## SIEMENS

## **Product data sheet**

## 3RF2350-1BA22



SEMI-COND. CONTACTOR 3RF2,1-PH. AC 51 50A / AC15 25A 40 DEG. C 24-230 V / 110-230 V AC INSTANTANEOUS SWITCHING

General technical data:		
Product brand name		SIRIUS
product designation		solid-state contactor
Product function		instantaneous switching
Number of poles / for main current circuit		1
Protection class IP		IP20
Product designation / _1 / of the accessories that can be ordered		terminal cover
Manufacturer article number / _1 / of the accessories that can be ordered		3RF2900-3PA88
Product designation / _2 / of the accessories that can be ordered	-	power regulator
Manufacturer article number / _2 / of the accessories that can be ordered		3RF2950-0HA33
Product designation / _4 / of the accessories that can be ordered	-	load monitoring
Manufacturer article number / _4 / of the accessories that can be ordered		3RF2950-0GA33
Ambient temperature		
during operating	°C	-25 60
during storage	°C	-55 80
Installation altitude / at a height over sea level / maximum	m	1,000

Number of NC contacts / for auxiliary contacts         Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for auxiliary contacts         Q           Number of NC contacts / for main contacts         1           Operating current         I           • at AC-1 / at 400 V / rated value         A         50           Operating current / minimum         mA         50           • at 50 Hz / at AC / rited value         V         24230           • at 60 Hz / at AC / rited value         V         24230           • at 60 Hz / at AC / rited value         V         20253           • at 60 Hz / at AC / rited value         V         20253           • at 60 Hz / at AC / rited value         V         20253           • at 60 Hz / at AC / rited value         V         20253	Resistance against vibration / according to IEC 60068-2-6	_	2g
tem designation       K         • according to DN 4 0719 extendable after IEC 204.2 / according to DN EN 61346-2       Q         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 NC contacts / for main contacts       1         Number of NC contacts / for main contacts       1         Number of NC contacts / for main contacts       0         Operating current       1         • al AC-1 / al 400 V/ rated value       A       50         • al AC-1 / al 400 V/ rated value       A       50         • al AC-1 / al 400 V/ rated value       A       50         • al AC-1 / al 400 V/ rated value       A       50         • al AC-1 / al 400 V/ rated value       A       50         • al AC-1 / al 400 V/ rated value       A       50         • al AC-1 / al 400 V/ rated value       A       50         • al AC / rated value       V       24 230         • al AC / rated value       V       24 230         • al 60 Hz / al AC / rated value       V       20 253         • al 60 Hz / al AC / rated value       V       20 263         • al 60 Hz / al AC / rated value <th></th> <th></th> <th></th>			
• according to DIN 40719 extendable after IEC 204-2/ according to DIN EN 61346-2C• according to DIN EN 61346-20Number of NG contacts / for auxiliary contacts0Number of NG contacts / for auxiliary contacts0Number of NG contacts / for main contacts1Number of NG contacts / for main contacts0Number of NG contacts / for main contacts0Operating current1• at AC-1 / at 400 V / rated valueA50• at AC-1 / at 400 V / rated valueA50• at AC-1 / at 400 V / rated valueA50• at AC-1 / at 400 V / rated valueA50• at AC-1 / at 400 V / rated valueA50• at AC-1 / at 400 V / rated valueA50• at AC-1 / at AC / rated valueV24 230• at AC-1 / rated valueV24 230• at BO Hz / rat AC / rated valueV20 253• at BO Hz / rate / rated valueV20 253• at BO Hz / rated valueM60• rated valueM<			
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Number of NC contacts / for main contacts1Number of NC contacts / for main contacts0Operating currentI• at AC-1 / at 400 V / rated valueA50• at AC-1 / rated valueAot at AC-51 / rated valueA0TmAOperating current / minimumTmAOperating outageI• at 50 Hz / rated valueV24 230• at 60 Hz / rated valueV• at 60 Hz / rated valueV24 230Working are a related to the operating voltageI• at 60 Hz / for ACV20 253Operating frequencyV• rated valueHz50 60Relative symmetrical tolerance / of the operation frequency%10Insulation voltage / rated valueV800Voltage slew rate / at the thyristor / for main contacts / maximum permissibleBlock voltage / at the thyristor / for main contacts / maximum permissibleBlock voltage / at the thyristor / for main contacts / maximum permissibleReverse current / of the thyristorControl circuit:Control circuit:Control circuit:Control supply voltage frequency• 1 / rated valueHz50	Number of change-over switches / for auxiliary contacts		0
Number of NC contacts / for main contactsImage: contacts / for main contactsOperating currentImage: contacts / for main contactsAS• at AC:1 / at 400 V / rated valueASoSo• at AC:51 / rated valueASoSoOperating current / minimumImage: contacts / for Main contact	Main circuit:		
Operating currentI• at AC-1/at 400 V/rated valueA50• at AC-51 / rated valueA50Operating current / minimummA500Operating current / minimummA500Operating voltageV24 230• at 50 Hz / at AC / rated valueV24 230• at 60 Hz / at AC / rated valueV20 253• at 50 Hz / for ACV20 253• at 60 Hz / for ACV20	Number of NO contacts / for main contacts		1
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Operating voltage       V       24 230         • at 50 Hz / at AC / rated value       V       24 230         • at 60 Hz / at AC / rated value       V       24 230         Working area related to the operating voltage       V       24 230         • at 50 Hz / for AC       V       20 253         • at 60 Hz / for AC       V       20 253         Operating frequency       V       20 253         • rated value       Hz       50 60         Relative symmetrical tolerance / of the operation frequency       %       10         Insulation voltage / rated value       V       600         Voltage slew rate / at the thyristor / for main contacts / maximum permissible       V       800         Block voltage / at the thyristor / for main contacts / maximum permissible       %       10         Derating temperature       °C       40       40         Active power loss / total / typical       M       54       40         Resistance against the impulse current / rated value       A       1,150       40         Resistance against the impulse current / rated value       A       4.56       6.600       40         Resistance against the impulse current / rated value       A       4.56       6.600       40 <td>• at AC-51 / rated value</td> <td>А</td> <td>50</td>	• at AC-51 / rated value	А	50
• at 50 Hz / at AC / rated valueV24 230• at 60 Hz / at AC / rated valueV24 230Working area related to the operating voltageV24 230• at 50 Hz / for ACV20 253• at 60 Hz / for ACV20 253Operating frequencyV20 253• rated valueHz50 60Relative symmetrical tolerance / of the operation frequency%10Insulation voltage / rated valueV600Voltage slew rate / at the thyristor / for main contacts / maximum permissibleV/µs1,000Block voltage / at the thyristor / for main contacts / maximum permissibleMA10Block voltage / at the thyristor / for main contacts / maximum permissibleMA10Reverse current / of the thyristorMA10Derating temperatureAC40Active power loss / total / typicalAR6,600Revistance against the impulse current / rated valueAR6,600Vortal supply voltage frequencyHz50	Operating current / minimum	mA	500
• at 60 Hz / at AC / rated valueV24 230Working area related to the operating voltageV20 253• at 50 Hz / for ACV20 253• at 60 Hz / for ACV20 253Operating frequencyV20 263• rated valueHz50 60Relative symmetrical tolerance / of the operation frequency%10Insulation voltage / rated valueV600Voltage slew rate / at the thyristor / for main contacts / maximum permissibleV/µs1,000Block voltage / at the thyristor / for main contacts / maximum permissibleV800Reverse current / of the thyristormA10Derating temperature°C40Active power loss / total / typicalA* s6,600Izel-level / maximumA* s6,600Control supply voltage frequencyHz50	Operating voltage	_	
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• at 50 Hz / for ACV20 253• at 60 Hz / for ACV20 253Operating frequencyHz50 60• rated valueHz50 60Relative symmetrical tolerance / of the operation frequency%10Insulation voltage / rated valueV600Voltage slew rate / at the thyristor / for main contacts / maximum permissibleV/µs1,000Block voltage / at the thyristor / for main contacts / maximum permissibleMA10Block voltage / at the thyristor / for main contacts / maximum permissibleMA10Reverse current / of the thyristorMA10Derating temperature^C40Active power loss / total / typicalMV54Resistance against the impulse current / rated valueA <sup>2</sup> s6,600Control supply voltage frequency + 1/ rated valueHz50	• at 60 Hz / at AC / rated value	V	24 230
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Operating frequency       Image: Frequency         • rated value       Hz       50 60         Relative symmetrical tolerance / of the operation frequency       %       10         Insulation voltage / rated value       V       600         Voltage slew rate / at the thyristor / for main contacts / maximum permissible       V/us       1,000         Block voltage / at the thyristor / for main contacts / maximum permissible       V       800         Pervissible       mA       10         Active power loss / total / typical       MX       54         Resistance against the impulse current / rated value       A       1,150         Izt-level / maximum       A <sup>2</sup> -s       6,600	• at 50 Hz / for AC	V	20 253
• rated valueHz50 60Relative symmetrical tolerance / of the operation frequency%10Insulation voltage / rated valueV600Voltage slew rate / at the thyristor / for main contacts / maximum permissibleV/µs1,000Block voltage / at the thyristor / for main contacts / maximum permissibleV800Block voltage / at the thyristor / for main contacts / maximum permissibleV800Control the thyristor / for main contacts / maximum permissibleV800Reverse current / of the thyristorrmA10Derating temperature°C40Active power loss / total / typicalW54Resistance against the impulse current / rated valueA1,150Izt-level / maximumA <sup>2</sup> -s6,600Control circuit:Control supply voltage frequency • 1/ rated valueHz50	• at 60 Hz / for AC	V	20 253
Relative symmetrical tolerance / of the operation frequency%10Insulation voltage / rated valueV600Voltage slew rate / at the thyristor / for main contacts / maximum permissible1,000Block voltage / at the thyristor / for main contacts / maximum permissibleV/ µs800Block voltage / at the thyristormA10Derating temperature°C40Active power loss / total / typicalW54Resistance against the impulse current / rated valueA1,150Izt-level / maximumA²-s6,600Control circuit:Control supply voltage frequency • 1 / rated valueHz50	Operating frequency		
Insulation voltage / rated value       V       600         Voltage slew rate / at the thyristor / for main contacts / maximum permissible       1,000         Block voltage / at the thyristor / for main contacts / maximum permissible       V       800         Block voltage / at the thyristor / for main contacts / maximum permissible       V       800         Reverse current / of the thyristor       mA       10         Derating temperature       °C       40         Active power loss / total / typical       W       54         Izt-level / maximum       A <sup>2</sup> -s       6,600	rated value	Hz	50 60
Voltage slew rate / at the thyristor / for main contacts / maximum permissibleV/µs1,000Block voltage / at the thyristor / for main contacts / maximum permissibleV800Reverse current / of the thyristormA10Derating temperature°C40Active power loss / total / typicalW54Resistance against the impulse current / rated valueA1,150Izt-level / maximumA <sup>2</sup> -s6,600Control circuit:Hz50	Relative symmetrical tolerance / of the operation frequency	%	10
maximum permissibleImage: Control supply voltage frequency • 1/ rated valueImage: Control supply voltage frequency • 1/ rated valueImage: Control supply voltage frequency HzImage: Control supply voltage frequency Hz <th>Insulation voltage / rated value</th> <th>V</th> <th>600</th>	Insulation voltage / rated value	V	600
permissibleImage: Control circuitReverse current / of the thyristormA10Derating temperature°C40Active power loss / total / typicalW54Resistance against the impulse current / rated valueA1,150I2t-level / maximumA²-s6,600Control circuit:Control supply voltage frequency• 1 / rated valueHz50		V/µs	1,000
Derating temperature     °C     40       Active power loss / total / typical     W     54       Resistance against the impulse current / rated value     A     1,150       I2t-level / maximum     A <sup>2</sup> -s     6,600       Control circuit:       Control supply voltage frequency       • 1 / rated value     Hz     50		V	800
Active power loss / total / typical     W     54       Resistance against the impulse current / rated value     A     1,150       I2t-level / maximum     A <sup>2</sup> ·s     6,600       Control circuit:     V       Control supply voltage frequency     Hz     50	Reverse current / of the thyristor	mA	10
Resistance against the impulse current / rated value     A     1,150       I2t-level / maximum     A <sup>2</sup> ·s     6,600       Control circuit:     -       Control supply voltage frequency     -       • 1 / rated value     Hz     50	Derating temperature	°C	40
I2t-level / maximum     A <sup>2</sup> ·s     6,600       Control circuit:     -     -       Control supply voltage frequency     -     -       · 1 / rated value     Hz     50	Active power loss / total / typical	W	54
Control circuit:       Control supply voltage frequency       • 1 / rated value       Hz	Resistance against the impulse current / rated value	А	1,150
Control supply voltage frequency     Hz       • 1 / rated value     Hz	l2t-level / maximum	A²·s	6,600
• 1 / rated value Hz 50	Control circuit:		
	Control supply voltage frequency		
• 2 / rated value Hz 60	• 1 / rated value	Hz	50
	• 2 / rated value	Hz	60

Type of voltage / of the controlled supply voltage		AC
Control supply voltage / 1		
• at 50 Hz / for AC		
initial rated value	V	110
• final rated value	V	230
• at 60 Hz / for AC		
initial rated value	V	110
final rated value	V	230
Control supply voltage		
• at 50 Hz / for AC / final value for signal<0>-recognition	V	40
• at 60 Hz / for AC / final value for signal<0>-recognition	V	40
Tolerance of the line frequency	Hz	5
Relative symmetrical tolerance / of the supply voltage frequency	%	10
Control current		
<ul> <li>at minimum control supply voltage / for AC</li> </ul>	mA	2
• for AC / rated value	mA	15
Fuse assignments	_	https://www.automation.siemens.com/cd- static/material/info/3RF21_eng.pdf
Installation/mounting/dimensions:		
Type of mounting		screw and snap-on mounting onto 35 mm standard mounting rail

		mounting rail
Type of fixing/fixation / series installation		Yes
Design of the thread / of the screw for fastening of the operating resource		M4
Tightening torque / of the screw for fastening of the operating resource	N∙m	1.5
Width	mm	67.5
Height	mm	100
Depth	mm	156

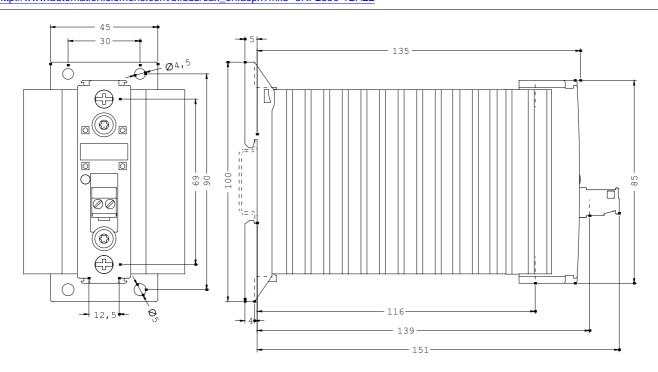
Connections:		
Design of the electrical connection / for main current circuit		screw-type terminals
Design of the thread / of the connection screw / for main contacts		M4
Tightening torque / for main contacts		
with screw-type terminals	N∙m	2 2.5
Tightening torque (Ibf·in) / for main contacts		
with screw-type terminals	lbf∙in	18 22
Type of the connectable conductor cross-section		
for main contacts		

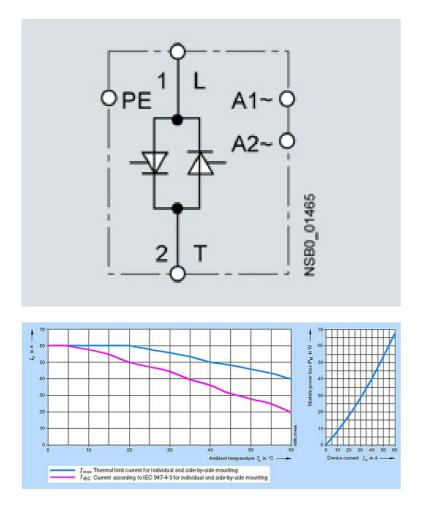
• solid		2x (1.5 2.5 mm2), 2x (2.5 6 mm2)
finely stranded		
<ul> <li>with conductor end processing</li> </ul>		2x (1 2.5 mm2), 2x (2.5 6 mm2), 1x 10 mm2
for AWG conductors		
• for main contacts		2x (14 10)
<ul> <li>for auxiliary and control contacts</li> </ul>		1x (AWG 20 12)
<ul> <li>for auxiliary and control contacts</li> </ul>		
• solid		1x (0.5 2.5 mm2), 2x (0.5 1.0 mm2)
finely stranded		
<ul> <li>with conductor end processi</li> <li>ng</li> </ul>		1x (0.5 2.5 mm2), 2x (0.5 1.0 mm2)
<ul> <li>without conductor final cut ting</li> </ul>	_	1x (0.5 2.5 mm2), 2x (0.5 1.0 mm2)
Conductor cross section that can be connected		
for main contacts		
• solid	mm²	1.5 6
stranded wire		
<ul> <li>with conductor end processing</li> </ul>	mm²	1 10
<ul> <li>for auxiliary and control contacts</li> </ul>		
• solid	mm²	0.5 2.5
stranded wire		
with conductor end processing / minimum	mm²	0.5 2.5
without conductor final cutting	mm²	0.5 2.5
AWG number / as coded connectable conductor cross-section / for main contacts		10 14
Design of the electrical connection / for auxiliary and control current circuit		screw-type terminals
Design of the thread / of the connection screw / of the auxiliary and control pins	_	M3
AWG number / as coded connectable conductor cross-section		
<ul> <li>for auxiliary and control contacts</li> </ul>		20 12
Skinning length / of the cable / for main contacts	mm	7
Skinning length / of the cable / for auxiliary and control contacts	mm	7
Tightening torque / for auxiliary and control contacts		
with screw-type terminals	N∙m	0.5 0.6
Tightening torque (lbf-in) / for auxiliary and control contacts		
• with screw-type terminals	lbf∙in	4.5 5.3

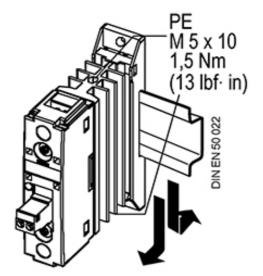
Certificates/approvals:

General Produc	t Approval		Test Certificates	other
CSA	<u>ROSTEST</u>		Manufacturer	<u>Manufacturer</u>
	ation: Downloadcenter (Catal ns.com/industrial-controls/	• • • •		
Industry Mall (On	Iline ordering system)	/mall		
http://www.siemer				
http://www.siemer CAx-Online-Gene http://www.siemer				

## Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RF2350-1BA22







last change:

Aug 22, 2011