**PRODUCT SPECIFICATION GUIDE  - (MS Word formatted for editing)**

**PRODUCT: THE ZIPSET SYSTEM FOR REMOTE AIR BALANCING DAMPERS**

**DIVISION 23 – HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)**

**(PREVIOUSLY DIVISION 15)**

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Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Master Three Part Section Format (2004)

The section is to be carefully reviewed and edited by the Engineer to meet the requirements of the project and local building codes. Coordinate with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

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**SECTION 233313 (Previously 15820)**

**REMOTE OPERATED BALANCING DAMPERS**

1. **GENERAL**
	* + 1. **SECTION INCLUDES**
				1. Remote operated balancing dampers suitable for application in HVAC systems with velocities to 2000 fpm (10.2 m/s).
			2. **SUMMARY**
				1. Section 233100 – HVAC Ducts and Casings (Previously 15810).
				2. Section 230913.13 – Actuators and Operators (Previously 15900).
			3. **REFERENCES**
2. UL 94 Standards for Test For Flammability of Plastic Materials.
3. NFPA-262, UL-910, Burn and Smoke Density Standards for Plenum-rated (CMP) Cable.
	* + 1. **SUBMITTALS**
4. Comply with requirements of Section 013300 - Submittal Procedures.
5. Product Data: Submit manufacturer's product data.
	1. Include maximum system velocity and differential pressure ratings.
	2. Indicate materials, construction, dimensions, and installation details.
	3. Pre and Post-bid substitutions per “Section 012500-Substitution Procedures”.
		* 1. **QUALITY ASSURANCE**
				1. Dampers shall be warranted against manufacturing defects for a period of 1 year.
			2. **DELIVERY, STORAGE, AND HANDLING**
				1. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer, material, and location of installation.
				2. Storage: Store materials in a dry area indoor and protected from damage and in accordance with manufacturer’s instructions.
				3. Handling: Handle and lift all items carefully during installation to prevent damage and protect finishes.
6. **PRODUCTS**
	* + 1. **MANUFACTURER**
				1. The Zip Group, LLC, Willmington, DE. zipset@zipset.net [www.zipset.net](http://www.zipset.net)
			2. **REMOTE OPERATED BALANCING DAMPERS**
				1. Model: The Zipset System ‘Z Series’ Round and Rectangular Inline Balancing Damper.
				2. Ratings:

Temperature Rating: +30ºF to 125ºF (-1ºC to 52ºC)

Air Flow Rating: 2000 fpm (10.2 m/s)

Differential Pressure Rating: 2 in. wg. (0.49 kPa)

* + - * 1. Construction:

Frame: 5.75” x 22 gauge galvanized steel.

Blade: 20 gauge galvanized steel with V groove stiffening.

Axles: 3/8” square galv steel.

Bearings: Molded synthetic, press fitted into the frame.

Mounting: Position Independent

Actuator: Model ZSA-1, Universal Mount, 9-12VDC; MECHANICAL CABLE SYSTEMS ARE NOT ACCEPTABLE.

Options: Aluminum or SS Frame and Blade; Insulation standoffs

* + - 1. **Accessories:**
				1. Model ZSA-1, 9-12V Actuator:

Operating Range: +30°F to 125°F

Operating Voltage: 9-12VDC

Rated Torque: 30 in-lbs

UL Class: Meets UL94-5VA for Plenum-Rated Ceilngs

Mounting: Universal bracket mounts to most round, oval or rectangular brands with drive shaft profiles from ¼ thru ½ inch round, hex or square. Minimum L = 3.25 inches

* + - * 1. HHC-1 and HHC-1R Series Hand Held Controller

HHC-1 Local-only control, CW and CCW damper blade adjustment

HHC-1R Local or wireless remote adjustment with a Bluetooth enabled smart phone, tablet (iPhone, iPad, iPod, MacBook) with Zipset App downloaded from iTunes at the [www.zipset.net](http://www.zipset.net) website.

The controller will be provided with an LED visual indication on the panel to show a working actuator or reveal and open/short power cable problem.

The HHC-1 and HHC-1R Series internal 9V battery provides actuator power. No hard wiring or building power is ever required.

* + - * 1. Optional CR-1 Ceiling Receptacle Bracket When Specified

Generally used in hard ceilings at locations within a few feet of the damper.

Mounts on any industry-standard T grid with 2 self drilling screws.

Installs in minutes. No auxillary support framework is ever needed.

The cover plate accommodates panel thicknesses from ½ inch thru 2 inches.

The ‘Y’ neck on the bracket provides takeup means for any excess power cable.

* + - * 1. Optional RP Series Remote Panels When Specified

Capacity: Standard models available in 4, 8, 12 connectors. Provide custom panel designs as specified in the contract documents.

Material: 10 gage aluminum with white powder coat finish.

Mounting: Designed to mount on standard minimum 2-1/2” deep gang boxes.

Locate panels where indicated on the drawings.

Run the two conductor actuator power cables in lengths as required for a complete hookup.

* + - * 1. Extension Power Cables

UL Class: Plenum rated (CMP) for above ceiling return air plenums.

Provide extensions as req’d in 10, 20, 30, 50 ft increment with M-F RCA connectors.

Connector easily join for failsafe extensions up to recommended 150 ft maximum.

* + - 1. **QUALITY CONTROL**
				1. Factory Tests:

Cycle each damper before packaging to insure proper operation.

Bench test each HHC Series controller to insure proper operation

1. **EXECUTION**
	* + 1. **EXAMINATION**
				1. Examine areas to receive dampers. Notify the Engineer of conditions that would adversely affect installation or subsequent utilization of dampers. Do not proceed with installation until unsatisfactory conditions are corrected.
			2. **INSTALLATION**
				1. Install dampers at locations as indicated on the drawings and in accordance with manufacturer’s installation instructions.
				2. Do not compress or distort round damper sleeves, or rack rectangular frames to make them fit into irregular duct openings
				3. Verify that damper blades move smoothly and the actuator is properly installed.
				4. Prior to the ceiling panels being installed, cycle each damper with the HHC Series controller to verify it is working properly as shown by the LED indicator on the HHC. Repair and retest any damper installation as required.

**END OF SECTION**