

Open Type Controllers

Up to 460V AC

Current* Rating [A]	kW*		Hp‡			100...240V AC 50/60 Hz Control Cat. No.	24V AC/DC Control Cat. No.
	230V AC 50 Hz	400V AC 50 Hz	200V AC 60 Hz	230V AC 60 Hz	460V AC 60 Hz		
24	5.5	11	1...5	1...7.5	1...15	150-B24NBD	150-B24NBR
35	10	18.5	1...10	1...10	1...25	150-B35NBD	150-B35NBR
54	15	22	1...15	1...20	1...40	150-B54NBD	150-B54NBR
97	25	45	5...30	5...30	5...75	150-B97NBD	§ 150-B97NBR
135	37	75	5...40	5...50	5...100	150-B135NBD	§ 150-B135NBR
180	51	90	5...60	5...60	5...150	150-B180NBD	§ 150-B180NBR
240	75	132	5...75	5...75	5...200	150-B240NBD	§ 150-B240NBR
360	110	200	5...125	5...150	5...300	150-B360NBD	§ 150-B360NBR
500	150	257	5...150	5...200	5...400	150-B500NBD	§ 150-B500NBR
650	200	355	5...200	5...250	5...500	150-B650NBD	§ 150-B650NBR
720	220	400	5...250	5...300	5...600	150-B720NBD	§ 150-B720NBR
850	257	475	10...300	10...350	10...700	150-B850NBD	§ 150-B850NBR
1000	315	530	10...350	10...400	10...800	150-B1000NBD	§ 150-B1000NBR

\* Controllers rated 97...360 A are not equipped with line and load terminal lugs. See [T-2097386] for terminal lug kits.

\* The minimum rating is: 0.7 kW for devices with current ratings of 54 A or less; 4 kW for devices rated 97...720 A; 7.5 kW for devices rated 850 A and greater.

‡ Hp ratings at motor terminal voltages for 208, 480, and 600 line volts, respectively.

§ 120V AC control is required for heatsink fan operation.

Up to 575V AC

Current* Rating [A]	kW*			Hp‡				100...240V AC 50/60 Hz Control Cat. No.	24V AC/DC Control Cat. No.
	230V AC 50 Hz	400V AC 50 Hz	500V AC 50 Hz	200V AC 60 Hz	230V AC 60 Hz	460V AC 60 Hz	575V AC 60 Hz		
24	5.5	11	15	1...5	1...7.5	1...15	1...20	150-B24NCD	150-B24NCR
35	10	18.5	22	1...10	1...10	1...25	1...30	150-B35NCD	150-B35NCR
54	15	22	37	1...15	1...20	1...40	1...50	150-B54NCD	150-B54NCR
97	25	45	63	5...30	5...30	5...75	5...75	150-B97NCD	§ 150-B97NCR
135	37	75	90	5...40	5...50	5...100	5...125	150-B135NCD	§ 150-B135NCR
180	51	90	132	5...60	5...60	5...150	5...150	150-B180NCD	§ 150-B180NCR
240	75	132	160	5...75	5...75	5...200	5...250	150-B240NCD	§ 150-B240NCR
360	110	200	250	5...125	5...150	5...300	5...350	150-B360NCD	§ 150-B360NCR
500	150	257	355	5...150	5...200	5...400	5...500	150-B500NCD	§ 150-B500NCR
650	200	355	475	5...200	5...250	5...500	5...600	150-B650NCD	§ 150-B650NCR
720	220	400	500	5...250	5...300	5...600	5...700	150-B720NCD	§ 150-B720NCR
850	257	475	600	10...300	10...350	10...700	10...800	150-B850NCD	§ 150-B850NCR
1000	315	530	710	10...350	10...400	10...800	10...1000	150-B1000NCD	§ 150-B1000NCR

\* Controllers rated 97...360 A are not equipped with line and load terminal lugs. See [T-2097386] for terminal lug kits.

\* The minimum rating is: 0.7 kW for devices with current ratings of 54 A or less; 4 kW for devices rated 97...720 A; 7.5 kW for devices rated 850 A and greater.

‡ Hp ratings at motor terminal voltages for 208, 480, and 600 line volts, respectively.

§ 120V AC control is required for heatsink fan operation.

Open Type Options (only one selection allowed)


Option	Description	Cat. No. Modification
Soft Stop	Provides a ramp down time of 0...60 s for applications which require an extended coast-to-rest.	A§
Pump Control	Provides smooth motor acceleration and deceleration, reducing surges caused by the starting and stopping of centrifugal pumps. Starting time is adjustable from 0...30 s, and stopping time is adjustable from 0...120 s.	B§
Preset Slow Speed	Provides preset slow speeds for positioning or alignment applications. Preset speeds can be selected at either 7% or 15% of rated motor speed, with adjustable slow speed current from 0...450% of full-load motor current.	C§
SMB Smart Motor Braking	Provides a microprocessor-based braking system that applies 3-phase braking current to a standard squirrel-cage induction motor. The strength of the braking current is adjustable from 0...400% of the motor's full-load current rating.	D§
Accu-Stop	Provides stopping control for general positioning or to minimize jogging to stop. A 3-phase braking current is applied to the motor (adjustable from 0...400% of full-load current) until it reaches a preset slow speed (either 7% or 15% of rated motor speed). The motor is held at this speed until a stop command is given. Braking torque is then applied until the motor reaches zero speed. Slow speed current is adjustable from 0...450% of full-load current.	E§
Slow Speed with Braking	Provides a preset slow speed for positioning or alignment applications. Preset speeds can be selected at either 7% or 15% of rated motor speed, with adjustable slow speed current from 0...450% of full-load current. Provides a microprocessor-based braking system that applies 3-phase braking current to a standard squirrel-cage induction motor. The strength of the braking current is adjustable from 0...400% of full-load motor current.	F§

§ Add the designated letter to the end of the cat. no. Example: To add the Pump Control option: **Cat. No. 150-B24NBDDB**.



# SMC™ Dialog Plus Smart Motor Controllers

## Product Overview/Features

	<p><b>Bulletin 150 — SMC™ Dialog Plus Smart Motor Controller</b></p> <p>The SMC™ Dialog Plus controller provides microprocessor controlled starting for standard three-phase squirrel-cage induction motors. Four standard modes of operation are available within a single controller:</p> <ul style="list-style-type: none"> <li>• Soft Start with Selectable Kickstart</li> <li>• Current Limit Start with Selectable Kickstart</li> <li>• Dual Ramp Start</li> <li>• Full Voltage Start</li> </ul> <p>Options include:</p> <ul style="list-style-type: none"> <li>– Soft Stop</li> <li>– Pump Control</li> <li>– Preset Slow Speed</li> <li>– SMB Smart Motor Braking</li> <li>– Accu-Stop</li> <li>– Slow Speed with Braking</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>• Built-in electronic motor overload protection</li> <li>• Metering</li> <li>• SCANport communication</li> <li>• Three programmable auxiliary contacts</li> <li>• Keypad programming</li> <li>• LCD display</li> </ul> <p>The SMC™ Dialog Plus controller is available for motors rated 1...1000 A; 200...480V AC, or 200...600V AC, 50 and 60 Hz. In addition to motors, the SMC Dialog Plus™ controller can be used to control resistive loads.</p>	<p><b>Table of Contents</b></p> <p>Features..... this page</p> <p>Cat. No. Explanation 4-161</p> <p>Product Selection..... 4-162</p> <p>Options ..... 4-162</p> <p>Accessories..... 4-163</p> <p>Specifications..... 4-165</p> <p>Approx. Dimensions . 4-168</p>
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### Standards Compliance

UL 508  
 CSA C22.2 No.14  
 EN/IEC 60947-1  
 EN/IEC 60947-4-2

### Description of Features

#### Electronic Motor Overload Protection

The SMC Dialog Plus controller incorporates, as standard, electronic motor overload protection. This overload protection is accomplished electronically with an  $I^2t$  algorithm.

When coordinated with the proper short circuit protection, overload protection is intended to protect the motor, motor controller, and power wiring against overheating caused by excessive overcurrent. The SMC Dialog Plus controller meets applicable requirements as a motor overload protective device.

The controller's overload protection is programmable, providing the user with flexibility. The overload trip class can be selected for class 10, 15, 20, or 30 protection. The trip current is programmed by entering the motor full-load current rating.

Thermal memory is included to accurately model motor operating temperature. Ambient insensitivity is inherent in the electronic design of the overload.

**Note:** The current sensing capability of the SMC Dialog Plus controller is disabled during bypass operation. The Bulletin 825 Converter Module and 150-NFS fanning strip are required for providing current feedback in these applications. **Note:** To achieve calibration, 70% motor load or greater is required at the motor shaft for 2 s. Calibration is required when a Bulletin 825 Converter Module is not used.

#### Stall Protection and Jam Detection

Motors can experience locked rotor currents and develop high torque levels in the event of a stall or a jam. These conditions can result in winding insulation breakdown or mechanical damage to the connected load. The SMC Dialog Plus controller provides both stall protection and jam detection for enhanced motor and system protection. Stall protection allows the user to program a maximum stall protection delay time from 0...10 s. The stall protection delay time is in addition to the programmed start time and begins only after the start time has timed out. If the controller senses that the motor is stalled, it will shut down after the delay period has expired. Jam detection allows the user to determine the motor jam detection level as a percentage of the motor's full load current rating. To prevent nuisance tripping, a jam detection delay time, from 0.0...10.0 s, can be programmed. This allows the user to select the time delay required before the SMC Dialog Plus controller will trip on a motor jam condition. The motor current must remain above the jam detection level during the delay time. Jam detection is active only after the motor has reached full speed.

### Certifications

cULus Listed (Open Type) (File No. E96956, Guides NMFT, NMFT7)  
 CSA Certified (File No. LR 1234)  
 CE Marked (Open Type) per EMC and Low Voltage Directive  
 CCC Certified

#### Energy Saver

This is a standard feature with the SMC Dialog Plus controller. It is used to save energy on applications where the motor is lightly loaded or unloaded for long periods of time. The Energy Saver is a built-in feature of the controller. It does not require additional panel space or external wiring. It also does not require a complicated setup procedure.

#### Phase Rebalance

The SMC Dialog Plus controller incorporates, as standard, a dynamic Phase Rebalance feature. The controller compensates for voltage unbalance by automatically adjusting the voltage output to balance the 3-phase currents drawn by the motor. When phase rebalance is achieved, motor life may be extended and production can continue without interruption. Phase Rebalance is a built-in feature of the controller and does not require a complicated setup procedure.

**Note:** Phase Rebalance requires the use of the Bulletin 825 Converter Module and the Cat. No. 150-NFS fanning strip.

**Note:** The performance of the Phase Rebalance feature is dependent on the motor's loading and characteristics. Severe imbalances cannot be corrected.

#### Underload Protection

Utilizing the underload protection of the SMC Dialog Plus controller, motor operation can be halted if a drop in current is sensed. The SMC Dialog Plus controller provides an adjustable underload trip setting from 0...99% of the programmed motor full load current rating with an adjustable trip delay time of 0...99 s.

#### Undervoltage Protection

The SMC Dialog Plus controller's undervoltage protection will halt motor operation if a drop in the incoming line voltage is detected. The undervoltage trip level is adjustable as a percentage of the programmed line voltage, from 0...99%. To eliminate nuisance trips, a programmable undervoltage trip delay time of 0...99 s can also be programmed. The line voltage must remain below the undervoltage trip level during the programmed delay time.

**Overvoltage Protection**

If a rise in the incoming line voltage is detected, the SMC Dialog Plus controller's overvoltage protection will halt motor operation. The overvoltage trip level is adjustable as a percentage of the programmed line voltage, from 0...99%. To eliminate nuisance trips, a programmable overvoltage trip delay time of 0...99 s can also be programmed. The line voltage must remain above the overvoltage trip level during the programmed delay time.

**Voltage Unbalance Protection**

Voltage unbalance is detected by monitoring the 3-phase supply voltage magnitudes in conjunction with the rotational relationship of the three phases. The controller will halt motor operation when the calculated voltage unbalance reaches the user-programmed trip level.

The voltage unbalance trip level is programmable from 0...25% unbalance.

**Excessive Starts Per Hour**

The SMC Dialog Plus controller allows the user to program the allowed number of starts per hour (up to 99). This helps eliminate motor stress caused by repeated starting during a short time period.

**Metering**

Power monitoring parameters include:

- 3-phase current
- 3-phase voltage
- Power in kW
- Power usage in KWH
- Power factor
- Motor thermal capacity usage
- Elapsed time

**Note:** The motor thermal capacity usage allows the user to monitor the amount of overload thermal capacity usage before the SMC Dialog Plus controller's built-in electronic overload trips.

**Note:** In bypass configurations, the current sensing and power factor measurement capability of the SMC Dialog Plus controller is disabled. Three-phase current measurement, kW, kWH, and motor thermal capacity usage can still be maintained with the use of the Bulletin 825 Converter Module.

**Note:** The usage of an SMC Controller on a generator and line power requires the use of a Bulletin 825 Converter Module.

**Built-in SCANport™ Communication**

A serial interface port is provided as standard, which allows connection to a Bulletin 1201 Human Interface Module or a variety of Bulletin 1203 Communication Modules. This includes Allen-Bradley Remote I/O, DeviceNet network and RS-232/422/485-DF1.

**LCD Display**

The SMC Dialog Plus controller's two-line 16-character backlit LCD display provides parameter identification using clear, informative text. Controller set up can be performed quickly and easily without the use of a reference manual. Parameters are arranged in an organized four-level menu structure for ease of programming and fast access to parameters.



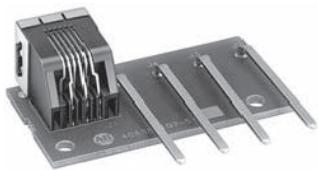

**Keypad Programming**

Programming of parameters is accomplished through a five-button keypad on the front of the SMC Dialog Plus controller. The five buttons include up and down arrows, an Enter button, a Select button, and an Escape button. The user needs only to enter the correct sequence of keystrokes for programming the SMC Dialog Plus controller.

**Auxiliary Contacts**

Three hard contacts are furnished as standard with the SMC Dialog Plus controller. The first two contacts are programmable for Normal/Up-to-speed. The third is programmable for Normal/Fault.

## Converter Modules\*

	Motor Full Load Current Range [A]	Cat. No.
 <b>Cat. No. 825-MCM180</b>	2.5...20 A	<b>825-MCM20</b>
	9...100 A	<b>825-MCM180</b>
 <b>Cat. No. 825-MCM630</b>	64...360 A	<b>825-MCM630</b>
<b>Connection Cable (Replacement)</b> Bul. 825-P to Bul. 825-MCM connection		<b>825-MCA</b>
	Description	Cat. No.
 <b>Cat. No. 150-NFS</b>	<b>Fanning Strip for Bulletin 825 Converter Modules</b>	<b>150-NFS</b>
 <b>M8 connections</b> Set of three 4 x 16 x 102 mm (1/8 x 5/8 x 4-1/64 in.) (125 A max.) Universally applicable Weight: 230 g		<b>825-MVM</b>

\* Must be used with fanning strip Cat. No. 150-NFS.

## Specifications

Functional Design Specifications			
Standard Features	Installation	Power Wiring	The SMC Dialog Plus Controller can be wired with or without an isolation contactor. Bypass contactors can be employed after the controller has brought the motor to full speed.
		Control Wiring	2- and 3-wire control for a wide variety of applications.
	Setup	Keypad	The SMC Dialog Plus Controller is configured with the front keypad and backlit LCD display.
		Software	Parameter values can be downloaded to the SMC Dialog Plus Controller with DriveTools programming software and the Cat. No. 1203-GD2 communication module.
	Communications	One serial port provided for connection to optional human interface and communication modules.	
	Starting Modes	Soft start with selectable kickstart, current limit, dual ramp, and full voltage in one unit.	
	Protection and Diagnostics	Power loss, line fault, voltage unbalance, excessive starts/hour, phase reversal, undervoltage, overvoltage, controller temp, stall, jam, open gate, overload, underload, communication fault.	
	Metering	Amps, volts, kW, kWh, elapsed time, power factor, motor thermal capacity usage.	
	Status Indication	Stopped, ramping, stopping, at speed, and fault.	
	Auxiliary Contacts	(1) Single-pole double-throw contact programmable as normal or up-to-speed; one programmable as normal or fault.	
Optional Features	Soft Stop	Extended coast-to-rest to minimize load shifting. Ramp down time is adjustable from 0...60 s.	
	Pump Control	Helps reduce fluid surges in centrifugal pumping systems during starting and stopping period. Starting time is adjustable from 0...30 s. Stopping time is adjustable from 0...120 s.	
	Preset Slow Speed	Enables the operator to position material. The preset slow speed can be set for low (7% of base speed), high (15% of base speed), reverse low (10% of base speed) or reverse high (20% of base speed).	
	SMB Smart Motor Braking	Provides motor braking without additional equipment for applications that require the motor to stop quickly. Braking current is adjustable from 0...400% of the motor's full-load current rating.	
	Accu-Stop/Slow Speed with Braking	Combines Smart Motor Braking and Preset Slow Speed. Braking current is adjustable from 0...400% of full-load current. Slow speed can be set for either Low (7% of base speed) or High (15% of base speed).	

			Electrical Ratings		
			UL/CSA/NEMA	IEC	
Power Circuit	Rated Operation Voltage		200...480V AC 200...600V AC (-15%, +10%)	200...415V 200...500V	
	Rated Insulation Voltage		N/A	500V	
	Rated Impulse Voltage		N/A	6000V	
	Dielectric Withstand		2200V AC	2500V	
	Repetitive Peak Inverse Voltage Rating		200...480V AC: 1400V 200...600V AC: 1600V	200...415V: 1400V 200...500V: 1600V	
	Operating Frequency		50/60 Hz	50/60 Hz	
	Utilization Category		MG 1	AC-53a	
	Protection Against Electrical Shock		N/A	IP00 (open device)	
	DV/DT Protection		RC Snubber Network		
Transient Protection		Metal Oxide Varistors: 220 Joules @ 24...360 A 220 Joules @ 480V, 500...1000 A 300 Joules @ 600V, 500...1000 A			
Short-Circuit Protection	SCPD Performance		Type 1		
	SCPD List		Maximum Fuse or Circuit Breaker (A):		
	Device Operational Current Rating [A]	24		80	
		35		125	
		54		200	
		97		350	
		135		500	
		180		600	
		240		700	
		360		1000	
		500		1200	
		650		1600	
		720		2000	
850		2500			
1000		3000			
Control Circuit	Rated Operational Voltage		100...240V AC 24V AC 24V DC	100...240V 24V 24V DC	
	Rated Insulation Voltage		N/A	240V	
	Rated Impulse Voltage		N/A	3000V	
	Dielectric Withstand		1600V AC	2000V	
	Operating Frequency		50/60 Hz	50/60 Hz	
	Protection Against Electric Shock		N/A	IP20	
Power Requirements	Control Module		40 VA		
	Heatsink Fan(s) [A]*	24		—	
		35		—	
		54		—	
		97		45 VA	
		135		45 VA	
		180		45 VA	
		240		45 VA	
		360		45 VA	
		500		145 VA	
		650		320 VA	
		720		320 VA	
850		320 VA			
1000		320 VA			

\* For devices rated 24...500 A, heatsink fans can be powered by either 110/120V AC or 220/240V AC. For devices rated 650...1000 A, heatsink fans can only be powered by 110/120V AC.

# SMC™ Dialog Plus Smart Motor Controllers

## Specifications

Electrical Ratings, Continued						
		UL/CSA/NEMA		IEC		
Maximum Heat Dissipation [W]	Current Rating [A]	24	110			
		35	150			
		54	200			
		97	285			
		135	490			
		180	660			
		240	935			
		360	1170			
		500	1400			
		650	2025			
		720	2250			
850	2400					
1000	2760					
Auxiliary Contacts	Rated Operation Voltage		240V AC		240V	
	Rated Insulation Voltage		N/A		240V	
	Dielectric Withstand		1600V AC		2000V	
	Operating Frequency		50/60 Hz		50/60 Hz	
	Utilization Category		B300 (terminals 18...19) C300 (terminals 18...20) C300 (terminals 29...30)		AC-15	
	SCPD Performance		Type 2			
SCPD List		Class CC 8 A @ 1000 A Available Fault Current				
Environmental						
Operating Temperature Range		0...+50 °C (32...122 °F) (open) 0...+40 °C (32...104 °F) (enclosed)				
Storage and Transportation Temperature Range		-20...+75 °C				
Humidity		2000 m (6560 ft)				
Pollution Degree		5...95% (non-condensing)				
		2				
Mechanical						
Resistance to Vibration	Operational		1.0 G Peak, 0.006 in. displacement			
	Non-Operational		2.5 G, 0.015 in. displacement			
Resistance to Shock	Operational		15 G			
	Non-Operational		30 G			
Construction	Power Poles	Thermoset Moldings	24...135 A			
		Heatsink hockey puck thyristor	180...1000 A			
	Control Modules		Thermoset and Thermoplastic Moldings			
Metal Parts		Anodized Aluminum, Plated Brass, Copper, or Painted Steel				
Terminals	Power Terminals	24...54 A	6.0 mm hole with clamp screw			
		97 and 135 A	One 11.5 mm (0.453 in.) diameter hole each			
		180...360 A	One 10.5 mm (0.413 in.) diameter hole each			
		500 A	Two 13.5 mm (0.531 in.) diameter holes each			
		650 and 720 A	Three 13.1 mm (0.515 in.) diameter holes each			
	850 and 1000 A	Six 13.1 mm (0.515 in.) diameter holes each				
Power Terminal Markings		NEMA, CENELEC EN50 012				
Control Terminals		M 3.5 x 0.6 Pozidriv screw with self-lifting clamp plate				
Other						
EMC Emission Levels	Conducted Radio Frequency Emissions		Class A			
	Radiated Emissions		Class A			
EMC Immunity Levels	Electrostatic Discharge		8 kV Air Discharge			
	Radio Frequency Electromagnetic Field		Per IEC 947-4-2			
	Fast Transient		Per IEC 947-4-2			
	Surge Transient		Per IEC 947-4-2			
Overload Characteristics	Current Range		1.0...999.9 A			
	Trip Classes		10, 15, 20, and 30			
	Trip Current Rating		120% of Motor FLC			
	Number of Poles		3			

## Fuse Clip Sizing and Type for Fusible Combination Controllers\*‡

Horsepower @ 480V	Fuse Clip Size/Type	Fuse Size Range [A]
15	30 A/Class J	0...30
20	60 A/Class J	31...60
25	60 A/Class J	31...60
30	60 A/Class J	31...60
40	100 A/Class J	61...100
50	100 A/Class J	61...100
60	200 A/Class J	101...200
75	200 A/Class J	101...200
100	200 A/Class J	101...200
125	400 A/Class J	201...400
150	400 A/Class J	201...400
200	400 A/Class J	201...400
250	400 A/Class J	401...600
300	600 A/Class J	401...600
350	600 A/Class J	401...600
400	1200 A/Class L	601...1600
450	1200 A/Class L	601...1600
500	1200 A/Class L	601...1600
600	1200 A/Class L	601...1600
700	1200 A/Class L	601...1600
800	1200 A/Class L	601...1600

\* Consult NEC Handbook for proper fuse sizing guidelines.

‡ Optional fuse clip sizes and types are available upon request. Consult your local Rockwell Automation sales office or Allen-Bradley distributor.

## Circuit Breaker Sizes and Rating Plug Sizes

Horsepower @ 480V	Circuit Breaker Size [A]/ Rating Plug Size [A]	Interrupting Rating in Symmetrical Amps @ 480V‡
15	150/50	14 000
20	150/50	14 000
25	150/60	14 000
30	150/70	14 000
40	150/100	14 000
50	150/125	14 000
60	250/150	25 000
75	250/175	25 000
100	250/225	25 000
125	250/250	25 000
150	400/300	35 000
200	400/400	35 000
250	600/500	35 000
300	600/600	35 000
350	800/800	35 000
400	800/800	50 000
450	1200/1000	50 000
500	1200/1200	50 000
600	1200/1200	50 000
700	2000/1600	65 000
800	2000/2000	65 000

‡ For higher interrupting ratings, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

## Approximate Dimensions and Shipping Weights

## Open Type Controllers

Dimensions are in millimeters (inches). Dimensions are not intended for manufacturing purposes.

Controller Rating [A]	Height	Width	Depth	Weight
24	180 (7.09)	154 (6.06)	185 (7.29)	4.5 kg (10 lbs)
35	240 (9.45)	214 (8.43)	195 (7.68)	6.8 kg (15 lbs)
54	290 (11.42)	244 (9.61)	225 (8.86)	11.3 kg (25 lbs)
97	336 (13.23)	248 (9.77)	256 (10.09)	10.4 kg (23 lbs)
135	336 (13.23)	248 (9.77)	256 (10.09)	11.8 kg (26 lbs)
180	560 (22.06)	273 (10.75)	294 (11.58)	25 kg (55 lbs)
240	560 (22.06)	273 (10.75)	294 (11.58)	30 kg (65 lbs)
360	560 (22.06)	273 (10.75)	294 (11.58)	30 kg (65 lbs)
500	588 (23.17)	508 (20.00)	311 (12.23)	40.8 kg (90 lbs)
650...1000	1524 (60.0)	813 (32.00)	402 (15.83)	167.8 kg (370 lbs)