

- ◆ 6 to 45A starter ratings
- ◆ Internal by-pass relay
- ◆ Two-pole switching
- ◆ Soft start and stop
- ◆ Initial torque control for smooth and gradual starting
- ◆ Total integrated motor protection.



### Soft starters

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1.5 to 10HP ratings up to 600VAC .....	<b>14-</b>	<b>2</b>
10 to 40HP ratings up to 600VAC .....	<b>14-</b>	<b>3</b>

## ADXM...BP type



51 ADXM 06BP  
51 ADXM 12BP  
51 ADXM 18BP

Motor rating Three-phase power	Rated starter current I <sub>e</sub>	Catalog number ①②	Price
[HP]	[kW]	[A in AC-53b]	\$ each

With integrated by-pass relay.  
220VAC motor voltage.

1.5	1.1	6	<b>51 ADXM 06BP A220</b>	579.00
3	3	12	<b>51 ADXM 12BP A220</b>	707.00
5	4	18	<b>51 ADXM 18BP A220</b>	783.00

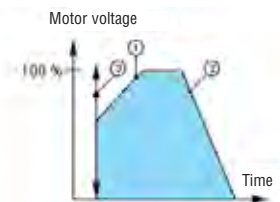
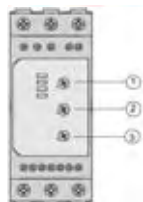
480VAC motor voltage.

7.5	5.5	12	<b>51 ADXM 12BP A480</b>	707.00
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600VAC motor voltage.

10	7.5	12	<b>51 ADXM 12BP A600</b>	707.00
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### ADXM 06/12/18 adjustments



- ① Ramp-up time 0.5 to 10s. Time from zero to full load voltage.  
② Ramp-down time 0.5 to 20s. Time from full load voltage to zero.  
③ Initial torque 0 to 85% voltage at the beginning of the ramp-up function.  
Starting and stopping time as well as initial torque can be independently adjusted by built-in potentiometers.

### Led indication

Description	LED color	Inscription
Power supply on	Green	POWER ON
Ramp up/down	Yellow (constantly on)	RAMPING
By-pass relay	Yellow (constantly on)	BY-PASS

### General characteristics

ADXM...BP is a compact soft starter, for three-phase squirrel-cage motors; it soft starts and soft stops rated motor load currents up to 18A.

The soft starter reduces the mechanical load on motors, shafts, gearboxes and drive belts.

The internal by-pass relay of the starter eliminates the need for external heatsinks thereby reducing space requirements in panels and generated heat.

Main features are:

- Suitable for three-phase induction motors up to 10HP/7.5kW at 600V
- 35mm DIN rail mounting (IEC/EN 60715)
- Integrated by-pass relay
- Low in-rush current and reduced vibrations during starting
- Simple programming and installation
- Ideal for conveyor belts, compressors, pumps, hoisting equipment, blowers, fans and mixers.

### Operational characteristics

- Number of controlled phases: Two
- Controlled operational voltage L1-L2.L3:  
220VAC -15/+10% for ADXM...BP A220 types ①  
480VAC -15/+10% for ADXM 12BP A480 ②  
600VAC -15/+10% for ADXM 12BP A600 ②
- Rated AC frequency: 50/60Hz ±10% (self-configurable)
- Auxiliary control power: A1-A2 - 24-110VAC/DC ±15%  
A1-A3 - 110-480VAC ±15%
- Min-max control input current: 1-5mA
- Method of starting and stopping: Voltage control
- Start time adjustment - ramp up: 0.5 to 10 seconds
- Stop time adjustment - ramp down: 0.5 to 20 seconds
- Start torque adjustment - initial torque: 0-85% voltage
- Minimum operating current: 250mA
- Termination:
  - Line: 6 cage clamp type with M4 screw
  - Secondary: 7 cage clamp type with M3 screw
- Conductor cross section:
  - Line: 14...8 AWG / flexible 2.5...10mm<sup>2</sup> or 2 - 4mm<sup>2</sup>
  - Secondary: 22...12 AWG / flexible 0.5...1.5mm<sup>2</sup>
- Maximum tightening torque (tool):
  - Line: 22lbin / 2.5Nm (Pozidrive 2)
  - Secondary: 4.5lbin / 0.5Nm (Phillips 0)
- Degree of protection: IP20
- Natural cooling system
- Ambient conditions:
  - Operating temperature: -4...+140°F (-20...+60°C)
  - Storage temperature: -58...+185°F (-50...+85°C)
  - Relative humidity: <95% with no condensation at 104°F/40°C
  - Pollution degree: 3
  - Altitude: 1000m; derating required higher up to 2000m maximum.

① 400VAC type available on request. Contact Sales & Technical Support for details.

② 480VAC or 600VAC types not mentioned in table above available on request. Contact Sales & Technical Support for details.

### Certifications and compliance

UL listed for USA and Canada, file E223223.  
Compliant with standards: IEC/EN 60947-1,  
IEC/EN 60947-4-2.

## ADXM...BP type



51 ADXM 25BP  
51 ADXM 45BP

Motor rating Three-phase power	Rated starter current Ie	Catalog number ①②	Price
[HP] [kW]	[A in AC-53b]		\$ each

With integrated by-pass relay.  
220VAC motor voltage.

10	5.5	25	<b>51 ADXM 25BP A220</b>	978.00
15	11	45	<b>51 ADXM 45BP A220</b>	2106.00

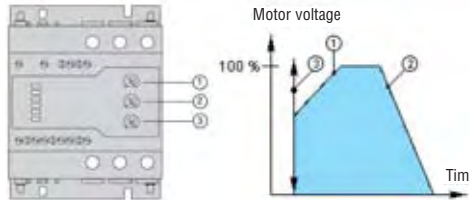
480VAC motor voltage.

20	15	25	<b>51 ADXM 25BP A480</b>	978.00
30	30	45	<b>51 ADXM 45BP A480</b>	2106.00

600VAC motor voltage.

25	18.5	25	<b>51 ADXM 25BP A600</b>	978.00
40	30	45	<b>51 ADXM 45BP A600</b>	2106.00

### ADXM 25/45BP adjustments



- ① Ramp-up time 1 to 10s. Time from zero to full load voltage.
  - ② Ramp-down time 1 to 30s. Time from full load voltage to zero.
  - ③ Initial torque 0 to 70% voltage at the beginning of the ramp-up function.
- Starting and stopping time as well as initial torque can be independently adjusted by built-in potentiometers.

### Led indication

Description	LED color	Inscription
Power supply on	Green	POWER ON
Ramp up/down	Yellow (flashing)	RAMPING
By-pass relay	Yellow (constantly on)	BYPASS
Over temperature inside starter	Red (flashing)	OVERHEAT
Over temperature in motor (PTC)	Red (constantly on)	
Wrong phase sequence ③	Red (flashing)	WRONG SEQ
Phase failure/loss ③	Red (fast flashing)	PHASE LOSS
Voltage too low	Red (slow flashing)	

③ These protections are active at power on only.

### General characteristics

ADXM...BP is a compact soft starter, for three-phase squirrel-cage motors; it soft starts and soft stops rated motor load currents up to 45A. The soft starter reduces the mechanical load on motors, shafts, gearboxes and drive belts. The internal by-pass relay of the starter eliminates the need for external heatsinks thereby reducing space requirements in panels and generated heat.

Main features are:

- Suitable for three-phase induction motors up to 40HP/30kW at 600V
- 35mm DIN rail mounting (IEC/EN 60715)
- Integrated by-pass relay
- Low in-rush current and reduced vibrations during starting
- Full protection against over temperature
- Simple programming and installation
- Ideal for conveyor belts, compressors, pumps, hoisting equipment, blowers, fans and mixers.

### Operational characteristics

- Number of controlled phases: Two
- Controlled operational voltage L1-L2.L3:
  - 220VAC -15/+10% for ADXM...BP A220 types ①
  - 480VAC -15/+10% for ADXM...BP A480 ②
  - 600VAC -15/+10% for ADXM...BP A600 ②
- Rated AC frequency: 50/60Hz ±10% (self-configurable)
- Auxiliary control power:
  - A1-A2 24-550VAC/DC ±15% for ADXM...BP A220 and A480
  - A1-A2 24-600VAC/DC +10% for ADXM...BP A600
- Min-max control input current: 1-5mA
- Method of starting and stopping: Voltage control
- Start time adjustment - ramp up: 1 to 10 seconds
- Stop time adjustment - ramp down: 1 to 30 seconds
- Start torque adjustment - initial torque: 0-70% voltage
- Minimum operating current: 500mA
- Termination:
  - Line: 6 cage clamp type with M5 screw
  - Secondary: 7 cage clamp type with M3 screw
- Conductor cross section:
  - Line: 14...4 AWG / flexible 0.75...16mm<sup>2</sup>
  - Secondary: 22...14 AWG / flexible 0.75...2.5mm<sup>2</sup>
- Maximum tightening torque :
  - Line: 22lbin / 2.5Nm
  - Secondary: 4.5lbin / 0.5Nm
- Degree of protection: IP20
- Natural cooling system
- Ambient conditions:
  - Operating temperature: -4...+140°F (-20...+60°C)
  - Storage temperature: -58...+185°F (-50...+85°C)
  - Relative humidity: <95% with no condensation at 104°F/40°C
  - Pollution degree: 3
  - Altitude: 1000m; derating required higher up to 2000m maximum.

① 400VAC type available on request. Contact Sales & Technical Support for details.

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### Certifications and compliance

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Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-4-2.



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**DCRK**

- Digital programming
- 5 or 7 step configuration in 96x96mm housing
- 8 or 12 step configuration in 144x144mm housing
- Capacitor overload protection
- Internal panel temperature sensor
- TTL/RS232 programming interface
- Automatic set-up function
- Configurable alarms.



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**DCRJ**

- Digital programming
- 8 or 12 step configuration in 144x144mm housing
- Dual displays
- Independent voltage measure input
- Capacitor overload protection
- Internal-external panel temperature sensor
- RS232 programming and supervision interface
- RS485 supervision interface
- Voltage and current harmonics measures
- Event log
- Automatic set-up function (adjustable)
- Configurable alarms
- Suitable for medium voltage systems.



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**DCRJF (STATIC OUTPUTS)**

- Digital programming
- 11 step + 1 alarm configuration in 144x144mm housing
- Dual displays
- Independent voltage measure input
- Capacitor overload protection
- Internal-external panel temperature sensor
- RS232 programming and supervision interface
- Voltage and current harmonics measures
- Event log
- Configurable alarms.

**DESCRIPTION**

**Front plate**

- 3-digit display
- 4-digit display supplement
- 4 operation keys
- 1 function key
- 7 LED indicators for main functions and measures
- 14 LED indicators for main functions and measures

**Control - Functions**

- Automatic recognition of current flow
- 4-quadrant operation
- Independent voltage input
- Three-phase voltage control
- Medium-voltage usage
- Phase-Neutral connection in 3-phase systems
- Programmable input as functional or remote temperature sensor

- Keypad lock
- TTL/RS232 communication interface
- RS232 communication interface
- Isolated RS485 communication interface
- Automatic set-up function (adjustable)
- Easy current transformer setting function
- Set-up and automatic panel test software
- Remote supervision software
- Real time clock with back-up battery
- Current and voltage waveform captures, related to harmonic events
- Events logging such as: alarms, power ON, power OFF, set-up changes, etc.

**Measurements**

- Instantaneous displacement power factor (cosφ)
- Instantaneous and average weekly power factor
- Voltage and current
- Reactive power to reach set-point value
- Total reactive power
- Capacitor overload
- Electric panel temperature
- Maximum voltage and current value
- Maximum capacitor overload value
- Maximum panel temperature value
- Maximum capacitor temperature value
- Active and apparent power
- Current and voltage harmonic analysis
- Current and voltage harmonic waveform logged at overload events
- Step "var" value
- Number of switching measures per step

**Protection functions**

- Voltage too high and too low
- Current too high and too low
- Over compensation (capacitors disconnected and cosφ higher than set-point)
- Under compensation (capacitors connected and cosφ lower than set-point)
- Capacitor overload
- Capacitor overload on all 3 phases
- Over temperature
- No-voltage release protection
- Capacitor bank failure
- Over maximum harmonic distortion level limit
- Programmable alarm properties (enable, trip delay, relay energising, etc.)



**DCRK**

**DCRJ**

**DCRJ12F**

	DCRK	DCRJ	DCRJ12F
3-digit display	●	●	●
4-digit display supplement		●	●
4 operation keys	●	●	●
1 function key		●	●
7 LED indicators for main functions and measures	●		
14 LED indicators for main functions and measures		●	●
<b>Control - Functions</b>			
Automatic recognition of current flow	●	●	●
4-quadrant operation	●	●	●
Independent voltage input		●	●
Three-phase voltage control		●	●
Medium-voltage usage		●	●
Phase-Neutral connection in 3-phase systems		●	●
Programmable input as functional or remote temperature sensor		●	●
Keypad lock	●	●	●
TTL/RS232 communication interface	●		
RS232 communication interface		●	●
Isolated RS485 communication interface		●	●
Automatic set-up function (adjustable)	●	●	
Easy current transformer setting function	●	●	●
Set-up and automatic panel test software	●	●	
Remote supervision software		●	●
Real time clock with back-up battery		●	●
Current and voltage waveform captures, related to harmonic events		●	●
Events logging such as: alarms, power ON, power OFF, set-up changes, etc.		●	●
<b>Measurements</b>			
Instantaneous displacement power factor (cosφ)	●	●	●
Instantaneous and average weekly power factor	●	●	●
Voltage and current	●	●	●
Reactive power to reach set-point value	●	●	●
Total reactive power	●	●	●
Capacitor overload	●	●	●
Electric panel temperature	●	●	●
Maximum voltage and current value	●	●	●
Maximum capacitor overload value	●	●	●
Maximum panel temperature value	●	●	●
Maximum capacitor temperature value		●	●
Active and apparent power		●	●
Current and voltage harmonic analysis		●	●
Current and voltage harmonic waveform logged at overload events		●	●
Step "var" value		●	●
Number of switching measures per step		●	●
<b>Protection functions</b>			
Voltage too high and too low	●	●	●
Current too high and too low	●	●	●
Over compensation (capacitors disconnected and cosφ higher than set-point)	●	●	●
Under compensation (capacitors connected and cosφ lower than set-point)	●	●	●
Capacitor overload	●	●	●
Capacitor overload on all 3 phases		●	●
Over temperature	●	●	●
No-voltage release protection	●	●	●
Capacitor bank failure		●	●
Over maximum harmonic distortion level limit		●	●
Programmable alarm properties (enable, trip delay, relay energising, etc.)	●	●	●

## AUTOMATIC POWER FACTOR CONTROLLERS

- ◆ *Microprocessor supervision and control*
- ◆ *Accurate current evaluation with RMS readings*
- ◆ *Automatic intelligent adjustment*
- ◆ *Version with 5, 7, 8 or 12 steps*
- ◆ *Use in co-generation systems*
- ◆ *Communication serial interfaces*
- ◆ *ASCII and Modbus®-RTU communication protocols.*



### Automatic power factor controllers

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DCRK series .....	15-	2
DCRJ series .....	15-	3

