



SIRIUS soft starter 200-480 V 32 A, 24 V AC/DC Screw terminals Thermistor input

<b>product brand name</b>	SIRIUS
<b>product category</b>	Hybrid switching devices
<b>product designation</b>	Soft starter
<b>product type designation</b>	3RW52
<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• of standard HMI module usable</li> <li>• of high feature HMI module usable</li> <li>• of communication module PROFINET standard usable</li> <li>• of communication module PROFIBUS usable</li> <li>• of communication module Modbus TCP usable</li> <li>• of communication module Modbus RTU usable</li> <li>• of communication module Ethernet/IP</li> <li>• of circuit breaker usable at 400 V</li> <li>• of circuit breaker usable at 500 V</li> <li>• of circuit breaker usable at 400 V at inside-delta circuit</li> <li>• of circuit breaker usable at 500 V at inside-delta circuit</li> <li>• of the gG fuse usable up to 690 V</li> <li>• of the gG fuse usable at inside-delta circuit up to 500 V</li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V</li> <li>• of back-up R fuse link for semiconductor protection usable up to 690 V</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">3RW5980-0HS00</a></li> <li><a href="#">3RW5980-0HF00</a></li> <li><a href="#">3RW5980-0CS00</a></li> <li><a href="#">3RW5980-0CP00</a></li> <li><a href="#">3RW5980-0CT00</a></li> <li><a href="#">3RW5980-0CR00</a></li> <li><a href="#">3RW5980-0CE00</a></li> <li><a href="#">3RV2032-4VA10; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3RV2032-4VA10; Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li><a href="#">3RV2032-4JA10; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li><a href="#">3NA3824-6; Type of coordination 1, Iq = 65 kA</a></li> <li><a href="#">3NA3824-6; Type of coordination 1, Iq = 65 kA</a></li> <li><a href="#">3NE1818-0; Type of coordination 2, Iq = 65 kA</a></li> <li><a href="#">3NE8022-1; Type of coordination 2, Iq = 65 kA</a></li> </ul>

General technical data	
<b>starting voltage [%]</b>	30 ... 100 %
<b>stopping voltage [%]</b>	50 %; non-adjustable
<b>start-up ramp time of soft starter</b>	0 ... 20 s
<b>current limiting value [%] adjustable</b>	130 ... 700 %
<b>certificate of suitability</b>	
<ul style="list-style-type: none"> <li>• CE marking</li> <li>• UL approval</li> <li>• CSA approval</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>
<b>product component</b>	
<ul style="list-style-type: none"> <li>• HMI-High Feature</li> <li>• is supported HMI-Standard</li> <li>• is supported HMI-High Feature</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>Yes</li> <li>Yes</li> </ul>
<b>product feature integrated bypass contact system</b>	Yes
<b>number of controlled phases</b>	3

<b>buffering time in the event of power failure</b>	
• for main current circuit	100 ms
• for control circuit	100 ms
<b>insulation voltage rated value</b>	600 V
<b>degree of pollution</b>	3, acc. to IEC 60947-4-2
<b>impulse voltage rated value</b>	6 kV
<b>blocking voltage of the thyristor maximum</b>	1 600 V
<b>service factor</b>	1
<b>surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for protective separation</b>	
• between main and auxiliary circuit	600 V
<b>shock resistance</b>	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
<b>vibration resistance</b>	15 mm to 6 Hz; 2 g to 500 Hz
utilization category according to IEC 60947-4-2	AC 53a
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (day/month/year)</b>	02/15/2018
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4 Diboron trioxide CAS-No. 1303-86-2
<b>Net Weight</b>	3.137 kg
<b>product function</b>	
• ramp-up (soft starting)	Yes
• soft stopping	Yes
• Soft Torque	Yes
• adjustable current limitation	Yes
• pump stop	Yes
• intrinsic device protection	Yes
• motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)
• evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick
• inside-delta circuit	Yes
• auto-RESET	Yes
• manual RESET	Yes
• remote reset	Yes; By turning off the control supply voltage
• communication function	Yes
• operating measured value display	Yes; Only in conjunction with special accessories
• error logbook	Yes; Only in conjunction with special accessories
• via software parameterizable	No
• via software configurable	Yes
• <b>PROFenergy</b>	Yes; in connection with the PROFINET Standard communication module
• <b>firmware update</b>	Yes
• <b>removable terminal for control circuit</b>	Yes
• torque control	No
• analog output	No
<b>Power Electronics</b>	
<b>operational current</b>	
• at 40 °C rated value	32 A
• at 50 °C rated value	28.4 A
• at 60 °C rated value	26 A
<b>operational current at inside-delta circuit</b>	
• at 40 °C rated value	55.4 A
• at 50 °C rated value	49 A
• at 60 °C rated value	45 A
<b>operating voltage</b>	
• rated value	200 ... 480 V

<ul style="list-style-type: none"> <li>• at inside-delta circuit rated value</li> </ul>	200 ... 480 V
<b>relative negative tolerance of the operating voltage</b>	-15 %
<b>relative positive tolerance of the operating voltage</b>	10 %
<b>relative negative tolerance of the operating voltage at inside-delta circuit</b>	-15 %
<b>relative positive tolerance of the operating voltage at inside-delta circuit</b>	10 %
<b>operating power for 3-phase motors</b>	
<ul style="list-style-type: none"> <li>• at 230 V at 40 °C rated value</li> </ul>	7.5 kW
<ul style="list-style-type: none"> <li>• at 230 V at inside-delta circuit at 40 °C rated value</li> </ul>	15 kW
<ul style="list-style-type: none"> <li>• at 400 V at 40 °C rated value</li> </ul>	15 kW
<ul style="list-style-type: none"> <li>• at 400 V at inside-delta circuit at 40 °C rated value</li> </ul>	22 kW
<b>Operating frequency 1 rated value</b>	50 Hz
<b>Operating frequency 2 rated value</b>	60 Hz
<b>relative negative tolerance of the operating frequency</b>	-10 %
<b>relative positive tolerance of the operating frequency</b>	10 %
<b>adjustable motor current</b>	
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 1</li> </ul>	14 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 2</li> </ul>	15.2 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 3</li> </ul>	16.4 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 4</li> </ul>	17.6 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 5</li> </ul>	18.8 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 6</li> </ul>	20 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 7</li> </ul>	21.2 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 8</li> </ul>	22.4 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 9</li> </ul>	23.6 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 10</li> </ul>	24.8 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 11</li> </ul>	26 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 12</li> </ul>	27.2 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 13</li> </ul>	28.4 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 14</li> </ul>	29.6 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 15</li> </ul>	30.8 A
<ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 16</li> </ul>	32 A
<ul style="list-style-type: none"> <li>• minimum</li> </ul>	14 A
<b>adjustable motor current</b>	
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 1</li> </ul>	24.2 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 2</li> </ul>	26.3 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 3</li> </ul>	28.4 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 4</li> </ul>	30.5 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 5</li> </ul>	32.6 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 6</li> </ul>	34.6 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 7</li> </ul>	36.7 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 8</li> </ul>	38.8 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 9</li> </ul>	40.9 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 10</li> </ul>	43 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 11</li> </ul>	45 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 12</li> </ul>	47.1 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 13</li> </ul>	49.2 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 14</li> </ul>	51.3 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 15</li> </ul>	53.3 A

position 15	
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 16</li> </ul>	55.4 A
<ul style="list-style-type: none"> <li>• at inside-delta circuit minimum</li> </ul>	24.2 A
<b>minimum load [%]</b>	15 %; Relative to smallest settable Ie
<b>power loss [W] for rated value of the current at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C after startup</li> </ul>	22 W
<ul style="list-style-type: none"> <li>• at 50 °C after startup</li> </ul>	21 W
<ul style="list-style-type: none"> <li>• at 60 °C after startup</li> </ul>	20 W
<b>power loss [W] at AC at current limitation 350 %</b>	
<ul style="list-style-type: none"> <li>• at 40 °C during startup</li> </ul>	531 W
<ul style="list-style-type: none"> <li>• at 50 °C during startup</li> </ul>	449 W
<ul style="list-style-type: none"> <li>• at 60 °C during startup</li> </ul>	395 W

#### Control circuit/ Control

<b>type of voltage of the control supply voltage</b>	AC/DC
<b>control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• at 60 Hz rated value</li> </ul>	24 V
<b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-20 %
<b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	20 %
<b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-20 %
<b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	20 %
<b>control supply voltage frequency</b>	50 ... 60 Hz
<b>relative negative tolerance of the control supply voltage frequency</b>	-10 %
<b>relative positive tolerance of the control supply voltage frequency</b>	10 %
<b>control supply voltage at DC rated value</b>	24 V
<b>relative negative tolerance of the control supply voltage at DC</b>	-20 %
<b>relative positive tolerance of the control supply voltage at DC</b>	20 %
<b>control supply current in standby mode rated value</b>	160 mA
<b>holding current in bypass operation rated value</b>	360 mA
<b>inrush current by closing the bypass contacts maximum</b>	0.75 A
inrush current peak at application of control supply voltage maximum	3.3 A
duration of inrush current peak at application of control supply voltage	12.1 ms
<b>design of the overvoltage protection</b>	Varistor
<b>design of short-circuit protection for control circuit</b>	4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply

#### Inputs/ Outputs

<b>number of digital inputs</b>	1
<b>number of digital outputs</b>	3
<ul style="list-style-type: none"> <li>• not parameterizable</li> </ul>	2
<b>digital output version</b>	2 normally-open contacts (NO) / 1 changeover contact (CO)
<b>number of analog outputs</b>	0
<b>switching capacity current of the relay outputs</b>	
<ul style="list-style-type: none"> <li>• at AC-15 at 250 V rated value</li> </ul>	3 A
<ul style="list-style-type: none"> <li>• at DC-13 at 24 V rated value</li> </ul>	1 A

#### Installation/ mounting/ dimensions

<b>mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>fastening method</b>	screw fixing
<b>height</b>	275 mm
<b>width</b>	170 mm
<b>depth</b>	152 mm

required spacing with side-by-side mounting	
<ul style="list-style-type: none"> <li>• forwards</li> <li>• backwards</li> <li>• upwards</li> <li>• downwards</li> <li>• at the side</li> </ul>	<p>10 mm</p> <p>0 mm</p> <p>100 mm</p> <p>75 mm</p> <p>5 mm</p>
<b>weight without packaging</b>	2.3 kg

### Connections/ Terminals

<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for control circuit</li> </ul>	<p>screw-type terminals</p> <p>screw-type terminals</p>
<b>wire length for thermistor connection</b>	
<ul style="list-style-type: none"> <li>• with conductor cross-section = 0.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>	<p>50 m</p> <p>150 m</p> <p>250 m</p>
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for main current circuit solid</li> </ul>	<p>2x (1.0 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 10 mm<sup>2</sup>)</p> <p>2x (1.0 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6.0 mm<sup>2</sup>)</p> <p>2x (16 ... 12), 2x (14 ... 8)</p>
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for control circuit solid</li> <li>• for control circuit finely stranded with core end processing</li> <li>• for AWG cables for control circuit solid</li> </ul>	<p>1x (0.5 ... 4.0 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
<b>wire length</b>	
<ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> <li>• at the digital inputs at AC maximum</li> <li>• at the digital inputs at DC maximum</li> </ul>	<p>800 m</p> <p>100 m</p> <p>1 000 m</p>
<b>tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	<p>2 ... 2.5 N·m</p> <p>0.8 ... 1.2 N·m</p>
<b>tightening torque [lbf·in]</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	<p>18 ... 22 lbf·in</p> <p>7 ... 10.3 lbf·in</p>

### Ambient conditions

installation altitude at height above sea level maximum	5 000 m
<b>ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>
<b>environmental category</b>	
<ul style="list-style-type: none"> <li>• during operation according to IEC 60721</li> <li>• during storage according to IEC 60721</li> <li>• during transport according to IEC 60721</li> </ul>	<p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p>

### Electromagnetic compatibility

<b>EMC emitted interference</b>	acc. to IEC 60947-4-2: Class A
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### Communication/ Protocol

<b>communication module is supported</b>	
<ul style="list-style-type: none"> <li>• PROFINET standard</li> <li>• EtherNet/IP</li> <li>• Modbus RTU</li> <li>• Modbus TCP</li> <li>• PROFIBUS</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

### UL/CSA ratings

<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• of circuit breaker usable for Standard Faults <ul style="list-style-type: none"> <li>— at 460/480 V according to UL</li> </ul> </li> </ul>	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I <sub>q</sub> = 5 kA

- 60/480 V according to UL
- at 460/480 V at inside-delta circuit according to UL
- 60/480 V at inside-delta circuit according to UL
- at 575/600 V according to UL
- at 575/600 V at inside-delta circuit according to UL

● of the fuse

- usable for Standard Faults up to 575/600 V according to UL
- usable for High Faults up to 575/600 V according to UL
- usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL
- usable for High Faults at inside-delta circuit up to 575/600 V according to UL

Siemens type: 3RV2742, max.40 A or 3VA51, max. 60 A; Iq max = 65 kA  
 Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA  
 Siemens type: 3VA51, max. 60 A; Iq max = 65 kA  
 Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA  
 Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA

Type: Class RK5 / K5, max. 125 A; Iq = 5 kA

Type: Class J / L, max. 125 A; Iq = 100 kA

Type: Class RK5 / K5, max. 125 A; Iq = 5 kA

Type: Class J / L, max. 125 A; Iq = 100 kA

**operating power [hp] for 3-phase motors**

- at 200/208 V at 50 °C rated value
- at 220/230 V at 50 °C rated value
- at 460/480 V at 50 °C rated value
- at 200/208 V at inside-delta circuit at 50 °C rated value
- at 220/230 V at inside-delta circuit at 50 °C rated value
- at 460/480 V at inside-delta circuit at 50 °C rated value

7.5 hp  
 10 hp  
 20 hp  
 15 hp  
 15 hp  
 30 hp

**contact rating of auxiliary contacts according to UL**

R300-B300

Electrical Safety

**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

**Approvals Certificates**

Environmental Product Declaration

- global warming potential [CO2 eq] / during manufacturing 37.2 kg
- global warming potential [CO2 eq] / during sales 0.66 kg
- global warming potential [CO2 eq] / during operation 152 kg
- global warming potential [CO2 eq] / after end of life -4.19 kg
- global warming potential [CO2 eq] / total 185 kg

Environment

General Product Approval

[Environmental Confirmations](#)



General Product Approval

EMV

Test Certificates

Maritime application



[Type Test Certificates/Test Report](#)



Maritime application

other



[Confirmation](#)

[Confirmation](#)

other



## Further information

### Information on the packaging

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

### Information for data generation and storage

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

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

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

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5216-1TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1TC04>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5216-1TC04&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5216-1TC04&lang=en)

### Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5216-1TC04>

### Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1TC04/char>

### Characteristic: Installation altitude

[https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G\\_NSB0\\_XX\\_01704&showdetail=true&view=Search](https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSB0_XX_01704&showdetail=true&view=Search)

### Simulation Tool for Soft Starters (STS)

<https://support.industry.siemens.com/cs/ww/en/view/101494917>

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