

Siemens  
EcoTech



SIRIUS soft starter S3 80 A, 55 kW/500 V, 40 °C 400-600 V AC, 24 V AC/DC  
Screw terminals

### General technical data

|                                                                                            |                          |
|--------------------------------------------------------------------------------------------|--------------------------|
| product brand name                                                                         | SIRIUS                   |
| product designation                                                                        | Soft starter             |
| product feature                                                                            |                          |
| • integrated bypass contact system                                                         | Yes                      |
| • thyristors                                                                               | Yes                      |
| product function                                                                           |                          |
| • intrinsic device protection                                                              | Yes                      |
| • motor overload protection                                                                | Yes                      |
| • evaluation of thermistor motor protection                                                | No                       |
| • external reset                                                                           | Yes                      |
| • adjustable current limitation                                                            | Yes                      |
| • inside-delta circuit                                                                     | No                       |
| product component motor brake output                                                       | No                       |
| insulation voltage rated value                                                             | 600 V                    |
| degree of pollution                                                                        | 3, acc. to IEC 60947-4-2 |
| blocking voltage of the thyristor maximum                                                  | 1 600 V                  |
| reference code according to EN 61346-2                                                     | Q                        |
| reference code according to DIN 40719 extended according to IEC 204-2 according to IEC 750 | G                        |

### Power Electronics

|                                                                          |               |
|--------------------------------------------------------------------------|---------------|
| operational current                                                      |               |
| • at 40 °C rated value                                                   | 80 A          |
| • at 50 °C rated value                                                   | 73 A          |
| • at 60 °C rated value                                                   | 66 A          |
| yielded mechanical performance for 3-phase motors                        |               |
| • at 400 V                                                               |               |
| — at standard circuit at 40 °C rated value                               | 45 kW         |
| • at 500 V                                                               |               |
| — at standard circuit at 40 °C rated value                               | 55 kW         |
| operating frequency rated value                                          | 50 ... 60 Hz  |
| relative negative tolerance of the operating frequency                   | -10 %         |
| relative positive tolerance of the operating frequency                   | 10 %          |
| operating voltage at standard circuit rated value                        | 400 ... 600 V |
| relative negative tolerance of the operating voltage at standard circuit | -15 %         |
| relative positive tolerance of the operating voltage at                  | 10 %          |

|                                                                                                                       |                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>standard circuit</b>                                                                                               |                                                                                                                                                                                                                                                                 |
| <b>minimum load [%]</b>                                                                                               | 20 %                                                                                                                                                                                                                                                            |
| <b>adjustable motor current for motor overload protection minimum rated value</b>                                     | 43 A                                                                                                                                                                                                                                                            |
| <b>continuous operating current [% of I<sub>e</sub>] at 40 °C</b>                                                     | 115 %                                                                                                                                                                                                                                                           |
| <b>power loss [W] at operational current at 40 °C during operation typical</b>                                        | 12 W                                                                                                                                                                                                                                                            |
| <b>Control circuit/ Control</b>                                                                                       |                                                                                                                                                                                                                                                                 |
| <b>type of voltage of the control supply voltage</b>                                                                  | AC/DC                                                                                                                                                                                                                                                           |
| <b>control supply voltage frequency 1 rated value</b>                                                                 | 50 Hz                                                                                                                                                                                                                                                           |
| <b>control supply voltage frequency 2 rated value</b>                                                                 | 60 Hz                                                                                                                                                                                                                                                           |
| <b>relative negative tolerance of the control supply voltage frequency</b>                                            | -10 %                                                                                                                                                                                                                                                           |
| <b>relative positive tolerance of the control supply voltage frequency</b>                                            | 10 %                                                                                                                                                                                                                                                            |
| <b>control supply voltage 1 at AC</b>                                                                                 |                                                                                                                                                                                                                                                                 |
| • at 50 Hz rated value                                                                                                | 24 V                                                                                                                                                                                                                                                            |
| • at 60 Hz rated value                                                                                                | 24 V                                                                                                                                                                                                                                                            |
| <b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b>                                       | -20 %                                                                                                                                                                                                                                                           |
| <b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b>                                       | 20 %                                                                                                                                                                                                                                                            |
| <b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>                                       | -20 %                                                                                                                                                                                                                                                           |
| <b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>                                       | 20 %                                                                                                                                                                                                                                                            |
| <b>control supply voltage 1 at DC rated value</b>                                                                     | 24 V                                                                                                                                                                                                                                                            |
| <b>relative negative tolerance of the control supply voltage at DC</b>                                                | -20 %                                                                                                                                                                                                                                                           |
| <b>relative positive tolerance of the control supply voltage at DC</b>                                                | 20 %                                                                                                                                                                                                                                                            |
| <b>display version for fault signal</b>                                                                               | red                                                                                                                                                                                                                                                             |
| <b>Mechanical data</b>                                                                                                |                                                                                                                                                                                                                                                                 |
| <b>size of engine control device</b>                                                                                  | S3                                                                                                                                                                                                                                                              |
| <b>width</b>                                                                                                          | 70 mm                                                                                                                                                                                                                                                           |
| <b>height</b>                                                                                                         | 170 mm                                                                                                                                                                                                                                                          |
| <b>depth</b>                                                                                                          | 190 mm                                                                                                                                                                                                                                                          |
| <b>fastening method</b>                                                                                               | screw and snap-on mounting                                                                                                                                                                                                                                      |
| <b>mounting position</b>                                                                                              | With additional fan: With vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back Without additional fan: With vertical mounting surface +/-10° rotatable, with vertical mounting surface +/- 10° t |
| <b>required spacing with side-by-side mounting</b>                                                                    |                                                                                                                                                                                                                                                                 |
| • upwards                                                                                                             | 60 mm                                                                                                                                                                                                                                                           |
| • at the side                                                                                                         | 30 mm                                                                                                                                                                                                                                                           |
| • downwards                                                                                                           | 40 mm                                                                                                                                                                                                                                                           |
| <b>wire length maximum</b>                                                                                            | 300 m                                                                                                                                                                                                                                                           |
| <b>number of poles for main current circuit</b>                                                                       | 3                                                                                                                                                                                                                                                               |
| <b>Connections/ Terminals</b>                                                                                         |                                                                                                                                                                                                                                                                 |
| <b>type of electrical connection</b>                                                                                  |                                                                                                                                                                                                                                                                 |
| • for main current circuit                                                                                            | screw-type terminals                                                                                                                                                                                                                                            |
| • for auxiliary and control circuit                                                                                   | screw-type terminals                                                                                                                                                                                                                                            |
| <b>number of NC contacts for auxiliary contacts</b>                                                                   | 0                                                                                                                                                                                                                                                               |
| <b>number of NO contacts for auxiliary contacts</b>                                                                   | 2                                                                                                                                                                                                                                                               |
| <b>number of CO contacts for auxiliary contacts</b>                                                                   | 1                                                                                                                                                                                                                                                               |
| <b>type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point</b> |                                                                                                                                                                                                                                                                 |
| • solid                                                                                                               | 2x (2.5 ... 16 mm <sup>2</sup> )                                                                                                                                                                                                                                |
| • finely stranded with core end processing                                                                            | 2.5 ... 35 mm <sup>2</sup>                                                                                                                                                                                                                                      |
| • stranded                                                                                                            | 4 ... 70 mm <sup>2</sup>                                                                                                                                                                                                                                        |
| <b>type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point</b>  |                                                                                                                                                                                                                                                                 |
| • solid                                                                                                               | 2x (2.5 ... 16 mm <sup>2</sup> )                                                                                                                                                                                                                                |

|                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>finely stranded with core end processing</li> <li>stranded</li> </ul>                                                                                                                                                                                                                                                                                                | 2.5 ... 50 mm <sup>2</sup><br>10 ... 70 mm <sup>2</sup>                                                                                                                                                                                                                 |
| <b>type of connectable conductor cross-sections for main contacts for box terminal using both clamping points</b> <ul style="list-style-type: none"> <li>solid</li> <li>finely stranded with core end processing</li> <li>stranded</li> </ul>                                                                                                                                                               | 2x (2.5 ... 16 mm <sup>2</sup> )<br>2x (2.5 ... 35 mm <sup>2</sup> )<br>2x (10 ... 50 mm <sup>2</sup> )                                                                                                                                                                 |
| <b>type of connectable conductor cross-sections for AWG cables for main contacts for box terminal</b> <ul style="list-style-type: none"> <li>using the back clamping point</li> <li>using the front clamping point</li> <li>using both clamping points</li> </ul>                                                                                                                                           | 2x (10 ... 1/0)<br>2x (10 ... 1/0)<br>10 ... 2/0                                                                                                                                                                                                                        |
| <b>type of connectable conductor cross-sections for DIN cable lug for main contacts</b> <ul style="list-style-type: none"> <li>finely stranded</li> <li>stranded</li> </ul>                                                                                                                                                                                                                                 | 2 x (10 ... 50 mm <sup>2</sup> )<br>2x (10 ... 70 mm <sup>2</sup> )                                                                                                                                                                                                     |
| <b>type of connectable conductor cross-sections for auxiliary contacts</b> <ul style="list-style-type: none"> <li>solid</li> <li>finely stranded with core end processing</li> </ul>                                                                                                                                                                                                                        | 2x (0.5 ... 2.5 mm <sup>2</sup> )<br>2x (0.5 ... 1.5 mm <sup>2</sup> )                                                                                                                                                                                                  |
| <b>type of connectable conductor cross-sections for AWG cables</b> <ul style="list-style-type: none"> <li>for main contacts</li> <li>for auxiliary contacts</li> <li>for auxiliary contacts finely stranded with core end processing</li> </ul>                                                                                                                                                             | 2x (7 ... 1/0)<br>2x (20 ... 14)<br>2x (20 ... 16)                                                                                                                                                                                                                      |
| <b>Ambient conditions</b>                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                         |
| <b>installation altitude at height above sea level</b>                                                                                                                                                                                                                                                                                                                                                      | 5 000 m                                                                                                                                                                                                                                                                 |
| <b>environmental category</b> <ul style="list-style-type: none"> <li>during transport according to IEC 60721</li> <li>during storage according to IEC 60721</li> <li>during operation according to IEC 60721</li> </ul>                                                                                                                                                                                     | 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)<br>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4<br>3K6 (no formation of ice, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 |
| <b>ambient temperature</b> <ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> </ul>                                                                                                                                                                                                                                                                                       | -25 ... +60 °C<br>-40 ... +80 °C                                                                                                                                                                                                                                        |
| <b>derating temperature</b>                                                                                                                                                                                                                                                                                                                                                                                 | 40 °C                                                                                                                                                                                                                                                                   |
| <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, for vertical contact from the front                                                                                                                                                                                                                        |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                         |
| <b>yielded mechanical performance [hp] for 3-phase AC motor</b> <ul style="list-style-type: none"> <li>at 460/480 V <ul style="list-style-type: none"> <li>at standard circuit at 50 °C rated value</li> </ul> </li> <li>at 575/600 V <ul style="list-style-type: none"> <li>at standard circuit at 50 °C rated value</li> </ul> </li> </ul>                                                                | 50 hp<br>60 hp                                                                                                                                                                                                                                                          |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                 | B300 / R300                                                                                                                                                                                                                                                             |
| <b>Approvals Certificates</b>                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                         |
| <b>Environmental Product Declaration</b>                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>global warming potential [CO<sub>2</sub> eq] / during manufacturing</li> <li>global warming potential [CO<sub>2</sub> eq] / during sales</li> <li>global warming potential [CO<sub>2</sub> eq] / during operation</li> <li>global warming potential [CO<sub>2</sub> eq] / after end of life</li> <li>global warming potential [CO<sub>2</sub> eq] / total</li> </ul> | 23.7 kg<br>0.471 kg<br>158 kg<br>-6.65 kg<br>175 kg                                                                                                                                                                                                                     |
| <b>Environment</b>                                                                                                                                                                                                                                                                                                                                                                                          | <b>General Product Approval</b>                                                                                                                                                                                                                                         |

[Environmental Conformations](#)



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|                                                                                               |                                                                                   |                                                                                          |                                                                                          |                                                                                              |                                                                                             |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| General Product Approval                                                                      |                                                                                   | EMV                                                                                      |                                                                                          | For use in hazardous locations                                                               |                                                                                             |
| <br>EG-Konf. |  |         | <br>RCM | <br>IECEX | <br>ATEX |
| Test Certificates                                                                             |                                                                                   | Maritime application                                                                     |                                                                                          |                                                                                              | other                                                                                       |
| <a href="#">Type Test Certificates/Test Report</a>                                            | <a href="#">Special Test Certificate</a>                                          | <br>DNV | <br>LRS | <br>PRS   | <a href="#">Confirmation</a>                                                                |
| other                                                                                         |                                                                                   | Railway                                                                                  |                                                                                          |                                                                                              |                                                                                             |
| <a href="#">Confirmation</a>                                                                  |  | <a href="#">Special Test Certificate</a>                                                 | <a href="#">Confirmation</a>                                                             |                                                                                              |                                                                                             |

#### Further information

##### Simulation Tool for Soft Starters (STS)

<https://www.modulplc.com/?s=3RW4046-1BB05>

##### Information on the packaging

<https://www.modulplc.com/?s=3RW4046-1BB05>

##### Information for data generation and storage

<https://www.modulplc.com/?s=3RW4046-1BB05>

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

<https://www.modulplc.com/?s=3RW4046-1BB05>

##### Industry Mall (Online ordering system)

<https://www.modulplc.com/?s=3RW4046-1BB05>

##### Cax online generator

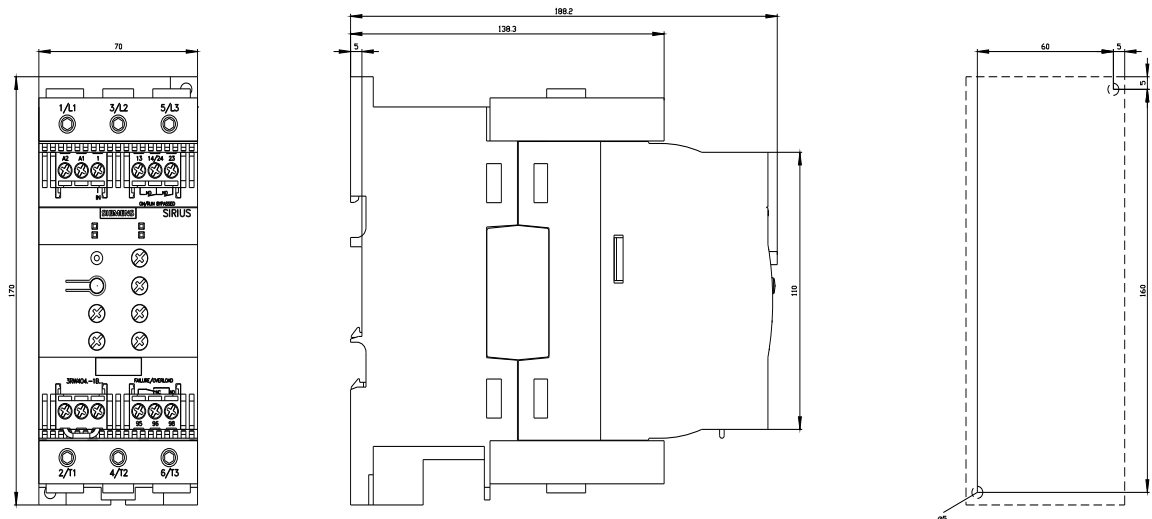
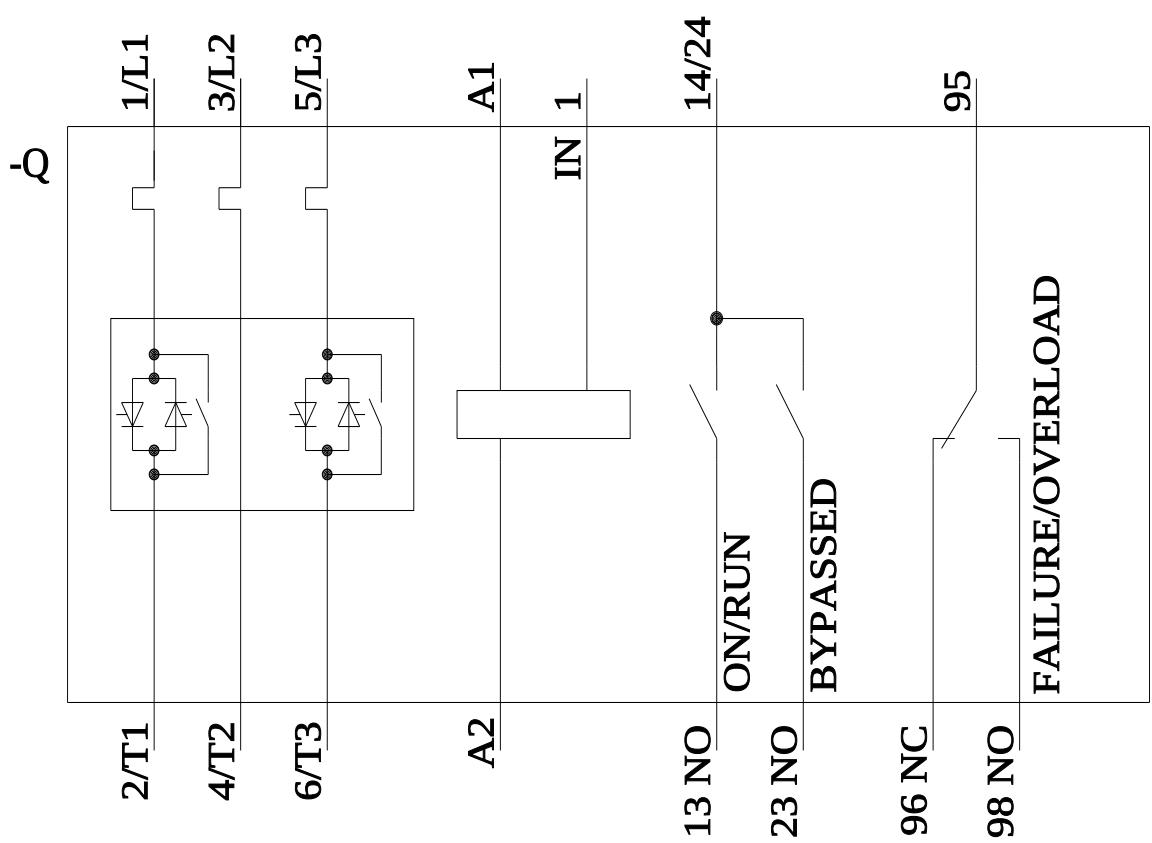
<https://www.modulplc.com/?s=3RW4046-1BB05>

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

<https://www.modulplc.com/?s=3RW4046-1BB05>

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

<https://www.modulplc.com/?s=3RW4046-1BB05>



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