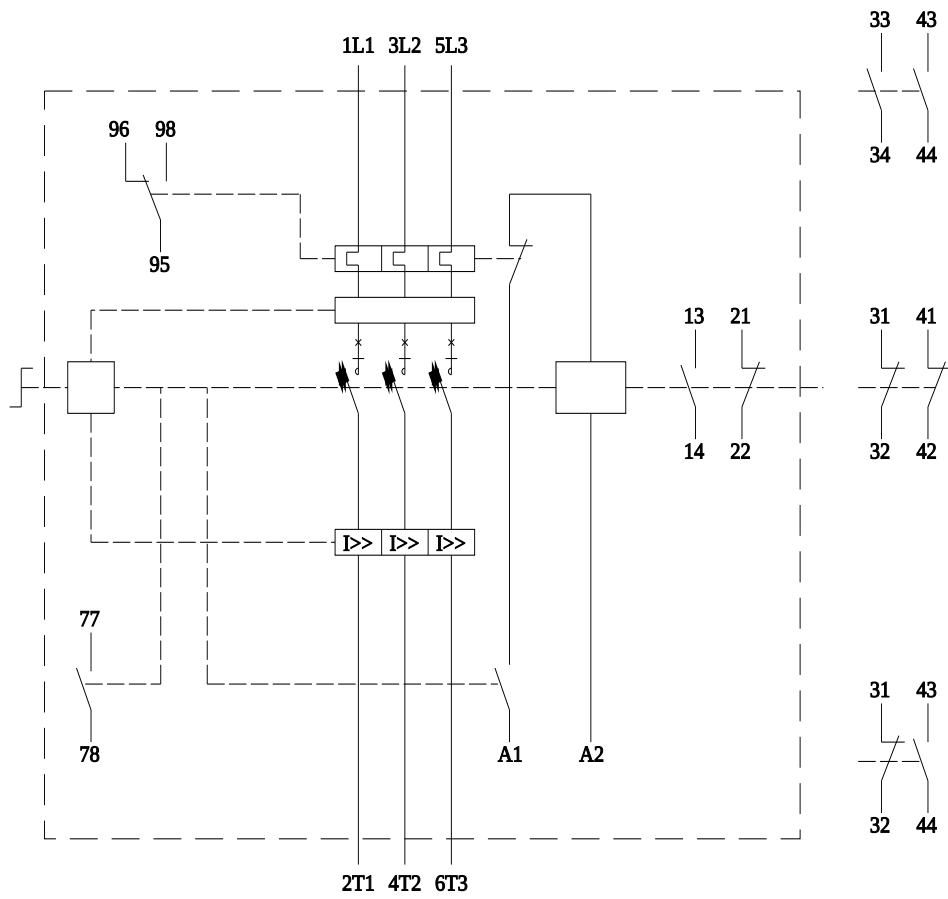
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-1AB33>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>)







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