

# SIRIUS Soft Starters

## Introduction

### Overview

#### Products at a glance



3RW30/3RW31



3RW40



3RW44



Class 73/74 Enclosed

#### SIRIUS soft starters

##### for standard applications

##### SIRIUS 3RW30 soft starters

- SIRIUS 3RW30/31 soft starters for soft starting and smooth ramp-down of single-phase or three-phase asynchronous motors<sup>1)</sup>
- Rating range of up to 60 Hp at 460 V (50 °C ambient)
- Application areas:
  - Fans
  - Pumps
  - Building/construction machines
  - Presses
  - Escalators
  - Transport systems
  - Air conditioning systems
  - Ventilators
  - Assembly lines
  - Compressors and coolers
  - Operating mechanisms

3RW30, 3RW31

16-164

##### SIRIUS 3RW40 soft starters

- SIRIUS 3RW40 soft starters with integrated functions
  - solid-state motor overload and intrinsic device protection and adjustable current limiting for the soft starting and stopping of three-phase asynchronous motors
- Rating range from 75 to 300 Hp at 460 V (50 °C ambient)
- Application areas:
  - Fans
  - Pumps
  - Building/construction machines
  - Presses
  - Escalators
  - Transport systems
  - Air conditioning systems
  - Ventilators
  - Assembly lines
  - Compressors and coolers
  - Operating mechanisms

3RW40

16-165

##### for High Feature applications

##### SIRIUS 3RW44 soft starters

- In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements
- Rating range from - up to 600 Hp at 460 V in inline circuit
- Application areas:
  - Pumps
  - Ventilators
  - Compressors
  - Cooling systems
  - Industrial refrigerating systems
  - Water transport
  - Conveying systems
  - Hydraulics
  - Machine tools
  - Mills

3RW44

16-166

##### For enclosed applications

##### Enclosures in NEMA 1, 3, 4, & 12 types UL/CSA listed

- Complete starter includes 3RW40 or 3RW44 and CPT
- Combination options include circuit breaker or fusible DBC
- Application areas:
  - Compressors
  - Pumps
  - Stamping presses
  - Cooling towers
  - Molding and extruding
  - Chippers and debarkers
  - Lumber processing
  - Pulp & paper processing
  - Conveyors
  - Textiles
  - HVAC

Class 73/74

16-168/16-169

<sup>1)</sup> 3RW30 single phase devices do not have ramp down functionality.

# SIRIUS Soft Starters

## General Data

### Overview

The advantages of the SIRIUS soft starters at a glance:

- Soft starting and soft stop<sup>1)</sup>
- Stepless starting
- Reduction of current peaks
- Avoidance of mains voltage fluctuations during starting
- Reduced load on the power supply network
- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with mechanical reduced voltage starters
- Maintenance-free switching
- Very easy handling
- Fits perfectly in the SIRIUS modular system



		SIRIUS 3RW30/31 Standard applications	SIRIUS 3RW40	SIRIUS 3RW44 High Feature applications
Rated current at 50 °C	A	2.6 ... 85	117 ... 385	26 ... 1076
Rated operating voltage	V	200 ... 575	200 ... 600	200 ... 690
Motor rating at 460 V				
• Inline circuit	Hp	1.1 ... 60	75 ... 300	15 ... 950
• Inside-delta circuit	Hp	—	—	22 ... 600
Temperature range	°C	-25 ... +60	-25 ... +60	0 ... +60
Soft starting/ramp-down		✓ <sup>1)</sup>	✓	✓
Voltage ramp		✓	✓	✓
Starting/stopping voltage	%	40 ... 100	40 ... 100	20 ... 100
Starting and ramp-down time	s	0 ... 20	0 ... 20	1 ... 360
Torque control		—	—	✓
Starting/stopping torque	%	—	—	20 ... 100
Torque limit	%	—	—	20 ... 200
Ramp time	s	—	—	1 ... 360
Integral bypass contact system		✓ <sup>2)</sup>	✓	✓
Intrinsic device protection		—	✓	✓
Motor overload protection		—	✓	✓
Thermistor motor protection		—	✓	✓
Adjustable current limiting		—	✓	✓
Inside-delta circuit		—	—	✓
Breakaway pulse		—	—	✓
Creep speed in both directions		—	—	✓
Pump ramp-down		—	—	✓ <sup>6)</sup>
DC braking		—	—	✓ <sup>3) 6)</sup>
Combined braking		—	—	✓ <sup>3) 6)</sup>
Motor heating		—	—	—
Communication		—	—	with PROFIBUS DP (option)
External display and operator module		—	—	(option )
LCD Operating measured value display		—	—	✓
Error logbook		—	—	✓
Event list		—	—	✓
Slave pointer function		—	—	✓
Trace function		—	—	✓ <sup>4)</sup>
Programmable control inputs and outputs		—	—	—
Number of parameter sets		1 (2 with 3RW31)	1	3
Parameterization software (Softstarter ES)		—	—	✓
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Spring-loaded terminals		✓ (only 3RW30 03)	✓	✓
Screw terminals		✓	✓	✓
UL/CSA		✓ <sup>5)</sup>	✓	✓
CE marking		✓	✓	✓
Soft starting under heavy starting conditions		—	—	✓ <sup>6)</sup>
Configuring support		—	—	—

- ✓ Function is available  
 — Function not available

- 1) Soft stop not available for 3RW31.  
 2) Not available for 3RW30 03.  
 3) Not possible in inside-delta circuit.  
 4) Trace function with Softstarter ES software.

Win-SOFTSTARTER Technical Assistance 1-800-241-4453

- 5) For 3RW30 03 up to 230 V.  
 6) Calculate soft starter and motor with size allowance where required.

You can find further information on the Internet at:  
<http://sielect.sea.siemens.com>

# SIRIUS Soft Starters

## Standard Applications—SIRIUS 3RW3 Soft Starters

Selection

### Selection and ordering data



3RW30 03-2CB54



3RW30 25-1AB14



3RW30 35-1AB14



3RW30 35-1AA12

Rated operating voltage $U_e$	At ambient temperature 50 °C					Size	Order No.	List Price \$	Weight per PU approx.	
	Rated operating current $I_e$	Rated output of three-phase induction motors for rated operating voltage $U_e$								
		115 V	200 V	230 V	460 V					575 V
V	A	hp	hp	hp	hp	hp		kg		
<b>Soft starters for easy starting conditions and high operating frequency</b>										
200 ... 400	2.6	-	0.5	0.5	-	-	3RW30 03-□CB54	308.00	0.200	
<b>Order No. extension for rated connection method<sup>1)</sup></b>										
with screw-type terminals							22.5 mm	1		
with spring-loaded terminals							22.5 mm	2		
<b>Soft starters for three-phase asynchronous motors</b>										
200 ... 460	4.8	-	1	1	3	-	S00	3RW30 14-1CB□4	406.00	0.302
	7.8	-	2	2	5	-	S00	3RW30 16-1CB□4	484.00	0.305
	11	-	3	3	7.5	-	S0	3RW30 24-1AB□4	496.00	0.490
	14	-	3	3	10	-	S0	3RW30 25-1AB□4	567.00	0.481
	21	-	5	5	15	-	S0	3RW30 26-1AB□4	587.00	0.489
	27	-	7.5	7.5	20	-	S2	3RW30 34-1AB□4	763.00	0.794
	32	-	7.5	10	20	-	S2	3RW30 35-1AB□4	942.00	0.779
	38	-	10	10	25	-	S2	3RW30 36-1AB□4	1177.00	0.791
	54	-	15	20	40	-	S3	3RW30 44-1AB□4	1301.00	1.660
	64	-	20	20	40	-	S3	3RW30 45-1AB□4	1639.00	1.800
85	-	25	30	60	-	S3	3RW30 46-1AB□4	1978.00	1.810	
460 ... 575	11	-	-	-	7.5	10	S0	3RW30 24-1AB□5	668.00	0.490
	14	-	-	-	10	10	S0	3RW30 25-1AB□5	723.00	0.489
	21	-	-	-	15	15	S0	3RW30 26-1AB□5	780.00	0.489
	27	-	-	-	20	25	S2	3RW30 34-1AB□5	916.00	0.791
	32	-	-	-	20	30	S2	3RW30 35-1AB□5	1132.00	0.793
	38	-	-	-	25	30	S2	3RW30 36-1AB□5	1412.00	0.792
	54	-	-	-	40	50	S3	3RW30 44-1AB□5	1561.00	1.660
	64	-	-	-	40	60	S3	3RW30 45-1AB□5	1967.00	1.810
	85	-	-	-	60	75	S3	3RW30 46-1AB□5	2375.00	1.800
	<b>Order No. extension for rated control supply voltage <math>U_s</math></b>									
AC/DC 24 V								0		
AC/DC 110 ... 230 V								1		
<b>Soft starters with two-ramp control for three-phase induction motors with two speeds (double pole-reversing)</b>										
200 ... 460	11	-	3	3	7.5	-	S0	3RW31 24-1CB14	613.00	0.468
	14	-	3	3	10	-	S0	3RW31 25-1CB14	657.00	0.475
	21	-	5	5	15	-	S0	3RW31 26-1CB14	722.00	0.464
460 ... 575	11	-	-	-	7.5	10	S0	3RW31 24-1CB15	735.00	0.467
	14	-	-	-	10	10	S0	3RW31 25-1CB15	795.00	0.476
	21	-	-	-	15	15	S0	3RW31 26-1CB15	858.00	0.475
<b>Soft starters for single-phase motors</b>										
115 ... 240	21	1.5	3	3	-	-	S0	3RW30 26-1AA12	313.00	0.439
	32	2	5	5	-	-	S2	3RW30 35-1AA12	501.00	0.729
	64	5	10	10	-	-	S3	3RW30 45-1AA12	864.00	1.390

1) Units have removable terminals.

2) 3RW30 46-1AB05 soft starters (AC/DC 24 V version):  
Delivery time on request.

Selection of the soft starter depends on the motor's rated current.

The SIRIUS 3RW3 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger unit. Siemens recommends the use of the selection and simulation program Win-Soft starter. See Technical specifications for information about rated currents for ambient temperatures >50 °C.

# SIRIUS Soft Starters

## Standard Applications—SIRIUS 3RW40 Soft Starters

Selection

### Overview

#### SIRIUS 3RW40

SIRIUS 3RW40 soft starters have all the same advantages as the 3RW30/31 soft starters including soft start and soft stop,<sup>1)</sup> and internal bypass. At the same time they come with additional functions, i.e. selectable solid-state motor overload, intrinsic device protection and adjustable current limiting, as well as a new patented two-phase control method (Polarity Balancing) that is unique in this rating range.

SIRIUS 3RW40 soft starters are part of the SIRIUS modular system. This results in advantages such as identical sizes and a uniform connection system. Thanks to their particularly compact design, SIRIUS 3RW40 soft starters are only half as big as comparable wye-delta starters. Hence they can be mounted in compact space requirements in the control cabinet. Configuring and installation are carried out quickly and easily thanks to the 3-wire connection.

#### SIRIUS 3RW40 for three-phase motors

Soft starters rated up to 300 Hp (at 460 V) for standard applications in three-phase power systems. Extremely small sizes, low power losses and simple commissioning are just three of the many advantages of the SIRIUS 3RW40 soft starters.

### Area of application

The SIRIUS 3RW40 solid-state soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Using the patented two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time and typical direct current components are eliminated. This not only enables the two-phase starting of motors up to 300 Hp (at 460 V) but also avoids the current and torque peaks which occur i.e. with wye-delta starters or other mechanical starters.

#### Application areas

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Ventilators
- Assembly lines
- Compressors and coolers
- Operating mechanisms

#### Applicable standards

- IEC 60947-2
- UL/CSA #E143112



3RW40 56-6BB44



3RW40 76-6BB44

Ambient temperature 50 °C <sup>3)</sup>					Size	Order No.	List Price \$	Approx. weight per PU
Rated operating current $I_e$	Rated output of three-phase induction motors for rated operating voltage $U_e$							
A	200 V hp	230 V hp	460 V hp	575 V hp				
<b>Inline circuit, rated operating voltage 200 ... 460 V</b>								
117	30	40	75	–	S6	3RW40 55-□BB□4	2237.00	5.700
145	40	50	100	–		3RW40 56-□BB□4	2460.00	5.700
205	60	75	150	–	S12	3RW40 73-□BB□4	2879.00	7.000
248	75	100	200	–		3RW40 74-□BB□4	3243.00	7.000
315	100	125	250	–		3RW40 75-□BB□4	3578.00	7.000
385	125	1250	300	–		3RW40 76-□BB□4	4585.00	7.000
<b>Inline circuit, rated operating voltage 400 ... 600 V</b>								
117	–	–	75	100	S6	3RW40 55-□BB□5	2573.00	5.700
145	–	–	100	150		3RW40 56-□BB□5	2829.00	5.700
205	–	–	150	200	S12	3RW40 73-□BB□5	3321.00	7.000
248	–	–	200	250		3RW40 74-□BB□5	3735.00	7.000
315	–	–	250	300		3RW40 75-□BB□5	4115.00	7.000
385	–	–	300	400		3RW40 76-□BB□5	5278.00	7.000

#### Order No. extension for connection method

- with spring-loaded terminals
- with screw-type terminals

#### Order No. extension for the rated control supply voltage $U_s$ <sup>2)</sup>

- 115 V AC
- 230 V AC

1) Soft stop not available on 3RW31.

2) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

3) For other temperature ratings, see the Industrial Controls catalog CPPC-06000-0806.

Selection of the soft starter depends on the motor's rated current.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions.  $J_{Load} < 10 \times J_{Motor}$ . In the event of deviating conditions or increased duty cycle, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-SOFTSTARTER.

2  
6  
3  
4

# SIRIUS Soft Starters

## High Feature Applications—SIRIUS 3RW44 Soft Starters

Selection

### Overview

#### SIRIUS 3RW44

In addition to soft starting and soft stopping, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. They cover a rating range up to 900Hp at 460 V in the inline circuit<sup>1)</sup>.

The SIRIUS 3RW44 soft starters are characterized by a compact design for space-saving and clearly arranged control cabinet layouts. For optimized motor starting and stopping, the innovative SIRIUS 3RW44 soft starters are an attractive alternative with considerable savings potential compared to applications with a frequency converter. The new torque control and adjustable current limiting enable these high feature soft starters to be used in nearly every conceivable task. They reliably mitigate the sudden torque applications and current peaks during motor starting and stopping. This creates savings potential when calculating the size of the controlgear and when servicing the machinery installed. Be it for inline circuits or inside-delta circuits – the SIRIUS 3RW44 soft starter offers savings especially in terms of size and equipment costs.

Combinations of various starting, operating and ramp-down possibilities ensure an optimum adaptation to the application-specific requirements. Operating and commissioning can be performed by means of the user-friendly keypad and a menu-

prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected by means of just a few settings with a previously selected language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation.

#### Applicable standards

- IEC 60947-4-2
- UL/CSA #E143112

#### Area of application

The SIRIUS 3RW44 solid-state soft starters are suitable for the torque-controlled soft starting and smooth ramp-down as well as braking of three-phase asynchronous motors.

#### Application areas, e.g.

- Pumps
- Ventilators
- Compressors
- Water transport
- Conveying systems and lifts
- Hydraulics
- Mills
- Saws
- Crushers
- Mixers
- Centrifuges
- Industrial cooling and refrigerating systems

1) Current range available up to 600Hp at 460 V.

### Selection and ordering data



3RW44 27-1BC44



3RW44 36-6BC44



3RW44 47-6BC44



Ambient temperature 50 °C <sup>1)</sup>					Order No.	List Price \$	Approx. weight per PU kg
Rated operating current $I_e$	Rated output of three-phase induction motors for rated operating voltage $U_e$						
A	200 V hp	230 V hp	460 V hp	575 V hp			
<b>Inline circuit, rated operating voltage 200 ... 460 V</b>							
26	7.5	7.5	15	–	3RW44 22-@BC@4	2337.00	4.900
32	10	10	20	–	3RW44 23-@BC@4	2472.00	4.900
42	10	15	25	–	3RW44 24-@BC@4	2494.00	4.900
51	15	15	30	–	3RW44 25-@BC@4	2963.00	4.900
68	20	20	50	–	3RW44 26-@BC@4	3109.00	4.900
82	25	25	60	–	3RW44 27-@BC@4	3735.00	4.900
<b>Order No. extension for connection method</b>					3 1		
• with spring-loaded terminals							
• with screw-type terminals							
100	30	30	75	–	3RW44 34-@BC@4	4406.00	7.900
117	30	40	75	–	3RW44 35-@BC@4	4652.00	7.900
145	40	50	100	–	3RW44 36-@BC@4	6039.00	7.900
180	50	60	125	–	3RW44 43-@BC@4	6565.00	10.300
215	60	75	150	–	3RW44 44-@BC@4	6922.00	10.300
280	75	100	200	–	3RW44 45-@BC@4	7503.00	10.300
315	100	125	250	–	3RW44 46-@BC@4	8342.00	10.300
385	125	150	300	–	3RW44 47-@BC@4	9282.00	10.300
494	150	200	400	–	3RW44 53-@BC@4	10959.00	50.000
551	150	200	450	–	3RW44 54-@BC@4	12580.00	50.000
615	200	250	500	–	3RW44 55-@BC@4	13979.00	50.000
693	200	250	550	–	3RW44 56-@BC@4	15656.00	50.000
780	250	300	600	–	3RW44 57-@BC@4	19570.00	50.000
<b>Order No. extension for connection method</b>					2 6		
• with spring-loaded terminals							
• with screw-type terminals							
<b>Order No. extension for the rated control supply voltage <math>U_s</math></b>					3 4		
• 115 V AC							
• 230 V AC							

1) For other temperature ratings, see technical information in 2006 Industrial Catalog CPPC-06000-0106.

# SIRIUS Soft Starters

## High Feature Applications—SIRIUS 3RW44 Soft Starters

Selection

### Selection and ordering data



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

Ambient temperature 50 °C <sup>2)</sup>					Order No.	List Price \$	Approx. weight per PU
Rated operating current $I_e$	Rated output of three-phase induction motors for rated operating voltage $U_e$						
A	200 V	230 V	460 V	575 V			
	hp	hp	hp	hp			kg
<b>Inline circuit, rated operating voltage 400 ... 600 V</b>							
26	–	–	15	20	3RW44 22-□BC□5	2695.00	4.900
32	–	–	20	25	3RW44 23-□BC□5	2852.00	4.900
42	–	–	25	30	3RW44 24-□BC□5	2874.00	4.900
51	–	–	30	40	3RW44 25-□BC□5	3410.00	4.900
68	–	–	50	50	3RW44 26-□BC□5	3578.00	4.900
82	–	–	60	75	3RW44 27-□BC□5	4305.00	4.900

### Order No. extension for connection method

- with spring-loaded terminals
- with screw-type terminals

100	–	–	75	75	3RW44 34-□BC□5	5077.00	7.900
117	–	–	75	100	3RW44 35-□BC□5	5356.00	7.900
145	–	–	100	125	3RW44 36-□BC□5	6945.00	7.900
180	–	–	125	150	3RW44 43-□BC□5	7559.00	10.300
215	–	–	150	200	3RW44 44-□BC□5	7962.00	10.300
280	–	–	200	250	3RW44 45-□BC□5	8633.00	10.300
315	–	–	250	300	3RW44 46-□BC□5	9595.00	10.300
385	–	–	300	400	3RW44 47-□BC□5	10680.00	10.300
494	–	–	400	500	3RW44 53-□BC□4	12603.00	50,000
551	–	–	450	550	3RW44 54-□BC□4	14470.00	50,000
615	–	–	500	600	3RW44 55-□BC□4	16081.00	50,000
693	–	–	550	700	3RW44 56-□BC□4	18004.00	50,000
780	–	–	600	800	3RW44 57-□BC□4	22510.00	50,000

### Order No. extension for connection method

- with spring-loaded terminals
- with screw-type terminals

### Order No. extension for the rated control supply voltage $U_s$ <sup>1)</sup>

- 115 V AC
- 230 V AC

1) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

2) For other temperature ratings, see technical information in the Industrial Controls Catalog CPPC-06000-0803.

Soft starter selection depends on the motor's rated current.

The 3RW44 solid-state soft starters are designed for normal starting (class 10). (Inertia load of the overall operating mechanism  $J_{Load} < 10 \times J_{Motor}$ ; starting current 350 %  $\times I_e$  for 20 s or similar load.) For any other conditions of use, the devices should be selected using the selection and simulation program Win-SOFTSTARTER. See technical specifications for information about rated currents for ambient temperatures > 40 °C and operating frequency.



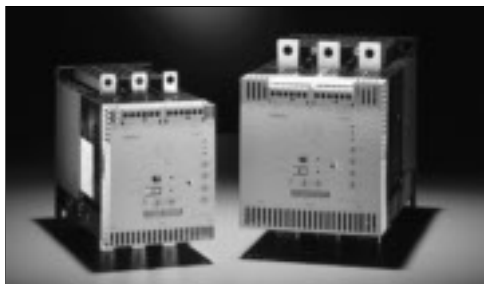




# Control Products

## Enclosed 3RW40

## Selection



### 3RW40 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550%
- Internal overload class 10, 15, or 20
- Internal self protection
- Fault monitoring

### Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW40 is designed for normal starting applications (Class 10 applications).
- For factory modifications see page 16-177.
- For complete derating and application info see the 2006 Industrial Controls catalog CPPC-06000-0106.
- For dimensional drawings see page 16-178.

### Class 74 combination starters include:

- NEMA rated enclosure
- Fusible disconnect
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control circuit transformer

Ideal applications for 3RW40 enclosed softstarters:

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Ventilators
- Assembly lines
- Compressors and chillers

The 3RW40 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

## 3RW40 for Standard Applications

### Enclosed Fusible Combination (Starter with Fusible Disconnect)

Rated Operating Current	MAX HP <sup>①</sup>				KW 380V	Class 10 Light Duty (350% * I <sub>e</sub> for 10s) <sup>②</sup>										
	200V	230V	460V	575V		OPEN Style (Starter Only)		List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
117	30	40	75	—	56	3RW4055-6BB34	74AS3_BFAF	5700.00	74AS3_DFAF	5700.00	74AS3_0FAF	5700.00	74AS3_EFAF	6000.00	74AS3_WFAF	8900.00
145	40	50	100	—	75	3RW4056-6BB34	74BS3_BFAF	7200.00	74BS3_DFAF	7200.00	74BS3_0FAF	7200.00	74BS3_EFAF	7600.00	74BS3_WFAF	10400.00
205	60	75	150	—	112	3RW4073-6BB34	74CS3_BFAF	8300.00	74CS3_DFAF	8200.00	74CS3_0FAF	8200.00	74CS3_EFAF	8700.00		
248	75	100	200	—	149	3RW4074-6BB34	74DS3_BFAF	8700.00	74DS3_DFAF	8700.00	74DS3_0FAF	8700.00	74DS3_EFAF	9200.00		
315	100	125	250	—	186	3RW4075-6BB34	74ES3_BFAF	10900.00	74ES3_DFAF	10900.00	74ES3_0FAF	10900.00	74ES3_EFAF	11500.00		
385	125	150	300	—	224	3RW4076-6BB34	74FS3_BFAF	12300.00	74FS3_DFAF	12400.00	74FS3_0FAF	12300.00	74FS3_EFAF	13000.00		
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	
117	—	—	75	100	—	3RW4055-6BB35	74AS35BFAF	6100.00	74AS35DFAF	6000.00	74AS350FAF	6100.00	74AS35EFAF	6300.00	74AS35WFAF	9300.00
145	—	—	100	150	—	3RW4056-6BB35	74BS35BFAF	7700.00	74BS35DFAF	7600.00	74BS350FAF	7700.00	74BS35EFAF	8000.00	74BS35WFAF	10900.00
205	—	—	150	200	—	3RW4073-6BB35	74CS35BFAF	8500.00	74CS35DFAF	8800.00	74CS350FAF	8800.00	74CS35EFAF	9300.00		
248	—	—	200	250	—	3RW4074-6BB35	74DS35BFAF	9200.00	74DS35DFAF	9200.00	74DS350FAF	9200.00	74DS35EFAF	9700.00		
315	—	—	250	300	—	3RW4075-6BB35	74ES35BFAF	11600.00	74ES35DFAF	11600.00	74ES350FAF	11600.00	74ES35EFAF	12200.00		
385	—	—	300	400	—	3RW4076-6BB35	74FS35BFAF	12200.00	74FS35DFAF	12200.00	74FS350FAF	12200.00	74FS35EFAF	13900.00		

### Enclosed Fusible Combination (Starter with Fusible Disconnect)

Rated Operating Current	MAX HP <sup>①</sup>				KW 380V	Class 20 Severe Duty (350% * I <sub>e</sub> for 20s) <sup>②</sup>										
	200V	230V	460V	575V		OPEN Style (Starter Only)		List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
112	30	40	75	—	56	3RW4055-6BB34	74AS3_BFAF	5700.00	74AS3_DFAF	5700.00	74AS3_0FAF	5700.00	74AS3_EFAF	6000.00	74AS3_WFAF	8900.00
132	40	50	100	—	75	3RW4056-6BB34	74BS3_BFAF	7200.00	74BS3_DFAF	7200.00	74BS3_0FAF	7200.00	74BS3_EFAF	7600.00	74BS3_WFAF	10400.00
185	60	60	125	—	93	3RW4073-6BB34	74CS3_BFAF	8300.00	74CS3_DFAF	8200.00	74CS3_0FAF	8200.00	74CS3_EFAF	8700.00		
205	60	75	150	—	112	3RW4074-6BB34	74DS3_BFAF	8700.00	74DS3_DFAF	8700.00	74DS3_0FAF	8700.00	74DS3_EFAF	9200.00		
280	75	100	200	—	149	3RW4075-6BB34	74ES3_BFAF	10900.00	74ES3_DFAF	10900.00	74ES3_0FAF	10900.00	74ES3_EFAF	11500.00		
340	100	125	250	—	186	3RW4076-6BB34	74FS3_BFAF	12300.00	74FS3_DFAF	12400.00	74FS3_0FAF	12300.00	74FS3_EFAF	13000.00		
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	
112	—	—	75	75	—	3RW4055-6BB35	74AS35BFAF	6100.00	74AS35DFAF	6000.00	74AS350FAF	6100.00	74AS35EFAF	6300.00	74AS35WFAF	9300.00
132	—	—	100	125	—	3RW4056-6BB35	74BS35BFAF	7700.00	74BS35DFAF	7600.00	74BS350FAF	7700.00	74BS35EFAF	8000.00	74BS35WFAF	10900.00
185	—	—	125	150	—	3RW4073-6BB35	74CS35BFAF	8500.00	74CS35DFAF	8800.00	74CS350FAF	8800.00	74CS35EFAF	9300.00		
205	—	—	150	200	—	3RW4074-6BB35	74DS35BFAF	9200.00	74DS35DFAF	9200.00	74DS350FAF	9200.00	74DS35EFAF	9700.00		
280	—	—	200	250	—	3RW4075-6BB35	74ES35BFAF	11600.00	74ES35DFAF	11600.00	74ES350FAF	11600.00	74ES35EFAF	12200.00		
340	—	—	250	300	—	3RW4076-6BB35	74FS35BFAF	12200.00	74FS35DFAF	12200.00	74FS350FAF	12200.00	74FS35EFAF	13900.00		

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. I<sub>e</sub> = FLA rating of motor.









# Control Products

## Enclosed 3RW44

## Selection



### 3RW44 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Multiple starting/stopping techniques including torque control
- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
- Communication capable via opt. Profibus module
- Programmable inputs and outputs
- External keypad available

### Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW44 is designed for normal starting applications.
- For factory modifications see page 16-177.
- For complete derating and application info see the 2006 Industrial Controls catalog CPPC-06000-0106.
- For dimensional drawings see page 16-178.

Ideal applications for 3RW44 enclosed softstarters:

- Fans
- Pumps
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

### Class 74 non-combination starters include:

- NEMA rated enclosure
- 3RW44 Sirius softstarter with built-in OL and bypass
- Fusible disconnect
- Control circuit transformer
- Reset button

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

## 3RW44 For High Feature Applications

### Enclosed Combination with Fusible Disconnect

Rated Operating Current	MAX HP <sup>①</sup>				KW	Class 10 Light Duty <sup>②</sup>												
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)		List Price \$	NEMA 3R		List Price \$	NEMA 12		List Price \$	NEMA 4		List Price \$
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAF	4600.00	74AT3_DFAF	4500.00	74AT3_OFAF	4500.00	74AT3_EFAF	4800.00	74AT3_WFAF	5500.00		
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAF	4800.00	74BT3_DFAF	4800.00	74BT3_OFAF	4800.00	74BT3_EFAF	5100.00	74BT3_WFAF	5800.00		
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAF	5100.00	74CT3_DFAF	5100.00	74CT3_OFAF	5100.00	74CT3_EFAF	5400.00	74CT3_WFAF	6100.00		
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAF	5500.00	74DT3_DFAF	5400.00	74DT3_OFAF	5400.00	74DT3_EFAF	5700.00	74DT3_WFAF	7000.00		
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAF	5700.00	74ET3_DFAF	5700.00	74ET3_OFAF	5700.00	74ET3_EFAF	6000.00	74ET3_WFAF	7300.00		
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAF	6400.00	74FT3_DFAF	6400.00	74FT3_OFAF	6400.00	74FT3_EFAF	6800.00	74FT3_WFAF	7700.00		
100	30	30	75	—	56	3RW4434-6BC34	74GT3_BFAF	6800.00	74GT3_DFAF	6800.00	74GT3_OFAF	6800.00	74GT3_EFAF	7200.00	74GT3_WFAF	8100.00		
117	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAF	7600.00	74HT3_DFAF	7600.00	74HT3_OFAF	7600.00	74HT3_EFAF	8000.00	74HT3_WFAF	10800.00		
145	40	50	100	—	75	3RW4436-6BC34	74JT3_BFAF	8800.00	74JT3_DFAF	8800.00	74JT3_OFAF	8800.00	74JT3_EFAF	9300.00	74JT3_WFAF	11700.00		
180	60	60	125	—	93	3RW4443-6BC34	74KT3_BFAF	11000.00	74KT3_DFAF	11000.00	74KT3_OFAF	11000.00	74KT3_EFAF	11600.00				
215	60	75	150	—	112	3RW4444-6BC34	74LT3_BFAF	11900.00	74LT3_DFAF	11900.00	74LT3_OFAF	11900.00	74LT3_EFAF	12400.00				
280	75	100	200	—	149	3RW4445-6BC34	74MT3_BFAF	14900.00	74MT3_DFAF	14900.00	74MT3_OFAF	14900.00	74MT3_EFAF	15700.00				
315	100	125	250	—	186	3RW4446-6BC34	74NT3_BFAF	16400.00	74NT3_DFAF	16400.00	74NT3_OFAF	16400.00	74NT3_EFAF	17300.00				
385	125	150	300	—	224	3RW4447-6BC34	74PT3_BFAF	18000.00	74PT3_DFAF	18100.00	74PT3_OFAF	18000.00	74PT3_EFAF	18900.00				
494	150	200	400	—	298	3RW4453-6BC34	73QT_BFAF		73QT_DFAF		73QT_OFAF		73QT_EFAF					
551	150	200	450	—	336	3RW4454-6BC34	73RT_BFAF		73RT_DFAF		73RT_OFAF		73RT_EFAF					
615	200	250	500	—	373	3RW4455-6BC34	73ST_BFAF		73ST_DFAF		73ST_OFAF		73ST_EFAF					
693	200	250	550	—		3RW4456-6BC34	73TT_BFAF		73TT_DFAF		73TT_OFAF		73TT_EFAF					
780	200	250	600	—	447	3RW4457-6BC34	73WT_BFAF		73WT_DFAF		73WT_OFAF		73WT_EFAF					
						200V	6		6		6		6		6			
						230V	2		2		2		2		2			
						380V	3		3		3		3		3			
						460V	4		4		4		4		4			
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAF	4800.00	74AT35DFAF	4800.00	74AT35OFAF	4800.00	74AT35EFAF	5100.00	74AT35WFAF	5800.00		
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAF	5100.00	74BT35DFAF	5100.00	74BT35OFAF	5100.00	74BT35EFAF	5400.00	74BT35WFAF	6100.00		
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAF	5500.00	74CT35DFAF	5500.00	74CT35OFAF	5500.00	74CT35EFAF	5800.00	74CT35WFAF	6500.00		
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAF	5800.00	74DT35DFAF	5800.00	74DT35OFAF	5800.00	74DT35EFAF	6100.00	74DT35WFAF	7400.00		
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAF	6200.00	74ET35DFAF	6100.00	74ET35OFAF	6100.00	74ET35EFAF	6500.00	74ET35WFAF	7700.00		
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAF	6900.00	74FT35DFAF	6900.00	74FT35OFAF	6900.00	74FT35EFAF	7300.00	74FT35WFAF	8200.00		
100	—	—	75	75	—	3RW4434-6BC35	74GT35BFAF	7400.00	74GT35DFAF	7400.00	74GT35OFAF	7400.00	74GT35EFAF	7800.00	74GT35WFAF	8700.00		
117	—	—	75	100	—	3RW4435-6BC35	74HT35BFAF	8200.00	74HT35DFAF	8200.00	74HT35OFAF	8200.00	74HT35EFAF	8800.00	74HT35WFAF	11500.00		
145	—	—	100	125	—	3RW4436-6BC35	74JT35BFAF	9600.00	74JT35DFAF	9600.00	74JT35OFAF	9600.00	74JT35EFAF	10100.00	74JT35WFAF	12500.00		
180	—	—	125	150	—	3RW4443-6BC35	74KT35BFAF	11900.00	74KT35DFAF	11900.00	74KT35OFAF	11900.00	74KT35EFAF	12500.00				
215	—	—	150	200	—	3RW4444-6BC35	74LT35BFAF	12900.00	74LT35DFAF	12900.00	74LT35OFAF	12900.00	74LT35EFAF	13600.00				
280	—	—	200	250	—	3RW4445-6BC35	74MT35BFAF	16100.00	74MT35DFAF	16100.00	74MT35OFAF	16100.00	74MT35EFAF	17000.00				
315	—	—	250	300	—	3RW4446-6BC35	74NT35BFAF	17800.00	74NT35DFAF	17900.00	74NT35OFAF	17800.00	74NT35EFAF	18700.00				
385	—	—	300	400	—	3RW4447-6BC35	74PT35BFAF	19700.00	74PT35DFAF	19800.00	74PT35OFAF	19700.00	74PT35EFAF	20700.00				
494	—	—	400	500	—	3RW4453-6BC35	73QT35BFAF		73QT35DFAF		73QT35OFAF		73QT35EFAF					
551	—	—	450	600	—	3RW4454-6BC35	73RT35BFAF		73RT35DFAF		73RT35OFAF		73RT35EFAF					
615	—	—	500	700	—	3RW4455-6BC35	73ST35BFAF		73ST35DFAF		73ST35OFAF		73ST35EFAF					
693	—	—	550	750	—	3RW4456-6BC35	73TT35BFAF		73TT35DFAF		73TT35OFAF		73TT35EFAF					
780	—	—	600	850	—	3RW4457-6BC35	73WT35BFAF		73WT35DFAF		73WT35OFAF		73WT35EFAF					

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Ie = FLA rating of motor.



# Control Products

## Factory Modifications

Selection

Modification	3RW Version	Enclosed Style	Enclosure NEMA Type	Mod Suffix	List Price Adder \$
<b>Available modifications in STANDARD enclosure</b>					
<b>Pilot Devices</b>					
<b>Push Buttons</b>					
Start/Stop	3RW40/44	73/74	ALL	A1	260.
<b>Selector Switches</b>					
Hand-Off-Auto	3RW40/44	73/74	ALL	A3	260.
Hand-Off-Auto (keyed)	3RW40/44	73/74	ALL	S3	390.
Off-On	3RW40/44	73/74	ALL	A4	260.
<b>Pilot Light</b>					
Red 'On'	3RW40/44	73/74	ALL	FA	250.
Green 'On'	3RW40/44	73/74	ALL	FB	250.
Red 'Run'	3RW40/44	73/74	ALL	FC	250.
Green 'Run'	3RW40/44	73/74	ALL	FD	250.
Red 'Off'	3RW40/44	73/74	ALL	FJ	250.
Green 'Off'	3RW40/44	73/74	ALL	FK	250.
Amber 'Fault'	3RW40/44	73/74	ALL	FL	250.
White 'Control Power On'	3RW40/44	73/74	ALL	FW	250.
Red 'On' Push-to-Test	3RW40/44	73/74	ALL	FS	360.
Green 'On' Push-to-Test	3RW40/44	73/74	ALL	FT	360.
Green 'Off' Push-to-Test	3RW40/44	73/74	ALL	FU	360.
Custom pilot light (state color and nameplate text)	3RW40/44	73/74	ALL	FZ	300.
<b>Through the Door Metering</b>					
External keypad for 3RW44	3RW44	73/74	N1, N12	K1	1100.
Elapse time meter	3RW40/44		N1, N12 (120V)	M5	300.
<b>Control Options</b>					
Profibus Communication Module (installed-connection cable not supplied)	3RW44	73/74	ALL	P1	1000.
Ground Lug - 1 Conductor	3RW40/44	73/74	ALL	L10	100.
Alarm Package - Includes horn, light, relay & push button	3RW40/44	73/74	N1, N3, N12	M7	500.
Electronic 8 function timing relay (.05s - 100h) supplied mounted and unwired	3RW40/44	73/74	ALL	TR	400.
Control Relay supplied mounted and unwired (4-pole max)	3RW40/44	73/74	ALL	R04	300.
				R22	300.
				R40	300.
Circuit Breaker Shunt Trip (included std in 3RW40 versions)	3RW44	74	ALL	L6	500.
Service Entrance Labeled	3RW40/44	74	ALL	N3	100.
Function identification plate, with marking as specified	3RW40/44	73/74	ALL	N1	100.
Terminal Block 3 point	3RW40/44	73/74	ALL	TC3	150.
Terminal Block 6 point	3RW40/44	73/74	ALL	TC6	150.
Terminal Block 9 point	3RW40/44	73/74	ALL	TC9	150.
Terminal Block 12 point	3RW40/44	73/74	ALL	TC12	150.

### Options Requiring the Modified Options Box Size

Modification	3RW Version	Enclosed Style	Enclosed NEMA Type	Mod Suffix	List Price Adder \$							
MODIFIED BOX ADDER (change 8th character to a 'G')	3RW40				117 - 285	315	385					
					A - D	E	F					
								0				
								800.	800.	500.		
		73	N1/12/3R/4		2600.	2600.	500.					
		74	N1/12/3R/4		800.	0	0					
			N4SS		2600.Ⓢ	—	—					
	3RW44				26 - 51	68	82 - 117	145 - 215	280 - 385			
					A - D	E	F - H	J - L	M - P			
										0		
										0		
										0		
										0		
										0		
										3000.	2600.	2500.
<b>Mod Box Options</b>												
	3RW40 current size (3rd character)						117	145 - 205	248	315 - 385		
	3RW44 current size (3rd character)				26 - 42	51 - 68	82 - 117	145 - 215	280	315 - 385		
					A, B, C	D, E	F, G, H	J, K, L	M	N, P		
<b>Contactor Options</b>												
Isolation contactor	3RW40/44	73/74	N1/12/3R/4	IC	700.	1200.	1700.	1800.	2600.	4300.		
Emergency HP Rated Bypass Starter	3RW40Ⓢ	73/74	N1/12/3R/4	A12			3500.	5000.	6600.	10000.		
*Includes keyed selector switch to select between soft start and across the line start	3RW44	73/74	N1/12/3R/4	A12	1300.	1600.	1900.	3200.	4100.	5800.		
<b>Extra Capacity CPT</b>												
100 VA Extra	3RW40/44	73/74	ALL	CA	600.	600.	600.	600.	600.	600.		
<b>Control Options</b>												
Space Heater (120V separate control)	3RW40/44	73/74	ALL	SH	300.							
Space Heater with Thermostat (120V separate control)	3RW40/44	73/74	ALL	ST	500.							
Lightning Arrestor	3RW40/44	73/74	ALL	L	600.							

Ⓢ Limited to N4SS offering.

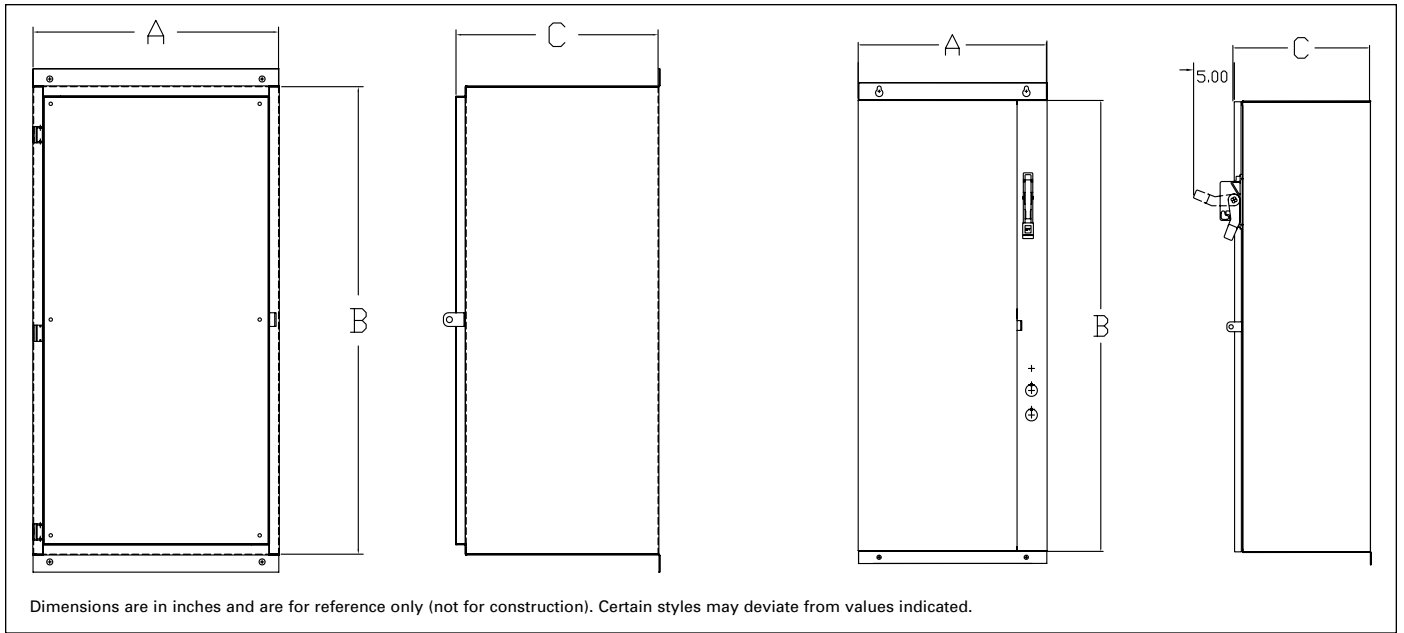
Ⓢ An isolation contactor is included for 3RW40.



# Control Products

## Class 73, 74

## Dimensions



### Non-Combination Class 73

#### N1, N12, N4 Standard Enclosure

	Amps	A	B	C
3RW40	117-145	36	18	15
	205-315	36	22	20
	385	54	36	20
3RW44	26-68	26	12.5	15
	82-117	36	18	15
	145-215	36	22	20
	280-385	54	36	20

#### N4 Stainless Steel Standard Enclosure

	Amps	A	B	C
3RW40	117	36	18	15
	145-205	36	22	20
	248-385	54	36	20
3RW44	26-51	26	12.5	15
	68-82	36	18	15
	100-117	36	22	20
	145-385	54	36	20

#### N1, N12, N4 Modified Enclosure

	Amps	A	B	C
3RW40	117-385	56	36	20
3RW44	26-51	36	22	20
	68-385	54	36	20

#### N4 Stainless Steel Modified Enclosure

	Amps	A	B	C
3RW40	117-385	54	36	20
3RW44	26-51	36	22	20
	68-385	54	36	20

### Combination Type Class 74

#### N1, N12, N4 Standard Enclosure

	Amps	A	B	C
3RW40	117-145	50	25	20
	145-205	66	25	20
	248-315	90	30	20
	385	90	40	20
3RW44	26-68	36	23	15
	82-117	50	25	20
	145-215	66	25	20
	280	90	30	20
	315-384	90	40	20

#### N4 Stainless Steel Standard Enclosure

	Amps	A	B	C
3RW40	117-145	54	36	20
	205-300	90	40	20
3RW44	26-42	36	23	15
	51-100	50	25	20
	117-145	54	36	20
	180-385	90	40	20

#### N1, N12, N4 Modified Enclosure

	Amps	A	B	C
3RW40	117-248	76	30	20
	315	90	30	20
	385	90	40	20
3RW44	26-215	76	30	20
	280	90	30	20
	315-385	90	40	20

#### N4 Stainless Steel Modified Enclosure

	Amps	A	B	C
3RW40	117-145	76	30	20
3RW44	26-145	76	30	20

# Control Products

## Class 73, 74

## Wiring Diagrams

