



SIRIUS soft starter S2 45 A, 22 kW/400 V, 40 °C 200-480 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                                                                                 | V  | 600                      |
| degree of pollution                                                                                            |    | 3, acc. to IEC 60947-4-2 |
| blocking voltage of the thyristor maximum                                                                      | V  | 1 600                    |
| 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                                                                                         | A  | 45                       |
| • at 50 °C rated value                                                                                         | A  | 42                       |
| • at 60 °C rated value                                                                                         | A  | 39                       |
| yielded mechanical performance for 3-phase motors                                                              |    |                          |
| • at 230 V                                                                                                     |    |                          |
| — at standard circuit at 40 °C rated value                                                                     | kW | 11                       |
| • at 400 V                                                                                                     |    |                          |
| — at standard circuit at 40 °C rated value                                                                     | kW | 22                       |
| yielded mechanical performance [hp] for 3-phase AC motor at 200/208 V at standard circuit at 50 °C rated value | hp | 10                       |
| operating frequency rated value                                                                                | Hz | 50 ... 60                |
| relative negative tolerance of the operating frequency                                                         | %  | -10                      |
| relative positive tolerance of the operating frequency                                                         | %  | 10                       |
| operating voltage at standard circuit rated value                                                              | V  | 200 ... 480              |
| relative negative tolerance of the operating voltage at standard circuit                                       | %  | -15                      |
| relative positive tolerance of the operating voltage at standard circuit                                       | %  | 10                       |
| minimum load [%]                                                                                               | %  | 20                       |

|                                                                                                                |    |                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| adjustable motor current for motor overload protection minimum rated value                                     | A  | 23                                                                                                                                                                                                                                                                |
| continuous operating current [% of I <sub>e</sub> ] at 40 °C                                                   | %  | 115                                                                                                                                                                                                                                                               |
| power loss [W] at operational current at 40 °C during operation typical                                        | W  | 6                                                                                                                                                                                                                                                                 |
| <b>Control circuit/ Control</b>                                                                                |    |                                                                                                                                                                                                                                                                   |
| type of voltage of the control supply voltage                                                                  |    | AC/DC                                                                                                                                                                                                                                                             |
| control supply voltage frequency 1 rated value                                                                 | Hz | 50                                                                                                                                                                                                                                                                |
| control supply voltage frequency 2 rated value                                                                 | Hz | 60                                                                                                                                                                                                                                                                |
| relative negative tolerance of the control supply voltage frequency                                            | %  | -10                                                                                                                                                                                                                                                               |
| relative positive tolerance of the control supply voltage frequency                                            | %  | 10                                                                                                                                                                                                                                                                |
| control supply voltage 1 at AC                                                                                 |    |                                                                                                                                                                                                                                                                   |
| • at 50 Hz rated value                                                                                         | V  | 24                                                                                                                                                                                                                                                                |
| • at 60 Hz rated value                                                                                         | V  | 24                                                                                                                                                                                                                                                                |
| relative negative tolerance of the control supply voltage at AC at 50 Hz                                       | %  | -15                                                                                                                                                                                                                                                               |
| relative positive tolerance of the control supply voltage at AC at 50 Hz                                       | %  | 10                                                                                                                                                                                                                                                                |
| relative negative tolerance of the control supply voltage at AC at 60 Hz                                       | %  | -15                                                                                                                                                                                                                                                               |
| relative positive tolerance of the control supply voltage at AC at 60 Hz                                       | %  | 10                                                                                                                                                                                                                                                                |
| control supply voltage 1 at DC rated value                                                                     | V  | 24                                                                                                                                                                                                                                                                |
| relative negative tolerance of the control supply voltage at DC                                                | %  | -20                                                                                                                                                                                                                                                               |
| relative positive tolerance of the control supply voltage at DC                                                | %  | 20                                                                                                                                                                                                                                                                |
| display version for fault signal                                                                               |    | red                                                                                                                                                                                                                                                               |
| <b>Mechanical data</b>                                                                                         |    |                                                                                                                                                                                                                                                                   |
| size of engine control device                                                                                  |    | S2                                                                                                                                                                                                                                                                |
| width                                                                                                          | mm | 55                                                                                                                                                                                                                                                                |
| height                                                                                                         | mm | 160                                                                                                                                                                                                                                                               |
| depth                                                                                                          | mm | 170                                                                                                                                                                                                                                                               |
| fastening method                                                                                               |    | screw and snap-on mounting                                                                                                                                                                                                                                        |
| mounting position                                                                                              |    | 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 |
| required spacing with side-by-side mounting                                                                    |    |                                                                                                                                                                                                                                                                   |
| • upwards                                                                                                      | mm | 60                                                                                                                                                                                                                                                                |
| • at the side                                                                                                  | mm | 30                                                                                                                                                                                                                                                                |
| • downwards                                                                                                    | mm | 40                                                                                                                                                                                                                                                                |
| wire length maximum                                                                                            | m  | 300                                                                                                                                                                                                                                                               |
| number of poles for main current circuit                                                                       |    | 3                                                                                                                                                                                                                                                                 |
| <b>Connections/ Terminals</b>                                                                                  |    |                                                                                                                                                                                                                                                                   |
| type of electrical connection                                                                                  |    |                                                                                                                                                                                                                                                                   |
| • for main current circuit                                                                                     |    | screw-type terminals                                                                                                                                                                                                                                              |
| • for auxiliary and control circuit                                                                            |    | screw-type terminals                                                                                                                                                                                                                                              |
| number of NC contacts for auxiliary contacts                                                                   |    | 0                                                                                                                                                                                                                                                                 |
| number of NO contacts for auxiliary contacts                                                                   |    | 2                                                                                                                                                                                                                                                                 |
| number of CO contacts for auxiliary contacts                                                                   |    | 1                                                                                                                                                                                                                                                                 |
| type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point |    |                                                                                                                                                                                                                                                                   |
| • solid                                                                                                        |    | 2x (1.5 ... 16 mm²)                                                                                                                                                                                                                                               |
| • finely stranded with core end processing                                                                     |    | 0.75 ... 25 mm²                                                                                                                                                                                                                                                   |
| • stranded                                                                                                     |    | 0.75 ... 35 mm²                                                                                                                                                                                                                                                   |
| type of connectable conductor cross-sections for main contacts for box terminal using the back clamping point  |    |                                                                                                                                                                                                                                                                   |
| • solid                                                                                                        |    | 2x (1.5 ... 16 mm²)                                                                                                                                                                                                                                               |
| • finely stranded with core end processing                                                                     |    | 1.5 ... 25 mm²                                                                                                                                                                                                                                                    |
| • stranded                                                                                                     |    | 1.5 ... 35 mm²                                                                                                                                                                                                                                                    |
| type of connectable conductor cross-sections for main contacts for box terminal using both clamping points     |    |                                                                                                                                                                                                                                                                   |

|                                                                                                                                                                                                                                                                         |  |                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with core end processing</li> <li>• stranded</li> </ul>                                                                                                                                       |  | 2x (1.5 ... 16 mm²)<br>2x (1.5 ... 16 mm²)<br>2x (1.5 ... 25 mm²) |
| <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> |  | 16 ... 2<br>18 ... 2<br>2x (16 ... 2)                             |
| <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 mm²)<br>2x (0.5 ... 1.5 mm²)                      |
| <b>type of connectable conductor cross-sections for AWG cables</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts</li> <li>• for auxiliary contacts finely stranded with core end processing</li> </ul>                                                |  | 2x (20 ... 14)<br>2x (20 ... 16)                                  |

#### Ambient conditions

|                                                                                                                                                                                                                               |    |                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>installation altitude at height above sea level</b>                                                                                                                                                                        | m  | 5 000                                                                                                                                                                                                                                                                   |
| <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>                                                                                                     | °C | -25 ... +60                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                               | °C | -40 ... +80                                                                                                                                                                                                                                                             |
| <b>derating temperature</b>                                                                                                                                                                                                   | °C | 40                                                                                                                                                                                                                                                                      |
| <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                                                                                                                                                                                                                        |

#### Environmental footprint

|                                                        |    |       |
|--------------------------------------------------------|----|-------|
| Global Warming Potential [CO2 eq] total                | kg | 181   |
| Global Warming Potential [CO2 eq] during manufacturing | kg | 26.9  |
| global warming potential [CO2 eq] during sales         | kg | 0.324 |
| Global Warming Potential [CO2 eq] during operation     | kg | 158   |
| Global Warming Potential [CO2 eq] after end of life    | kg | -4.56 |

#### UL/CSA ratings

|                                                                                                                                                                                                                                                                                                                                                      |    |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------|
| <b>yielded mechanical performance [hp] for 3-phase AC motor</b> <ul style="list-style-type: none"> <li>• at 220/230 V <ul style="list-style-type: none"> <li>— at standard circuit at 50 °C rated value</li> </ul> </li> <li>• at 460/480 V <ul style="list-style-type: none"> <li>— at standard circuit at 50 °C rated value</li> </ul> </li> </ul> | hp | 15          |
|                                                                                                                                                                                                                                                                                                                                                      | hp | 30          |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                          |    | B300 / R300 |

#### Approvals Certificates

##### General Product Approval



[Confirmation](#)



#### EMV For use in hazardous locations Test Certificates



[KC](#)



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

#### Marine / Shipping other Railway



[Confirmation](#)

[Special Test Certificate](#)

[Confirmation](#)

## Environment



Siemens  
EcoTech



[Environmental Confirmations](#)

## Further information

Simulation Tool for Soft Starters (STS)

<https://support.industry.siemens.com/cs/ww/en/view/101494917>

Information on the packaging

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

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=3RW4036-1BB04>

Cax online generator

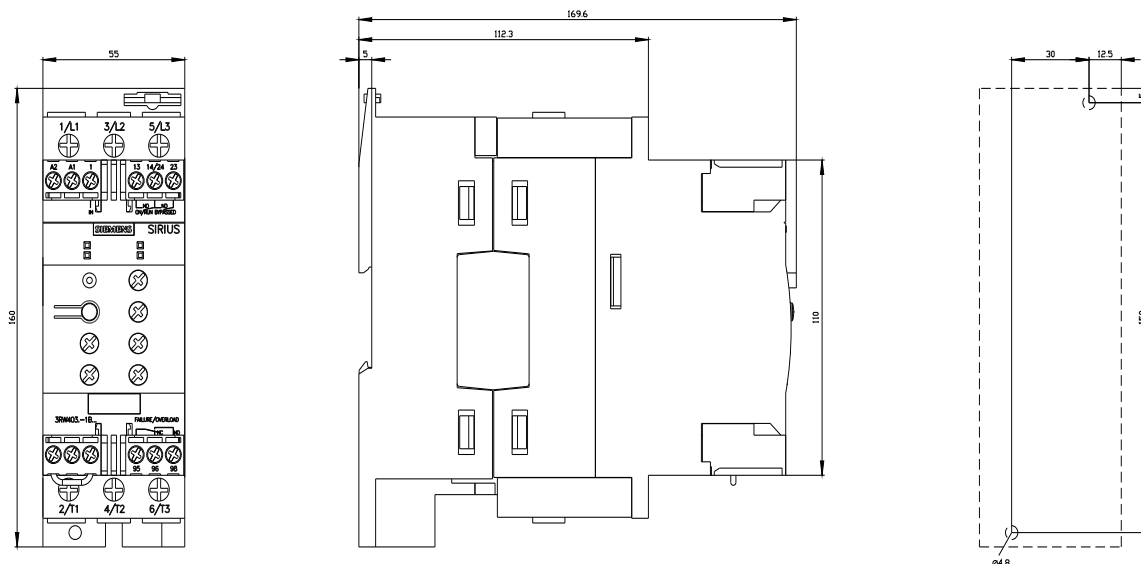
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW4036-1BB04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW4036-1BB04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW4036-1BB04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW4036-1BB04&lang=en)





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