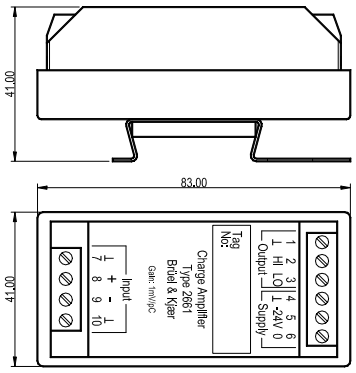
Brüel & Kjær Vibro

Charge Amplifier type 2661 data sheet

1. Application

Charge Amplifier.



2. Usage

Type 2661 is intended for connection to charge type accelerometers, when monitoring plant machinery in harsh environments, for industrial machine installations and for gas turbine applications requiring long mean time between failures.
To protect the Type 2661 from harsh environmental conditions, such as humidity and vibration, it should be mounted in a junction box in conformity with IP 65, as available from Brüel & Kjær Vibro.

Type 2661 is available in a number of versions when other amplification factors or filtering ranges are required.

3. Technical Data

Balanced Charge Input

Sensitivity: .....1 mV/pC, ±2% - 80 Hz
Frequency range: ..... 1 Hz to 100 kHz ±0.5 dB
Max. Input Signal:.....8 nC
High-Pass Filter:.....2nd order, -3 dB @ 0.48 Hz
Common Mode Rejection:.....> 30 dB (1 Hz to 50 kHz)
Noise : ..... < 40 x 10^{-3} pC referred to input terminated with 1 - 4 nF, 2 Hz to 50 kHz
Source Impedance: .....>50MΩ
Effects of Source Impedance on Low Frequency Response:

10 MΩ ⇒ 2 dB peak @ 0.8 Hz
4 MΩ ⇒ 5 dB peak @ 0.8 Hz
2 MΩ ⇒ 8 dB peak @ 0.9 Hz

Connections: .....Screw terminals
Max. wire gauge: ..... 1.5 mm^2

Output

Min. voltage deviation:.....~1.9 V to ~18.1 V unloaded
DC offset: .....- 10 V
Output Impedance:.....2 x 5 Ω

Short Circuit Time:.....Infinite
Drive Capacity: ..... Min. 13 mA peak
Connections: .....Screw terminals

Environmental*

Temperature:
Operating temperature: .....-40° to +85°C (-40°F to +185°F)
Non-Operating Temperature: .....-55°C tp +100°C (-67°F to +212°F)
Humidity: .....+30°C, 95% RH
Electromagnetic Sensitivity: .....< 0.15 μV/A/m
Enclosure: ..... Protection class IP20

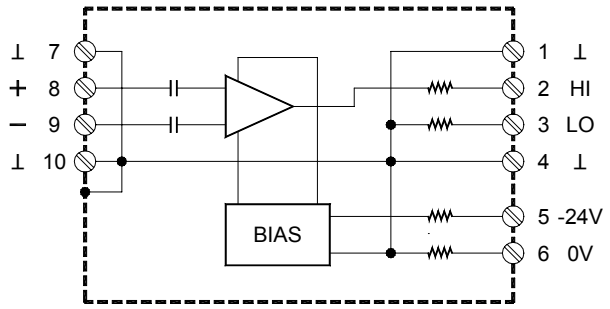
Power Supply

Voltage Supply: .....- 24 V ± 4 V
Current Consumption: ..... < 7.4 mA (typically 5 mA)
Incorrect installation:
Connections to the output and supply terminals can be arbitrarily switched around without over-loading the preamplifier.

Note: All values are typical at 25^0C (77^0F, unless measurement uncertainty is specified. All uncertainty values are specified at 2σ (i.e. expanded uncertainty using a coverage factor of 2).

Physical

Height: .....41 mm (1.614 in)
Width: .....41 mm (1.614 in)
Length:.....83 mm (3.268 in)
Weight: ..... 125 g (0.27 lb)



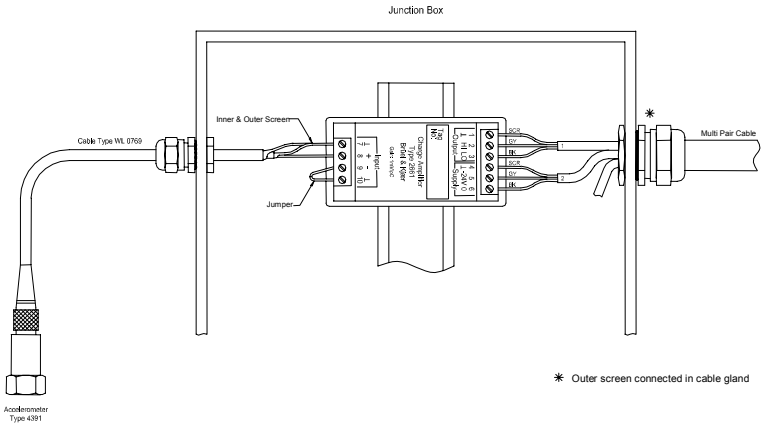
Electrical layout

* These specifications pertain only to the preamplifier/junction box set-up.

Connection

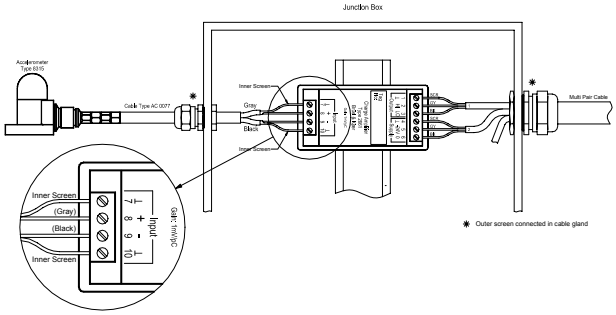
The preamplifier must be mounted in a shielded junction box via DIN-rail.

Guidelines for connecting transducers to Charge Amplifier type 2661:



Connection to a single-end accelerometer.

Note: It may be advantageous to use Microdot Input Adaptor type EQ2353 for connection of single-end accelerometers.



Connection to a differential accelerometer

The figure shows the Type 2661 with connected cable(s).

Versions

Type 2661 may be delivered in several versions.

Standard version in **bold**.

Type number	Sensitivity	Filter	Power Supply
2661	**1mV/pC**	**1Hz-100kHz**	**-24V**
2661-S-0-001-104-S	1mV/pC	1Hz-100kHz	±12V
2661-S-0-025-053	1mV/pC	25Hz-5kHz	-24V
2661-S-004	10mV/pC	0.2Hz-100kHz	-24V
2661-S-005	1mV/pC	0.5Hz-100KHz	-24V
2661-S-1-001-104-P	10mV/pC	1Hz-100kHz	+24V
2661-S-1-025-053	10mV/pC	25Hz-5kHz	-24V
2661-S-3-001-104-P	25mV/pC	1Hz-100kHz	+24V
2661-S-4-001-104-P	3mV/pC	1Hz-100kHz	+24V
2661-S-5-001-104-P	5mV/pC	1Hz-100kHz	+24V
2661-S-6-010-053-N	55.8mV/pC	10Hz-5kHz	-24V
2661-S-7-002-503-N	44.25mV/pC	10Hz-5kHz	-24V
2661-WH2824	0,1 mV/pC	1Hz-100kHz	-24V
2661-WH2825	10 mV/pC	1Hz-100kHz	-24V
2661-WH3132	1mV/pC	10Hz-5kHz	-24V
2661-WH3133	10mV/pC	10Hz-5kHz	-24V

Brüel & Kjær Vibro

Declaration of Conformity

Manufacturer: **Brüel & Kjær Vibro A/S**
Address: **Skodsborgvej 307 B**
2850 Nærum, Denmark

hereby declares that the product

Charge Amplifier - Type 2661 – from Serial number 1876031

conforms to the provisions of the EMC Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC and is in compliance with the following standards:

Safety:	EN 61010-1: (1993) EN 61010-2: (1990)	Safety requirements for electrical equipment for measurement, control and laboratory use
EMC emission:	EN 50081-1: (1992)	Generic emission standard. Part 1: Residential, commercial and light industry
	EN 50081-2: (1993)	Generic emission standard. Part 2: Industrial environment
	CISPR 22: (1993)	Radio disturbance characteristics of information technology equipment. Class B limits
	FCC Rules:	Part 15: Class B limits
EMC immunity:	EN 50082-1: (1992)	Generic immunity standard. Part 1: Residential, commercial and light industry
	EN 50082-2: (1995)	Generic immunity standard. Part 2: Industrial environment **Note 1:** The above is guaranteed using accessories listed in this data sheet **Note 2:** The screw terminals of Type 2661 must not be exposed to ESD. Precautions for handling electrostatic sensitive devices must be followed. **Note 3:** Type 2661 only conforms to the above standards when mounted in a junction box immune to RF and connected via double-screened cable
Temperature:	IEC60068-2-1 IEC60068-2-2 IEC60068-2-14	Environmental Testing. Cold & Dry Heat. Operating temperature: -40 to +85°C (-40 to +185°F) Storage temperature: -55 to +100°C (-67 to +212°F) Change of temperature: -40 to +85°C (-40 to +185°F) (2 cycles, 1°C/min)
Humidity:	IEC60068-2-3 IEC60068-2-30	Damp Heat: 95% RH (non-condensing at 30°C (86°F) operating, and 40°C (104°F) storage) (4 cycles of 25°C (77°F), 97% RH and 55°C (131°F), 93% RH)
Mechanical:		Non-operating:
	IEC60068-2-6	Vibration: 0.75 mm, 1-41 Hz. 50 m/s^2 peak @ 41 to 150 Hz to 2 kHz. 1 m/s^2 peak @ 150 Hz to 2 kHz
	IEC60068-2-27	Shock: 1000 m/s^2
	IEC60068-2-29	Bump: 3000 bumps at 250 m/s^2
Enclosure:	IEC60529 (1989)	Protection provided by Enclosures: IP 20

Declaration of Conformity - Charge Amplifier Type 2661

This product met its published specifications at the time of shipment from the factory and has been manufactured in compliance with the provisions of the relevant Brüel & Kjær Vibro production code and our Quality System certified according to EN ISO 9001. The product has been tested individually using calibrated equipment that is traceable to national and international standards. The final tests have been recorded and are available in the form of test records for examination upon request.

This Declaration of Conformity is issued under the sole responsibility of the manufacturer, pursuant to ISO/IEC Guide 22 and EN 45014. It does not affect the warranty obligations of the supplier.

Place and date of issue:	Approved by:
Nærum, 28 June 2002	Thomas Etter Q.A. Manager