## **SIEMENS**

Data sheet 3RF2390-1BA22

Solid-state contactor 1-phase 3RF2 AC 15 / 30 A / 40 °C 24-230 V / 110-

	230 V AC Instantaneous switching Phased-out product, no successor available!
product brand name	SIRIUS
product brand name	
product designation	solid-state contactor
product type designation	3RF23
manufacturer's article number	0050000 00400
• _1 of the accessories that can be ordered	3RF2900-3PA88
• _2 of the accessories that can be ordered	3RF2950-0HA33
<ul> <li>_4 of the accessories that can be ordered</li> </ul>	3RF2950-0GA33
product designation	
• _1 of the accessories that can be ordered	terminal cover
<ul> <li>_2 of the accessories that can be ordered</li> </ul>	power regulator
• _4 of the accessories that can be ordered	load monitoring
General technical data	
product function	instantaneous switching
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	117 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	117 W
<ul> <li>without load current share typical</li> </ul>	3.5 W
insulation voltage rated value	600 V
degree of pollution	3
type of voltage of the control supply voltage	AC
surge voltage resistance of main circuit rated value	6 kV
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
Main circuit	
number of poles for main current circuit	1
number of NO contacts for main contacts	1
number of NC contacts for main contacts	0
operating voltage at AC	·
at 50 Hz rated value	24 230 V
at 60 Hz rated value	24 230 V
operating frequency rated value	50 60 Hz
operating range relative to the operating voltage at AC	00 00 TIZ
• at 50 Hz	20 253 V
• at 60 Hz	20 253 V
operational current	20 200 V
at AC-51 rated value	50 A
at AC-51 rated value     at AC-51 rated value     at AC-51 rated value     at AC-51 rated value	50 A
<ul> <li>at AC-51 according to IEC 60947-4-3</li> <li>according to UL 508 rated value</li> </ul>	30 A
	500 MA
operational current minimum rate of voltage rise at the thyristor for main contacts	
maximum permissible	1 000 V/µs
blocking voltage at the thyristor for main contacts maximum permissible	800 V
reverse current of the thyristor	10 mA
reverse current of the try lister	
derating temperature	40 °C
	40 °C 1 150 A
derating temperature	
derating temperature surge current resistance rated value	1 150 A
derating temperature surge current resistance rated value l2t value maximum Control circuit/ Control	1 150 A
derating temperature surge current resistance rated value I2t value maximum	1 150 A 6 600 A <sup>2</sup> ·s

* af 50 Hz * af 60 Hz control supply voltage frequency * 1 rated value * 2 rated value * 2 rated value * 3 0 Hz Mil-scale value for signal-02 recognition * af 60 Hz Mil-scale value for signal-02 recognition * af 60 Hz Mil-scale value for signal-02 recognition * out of the Mil-scale value for signal-03 recognition control supply voltage * al AC Mil-scale value for signal-13 detection symmetrical line frequency tolerance * out of current at AC rated value  • AC 2 mA  * On-dolsy time • ON-dol		
control supply voltage frequency  * 1 rated value  * 2 rated value  * 2 rated value  * 3 rated value  * 3 rated value  * 3 rated value  * 3 rated value value for signal <0 recognition  * at 00 tz fall-scale value for signal <1 > defection  * or 00 tz fall-scale value for signal <1 > defection  * or 00 tz fall-scale value for signal <1 > defection  * or 00 tz fall-scale value for signal <1 > defection  * or 00 tz fall-scale value for signal <1 > defection  * or 00 tz fall-scale value  * or 00 tz fall-scal	● at 50 Hz	110 230 V
* Trated Value     * 2 rated value     * call O Hz Mil-scale value for signal <0 recognition     * at O Hz Mil-scale value for signal <0 recognition     * at O Hz Mil-scale value for signal <0 recognition     * at O Hz Mil-scale value for signal <1 defection     * aymmetrical limit-seque value for signal <1 defection     * aymmetrical current at minimum control supply voltage     * at AC     * availary corteant     * availary circuit     * availary circuit     * availary circuit     * availably virial	● at 60 Hz	110 230 V
* Trated Value     * 2 rated value     * call O Hz Mil-scale value for signal <0 recognition     * at O Hz Mil-scale value for signal <0 recognition     * at O Hz Mil-scale value for signal <0 recognition     * at O Hz Mil-scale value for signal <1 defection     * aymmetrical limit-seque value for signal <1 defection     * aymmetrical current at minimum control supply voltage     * at AC     * availary corteant     * availary circuit     * availary circuit     * availary circuit     * availably virial	control supply voltage frequency	
a 2 meta value control supply voltage at AC  at 30 Hz full-scale value for signal-CP recognition at 80 Hz full-scale value for signal-CP recognition at 80 Hz full-scale value for signal-CP recognition control supply voltage at AC initial value for signal-CP recognition control supply voltage at AC initial value for signal-CP recognition control current at minimum control supply voltage at AC initial value for signal <1> detection symmetrical line frequency tolerance control current at minimum control supply voltage at AC and Carded value  ON-delay time OFF-delay time O		50 Hz
control supply voltage at AC  • at 60 Hz full-scale value for signal-Qb- recognition • at 60 Hz full-scale value for signal-Qb- recognition • at 60 Hz full-scale value for signal-qb- recognition • at 60 Hz full-scale value for signal-qb- recognition • at 60 Hz full-scale value for signal-qb- recognition • at AC initial value for auxiliary contacts		
• at 90 Hz full-scale value for signal-0P recognition     • at 90 Hz full-scale value for signal-0P recognition control supply voltage     • at AC initial value for signal-0P recognition symmetrical line frequency tolerance control current at minimum control supply voltage     • at AC control current at minimum control supply voltage     • at AC ON-delay time		00 112
• et 60 Hz full-scale value for signal < 10 electrician control supply voltage • at AC initial value for signal < 10 electron symmetrical line frequency tolerance control current at minimum control supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage • at AC initial value for signal < 10 electron supply voltage in signal < 10 electron supply voltage		40.17
control supply voltage		
at AC initial value for signal <17 detection symmetrical line frequency tolerance control current at minimum control supply voltage   at AC   corrol current at AC rated value		40 V
symmetrical line frequency tolerance control current at Ainimum control supply voltage  at AC control current at AC rated value  ON-delay time  OF-delay time  Screw fixing  Yes  OCOUNTIES TO Contacts for auxiliary contacts  Unumber of NO contacts  Unumber of NO contacts for auxiliary contacts  Unumber of NO contacts for auxiliary and control contacts  Unumber of NO contacts  Unumber of NO contacts with screw-type terminals  Unumber of NO contacts  Unumber of NO contacts with screw-type terminals  Unumber of NO contacts  Unumber of NO contacts  Unumber of NO contacts with screw-type terminals  Unumber of NO contacts w	control supply voltage	
control current at minimum control supply voltage	<ul> <li>at AC initial value for signal &lt;1&gt; detection</li> </ul>	90 V
at AC control current at AC rated value  ON-distay time  Auxiliary circuit  number of NC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of CO contacts  **Example of CO contacts for auxiliary contacts **On method **exity of Contacts of Contacts **On main contacts - solid - finely stranded with core end processing - finely stranded with core end proces	symmetrical line frequency tolerance	5 Hz
Conflocturent at AC rated value ONt-delay time OF-delay time Auxiliary circuit  number of NC contacts for auxiliary contacts 0 Installation/mounting/dimensions  fastening method e. side-by-side mounting design of the thread of the screw for securing the equipment height width depth  Connection/Terminals  Type of electrical connection e. for main current circuit for main contacts — solid — finely stranded with core end processing e. at AVG cables for main contacts  Sonical stranded — finely stranded with core end processing e. finely stranded with core end processing ype of connectable conductor cross-sections e. for auxiliary and control contacts  AVG number as coded connectable conductor cross-sections e. for auxiliary and control contacts  AVG number as coded connectable conductor cross-sections e. for auxiliary and control contacts  AVG number as coded connectable conductor cross-sections e. for auxiliary and control contacts  AVG number as coded connectable conductor cross-sections e. for main contacts  Wightneing torque e. for main contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for auxiliary and control contacts with screw-type terminals e. for aux	control current at minimum control supply voltage	
ON-cleay time 40 ms  OFF-delay time 40 ms; additionally max; one half-wave  Auxiliary directit  number of NC contacts for auxiliary contacts 0 number of NC contacts for auxiliary contacts 0 number of NC contacts for auxiliary contacts 0 number of CO contacts for auxiliary contacts 0 number of CO contacts for auxiliary contacts 0 number of NC n	• at AC	2 mA
OFF- dalay time  Auxillary circuit  number of NC contacts for auxiliary contacts number of NC contacts for auxiliary contacts 0 number of NC contacts for auxiliary contacts 0 installation/ mounting/ dimensions  fastening method e side-by-side mounting design of the thread of the screw for securing the equipment height width depth  Connections/ Terminals  type of electrical connection e for main current circuit for main current circuit e for auxiliary and control cortacts  — solid — finely stranded with core end processing e at AWC cables for main contacts  — solid — finely stranded with core end processing — for auxiliary and control contacts  AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * for for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * for for main contacts with screw-type terminals e for auxiliary and control contacts with screw-type terminals e for auxiliary and control contacts with screw-type terminals e for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for main contacts  * of the auxiliary and control contacts  * MA  * of main contacts  * of main contacts  * of the auxiliary and control contacts  * AWG number as coded connectates with screw-type terminals e for auxiliary and control contacts  * of the auxiliary and control contacts  * of the auxiliary and	control current at AC rated value	15 mA
OFF- dalay time  Auxillary circuit  number of NC contacts for auxiliary contacts number of NC contacts for auxiliary contacts 0 number of NC contacts for auxiliary contacts 0 installation/ mounting/ dimensions  fastening method e side-by-side mounting design of the thread of the screw for securing the equipment height width depth  Connections/ Terminals  type of electrical connection e for main current circuit for main current circuit e for auxiliary and control cortacts  — solid — finely stranded with core end processing e at AWC cables for main contacts  — solid — finely stranded with core end processing — for auxiliary and control contacts  AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * for for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for auxiliary and control contacts  * for for main contacts with screw-type terminals e for auxiliary and control contacts with screw-type terminals e for auxiliary and control contacts with screw-type terminals e for auxiliary and control contacts  * AWG number as coded connectable conductor cross-sections e for main contacts  * of the auxiliary and control contacts  * MA  * of main contacts  * of main contacts  * of the auxiliary and control contacts  * AWG number as coded connectates with screw-type terminals e for auxiliary and control contacts  * of the auxiliary and control contacts  * of the auxiliary and	ON-delay time	40 ms
Auxillary circuit  number of NC contacts for auxillary contacts number of CO contacts for auxillary contacts number of CO contacts for auxillary contacts   number of CO contacts for auxillary contacts		
number of NC contacts for auxiliary contacts number of NC contacts for auxiliary contacts number of CO contacts for auxiliary contacts 1		40 ms, additionally max. one hall-wave
number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts 1		
number of CO contacts for auxiliary contacts    national contacts   0		0
fastaning method   side-by-side mounting   design of the thread of the screw for securing the equipment   height   width   180 mm   180		0
fastaning method   side-by-side mounting   design of the thread of the screw for securing the equipment   height   width   180 mm   180	number of CO contacts for auxiliary contacts	0
fastening method  • side-by-side mounting design of the thread of the screw for securing the equipment helight width depth width depth is 3m m  200 mm  180 mm 163 mm  200 mm  (onnections/ Terminals  type of electrical connection • for main current circuit for auxiliary and control circuit respective of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • for auxiliary and control contacts  - solid — finely stranded with core end processing • for auxiliary and control contacts  - solid — finely stranded with core end processing • for auxiliary and control contacts  - solid — finely stranded with core end processing - finely stranded with core end pr		
e side-by-side muniting design of the thread of the screw for securing the equipment height 200 mm width 180 mm 183 mm  Connections/ Terminals  Type of electrical connection • for auxiliary and control contacts - solid - finely stranded with core end processing + solid or stranded • finely stranded with core end processing - finely stranded with core end processing + finely stranded with core end processing + solid - finely stranded with core end processing + finely stranded with core end processing + solid or stranded - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - finely stranded with core end processing + solid - sol	-	scraw fiving
design of the thread of the screw for securing the equipment height width 180 mm 163 mm  Connections/ Terminals  type of electrical connection	_	
equipment height width 180 mm depth 163 mm  Connections/ Terminals  type of electrical connection		
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width depth 180 mm 163 mm 105		200
type of electrical connection  • for main current circuit  • for main contacts  • for main contacts  — solid — finely stranded with core end processing • finely stranded with core end processing — finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG cables for auxiliary and control contacts  — solid — finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  • for auxiliary and control contacts with screw-type • for main contacts  • of the auxiliary and control contacts  • of the auxiliary and control contacts  • of the auxiliary and control contacts  • of or auxilia	_	
type of connectable conductor cross-sections  • for main current circuit • for awailiary and control cross-sections  • for main contacts  - solid - finely stranded with core end processing • at AWG cables for main contacts  - solid or stranded • finely stranded with core end processing • for awailiary and control contacts  - solid or stranded • finely stranded with core end processing • for awailiary and control contacts  - solid or stranded • finely stranded with core end processing • finely stranded with core end processing • finely stranded with core end processing - finely stranded without core end processing - at AWG cables for awailiary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque - for main contacts with screw-type terminals - for awailiary and control contacts with screw-type terminals  tightening torque [lbf-in] - for main contacts with screw-type terminals - for awailiary and control contacts with screw-type terminals  design of the thread of the connection screw - for main contacts - for main contacts - for awailiary and control contacts - for main co		
type of electrical connection  • for main current circuit  • for auxiliary and control circuit  type of connectable conductor cross-sections  • for main contacts  — solid — finely stranded with core end processing • at AWG cables for main contacts  — solid or stranded • finely stranded with core end processing • for auxiliary and control contacts  — solid or stranded • finely stranded with core end processing • for auxiliary and control contacts  — solid — finely stranded with core end processing • for auxiliary and control contacts  — solid — finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross-section for main contacts  * tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts with screw-type terminals  * for auxiliary and control contacts  * for auxil	depth	163 mm
• for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts — solid or stranded • finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for main contacts • of the auxiliary and control contacts • for main contacts	Connections/ Terminals	
• for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts — solid or stranded • finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for main contacts • of the auxiliary and control contacts • for main contacts	type of electrical connection	
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• for main contacts  • for main contacts  — solid — finely stranded with core end processing • at AWG cables for main contacts  • solid or stranded • finely stranded with core end processing type of connectable conductor cross-section for main contacts  • solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections • for auxiliary and control contacts  — solid — finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for main contacts with screw-type terminals • for main contacts • for main cont	<ul> <li>for auxiliary and control circuit</li> </ul>	screw-type terminals
<ul> <li>for main contacts</li></ul>		
- solid - finely stranded with core end processing  • at AWG cables for main contacts  • solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections • for auxiliary and control contacts - solid - finely stranded with core end processing - finely stranded without core end processing - at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for main contacts with screw-type terminals • for main contacts with screw-type terminals • for main contacts  tightening torque [Ibf-in] • for main contacts with screw-type terminals • for main contacts • for		
<ul> <li>— finely stranded with core end processing</li> <li>at AWG cables for main contacts</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>type of connectable conductor cross-sections</li> <li>for auxiliary and control contacts</li> <li>— solid</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> <li>— finely stranded without core end processing</li> <li>— at AWG cables for auxiliary and control contacts</li> <li>AWG number as coded connectable conductor cross section for main contacts</li> <li>tightening torque</li> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>design of the thread of the connection screw</li> <li>for main contacts</li> <li>for main contacts</li> <li>of the function of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>M4</li> <li>M3</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> <li>7 mm</li> </ul>		2x (1.5 2.5 mm²) 2x (2.5 6 mm²)
<ul> <li>at AWG cables for main contacts</li> <li>connectable conductor cross-section for main contacts</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>type of connectable conductor cross-sections</li> <li>for auxiliary and control contacts</li> <li>— solid</li> <li>— finely stranded with core end processing</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> <li>— finely stranded with core end processing</li> <li>— solid</li> <li>— solid</li> <li>— solid</li> <li>1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)</li> <li>1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)</li> <li>1x (AWG 20 12)</li> <li>1x (AWG 20 12)</li> <li>10 14</li> <li>2 2.5 N·m</li> <li>0.5 0.6 N·m</li> <li>0.5 0.6 N·m</li> <li>18 22 lbf·in</li> <li>4.5 5.3 l</li></ul>		
connectable conductor cross-section for main contacts  • solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections • for auxiliary and control contacts — solid — finely stranded with core end processing — finely stranded with core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  tightening torque [Ibf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw • for main contacts • solid or stranded  1 10 mm²  1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)  1x (AWG 20 12)  1x (AWG 20 12		
e solid or stranded • finely stranded with core end processing type of connectable conductor cross-sections • for auxiliary and control contacts  — solid — finely stranded with core end processing — finely stranded with core end processing — finely stranded without core end processing — finely stranded without core end processing • at AWG cables for auxiliary and control contacts AWG number as coded connectable conductor cross section for main contacts tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals design of the thread of the connection screw • for main contacts • for main contacts • for main contacts  M4 • of the auxiliary and control contacts  **M3  **Tripped length of the cable • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts		2X (14 10)
solid or stranded     finely stranded with core end processing type of connectable conductor cross-sections     for auxiliary and control contacts     — solid     — finely stranded with core end processing     — finely stranded with core end processing     — finely stranded without core end processing     — at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque     • for main contacts with screw-type terminals     • for auxiliary and control contacts with screw-type terminals     • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw     • for main contacts     • of the auxiliary and control contacts     • for main contacts     • of the auxiliary and control contacts     • for main co		
• finely stranded with core end processing     type of connectable conductor cross-sections         • for auxiliary and control contacts             — solid		1.5 6 mm²
type of connectable conductor cross-sections  • for auxiliary and control contacts  — solid — finely stranded with core end processing — finely stranded without core end processing — finely stranded without core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw • for main contacts •		
• for auxiliary and control contacts     — solid     — finely stranded with core end processing     — finely stranded without core end processing     — finely stranded without core end processing     — at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  **tightening torque**     • for main contacts with screw-type terminals  **tightening torque [Ibf-in]     • for main contacts with screw-type terminals  **tightening torque [Ibf-in]  **of or auxiliary and control contacts with screw-type terminals  **design of the thread of the connection screw**  **of the auxiliary and control contacts  **of the auxiliary and control contacts  **of the auxiliary and control contacts  **of or main contacts  **of		I IV IIIIII
- solid - finely stranded with core end processing - finely stranded without core end processing - finely stranded without core end processing - finely stranded without core end processing - at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  **tightening torque** - for main contacts with screw-type terminals - for auxiliary and control contacts with screw-type terminals  **tightening torque [lbf-in]* - for main contacts with screw-type terminals - for auxiliary and control contacts with screw-type terminals  **design of the thread of the connection screw* - for main contacts - of the auxiliary and control contacts - for main contacts - of the auxiliary and control contacts - for main	• •	
- finely stranded with core end processing - finely stranded without core end processing - finely stranded without core end processing • at AWG cables for auxiliary and control contacts  AWG number as coded connectable conductor cross section for main contacts  tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts • for main contacts	-	
<ul> <li>— finely stranded without core end processing</li> <li>• at AWG cables for auxiliary and control contacts</li> <li>AWG number as coded connectable conductor cross section for main contacts</li> <li>• for main contacts</li> <li>• for auxiliary and control contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> <li>• for main contacts with screw-type terminals</li> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> <li>• for main contacts</li> <li>• of the auxiliary and control contacts</li> <li>• for main contacts</li> <li>• for main contacts</li> <li>• of the auxiliary and control contacts</li> <li>• for main contacts</li> <li>• for mai</li></ul>		
at AWG cables for auxiliary and control contacts AWG number as coded connectable conductor cross section for main contacts  tightening torque  a for main contacts with screw-type terminals  b for auxiliary and control contacts with screw-type terminals  tightening torque [lbf-in]  a for main contacts with screw-type terminals  b for auxiliary and control contacts with screw-type terminals  c for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw  a for main contacts  b for main contacts  c for mai	<ul> <li>finely stranded with core end processing</li> </ul>	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
AWG number as coded connectable conductor cross section for main contacts  tightening torque  • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts  **M4**  **M3**  **Stripped length of the cable** • for main contacts • for auxiliary and control contacts  **Tomm  **Tom	<ul> <li>finely stranded without core end processing</li> </ul>	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
tightening torque  • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  tightening torque [lbf·in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for main contacts • for main contacts • for auxiliary and control contacts	<ul> <li>at AWG cables for auxiliary and control contacts</li> </ul>	1x (AWG 20 12)
tightening torque  • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  tightening torque [lbf-in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts  stripped length of the cable • for main contacts • for auxiliary and control contacts  for main contacts • for auxiliary and control contacts  for main contacts • for main contacts • for main contacts • for auxiliary and control contacts • for main contacts • for auxiliary and control contacts • for auxiliary and control contacts • for auxiliary and control contacts		10 14
<ul> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>tightening torque [lbf·in]</li> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>design of the thread of the connection screw</li> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>for main contacts</li></ul>		
<ul> <li>for auxiliary and control contacts with screw-type terminals</li> <li>tightening torque [lbf-in]</li> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>design of the thread of the connection screw</li> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>of or auxiliary and control contacts</li> <li>for auxiliary and control contacts</li> <li>for auxiliary and control contacts</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>for main contact</li></ul>		2 2.5 N·m
tightening torque [lbf-in]  • for main contacts with screw-type terminals  • for auxiliary and control contacts with screw-type terminals  design of the thread of the connection screw  • for main contacts  • of the auxiliary and control contacts  stripped length of the cable  • for main contacts  • for auxiliary and control contacts  7 mm		
<ul> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> <li>design of the thread of the connection screw</li> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> </ul>	terminals	J.O IV III
<ul> <li>for auxiliary and control contacts with screw-type terminals</li> <li>design of the thread of the connection screw</li> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> <li>for main contacts</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> </ul>		
terminals  design of the thread of the connection screw  • for main contacts • of the auxiliary and control contacts  stripped length of the cable  • for main contacts • for auxiliary and control contacts  7 mm  • for auxiliary and control contacts  7 mm	<ul> <li>for main contacts with screw-type terminals</li> </ul>	18 22 lbf·in
design of the thread of the connection screw  • for main contacts • of the auxiliary and control contacts  stripped length of the cable  • for main contacts • for auxiliary and control contacts  7 mm  • for auxiliary and control contacts		4.5 5.3 lbf·in
<ul> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> <li>7 mm</li> </ul>		
<ul> <li>of the auxiliary and control contacts</li> <li>stripped length of the cable</li> <li>for main contacts</li> <li>for auxiliary and control contacts</li> <li>7 mm</li> <li>7 mm</li> </ul>	_	N/A
stripped length of the cable		
<ul> <li>◆ for main contacts</li> <li>◆ for auxiliary and control contacts</li> <li>7 mm</li> <li>7 mm</li> </ul>		IVI3
• for auxiliary and control contacts 7 mm		
·		
Safety related data	for auxiliary and control contacts	7 mm
	Safety related data	

protection class IP on the front according to IEC 60529	IP20
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><li>during operation</li></ul>	-25 +60 °C
<ul> <li>during storage</li> </ul>	-55 +80 °C
Electromagnetic compatibility	
conducted interference	
<ul> <li>due to burst according to IEC 61000-4-4</li> </ul>	2 kV / 5 kHz behavior criterion 2
<ul> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	2 kV behavior criterion 2
<ul> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>	1 kV behavior criterion 2
<ul> <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
field-based interference according to IEC 61000-4-3	80 MHz 1 GHz 10 V/m, 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 B for the domestic, business and commercial environments
Short-circuit protection, design of the fuse link	
manufacturer's article number	
<ul> <li>of full range R fuse link for semiconductor protection at NH design usable</li> </ul>	<u>3NE1021-2</u>
<ul> <li>of back-up R fuse link for semiconductor protection at NH design usable</li> </ul>	<u>3NE8021-1</u>
<ul> <li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	3NC2200

## Certificates/ approvals

manufacturer's article number
• of NEOZED fuse usable

General Product Approval EMC Declaration of Conformity



Confirmation







5SE2335; These fuses have a smaller rated current than the



Declaration of Conformity

**Test Certificates** 

other

semiconductor relays

Railway



Type Test Certificates/Test Report

Special Test Certificate

Confirmation



Vibration and Shock

## 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=3RF2390-1BA22

Cax online generator

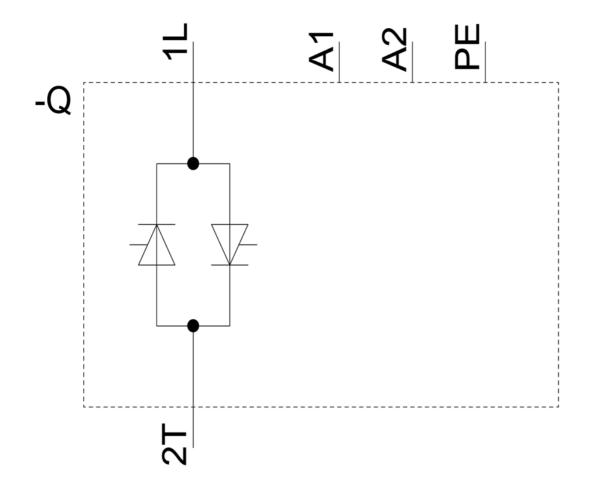
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-1BA22

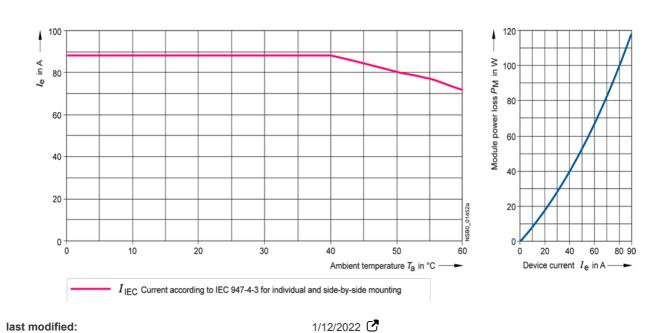
 $Service \& Support \ (Manuals, \ Certificates, \ Characteristics, \ FAQs, ...)$ 

https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-1BA22

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

http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RF2390-1BA22&lang=en





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