Bently Nevada 126648-01

Keyphasor External I/O Module



Bently Nevada 126648-01 is the non-isolated external-termination I/O module for a 3500/25 Enhanced Keyphasor assembly. It links the external termination arrangement to the Keyphasor signal-processing module, which receives shaft-reference events from compatible proximity probes or magnetic pickups. The resulting timing signals are used by the monitoring system for shaft-speed and vibration-phase measurements. This part serves installations that use a separate termination block and signal cable; its complete code distinguishes that arrangement from internal-termination 125800-01 and isolated external-termination 126648-02 hardware.

Technical Specifications

Product Identity	
Part number	126648-01
I/O dimensions (H x W x D)	241.3 x 24.4 x 103.1 mm
Rack space	One full-height rear slot
Functional Configuration	
Family	3500/25 Enhanced Keyphasor
Termination	External
Isolation version	Non-isolated I/O
External block / cable	Ordered separately
Published non-isolated signal range	+0.8 to -21.0 V
Performance & Power	
Input impedance	21.8 kOhm minimum
Environment	
Operating temperature	-30 to +65 degrees C, non-barrier I/O application
Humidity	95%, non-condensing

Selected original manufacturer material follows on pages 3–7.

Compatibility & Selection Guide

System compatibility. A compatible 3500/25 main module provides the Keyphasor timing reference used by other 3500 monitors. Select 126648-01 together with the documented external termination arrangement and intended transducer application. The manufacturer lists separate isolated and internal-barrier I/O options; neither the family name nor physical appearance alone establishes interchangeability.

Wiring & Installation Reference

External termination path

1. Identify the termination block Choose the documented Euro-style or terminal-strip Keyphasor ET arrangement for the installation.

2. Match the cable Confirm the 129530 cable family, actual length and assembly option against the manufacturer ordering table.

I/O position and signal version

1. Confirm 126648-01 identity Read the complete spare number and verify the non-isolated external-termination version.

2. Verify the front assembly Check the compatible Keyphasor main-module and rack arrangement using the manufacturer diagrams.

Installation precautions

126648-01 is the non-isolated external-termination I/O spare. Confirm the installed input and external termination arrangement before replacement.

Do not treat an internal-termination I/O module as the same component merely because it belongs to the 3500/25 family.

View external I/O layout (PDF) — page 7 · View mounting reference (PDF) — page 7

Specifications

Inputs

Power Consumption	3.2 Watts typical
Signal	Each Keyphasor Module accepts up to two transducer signals from proximity probe transducers or magnetic pickups. The input signal range is +0.8 V to -21.0 V (NonIsolated I/O modules) or +5V to -11V (Isolated I/O modules). Signals exceeding this range are limited internally by the module. Passive magnetic pickups require a shaft rotative speed greater than 200 rpm (3.3 Hz).
Input Impedance	21.8 kΩ minimum

Signal Conditioning

Speed/ Frequency Signal Ranges	Input range of 1 to 1,200,000 cpm (0.017 to 20 kHz). Supports multiple events per revolution to a maximum of 20 kHz. Output range of 1 to 99,999 cpm (0.017 to 1667 Hz)
Speed/ Frequency Signal Accuracy	Specified at +25°C (+77°F).
Non-processed Signals	0.017 to 100 Hz ... ±1 cpm 101 to 500 Hz ... ±8 cpm 501 to 20 kHz ... ±1% of cpm
Processed Signals	0.017 to 60 Hz ... ±1 cpm 61 to 150 Hz ... ±8 cpm 151 to 20 kHz ... ±1% of cpm

Transducer Conditioning

Auto Threshold	Minimum signal amplitude for triggering is 2 volts peak to peak and minimum frequency is 120 rpm (2 Hz).
Manual Threshold	Use for any input above 0.017 Hz (1 rpm for 1 event per revolution). User-selectable from 0 to -20 volts dc. Minimum signal amplitude for triggering is 500 millivolts peak to peak.
Hysteresis	User-selectable from 0.2 to 2.5 Volts.

Outputs

Buffered Keyphasor Signals	Two buffered Keyphasor outputs are available at the front of the rack via coaxial connectors. Two buffered Keyphasor outputs are also available at the back of the rack via Euro Style connectors.
Output Impedance	504 Ω maximum buffered output impedance.
Keyphasor Transducer Power Supply	-24 Vdc, 40 mA maximum per channel.
Front Panel LEDs	
OK LED	Indicates when a fault has been detected in the Keyphasor Module.
TX/RX LED	Indicates when the Keyphasor Module is communicating with the Rack Interface Module (RIM).

Environmental Limits

Operating Temperature	-30°C to +65°C (-22°F to +150°F) when used with Keyphasor I/O Module other than the Internal Barrier version. 0°C to +65°C (32°F to +150°F) when used with Keyphasor Internal Barrier I/O Module (Internal Termination).
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	95%, non-condensing

Physical

Main Module	
Dimensions Height x Width x Depth)	119.9 mm x 24.4 mm x 256.5 mm (4.72 in x 0.96 in x 10.10 in).
Weight	0.34 kg (0.76 lbs.)
I/O Module	
Dimensions (Height x Width x Depth)	241.3 mm x 24.4 mm x 103.1 mm (9.50 in x 0.96 in x 4.06 in)
Weight	0.46 kg (1.01 lbs.).

Rack Space Requirement

Main Module	1 half-height front slot The half-height main modules require a special mounting adapter for mounting in the full-height slots. The user can place the main modules in any one of the 14 available slots. Each rack may have no more than two main modules, one in a top half-slot and one in a bottom half-slot.
I/O Modules	1 full-height rear slot

Ordering Considerations

General

- External Termination (ET) Blocks cannot be used with Internal Termination I/O modules.
- When ordering I/O Modules with External Terminations, the External Termination Blocks and Cables must be ordered separately.
- There are many technical considerations involved in using the expanded signal processing functions of the Enhanced Keyphasor Module. A qualified Bently Nevada sales representative should be consulted prior to specifying or ordering modules for such applications.

Internal Barrier I/O Module

Consult the 3500 Internal Barrier specification sheet document (141495) if the Internal Barrier Option is selected.

Ordering Information

For the detailed listing of country and product-specific approvals, refer to the *Approvals Quick Reference Guide (108M1756)*.

For additional technical documentation, please log in to bntechsupport.com and access the Bently Nevada Media Library.

Enhanced Keyphasor Module

3500/25-AA-BB-CC

A: Number of channels	
01	Single half-height 2-channel Keyphasor card (order for 2-channels)
02	Two half-height 2-channel Keyphasor cards (order for 4-Channels)
B: Type of I/O Module	
01	I/O module with Internal Terminations
02	I/O module with External Terminations
03	Internal Barrier I/O with Internal Terminations
04	Isolated I/O module with Internal Terminations (Designed for use with Magnetic Pickups)
05	Isolated I/O module with External Terminations (Designed for use with Magnetic Pickups)
C: Agency Approval Option	
00	Not required
01	cNRTLus (Class 1, Div 2)
02	ATEX/IECEx/CSA (Class 1 Zone 2)

External Termination Blocks

128718-01	Keyphasor External Termination Block (Euro Style Connectors)
128726-01	Keyphasor External Termination Block (Terminal Strip Connectors)

Cables

3500 Keyphasor (KPH) Signal to External Termination (ET) Block Cable

129530-AAAA-BB

A:Cable Length	
0005	5 feet (1.5 metres)
0007	7 feet (2.1 metres)
0010	10 feet (3 metres)
0025	25 feet (7.5 metres)
0050	50 feet (15 metres)
0100	100 feet (30.5 metres)
B: Assembly Instructions	
01	Not assembled
02	Assembled

Spares

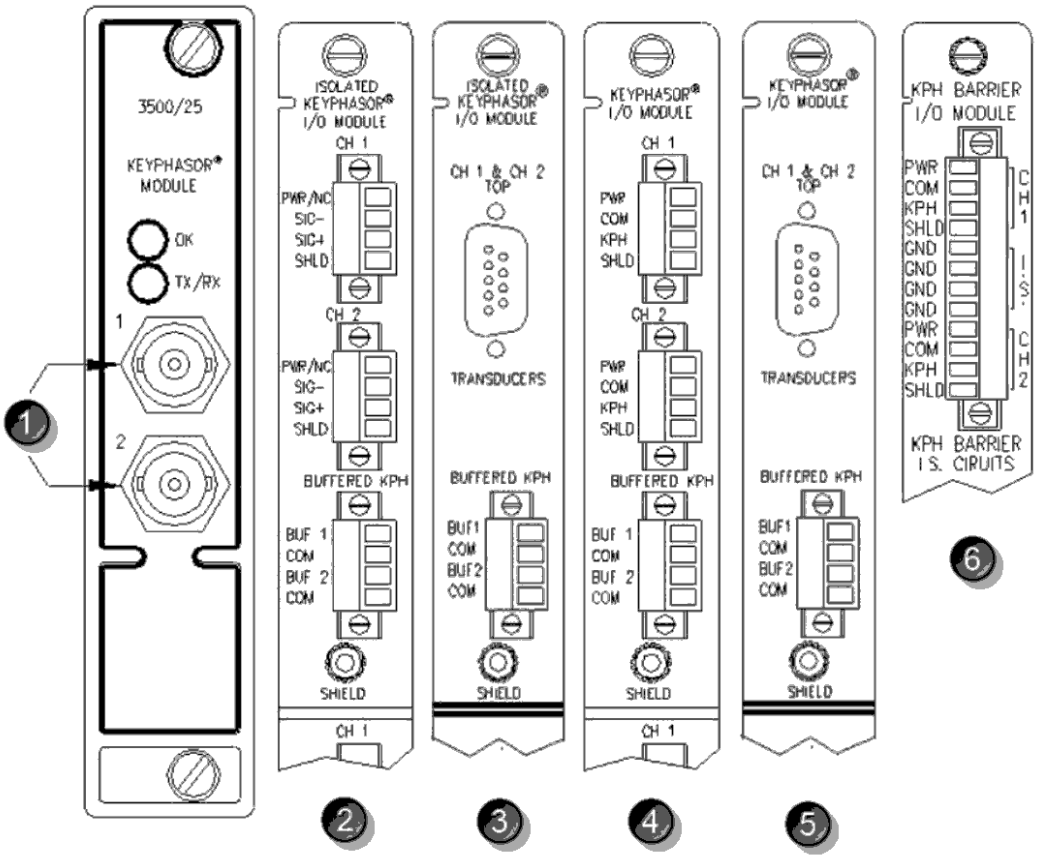
149369-01	Enhanced Keyphasor Module

This module may be ordered as a direct plug-in replacement for Keyphasor Module 125792-01.

125800-01	Keyphasor I/O Module (Internal Terminations)
126648-01	Keyphasor I/O Module (External Terminations)
125800-02	Isolated Keyphasor I/O Module (Internal Terminations) (Designed for use with Magnetic Pickups)
126648-02	Isolated Keyphasor I/O Module (External Terminations) (Designed for use with Magnetic Pickups)
135473-01	Keyphasor I/O Module (Internal Barriers and Internal Terminations.
04425545	Grounding Wrist Strap (single use)
00580438	Connector Header, Internal Termination, 4-Position, Green
166M2391	Connector Header, Push-in-Spring Type (alternative for PN 00580438)
00502133	Connector Header, Internal Termination, 12-Position, Blue
129770	Keyphasor Module User Guide
Half-height Blank Monitor Cover Kit	
131151-01	Half-height Blank Front Panel Cover (qty 1, includes screws)

Half-height Card Adapter

125388-01	Half-height Chassis
125565-01	Card Guide
04300111	Assembly Screws (Order Qty. 3)



1. Buffered Transducer Outputs
2. I/O Module, Isolated Internal Termination
3. I/O Module, Isolated External Termination
4. I/O Module, Non-Isolated Internal Termination
5. I/O Module, Non-Isolated External Termination
6. Barrier I/O Module, Internal Termination

Figure 2: Front and Rear View of 3500/25 Keyphasor module