



Solid-state contactor 3-phase 3RF3 AC 53 / 5.2 A / 40 °C 48-480 V / 110-230 V AC  
2-phase controlled Instantaneous switching screw terminal

|                                                         |                                                                        |
|---------------------------------------------------------|------------------------------------------------------------------------|
| product brand name                                      | SIRIUS                                                                 |
| product designation                                     | solid-state contactor                                                  |
| design of the product                                   | 2-pole controlled                                                      |
| product type designation                                | 3RF34                                                                  |
| manufacturer's article number                           |                                                                        |
| • _1 of the accessories that can be ordered             | <a href="#">3RA2921-1BA00</a>                                          |
| • _2 of the accessories that can be ordered             | <a href="#">3RF3900-0QA88</a>                                          |
| product designation                                     |                                                                        |
| • _1 of the accessories that can be ordered             | Link module                                                            |
| • _2 of the accessories that can be ordered             | Connection adapter                                                     |
| General technical data                                  |                                                                        |
| certificate of suitability                              | CE / UL / CSA / CCC / C-Tick (RCM)                                     |
| product function                                        | instantaneous switching                                                |
| power loss [W] for rated value of the current           |                                                                        |
| • at AC in hot operating state                          | 10 W                                                                   |
| • at AC in hot operating state per pole                 | 3.33 W                                                                 |
| • without load current share typical                    | 3.5 W                                                                  |
| type of calculation of power loss current-dependent     | linear                                                                 |
| insulation voltage rated value                          | 600 V                                                                  |
| degree of pollution                                     | 3                                                                      |
| surge voltage resistance of main circuit rated value    | 6 kV                                                                   |
| protection class IP                                     | IP20                                                                   |
| protection class IP on the front according to IEC 60529 | IP20                                                                   |
| shock resistance according to IEC 60068-2-27            | 15 g / 11 ms                                                           |
| vibration resistance according to IEC 60068-2-6         | 2 g                                                                    |
| reference code according to IEC 81346-2                 | Q                                                                      |
| Substance Prohibitance (day/month/year)                 | 05/28/2009                                                             |
| SVHC substance name                                     | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8 |
| Net Weight                                              | 0.287 g                                                                |
| Main circuit                                            |                                                                        |
| number of poles for main current circuit                | 3                                                                      |
| number of NO contacts for main contacts                 | 2                                                                      |
| number of NC contacts for main contacts                 | 0                                                                      |
| type of voltage of the operating voltage                | AC                                                                     |
| operating voltage                                       |                                                                        |

|                                                                                                                                                                                                                                                                                |                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC <ul style="list-style-type: none"> <li>— at 50 Hz rated value</li> <li>— at 60 Hz rated value</li> </ul> </li> </ul>                                                                                                            | 48 ... 480 V<br>48 ... 480 V                   |
| <b>operating frequency rated value</b>                                                                                                                                                                                                                                         | 50 ... 60 Hz                                   |
| <b>relative symmetrical tolerance of the operating frequency</b>                                                                                                                                                                                                               | 10 %                                           |
| <b>operating range relative to the operating voltage at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                                                                                                                                | 40 ... 506 V<br>40 ... 506 V                   |
| <b>operational current</b> <ul style="list-style-type: none"> <li>• at AC-3 at 400 V rated value</li> <li>• at AC-53a at 400 V at ambient temperature 40 °C rated value</li> </ul>                                                                                             | 5.2 A<br>5.2 A                                 |
| <b>operational current minimum</b>                                                                                                                                                                                                                                             | 100 mA                                         |
| <b>operating power</b> <ul style="list-style-type: none"> <li>• at AC-3 at 400 V rated value</li> </ul>                                                                                                                                                                        | 2.2 kW                                         |
| <b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>                                                                                                                                                                                             | 1 000 V/μs                                     |
| <b>blocking voltage at the thyristor for main contacts maximum permissible</b>                                                                                                                                                                                                 | 1 200 V                                        |
| <b>reverse current of the thyristor</b>                                                                                                                                                                                                                                        | 10 mA                                          |
| <b>derating temperature</b>                                                                                                                                                                                                                                                    | 40 °C                                          |
| <b>surge current resistance rated value</b>                                                                                                                                                                                                                                    | 200 A                                          |
| <b>I<sup>2</sup>t value maximum</b>                                                                                                                                                                                                                                            | 200 A <sup>2</sup> ·s                          |
| <b>Control circuit/ Control</b>                                                                                                                                                                                                                                                |                                                |
| <b>type of voltage of the control supply voltage</b>                                                                                                                                                                                                                           | AC                                             |
| <b>control supply voltage at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                                                                                                                                                           | 110 ... 230 V<br>110 ... 230 V                 |
| <b>control supply voltage at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz full-scale value for signal&lt;0&gt; recognition</li> <li>• at 60 Hz full-scale value for signal&lt;0&gt; recognition</li> <li>• initial value for signal &lt;1&gt; detection</li> </ul> | 40 V<br>40 V<br>90 V                           |
| <b>control supply voltage frequency</b> <ul style="list-style-type: none"> <li>• 1 rated value</li> <li>• 2 rated value</li> </ul>                                                                                                                                             | 50 Hz<br>60 Hz                                 |
| <b>relative symmetrical tolerance of the control supply voltage frequency</b>                                                                                                                                                                                                  | 10 %                                           |
| <b>symmetrical line frequency tolerance</b>                                                                                                                                                                                                                                    | 5 Hz                                           |
| <b>operating range factor control supply voltage rated value at AC at 50 Hz</b> <ul style="list-style-type: none"> <li>• initial value</li> <li>• full-scale value</li> </ul>                                                                                                  | 0.82<br>1.1                                    |
| <b>operating range factor control supply voltage rated value at AC at 60 Hz</b> <ul style="list-style-type: none"> <li>• initial value</li> <li>• full-scale value</li> </ul>                                                                                                  | 0.82<br>1.1                                    |
| <b>control current at minimum control supply voltage</b> <ul style="list-style-type: none"> <li>• at AC</li> </ul>                                                                                                                                                             | 2 mA                                           |
| <b>control current at AC rated value</b>                                                                                                                                                                                                                                       | 15 mA                                          |
| <b>ON-delay time</b>                                                                                                                                                                                                                                                           | 5 ms                                           |
| <b>OFF-delay time</b>                                                                                                                                                                                                                                                          | 30 ms; additionally max. one half-wave         |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                      |                                                |
| <b>mounting position</b>                                                                                                                                                                                                                                                       | vertical                                       |
| <b>fastening method side-by-side mounting</b>                                                                                                                                                                                                                                  | Yes                                            |
| <b>fastening method</b>                                                                                                                                                                                                                                                        | screw and snap-on mounting onto 35 mm DIN rail |
| <b>design of the thread of the screw for securing the equipment</b>                                                                                                                                                                                                            | M4                                             |
| <b>height</b>                                                                                                                                                                                                                                                                  | 95 mm                                          |
| <b>width</b>                                                                                                                                                                                                                                                                   | 45 mm                                          |
| <b>depth</b>                                                                                                                                                                                                                                                                   | 100.8 mm                                       |
| <b>required spacing with side-by-side mounting</b>                                                                                                                                                                                                                             |                                                |

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| <ul style="list-style-type: none"> <li>• upwards</li> <li>• downwards</li> </ul>                                                                                                                                                                                                                                                                                              | 70 mm<br>50 mm                                                                                                                                                                                                                   |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                  |
| <b>product component removable terminal for auxiliary and control circuit</b>                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                              |
| <b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> </ul>                                                                                                                                                                                                                | screw-type terminals<br>screw-type terminals                                                                                                                                                                                     |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for main contacts</li> </ul>                                                                                          | 2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )<br>2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup><br>2x (18 ... 14)                                                  |
| <b>connectable conductor cross-section for main contacts</b> <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> </ul>                                                                                                                                                                                        | 1.5 ... 6 mm <sup>2</sup><br>1 ... 10 mm <sup>2</sup>                                                                                                                                                                            |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary and control contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• for AWG cables for auxiliary and control contacts</li> </ul> | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )<br>1x (20 ... 12) |
| <b>AWG number as coded connectable conductor cross section for main contacts</b>                                                                                                                                                                                                                                                                                              | 14 ... 10                                                                                                                                                                                                                        |
| <b>tightening torque</b> <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>                                                                                                                                                                              | 2 ... 2.5 N·m<br>0.5 ... 0.6 N·m                                                                                                                                                                                                 |
| <b>tightening torque [lbf·in]</b> <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>                                                                                                                                                                     | 18 ... 22 lbf·in<br>7.5 ... 5.3 lbf·in                                                                                                                                                                                           |
| <b>design of the thread of the connection screw</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• of the auxiliary and control contacts</li> </ul>                                                                                                                                                                                                    | M4<br>M3                                                                                                                                                                                                                         |
| <b>stripped length of the cable</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>                                                                                                                                                                                                                       | 10 mm<br>7 mm                                                                                                                                                                                                                    |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                  |
| <b>full-load current (FLA) for 3-phase AC motor</b> <ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>                                                                                                                                                                                                                                                  | 3.4 A                                                                                                                                                                                                                            |
| yielded mechanical performance [hp] for 3-phase AC motor <ul style="list-style-type: none"> <li>• at 200/208 V rated value</li> <li>• at 220/230 V rated value</li> <li>• at 460/480 V rated value</li> </ul>                                                                                                                                                                 | 0.5 hp<br>0.75 hp<br>2 hp                                                                                                                                                                                                        |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                  |
| proportion of dangerous failures with high demand rate according to SN 31920                                                                                                                                                                                                                                                                                                  | 50 %                                                                                                                                                                                                                             |
| <b>MTTF with high demand rate</b>                                                                                                                                                                                                                                                                                                                                             | 76 a                                                                                                                                                                                                                             |
| IEC 61508                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                  |
| T1 value for proof test interval or service life according to IEC 61508                                                                                                                                                                                                                                                                                                       | 20 a                                                                                                                                                                                                                             |
| Electrical Safety                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                  |
| <b>touch protection on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                   | finger-safe, for vertical contact from the front                                                                                                                                                                                 |
| <b>Ambient conditions</b>                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                  |
| installation altitude at height above sea level maximum                                                                                                                                                                                                                                                                                                                       | 1 000 m                                                                                                                                                                                                                          |
| <b>ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>                                                                                                                                                                                                                                                     | -25 ... +60 °C<br>-55 ... +80 °C                                                                                                                                                                                                 |
| <b>Electromagnetic compatibility</b>                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                  |

|                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>conducted interference</b>                                                                                                                                                                                                                                                                               |                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• due to burst according to IEC 61000-4-4</li> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul> | 2 kV / 5 kHz, behavior criterion 2<br>2 kV, behavior criterion 2<br>1 kV, behavior criterion 2<br><br>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1 |
| <b>electrostatic discharge according to IEC 61000-4-2</b>                                                                                                                                                                                                                                                   | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2                                                                                                       |
| <b>conducted HF interference emissions according to CISPR11</b>                                                                                                                                                                                                                                             | Class A for industrial environment                                                                                                                                          |
| <b>field-bound HF interference emission according to CISPR11</b>                                                                                                                                                                                                                                            | Class A for industrial environment                                                                                                                                          |

#### Short-circuit protection, design of the fuse link

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| manufacturer's article number <ul style="list-style-type: none"> <li>• of full range R fuse link for semiconductor protection at NH design usable</li> <li>• of full range R fuse link for semiconductor protection at cylindrical design usable</li> <li>• of back-up R fuse link for semiconductor protection at NH design usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul> | <a href="#">3NE1813-0</a><br><br><a href="#">5SE1320</a><br><br><a href="#">3NE8015-1</a><br><br><a href="#">3NC1020</a><br><br><a href="#">3NC1415</a><br><br><a href="#">3NC2220</a> |
| manufacturer's article number of the gG fuse <ul style="list-style-type: none"> <li>• at NH design usable</li> <li>• at cylindrical design 10 x 38 mm usable</li> <li>• at cylindrical design 14 x 51 mm usable</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                          | <a href="#">3NA3801-6</a><br><a href="#">3NW6001-1</a><br><a href="#">3NW6101-1</a>                                                                                                    |

#### Approvals Certificates

|             |                          |
|-------------|--------------------------|
| Environment | General Product Approval |
|-------------|--------------------------|

[Environmental Confirmations](#)



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|                          |     |                   |       |
|--------------------------|-----|-------------------|-------|
| General Product Approval | EMV | Test Certificates | other |
|--------------------------|-----|-------------------|-------|



[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Confirmation](#)

other



#### Further information

Information on the packaging

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

Information for data generation and storage

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

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

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

Industry Mall (Online ordering system)

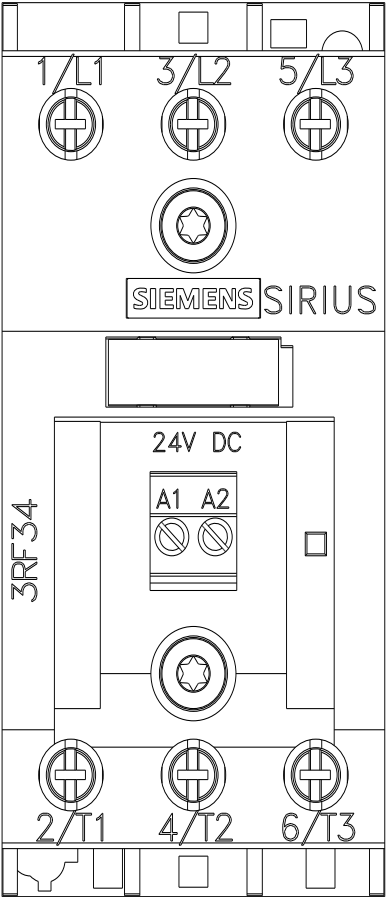
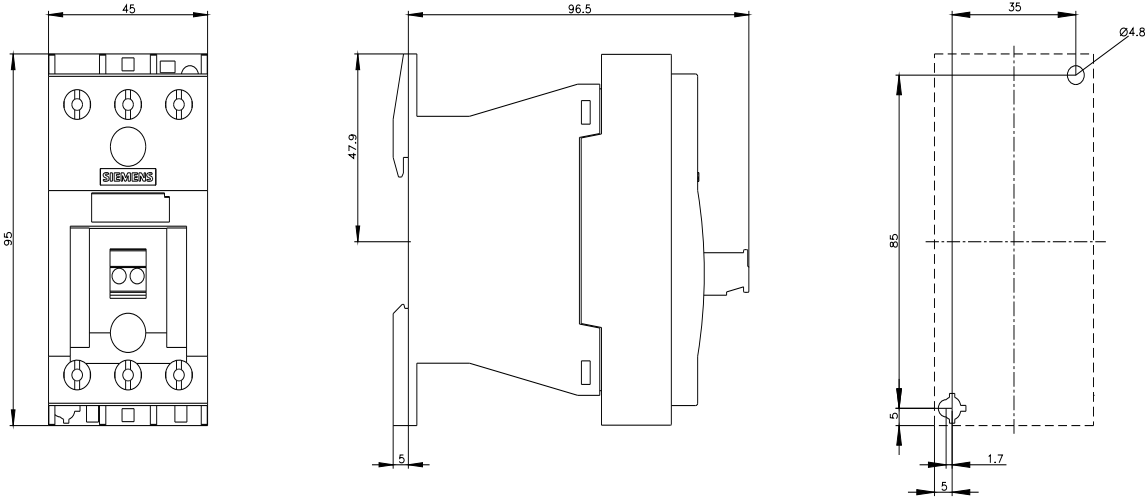
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3405-1BB24>

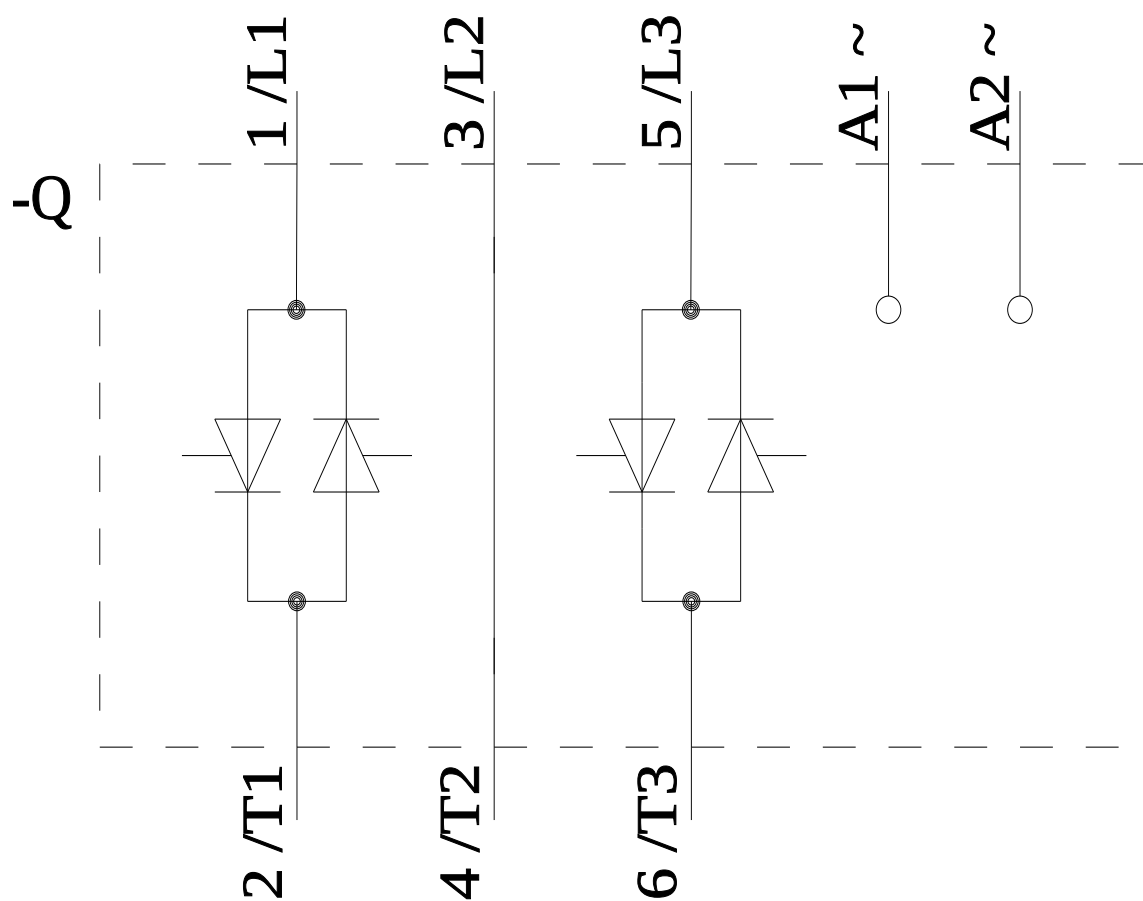
Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3405-1BB24>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3405-1BB24>





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