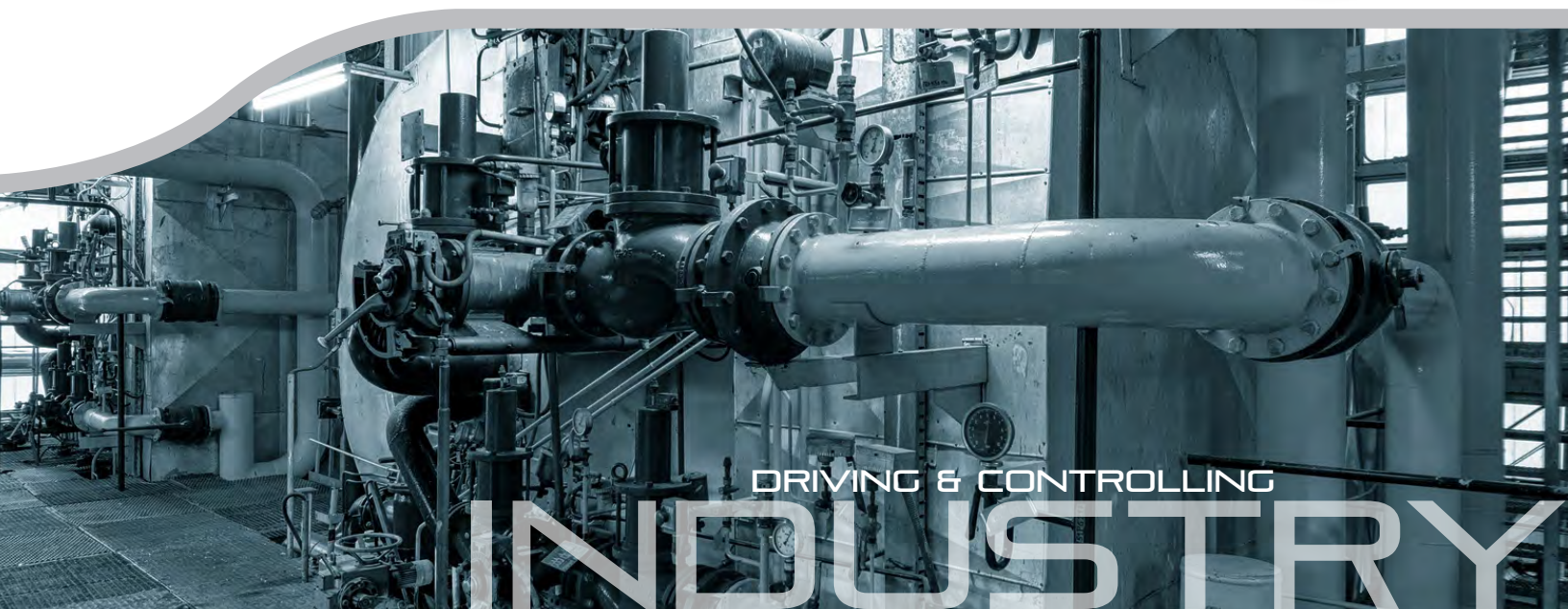




# MOTOR CONTROLS

## STOCK PRODUCTS CATALOG



DRIVING & CONTROLLING

# INDUSTRY

# WORLDWIDE MOTOR CONTROLS

## Variable Frequency Drives - Discount Code: MC1

### HYUNDAI N700E Series High Performance Drives



#### Product Overview

The HYUNDAI N700E Series High Performance Drives offer powerful control solutions with exceptional speed control and torque response which provides superior vector performance.

The N700E's compact size and sensorless vector control technology provides perfectly optimized performance for industrial and commercial applications.

Certificates of international standards (UL/cUL, CE) for the N700E series make it perfect for global applications. Compatible with the most common loads such as: fans, blowers, compressors, pumps, mixers, agitators, feeders, centrifuges, cranes, hoists, presses, extruders, and textile spinning machines.

#### Product Specifications

- Sensorless Vector Control
- 0.01 - 400 Hz
- 150% overload for one minute, CT applications  
120% overload for one minute, VT applications
- 3000 second accel/decel
- DC braking
- Auto-tuning
- Sixteen level multi-speed
- Adjustable carrier frequencies
- PID control
- Frequency jump
- Analog gain bias
- Jog run
- Electronic thermal overload
- Auto-torque boost, trip history monitor and software lock
- Speed search function
- Intelligent input function
- RS485 - Modbus communications

#### 230 Volt, Single-Phase In / 230 Volt, Three-Phase Out

HP	Output Current	Model Number	List Price	Dimensions (Inches) H x W x D	Approx. Wt. (lbs.)	Conduit Connection Box NEMA 1 Enclosure	
						Model Number	List Price
0.5	3	N700E-004SF	-	5.04 x 2.67 x 5.04	2.6	Standard	—
1	5	N700E-007SF	-	5.04 x 2.67 x 5.04	2.6	Standard	—
2	7	N700E-015SF	-	5.04 x 4.25 x 5.6	3.3	Standard	—
3	11	N700E-022SF	-	5.04 x 4.25 x 5.6	3.3	Standard	—

#### 230 Volt, Three-Phase In / 230 Volt, Three-Phase Out

Constant Torque 150% Overload		Variable Torque 120% Overload		Model Number	List Price	Dimensions (Inches) H x W x D	Approx. Wt. (lbs.)	Conduit Connection Box NEMA 1 Enclosure	
HP	Output Current	HP	Output Current					Model Number	List Price
0.5	3	—	—	N700E-004LF	-	5.04 x 2.67 x 5.04	2.6	Standard	—
1	5	—	—	N700E-007LF	-	5.04 x 2.67 x 5.04	2.6	Standard	—
2	7	—	—	N700E-015LF	-	5.04 x 2.67 x 5.04	2.6	Standard	—
3	11	—	—	N700E-022LF	-	5.04 x 4.25 x 5.6	3.3	Standard	—
5	17	—	—	N700E-037LF	-	5.04 x 5.42 x 5.78	4.4	Standard	—
7.5	24	10	30	N700E-055LF	-	10.82 x 8.26 x 6.61	9.3	CBOX5.5-11	-
10	32	15	44	N700E-075LF	-	10.82 x 8.26 x 6.61	9.3	CBOX5.5-11	-
15	45	20	50	N700E-110LF	-	10.82 x 8.26 x 6.61	9.3	CBOX5.5-11	-
20	64	25	73	N700E-150LF	-	15.4 x 9.85 x 7.4	16	CBOX15-22	-
25	76	30	85	N700E-185LF	-	15.4 x 9.85 x 7.4	16	CBOX15-22	-
30	90	40	90	N700E-220LF	-	15.4 x 9.85 x 7.4	22	CBOX15-22	-
40	114	50	140	N700E-300LF	-	21.7 x 10.7 x 10.5	55	CBOX-30LF	-
50	140	60	170	N700E-370LF	-	25.6 x 11.7 x 10.5	78	CBOX37-45LF	-
60	170	75	205	N700E-450LF	-	25.6 x 11.7 x 10.5	78	CBOX37-45LF	-
75	211	100	261	N700E-550LF	-	30.0 x 13.7 x 10.9	105	CBOX-55-75LF	-
100	251	125	310	N700E-750LF	-	30.0 x 13.7 x 10.9	105	CBOX-55-75LF	-

# WORLDWIDE MOTOR CONTROLS

Variable Frequency Drives - Discount Code: MC1

HYUNDAI N700E Series High Performance Drives



VARIABLE  
FREQUENCY DRIVES



## Product Overview

The HYUNDAI N700E Series High Performance Drives offer powerful control solutions with exceptional speed control and torque response which provides superior vector performance.

The N700E's compact size and sensorless vector control technology provides perfectly optimized performance for industrial and commercial applications.

Certificates of international standards (UL/cUL, CE) for the N700E series make it perfect for global applications. Compatible with the most common loads such as: fans, blowers, compressors, pumps, mixers, agitators, feeders, centrifuges, cranes, hoists, presses, extruders, and textile spinning machines.

## Product Specifications

- Sensorless Vector Control
- 0.01 - 400 Hz
- 150% overload for one minute, CT applications  
120% overload for one minute, VT applications
- 3000 second accel/decel
- DC braking
- Auto-tuning
- Sixteen level multi-speed
- Adjustable carrier frequencies
- PID control
- Frequency jump
- Analog gain bias
- Jog run
- Electronic thermal overload
- Auto-torque boost, trip history monitor and software lock
- Speed search function
- Intelligent input function
- RS485 - Modbus communications

### 460 Volt, Three-Phase In / 460 Volt, Three-Phase Out

Constant Torque 150% Overload		Variable Torque 120% Overload		Model Number	Dimensions (Inches) H x W x D	Approx. Wt. (lbs.)	Conduit Connection Box NEMA 1 Enclosure	
HP	Output Current	HP	Output Current				Model Number	List Price
0.5	1.8	—	—	N700E-004HF	5.04 x 4.25 x 5.6	2.6	Standard	—
1	3.4	—	—	N700E-007HF	5.04 x 4.25 x 5.6	2.6	Standard	—
2	4.8	—	—	N700E-015HF	5.04 x 4.25 x 5.6	3.3	Standard	—
3	7.2	—	—	N700E-022HF	5.04 x 4.25 x 5.6	3.3	Standard	—
5	9.2	—	—	N700E-037HF	5.04 x 5.42 x 5.78	4.4	Standard	—
7.5	12	10	15	N700E-055HF	10.82 x 8.26 x 6.61	9.3	CBOX5.5-11	-
10	16	15	22	N700E-075HF	10.82 x 8.26 x 6.61	9.3	CBOX5.5-11	-
15	23	20	29	N700E-110HF	10.82 x 8.26 x 6.61	9.3	CBOX5.5-11	-
20	32	25	37	N700E-150HF	15.4 x 9.85 x 7.4	16	CBOX15-22	-
25	38	30	43	N700E-185HF	15.4 x 9.85 x 7.4	16	CBOX15-22	-
30	45	40	57	N700E-220HF	15.4 x 9.85 x 7.4	17	CBOX15-22	-
40	58	50	70	N700E-300HF	20.86 x 12.28 x 10.63	48	CBOX30-37	-
50	75	60	85	N700E-370HF	20.86 x 12.28 x 10.63	48	CBOX30-37	-
60	90	75	105	N700E-450HF	21.57 x 13.46 x 11.02	60	CBOX45-55	-
75	110	100	135	N700E-550HF	21.57 x 13.46 x 11.02	66	CBOX45-55	-
100	149	125	160	N700E-750HF	27.48 x 15.6 x 11.02	110	CBOX75-90	-
125	176	150	195	N700E-900HF	27.48 x 15.6 x 11.02	110	CBOX75-90	-
150	217	200	230	N700E-1100HF	29.13 x 18.89 x 11.81	132	CBOX110-132	-
200	260	250	285	N700E-1320HF	29.13 x 18.89 x 11.81	132	CBOX110-132	-
250	300	300	370	N700E-1600HF	36.22 x 19.92 x 15.35	242	CBOX160-220	-
300	415	350	450	N700E-2200HF	36.22 x 19.92 x 15.35	242	CBOX160-220	-
400	525	450	600	N700E-2800HF	40.15 x 31.73 x 15.55	375	CBOX280-350	-
500	656	550	680	N700E-3500HF	40.15 x 31.73 x 15.55	375	CBOX280-350	-

**NOTES:**

- All WorldWide Hyundai N700E drives can be used for single-phase input / three-phase output. Call for engineering assistance to size properly.
- Always check the motor full load amps prior to selecting the inverter.



# WORLDWIDE MOTOR CONTROLS

## Variable Frequency Drives - Discount Code: MC1

### HYUNDAI N700E Series High Performance Drives

## Specifications



Specification		Description	
Control Method		Sensorless vector PWM method	
Output Frequency Range		0.01~400 Hz	
Frequency Accuracy		Digital: Max frequency $\pm 0.01\%$ ; Analog: Max frequency $\pm 0.1\%$	
Frequency Resolution		Digital setting: 0.01 Hz (<100 Hz), 0.1Hz (>100 Hz) Analog: Max frequency / 500 (when DC 5V input), Max frequency / 1,000 (DC 0~10V, 4~20mA)	
V/f Characteristic		Base frequency: 0~400 Hz free set Torque pattern selection available (constant torque / reduced torque)	
Overload Capacity		150%, 1 minute (heavy duty), 120%, 1 minute (normal duty)	
Acceleration/Deceleration Time		0.1~3,000 sec (linear / curve selection available) 2 <sup>nd</sup> Acceleration / Deceleration setting available	
DC Braking		Performs between min. frequency and established braking frequency Level and time setting available	
Input	Frequency Setting	Standard Operator	Set by volume up / down key 1 W, 1~2 k $\Omega$ variable resistor
		External Signal	DC 0~10 V (input impedance 10 k $\Omega$ ), 4~20 mA (input impedance 250 $\Omega$ )
	Forward Reverse Start / Stop	Standard Operator	Run key / Stop key (change forward / reverse by function command)
		External Signal	Forward run / stop, reverse run / stop set by terminal assignment (1a, 1b selection available)
Intelligent Input Terminal		FW (Forward), RV (Reverse), CF1~4 (Multi-speed), RS (Reset), AT (Analog input current / voltage Transfer), USP (Unattended Start Protection), EXT (External Trip), FRS (Free Run Stop), JG (Jogging Command), SFT (Software Lock Command), 2CH (2 <sup>nd</sup> Acceleration / Deceleration), SET (2 <sup>nd</sup> Motor Constants Setting)	
Output	Intelligent Output Terminal		RUN (Run Signal), FA1 (Frequency Arrival Signal [at the set frequency]), FA2 (Frequency Arrival Signal [at or above the set frequency]), OL (Overload Advanced Notice Signal), OD (Output Deviation of PID Signal), AL (Alarm Signal)
	Frequency Monitor		Analog meter (DC0~10V full scale, Max 1 mA) Analog output frequency signal and analog output current signal Analog output voltage signal selection available
	Alarm Output Contact		OFF when inverter alarm (b contact output) / Auto switch ON and OFF / Intelligent output terminal use available
Main Functions		Auto-tuning, AVR Function, V/F Setting, Curve Accel. / Decel. Selection, Frequency Upper / Lower Limit, 6 Level Multi-speed, Start Frequency Set, Carrier Frequency Setting (0.5~15 kHz), PID Control, Frequency Jump, Analog Gain Bias Control, Jogging Run, Electronic Thermal Level Control, Retry, Auto Torque Boost, Trip History Monitor, Software Lock, S-shape Accel. / Decel., Frequency Conversion Display, USP, 2 <sup>nd</sup> Control	
Protective Functions		Over-current Protection, Overload (electronic thermal), Over-voltage, Communication Error, Under-voltage, Output Short, USP Error, EEPROM Error, External Trip, Ground Fault, Temperature Trip	
Environmental Conditions	Ambient Temperature		-10~50°C (over 40°C: set carrier frequency below 2.0 kHz)
	Storage Temperature		-20~60°C (while transporting: short time)
	Ambient Humidity		Below 90% RH (non-condensing)
	Vibration		5.9 m/s <sup>2</sup> (0.6 G). 10~55 Hz (JIS C0911 test methodology)
	Location		Less than 1,000 m above sea level, Indoor (no corrosive gas, no flammable gas, no oil-drop, no dust)
Options		Remote operator, Remote operator cable, Regenerative braking resistor	

# WORLDWIDE MOTOR CONTROLS

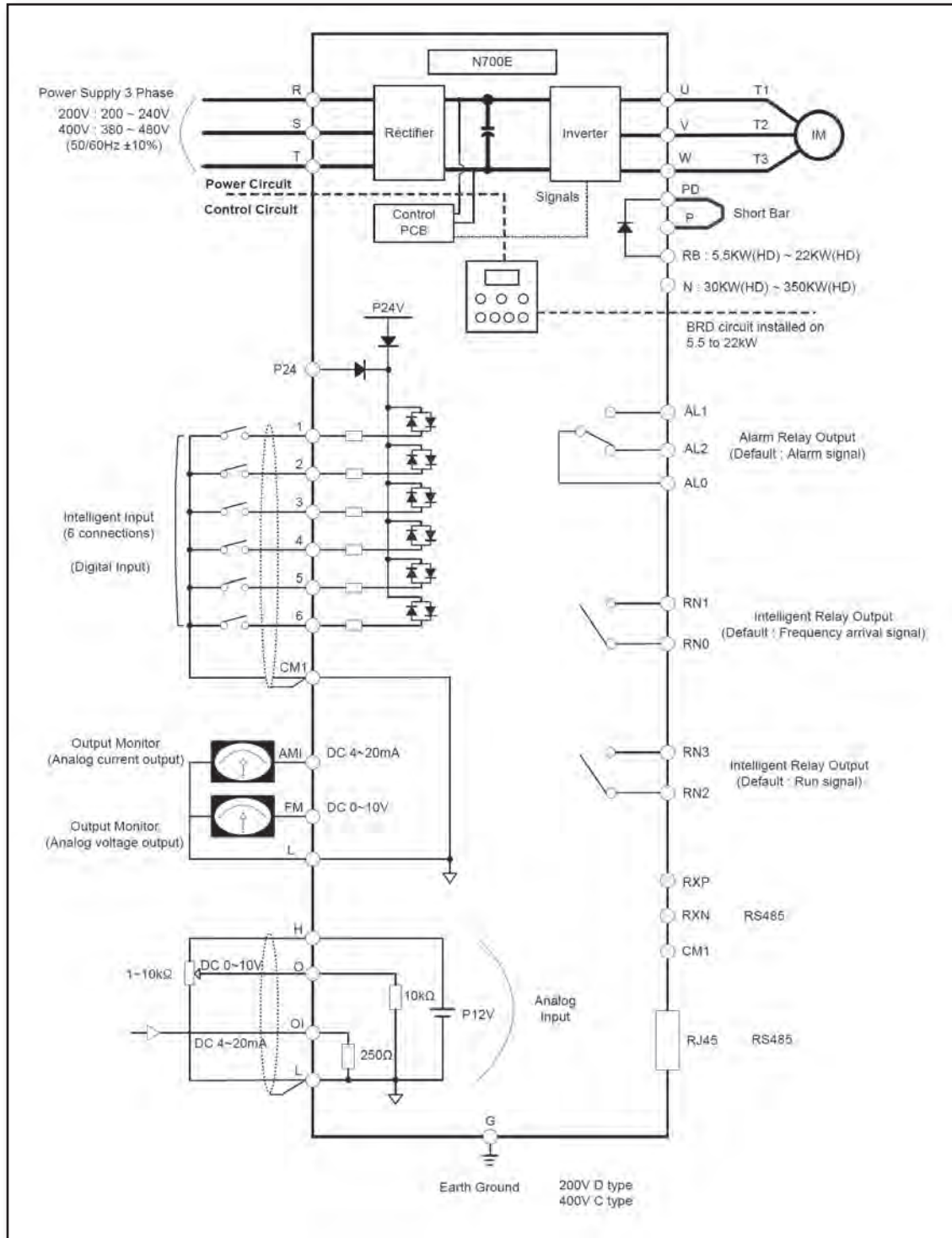
**Variable Frequency Drives** - Discount Code: MC1

**HYUNDAI N700E Series High Performance Drives**

**Terminal Connections Diagram**



VARIABLE FREQUENCY DRIVES



# WORLDWIDE MOTOR CONTROLS

*Variable Frequency Drives* - Discount Code: MC1

*General Purpose Outdoor Rated*

*Configurable - WCD Series - NEMA 3R Enclosure*



Unit Shown With H & I Options

## Product Overview

- 2 - 550 HP (Hyundai N700E VFD)
- Three-phase or single-phase input
- CT and VT ratings
- Heavy duty NEMA 3R Enclosure
- Hooded (sloped roof), ventilated and filtered
- Heavy duty mounting ears and lifting straps
- Bottom-to-top ventilation (heat-shedding design)
- Forced-air filtered fans (positive pressure design)
- Galvanized back panel
- Heater package option available
- Concealed hinges and padlockable door
- Padlock disconnect on main CB
- 3% line reactors
- Control transformer with CB protection
- Dual control thermostat
- Options ... your drive - your way!

Voltage	Fan, Blower, Centrifugal Pump				Model Number
	Variable Torque		Constant Torque		
	HP	Current	HP	Current	
480	3	7.2	3	7.2	WCD3RC-007A4A
480	5	9.2	5	9.2	WCD3RC-009A4A
480	10	15	7.5	12	WCD3RC-015A4A
480	15	22	10	16	WCD3RC-022A4A
480	20	29	15	23	WCD3RC-029A4A
480	25	37	20	32	WCD3RC-037A4A
480	30	43	25	38	WCD3RC-043A4A
480	40	57	30	45	WCD3RC-057A4A
480	50	70	40	58	WCD3RC-070A4A
480	60	85	50	75	WCD3RC-085A4A
480	75	105	60	90	WCD3RC-105A4A
480	100	135	75	110	WCD3RC-135A4A
480	125	160	100	149	WCD3RC-160A4A
480	150	195	125	176	WCD3RC-195A4A
480	200	230	150	217	WCD3RC-230A4A
480	250	285	200	260	WCD3RC-285A4A
480	300	370	250	300	WCD3RC-370A4A
480	350	450	300	415	WCD3RC-450A4A
480	450	600	400	525	WCD3RC-600A4A
480	550	680	500	656	WCD3RC-680A4A

- (1) Also available in three-phase, 230 volt
- (2) All ratings available in single-phase input, three-phase output
- (3) Call for sizing, pricing and model number

# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives** - Discount Code: MC1

*General Purpose Outdoor Rated*

*Configurable - WCD Series - NEMA 3R Enclosure*



VARIABLE  
FREQUENCY DRIVES

Options 480 V Model Number	Option Adder Codes / List Prices (Add codes at end of base model number in alpha order)					
	5% Line Reactor Upgrade B (1)	IEEE Harmonic Filter Upgrade C (1)	2 Contactor Bypass D (1)	3 Contactor Bypass E (1)	Output Reactor F (1)	DV / DT Filter G (1)
WCD3RC-007A4A						
WCD3RC-009A4A						
WCD3RC-015A4A						
WCD3RC-022A4A						
WCD3RC-029A4A						
WCD3RC-037A4A						
WCD3RC-043A4A						
WCD3RC-057A4A						
WCD3RC-070A4A						
WCD3RC-085A4A						
WCD3RC-105A4A						
WCD3RC-135A4A						
WCD3RC-160A4A						
WCD3RC-195A4A						
WCD3RC-230A4A						
WCD3RC-285A4A						
WCD3RC-370A4A						
WCD3RC-450A4A						
WCD3RC-600A4A						
WCD3RC-680A4A						

Option Code	Option Description
H (2)	On-Off-Auto Selector Switch
I (2)	Speed Potentiometer
J (2)	Start/Stop Pushbuttons
K (2)	Hand-Off-Auto Selector Switch
L (2)	Surge Suppression
M (2)	Installed SID1 Text Keypad
M7 (2)	Installed SID7 Operator Interface

Option Code	Option Description
N (2)	Panel Space Heater - 150W
O (2)	Run Pilot Light
P (2)	Fault Pilot Light and Reset button
Q (2)	Drive Ready Pilot Light
R (2)	Lockable, solid control door cover
S (2)	Lockable, window control door cover
T (2)	24 / 7 timer



# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives - Discount Code: MC1**

*NEMA 4 and NEMA 4X Drive Packages*

*WNC Series and WEC Series*



## Non-Combination

- Drive-mounted with grounding lugs
- All ratings 24" x 20" x 10" enclosure
- Hyundai N700 Series drive
- UL508A and NEC Code built
- See options below



## Combination

- 30 amp moulded case circuit breaker disconnect
- Through-the-door disconnect lever and shaft
- Grounding lugs
- UL508A and NEC Code built
- See options below



HP Rating	Phase / Voltage	Enclosure	Model Number	
<b>Non-Combination</b>				
1	3 / 230	NEMA 4 Painted	WNC-1N2	
2	3 / 230	NEMA 4 Painted	WNC-2N2	
3	3 / 230	NEMA 4 Painted	WNC-3N2	
5	3 / 230	NEMA 4 Painted	WNC-5N2	
1	3 / 230	NEMA 4X Stainless	WNC-1S2	
2	3 / 230	NEMA 4X Stainless	WNC-2S2	
3	3 / 230	NEMA 4X Stainless	WNC-3S2	
5	3 / 230	NEMA 4X Stainless	WNC-5S2	
1	3 / 460	NEMA 4 Painted	WNC-1N4	
2	3 / 460	NEMA 4 Painted	WNC-2N4	
3	3 / 460	NEMA 4 Painted	WNC-3N4	
5	3 / 460	NEMA 4 Painted	WNC-5N4	
1	3 / 460	NEMA 4X Stainless	WNC-1S4	
2	3 / 460	NEMA 4X Stainless	WNC-2S4	
3	3 / 460	NEMA 4X Stainless	WNC-3S4	
5	3 / 460	NEMA 4X Stainless	WNC-5S4	
<b>Combination</b>				
1	3 / 230	NEMA 4 Painted	WEC-1N2	
2	3 / 230	NEMA 4 Painted	WEC-2N2	
3	3 / 230	NEMA 4 Painted	WEC-3N2	
5	3 / 230	NEMA 4 Painted	WEC-5N2	
1	3 / 230	NEMA 4X Stainless	WEC-1S2	
2	3 / 230	NEMA 4X Stainless	WEC-2S2	
3	3 / 230	NEMA 4X Stainless	WEC-3S2	
5	3 / 230	NEMA 4X Stainless	WEC-5S2	
1	3 / 460	NEMA 4 Painted	WEC-1N4	
2	3 / 460	NEMA 4 Painted	WEC-2N4	
3	3 / 460	NEMA 4 Painted	WEC-3N4	
5	3 / 460	NEMA 4 Painted	WEC-5N4	
1	3 / 460	NEMA 4X Stainless	WEC-1S4	
2	3 / 460	NEMA 4X Stainless	WEC-2S4	
3	3 / 460	NEMA 4X Stainless	WEC-3S4	
5	3 / 460	NEMA 4X Stainless	WEC-5S4	

Description	Suffix Adder	
<b>Options</b>		
Door Mounted Start / Stop Pushbutton	J	
Door Mounted Speed Pot	I	
3% Line Reactor Installed	A	



# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives - Discount Code: MC1**

*Standard Duty Drive Package*

*WWESDA Series - NEMA 12 Enclosure*



VARIABLE  
FREQUENCY DRIVES



## Product Overview

- 3 - 550 HP (Hyundai N700E VFD)
- Three-phase or single-phase input
- CT and VT ratings
- Standard duty NEMA 12 indoor rated enclosure
- Forced-air filtered fans (positive pressure design)
- Padlock disconnect on main CB
- 3% line reactors
- Control transformer with CB protection
- Dual control thermostat
- SID1 (Smart Interface Device) with extended functions

Voltage	Constant Torque		Variable Torque		Model Number
	HP	Current	HP	Current	
480	3	7.2	3	7.2	WWESDA-DRV12-003-4
480	5	9.2	5	9.2	WWESDA-DRV12-005-4
480	7.5	12	10	15	WWESDA-DRV12-007-4
480	10	16	15	22	WWESDA-DRV12-010-4
480	15	23	20	29	WWESDA-DRV12-015-4
480	20	32	25	37	WWESDA-DRV12-020-4
480	25	38	30	43	WWESDA-DRV12-025-4
480	30	45	40	57	WWESDA-DRV12-030-4
480	40	58	50	70	WWESDA-DRV12-040-4
480	50	75	60	85	WWESDA-DRV12-050-4
480	60	90	75	105	WWESDA-DRV12-060-4
480	75	110	100	135	WWESDA-DRV12-075-4
480	100	149	125	160	WWESDA-DRV12-100-4
480	125	176	150	195	WWESDA-DRV12-125-4
480	150	217	200	230	WWESDA-DRV12-150-4
480	200	260	250	285	WWESDA-DRV12-200-4
480	250	300	300	370	WWESDA-DRV12-250-4
480	300	415	350	450	WWESDA-DRV12-300-4
480	400	525	450	600	WWESDA-DRV12-400-4
480	500	656	550	680	WWESDA-DRV12-500-4

- (1) Also available in three-phase, 230 volt
- (2) All ratings available in single-phase input, three-phase output
- (3) Call for sizing, pricing and model number



# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives** - Discount Code: MC1

*Heavy Duty Outdoor Rated*

*WWEHDA Series - NEMA 3R Enclosure*



## Product Overview

- 3 - 550 HP (Hyundai N700E VFD)
- Three-phase or single-phase input
- CT and VT ratings
- Heavy duty NEMA 3R Enclosure
- Hooded (sloped roof), ventilated and filtered
- Heavy duty mounting ears and lifting straps
- Bottom-to-top ventilation (heat-shedding design)
- Forced-air filtered fans (positive pressure design)
- Galvanized back panel
- Door mounted keypad
- Padlock disconnect on main CB
- 3% line reactors
- Control transformer with CB protection
- Dual control thermostat
- Panel heater
- Full panel surge protection
- Start / Stop / Reset pushbuttons
- Run / Fault pilot lights
- Hand-Off-Auto selector
- Emergency stop
- E-stop output contactor
- Speed control potentiometer

Voltage	Constant Torque		Variable Torque		Model Number
	HP	Current	HP	Current	
480	3	7.2	---	---	WWEHDA-DRV3R-003-4
480	5	9.2	---	---	WWEHDA-DRV3R-005-4
480	7.5	12	10	15	WWEHDA-DRV3R-007-4
480	10	16	15	22	WWEHDA-DRV3R-010-4
480	15	23	20	29	WWEHDA-DRV3R-015-4
480	20	32	25	37	WWEHDA-DRV3R-020-4
480	25	38	30	43	WWEHDA-DRV3R-025-4
480	30	45	40	57	WWEHDA-DRV3R-030-4
480	40	58	50	70	WWEHDA-DRV3R-040-4
480	50	75	60	85	WWEHDA-DRV3R-050-4
480	60	90	75	105	WWEHDA-DRV3R-060-4
480	75	110	100	135	WWEHDA-DRV3R-075-4
480	100	149	125	160	WWEHDA-DRV3R-100-4
480	125	176	150	195	WWEHDA-DRV3R-125-4
480	150	217	200	230	WWEHDA-DRV3R-150-4
480	200	260	250	285	WWEHDA-DRV3R-200-4
480	250	300	300	370	WWEHDA-DRV3R-250-4
480	300	415	350	450	WWEHDA-DRV3R-300-4
480	400	525	450	600	WWEHDA-DRV3R-400-4
480	500	656	550	680	WWEHDA-DRV3R-500-4

- (1) Also available in three-phase, 230 volt
- (2) All ratings available in single-phase input, three-phase output
- (3) Call for sizing, pricing and model number



# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives** - Discount Code: MC1

*Producer Beam Pump Controller - Sensorless Pump Jack Control  
WWEPJC Series - NEMA 3R Enclosure*



VARIABLE  
FREQUENCY DRIVES



## Product Overview

- 3 - 250 HP (Hyundai N700E VFD)
- Heavy duty CT rated
- Heavy duty NEMA 3R Enclosure
- Hooded (sloped roof), ventilated and filtered
- Heavy duty mounting ears and lifting straps
- Bottom-to-top ventilation (heat-shedding design)
- Forced-air filtered fans (positive pressure design)
- Galvanized back panel
- Lockable main door
- Lockable control cover door
- Main circuit breaker with lockable handle
- 3% line reactors
- Control transformer with CB protection
- Dual control thermostat
- Panel heater
- Full panel surge protection
- Door heat strip for keypad
- Full panel surge suppression
- SID1 (Smart Interface Device) with extended functions
- Sensorless pump off control
- Pump off control with sensor feedback
- Down hole sensor
- Level sensor feedback ready
- Load sensor feedback ready
- 24 / 7 time clock
- Configurable I / O

Voltage	Constant Torque		Model Number
	HP	Current	
480	3	7.2	WWEPJC-DRV3R-003-4
480	5	9.2	WWEPJC-DRV3R-005-4
480	7.5	12	WWEPJC-DRV3R-007-4
480	10	16	WWEPJC-DRV3R-010-4
480	15	23	WWEPJC-DRV3R-015-4
480	20	32	WWEPJC-DRV3R-020-4
480	25	38	WWEPJC-DRV3R-025-4
480	30	45	WWEPJC-DRV3R-030-4
480	40	58	WWEPJC-DRV3R-040-4
480	50	75	WWEPJC-DRV3R-050-4
480	60	90	WWEPJC-DRV3R-060-4
480	75	110	WWEPJC-DRV3R-075-4
480	100	149	WWEPJC-DRV3R-100-4
480	125	176	WWEPJC-DRV3R-125-4
480	150	217	WWEPJC-DRV3R-150-4
480	200	260	WWEPJC-DRV3R-200-4
480	250	300	WWEPJC-DRV3R-250-4

- (1) Also available in three-phase, 230 volt
- (2) All ratings available in single-phase input, three-phase output
- (3) Call for sizing, pricing and model number



# WORLDWIDE MOTOR CONTROLS

*Variable Frequency Drives* - Discount Code: MC1

*PumpPro High Feature - Advanced Feature Pump Applications*

*WWEDPIC Series - NEMA 3R Enclosure*



## Product Overview

- 5 - 550 HP (Hyundai N700E VFD)
- Normal duty VT rated
- Heavy duty NEMA 3R Enclosure
- Hooded (sloped roof), ventilated and filtered
- Heavy duty mounting ears and lifting straps
- Bottom-to-top ventilation (heat-shedding design)
- Forced-air filtered fans (positive pressure design)
- Galvanized back panel
- Lockable main door
- Lockable control cover door
- Main circuit breaker with lockable handle
- 3% line reactors
- Control transformer with CB protection
- Dual control thermostat
- Panel heater
- Full panel surge protection
- Door heat strip for keypad
- Full panel surge suppression
- SID1 (Smart Interface Device) with extended functions
- Broken pipe protection
- Jammed impeller
- Under load
- Under / over current
- Pipe fill control
- Pre-charge pump timer
- 24 / 7 time clock
- Configurable I / O

Voltage	Variable Torque		Model Number
	HP	Current	
480	5	9.2	WEDPIC3R-9AN-4
480	10	15	WEDPIC3R-15AN-4
480	15	22	WEDPIC3R-22AN-4
480	20	29	WEDPIC3R-29AN-4
480	25	37	WEDPIC3R-37AN-4
480	30	43	WEDPIC3R-43AN-4
480	40	57	WEDPIC3R-57AN-4
480	50	70	WEDPIC3R-70AN-4
480	60	85	WEDPIC3R-85AN-4
480	75	105	WEDPIC3R-105AN-4
480	100	135	WEDPIC3R-135AN-4
480	125	160	WEDPIC3R-160AN-4
480	150	195	WEDPIC3R-195AN-4
480	200	230	WEDPIC3R-230AN-4
480	250	285	WEDPIC3R-285AN-4
480	300	370	WEDPIC3R-370AN-4
480	350	450	WEDPIC3R-450AN-4
480	450	600	WEDPIC3R-600AN-4
480	550	680	WEDPIC3R-680AN-4

- (1) Also available in three-phase, 230 volt
- (2) All ratings available in single-phase input, three-phase output
- (3) Call for sizing, pricing and model number

# WORLDWIDE MOTOR CONTROLS

*Variable Frequency Drives* - Discount Code: MC1

*Positive Displacement Pump*

*WWEPPB Series - NEMA 3R Enclosure*



VARIABLE  
FREQUENCY DRIVES



## Product Overview

- 3 - 550 HP (Hyundai N700E VFD)
- Three-phase or single-phase input
- CT and VT ratings
- Heavy duty NEMA 3R Enclosure
- Hooded (sloped roof), ventilated and filtered
- Heavy duty mounting ears and lifting straps
- Bottom-to-top ventilation (heat-shedding design)
- Forced-air filtered fans (positive pressure design)
- Galvanized back panel
- Lockable main door and control cover door
- Padlock disconnect on main CB
- 3% line reactors
- Control transformer with CB protection
- Dual control thermostat
- Door heat strip for keypad
- Full panel surge protection
- SID1 (Smart Interface Device) with extended functions
- Start / Stop / Reset pushbuttons
- Run / Fault pilot lights
- Hand-Off-Auto selector
- Emergency stop
- Murphy switch input ready (7)
- NO / NC selectable inputs
- Configurable analog and discrete I/O
- Pre-charge pump timer
- 24 / 7 time clock

Voltage	Constant Torque		Variable Torque		Model Number
	HP	Current	HP	Current	
480	3	7.2	3	7.2	WWEPPB-DRV3R-003-4
480	5	9.2	5	9.2	WWEPPB-DRV3R-005-4
480	7.5	12	10	15	WWEPPB-DRV3R-007-4
480	10	16	15	22	WWEPPB-DRV3R-010-4
480	15	23	20	29	WWEPPB-DRV3R-015-4
480	20	32	25	37	WWEPPB-DRV3R-020-4
480	25	38	30	43	WWEPPB-DRV3R-025-4
480	30	45	40	57	WWEPPB-DRV3R-030-4
480	40	58	50	70	WWEPPB-DRV3R-040-4
480	50	75	60	85	WWEPPB-DRV3R-050-4
480	60	90	75	105	WWEPPB-DRV3R-060-4
480	75	110	100	135	WWEPPB-DRV3R-075-4
480	100	149	125	160	WWEPPB-DRV3R-100-4
480	125	176	150	195	WWEPPB-DRV3R-125-4
480	150	217	200	230	WWEPPB-DRV3R-150-4
480	200	260	250	285	WWEPPB-DRV3R-200-4
480	250	300	300	370	WWEPPB-DRV3R-250-4
480	300	415	350	450	WWEPPB-DRV3R-300-4
480	350	475	400	500	WWEPPB-DRV3R-350-4
480	400	525	450	600	WWEPPB-DRV3R-400-4
480	500	656	550	680	WWEPPB-DRV3R-500-4

- (1) Also available in three-phase, 230 volt
- (2) All ratings available in single-phase input, three-phase output
- (3) Call for sizing, pricing and model number

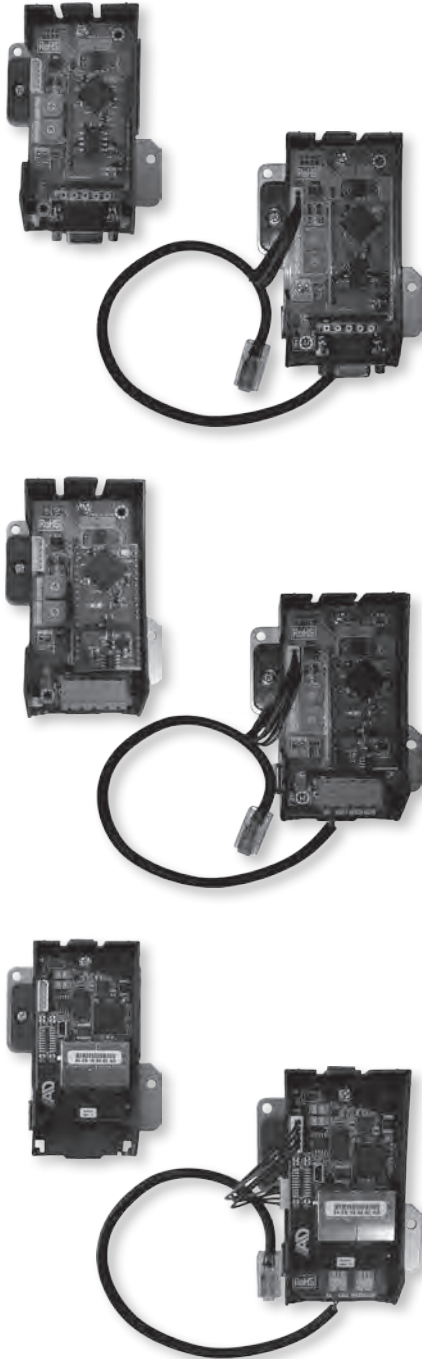


# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives** - Discount Code: MC1

WorldWide / HYUNDAI Communications Cards

For Use With HYUNDAI N700E Series High Performance Drives



Description	Model Number	
<p><b>Profibus DP Card For N700E Product</b> Use for N700E version product with "-C" at end of the part number. Serial Number beginning with AFF or higher. Also use for N700E-300 LF - N700E-750 LF, 230V drives.</p>	N700E-PRO-C	
<p><b>Profibus DP Card For N700E Product</b> Use for N700E version product without "-C" at end of the part number, ending in LF or HF. Exception: For N700E-300 LF - N700E-750 LF, 230V drives, use N700E-PRO-C</p>	N700E-PRO-ADAPT (1)	
<p><b>Devicenet Card For N700E Product</b> Use for N700E version product with "-C" at end of the part number. Serial Number beginning with AFF or higher. Also use for N700E-300 LF - N700E-750 LF, 230V drives.</p>	N700E-DNS-C	
<p><b>Devicenet Card For N700E Product</b> Use for N700E version product without "-C" at end of the part number, ending in LF or HF. Exception: For N700E-300 LF - N700E-750 LF, 230V drives, use N700E-DNS-C</p>	N700E-DNS-ADAPT (1)	
<p><b>Ethernet Card For N700E Product</b> Use for N700E version product with "-C" at end of the part number. Serial Number beginning with AFF or higher. Also use for N700E-300 LF - N700E-750 LF, 230V drives.</p>	N700E-ETH-C	
<p><b>Ethernet Card For N700E Product</b> Use for N700E version product without "-C" at end of the part number, ending in LF or HF. Exception: For N700E-300 LF - N700E-750 LF, 230V drives, use N700E-ETH-C</p>	N700E-ETH-ADAPT (1)	

# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives** - Discount Code: MC1  
**Accessories** - Multifunctional Keypads - SID1 and SID7



## Product Overview

SID1 and SID7 multifunctional keypads are ready to RUN. You can access any parameters on any drive. Multifunctional keypads allow for simple start up. Settings are easily set up on just one screen. Real time data is available in the easily understood terminology.

SID1 provides simple design and clean information. A rugged keypad provides access to all of the information you need. The information is displayed on a crystal clear monochrome backlit LCD screen.

SID7 displays controls and information on a 7" TFT color touchscreen. Pump status, POC conditions, and trip/alarm items are always visible on the SID7, regardless of the screen the operator is viewing.

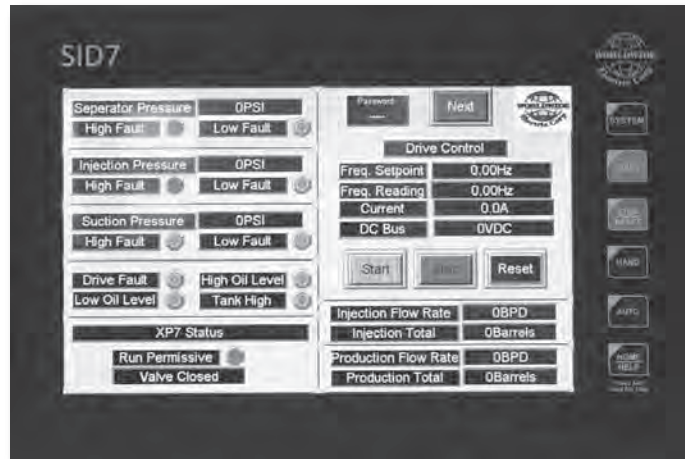
## Product Specifications

- Data Logging Screen:
  - Number of strokes
  - Number of faults
  - Number of pump-offs
- Drive Monitoring Screens:
  - Torque (%)
  - Motor voltage
  - Motor current
  - DC bus voltage
  - PJ parameters
- Drive Alarm History Time of Event:
  - Reference
  - Current
  - DC bus voltage
  - Motor voltage
  - Frequency

## SID1 - Model Number: HE-XE102-86



## SID7 - Model Number: HE-XW1E2-86



# WORLDWIDE MOTOR CONTROLS

*Variable Frequency Drives* - Discount Code: MC1  
*Accessories - Enclosures*



## Non-Flanged Style NEMA 3R Enclosure

- NEMA 3R
- White powder coat finish
- Pre-installed 115V fans
- Filtered ventilation
- Concealed hinges
- 180° door opening
- Quarter turn latches

## Flanged Style NEMA 3R Enclosure

- NEMA 3R
- White powder coat finish
- Accepts all major disconnects
- Pre-installed 115V fans / filters
- Full panel ventilation
- 180° door opening
- Quarter turn latches

HP	Size H x W x D	Model Number		Sub-Panel Model Number
<b>Non-Flanged NEMA 3R Enclosure</b>				
5 7.5 10 15	R1 - 27 x 24 x 10	WENB-272410-3R1		WENPG-22X21-3R1
20 25 30	R2 - 35 x 24 x 12	WENB-352412-3R2		WENPG-30X21-3R2
40 50 60 75	R3 - 47 x 30 x 14	WENB-453014-3R3		WENPG-40X27-3R3
100 125	R4 - 53 x 36 x 16	WENB-513616-3R4		WENPG-46X33-3R4
150 200	R5 - 60 x 36 x 16	WENB-583616-3R5		WENPG-53X33-3R5
<b>Flanged NEMA 3R Enclosure</b>				
250 300	R6 - 65 x 37 x 18	WENB-633718-3R6F		WENPG-58X33-3R6
400 500	R8 - 84 x 65 x 24	WENB-846524-3R8F		WENPG-72X59-3R8

Description	Model Number
Lifting Lugs (2 Per Panel)	WEN-LP (1)
Top Foot Mounting Kit	WEN-MFT (1)
Bottom Foot Mounting Kit	WEN-MFB (1)



# WORLDWIDE MOTOR CONTROLS

**Variable Frequency Drives** - Discount Code: MC1

*Accessories - Doors / Filler Plates / Mounting Feet / Mounting Stands*



VARIABLE  
FREQUENCY DRIVES

Description	Model Number	
<b>Filler Plates - NEMA 3R (To Be Used Without Door For NEMA 3R Finish)</b>		
No Operator	WEN-FPS-M0H0	
22mm Pilot (2)	WEN-FPS-M0H2	
<b>Doors - NEMA 3R</b>		
12" Tall, 12" Wide, Solid	WEN-CD-12x12	
12" Tall, 15" Wide, Window (6.7" Tall, 7" Wide)	WEN-CDW-12x15	
<b>Filler Plates - NEMA 1 (To Be Used With Door For NEMA 3R Finish)</b>		
No Operator	WEN-FP-M0H0	
22mm Pilot (2)	WEN-FP-M0H2	
1/4 DIN Only (For SID1 Screen)	WEN-FP-M1H0	
1/4 DIN, 22mm Pilot (1) (For SID1 Screen)	WEN-FP-M1H1	
1/4 DIN, 22mm Pilot (2) (For SID1 Screen)	WEN-FP-M1H2	
1/4 DIN, 22mm Pilot (4) (For SID1 Screen)	WEN-FP-M1H4	
1/4 DIN, 22mm Pilot (6) (For SID1 Screen)	WEN-FP-M1H6	
1/2 DIN Only (For SID7 Screen)	WEN-FP-M7H0	
1/2 DIN, 22mm Pilot (1) (For SID7 Screen)	WEN-FP-M7H1	
<b>Enclosure Mounting Feet</b>		
12" Tall, 12" Deep, Frame Size 3R1/3R2	WEN-FKW-1212	
24" Tall, 12" Deep, Frame Size 3R1/3R2	WEN-FKW-2412	
24" Tall, 14" Deep, Frame Size 3R3	WEN-FKW-2414	
12" Tall, 16" Deep, Frame Size 3R4/3R5	WEN-FKW-1216	
18" Tall, 16" Deep, Frame Size 3R4/3R5	WEN-FKW-1816	
12" Tall, 18" Deep, Frame Size 3R6	WEN-FKW-1218	
<b>Heavy Duty Mounting Stands</b>		
Frame Size 3R1 - 3R3	WWEDEVSTND-3R1-3R3	
Frame Size 3R4 - 3R6	WWEDRVSTND-3R4-3R6	

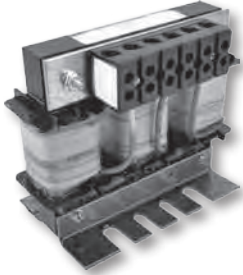


# WORLDWIDE MOTOR CONTROLS

## Variable Frequency Drives - Discount Code: MC1

### Accessories

Line Reactors / Control Transformers / Surge Suppressors / Keypads / Cables



### Line Reactors

Prevents nuisance tripping and limits expensive down-time.  
Reduces harmonic current, increases the life of the drive and protects sensitive equipment.

HP	VFD Model Number	Open		NEMA 1	
		Model Number		Model Number	
<b>230 Volt, Three-Phase</b>					
0.5	N700E-004LF / SF	KDRA25L		KDRA25LC1	
1	N700E-007LF / SF	KDRA26L		KDRA26LC1	
2	N700E-015LF / SF	KDRA27L		KDRA27LC1	
3	N700E-022LF / SF	KDRA28L		KDRA28LC1	
5	N700E-037LF	KDRB22L		KDRB22LC1	
7.5	N700E-055LF	KDRB23L		KDRB23LC2	
10	N700E-075LF	KDRD25L		KDRD25LC2	
15	N700E-110LF	KDRD24L		KDRD24LC2	
20	N700E-150LF	KDRD26L		KDRD26LC2	
25	N700E-185LF	KDRC22L		KDRC22LC2	
30	N700E-220LF	KDRF24L		KDRF24LC4	
40	N700E-300LF	KDRF25L		KDRF25LC4	
50	N700E-370LF	KDRF26L		KDRF26LC4	
60	N700E-450LF	KDRH22L		KDRH22LC4	
75	N700E-550LF	KDRI23L		KDRI23LC4	
100	N700E-750LF	KDRI24L		KDRI24LC4	

HP	VFD Model Number	Open		NEMA 1	
		Model Number		Model Number	
<b>460 Volt, Three-Phase</b>					
0.5	N700E-004HF	KDRA7L		KDRA7LC1	
1	N700E-007HF	KDRA8L		KDRA8LC1	
2	N700E-015HF	KDRA1L		KDRA1LC1	
3	N700E-022HF	KDRA2L		KDRA2LC1	
5	N700E-037HF	KDRA3L		KDRA3LC1	
7.5	N700E-055HF	KDRA4L		KDRA4LC1	
10	N700E-075HF	KDRA5L		KDRA5LC1	
15	N700E-110HF	KDRB2L		KDRB2LC1	
20	N700E-150HF	KDRB1L		KDRB1LC1	
25	N700E-185HF	KDRD1L		KDRD1LC2	
30	N700E-220HF	KDRD2L		KDRD2LC2	
40	N700E-300HF	KDRC1L		KDRC1LC2	
50	N700E-370HF	KDRF2L		KDRF2LC3	
60	N700E-450HF	KDRF4L		KDRF4LC3	
75	N700E-550HF	KDRF3L		KDRF3LC4	
100	N700E-750HF	KDRH3L		KDRH3LC4	
125	N700E-900HF	KDRH2L		KDRH2LC4	
150	N700E-1100HF	KDRH1L		KDRH1LC4	
200	N700E-1320HF	KDRG3L		KDRG3LC4	
250	N700E-1600HF	KDRG1L		KDRG1LC4	
300	N700E-2200HF	KDRG2L		KDRG2LC4	
400	N700E-2800HF	KDRJ1L		KDRJ1LC5	
500	N700E-3500HF	KDRL2L		KDRL2LC5	



### Control Transformers

VA	Model Number	
Primary: 480 / 460 / 440 / 240 / 230 / 220 Secondary: 120 / 115 / 110		
250	631-1601-300	
500	631-1901-300	
750	MT0750A	
1000	MT1000A	



### Surge Suppressors (Protectors)

Prevents damage to electronic equipment from voltage "spikes" called transients

Voltage	Model Number	
230	DS43S-230	
460	DS43S-480	

### Remote Keypads / Cables

Model Number	Description	
ROP7	Remote Keypad Unit	
NOP-1A	Cable, 1.5 Meter	
NOP1-3A	Cable, 3 Meter	

# WORLDWIDE MOTOR CONTROLS

*Variable Frequency Drives* - Discount Code: MC1

*Accessories - Braking Resistors / Braking Modules*



VARIABLE  
FREQUENCY DRIVES

VFD Model Number	Dynamic Braking Resistors - Heavy Duty Cycle					Braking Modules		
	Model Number	Ohms	Watts	Quantity Required		Model Number	Quantity Required	
<b>230 Volt, Single-Phase</b>								
N700E-004SF	RB-00P3-50	50	0.3	1		Built-In	---	
N700E-007SF	RB-00P3-50	50	0.3	1		Built-In	---	
N700E-015SF	RB-00P3-50	50	0.3	1		Built-In	---	
N700E-022SF	RB-00P6-35	35	0.6	1		Built-In	---	
<b>230 Volt, Three-Phase</b>								
N700E-004LF	RB-00P3-50	50	0.3	1		Built-In	---	
N700E-007LF	RB-00P3-50	50	0.3	1		Built-In	---	
N700E-015LF	RB-00P3-50	50	0.3	1		Built-In	---	
N700E-022LF	RB-00P6-35	35	0.6	1		Built-In	---	
N700E-037LF	RB-01P2-35	35	1.2	1		Built-In	---	
N700E-055LF	RB-01P2-17	17	1.2	1		Built-In	---	
N700E-075LF	RB-01P2-17	17	1.2	1		Built-In	---	
N700E-110LF	RB-01P2-17	17	1.2	1		Built-In	---	
N700E-150LF	RB-04P5-8.7	8.7	4.5	1		Built-In	---	
N700E-185LF	RB-05P6-6	6	5.6	1		Built-In	---	
N700E-220LF	RB-06P6-6	6	5.6	1		Built-In	---	
N700E-300LF	RB-09P0-HD-3.5	3.5	9	1		BRD-K3-370L	1	
N700E-370LF	RB-11P2-HD-3.5	3.5	11.2	1		BRD-K3-370L	1	
N700E-450LF	RB-13P5-HD-2.4	2.4	13.5	1		BRD-K3-550L	1	
N700E-550LF	RB-16P5-HD-2.4	2.4	16.5	1		BRD-K3-550L	1	
N700E-750LF	Call	---	---	---	---	---	---	---
<b>460 Volt, Three-Phase</b>								
N700E-004HF	RB-00P6-100	100	0.6	1		Built-In	---	---
N700E-007HF	RB-00P6-100	100	0.6	1		Built-In	---	---
N700E-015HF	RB-00P6-100	100	0.6	1		Built-In	---	---
N700E-022HF	RB-00P6-100	100	0.6	1		Built-In	---	---
N700E-037HF	RB-00P6-100	100	0.6	1		Built-In	---	---
N700E-055HF	RB-01P8-HD-70	70	1.8	1		Built-In	---	---
N700E-075HF	RB-02P4-HD-50	50	2.4	1		Built-In	---	---
N700E-110HF	RB-03P3-HD-50	50	3.3	1		Built-In	---	---
N700E-150HF	RB-04P5-HD-30	30	4.5	1		Built-In	---	---
N700E-185HF	RB-05P6-HD-20	20	5.6	1		Built-In	---	---
N700E-220HF	RB-06P6-HD-20	20	6.6	1		Built-In	---	---
N700E-300HF	RB-09P0-HD-12	12	9	1		BRD-VZ3-370H	1	
N700E-370HF	RB-11P2-HD-12	12	11.2	1		BRD-VZ3-370H	1	
N700E-450HF	RB-13P5-HD-8	8	13.5	1		BRD-VZ3-550H	1	
N700E-550HF	RB-16P5-HD-6	6	16.5	1		BRD-VZ3-550H	1	
N700E-750HF	RB-22P5-HD-6	6	22.5	1		BRD-VZ3-750H	1	
N700E-900HF	RB-22P5-HD-6	6	22.5	2		BRD-VZ3-550H	2	
N700E-1100HF	RB-22P5-HD-6	6	22.5	2		BRD-VZ3-750H	2	
N700E-1320HF	RB-22P5-HD-6	6	22.5	2		BRD-VZ3-750H	2	
N700E-1600HF	RB-45P0-3	3	45	2		FBU-100-160-4	1	
N700E-2200HF	RB-45P0-3	3	45	2		FBU-100-220-4	1	
N700E-2800HF	RB-45P0-3	3	45	4		FBU-100-160-4	2	
N700E-3500HF	Call	---	---	---	---	---	---	---



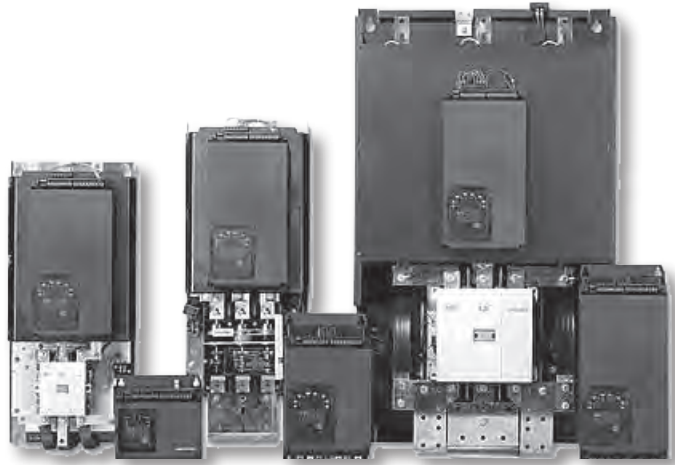
# WORLDWIDE MOTOR CONTROLS

*Soft Starters* - Discount Code: MC1

*WWE Chassis*



SOFT STARTERS



## Product Overview

- 5 - 700 HP
- Overload rated 500% for 60 seconds
- Line start full voltage bypass
- Soft start - soft stop
- Completely programmable
- 2 or 3 wire control
- Dual ramps
- Copper plated bustabs
- 120 V control
- Jog function

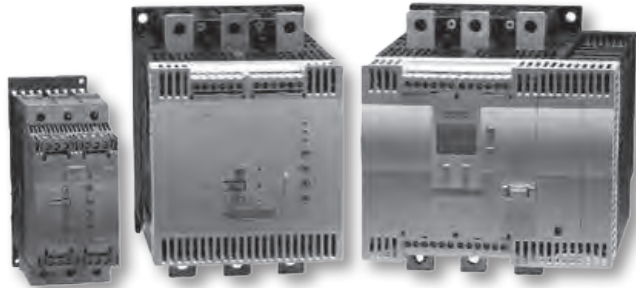
HP			Model Number	Max FLA	Dimensions (Inches) H x W x D
200 V	230 V	460 V			
5	5	10	WWE-18-BP	18	8.9 x 8.0 x 6.7
7.5	7.5	20	WWE-28-BP	28	8.9 x 8.0 x 6.7
10	10	25	WWE-39-BP	39	8.9 x 8.0 x 6.7
10	15	30	WWE-48-BP	48	8.9 x 8.0 x 6.7
15	20	40	WWE-62-BP	62	14.0 x 8.0 x 6.7
20	25	50	WWE-78-BP	78	14.0 x 8.0 x 6.7
25	30	60	WWE-92-BP	92	14.0 x 8.0 x 6.7
30	40	75	WWE-112-BP	112	14.0 x 8.0 x 6.7
40	50	100	WWE-150-BP	150	19.0 x 8.0 x 6.7
50	60	125	WWE-160-BP	160	19.0 x 8.0 x 6.7
60	75	150	WWE-210-BP	210	28.1 x 12.5 x 9.1
75	100	200	WWE-275-BP	275	28.1 x 12.5 x 9.1
125	125	300	WWE-361-BP	361	28.1 x 12.5 x 9.1
150	150	350	WWE-450-BP	450	28.1 x 12.5 x 9.1
150	200	450	WWE-550-BP	550	29.5 x 12.5 x 9.1
200	250	500	WWE-600-BP	600	29.5 x 12.5 x 9.1
300	350	700	WWE-900-BP	900	44.3 x 25.5 x 11.9



# WORLDWIDE MOTOR CONTROLS

*Soft Starters* - Discount Code: MC1

*Siemens Chassis*



## Product Overview

- 7.5 - 500 HP
- Bypass contactors
- Reduction of current peaks
- Soft start - soft stop
- Stepless starting
- Reduction of current peaks
- Maintenance-free switching
- Space saving design

SOFT STARTERS

HP			Model Number	Max FLA	Dimensions (Inches) H x W x D
200 V	230 V	460 V			
7.5	7.5	15	3RW4422-1BC34 (1)	26	7.3 x 6.7 x 10.7
10	10	20	3RW4423-1BC34 (1)	32	7.3 x 6.7 x 10.7
10	15	25	3RW4424-1BC34 (1)	42	7.3 x 6.7 x 10.7
15	15	30	3RW4425-1BC34 (1)	51	7.3 x 6.7 x 10.7
20	20	50	3RW4426-1BC34 (1)	68	7.3 x 6.7 x 10.7
25	25	60	3RW4427-1BC34 (1)	82	7.3 x 6.7 x 10.7
30	40	75	3RW4435-6BC34 (2)	117	7.8 x 6.7 x 10.7
40	50	100	3RW4436-6BC34 (2)	145	7.8 x 6.7 x 10.7
50	60	125	3RW4443-6BC34 (3)	180	7.8 x 6.7 x 10.7
60	75	150	3RW4444-6BC34 (3)	215	9.1 x 8.7 x 11.8
75	100	200	3RW4445-6BC34 (3)	280	9.1 x 8.7 x 11.8
100	125	250	3RW4446-6BC34 (3)	315	9.1 x 8.7 x 11.8
125	150	300	3RW4447-6BC34 (3)	385	9.1 x 8.7 x 11.8
150	200	400	3RW4453-6BC34 (3)	494	24.6 x 20.1 x 9.9
150	200	450	3RW4454-6BC34 (3)	551	24.6 x 20.1 x 9.9
200	250	500	3RW4455-6BC34 (3)	615	24.6 x 20.1 x 9.9



# WORLDWIDE MOTOR CONTROLS

**Soft Starters** - Discount Code: MC1

*WWE Heavy Duty Non-Combination*

*Reduced Voltage Soft Starters - NEMA 4/12 Enclosure*



SOFT STARTERS



## Product Overview

- 10 - 400 HP
- Rated 500% for 60 seconds
- NEMA 4 / 12 enclosure
- Surge suppression
- Service entrance rated
- Auto-synchronization
- Heavy duty full voltage rated integral bypass
- 120 Volt fused control power transformer
- Programmable electronic overload
- Two pre-punched knockouts for optional controls (Page 52)
- White powder coated finish

HP		Model Number	Max FLA	Dimensions (Inches) H x W x D
230 V	460 V			
10	25	WWE02534N1	48	24 x 16 x 8
20	40	WWE04034N1	78	24 x 16 x 8
25	50	WWE05034N1	92	24 x 16 x 8
40	75	WWE07534N1	112	36 x 24 x 8
50	100	WWE10034N1	160	48 x 24 x 12
60	125	WWE12534N1	210	48 x 24 x 12
75	150	WWE15034N1	220	48 x 24 x 12
100	200	WWE20034N1	361	48 x 24 x 12
125	250	WWE25034N1	400	60 x 24 x 12
150	300	WWE30034N1	400	60 x 24 x 12
200	400	WWE40034N1	550	60 x 24 x 12



# WORLDWIDE MOTOR CONTROLS

**Soft Starters** - Discount Code: MC1

*wwEPIC<sub>2</sub> General Purpose Soft Starters - NEMA 4 Enclosure*



WorldWide Electric's EPIC2 Softstart Package is designed for basic start-up, control and protection, needed for general purpose applications, with the added security of an emergency bypass starter. You will not find a simpler package to start-up or operate in the industry today.



## Product Overview

- **Designed for Irrigation and Special Purpose Applications**
  - 20 - 600 HP
  - Circuit breaker and door operator disconnect (fused disconnect on 20 - 25 HP)
  - Full panel surge protection
  - Fully rated emergency bypass starter with bypass switch included
  - Full three leg power starter
  - Overload rated 500% for 60 seconds
- **Designed for Outdoor Applications**
  - NEMA 4 enclosure
  - Three-wire in, three-wire out installation
- **Designed for Security**
  - Service entrance rated
- **Controls Designed for Easy Operation**
  - Remote-On-Off selector switch
  - Emergency stop pushbutton
  - Run pilot light
  - Illuminated reset control
  - Start / Stop pushbutton add-on kit available

SOFT STARTERS

HP		Model Number	Max FLA	Dimensions (Inches) H x W x D
230 V	460 V			
10	20	wwEPIC2SSRV12-20	31	37 x 15 x 12
—	25	wwEPIC2SSRV12-25	39	37 x 15 x 12
15	30	wwEPIC2SSRV12-30	46	37 x 15 x 12
20	40	wwEPIC2SSRV12-40	60	37 x 15 x 12
25	50	wwEPIC2SSRV12-50	75	37 x 15 x 12
30	60	wwEPIC2SSRV12-60	89	37 x 15 x 12
—	75	wwEPIC2SSRV12-75	111	37 x 15 x 12
50	100	wwEPIC2SSRV12-100	143	37 x 15 x 12
60	125	wwEPIC2SSRV12-125	180	37 x 15 x 12
75	150	wwEPIC2SSRV12-150	208	48 x 33 x 16
100	200	wwEPIC2SSRV12-200	276	48 x 33 x 16
125	250	wwEPIC2SSRV12-250	348	48 x 33 x 16
150	300	wwEPIC2SSRV12-300	516	48 x 33 x 16
200	400	wwEPIC2SSRV12-400	549	48 x 33 x 16
250	500	wwEPIC2SSRV12-500	600	48 x 33 x 16
300	600	wwEPIC2SSRV12-600	828	87 x 31 x 24

Description	Model Number
Start / Stop Adder Kit Kit includes Start / Stop pushbutton, wire, labels and instructions to convert "On-Off-Remote" switch to "Hand-Off-Auto" switch functionality and add Start / Stop momentary pushbuttons for "3-wire" control in pre-punched hole in EPIC2	EPIC2-S/S-KIT

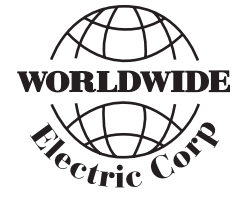


# WORLDWIDE MOTOR CONTROLS

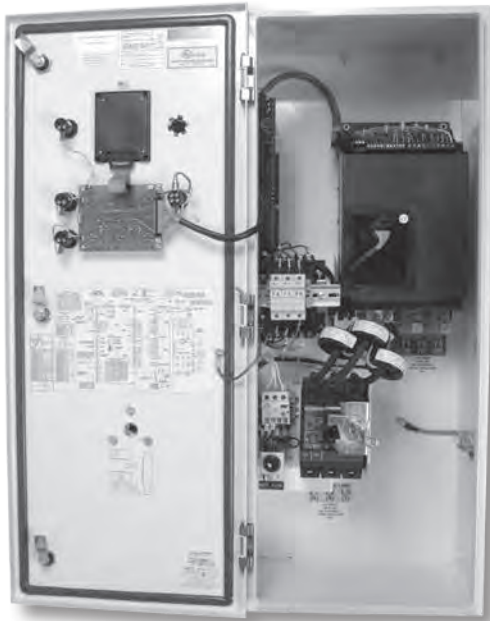
**Soft Starters** - Discount Code: MC1

*WWEHD Heavy Duty Reduced Voltage Soft Starters*

*With Full Rated Wired Emergency Bypass - NEMA 4/12 Enclosure*



SOFT STARTERS



## Product Overview

- Full panel surge suppression
- Three wire in, three wire out installation
- Service entrance rated
- Integral bypass contactors are standard on all sizes
- Over current capacity : 500% for 60 seconds
- Real-time thermal modeling and dynamic thermal register continuously calculates motor operating temperature even when your motor is not running
- Phase loss protection based on current and voltage
- Separate across the line overload protection
- Load loss trip (under current) with trip delay
- Pre-start checks for shorted load prior to each start
- Two programmable overload trip curves allow for the thermal capacity required to start the load while providing more closely matched overload protection during the run time
- PTC thermistor input for use on motors with embedded PTC temperature sensors
- Current imbalance trip and biasing of the thermal register
- Electronic shear pin trip (overcurrent) with trip delay
- Equipment ground fault trip and monitoring

HP		Model Number	Max FLA	Dimensions (Inches) H x W x D
230 V	460 V			
15	25	WWECDSRV12-25	40	37 x 15 x 12
15	30	WWECDSRV12-30	45	37 x 15 x 12
20	40	WWECDSRV12-40	55	37 x 15 x 12
25	50	WWECDSRV12-50	68	37 x 15 x 12
30	60	WWECDSRV12-60	96	37 x 15 x 12
40	75	WWECDSRV12-75	112	37 x 15 x 12
50	100	WWECDSRV12-100	130	48 x 33 x 16
60	125	WWECDSRV12-125	156	48 x 33 x 16
75	150	WWECDSRV12-150	210	48 x 33 x 16
100	200	WWECDSRV12-200	248	48 x 33 x 16
125	250	WWECDSRV12-250	320	48 x 33 x 16
150	300	WWECDSRV12-300	400	48 x 33 x 16
200	400	WWECDSRV12-400	480	48 x 33 x 16
250	500	WWECDSRV12-500	600	48 x 33 x 16
300	600	WWECDSRV12-600	800	87 x 31 x 24

## Product Specifications

### Power Components

- 6 SCRs in inverse parallel pairs for full phase angle soft start control
- 1600V PIV rating on all units
- RC snubber for dv/dt protection of each SCR pair

### Line Voltage Range

- 200 to 480 VAC, 3 phase ± 10%-15%, 50/60 Hz

### Current Ratings

- 18 to 1000A depending on unit selection
- Range of each unit is 50-100% of maximum

### Start/Stop Control Choices

- 2-wire START/STOP using dry contacts
- Normally open interlock input (dry contact) for remote devices

### Ramp Control Choices (4 built-in)

- Voltage Ramp
- Voltage Ramp with Current Limit
- CLT<sup>®</sup> Closed Loop Torque ramp (current ramp)
- Current Step (current limit only)

### Ramping

- Ramp times adjustable 1-120 seconds
- Current limit adjustable 200-600% of FLA

### Kick Start

- 10-100% starting torque for 0.1-2 seconds





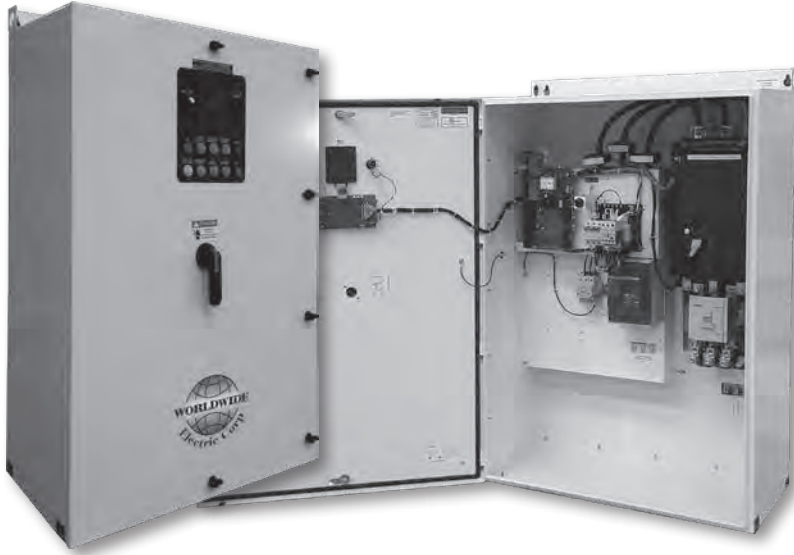
# WORLDWIDE MOTOR CONTROLS

**Soft Starters** - Discount Code: MC1

*Positive Displacement Soft Starters - NEMA 4 Enclosure*



WorldWide Electric's PD Softstart package is designed specifically for the demanding start-up, control and protection needed for Salt Water Disposal and Jet Pump applications. This package provides full skid control and protection of your motor and positive displacement piston pump.



## Product Overview

- **Designed for PD Pumping Applications**
  - 20 - 600 HP
  - Fully rated bypass contactor
  - Ready for Murphy Switch field inputs
  - NO/NC selectable Murphy inputs
  - Motor saver technology using SCR system overload
- **Designed for Harsh Environments**
  - NEMA 4 outdoor rated enclosure
- **Designed for Safety and Protection**
  - Service entrance rated meeting NEC requirements
  - Overated to 500% for 60 seconds
- **Designed for Security**
  - Lockable main door
  - Concealed hinges
  - Padlock disconnect on main CB
- **Keypad Designed for Easy Operation**
  - Start / Stop pushbutton
  - Help
  - Manual / Auto
- **Designed for Reality**
  - Full panel surge protection with main circuit breaker
  - External fault lights for high / low oil pressure levels, vibration trip and more ...

SOFT STARTERS

HP		Model Number	Max FLA	Dimensions (Inches) H x W x D
230 V	460 V			
10	20	WWEPDASSRV12-20	27	37 x 15 x 12
---	25	WWEPDASSRV12-25	40	37 x 15 x 12
15	30	WWEPDASSRV12-30	45	37 x 15 x 12
20	40	WWEPDASSRV12-40	55	37 x 15 x 12
25	50	WWEPDASSRV12-50	68	37 x 15 x 12
30	60	WWEPDASSRV12-60	96	37 x 15 x 12
40	75	WWEPDASSRV12-75	112	37 x 15 x 12
50	100	WWEPDASSRV12-100	130	48 x 33 x 16
60	125	WWEPDASSRV12-125	156	48 x 33 x 16
75	150	WWEPDASSRV12-150	210	48 x 33 x 16
100	200	WWEPDASSRV12-200	248	48 x 33 x 16
125	250	WWEPDASSRV12-250	320	48 x 33 x 16
150	300	WWEPDASSRV12-300	400	48 x 33 x 16
200	400	WWEPDASSRV12-400	480	48 x 33 x 16
250	500	WWEPDASSRV12-500	600	48 x 33 x 16
300	600	WWEPDASSRV12-600	800	87 x 31 x 24



# WORLDWIDE MOTOR CONTROLS

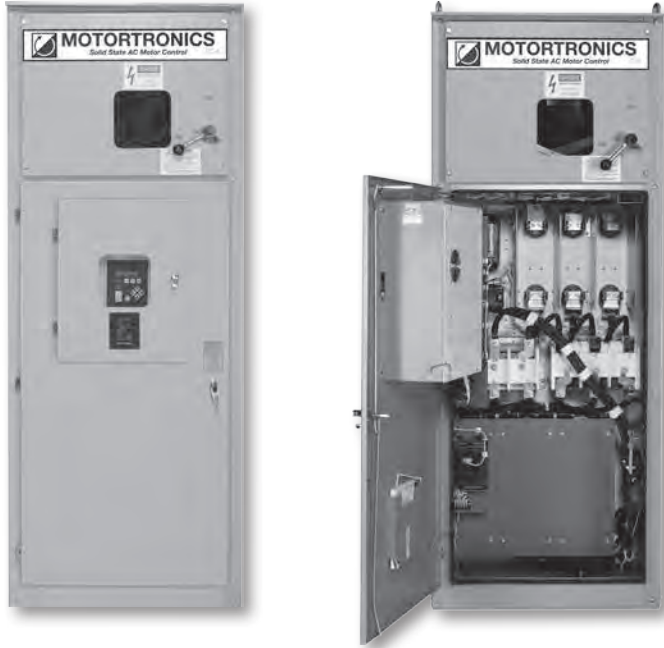
**Soft Starters** - Discount Code: MC1

Medium Voltage Soft Starters ▪ MVC Plus Series

Complete Soft Starter ▪ Class E-2 Controller



SOFT STARTERS



## Product Overview

- Fully programmable via the keypad or a laptop computer
- Fiber optically isolated low voltage compartment
- 120 V control power transformer
- Voltage and current metering
- Load-break / fault-make rated disconnect switch with door safety interlocking
- Visible grounding bar for safe operation
- Line isolation vacuum contactor
- Fully rated bypass contactor for increased thermal capacity and optional across the line starting
- RTD option accepts up to 12 RTD inputs
- Top entry, bottom exit with room for stress cones
- NEMA 12 gasketed enclosure

### In-Stock Product (Includes GF, RTD Monitor and Space Heater)

Nominal Voltage	Max. Amps	Nominal HP	Nominal kW	Model Number	Dimensions (Inches) H x W x D
2300 / 4160	400	1400 / 2500	1044 / 1865	MVC3-41400-ESWG-D	92.5 x 36 x 30

### Non-Stock Products (6-8 Week Lead Time)

Nominal Voltage	Max. Amps	Nominal HP	Nominal kW	Model Number	Dimensions (Inches) H x W x D
2300	100	350	261	MVC4-23100-E-SWG	92.5 x 36 x 30
	200	700	522	MVC4-23200-E-SWG	92.5 x 36 x 30
	400	1400	1044	MVC4-23400-E-SWG	92.5 x 36 x 30
	630	2200	1300	MVC4-23600-E-SWG	92.5 x 72 x 30
	800	2800	1600	MVC4-23800-E-SWG	92.5 x 72 x 30
4160	100	600	448	MVC4-41100-E-SWG	92.5 x 36 x 30
	200	1250	933	MVC4-41200-E-SWG	92.5 x 36 x 30
	400	2500	1865	MVC4-41400-E-SWG	92.5 x 36 x 30
	630	4000	2984	MVC4-41600-E-SWG	95 x 84 x 44
	800	5000	3730	MVC4-41800-E-SWG	95 x 84 x 44
	1000	6350	4737	MVC4-411000-E-SWG	95 x 84 x 80

**NOTES:**

- Motor current and service factor must be supplied on order for fuse and CT selection
- Max. HP / kW estimate assumes motor power factor equals .8 or better, motor efficiency is .95 or better and service factor is equal to 1.15
- Planned cable entry / exit must be verified at time of order
- Consult WWE if UL347 labelling is required





## HYUNDAI DRIVE CERTIFIED START-UP TRAINING

The Certified Start-up training provides the student with comprehensive instruction in the installation, wiring, and commissioning of low voltage Drives. The curriculum combines both instructor-led training and hands-on lab exercises.

The Certified Start-up training program for the Hyundai N700E and Worldwide Enclosed drives, focuses on commissioning for wall mount and enclosure installation of drives up to 550 HP. The course includes commissioning practices for standard I/O controlled installation and installations utilizing the Worldwide SID1 Controller.



### COURSE GOALS:

To provide students with the necessary information, tools, and training to be able to assess a low voltage AC Drive installation, to configure the drive, and perform complete commissioning services.

### COURSE TYPE AND DURATION:

This course is a 1 day instructor-led training including hands-on lab exercises to achieve course objectives.

### STUDENT PROFILE:

This course is intended for Hyundai / WorldWide partners with experience working with and installing low voltage AC drives. Students of a certified start-up course would be responsible for installation and technical services related to maintaining LV drives.

DRIVING & CONTROLLING

# INDUSTRY



Jameson Equipment Company  
www.jamesonequipment.com  
toll free 800.675.0280

# WORLDWIDE MOTOR CONTROLS

*Across-Line Motor Starters* - Discount Code: MC2

*Definite Purpose Motor Starters*



## Product Overview

- NEMA 1 enclosure
- Door mounted reset PB standard
- Knockouts for field kits
- Control terminals for field ease
- Large enclosure for wire bends
- Field kits for local start / stop
- Field kits for HOA operation
- 24 VAC and 208 VAC control coil available
- Reset pushbutton supplied standard

ACROSS-LINE  
MOTOR STARTERS

HP Rating	Main Voltage	Overload Current Setting	Motor FLA	Auxiliary Contacts	Coil Size	Dimensions (Inches) H x W x D	Box Size	With Main Voltage Coil *		With 120 Volt Coil *	
								Model Number		Model Number	
<b>Three-Phase - 230 Volt</b>											
1	230	4-6	4.2	1NO+1NC	C1	10 x 6 x 4.63	A	WWS1-230		WWS1-230-120C	
1.5	230	5-8	6	1NO+1NC	C1	10 x 6 x 4.63	A	WWS 1.5-230		WWS1.5-230-120C	
2	230	6-9	6.8	1NO+1NC	C1	10 x 6 x 4.63	A	WWS 2-230		WWS2-230-120C	
3	230	7-10	9.6	1NO+1NC	C1	10 x 6 x 4.63	A	WWS 3-230		WWS3-230-120C	
5	230	12-18	15.2	1NO+1NC	C1	10 x 6 x 4.63	A	WWS 5-230		WWS5-230-120C	
7 ½	230	18-25	22	1NO+1NC	C1	10 x 6 x 4.63	A	WWS 7.5-230		WWS7.5-230-120C	
10	230	22-32	28	1NO+1NC	C1	10 x 6 x 4.63	A	WWS 10-230		WWS10-230-120C	
15	230	34-50	42	2NO+2NC	C3	13.25 x 7.38 x 6.13	B	WWS 15-230		WWS15-230-120C	
20	230	45-65	54	2NO+2NC	C3	13.25 x 7.38 x 6.13	B	WWS 20-230		WWS20-230-120C	
25	230	54-75	68	2NO+2NC	C4	20.25 x 8.75 x 7.31	C	WWS 25-230		WWS25-230-120C	
30	230	70-95	80	2NO+2NC	C4	20.25 x 8.75 x 7.31	C	WWS 30-230		WWS30-230-120C	
40	230	95-130	104	2NO+2NC	C4	20.25 x 8.75 x 7.31	C	WWS40-230		WWS40-230-120C	
50	230	110-150	130	2NO+2NC	C5	20.25 x 8.75 x 7.31	C	WWS50-230		WWS50-230-120C	
<b>Three-Phase - 480 Volt</b>											
1	480	1.6-2.5	2.1	1NO+1NC	C1	10 x 6 x 4.63	A	WWS1-480		WWS1-480-120C	
2	480	2.5-4	3.4	1NO+1NC	C1	10 x 6 x 4.63	A	WWS2-480		WWS2-480-120C	
3	480	4-6	4.8	1NO+1NC	C1	10 x 6 x 4.63	A	WWS3-480		WWS3-480-120C	
5	480	6-9	7.6	1NO+1NC	C1	10 x 6 x 4.63	A	WWS5-480		WWS5-480-120C	
7 ½	480	9-13	11	1NO+1NC	C1	10 x 6 x 4.63	A	WWS7.5-480		WWS7.5-480-120C	
10	480	12-18	14	1NO+1NC	C1	10 x 6 x 4.63	A	WWS10-480		WWS10-480-120C	
15	480	18-25	21	1NO+1NC	C1	10 x 6 x 4.63	A	WWS15-480		WWS15-480-120C	
20	480	22-32	27	2NO+2NC	C2	10 x 6 x 4.63	A	WWS20-480		WWS20-480-120C	
25	480	28-40	34	2NO+2NC	C2	10 x 6 x 4.63	A	WWS25-480		WWS25-480-120C	
30	480	34-50	40	2NO+2NC	C3	13.25 x 7.38 x 6.13	B	WWS30-480		WWS30-480-120C	
40	480	45-65	52	2NO+2NC	C3	13.25 x 7.38 x 6.13	B	WWS40-480		WWS40-480-120C	
50	480	54-75	65	2NO+2NC	C4	20.25 x 8.75 x 7.31	C	WWS50-480		WWS50-480-120C	
60	480	63-85	77	2NO+2NC	C4	20.25 x 8.75 x 7.31	C	WWS60-480		WWS60-480-120C	
75	480	80-100	96	2NO+2NC	C4	20.25 x 8.75 x 7.31	C	WWS75-480		WWS75-480-120C	
100	480	110-150	124	2NO+2NC	C5	20.25 x 8.75 x 7.31	C	WWS100-480		WWS100-480-120C	



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*Definite Purpose Motor Starters*



## Product Overview

- NEMA 1 enclosure
- Door mounted reset PB standard
- Knockouts for field kits
- Control terminals for field ease
- Large enclosure for wire bends
- Field kits for local start / stop
- Field kits for HOA operation
- 24 VAC and 208 VAC control coil available
- Reset pushbutton supplied standard

HP Rating	Main Voltage	Overload Current Setting	Motor FLA	Auxiliary Contacts	Coil Size	Dimensions (Inches) H x W x D	Box Size	With Main Voltage Coil *		With 120 Volt Coil *	
								Model Number		Model Number	
<b>Single-Phase - 230 Volt</b>											
1/2	230	4-6	4.9	1NO+1NC	C1	10 x 6 x 4.63	A	WWS0.5-2301P		WWS0.5-2301P-120C	
3/4	230	5-8	6.9	1NO+1NC	C1	10 x 6 x 4.63	A	WWS0.75-2301P		WWS0.75-2301P-120C	
1	230	6-9	8	1NO+1NC	C1	10 x 6 x 4.63	A	WWS1-2301P		WWS1-2301P-120C	
1.5	230	9-13	10	1NO+1NC	C1	10 x 6 x 4.63	A	WWS1.5-2301P		WWS1.5-2301P-120C	
2	230	9-13	12	1NO+1NC	C1	10 x 6 x 4.63	A	WWS2-2301P		WWS2-2301P-120C	
3	230	12-18	17	1NO+1NC	C1	10 x 6 x 4.63	A	WWS3-2301P		WWS3-2301P-120C	
5	230	22-32	28	2NO+2NC	C2	10 x 6 x 4.63	A	WWS5-2301P		WWS5-2301P-120C	
7 1/2	230	34-50	40	2NO+2NC	C3	13.25 x 7.38 x 6.13	B	WWS7.5-2301P		WWS7.5-2301P-120C	
10	230	45-65	50	2NO+2NC	C3	13.25 x 7.38 x 6.13	B	WWS10-2301P		WWS10-2301P-120C	

## Accessories / Kits / Parts

Description	Box Size	Model Number	
Start/Stop Pushbutton Kit (Double Headed Style)	A	WWS-SS-A	
Start/Stop Pushbutton Kit (Double Headed Style)	B	WWS-SS-B	
Start/Stop Pushbutton Kit (Double Headed Style)	C	WWS-SS-C	
H-O-A Switch Kit (3 Position)	A	WWS-HOA-A	
H-O-A Switch Kit (3 Position)	B	WWS-HOA-B	
H-O-A Switch Kit (3 Position)	C	WWS-HOA-C	
Replacement Reset Pushbutton Kit	A	WWS-RS-A	
Replacement Reset Pushbutton Kit	B, C	WWS-RS-BC	
AUX 1NO, 1NC	A,B,C	UA-1-11	
Replacement Coils Are Available: 24V / 120V / 208V / 230V / 480V		Please Call	---



ACROSS-LINE  
MOTOR STARTERS



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*NEMA Heavy Duty Motor Starters  
With ESP200 Solid State Overload*



**14CUD32A\***  
Open



**14EUE32B\***  
NEMA 1

## Product Overview

- True phase loss protection - trips within 3 seconds
- Phase unbalanced prevents motor running inefficiently
- Ground fault trip when selected
- Selectable trip class: 5, 10, 20 or 30
- Reset trip can be selected auto/manual reset
- Overload is self powered. No need for external power source.
- Dual voltage, dual frequency coils
- Easy to select and use DIP Switch Selectable
- Half sizes for cost and space savings
- Easy coil access
- Straight through wiring
- UL Listed and CSA Certified

ACROSS-LINE  
MOTOR STARTERS

HP				NEMA Size	Overload Amp Range	Enclosure				
						Open		NEMA 1	NEMA 12 NEMA 3/3R	
200 V	230 V	460 V	575 V			Model Number		Model Number	Model Number	List Price
1/8	1/8	1/8	1/2	00	0.25-1	14BUA32A*		14BUA32B*	Use Size 0	---
1/2	3/4	1 1/2	2	00	0.75-3.4	14BUB32A*		14BUB32B*	Use Size 0	---
1 1/2	1 1/2	2	—	00	3-12	14BUC32A*		14BUC32B*	Use Size 0	---
1/8	1/8	1/8	1/2	0	0.25-1	14CUA32A*		14CUA32B*	14CUA320*	
1/2	3/4	1 1/2	2	0	0.75-3.4	14CUB32A*		14CUB32B*	14CUB320*	
2	2	5	5	0	3-12	14CUC32A*		14CUC32B*	14CUC320*	
3	3	—	—	0	5.5-22	14CUD32A*		14CUD32B*	14CUD320*	
1/8	1/8	1/8	1/2	1	0.25-1	14DUA32A*		14DUA32B*	14DUA320*	
1/2	3/4	1 1/2	2	1	0.75-3.4	14DUB32A*		14DUB32B*	14DUB320*	
2	2	5	5	1	3-12	14DUC32A*		14DUC32B*	14DUC320*	
3	3	10	10	1	5.5-22	14DUD32A*		14DUD32B*	14DUD320*	
7 1/2	7 1/2	—	—	1	10-40	14DUE32A*		14DUE32B*	14DUE320*	
10	10	15	15	1 3/4	10-40	14EUE32A*		14EUE32B*	14EUE320*	
10	15	25	25	2	13-52	14FUF32A*		14FUF32B*	14FUF320*	
15	20	30	30	2 1/2	25-100	14GUG32A*		14GUG32B*	14GUG320*	
25	30	50	50	3	25-100	14HUG32A*		14HUG32B*	14HUG320*	
30	40	75	75	3 1/2	50-200	14IUH32A*		14IUH32B*	14IUH320*	
40	50	100	100	4	50-200	14JUH32A*		14JUH32B*	14JUH320*	
75	100	200	200	5	55-250	14LPU32A*		14LPU32B*	14LPU320*	

**NOTES:**

- Bi-metal overload style available

Continued On Next Page



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*NEMA Heavy Duty Motor Starters  
With ESP200 Solid State Overload*



**14GUG32W\*  
NEMA 4X**

Coil Table *	
60 Hz Voltage	Letter
24 Separate Control	J
120 Separate Control	F
110-120/220-240	A
200-208	D
220-240	G
277	L
220-240/440-480	C
440-480	H
550-600	E

## Product Overview

- True phase loss protection - trips within 3 seconds
- Phase unbalanced prevents motor running inefficiently
- Ground fault trip when selected
- Selectable trip class: 5, 10, 20 or 30
- Reset trip can be selected auto/manual reset
- Overload is self powered. No need for external power source.
- Dual voltage, dual frequency coils
- Easy to select and use DIP Switch Selectable
- Half sizes for cost and space savings
- Easy coil access
- Straight through wiring
- UL Listed and CSA Certified

ACROSS-LINE  
MOTOR STARTERS

HP					NEMA Size	Overload Amp Range	Enclosure				
							NEMA 4/4X 304 Stainless Steel		NEMA 4X Fiberglass		NEMA 7 & 9 Explosion Proof
200 V	230 V	460 V	575 V			Model Number		Model Number		Model Number	
1/8	1/8	1/8	1/4	00	0.25-1	Use Size 0		Use Size 0		Use Size 0	
1/4	3/8	1 1/2	2	00	0.75-3.4	Use Size 0		Use Size 0		Use Size 0	
1 1/2	1 1/2	2	—	00	3-12	Use Size 0		Use Size 0		Use Size 0	
1/8	1/8	1/8	1/4	0	0.25-1	14CUA32W*		14CUA32F*		14CUA32H*	
1/4	3/8	1 1/2	2	0	0.75-3.4	14CUB32W*		14CUB32F*		14CUB32H*	
2	2	5	5	0	3-12	14CUC32W*		14CUC32F*		14CUC32H*	
3	3	—	—	0	5.5-22	14CUD32W*		14CUD32F*		14CUD32H*	
1/8	1/8	1/8	1/4	1	0.25-1	14DUA32W*		14DUA32F*		14DUA32H*	
1/4	3/8	1 1/2	2	1	0.75-3.4	14DUB32W*		14DUB32F*		14DUB32H*	
2	2	5	5	1	3-12	14DUC32W*		14DUC32F*		14DUC32H*	
3	3	10	10	1	5.5-22	14DUD32W*		14DUD32F*		14DUD32H*	
7 1/2	7 1/2	—	—	1	10-40	14DUE32W*		14DUE32F*		14DUE32H*	
10	10	15	15	1 3/4	10-40	14EUE32W*		14EUE32F*		14EUE32H*	
10	15	25	25	2	13-52	14FUF32W*		14FUF32F*		14FUF32H*	
15	20	30	30	2 1/2	25-100	14GUG32W*		14GUG32F*		14GUG32H*	
25	30	50	50	3	25-100	14HUG32W*		14HUG32F*		14HUG32H*	
30	40	75	75	3 1/2	50-200	14IUH32W*		14IUH32F*		14IUH32H*	
40	50	100	100	4	50-200	14JUH32W*		14JUH32F*		14JUH32H*	
75	100	200	200	5	55-250	14LPU32E*		—		14LPU32H*	

**NOTES:**

- Bi-metal overload style available
- 316 Stainless Steel enclosure available (please call for details)



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*NEMA Heavy Duty Explosion Proof Starters  
With Start/Stop Pushbuttons Installed*



## Product Overview Heavy Duty NEMA Starters

- NEMA 7 & 9 / 3 & 4 enclosure
- Bolted enclosure with hinged door
- Start / stop pushbutton
- Through door overload reset pushbutton
- Hazardous Areas Classification:
  - Division 1 and Division 2
  - Class I, Groups C & D; Class II, Groups E, F & G; Class III
- Solid state ESP200 overload relay
- Ground fault trip when selected
- Selectable trip class: 5, 10, 20 or 30
- Reset trip can be selected auto / manual reset
- Overload is self powered, no need for external power source
- 230/460 Dual voltage, 50/60 Hz dual frequency coils

**IN STOCK**

*Available For Immediate Delivery*

ACROSS-LINE  
MOTOR STARTERS

HP				NEMA Size	Overload Amp Range	NEMA 7 & 9 / NEMA 3 & 4 Explosion Proof	
200 Volts	230 Volts	460 Volts	575 Volts			Model Number	
2	2	5	5	1	3-12	14DUC32HCA1	
3	3	10	10	1	5.5-22	14DUD32HCA1	
7 ½	7 ½	—	—	1	10-40	14DUE32HCA1	
10	10	15	15	1 ¼	10-40	14EUE32HCA1	
10	15	25	25	2	13-52	14FUF32HCA1	
15	20	30	30	2 ½	25-100	14GUG32HCA1	
25	30	50	50	3	25-100	14HUG32HCA1	
30	40	75	75	3 ½	50-200	14IUH32HCA1	
40	50	100	100	4	50-200	14JUH32HCA1	

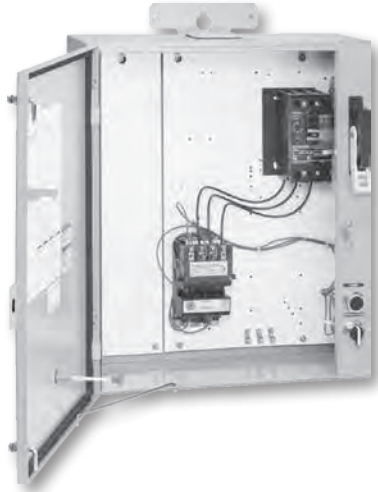




# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters - Discount Code: MC2**

*Irrigation Pump Panels*



## Product Overview

- Heavy duty NEMA starters
- Fully gasketed NEMA 3R rainproof enclosures
- Start pushbutton
- HOA selector switch
- Solid state overload relays
- Copper grounding lug for three #6 wires
- Heavy duty disconnect handle
- Bold pilot legend
- Generous accessory space
- CSA certified file #LR6535
- UL listed for outdoor use and service equipment file #E14900
- Bi-metal overload also available

ACROSS-LINE  
MOTOR STARTERS

HP				Solid State Overload				
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Amp Range	Fuse / Breaker Size	Model Number	
<b>Fusible Disconnect</b>								
—	—	7.5	10	1	5.5-22	30A / 600V	IPP1-460-ESP2	
7.5	7.5	—	—	1	10-40	30A / 600V	IPP1-230-ESP2	
—	—	15	15	1.75	10-40	30A / 600V	IPP1.75-460-ESP2	
10	10	—	—	1.75	10-40	60A / 250V	IPP1.75-230-ESP2	
—	—	25	25	2	13-52	60A / 600V	IPP2-460-ESP2	
10	15	—	—	2	13-52	60A / 250V	IPP2-230-ESP2	
—	—	30	30	2.5	25-100	60A / 600V	IPP2.5-460-ESP2	
15	20	—	—	2.5	25-100	60A / 250V	IPP2.5-230-ESP2	
—	—	50	50	3	25-100	100A / 600V	IPP3-460-ESP2	
20	25	—	—	3	25-100	100A / 250V	IPP3-230-ESP2	
—	—	75	75	3.5	50-200	200A / 600V	IPP3.5-460-ESP2	
30	40	—	—	3.5	50-200	200A / 250V	IPP3.5-230-ESP2	
—	—	100	100	4	50-200	200A / 600V	IPP4-460-ESP2	
40	50	—	—	4	50-200	200A / 250V	IPP4-230-ESP2	
—	—	200	200	5	55-250	400A / 600V	IPP5-460-ESP2	
75	100	—	—	5	55-250	400A / 250V	IPP5-230-ESP2	
<b>Breaker Disconnect</b>								
7.5	7.5	10	—	1	10-40	30	IPPCB1-230/460-ESP2	
—	—	15	15	1.75	10-40	40	IPPCB1.75-460-ESP2	
10	15	25	25	2	13-52	50	IPPCB2-230/460-ESP2	
15	20	30	30	2.5	25-100	100	IPPCB2.5-230/460-ESP2	
25	30	50	50	3	25-100	100	IPPCB3-230/460-ESP2	
30	40	75	75	3.5	50-200	125	IPPCB3.5-230/460-ESP2	
40	50	100	100	4	50-200	150	IPPCB4-230/460-ESP2	



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*Heavy Duty Combination Starters*

*MCP Type With Solid State Overload* ■ **Class 18**



60 Hz Voltage	Letter
24 Separate Control	J
120 Separate Control	F
110-120/220-240	A
200-208	D
220-240	G
277	L
220-240/440-480	C
440-480	H
550-600	E

## Product Overview

- SIEMENS type ETI breaker
- Short circuit protection
- Industrial type disconnect handle
- Wide range of enclosure types available
- Solid state ESP200 overload relay
- Flexibility with field modifications
- Easy to install
- Fusible disconnect available (call for details)
- Heater styler overload available (call for details)
- UL Listed and CSA Certified

ACROSS-LINE MOTOR STARTERS

HP				NEMA Size	Breaker Size	Overload Amp Range	Frame Size	Enclosure			
200 Volts	230 Volts	460 Volts	575 Volts					NEMA 1		NEMA 12 NEMA 3/3R	
								Model Number		Model Number	
½	½	1	1	0	3	0.75-3.4	A	18CUB92B*		18CUB92N*	
2	2	5	5	0	10	3-12	A1	18CUC92B*		18CUC92N*	
3	3	—	—	0	25	5.5-22	A1	18CUD92B*		18CUD92N*	
½	½	1	1	1	3	0.75-3.4	A	18DUB92B*		18DUB92N*	
2	2	5	5	1	10	3-12	A1	18DUC92B*		18DUC92N*	
3	3	7 ½	10	1	25	5.5-22	A1	18DUD92B*		18DUD92N*	
7 ½	7 ½	10	—	1	30	10-40	A1	18DUE92B*		18DUE92N*	
—	—	15	15	1.75	40	10-40	A1	18EUE92B*		18EUE92N*	
10	15	25	25	2	50	13-52	B	18FUF92B*		18FUF92N*	
15	20	30	30	2.5	100	25-100	B	18GUG92B*		18GUG92N*	
25	30	50	50	3	100	25-100	B	18HUG92B*		18HUG92N*	
30	40	75	75	3.5	125	50-200	B	18IUH92B*		18IUH92N*	
40	50	100	100	4	150	50-200	B	18JUH92B*		18JUH92N*	
50	75	150	200	5	250	55-250	—	18LPT92B*		18LPT92N*	
75	100	200	—	5	400	55-250	—	18LPU92B*		18LPU92N*	



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*Heavy Duty Combination Starters*

*MCP Type With Solid State Overload* ▪ **Class 18**



60 Hz Voltage	Letter
24 Separate Control	J
120 Separate Control	F
110-120/220-240	A
200-208	D
220-240	G
277	L
220-240/440-480	C
440-480	H
550-600	E

## Product Overview

- SIEMENS type ETI breaker
- Short circuit protection
- Industrial type disconnect handle
- Wide range of enclosure types available
- Solid state ESP200 overload relay
- Flexibility with field modifications
- Easy to install
- Fusible disconnect available (call for details)
- Heater styler overload available (call for details)
- UL Listed and CSA Certified

ACROSS-LINE  
MOTOR STARTERS

HP				NEMA Size	Breaker Size	Overload Amp Range	Frame Size	Enclosure					
200 Volts	230 Volts	460 Volts	575 Volts					NEMA 4/4X 304 Stainless Steel		NEMA 4X Fiberglass		NEMA 7 & 9 Explosion Proof	
								Model Number		Model Number		Model Number	
½	½	1	1	0	3	0.75-3.4	A	18CUB92W*		18CUB92F*		18CUB92H*	
2	2	5	5	0	10	3-12	A1	18CUC92W*		18CUC92F*		18CUC92H*	
3	3	—	—	0	25	5.5-22	A1	18CUD92W*		18CUD92F*		18CUD92H*	
½	½	1	1	1	3	0.75-3.4	A	18DUB92W*		18DUB92F*		18DUB92H*	
2	2	5	5	1	10	3-12	A1	18DUC92W*		18DUC92F*		18DUC92H*	
3	3	7 ½	10	1	25	5.5-22	A1	18DUD92W*		18DUD92F*		18DUD92H*	
7 ½	7 ½	10	—	1	30	10-40	A1	18DUE92W*		18DUE92F*		18DUE92H*	
—	—	15	15	1.75	40	10-40	A1	18EUE92W*		18EUE92F*		18EUE92H*	
10	15	25	25	2	50	13-52	B	18FUF92W*		18FUF92F*		18FUF92H*	
15	20	30	30	2.5	100	25-100	B	18GUG92W*		18GUG92F*		18GUG92H*	
25	30	50	50	3	100	25-100	B	18HUG92W*		18HUG92F*		18HUG92H*	
30	40	75	75	3.5	125	50-200	B	18IUH92W*		18IUH92F*		18IUH92H*	
40	50	100	100	4	150	50-200	B	18JUH92W*		18JUH92F*		18JUH92H*	
50	75	150	200	5	250	55-250	—	18LPT92E*		—	—	18LPT92H*	
75	100	200	—	5	400	55-250	—	18LPU92E*		—	—	18LPU92H*	

**NOTES:**

- 316 Stainless Steel enclosure available (please call for details)



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters** - Discount Code: MC2

*ESP200 Solid State Electronic Overload Relays*



## Product Overview

- Selectable Trip Classes: 5, 10, 20 and 30
- Manual, automatic, and remote reset
- Phase loss protection - trips in less than 3 seconds
- Phase unbalance protection - trips based on trip class selected (minimize temperature rise of the motor on an asymmetrical three-phase system)
- Thermal memory (prevents restarting the motor when it is hot)
- Ground fault protection - trips 60% of motor current
- Ambient insensitive (prevents nuisance tripping)
- FLA dial with wide adjustment range - 4:1 ratio
- One NO and one NC contacts standard
- Self protected in short circuit condition
- Visible trip indicator
- Touch-safe terminals
- Removable terminals

The field selectable Trip Class 5, 10, 20 or 30 can easily be set by 2 DIP switches. This eliminates the guess factor of application requirements and provides reduced inventory for multiple applications.

ESP200 can be directly coupled to the contactors or remotely mounted. In addition to the NEMA contactor applications, it also can be used with other types of controllers for applications requiring DP or IEC contactors.

### NOTES:

- (1) Requires use of 300:5 current transformers - (3) 2RL301
- (2) Requires use of 400:5 current transformers - (3) 5RL401
- (3) Requires use of 600:5 current transformers - (3) 5RL601
- (4) Requires use of 750:5 current transformers - (3) 5RL751
- (5) Requires use of 1200:5 current transformers - (3) 5RL122

ACROSS-LINE  
MOTOR STARTERS

Full Load Amp Range	Frame Size	New Model Number	Old Model Number
<b>Three-Phase</b>			
0.25-1	A	3UB81134AB2	48ATA3S00
0.75-3.4	A	3UB81134BB2	48ATB3S00
3-12	A1	3UB81234CW2	48ATC3S00
5.5-22	A1	3UB81234DW2	48ATD3S00
10-40	A1	3UB81234EW2	48ATE3S00
13-52	B	3UB81334FW2	48BTF3S00
25-100	B	3UB81334GW2	48BTG3S00
50-200	B	3UB81334HW2	48BTH3S00
100-300	A1 (1)	3UB81234JW2	48ATJ3S00
133-400	A1 (2)	3UB81234KW2	48ATK3S00
200-600	A1 (3)	3UB81234LW2	48ATL3S00
250-750	A1 (4)	3UB81234MW2	48ATM3S00
400-1220	A1 (5)	3UB81234NW2	48ATN3S00

## Current Transformers (1 Per Phase)

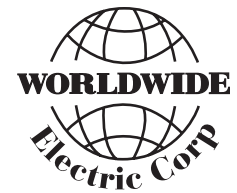
Current Ratio	New Model Number	Old Model Number	Dimensions (Inches)
300:5	2RL301	97CT005	1.05 Window x 2.46 OD x 1.05 W
400:5	5RL401	97CT006	1.56 Window x 3.58 OD x 1.10 W
600:5	5RL601	97CT008	1.56 Window x 3.58 OD x 1.10 W
750:5	5RL751	97CT009	1.56 Window x 3.58 OD x 1.10 W
1200:5	5RL122	97CT012	1.56 Window x 3.58 OD x 1.10 W



# WORLDWIDE MOTOR CONTROLS

**Across-Line Motor Starters - Discount Code: MC2**

**Overload Relay Heaters For Class 20 Trip**



Bi-Metal Standard Trip					
Full Load Amps					Model Number
Size 00, 0, 1	Size 1 3/4	Size 2, 2 1/2	Size 3, 3 1/2	Size 4	
<b>Trip Class 20 - Three-Phase</b>					
0.38-0.40	—	—	—	—	E6
0.41-0.43	—	—	—	—	E7
0.44-0.48	—	—	—	—	E8
0.49-0.53	—	—	—	—	E9
0.54-0.57	—	—	—	—	E11
0.58-0.62	—	—	—	—	E12
0.63-0.66	—	—	—	—	E13
0.67-0.72	—	—	—	—	E14
0.73-0.80	—	—	—	—	E16
0.81-0.85	—	—	—	—	E17
0.86-0.92	—	—	—	—	E18
0.93-0.99	—	—	—	—	E19
1.00-1.08	—	—	—	—	E23
1.09-1.23	—	—	—	—	E24
1.24-1.37	—	—	—	—	E26
1.38-1.54	—	—	—	—	E27
1.55-1.69	—	—	—	—	E28
1.70-1.80	—	—	—	—	E29
1.81-1.94	—	—	—	—	E31
1.95-2.07	—	—	—	—	E32
2.08-2.26	—	—	—	—	E33
2.27-2.54	2.27-2.54	—	—	—	E34
2.55-2.69	2.55-2.69	—	—	—	E36
2.70-2.88	2.70-2.88	—	—	—	E37
2.89-3.14	2.89-3.14	—	—	—	E38
3.15-3.40	3.15-3.40	—	—	—	E39
3.41-3.81	3.41-3.81	—	—	—	E41
3.82-4.26	3.82-4.25	—	—	—	E42
4.27-4.62	4.26-4.62	—	—	—	E44
4.63-5.09	4.63-5.09	—	—	—	E46
5.10-5.61	5.10-5.61	—	—	—	E47
5.62-5.91	5.62-5.91	—	—	—	E48
5.92-6.15	5.92-6.15	—	—	—	E49
6.16-6.70	6.16-6.70	—	—	—	E50
6.71-7.54	6.71-7.54	—	—	—	E51
7.55-8.29	7.55-8.29	—	—	—	E52
8.30-8.99	8.30-8.99	—	—	—	E53
9.00-9.85	9.00-9.85	—	—	—	E54
9.86-10.4	9.86-10.4	—	—	—	E55
10.5-12.0	10.5-12.0	10.5-12.0	—	—	E56
12.1-13.6	12.1-13.6	12.1-13.6	—	—	E57
13.7-15.6	13.7-15.6	13.7-15.6	—	—	E60
15.7-17.0	15.7-17.0	15.7-17.1	—	—	E61
17.1-18.4	17.1-19.4	17.2-19.4	—	—	E62
18.5-19.4	19.5-20.9	19.5-20.9	—	—	E65

## Product Overview

Heaters provide a maximum trip rating of 125% of minimum motor amperes for 40°C motors (service factor 1.15). For other motors (service factor 1.0), select the next lower listed heater catalog number within the designated table which provides a maximum trip rating of approximately 115%.

Overload relays do not provide against short circuits. To ensure proper coordination with short circuit protective device, select heaters from the information packaged with the controls device.

Bi-Metal Standard Trip					
Full Load Amps					Model Number
Size 00, 0, 1	Size 1 3/4	Size 2, 2 1/2	Size 3, 3 1/2	Size 4	
<b>Trip Class 20 - Three-Phase</b>					
19.5-21.3	21.0-22.2	21.0-22.2	—	—	E66
21.4-24.4	22.3-25.3	22.3-25.3	—	—	E67
24.5-25.9	25.4-26.9	25.4-26.9	30.0-33.5	—	E69
26.0-27.0	27.0-30.2	27.0-30.2	33.6-36.4	—	E70
—	—	—	36.5-39.6	—	E71
—	30.3-33.3	30.3-33.3	—	—	E72
—	33.4-36.0	33.4-35.3	39.7-43.6	—	E73
—	—	—	43.7-46.5	—	E73A
—	—	35.4-41.5	46.6-51.6	—	E74
—	—	41.6-45.0	51.7-54.4	—	E76
—	—	45.1-52.3	54.5-58.0	—	E77
—	—	52.4-55.7	58.1-63.0	—	E78
—	—	55.8-60.0	63.1-67.7	—	E79
—	—	—	67.8-72.4	—	E80
—	—	—	—	—	E88
—	—	—	—	56.9-60.9	E89
—	—	—	—	61.0-63.9	E91
—	—	—	—	64.0-67.7	E92
—	—	—	—	67.8-72.4	E93
—	—	—	72.5-80.0	72.5-77.7	E94
—	—	—	80.1-88.1	77.8-85.9	E96
—	—	—	88.2-91.5	86.0-91.9	E97
—	—	—	91.6-96.8	92.0-96.7	E98
—	—	—	96.9-99.0	96.8-105	E99
—	—	—	99.1-108	—	E101
—	—	—	—	—	E102
—	—	—	—	106-115	E103
—	—	—	—	116-130	E104

**NOTES:**

- Please call for Class 10 trip heaters.
- Please call for single-phase ratings.

ACROSS-LINE MOTOR STARTERS



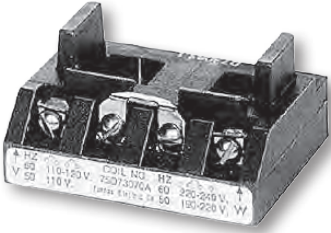
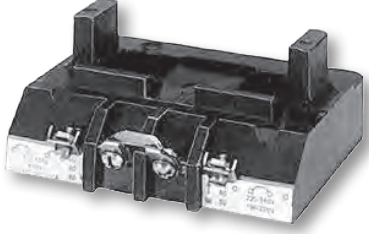
# WORLDWIDE MOTOR CONTROLS

*Across-Line Motor Starters* - Discount Code: MC2

*Replacement Coils For NEMA Starters*



ACROSS-LINE  
MOTOR STARTERS

	Size	Volts		Model Number
		60 Hz	50 Hz	
	00 - 2.5	24	24	75D73070J
		120	110	75D73070F
		110-120 / 220-240	110 / 190-200	75D73070A
		208	—	75D73070D
		220-240	190-220	75D73070G
		277	240	75D73070L
		220-240 / 440-480	190-220 / 380-440	75D73070C
	3, 3.5	24	24	75D73251J
		120	110	75D73251F
		110-120 / 220-240	110 / 190-200	75D73251A
		208	—	75D73251D
		220-240	190-220	75D73251G
		277	240	75D73251L
		220-240 / 440-480	190-220 / 380-440	75D73251C
	4	24	24	75D70131J
		120	110	75D70131F
		110-120 / 220-240	110 / 190-200	75D70131A
		208	—	75D70131D
		220-240	190-220	75D70131G
		277	240	75D70131L
		220-240 / 440-480	190-220 / 380-440	75D70131C
	5	23-26	23-26	3RT1965-5AB31
		110-127	110-127	3RT1965-5AF31
		200-220	200-220	3RT1965-5AM31
		220-240	220-240	3RT1965-5AP31
		240-277	240-277	3RT1965-5AU31
		380-420	380-420	3RT1965-5AV31
		440-480	440-480	3RT1965-5AR31
6	23-26	23-26	3RT1975-5AB31	
	110-127	110-127	3RT1975-5AF31	
	200-220	200-220	3RT1975-5AM31	
	220-240	200-240	3RT1975-5AP31	
	240-277	240-277	3RT1975-5AU31	
	380-420	380-420	3RT1975-5AV31	
	440-480	440-480	3RT1975-5AR31	
575-600	575-600	3RT1975-5AT31		



# WORLDWIDE MOTOR CONTROLS

*Contactors and Overload Relays* - Discount Code: MC2

*Definite Purpose AC Contactors*



FL Amps	Poles	Coil Voltage	Model Number
20	2	24	WH20-2-24
	2	110-120	WH20-2-115
	2	208-240	WH20-2-200/230
25	2	24	WH25-2-24
	2	110-120	WH25-2-115
	2	208-240	WH25-2-200/230
30	2	24	WH30-2-24
	2	110-120	WH30-2-115
	2	208-240	WH30-2-200/230
	3	24	WH30-24
	3	110-120	WH30-115
	3	208-240	WH30-200/230
	3	480	WH30-480
40	4	110-120	WH30-4-115
	2	24	WH40-2-24
	2	110-120	WH40-2-115
	2	208-240	WH40-2-200/230
	3	24	WH40-24
	3	110-120	WH40-115
	3	208-240	WH40-200/230
	3	480	WH40-480
50	4	110-120	WH40-4-115
	4	208-240	WH40-4-230
	3	24	WH50-24
	3	110-120	WH50-115
60	3	208-240	WH50-200/230
	3	480	WH50-480
	3	24	WH60-24
	3	110-120	WH60-115
75	3	208-240	WH60-200/230
	3	480	WH60-480
	3	24	WH75-24
	3	110-120	WH75-115
90	3	208-240	WH75-200/230
	3	480	WH75-480
	3	24	WH90-24
	3	110-120	WH90-115
120	3	208-240	WH90-200/230
	3	480	WH90-480
	3	110-120	WH120-115



## Product Overview

- Cushioned, isolated coil
- Reinforced thermalset polyester housing
- Large terminals for easy wiring
- Power termination via screw or lug

## Applications

- Air conditioning and heating
- Ventilating and refrigeration
- Food and beverage industries
- Pump and compressor
- Hoists and cranes
- Pool and spa
- Conveyors
- Welding

Field Modification Kits / Side Mount Auxiliary Contacts				
FL Amps	Type	Terminals	Model Number	
30-40	1 NO	Quick	WHACQ-NO-30/40	
30-40	1 NC	Quick	WHACQ-NC-30/40	
30-40	1 NO & 1 NC	Quick	WHACQ-NONC-30/40	
30-40	1 NO	Screw	WHACS-NO-30/40	
30-40	1 NC	Screw	WHACS-NC-30/40	
30-40	1 NO & 1 NC	Screw	WHACS-NONC-30/40	
30-40	1 SPDT	Quick	WHACQ-SPDT-30/40	
30-40	2 SPDT	Quick	WHACQ-2SPDT-30/40	
50-60	1 SPDT	Quick	WHACQ-SPDT-50/60	
75-90	1 SPDT	Quick	WHACQ-SPDT-75/90	

CONTACTORS  
OVERLOAD RELAYS



# WORLDWIDE MOTOR CONTROLS

Contactors and Overload Relays - Discount Code: MC2

IEC Contactors



Coil Table **		
60 Hz Voltage	50 Hz Voltage	Letter
24	24	C2*
120	110	K6
208	208	M2
240	220	P6
277	—	U6
480	—	V6
600	—	T6

\* For Frame Size S00 Only, Use Code BO

## Product Overview

- Four point AC coil can be wired on top, bottom or diagonally
- Direct mount 3RU21 overload relays to create starters
- Snap-on auxiliary contacts, surge suppressors and timers
- Contactors are available with cage clamps on the main terminal connections as well as the auxiliary terminal connections

NEW SERIES FROM SIEMENS

To maintain UL Certifications, use new 3RU2000 series overloads on page 43

CONTACTORS  
OVERLOAD RELAYS

Enclosed Amp Ratings		Single-Phase HP Ratings			Three-Phase HP Ratings				Auxiliary Contacts		Screw Terminals	
AC3	AC1	115 V	208 V	230 V	208 V	230 V	460 V	575 V	NO	NC	Model Number	
<b>Frame Size S00</b>												
7	18	¼	½	¾	1.5	2	3	5	1	0	3RT2015-1A**1	
									0	1	3RT2015-1A**2	
9	22	½	1	1	2	3	5	7.5	1	0	3RT2016-1A**1	
									0	1	3RT2016-1A**2	
12	22	½	1.5	2	3	3	7.5	10	1	0	3RT2017-1A**1	
									0	1	3RT2017-1A**2	
16	22	1	2	2	3	5	10	10	1	0	3RT2018-1A**1	
									0	1	3RT2018-1A**2	
<b>Frame Size S0</b>												
9	40	1	1	1	2	3	5	7.5	1	1	3RT2023-1A**0	
12	40	1	2	2	3	3	7.5	10	1	1	3RT2024-1A**0	
16	40	1	2	3	5	5	10	15	1	1	3RT2025-1A**0	
25	40	2	3	3	7.5	7.5	15	20	1	1	3RT2026-1A**0	
32	50	2	5	5	10	10	20	25	1	1	3RT2027-1A**0	
38	50	3	5	5	10	10	25	25	1	1	3RT2028-1A**0	
<b>Frame Size S2</b>												
28	50	2	3	5	7.5	10	20	25	0	0	3RT1033-1A**0	
32	50	2	5	5	10	10	25	30	0	0	3RT1034-1A**0	
40	60	3	5	7.5	10	15	30	40	0	0	3RT1035-1A**0	
50	60	3	7.5	10	15	15	40	50	0	0	3RT1036-1A**0	
<b>Frame Size S3</b>												
65	90	5		15	20	25	50	60	—	—	3RT1044-1A**0	
80	105	7.5		15	25	30	60	75	—	—	3RT1045-1A**0	
95	105	10		—	30	30	75	100	—	—	3RT1046-1A**0	

**NOTES:**

- Replace the \*\* in the contactor model number with a coil code from the table above.





# WORLDWIDE MOTOR CONTROLS

*Contactors and Overload Relays* - Discount Code: MC2

*IEC Contactors* ▪ *SIRIUS 3RT10* ▪ *3-Pole* ▪ *AC / DC Coil*



60 Hz Voltage	50 Hz Voltage	Letter
24	24	C2*
120	110	K6
208	208	M2
240	220	P6
277	—	U6
480	—	V6
600	—	T6

\* For Frame Size S00 Only, Use Code BO

## Product Overview

- Easy access plug-in AC/DC coil system
- Integrated varistor surge suppressor
- Snap-on auxiliary contacts, surge suppressors and timers
- Front and side mounted auxiliary contacts

Enclosed Amp Ratings		Three-Phase HP Ratings				Auxiliary Contacts		Model Number
AC3	AC1	208 V	230 V	460 V	575 V	NO	NC	
<b>Frame Size S6</b>								
115	160	40	50	100	125	2	2	3RT1054-6A**6
150	185	50	60	125	150	2	2	3RT1055-6A**6
185	215	60	75	150	200	2	2	3RT1056-6A**6
<b>Frame Size S10</b>								
225	275	75	75	150	200	2	2	3RT1064-6A**6
265	330	75	100	200	250	2	2	3RT1065-6A**6
300	330	100	125	250	300	2	2	3RT1066-6A**6
<b>Frame Size S12</b>								
400	430	125	150	300	400	2	2	3RT1075-6A**6
500	610	150	200	400	500	2	2	3RT1076-6A**6

**NOTES:**

- Replace the \*\* in the contactor model number with a coil code from the table above.

CONTACTORS  
OVERLOAD RELAYS



# WORLDWIDE MOTOR CONTROLS

*Contactors and Overload Relays* - Discount Code: MC2

*IEC Contactors*

*Auxiliary Contact Blocks*



3RH1921-1FA22



3RH1921-1DA11

## Product Overview

- EN50005
- Not usable with old 3RT1000 series contactors (Frame Size S00 - S0)
- Other auxiliary block combinations available

NEW SERIES FROM SIEMENS

To maintain UL Certifications, use on new 3RT2000 series contactors

CONTACTORS  
OVERLOAD RELAYS

Frame Size	NO	NC	Model Number	
<b>Top Mount</b>				
S00 - S0	2	2	3RH2911-1FA22	
S2 - S12	2	2	3RH1921-1FA22	
<b>Side Mount</b>				
S00	1	1	3RH2911-1DA11	
S0	1	1	3RH2921-1DA11	
S2 - S12	1	1	3RH1921-1DA11	

**NEW**

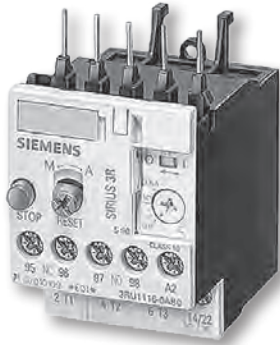
**NEW**  
**NEW**



# WORLDWIDE MOTOR CONTROLS

Contactors and Overload Relays - Discount Code: MC2

IEC Overload Relays



## Product Overview

- Thermal Class 10
- 1NO, 1NC contacts
- Manual / automatic reset
- Test function
- Direct mount

### NEW SERIES FROM SIEMENS

To maintain UL Certifications,  
use with new 3RT2000 series contactors or stand-alone units

For Contactor Type	Setting Range Amp	Screw Terminal Model Number
NEW	0.11 - 0.16	3RU2116-0AB0
	0.14 - 0.2	3RU2116-0BB0
	0.18 - 0.25	3RU2116-0CB0
	0.22 - 0.32	3RU2116-0DB0
	0.28 - 0.4	3RU2116-0EB0
	0.35 - 0.5	3RU2116-0FB0
	0.45 - 0.63	3RU2116-0GB0
	0.55 - 0.8	3RU2116-0HB0
	0.7 - 1.0	3RU2116-0JB0
	0.9 - 1.25	3RU2116-0KB0
	1.1 - 1.6	3RU2116-1AB0
	1.4 - 2	3RU2116-1BB0
	1.8 - 2.5	3RU2116-1CB0
	2.2 - 3.2	3RU2116-1DB0
	2.8 - 4	3RU2116-1EB0
	3.5 - 5	3RU2116-1FB0
4.5 - 6.3	3RU2116-1GB0	
5.5 - 8	3RU2116-1HB0	
7 - 10	3RU2116-1JB0	
9 - 12.5	3RU2116-1KB0	
11 - 16	3RU2116-4AB0	

For Contactor Type	Setting Range Amp	Screw Terminal Model Number
NEW	1.8 - 2.5	3RU2126-1CB0
	2.2 - 3.2	3RU2126-1DB0
	2.8 - 4	3RU2126-1EB0
	3.5 - 5	3RU2126-1FB0
	4.5 - 6.3	3RU2126-1GB0
	5.5 - 8	3RU2126-1HB0
	7 - 10	3RU2126-1JB0
	9 - 12.5	3RU2126-1KB0
	11 - 16	3RU2126-4AB0
	14 - 20	3RU2126-4BB0
	17 - 22	3RU2126-4CB0
	20 - 25	3RU2126-4DB0
	23 - 28	3RU2126-4NB0
	27 - 32	3RU2126-4EB0
30 - 36	3RU2126-4PB0	
34 - 40	3RU2126-4FB0	
Frame S2	5.5 - 8	3RU1136-1HB0
	7 - 10	3RU1136-1JB0
	9 - 12.5	3RU1136-1KB0
	11 - 16	3RU1136-4AB0
	14 - 20	3RU1136-4BB0
	18 - 25	3RU1136-4DB0
	22 - 32	3RU1136-4EB0
	28 - 40	3RU1136-4FB0
	36 - 45	3RU1136-4GB0
40 - 50	3RU1136-4HB0	
Frame S3	18 - 25	3RU1146-4DB0
	22 - 32	3RU1146-4EB0
	28 - 40	3RU1146-4FB0
	36 - 50	3RU1146-4HB0
	45 - 63	3RU1146-4JB0
	57 - 75	3RU1146-4KB0
	70 - 90	3RU1146-4LB0
80 - 100	3RU1146-4MB0	

CONTACTORS  
OVERLOAD RELAYS



# WORLDWIDE MOTOR CONTROLS

**Contactors and Overload Relays - Discount Code: MC2**

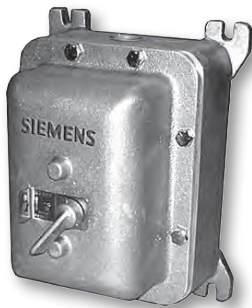
Manual Motor Starters / Protectors

Class 11 - 3RV ▪ Three-Phase



Open Type

NEMA 1



NEMA 7 & 9  
NEMA 3 & 4

## Product Overview

- ON/OFF rotary handle with lockout and visible trip indication
- Adjustment dial for setting to motor FLA (standards only)
- Low voltage protection (LVP) option
- Short circuit trip at 13 times the maximum setting of the FLA dial or rated current
- Ambient compensated up to 140° F
- Phase loss sensitivity
- Test trip function
- LVP option meets OSHA requirements
- UL Listed
- CSA Certified

CONTACTORS  
OVERLOAD RELAYS

60 Hz Voltage	Letter
120	F*
208	D*
240	G*
460	H*

\* Add corresponding letter to end of base class 11 model number for low voltage protection coil

FLA Adj. Range (1)	HP						Enclosure	
	Single-Phase		Three-Phase				Open	
	115 Volts	230 Volts	200 Volts	230 Volts	460 Volts	575 Volts	Model Number	
<b>Manual Starters - Class 11 - 3RV, Three-Phase</b>								
0.11-016	—	—	—	—	—	—	3RV1021-0AA10	
0.14-0.2	—	—	—	—	—	—	3RV1021-0BA10	
0.18-0.25	—	—	—	—	—	—	3RV1021-0CA10	
0.22-0.32	—	—	—	—	—	—	3RV1021-0DA10	
0.28-0.4	—	—	—	—	—	—	3RV1021-0EA10	
0.35-0.5	—	—	—	—	—	—	3RV1021-0FA10	
0.45-0.63	—	—	—	—	—	—	3RV1021-0GA10	
0.55-0.8	—	—	—	—	—	½	3RV1021-0HA10	
0.7-1	—	—	—	—	½	½	3RV1021-0JA10	
0.9-1.25	—	—	—	—	¾	¾	3RV1021-0KA10	
1.1-1.6	—	⅓	—	—	¾	1	3RV1021-1AA10	
1.4-2	—	⅓	—	—	1	1.5	3RV1021-1BA10	
1.8-2.5	—	⅓	½	½	1.5	1.5	3RV1021-1CA10	
2.2-3.2	⅓	¼	¾	¾	1.5	2	3RV1021-1DA10	
2.8-4	⅓	⅓	¾	1	2	3	3RV1021-1EA10	
3.5-5	⅓	½	1	1	3	3	3RV1021-1FA10	
4.5-6.3	¼	¾	1.5	1.5	5	5	3RV1021-1GA10	
5.5-8	½	1	2	2	5	5	3RV1021-1HA10	
7-10	½	1.5	3	3	7.5	10	3RV1021-1JA10	
9-12.5	½	2	3	3	7.5	10	3RV1021-1KA10	
11-16	1	3	5	5	10	15 (1)	3RV1021-4AA10	
14-20	1.5	3	5	7.5	15	20 (1)	3RV1021-4BA10	
17-22	2	3	7.5	7.5	15	20 (1)	3RV1021-4CA10	
20-25	2 (1)	5 (1)	7.5 (1)	7.5 (1)	15	20 (1)	3RV1021-4DA10	
<b>Manual Switches - Class 11 - 3RV, Three-Phase</b>								
1	—	—	—	—	½	½ (1)	3RV1321-0JC10	
5	⅓ (1)	½ (1)	1 (1)	1 (1)	3 (1)	3 (1)	3RV1321-1FC10	
10	½ (1)	1.5 (1)	3 (1)	3 (1)	7.5 (1)	10 (1)	3RV1321-1JC10	
20	1.5 (1)	3 (1)	5 (1)	7.5 (1)	15 (1)	20 (1)	3RV1321-4BC10	
25	2 (1)	5 (1)	7.5 (1)	7.5 (1)	15 (1)	20 (1)	3RV1321-4DC10	

**NOTES:**

- Please call for technical data and model numbers for enclosures: NEMA 1, NEMA 7 & 9, NEMA 3 & 4
- These ratings do not apply as UL Listed manual combination starters.
- (1) These ratings apply for manual motor controllers only



# WORLDWIDE MOTOR CONTROLS

**Pressure Switches** - Discount Code: MC2

*HUBBELL Pressure Switches*

*Formerly Manufactured by FURNAS*



## Product Overview

### 69J Series - Air

- 1/4" Female NPT with pulsation orifice
- 69J Rotatable unloader

Suffix	Description
L	AUTO-OFF disconnect lever
Y	Unloader valve
2A	1/4" Male NPT
2C	Four-port manifold (4 x 1/4" female)

### 69H Series - Air Heavy Duty

- 3/8" Female NPT with pulsation orifice

Suffix	Description
U	Unloader valve
2A	1/4" Male NPT
2S	1/4" Female NPT

### 69ES Series - Water 30-50 PSI

- 1/4" Female NPT pipe fitting

Suffix	Description
B	Pulsation orifice

### 69W Series - Water 3-50 PSI

- 1/4" Female NPT pipe fitting

Suffix	Description
B	Pulsation orifice
L	AUTO-OFF disconnect lever

Current Models Stocked		
Model Number	Cut-In (PSI)	Cut-Out (PSI)
<b>Pressure Switches - Air</b>		
69JF6	80	100
69JF6L	80	100
69JF6LY	80	100
69JF6LY2C	80	100
69JF6Y	80	100
69JF7	95	125
69JF7L	95	125
69JF7LY	95	125
69JF7LY2A	95	125
69JF7LY2C	95	125
69JF7Y	95	125
69JF7Y2C	95	125
69JF8	115	150
69JF8LY	115	150
69JF8LY2C	115	150
69JF8Y	115	150
69JF9	140	175
69JF92C	140	175
69JF9LY	140	175
69JF9LY2C	140	175
69JF9Y	140	175
69JG6	80	100
69JG6L	80	100
69JG6LY	80	100
69JG6Y	80	100
69JG7	95	125
69JG7LY	95	125
69JG7LY2C	95	125
69JG7Y	95	125
69JG8	115	150
69JG8LY	115	150
69JG8LY2C	115	150
69JG8Y	115	150
69JG9	140	175
69JG9LY	140	175
69JG9LY2C	140	175
69JG9Y	140	175
69JG9Y2C	140	175
69HA1	115	150
69HA12S	115	150
69HA1G	115	150
69HA1Z140-175	140	175

Current Models Stocked		
Model Number	Cut-In (PSI)	Cut-Out (PSI)
<b>Pressure Switches - Air</b>		
69HAU1	115	150
69HAU12AZ140-175	140	175
69HAU1Z140-175	140	175
69HAU2	100	125
69HA3	30	40
69HAU3	30	40
69HB1	115	150
69HBU1	115	150
69HB2	100	125
69HBU2	100	125
69HBU3	30	40
<b>Spare Unloader Valves</b>		
69DCA	—	—
69DJA	—	—
<b>Pressure Switches - Water</b>		
69ES1	30	50
69ES1Z20-40	20	40
69ES1Z40-60	40	60
69ES2	30	50
69ES2B	30	50
69WA4	30	50
69WA4B	30	50
69WA4G	30	50
69WA4GZ20-40	20	40
69WA4GZ40-60	40	60
69WA4L	30	50
69WA4LZ20-40	20	40
69WA4Z20-40	20	40
69WA4Z40-60	40	60
69WB2	3	7
69WB3	5	10
69WB5	30	50
69WC7	12	150
69WEC	20	40
69WECZ30-50	30	50
69WFC	20	40
69WH6	80	150
69WR2	7	3
69WR3	10	5
69WR5	50	30
69WR6	100	75
69WR7	125	95

PRESSURE SWITCHES



# WORLDWIDE MOTOR CONTROLS

*Pressure Switches* - Discount Code: MC2

*WorldWide Pressure Switches (Air)*



## Product Overview

- NEW From WorldWide Electric
- UL and CSA Listed
- Single 1/4" Female NPT Port
- Normally Closed

Model Number	Ratings - Single-Phase	
	120V	240V
WPAL	1.5 HP - 20 A	2 HP - 12 A
WPAH	2 HP - 26 A	3 HP - 26 A

PRESSURE SWITCHES

Factory Setting	Differential	Standard Duty		Heavy Duty	
		Model Number		Model Number	
<b>1-Port Manifold</b>					
80-100 PSI	20-35 PSI	WPAL80/100		WPAH80/100	
95-125 PSI	30-40 PSI	WPAL95/125		WPAH95/125	
115-150 PSI	35-55 PSI	WPAL115/150		WPAH115/150	
140-175 PSI	40-55 PSI	WPAL140/175		WPAH140/175	
<b>4-Port Manifold</b>					
80-100 PSI	20-35 PSI	WPAL480/100		WPAH480/100	
95-125 PSI	30-40 PSI	WPAL495/125		WPAH495/125	
115-150 PSI	35-55 PSI	WPAL4115/150		WPAH4115/150	
140-175 PSI	40-55 PSI	WPAL4140/175		WPAH4140/175	

Optional Adders		
Description	Suffix	
Disconnect Lever	L	
Unloader Valve	U	
1/4" NPT Male	M	



# WORLDWIDE MOTOR CONTROLS

**Pressure Switches** - Discount Code: MC2

WorldWide Pressure Switches  
Current Stock Models

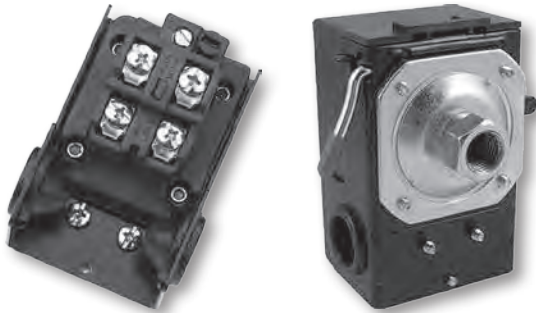


## WPHL Series - High Pressure (Air) Product Overview

- Up to 250 PSI
- Normally Closed
- 120 V - Single-Phase: 2 HP - 24 A
- 240 V - Single-Phase: 3 HP - 20 A

Factory Setting	Model Number		Connection
<b>NEMA 1</b>			
115-150 PSI	WPHL115/150		3/8" NPT Female
140-175 PSI	WPHL140/175		3/8" NPT Female
140-175 PSI	WPHL140/175MQ		1/4" NPT Male
<b>NEMA 1 - With Unloader Valve</b>			
115-150 PSI	WPHL115/150U		3/8" NPT Female
140-175 PSI	WPHL140/175U		3/8" NPT Female
100-125 PSI	WPHL100/125U		3/8" NPT Female
30-40 PSI	WPHL30/40U		3/8" NPT Female

PRESSURE SWITCHES



## WPHL Series - High Pressure (Water) Product Overview

- Up to 250 PSI
- Normally Closed
- 120 V - Single-Phase: 2 HP - 24 A
- 240 V - Single-Phase: 3 HP - 20 A

Factory Setting	Model Number		Connection
30-50 PSI	WPWL30/50		No Disconnect
30-50 PSI	WPWL30/50L		Disconnect Lever



# WORLDWIDE MOTOR CONTROLS

**Safety Switches** - Discount Code: MC2

*VBII Safety Switches*

*General Duty* ▪ 240 Volt



## Product Overview

- Highly visible easy-to-grip handle
- Visible blade construction
- Door opens greater than 180°
- Quick-make, quick-break mechanism
- 200% optional neutrals (200-600 Amps)
- Positive two and three point mounting
- Padlock style cover latch and handle
- Generous wiring gutter
- Front removable lugs which can easily be converted to copper body or compression type lugs
- Lugs suitable for copper or aluminium at 60°C or 75°C
- Replacement parts

VBII safety switches are built to last. Everything about the VBII safety switch has been designed for the engineer installer. We have rolled the enclosure's metal edges and corners to minimize cuts, nicks, and scrapes to the installer's hands and conductors. We have added generous wiring gutters to meet or exceed UL and NEC wire bending space requirements.

The enclosure is more rigid and resilient and all parts are replaceable for easier service. Our quick-make quick-break switching action coupled with our double break visible blade design ensures reliable operation in both general duty and heavy duty applications.

Amp Rating	NEMA 1 Indoor		NEMA 3R Outdoor		Horsepower Rating 240V AC			
	Model Number		Model Number		Single-Phase, 2-Wire		Three-Phase, 3-Wire	
					Std.	Max.	Std.	Max.
<b>240 Volt Fusible - 2-Pole, 2-Fuse, Solid Neutral</b>								
30	GF221N		GF221NR		1.5	3	3	7.5
60	GF222N		GF222NR		3	10	7.5	15
100	GF223N		GF223NR		7.5	15	15	30
200	GF224N		GF224NR		15	—	25	60
400	GF225N		GF225NR		15	—	50	125
600	GF226N		GR226NR		15	—	75	200
<b>240 Volt Fusible - 3-Pole, 3 Fuse, Solid Neutral</b>								
30	GF321N		GF321NR		1.5	3	3	7.5
60	GF322N		GF322NR		3	10	7.5	15
100	GF323N		GF323NR		7.5	15	15	30
200	GF324N		GF324NR		15	—	25	60
400	GF325N		GF325NR		15	—	50	125
600	GF326N		GF326NR		15	—	75	200
<b>240 Volt Non Fusible - 3-Pole, 3-Wire, No Neutral - Also Used For 2-Pole Applications</b>								
30	GNF321		GNF321R		—	3	7.5	—
60	GNF322		GNF322R		—	10	15	—
100	GNF323		GNF323R		—	15	30	—
200	GNF324		GNF324R		—	15	60	—
400	GNF325		—		—	15	125	—
600	GNF326		—		—	15	200	—

SAFETY SWITCHES





# WORLDWIDE MOTOR CONTROLS

**Safety Switches** - Discount Code: MC2

*VBI Safety Switches*

*Heavy Duty* ▪ 240 Volt / 480 Volt / 600 Volt



Heavy Duty - 240 Volt								
Amp Rating	NEMA 1 Indoor		NEMA 3R Outdoor		Horsepower Rating 240V AC			
	Model Number	Model Number	Model Number	Model Number	Single-Phase, 2-Wire		Three-Phase, 3-Wire	
					Std.	Max.	Std.	Max.
<b>240 Volt Fusible - 2-Pole, 2-Fuse, Solid Neutral</b>								
30	HF221N		HF221NR		1.5	3	3	7.5
60	HF222N		HF222NR		3	10	7.5	15
100	HF223N		HF223NR		7.5	15	15	30
200	HF224N		HF224NR		15	—	25	60
400	HF225NA		HF225NRA		15	—	50	125
600	HF226NA		HF226NRA		15	—	75	200
800	HF227N		HF227NR		—	—	100	250
1200	HF228N		HF228NR		—	—	100	250
<b>240 Volt Fusible - 3-Pole, 3-Fuse, Solid Neutral</b>								
30	HF321N		HF321NR		1.5	3	3	7.5
60	HF322N		HF322NR		3	10	7.5	15
100	HF323N		HF323NR		7.5	15	15	30
200	HF324N		HF324NR		15	—	25	60
400	HF325NA		HF325NRA		15	—	50	125
600	HF326NA		HF326NRA		15	—	75	200
800	HF327N		HF327NR		—	—	100	250
1200	HF328N		HF328NR		—	—	100	250

## Product Overview

- Highly visible easy-to-grip handle
- Visible blade construction
- Door opens greater than 180°
- All copper current carrying parts on heavy duty switches (except wire grips)
- Quick-make, quick-break mechanism
- 200% optional neutrals (200-600 Amps)
- Positive two and three point mounting
- Padlock style cover latch and handle
- Generous wiring gutter
- Front removable lugs which can easily be converted to copper body or compression type lugs
- Lugs suitable for copper or aluminium at 60°C or 75°C
- Replacement parts

Heavy Duty - 600 Volt										
Amp Rating	NEMA 1 Indoor		NEMA 3R Outdoor		NEMA 12 Industrial		Horsepower Rating			
	Model Number	Model Number	Model Number	Model Number	Model Number	Model Number	480VAC		600VAC	
							Single-Phase, 2-Wire		Three-Phase, 3-Wire	
							Std.	Max.	Std.	Max.
<b>600 Volt Fusible - 3-Pole, 3-Fuse, No Neutral - Also Used For 2-Pole Applications</b>										
30	HF361		HF361R		HF361J		5	15	7.5	20
60	HF362		HF362R		HF362J		15	30	15	50
100	HF363		HF363R		HF363J		25	60	30	75
200	HF364		HF364R		HF364J		50	125	60	150
400	HF365A		HF365RA		HF365JA		100	250	125	350
600	HF366A		HF366RA		HF366JA		150	400	200	500
800	HF367		HF367R		HF367J		200	500	250	500
1200	HF368		HF368R		HF368J		200	500	250	500
<b>600 Volt Non-Fusible - 3-Pole, 3-Wire</b>										
30	HNF361		HNF361R		HNF361J		—	20	—	30
60	HNF362		HNF362R		HNF362J		—	50	—	60
100	HNF363		HNF363R		HNF363J		—	75	—	100
200	HNF364		HNF364R		HNF364J		—	125	—	150
400	HNF365A		HNF365RA		HNF365JA		—	250	—	350
600	HNF366A		HNF366RA		HNF366JA		—	400	—	500
800	HNF367		HNF367R		HNF367J		—	500	—	500
1200	HNF368		HNF368R		HNF368J		—	500	—	500

**NOTES:**

- 600V product available in NEMA 4X stainless - please call for information



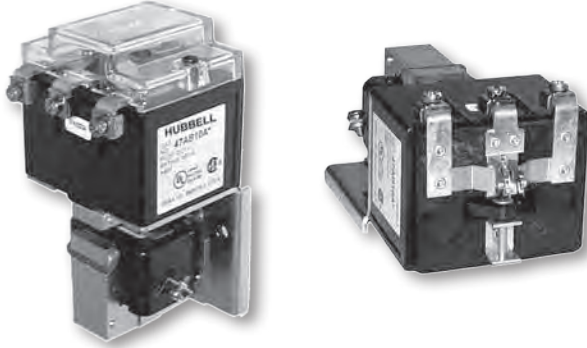
SAFETY SWITCHES

# WORLDWIDE MOTOR CONTROLS

*Alternator Relays and Drum Controllers* - Discount Code: MC2

*HUBBELL Alternator Relays*

*Formerly Manufactured By FURNAS*



## Product Overview

- Single pole double throw heavy duty 10 amp silver cadmium oxide contacts enclosed in a transparent dust cover
- The circuit is never closed or opened while current is being conducted (this provides increased control life)
- No load transfer
- Front wired
- Industrial/rugged design

Electrical Ratings For Alternator Relays		
Volts	Make	Break
120	60	6
240	30	3
480	15	1.5

Volts 60 Hz	Open Type		NEMA 1 Enclosure	
	Model Number		Model Number	
24	47AB10AJ		47AB10BJ	
120	47AB10AF		47AB10BF	
200	47AB10AD		47AB10BD	
240	47AB10AG		47AB10BG	
480	47AB10AH		47AB10BH	

## Drum Controllers



## Product Overview

- Start, stop and change the speed and/or rotating direction of reversible AC and DC motors
- Variety of handle styles are available as field modifications
- Magnetic chuck switches are also available
- Variety of enclosures NEMA 1 and NEMA 4
- Easy terminal access
- Heavy duty contacts

Type / Purpose	Max. HP						Enclosure			
	Single-Phase AC			Three-Phase AC		DC	NEMA 1		NEMA 4	
	120 Volts	240 Volts	480 Volts	240 Volts	480-600 Volts	120-240 Volts	Model Number	List Price	Model Number	List Price
Reversing / Maintaining	1.5	2	—	2	2	¼	58R44 (2)		WR44 (1)	
Reversing / Maintaining	1.5	2	3	3	3	1	J2 (2)		—	—
Reversing / Maintaining	2	3	—	5	7.5	2	J5 (2)		WJ5 (2)	

**NOTES:**

- To prevent unintentional operation, OSHA regulations and local installation codes may require guarding of handles.

- Consult these requirements prior to selecting a drum switch or handle.

(1) The WR44 is maintained only

(2) Switch is shipped maintained - customer adjustable to momentary

ALTERNATOR RELAYS  
DRUM CONTROLLERS



# WORLDWIDE MOTOR CONTROLS

*Push Buttons & Signaling Devices* - Discount Code: MC2

*Class 52 ▪ 30mm ▪ Water, Oil Tight & Corrosion Resistant*



**Pilot Light**



**Pushbutton**



**Selector Operator**



**Selector Push Operator**

**Pushbutton Operators**

- Neoprene actuator seals ring to prevent oil and dust from penetrating the contact blocks
- Neoprene gasket to seal operator mounting hole and a chrome plated lock nut

**Mushroom Head Pushbutton Operators**

- The Mushroom head base construction is identical to the pushbutton base
- The actuator is molded of high impact material for either a 1 5/8 Inch or 2 1/2 inch diameter molded head

**Contact Blocks**

- Contact blocks have double break bifurcated silver contacts, with gold flashing as standard, which improve contact fidelity
- Heavy duty rated, NEMA A600
- Suitable for applications down to 5V/1mA solid state outputs
- Molded bodies and pushers resist arcing and tracking
- Stainless steel springs resist corrosion and provide strong contact pressure
- Captive mounting screw speed panel assembly

**LED Type Pilot Lights:**

- LEDs (Light Emitting Diodes) can be used in pilot lights instead of incandescent bulbs because of their long life (up to 10 years)
- Resistance to vibration and ambient sensitivity

**Push Pull Operators:**

- Push pull operators combine two or three functions in one unit
- The maintained operator has two positions: PULL to start and PUSH to stop
- The momentary operator with three positions provides spring return from both pull and push positions
- Also available with a pilot light

Lever Color Inserts Are Available In 8 Colors.

**Transformer Type Pilot Lights:**

- Available with a 120, 240, 480 or 600 volt primary (50/60 Hz) and a separate secondary winding which supplies reduced voltage to a miniature bayonet base 6 volt lamp
- Suitable for applications where vibration is present and long bulb life is desirable

**Full Voltage Type Pilot Lights:**

- Available for 6, 12, 24, 120 and 240 volt AC and DC applications
- The 240 volt pilot light is supplied with a 120 volt lamp and a voltage dropping resistor

**Selector Operators:**

- Positive action indexing
- Available with either a short or long lever
- The molded black lever is designed to accept a color insert
- A white insert is provided as standard
- Each operator is equipped with a cam to actuate plungers of contact blocks assembled behind the operator
- Two, three and four position operators are available with seven different cams

**Electrical Ratings**

- NEMA AC Ratings 50/60 Hz
- NEMA A600 10 Continuous Amps

Volts	Make	Break
120	60	6
240	30	3
480	15	1.5
600	12	1.2
VA	7200	720

# WORLDWIDE MOTOR CONTROLS

**Push Buttons & Signaling Devices** - Discount Code: MC2

Class 52 ▪ 30mm ▪ Water, Oil Tight & Corrosion Resistant

Momentary Push Button ▪ Non-Illuminated



Flush Head



Extended Head



Large Mushroom Head 2-1/2"



Small Mushroom Head 1-3/4"

Head Style	Contacts	Color	Model Number
Flush	---	Black	52PA8A1
		Red	52PA8A2
		Green	52PA8A3
		Yellow	52PA8A4
Extended	---	Black	52PA8B1
		Red	52PA8B2
		Green	52PA8B3
Mushroom Head Plastic 1-3/4"	---	Red	52PM9W2
Mushroom Head Plastic 2-1/2"	---	Red	52PB9E2



52BAK



52BAJ

Contact Blocks			
Touchsafe Contact Blocks With Gold Flashing	Notes	Model Number	
1 NO		52BAK (4)	
1 NC		52BAJ (4)	
1 NO - 1 NC		52BJK (4)	
1 NO Early Make	Closes Before 52BAK	52BAH	
1 NC Late Break	Opens After 52BAJ	52BAE (4)	
1 NO - 1 NC	Reed Switch: UL listed for Class 1, Division 2; .25A Max, 200V AC, 10 Watt Max .5A Max, 200V DC, 10 Watt Max	52BAR (3)	
1 NC Extra Late Break		52BAU (4)	

**NOTES:**

- (1) These can also be used with the 1-3/4" push-pull devices
- (2) For push-pull units starting with part numbers 52PA, 52PE or 52PX replacement locknuts can be ordered using 52AANL (chrome) and 52AXNL (black)
- (3) Hermetically sealed
- (4) → Positive opening according to IEC 60947-5-1, Appendix K

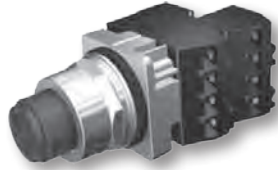


# WORLDWIDE MOTOR CONTROLS

*Push Buttons & Signaling Devices* - Discount Code: MC2

*Class 52* ▪ 30mm ▪ *Water, Oil Tight & Corrosion Resistant*

*Push Button & Push-To-Test* ▪ *Illuminated*



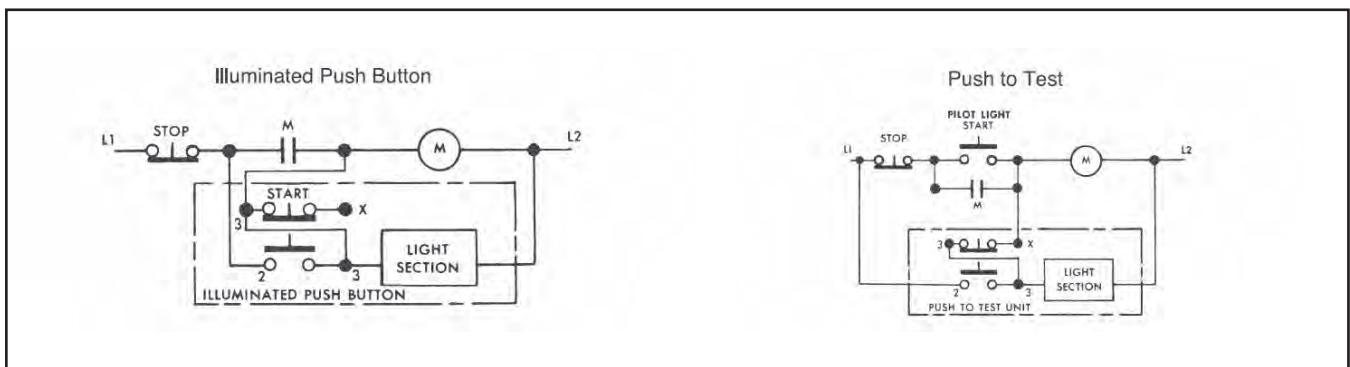
Extended Lens



Flush Lens

Type	Lamp Type	Voltage	Color	Contacts	Model Number
Full Voltage (AC/DC)	LED	24V	Red	1 NO - 1 NC	52PT6D2AB
			Green	1 NO - 1 NC	52PT6D3AB
			Blue	1 NO - 1 NC	52PT6D5AB
			Amber	1 NO - 1 NC	52PT6D9AB
			White	1 NO - 1 NC	52PT6DBAB
Full Voltage (AC/DC)	LED	120V	Red	1 NO - 1 NC	52PT6E2AB
			Green	1 NO - 1 NC	52PT6E3AB
Transformer (AC)	LED	120V	Red	1 NO - 1 NC	52PT6G2AB
			Green	1 NO - 1 NC	52PT6G3AB
			Amber	1 NO - 1 NC	52PT6G9AB
			White	1 NO - 1 NC	52PT6GBAB

## Wiring Diagrams

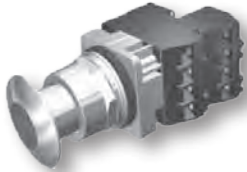


# WORLDWIDE MOTOR CONTROLS

**Push Buttons & Signaling Devices** - Discount Code: MC2

Class 52 ▪ 30mm ▪ Water, Oil Tight & Corrosion Resistant

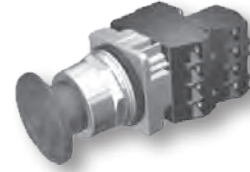
2 & 3 Position Push-Pull Mushroom Head Devices ▪ Non-Illuminated



Mushroom Head Metal 1-3/4"



Mushroom Head Plastic 2-1/2"



Mushroom Head Plastic 1-3/4"

Contacts	Color	Metal 1-3/4"		Plastic 1-3/4"		Plastic 2-1/2"	
		Model Number		Model Number		Model Number	
<b>2 Position - Maintained</b>							
---	Red	52PP2A2		52PP2W2		52PP2V2	
<b>3 Position - Momentary In - Momentary Out</b>							
---	Red	52PP3A2		52PP3W2		52PP3V2	
<b>3 Position - Maintained In - Momentary Out</b>							
---	Red	52PP7A2		52PP7W2		52PP7V2	



52BAK



52BAJ

Contact Blocks			
Touchsafe Contact Blocks With Gold Flashing	Notes	Model Number	
1 NO		52BAK (4)	
1 NC		52BAJ (4)	
1 NO - 1 NC		52BJK (4)	
1 NO Early Make	Closes Before 52BAK	52BAH	
1 NC Late Break	Opens After 52BAJ	52BAE (4)	
1 NO - 1 NC	Reed Switch: UL listed for Class 1, Division 2; .25A Max, 200V AC, 10 Watt Max .5A Max, 200V DC, 10 Watt Max	52BAR (3)	
1 NC Extra Late Break		52BAU (4)	

**NOTES:**

- (1) These can also be used with the 1-5/8" push-pull devices
- (2) For push-pull units starting with part numbers 52PA, 52PE or 52PX replacement locknuts can be ordered using 52AANL (chrome) and 52AXNL (black)
- (3) Hermetically sealed
- (4) → Positive opening according to IEC 60947-5-1, Appendix K

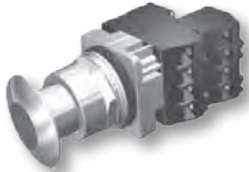


# WORLDWIDE MOTOR CONTROLS

**Push Buttons & Signaling Devices** - Discount Code: MC2

Class 52 ▪ 30mm ▪ Water, Oil Tight & Corrosion Resistant

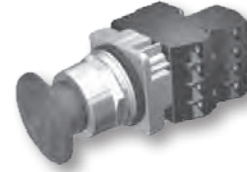
2 & 3 Position Push-Pull Mushroom Head Devices ▪ Illuminated



Mushroom Head Metal 1-3/4"



Mushroom Head Plastic 2-1/2"



Mushroom Head Plastic 1-3/4"

Type	Lamp Type	Voltage	Color	Contacts	Metal 1-3/4"		Plastic 1-3/4"	
					Model Number		Model Number	
<b>2 Position - Maintained</b>								
Full Voltage (AC/DC)	LED	24V	Red	1 NO - 1 NC	52PP2D2AB (1)		52PP2DRAB (1)	
			Green	1 NO - 1 NC	52PP2D3AB		52PP2DSAB	
Full Voltage (AC/DC)	Incandescent	120V	Red	1 NO - 1 NC	52PP2E2A (1)		52PP2ERA (1)	
Transformer (AC)	LED	120V	Red	1 NO - 1 NC	52PP2G2AB (1)		52PP2GRAB (1)	
			Green	1 NO - 1 NC	52PP2G3AB		52PP2GSAB	
<b>3 Position - Momentary In - Momentary Out</b>								
Full Voltage (AC/DC)	LED	24V	Green	1 NO - 1 NCELB	52PP3D3UB		52PP3DRUB	
Full Voltage (AC/DC)	Incandescent	120V	Red	1 NO - 1 NCELB	52PP3E2		52PP3ER	
Transformer (AC)	LED	120V	Red	1 NO - 1 NCELB	52PP3G2UB		52PP3GRUB	
			Green	1 NO - 1 NCELB	52PP3G3UB		52PP3GSUB	
<b>3 Position - Maintained In - Momentary Out</b>								
Full Voltage (AC/DC)	LED	24V	Green	1 NO - 1 NCELB	52PP7D3UB		52PP7DSUB	
Transformer (AC)	LED	120V	Red	1 NO - 1 NCELB	52PP7G2UB		52PP7GRUB	
			Green	1 NO - 1 NCELB	52PP7G3UB		52PP7GSUB	

**NOTES:**

(1) EMERGENCY-STOP control devices according to IEC 60947-5-5



# WORLDWIDE MOTOR CONTROLS

**Push Buttons & Signaling Devices** - Discount Code: MC2

*Class 52* ▪ 30mm ▪ Water, Oil Tight & Corrosion Resistant  
*Selector Switches*



Short Lever



Long Lever

Contact Type	M = Maintained S = Spring Return	Short Lever		Long Lever	
		Model Number		Model Number	
<b>2 Position - Operator</b>					
No Contacts	M M	52SA2AAB		52SB2AAB	
No Contacts	M<---S	52SA2ACB		52SB2ACB	
<b>3 Position - Operator</b>					
No Contacts	M M M	52SA2CAB		52SB2CAB	
No Contacts	M M M	52SA2BAB		52SB2BAB	
No Contacts	S--->M M	52SA2BBB		52SB2BBB	
No Contacts	M M<---S	52SA2BCB		52SB2BCB	
No Contacts	S--->M<---S	52SA2BDB		52SB2BDB	



52BAK



52BAJ

Contact Blocks			
Touchsafe Contact Blocks With Gold Flashing	Notes	Model Number	
1 NO		52BAK (4)	
1 NC		52BAJ (4)	
1 NO - 1 NC		52BJK (4)	
1 NO Early Make	Closes Before 52BAK	52BAH	
1 NC Late Break	Opens After 52BAJ	52BAE (4)	
1 NO - 1 NC	Reed Switch: UL listed for Class 1, Division 2; .25A Max, 200V AC, 10 Watt Max .5A Max, 200V DC, 10 Watt Max	52BAR (3)	
1 NC Extra Late Break		52BAU (4)	

**NOTES:**

- (1) These can also be used with the 1-5/8" push-pull devices
- (2) For push-pull units starting with part numbers 52PA, 52PE or 52PX replacement locknuts can be ordered using 52AANL (chrome) and 52AXNL (black)
- (3) Hermetically sealed
- (4) → Positive opening according to IEC 60947-5-1, Appendix K



# WORLDWIDE MOTOR CONTROLS

*Push Buttons & Signaling Devices* - Discount Code: MC2

*Class 52 ▪ 30mm ▪ Water, Oil Tight & Corrosion Resistant  
Indicator Lights*



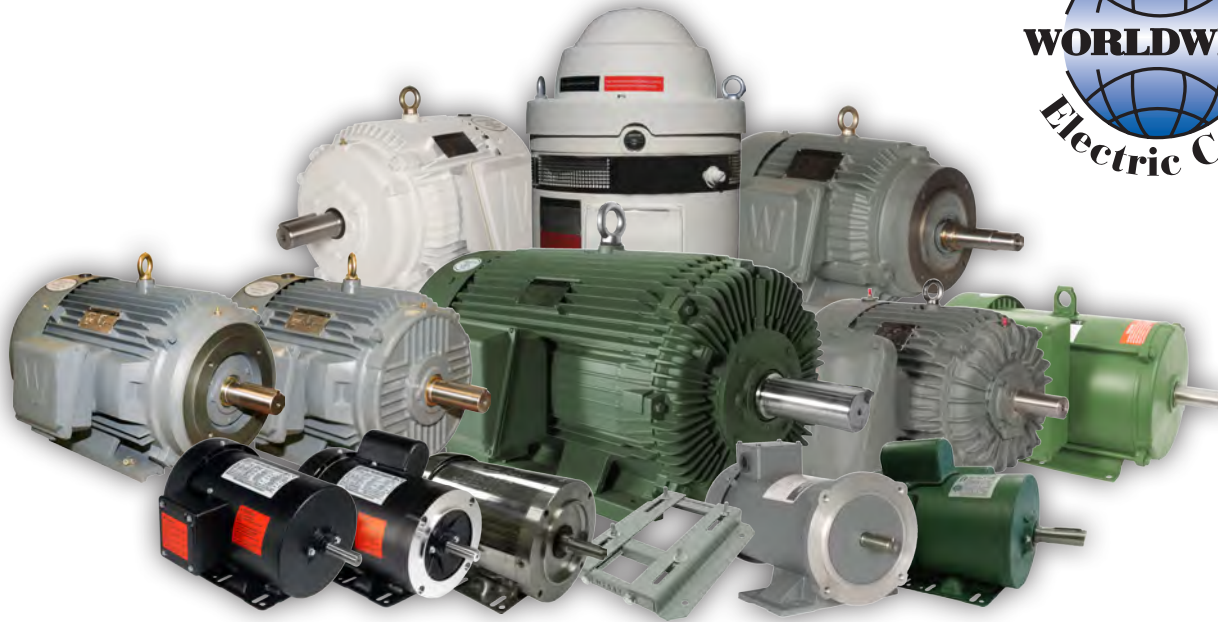
Plastic Lens



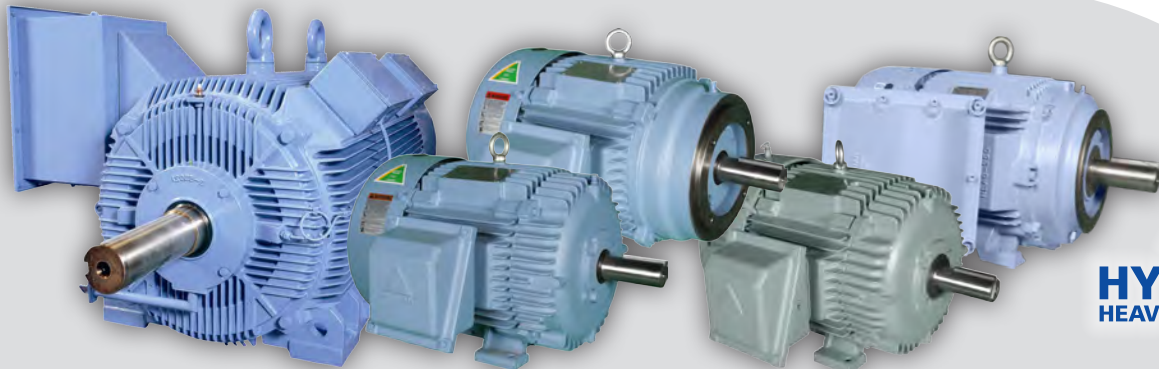
Glass Lens

Type	Lamp Type	Voltage	Color	Plastic Lens		Glass Lens	
				Model Number		Model Number	
Full Voltage (AC/DC)	LED	120V	Red	52PL4E2XB		52PL5E2XB	
			Green	52PL4E3XB		52PL5E3XB	
			Amber	52PL4E9XB		52PL5E9XB	
			Clear	52PL4EAXB		52PL5EAXB	
			White	52PL4EBXB		52PL5EBXB	
Full Voltage (AC/DC)	Incandescent	120V	Red	52PL4E2		52PL5E2	
			Green	52PL4E3		52PL5E3	
			Amber	52PL4E9		52PL5E9	
			No Lens	52PL4EN		52PL5EN	
Transformer (AC)	LED	120V	Red	52PL4G2XB		52PL5G2XB	
			Green	52PL4G3XB		52PL5G3XB	
			Amber	52PL4G9XB		52PL5G9XB	
			White	52PL4GBXB		52PL5GBXB	
Transformer (AC)	Incandescent	120V	Red	52PL4G2		52PL4G2	
			Green	52PL4G3		52PL4G3	
			Amber	52PL4G9		52PL4G9	
			White	52PL4GB		52PL4GB	

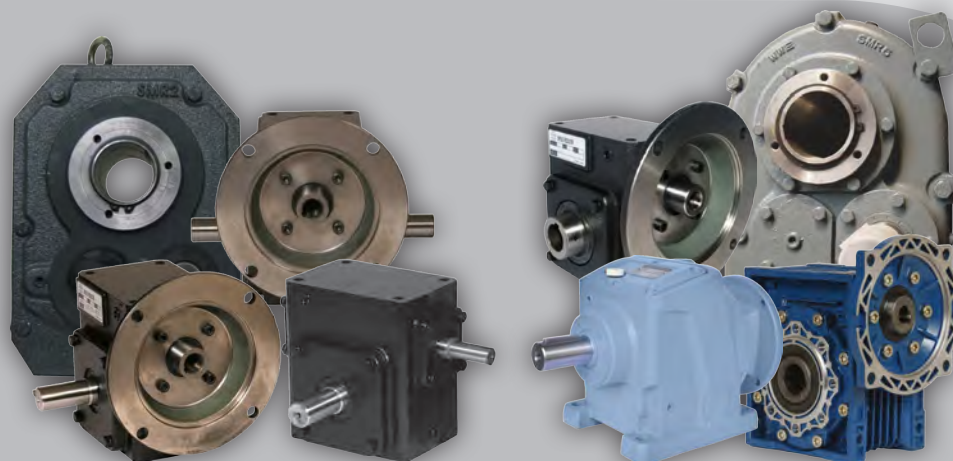
# ADDITIONAL PRODUCTS FROM WORLDWIDE ELECTRIC



**WorldWide Motors** | General Purpose Fractional HP | Stainless Steel / Washdown Duty | Jet Pump | Permanent Magnet DC | Farm Duty  
EPIC Plus Premium Efficiency | Explosion Proof | Advanced Design Rock Crusher | Oil Well Pump | Close Coupled Pump | Vertical Hollow Shaft



**HYUNDAI Motors** | Crown Triton™ Premium Efficiency | Crown Triton™ IEEE-841 | Crown Triton™ Explosion Proof  
Crown Triton™ Severe Duty Large Frame | Medium Voltage | High Voltage



**Gear Reducers** | "Original" Shaft Mount Reducers | "Ultimate" Shaft Mount Reducers | Cast Iron Worm Gear Reducers  
Aluminum Worm Gear Speed Reducers | Inline Helical Speed Reducers | Gearmotors | Accessories and Parts