

# PRODUCT DATA

## Modal Exciters — Types 4825 and 4826

*Designed for demanding modal testing applications, electrodynamic Modal Exciters Types 4825 and 4826 provide precise, reliable, stable and long-lasting operation. Highest quality materials, stringent quality control and rugged constructions provide for a versatile means of modal excitation for any experimental modal test.*

*The two modal exciters are available as stand-alone units – supplied only with the appropriate trunnion, blower and connecting cable – or as complete systems with matching power amplifiers.*

*Optional accessories include traditional push/pull stingers, tension wire stingers, lateral modal exciter stands, turnbuckles, hose and cable extension kits, chuck nut assemblies and various adaptors.*



## USES AND FEATURES

### USES

- General mechanical mobility measurements
- Experimental modal analysis on most mechanical structures
- SISO, MISO, SIMO and MIMO modal testing applications
- Advanced structural dynamics investigations
- Structural damage detection
- Finite element model correlation

### FEATURES

- Force rating 200 N sine (Type 4825) or 400 N sine (Type 4826)
- Rugged, industrial design
- Extremely high force-to-weight ratio due to rare-earth magnet technology
- One inch peak-to-peak displacement for best low frequency excitation
- High-rigidity, low-mass magnesium armature for minimised force drop-offs at resonance

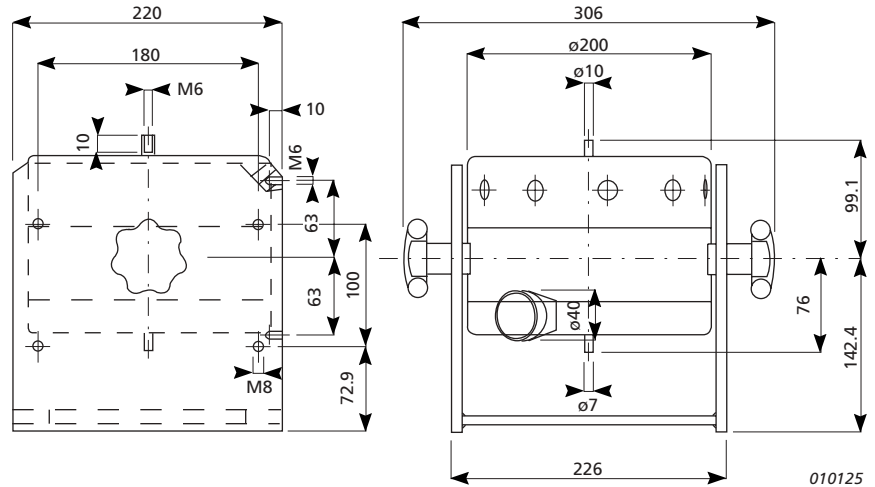
- Compact construction enabling easy positioning/ orientation relative to test object
- Wide frequency range
- Low stray magnetic field
- Built-in air switch for protection against damage related to excessive current
- Built-in optical sensor for accurate determination of armature position
- Ideal for any excitation signal (sine, impulse and random signals)
- Electronic DC control of tension wire pre-tensioning (optional)
- Hole-through design for choice of tension wire stingers – tension wire technology as well as traditional push/pull stinger technology (optional)
- Robust lateral exciter stands for easy positioning and orientation (optional)
- Can be delivered as a complete turn-key excitation system with trunnion, auxiliary hardware and all necessary cables

## Description


The “hole-through” design of Modal Exciters Types 4825 and 4826 makes it possible to use tension wire stingers or traditional push/pull stingers with the exciters. Easy and rapid attachment of stingers is achieved by use of a chuck nut assembly (for use with tension wire stingers) or with an M6 to 10–32 UNF threaded insert (for use with push/pull stingers).

In lateral setups of Modal Exciters Types 4825 and 4826, tension wire stingers can easily be mechanically pre-tensioned when Lateral Modal Exciter Stands UA-1607 and UA-1608 are used. For electrical pre-tensioning, especially useful in vertical, skewed excitation setups and for excitation in confined spaces, the optional DC Static Centering Unit Type 1056 can be used. Modal Exciters Types 4825 and 4826 have a Video HR-10 socket that outputs the signal from the built-in optical sensor, providing necessary feedback to the optional DC Static Centering Unit Type 1056. Traditional push/pull stingers require no pre-tensioning

**Fig. 1**  
Dimensions of Modal Exciters Types 4825  
and 4826 (mm)



## Compliance with Standards

	CE-mark indicates compliance with: EMC Directive and Low Voltage Directive. C-Tick mark indicates compliance with the EMC requirements of Australia and New Zealand
<b>Safety</b>	EN/IEC 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use. UL 61010B-1: Standard for Safety – Electrical measuring and test equipment
<b>EMC Emission</b>	EN/IEC 61000-6-3: Generic emission standard for residential, commercial and light industrial environments. EN/IEC 61000-6-4: Generic emission standard for industrial environments. CISPR 22: Radio disturbance characteristics of information technology equipment. Class B Limits. FCC Rules, Part 15: Complies with the limits for a Class B digital device.
<b>EMC Immunity</b>	EN/IEC 61000-6-1: Generic standards – Immunity for residential, commercial and light industrial environments. EN/IEC 61000-6-2: Generic standards – Immunity for industrial environments. EN/IEC 61326: Electrical equipment for measurement, control and laboratory use – EMC requirements. <b>Note:</b> The above is only guaranteed using accessories listed in this Product Data sheet.
<b>Temperature</b>	IEC 60068-2-1 & IEC 60068-2-2: Environmental Testing. Cold and Dry Heat. Operating Temperature: +5 to +40°C (41 to 104°F) Storage Temperature: -25 to +70°C (-13 to 158°F)
<b>Humidity</b>	IEC 60068-2-78: Damp Heat: 90% RH (non-condensing at 40°C (104°F))
<b>Enclosure</b>	IEC 60529: Protection provided by enclosures: IP 20

## Specifications – Modal Exciters Types 4825 and 4826

**Table 1** Overview of specifications for Modal Excitation Systems Types 3625, 3626

System	Type 3625	Type 3626
Exciter	Type 4825	Type 4826
Matching Power Amplifier	Type 2720	Type 2721
Matching Blower	UH-1035	UH-1036
Rated Force – without forced air cooling [sine (peak)/random (RMS)]	100/70 N	100/70 N
Rated Force – with forced air cooling [sine (peak)/random (RMS)]	200/140 N <sup>a</sup>	400/280 N <sup>a</sup>
Useful Frequency Range	2 – 5000 Hz	2 – 5000 Hz
Operating Frequency Range	DC – 5000 Hz	DC – 5000 Hz
Max. Rated Travel	25.4 mm (1 inch)	25.4 mm (1 inch)
Max. Velocity [sine (peak)/random (RMS)]	1.5/1.5 m/s	1.5/1.5 m/s
Max. Acceleration [sine (peak)/random (RMS)]	863/608 m/s <sup>2</sup> (88/62 g)	981/697 m/s <sup>2</sup> (100/71 g)
Rated Current	11.2 A	18 A
Suspension Stiffness	4 N/mm	4 N/mm
Effective Moving Mass	0.23 kg	0.40 kg
Main Resonance Frequency	> 6000 Hz	4000 Hz
Weight with Trunnion	21 kg (46 lb)	21 kg (46 lb)

a. Brüel & Kjær assumes no responsibility if blowers other than UH-1035 or UH-1036 are used for cooling.

**Table 2** Overview of specifications for the blowers UH-1035

	Mains Power Frequency	Max. Air Capacity	Max. Diff. Pressure (Vacuum)	Electro-motor	Hose diameter	SPL	Weight	Approx. Dimensions	Enclosure
UH-1035	50 Hz	80 m <sup>3</sup> /hr.	110 hPa	0.37 kW	40 mm	58 dB(A)	10 kg	248 × 230 × 250 mm	IP class 54
	60 Hz	90 m <sup>3</sup> /hr.	130 hPa	0.45 kW		61 dB(A)			

**Table 3** Overview of specifications for the blowers UH-1036

	Mains Power Frequency	Max. Air Capacity	Max. Diff. Pressure (Vacuum)	Electro-motor	Hose diameter	SPL	Weight	Approx. Dimensions	Enclosure
UH-1036	50 Hz	140 m <sup>3</sup> /hr.	150 hPa	1.1 kW	40 mm	63 dB(A)	16 kg	287 × 241 × 305 mm	IP class 54
	60 Hz	175 m <sup>3</sup> /hr.	180 hPa	1.3 kW		64 dB(A)			

## Ordering Information

### MODAL EXCITER TYPE 4825

Includes the following accessories:

AQ-0649	Cable with two 4-pin Neutrik Speakon plugs, length 5 m
KC-1007	Trunnion
UH-1035	200 N Blower
AF-1101	Air hose for UH-1035, 5 m
UA-1612	Three adaptors M6 to 10–32 UNF

### MODAL EXCITATION SYSTEM TYPE 3625

Type 4825	Modal Exciter
Type 2720	Power Amplifier
UA-1598	Three push/pull steel stingers. Content: Three fastening screws. Three adaptors diameter 2.5 mm to 10–32 UNF. Three steel rods, length 500 mm, diameter 2.5 mm. One 2.5 mm collet chuck (chuck nut with collet insert)

### MODAL EXCITER TYPE 4826

Includes the following accessories:

AQ-0659	Cable with two 8-pin Neutrik Speakon plugs, length 5 m
KC-1007	Trunnion
UH-1036	200 N Blower
AF-1103	Air hose for UH-1036, length 5 m
UA-1612	Three adaptors, M6 to 10–32 UNF

### MODAL EXCITATION SYSTEM TYPE 3626

Type 4826	Modal Exciter
Type 2721	Power Amplifier
UA-1598	Three push/pull steel stingers. Content: Three fastening screws. Three adaptors diameter 2.5 mm to 10–32 UNF. Three steel rods, length 500 mm, diameter 2.5 mm. One 2.5 mm collet chuck (chuck nut with collet insert)

## Optional Accessories

### ELECTRICAL TENSION WIRE PRE-TENSIONING

Type 1056	DC Static Centering Unit
-----------	--------------------------

### POWER AMPLIFIERS

Type 2720	Power Amplifier
Type 2721	Power Amplifier

### STINGERS, COLLET CHUCKS AND ADAPTORS

UA-1596	Five push/pull steel stingers. Content: Ten adaptors diameter 2.5 mm to 10–32 UNF. Five Steel rods, length 200 mm, diameter 2.5 mm. Ten fastening screws
UA-1597	Five push/pull steel stingers. Content: Ten adaptors, diameter 3.5 mm to 10–32 UNF. Five steel rods, length 200 mm, diameter 3.5 mm. Ten fastening screws
UA-1598	Three push/pull steel stingers. Content: Three fastening screws. Three adaptors diameter 2.5 mm to 10–32 UNF. Three steel rods, length 500 mm, diameter 2.5 mm. One 2.5 mm collet chuck (chuck nut with collet insert)
UA-1599	Three Push/Pull steel stingers. Content: Three fastening screws. Three Adaptors, diameter 3.5 mm to 10–32 UNF. Three steel rods, length 500 mm, diameter 3.5 mm, one 3.5 mm collet chuck (chuck nut with collet insert)
UA-1600	One tension wire, length 5000 mm, with collet chuck. Content: One fastening screw. One adaptor, diameter

UA-1601	0.75 mm to 10–32 UNF. One tension wire, length 5000 mm, diameter 0.75 mm, on a spool. One 0.75 mm collet chuck (chuck nut with collet insert) Three tension wires. Content: Three fastening screws. Three adaptors, diam. 2.0 mm, 10–32 UNF One tension wire, length 500 mm, diameter 2.0 mm, three 2.0 mm collet chucks (chuck nut with collet insert)
UA-1602	Collet chuck and adaptor for tension wire with diameter 0.75 mm. Content: Three chuck nuts. Three collet inserts for wire diameter 0.75 mm. Three fastening screws. Three adaptors, diameter 0.75 mm to 10–32 UNF
UA-1603	Collet chuck and adaptor for tension wire with 2.0 mm. Content: Three chuck nuts. Three collet inserts for wire diameter 2.0 mm. Three fastening screws. Three adaptors, 2.0 mm to 10–32 UNF
UA-1604	Collet chuck and adaptor for push/pull rod, diameter 2.5 mm. Content: Three chuck nuts. Three collet inserts for push/pull rod diameter 2.5 mm. Three fastening screws. Three adaptors, 2.5 mm to 10–32 UNF
UA-1605	Collet chuck and adaptor for push/pull rod, diameter 3.5 mm. Content: Three chuck nuts. Three collet inserts for push/pull rod diameter 3.5 mm. Three fastening screws. Three adaptors, 3.5 mm to 10–32 UNF
UA-1606	Five nylon stingers. Content: Five nylon rods, 200 mm, diameter 3.5 mm. Ten fastening screws. Ten adaptors, diameter 3.5 mm to 10–32 UNF

### FORCE TRANSDUCERS AND IMPEDANCE HEAD

8230-C-003	Force Transducer, Charge (+2200/–2200 N range)
8231-C	Force Transducer, Charge (+11000/–2200 N range)
8230-003	Force Transducer, DeltaTron® (+2200/–2200 N range)
8230-002	Force Transducer, DeltaTron (+2200/–2200 N range)
8230-001	Force Transducer, DeltaTron (+220/–220 N range)
8230	Force Transducer, DeltaTron (+44/–44 N range)
Type 8203	Force Transducer/Impact Hammer
Type 8001	Impedance Head

### THREAD AND BUSHING ADAPTORS

UA-2054	Bushing Adaptor, 10–32 UNF to ¼–28 UNF
UA-2052	Adaptor, Male 10–32 UNF to Male ¼–28 UNF

### CABLE AND HOSE EXTENSIONS

AQ-0648	Extension cable with Neutrik Speakon 4-pin connector at both ends, length 10 m
AQ-0655	Extension cable with Neutrik Speakon 8-pin connector at both ends, length 10 m
AF-1102	Extension air hose, length 10 m
AQ-0658	Extension cable with 9-pin D-sub connector to video HR-10 connector

### LATERAL MODAL EXCITER STANDS

UA-1607	Modal Exciter Stand, height 1.4 m. Mechanical pre-tensioning of tension wire possible via adjustable spring
UA-1608	Modal Exciter Stand, height 2.0 m. Mechanical pre-tensioning of tension wire possible via adjustable spring

Brüel & Kjær reserves the right to change specifications and accessories without notice

HEADQUARTERS: DK-2850 Nærum · Denmark · Telephone: +45 4580 0500  
Fax: +45 4580 1405 · www.bksv.com · info@bksv.com

Australia (+61) 2 9889-8888 · Austria (+43) 1 865 74 00 · Brazil (+55) 11 5188-8161  
Canada (+1) 514 695-8225 · China (+86) 10 680 29906 · Czech Republic (+420) 2 6702 1100  
Finland (+358) 9-521 300 · France (+33) 1 69 90 71 00 · Germany (+49) 421 17 87 0  
Hong Kong (+852) 2548 7486 · Hungary (+36) 1 215 83 05 · Ireland (+353) 1 807 4083  
Italy (+39) 0257 68061 · Japan (+81) 3 5715 1612 · Republic of Korea (+82) 2 3473 0605  
Netherlands (+31) 318 55 9290 · Norway (+47) 66 77 11 55 · Poland (+48) 22 816 75 56  
Portugal (+351) 21 41 69 040 · Singapore (+65) 6377 4512 · Slovak Republic (+421) 25 443 0701  
Spain (+34) 91 659 0820 · Sweden (+46) 33 225 622 · Switzerland (+41) 44 880 7035  
Taiwan (+886) 2 2502 7255 · United Kingdom (+44) 14 38 739 000 · USA (+1) 800 332 2040

Local representatives and service organisations worldwide

Brüel & Kjær 

