

Description and Application

KMC TSP-6001/6051s are combination air flow transducer and actuator units designed primarily for variable air volume terminal units controlled via Direct Digital Control (DDC) systems. Specific applications include slaving from digital controllers in dual duct or tracking applications.

Each unit mounts directly to a 1/2" diameter shaft, a 3/8" square damper shaft, or (with an optional HFO-0011 shaft adaptor) a 3/8" diameter shaft. Damper control is provided by an 18°/minute or 60°/minute actuator.

The TSP-6001/6051 actuator is controlled by a three-state analog signal (less than 2 VDC drives CCW, greater than 2.5 VDC drives CW, and 2.25 VDC is idle). **For proportional or tri-state inputs, see the TSP-5000 series.**

A minimum of 50 in.-lbs. of torque is provided. Both minimum and maximum stops are standard to limit the rotation. A gear disengagement feature allows positioning the damper and/or gear-train without energizing the actuator.

The TSP-6001/6051 has an on-board flow-through sensor for use with a single or multi-point differential pressure measuring station or pitot tube. The sensor utilizes twin platinum-ceramic resistance temperature sensors. Velocity measurement is maintained at 3% accuracy over the range of 0 to 3,000 feet per minute (fpm).

Features

- ◆ Three-state analog signal controls actuator motion
- ◆ Direct mounting to a 1/2" diameter shaft, a 3/8" square damper shaft, or (with an HFO-0011 shaft adaptor) a 3/8" diameter shaft
- ◆ 18°/minute or 60°/minute actuator models
- ◆ Gear disengagement feature allows positioning the damper and/or gear-train without unit activation
- ◆ On-board flow-through sensor for use with a single or multi-point differential pressure measuring station or pitot tube



Models

TSP-6001	18°/minute actuator
TSP-6051	60°/minute actuator

Accessories

Auxiliary Switches

CME-1002	Single SPDT auxiliary switch
CME-1004	Dual SPDT auxiliary switch

Differential Pressure Flow Sensors

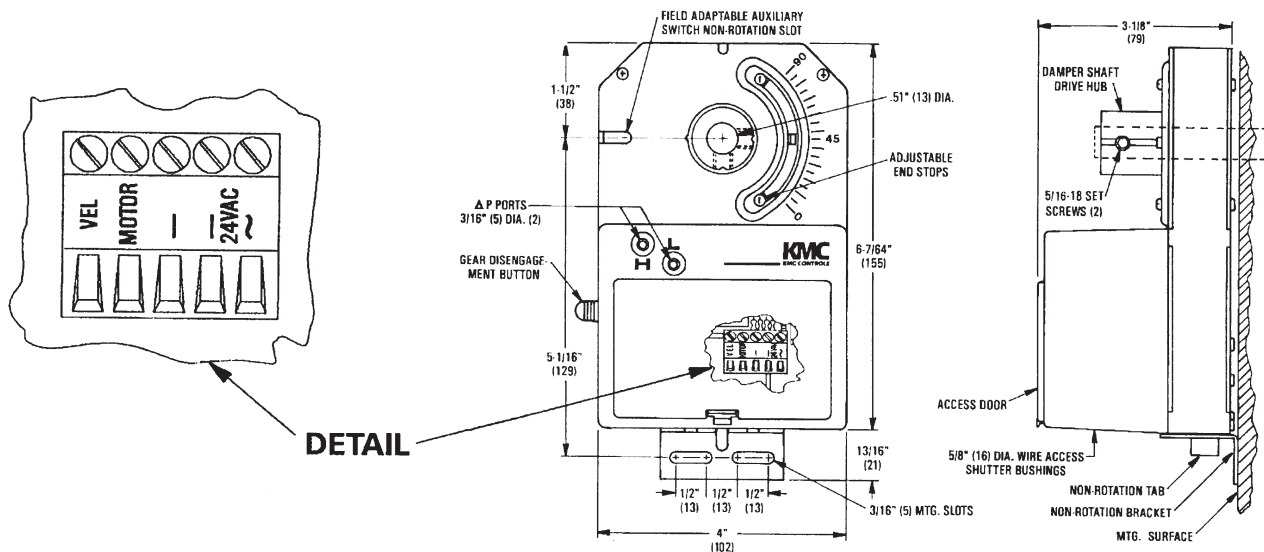
HFO-0108	3/8" by 1/4" barb union fitting
SSS-1002	3-5/32 inches long (80 mm)
SSS-1003	5-13/32 inches long (137 mm)
SSS-1004	7-21/32 inches long (195 mm)
SSS-1005	9-29/32 inches long (252 mm)

Mounting and Connection Hardware

HFO-0011	3/8" shaft adaptor
HMO-1003	Replacement non-rotation bracket (one included)
HMO-4518	Snap-in connector for 1/2" flexible metal conduit
HMO-4520	Compression connector for plenum cable
HMO-4526	Female connector for 1/2" conduit

Dimensions

All dimensions are in inches (mm).



DAMPER TYPE	Up to 1000 FPM	1000 to 2500 FPM	2500 to 3000 FPM
Opposed Blade without seals	3 in.-lb. / sq.-ft	4.5 in.-lb. / sq.-ft	6 in.-lb. / sq.-ft
Parallel Blade without seals	4 in.-lb. / sq.-ft	6.0 in.-lb. / sq.-ft	8 in.-lb. / sq.-ft
Opposed Blade with seals	5 in.-lb. / sq.-ft	7.5 in.-lb. / sq.-ft	10 in.-lb. / sq.-ft
Parallel Blade with seals	7 in.-lb. / sq.-ft	10.5 in.-lb. / sq.-ft	14 in.-lb. / sq.-ft

Specifications

Supply Power	24 VAC, -15/+20%, 5 VA
Velocity Sensor	Platinum/ceramic flow-through
Velocity Range	0 to 3,000 fpm (15.24 m/s), dependant upon differential pressure pickup, tubing size/length, and connections
Velocity Output	0 to 5 VDC
Torque	50 to 70 in-lb (5.7–7.9 N•m)
Connections	Wire clamp for 14–22 AWG, copper
Angular Rotation	0 to 95°, both end stops adjustable
Motor Drive	≤ 2.0 VDC = CCW ≥ 2.5 VDC = CW 2.25 ± 0.2 VDC = idle

Motor Timing

TSP-6001	18°/minute @ 60 Hz; 15°/minute @ 50 Hz
TSP-6051	60°/minute @ 60 Hz; 50°/minute @ 50 Hz

Material

Flame-retardant plastic, black housing/white cover

Weight

2.4 lbs. (1 kg)

Temperature Limits

Operating	32 to 120°F (0 to 49°C)
Shipping	-40 to 140°F (-40 to 60°C)

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