## **SIEMENS**

Data sheet 3RW4456-2BC35



SIRIUS soft starter Values at 575 V, 50 °C standard: 693 A, 750 hp Inside-delta: 1200 A, 1350 hp 400-600 V AC, 115 V AC spring-type terminals !!! Phased-out product !!! Successor is SIRIUS 3RW5, Preferred successor type is >>3RW5554-2HA16<<

General technical data		
product brand name		SIRIUS
product feature		
<ul> <li>integrated bypass contact system</li> </ul>		Yes
• thyristors		Yes
product function		
<ul> <li>intrinsic device protection</li> </ul>		Yes
<ul> <li>motor overload protection</li> </ul>		Yes
<ul> <li>evaluation of thermistor motor protection</li> </ul>		Yes
<ul> <li>external reset</li> </ul>		Yes
<ul> <li>adjustable current limitation</li> </ul>		Yes
inside-delta circuit		Yes
product component motor brake output		Yes
insulation voltage rated value	V	690
degree of pollution		3, acc. to IEC 60947-4-2
reference code acc. to DIN EN 61346-2		Q
reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		G
Power Electronics		
product designation		Soft starter
operational current		
<ul> <li>at 40 °C rated value</li> </ul>	Α	780
<ul> <li>at 50 °C rated value</li> </ul>	Α	693
<ul> <li>at 60 °C rated value</li> </ul>	^	
	A	615
operational current for 3-phase motors at inside-delta circuit	_ A	615
	A	1 351
circuit		
e at 40 °C rated value	A	1 351
<ul> <li>at 40 °C rated value</li> <li>at 50 °C rated value</li> </ul>	A A	1 351 1 200
<ul> <li>at 40 °C rated value</li> <li>at 50 °C rated value</li> <li>at 60 °C rated value</li> </ul>	A A	1 351 1 200
circuit  • at 40 °C rated value  • at 50 °C rated value  • at 60 °C rated value  yielded mechanical performance for 3-phase motors	A A	1 351 1 200
circuit  • at 40 °C rated value  • at 50 °C rated value  • at 60 °C rated value  yielded mechanical performance for 3-phase motors  • at 400 V	A A A	1 351 1 200 1 065
circuit  • at 40 °C rated value  • at 50 °C rated value  • at 60 °C rated value  yielded mechanical performance for 3-phase motors  • at 400 V  — at standard circuit at 40 °C rated value	A A A	1 351 1 200 1 065 450 000
circuit  • at 40 °C rated value  • at 50 °C rated value  • at 60 °C rated value  yielded mechanical performance for 3-phase motors  • at 400 V  — at standard circuit at 40 °C rated value  — at inside-delta circuit at 40 °C rated value	A A A	1 351 1 200 1 065 450 000
circuit  at 40 °C rated value  at 50 °C rated value  at 60 °C rated value  yielded mechanical performance for 3-phase motors  at 400 V  at standard circuit at 40 °C rated value  at inside-delta circuit at 40 °C rated value  at 500 V	A A A	1 351 1 200 1 065 450 000 800 000
circuit  • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value  yielded mechanical performance for 3-phase motors • at 400 V  — at standard circuit at 40 °C rated value — at inside-delta circuit at 40 °C rated value • at 500 V  — at standard circuit at 40 °C rated value	A A A W W	1 351 1 200 1 065 450 000 800 000 560 000

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adjustable motor current for motor overload protection minimum rated value continuous operating current (% of le) at 40 °C		%	10
protection minimum rated value continuous operating current (% of le) at 40 °C power loss [W] at operational current at 40 °C during operation typical  Verificative negative tolerance of the control supply voltage Control supply voltage frequency 2 rated value relative negative tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency control supply voltage 1 at AC • at 50 Hz rated value • at 60 Hz rated value • at 60 Hz rated value voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply voltage at AC at 60 Hz relative positive tolerance of the control supply voltage at AC at 60 Hz relative positive tolerance of the control supply voltage at AC at 60 Hz relative positive tolerance of the control supply voltage at AC at 60 Hz relative positive tolerance of the control supply voltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative positive tolerance of the control supply woltage at AC at 60 Hz relative	minimum load [%]	%	8
Dower loss [W] at operational current at 40 °C during operation typical Control supply voltage of the control supply voltage   AC		Α	156
control circuit/ Control  Type of voltage of the control supply voltage control supply voltage frequency 2 rated value relative negative tolerance of the control supply voltage frequency 2 rated value relative negative tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative negative tolerance of the control supply voltage frequency relative negative tolerance of the control supply voltage frequency control supply voltage 1 at AC  • at 50 Hz rated value	continuous operating current [% of le] at 40 °C	%	115
type of voltage of the control supply voltage control supply voltage frequency 2 rated value relative negative tolerance of the control supply voltage frequency 2 rated value relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative positive tolerance of the control supply voltage frequency relative negative stolerance of the control supply voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 50 Hz relative positive tolerance of the control supply voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance negative negative tolerance negative tol		W	214
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voltage frequency  control supply voltage 1 at AC  • at 50 Hz rated value  • at 60 Hz rated value  • at 60 Hz rated value  v 115  relative negative tolerance of the control supply voltage at AC at 50 Hz  relative positive tolerance of the control supply voltage at AC at 50 Hz  relative negative tolerance of the control supply voltage at AC at 50 Hz  relative negative tolerance of the control supply voltage at AC at 60 Hz  relative positive tolerance of the control supply voltage at AC at 60 Hz  relative positive tolerance of the control supply voltage at AC at 60 Hz  display version for fault signal  Mechanical data  width  mm 510  height  mm 640  depth  fastening method  mounting position  required spacing with side-by-side mounting  • upwards  • at the side  • downwards  • at the side  • downwards  wire length maximum  number of poles for main current circuit  • for auxiliary and control circuit  • for main current circuit  • for auxiliary and control circuit  number of NC contacts for auxiliary contacts  number of NC contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded		%	-10
* at 50 Hz rated value     * at 60 Hz rated value     * v    * 115     * voltage at AC at 50 Hz     relative positive tolerance of the control supply voltage at AC at 50 Hz     relative negative tolerance of the control supply voltage at AC at 60 Hz     relative positive tolerance of the control supply voltage at AC at 60 Hz     relative positive tolerance of the control supply voltage at AC at 60 Hz     display version for fault signal    Mechanical data		%	10
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relative positive tolerance of the control supply voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz relative positive tolerance of the control supply voltage at AC at 60 Hz display version for fault signal  Mechanical data  width  mm 510  height  dopth  mm 640  dopth  mm 200  fastening method  mounting position  with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/-22.5° tiltable to the front and back  required spacing with side-by-side mounting  • upwards  • at the side  • downwards  mm 55  wire length maximum  number of poles for main current circuit  Connections/ Torminals  type of electrical connection  • for auxiliary and control circuit  number of NC contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  finely stranded  • finely stranded  10  10  10  10  10  10  10  10  10  1	at 60 Hz rated value	V	115
relative negative tolerance of the control supply voltage at AC at 50 Hz  relative positive tolerance of the control supply voltage at AC at 60 Hz  relative positive tolerance of the control supply voltage at AC at 60 Hz  display version for fault signal  Mechanical data  width		%	-15
relative positive tolerance of the control supply voltage at AC at 60 Hz  display version for fault signal  Mechanical data  width height depth fastening method mounting position  required spacing with side-by-side mounting  • upwards • at the side • downwards wire length maximum number of poles for main current circuit • for auxiliary and control circuit number of NC contacts for auxiliary contacts number of CO contacts for auxiliary contacts type of connectable conductor residence in the finely stranded  pisplay  10  10  10  10  10  10  10  10  10  1	•	%	10
voltage at AC at 60 Hz display version for fault signal  Mechanical data  width height depth mm 510 height depth mm 290 fastening method mounting position  required spacing with side-by-side mounting • upwards • at the side • downwards wire length maximum number of poles for main current circuit  Connections/ Terminals  type of electrical connection • for auxiliary and control circuit number of NC contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts type of connectable conductor cross-sections for DIN cable lug for main contacts • finely stranded  Display  The 400  Sorue fixed  Display  Mm 510  Not Contacte for auxiliary contacts 1  1  Sorue fixed part of CO contacts for auxiliary contacts 1  Type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded		%	-15
Mechanical data       width     mm     510       height     mm     640       depth     mm     290       fastening method     screw fixing       mounting position     with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back       required spacing with side-by-side mounting     mm     100       • at the side     mm     5       • downwards     mm     75       wire length maximum     m     500       number of poles for main current circuit     3       Connections/ Terminals       type of electrical connection     busbar connection       • for main current circuit     busbar connection       • for main current circuit     spring-loaded terminals       number of NC contacts for auxiliary contacts     0       number of NO contacts for auxiliary contacts     1       type of connectable conductor cross-sections for DIN cable lug for main contacts     50 240 mm²		%	10
width	display version for fault signal		Display
height depth mm 290  fastening method screw fixing with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back  required spacing with side-by-side mounting  • upwards • at the side • downwards wire length maximum number of poles for main current circuit  Connections/ Terminals  type of electrical connection • for main current circuit • for auxiliary and control circuit number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts 1 type of connectable conductor cross-sections for DIN cable lug for main contacts • finely stranded  mm 640 mm 290 with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/-90° r	Mechanical data		
depth mm 290  fastening method screw fixing with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back  required spacing with side-by-side mounting  • upwards mm 100  • at the side mm 5  • downwards mm 75  wire length maximum m 500  number of poles for main current circuit 3  Connections/ Terminals  type of electrical connection  • for main current circuit spring-loaded terminals  number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts 1  number of CO contacts for auxiliary contacts 1  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded 50 240 mm²	width	mm	510
fastening method mounting position  screw fixing with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back  required spacing with side-by-side mounting  • upwards • at the side • downwards  mm  5  wire length maximum number of poles for main current circuit  connections/ Terminals  type of electrical connection • for main current circuit • for auxiliary and control circuit  number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts type of connectable conductor cross-sections for DIN cable lug for main contacts • finely stranded  screw fixing with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/-9	height	mm	640
mounting position  with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back  required spacing with side-by-side mounting  upwards  to upwards  to the side  downwards  mm  mm  mm  mm  mm  mm  mm  mm  mm	depth	mm	290
required spacing with side-by-side mounting  • upwards • at the side • downwards  wire length maximum  number of poles for main current circuit  Connections/ Terminals  type of electrical connection • for auxiliary and control circuit  number of NC contacts for auxiliary contacts number of CO contacts for auxiliary contacts type of connectable conductor cross-sections for DIN cable lug for main contacts • finely stranded  vertical mounting surface +/- 22.5° tiltable to the front and back  mm busch  100  3  Connections/ Terminals  busbar connection  busbar connection  spring-loaded terminals  0  1  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded	fastening method		screw fixing
<ul> <li>upwards</li> <li>at the side</li> <li>downwards</li> <li>mm</li> <li>fowire length maximum</li> <li>number of poles for main current circuit</li> <li>Connections/ Terminals</li> <li>type of electrical connection</li> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>number of NC contacts for auxiliary contacts</li> <li>number of NO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>for auxiliary contacts</li> <li>number of SO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>for aux</li></ul>	mounting position		vertical mounting surface +/- 22.5° tiltable to the front and
<ul> <li>at the side</li> <li>downwards</li> <li>mm</li> <li>75</li> <li>wire length maximum</li> <li>number of poles for main current circuit</li> <li>Connections/ Terminals</li> <li>type of electrical connection</li> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>number of NC contacts for auxiliary contacts</li> <li>number of NO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>type of connectable conductor cross-sections for DIN cable lug for main contacts</li> <li>finely stranded</li> <li>finely stranded</li> <li>finely stranded</li> </ul>	required spacing with side-by-side mounting		
● downwards mm 75  wire length maximum m 500  number of poles for main current circuit 3  Connections/ Terminals  type of electrical connection ● for main current circuit busbar connection ● for auxiliary and control circuit spring-loaded terminals  number of NC contacts for auxiliary contacts 0  number of NO contacts for auxiliary contacts 3  number of CO contacts for auxiliary contacts 1  type of connectable conductor cross-sections for DIN cable lug for main contacts ● finely stranded 50 240 mm²	• upwards	mm	100
wire length maximum number of poles for main current circuit  Connections/ Terminals  type of electrical connection	• at the side	mm	5
number of poles for main current circuit  type of electrical connection  of or main current circuit busbar connection spring-loaded terminals  number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  full type of connectable conductor cross-sections for DIN cable lug for main contacts of inely stranded  3  Connections  busbar connection spring-loaded terminals  0  1  1  1  1  1  1  1  1  1  1  1  1	• downwards	mm	75
type of electrical connection  • for main current circuit  • for auxiliary and control circuit  number of NC contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  busbar connection  spring-loaded terminals  0  1  type of contacts for auxiliary contacts  1  type of connectable conductor cross-sections for DIN cable lug for main contacts	wire length maximum	m	500
type of electrical connection  • for main current circuit  • for auxiliary and control circuit  number of NC contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  1  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  busbar connection  spring-loaded terminals  0  1  type of contacts for auxiliary contacts  1  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  50 240 mm²	number of poles for main current circuit		3
<ul> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>spring-loaded terminals</li> <li>number of NC contacts for auxiliary contacts</li> <li>number of NO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>type of connectable conductor cross-sections for DIN cable lug for main contacts</li> <li>finely stranded</li> <li>50 240 mm²</li> </ul>	Connections/ Terminals		
<ul> <li>◆ for auxiliary and control circuit</li> <li>number of NC contacts for auxiliary contacts</li> <li>number of NO contacts for auxiliary contacts</li> <li>number of CO contacts for auxiliary contacts</li> <li>type of connectable conductor cross-sections for DIN cable lug for main contacts</li> <li>◆ finely stranded</li> <li>spring-loaded terminals</li> <li>1</li> <li>50 240 mm²</li> </ul>	type of electrical connection		
number of NC contacts for auxiliary contacts  number of NO contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  0  1  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  50 240 mm²	• for main current circuit		busbar connection
number of NO contacts for auxiliary contacts  number of CO contacts for auxiliary contacts  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  50 240 mm²	for auxiliary and control circuit		spring-loaded terminals
number of CO contacts for auxiliary contacts  type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  50 240 mm²	number of NC contacts for auxiliary contacts		0
type of connectable conductor cross-sections for DIN cable lug for main contacts  • finely stranded  50 240 mm²			3
cable lug for main contacts  ● finely stranded  50 240 mm²	number of CO contacts for auxiliary contacts		1
• stranded 70 240 mm²	<ul> <li>finely stranded</li> </ul>		50 240 mm²
	• stranded		70 240 mm²

type of connectable conductor cross-sections for auxiliary contacts		
• solid		2x (0.25 1.5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>		2x (0.25 1.5 mm²)
type of connectable conductor cross-sections at AWG cables		
<ul> <li>for main contacts</li> </ul>		2/0 500 kcmil
<ul> <li>for auxiliary contacts</li> </ul>		2x (24 16)
Ambient conditions		
installation altitude at height above sea level	m	5 000
environmental category		
<ul> <li>during transport acc. to IEC 60721</li> </ul>		2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
<ul> <li>during storage acc. to IEC 60721</li> </ul>		1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
<ul> <li>during operation acc. to IEC 60721</li> </ul>		3K6 (no formation of ice, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
ambient temperature		
<ul> <li>during operation</li> </ul>	°C	60
<ul> <li>during storage</li> </ul>	°C	-25 +80
derating temperature	°C	40
• .		

Certificates/ approvals

**General Product Approval** 

EMC

Declaration of Conformity













**Test Certificates** 

Marine / Shipping

other

Special Test Certificate







Confirmation

UL/CSA ratings			
yielded mechanical performance [hp] for 3-phase AC motor			
• at 460/480 V			
<ul> <li>at standard circuit at 50 °C rated value</li> </ul>	hp	600	
<ul> <li>at inside-delta circuit at 50 °C rated value</li> </ul>	hp	1 050	
● at 575/600 V			
<ul> <li>at standard circuit at 50 °C rated value</li> </ul>	hp	750	
<ul> <li>at inside-delta circuit at 50 °C rated value</li> </ul>	hp	1 350	
contact rating of auxiliary contacts according to UL		B300 / R300	

## Further information

Simulation Tool for Soft Starters (STS)

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

Information- and Download center (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW4456-2BC35

Cax online generator

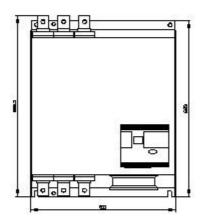
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW4456-2BC35

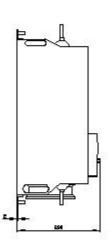
 ${\bf Service \& Support~(Manuals,~Certificates,~Characteristics,~FAQs,...)}$ 

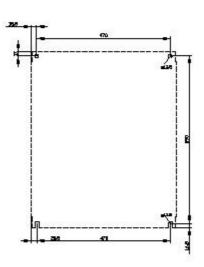
https://support.industry.siemens.com/cs/ww/en/ps/3RW4456-2BC35

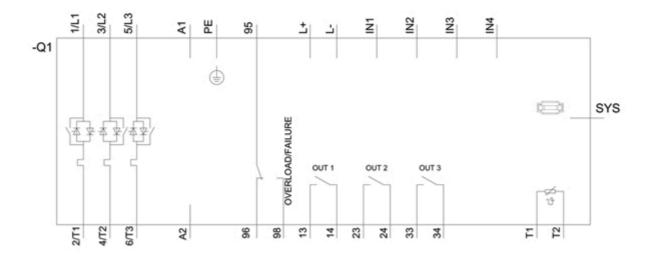
 $Image\ database\ (product\ images,\ 2D\ dimension\ drawings,\ 3D\ models,\ device\ circuit\ diagrams,\ EPLAN\ macros,\ ...)$ 

http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RW4456-2BC35&lang=en









last modified: 1/18/2021 **C**