

SIRIUS Compact load feeder DOL starter 690 V 110...240 V AC/DC  
50...60 Hz 8...32 A IP20 Connection main circuit: plug-in, without  
terminals Connection auxiliary circuit: plug-in, without terminals



|                          |                 |
|--------------------------|-----------------|
| Product brand name       | SIRIUS          |
| Product designation      | compact starter |
| Design of the product    | direct starter  |
| Product type designation | 3RA61           |

### General technical data

|                                                                                  |         |
|----------------------------------------------------------------------------------|---------|
| 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                                                   | 5.4 W   |
| • at AC in hot operating state per pole                                          | 1.8 W   |
| Power loss [W] for rated value of the current without load current share typical | 5.8 W   |
| Insulation voltage                                                               |         |
| • rated value                                                                    | 690 V   |
| Degree of pollution                                                              | 3       |
| Surge voltage resistance rated value                                             | 6 000 V |
| maximum permissible voltage for safe isolation                                   |         |

|                                                                                                                                                                                                                          |                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• between main and auxiliary circuit</li> <li>• between auxiliary and auxiliary circuit</li> <li>• between control and auxiliary circuit</li> </ul>                               | 400 V<br>250 V<br>300 V                                                          |
| <b>Protection class IP</b>                                                                                                                                                                                               | IP20                                                                             |
| <b>Shock resistance</b>                                                                                                                                                                                                  | a=60 m/s <sup>2</sup> (6g) with 10 ms per 3 shocks in all axes                   |
| <b>Vibration resistance</b>                                                                                                                                                                                              | f= 4 ... 5.8 Hz, d= 15 mm; f= 5.8 ... 500 Hz, a= 20 m/s <sup>2</sup> ; 10 cycles |
| <b>Mechanical service life (switching cycles)</b> <ul style="list-style-type: none"> <li>• of the main contacts typical</li> <li>• of auxiliary contacts typical</li> <li>• of the signaling contacts typical</li> </ul> | 10 000 000<br>10 000 000<br>10 000 000                                           |
| <b>Electrical endurance (switching cycles) of auxiliary contacts</b> <ul style="list-style-type: none"> <li>• at DC-13 at 6 A at 24 V typical</li> <li>• at AC-15 at 6 A at 230 V typical</li> </ul>                     | 30 000<br>200 000                                                                |
| <b>Type of assignment</b>                                                                                                                                                                                                | continuous operation according to IEC 60947-6-2                                  |
| <b>Reference code acc. to DIN EN 81346-2</b>                                                                                                                                                                             | Q                                                                                |
| <b>Reference code acc. to DIN EN 61346-2</b>                                                                                                                                                                             | Q                                                                                |

#### Ambient conditions

|                                                                                                                                                       |                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>Installation altitude at height above sea level</b> <ul style="list-style-type: none"> <li>• maximum</li> </ul>                                    | 2 000 m                                            |
| <b>Ambient temperature</b> <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 %                                        |

#### Main circuit

|                                                                                                                                                                                                                                       |                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Number of poles for main current circuit</b>                                                                                                                                                                                       | 3                       |
| <b>Adjustable pick-up value current of the current-dependent overload release</b>                                                                                                                                                     | 8 ... 32 A              |
| <b>Formula for making capacity limit current</b>                                                                                                                                                                                      | 12 x I <sub>e</sub>     |
| <b>Formula for interruption capacity limit current</b>                                                                                                                                                                                | 10 x I <sub>e</sub>     |
| <b>Mechanical power output for 4-pole AC motor</b> <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>                                           | 15 kW<br>11 kW<br>11 kW |
| <b>Operating voltage</b> <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>                                                                                                                              | 690 V                   |
| <b>Operating current</b> <ul style="list-style-type: none"> <li>• at AC 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> </ul> </li> </ul> | 32 A<br>29 A<br>17.6 A  |

|                                          |           |
|------------------------------------------|-----------|
| — at 690 V rated value                   | 12.8 A    |
| <b>Operating power</b>                   |           |
| • at AC-3                                |           |
| — at 400 V rated value                   | 15 kW     |
| • at AC-43                               |           |
| — at 400 V rated value                   | 15 000 W  |
| — at 500 V rated value                   | 11 000 W  |
| — at 690 V rated value                   | 11 000 W  |
| <b>No-load switching frequency</b>       | 3 600 1/h |
| <b>Operating frequency</b>               |           |
| • at AC-41 acc. to IEC 60947-6-2 maximum | 750 1/h   |
| • at AC-43 acc. to IEC 60947-6-2 maximum | 250 1/h   |

#### Control circuit/ Control

|                                         |               |
|-----------------------------------------|---------------|
| <b>Type of voltage</b>                  | AC/DC         |
| <b>Control supply voltage 1 at AC</b>   |               |
| • at 50 Hz                              | 110 ... 240 V |
| • at 60 Hz                              | 110 ... 240 V |
| <b>Control supply voltage frequency</b> |               |
| • 1 rated value                         | 50 Hz         |
| • 2 rated value                         | 60 Hz         |
| <b>Control supply voltage 1</b>         |               |
| • at DC                                 | 110 ... 240 V |
| <b>Holding power</b>                    |               |
| • at AC maximum                         | 5.2 W         |
| • at DC maximum                         | 5.8 W         |

#### Auxiliary circuit

|                                                                   |        |
|-------------------------------------------------------------------|--------|
| <b>Number of NC contacts for auxiliary contacts</b>               | 1      |
| <b>Number of NO contacts for auxiliary contacts</b>               | 1      |
| <b>Number of NO contacts</b>                                      |        |
| • of instantaneous short-circuit trip unit for signaling contact  | 1      |
| <b>Number of CO contacts</b>                                      |        |
| • of the current-dependent overload release for signaling contact | 1      |
| <b>Operating current of auxiliary contacts at AC-12 maximum</b>   | 10 A   |
| <b>Operating current of auxiliary contacts at DC-13</b>           |        |
| • at 250 V                                                        | 0.27 A |

#### Protective and monitoring functions

|                                                                  |                            |
|------------------------------------------------------------------|----------------------------|
| <b>Trip class</b>                                                | CLASS 10 and 20 adjustable |
| <b>Operational short-circuit current breaking capacity (Ics)</b> |                            |

|                        |       |
|------------------------|-------|
| • at 400 V             | 53 kA |
| • at 500 V rated value | 1 kA  |
| • at 690 V rated value | 1 kA  |

#### UL/CSA ratings

|                                                             |                                                                                                     |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Full-load current (FLA) for three-phase AC motor</b>     |                                                                                                     |
| • at 480 V rated value                                      | 32 A                                                                                                |
| <b>Yielded mechanical performance [hp]</b>                  |                                                                                                     |
| • for three-phase AC motor                                  |                                                                                                     |
| — at 200/208 V rated value                                  | 7.5 hp                                                                                              |
| — at 220/230 V rated value                                  | 10 hp                                                                                               |
| — at 460/480 V rated value                                  | 20 hp                                                                                               |
| <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 |

#### Short-circuit protection

|                                                                                              |                  |
|----------------------------------------------------------------------------------------------|------------------|
| <b>Product function Short circuit protection</b>                                             | Yes              |
| <b>Design of short-circuit protection</b>                                                    | electromagnetic  |
| <b>Design of the fuse link</b>                                                               |                  |
| • for short-circuit protection of the auxiliary switch required                              | fuse gL/gG: 10 A |
| • for short-circuit protection of the signaling switch of the short-circuit release required | 6A gL/gG/400V    |
| • for short-circuit protection of the signaling switch of the overload release required      | 4A gL/gG/400V    |

#### Installation/ mounting/ dimensions

|                          |                                                |
|--------------------------|------------------------------------------------|
| <b>Mounting position</b> | any                                            |
| • recommended            | vertical, on horizontal standard mounting rail |
| <b>Mounting type</b>     | screw and snap-on mounting                     |
| <b>Height</b>            | 170 mm                                         |
| <b>Width</b>             | 45 mm                                          |
| <b>Depth</b>             | 165 mm                                         |

#### Connections/ Terminals

|                                                        |                           |
|--------------------------------------------------------|---------------------------|
| <b>Product function</b>                                |                           |
| • removable terminal for main circuit                  | Yes                       |
| • removable terminal for auxiliary and control circuit | Yes                       |
| <b>Type of electrical connection</b>                   |                           |
| • for main current circuit                             | plug-in without terminals |
| • for auxiliary and control current circuit            | plug-in without terminals |

#### Safety related data

|                                          |           |
|------------------------------------------|-----------|
| <b>B10 value</b>                         |           |
| • with high demand rate acc. to SN 31920 | 2 000 000 |

|                                                                           |         |
|---------------------------------------------------------------------------|---------|
| <b>Proportion of dangerous failures</b>                                   |         |
| • with low demand rate acc. to SN 31920                                   | 40 %    |
| • with high demand rate acc. to SN 31920                                  | 50 %    |
| <b>Failure rate [FIT]</b>                                                 |         |
| • with low demand rate acc. to SN 31920                                   | 100 FIT |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 20 y    |

#### Communication/ Protocol

|                                                                |    |
|----------------------------------------------------------------|----|
| <b>Product function Bus communication</b>                      | No |
| <b>Protocol is supported</b>                                   |    |
| • IO-Link protocol                                             | No |
| <b>Product function Control circuit interface with IO link</b> | No |

#### Electromagnetic compatibility

|                                                             |                                             |
|-------------------------------------------------------------|---------------------------------------------|
| <b>Conducted interference</b>                               |                                             |
| • due to burst acc. to IEC 61000-4-4                        | 4 kV main contacts, 2 kV auxiliary contacts |
| • due to conductor-earth surge acc. to IEC 61000-4-5        | 4 kV main contacts, 2 kV auxiliary contacts |
| • due to conductor-conductor surge acc. to IEC 61000-4-5    | 2 kV main contacts, 1 kV auxiliary contacts |
| • due to high-frequency radiation acc. to IEC 61000-4-6     | 0.15-80Mhz at 10V                           |
| <b>Field-bound parasitic coupling acc. to IEC 61000-4-3</b> | 10 V/m                                      |
| <b>Electrostatic discharge acc. to IEC 61000-4-2</b>        | 8 kV                                        |
| <b>Conducted HF-interference emissions acc. to CISPR11</b>  | 150 kHz ... 30 MHz Class A                  |
| <b>Field-bound HF-interference emission acc. to CISPR11</b> | 30 ... 1000 MHz Class A                     |

#### Supply voltage

|                                                  |    |
|--------------------------------------------------|----|
| <b>Supply voltage required Auxiliary voltage</b> | No |
|--------------------------------------------------|----|

#### Certificates/ approvals

|                          |     |                                       |
|--------------------------|-----|---------------------------------------|
| General Product Approval | EMC | Functional Safety/Safety of Machinery |
|--------------------------|-----|---------------------------------------|



|                           |                   |                   |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------|-------------------|-------------------|



EG-Konf.

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS



LRS

|                   |       |
|-------------------|-------|
| Marine / Shipping | other |
|-------------------|-------|



PRS



RINA



RMRS



DNVGL.COM/AF

[Confirmation](#)

## Further information

**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=3RA6120-0EP30>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA6120-0EP30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-0EP30>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RA6120-0EP30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA6120-0EP30&lang=en)

**Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RA6120-0EP30/char>

**Further characteristics (e.g. electrical endurance, switching frequency)**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RA6120-0EP30&objecttype=14&gridview=view1>







