



\*\*\*phase-out type\*\*\* semiconductor relay, 3-phase 3RF2 30 A / 40 °C 48-600 V / 4-30 V DC 2-phase controlled spring-loaded terminal blocking voltage 1200 V for mounting on available cooling surfaces

|                                                           |                                                                                                                                                          |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                        | SIRIUS                                                                                                                                                   |
| product designation                                       | solid-state relay                                                                                                                                        |
| design of the product                                     | 2-pole controlled                                                                                                                                        |
| product type designation                                  | 3RF22                                                                                                                                                    |
| manufacturer's article number                             |                                                                                                                                                          |
| • _2 of the accessories that can be ordered               | <a href="#">3RF2900-0EA18</a>                                                                                                                            |
| product designation                                       |                                                                                                                                                          |
| • _2 of the accessories that can be ordered               | converter                                                                                                                                                |
| <b>General technical data</b>                             |                                                                                                                                                          |
| product function                                          | zero-point switching                                                                                                                                     |
| power loss [W] for rated value of the current             |                                                                                                                                                          |
| • at AC in hot operating state                            | 81 W                                                                                                                                                     |
| • at AC in hot operating state per pole                   | 81 W                                                                                                                                                     |
| • without load current share typical                      | 0.9 W                                                                                                                                                    |
| insulation voltage rated value                            | 600 V                                                                                                                                                    |
| 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)                   | 07/01/2006                                                                                                                                               |
| SVHC substance name                                       | Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5<br>Melamine CAS-No. 108-78-1 |
| Net Weight                                                | 0.14 g                                                                                                                                                   |
| <b>Main circuit</b>                                       |                                                                                                                                                          |
| 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                                         |                                                                                                                                                          |
| • at AC                                                   |                                                                                                                                                          |
| — at 50 Hz rated value                                    | 48 ... 600 V                                                                                                                                             |
| — at 60 Hz rated value                                    | 48 ... 600 V                                                                                                                                             |
| operating frequency rated value                           | 50 ... 60 Hz                                                                                                                                             |
| relative symmetrical tolerance of the operating frequency | 10 %                                                                                                                                                     |
| operating range relative to the operating voltage at AC   |                                                                                                                                                          |
| • at 50 Hz                                                | 40 ... 660 V                                                                                                                                             |

|                                                                                    |                                       |
|------------------------------------------------------------------------------------|---------------------------------------|
| • at 60 Hz                                                                         | 40 ... 660 V                          |
| <b>operational current rated value maximum</b>                                     | 30 A                                  |
| <b>operational current</b>                                                         |                                       |
| • at AC-1 at 400 V rated value                                                     | 30 A                                  |
| • at AC-51 rated value                                                             | 20 A                                  |
| • according to UL 508 rated value                                                  | 20 A                                  |
| <b>ampacity maximum</b>                                                            | 30 A                                  |
| <b>operational current minimum</b>                                                 | 500 mA                                |
| <b>rate of voltage rise at the thyristor for main contacts maximum permissible</b> | 500 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>                                        | 300 A                                 |
| <b>I<sup>2</sup>t value maximum</b>                                                | 450 A <sup>2</sup> ·s                 |
| <b>Control circuit/ Control</b>                                                    |                                       |
| <b>type of voltage of the control supply voltage</b>                               | DC                                    |
| <b>control supply voltage 1 at DC</b>                                              | 4 ... 30 V                            |
| <b>control supply voltage at DC</b>                                                |                                       |
| • initial value for signal <1> detection                                           | 4 V                                   |
| • full-scale value for signal<0> recognition                                       | 1 V                                   |
| <b>control current at minimum control supply voltage</b>                           |                                       |
| • at DC                                                                            | 22 mA                                 |
| control current at DC rated value                                                  | 30 mA                                 |
| <b>ON-delay time</b>                                                               | 1 ms; additionally max. one half-wave |
| <b>OFF-delay time</b>                                                              | 1 ms; additionally max. one half-wave |
| <b>Installation/ mounting/ dimensions</b>                                          |                                       |
| fastening method side-by-side mounting                                             | Yes                                   |
| <b>fastening method</b>                                                            | screw fixing                          |
| <b>design of the thread of the screw for securing the equipment</b>                | M4                                    |
| <b>tightening torque of fixing screw maximum</b>                                   | 1.5 N·m                               |
| <b>tightening torque [lbf·in] of fixing screw maximum</b>                          | 13 lbf·in                             |
| <b>height</b>                                                                      | 95 mm                                 |
| <b>width</b>                                                                       | 45 mm                                 |
| <b>depth</b>                                                                       | 47 mm                                 |
| <b>Connections/ Terminals</b>                                                      |                                       |
| <b>product component removable terminal for auxiliary and control circuit</b>      | Yes                                   |
| <b>type of electrical connection</b>                                               |                                       |
| • for main current circuit                                                         | spring-loaded terminals               |
| • for auxiliary and control circuit                                                | spring-loaded terminals               |
| <b>type of connectable conductor cross-sections</b>                                |                                       |
| • for main contacts                                                                |                                       |
| — solid                                                                            | 2x (0.5 ... 2.5 mm <sup>2</sup> )     |
| — finely stranded with core end processing                                         | 2x (0.5 ... 1.5 mm <sup>2</sup> )     |
| — finely stranded without core end processing                                      | 2x (0.5 ... 2.5 mm <sup>2</sup> )     |
| • for AWG cables for main contacts                                                 | 2x (18 ... 14)                        |
| <b>connectable conductor cross-section for main contacts</b>                       |                                       |
| • solid or stranded                                                                | 0.5 ... 2.5 mm <sup>2</sup>           |
| • finely stranded with core end processing                                         | 0.5 ... 1.5 mm <sup>2</sup>           |
| • finely stranded without core end processing                                      | 0.5 ... 2.5 mm <sup>2</sup>           |
| <b>type of connectable conductor cross-sections</b>                                |                                       |
| • for auxiliary and control contacts                                               |                                       |
| — solid                                                                            | 0.5 ... 1.5 mm <sup>2</sup>           |
| — finely stranded with core end processing                                         | 0.5 ... 2.5 mm <sup>2</sup>           |
| — finely stranded without core end processing                                      | 0.5 ... 2.5 mm <sup>2</sup>           |
| • for AWG cables for auxiliary and control contacts                                | 1x (20 ... 12)                        |
| <b>AWG number as coded connectable conductor cross</b>                             | 10 ... 14                             |

|                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|------------------------------|
| section for main contacts                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| tightening torque                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>for main contacts with screw-type terminals</li></ul>                                                                             | 2 ... 2.5 N·m                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                               |                              |
| design of the thread of the connection screw                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>for main contacts</li></ul>                                                                                                       | M4                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                               |                              |
| stripped length of the cable                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>for main contacts</li></ul>                                                                                                       | 10 mm                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                               |                              |
| <ul style="list-style-type: none"><li>for auxiliary and control contacts</li></ul>                                                                                      | 10 mm                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                               |                              |
| UL/CSA ratings                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| operational current according to UL 508 rated value                                                                                                                     | 20 A                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                               |                              |
| Electrical Safety                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| touch protection on the front according to IEC 60529                                                                                                                    | finger-safe, for vertical contact from the front                                                                                                                                                                                                                                                                                                                                                                                        |                              |                               |                              |
| Ambient conditions                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| installation altitude at height above sea level maximum                                                                                                                 | 1 000 m                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |                               |                              |
| ambient temperature                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>during operation</li></ul>                                                                                                        | -25 ... +60 °C                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |                               |                              |
| <ul style="list-style-type: none"><li>during storage</li></ul>                                                                                                          | -55 ... +80 °C                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |                               |                              |
| Electromagnetic compatibility                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| conducted interference                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>due to burst according to IEC 61000-4-4</li></ul>                                                                                 | 2 kV / 5 kHz, behavior criterion 2                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                               |                              |
| <ul style="list-style-type: none"><li>due to conductor-earth surge according to IEC 61000-4-5</li></ul>                                                                 | 2 kV, behavior criterion 2                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                               |                              |
| <ul style="list-style-type: none"><li>due to conductor-conductor surge according to IEC 61000-4-5</li></ul>                                                             | 1 kV, behavior criterion 2                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                               |                              |
| <ul style="list-style-type: none"><li>due to high-frequency radiation according to IEC 61000-4-6</li></ul>                                                              | 140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1                                                                                                                                                                                                                                                                                                                                                                   |                              |                               |                              |
| electrostatic discharge according to IEC 61000-4-2                                                                                                                      | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2                                                                                                                                                                                                                                                                                                                                                                   |                              |                               |                              |
| conducted HF interference emissions according to CISPR11                                                                                                                | Class A for industrial environment                                                                                                                                                                                                                                                                                                                                                                                                      |                              |                               |                              |
| field-bound HF interference emission according to CISPR11                                                                                                               | 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></ul>                                              | <a href="#">3NE1814-0: These fuses have a smaller rated current than the semiconductor relays</a>                                                                                                                                                                                                                                                                                                                                       |                              |                               |                              |
| <ul style="list-style-type: none"><li>of back-up R fuse link for semiconductor protection at NH design usable</li></ul>                                                 | <a href="#">3NE8003-1</a>                                                                                                                                                                                                                                                                                                                                                                                                               |                              |                               |                              |
| <ul style="list-style-type: none"><li>of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable</li></ul>                             | <a href="#">3NC1025: These fuses have a smaller rated current than the semiconductor relays</a>                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li></ul>                             | <a href="#">3NC1430</a>                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |                               |                              |
| <ul style="list-style-type: none"><li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li></ul>                             | <a href="#">3NC2232</a>                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |                               |                              |
| manufacturer's article number of the gG fuse at NH design usable                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| <ul style="list-style-type: none"><li>up to 460 V</li></ul>                                                                                                             | <a href="#">3NA3803-6: These fuses have a smaller rated current than the semiconductor relays</a>                                                                                                                                                                                                                                                                                                                                       |                              |                               |                              |
| <ul style="list-style-type: none"><li>up to 600 V</li></ul>                                                                                                             | <a href="#">3NA3803-6: These fuses have a smaller rated current than the semiconductor relays</a>                                                                                                                                                                                                                                                                                                                                       |                              |                               |                              |
| Approvals Certificates                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                               |                              |
| Environment                                                                                                                                                             | General Product Approval                                                                                                                                                                                                                                                                                                                                                                                                                |                              |                               |                              |
| <a href="#">Environmental Confirmations</a>                                                                                                                             |      |                              |                               |                              |
| General Product Approval                                                                                                                                                | EMV                                                                                                                                                                                                                                                                                                                                                                                                                                     | Test Certificates            | other                         |                              |
|   | <a href="#">Type Test Certificates/Test Report</a>                                                                                                                                                                                                                                                                                                                                                                                      | <a href="#">Confirmation</a> | <a href="#">Miscellaneous</a> | <a href="#">Confirmation</a> |



#### 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=3RF2230-2AB45>

##### Cax online generator

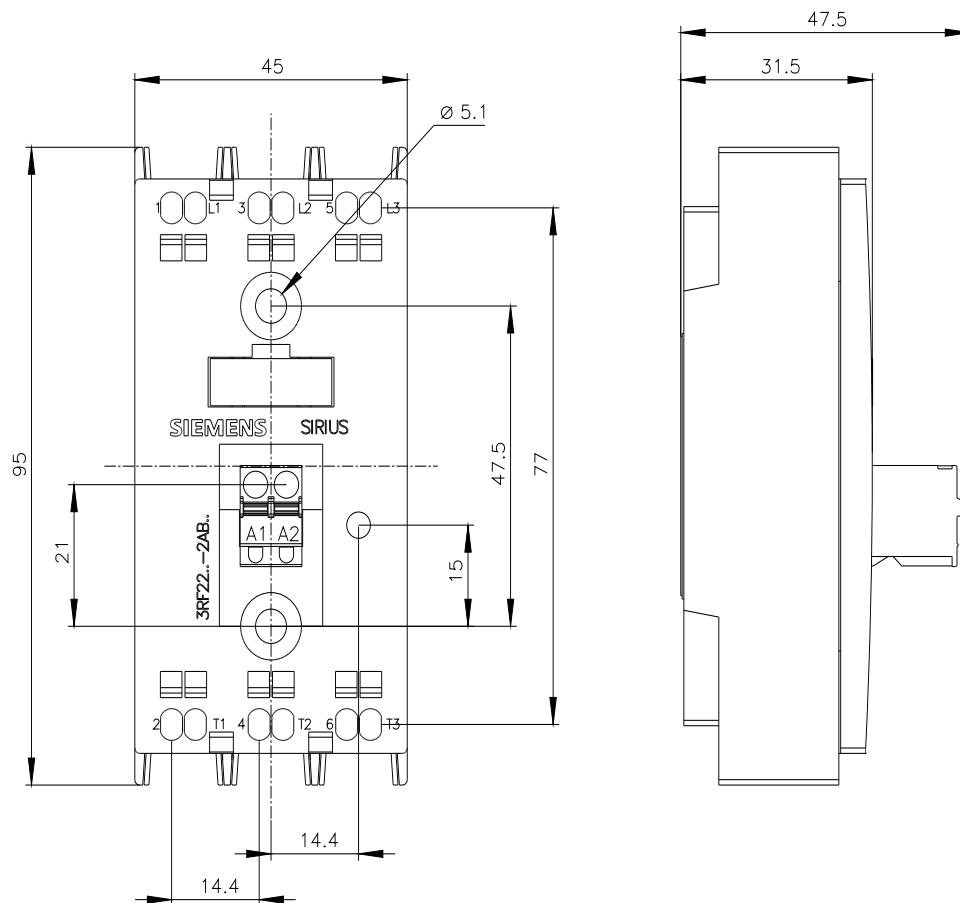
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2230-2AB45>

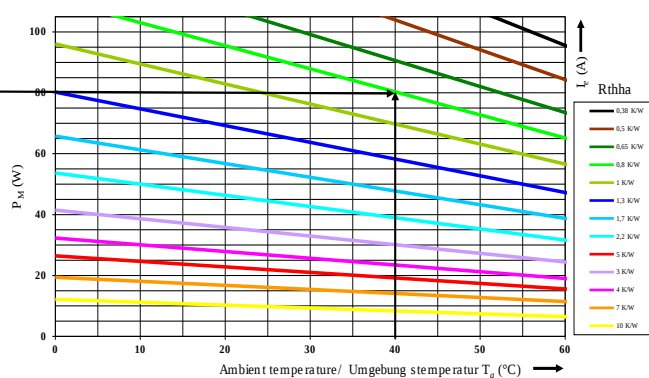
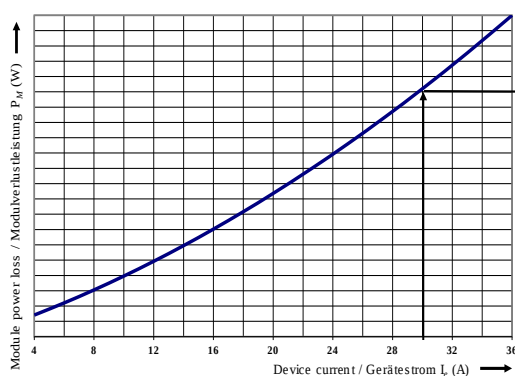
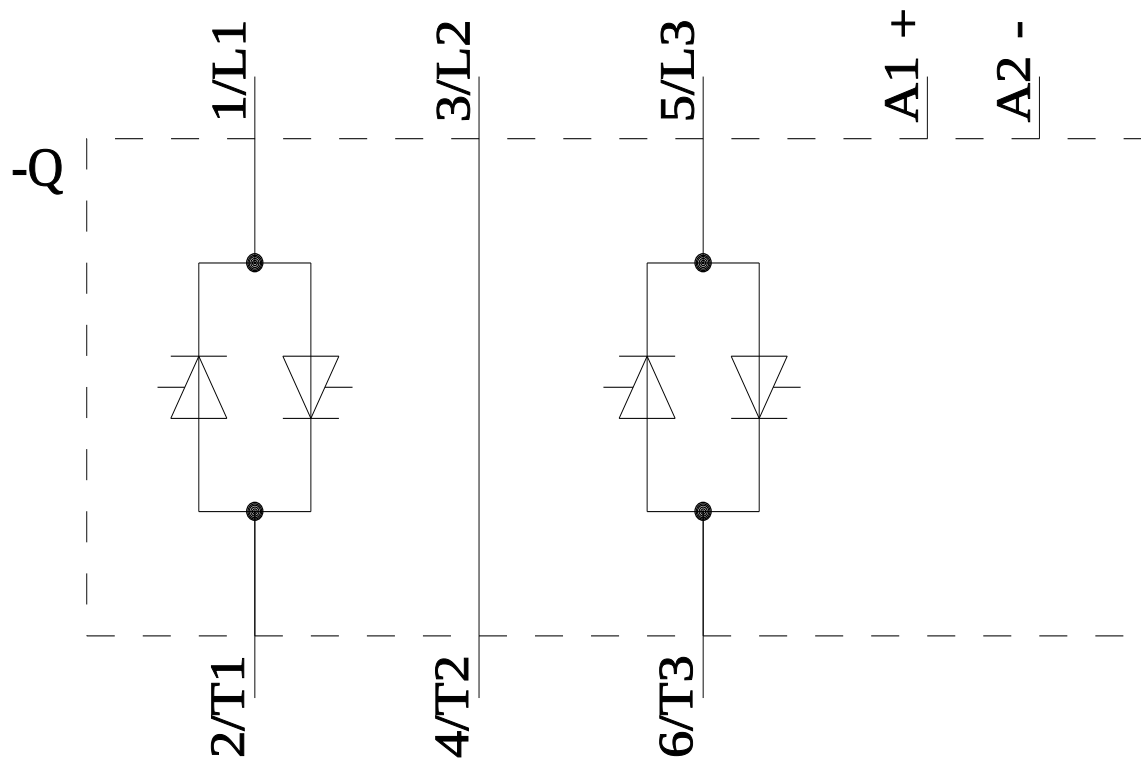
##### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2230-2AB45>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2230-2AB45&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2230-2AB45&lang=en)





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