ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

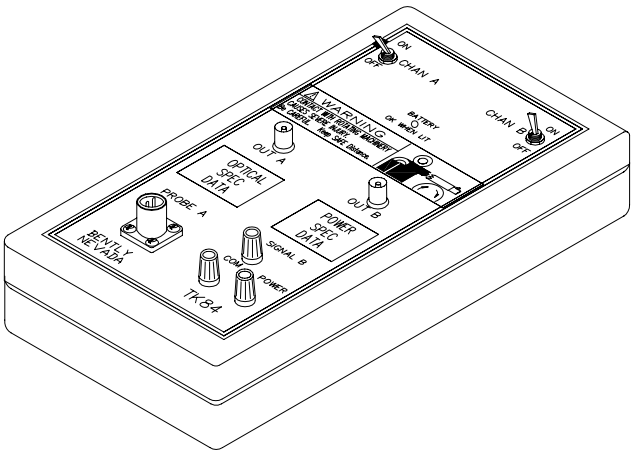
Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *GE / Bently Nevada TK84* at our website: *Click HERE*

User Guide

Bently Nevada™ Asset Condition Monitoring



TK84 Temporary Transducer Interface

imagination at work

Part Number 82594-01
Rev. C (07/07)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Copyright 1988. Bently Nevada LLC.
All rights reserved.

The information contained in this document is subject to change without notice.

The following are trademarks of General Electric Company in the United States and other countries:

Bently Nevada, Keyphasor, Proximitor

Contact Information

The following contact information is provided for those times when you cannot contact your local representative:

Mailing Address	1631 Bently Parkway South Minden, Nevada USA 89423 USA
Telephone	1.775.782.3611 1.800.227.5514
Fax	1.775.215.2873
Internet	www.ge-energy.com/bently

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Additional Information

Product Disposal Statement

Customers and third parties, who are not member states of the European Union, who are in control of the product at the end of its life or at the end of its use, are solely responsible for the proper disposal of the product. No person, firm, corporation, association or agency that is in control of product shall dispose of it in a manner that is in violation of any applicable federal, state, local or international law. Bently Nevada LLC is not responsible for the disposal of the product at the end of its life or at the end of its use.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Contents

1. Introduction 1
1.1 Purpose 1
1.2 Features 1
1.3 Operation 4
1.3.1 Powering Transducer Interfaces 4
1.3.2 Optical Keyphasor® Transducer 4
2. In Case of Difficulty 9
2.1 Test and Verification 9
2.2 Problems 10
3. Ordering Information 13
4. Specifications 15
4.1 General 15
4.2 Optical (Channel A) 16
4.3 Proximitor® Power (Channel B) 16

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

1. Introduction

1.1 Purpose

The TK84 Optical Package consists of the TK84 Temporary Transducer Interface, optical Keyphasor® sensor, optical Keyphasor mounting kit, cables, reflective tape, carrying case, and manual as shown in Figure 1-1. The TK84 Temporary Transducer Interface is a two-channel, portable unit. Channel A is a signal conditioner for an optical Keyphasor transducer. Channel B is a power source for a proximity probe transducer. Use the TK84 with diagnostic equipment as an optical Keyphasor trigger input or to temporarily power proximity probe transducers during machine assembly, probe installation, or machine balancing.

1.2 Features

- Portable (low weight, small size)
- Low cost
- Battery powered
- Optical Keyphasor and Proximitor® power supply in one unit
- Magnetic or clamp mounting for temporary optical pickup

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

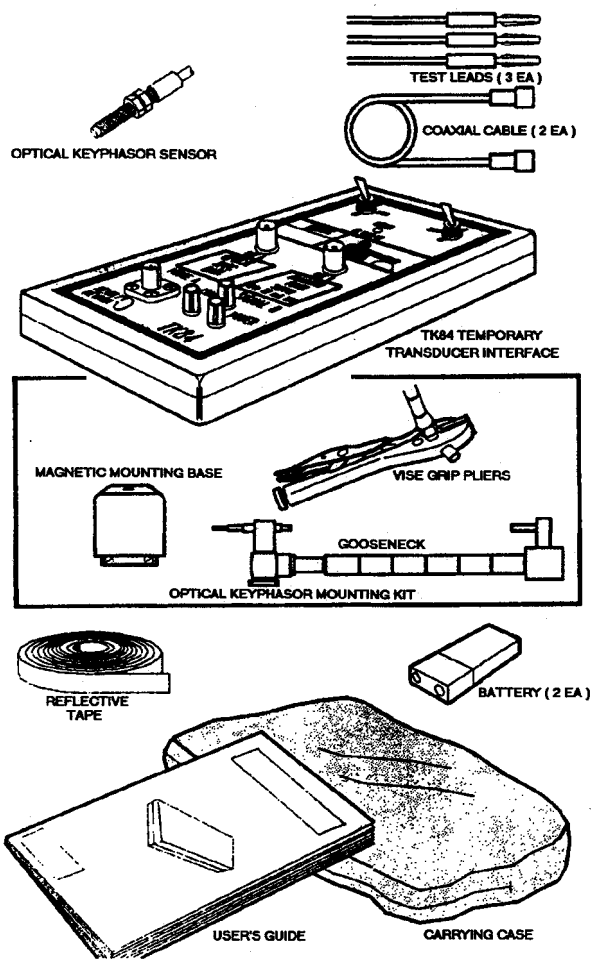


Figure 1-1: TK-84 Optical Package

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

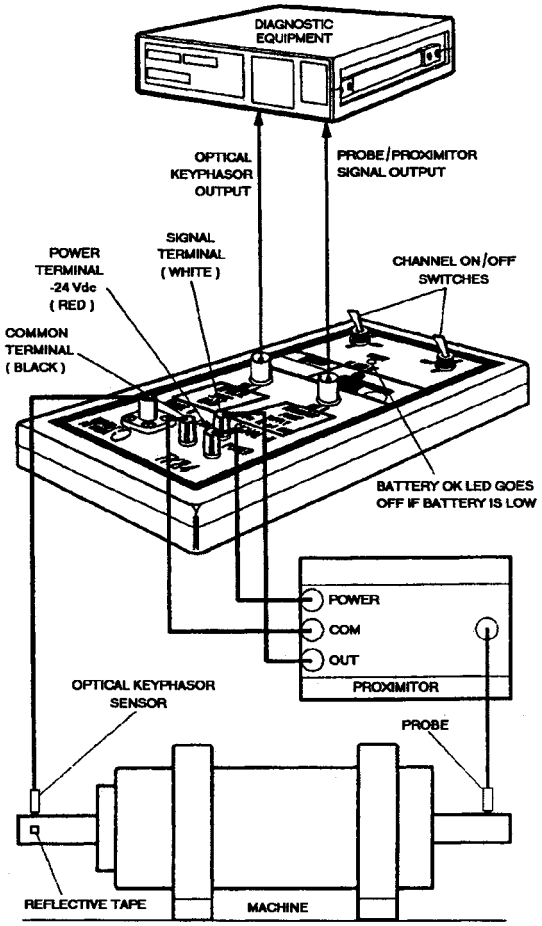


Figure 1-2: TK-84 Controls and Connections

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

1.3 Operation

WARNING

TK-84 operation can take place close to rotating equipment. Contact with rotating equipment can result in severe injury. Maintain safe distance and exercise caution when using the TK-84 near rotating equipement.

1.3.1 Powering Transducer Interfaces

The TK84 Temporary Transducer Interface powers transducers such as Proximitor sensors or Bently Nevada accelerometer interface units. The output power is -24 Vdc at 12 mA minimum. This is adequate to power one Proximitor or accelerometer interface unit. Figure 1-2 shows the necessary connections. Test leads and alligator clips are supplied with the package for making these connections.

1.3.2 Optical Keyphasor® Transducer

Refer to Figure 1-3 and the steps below to install the mounting kit.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

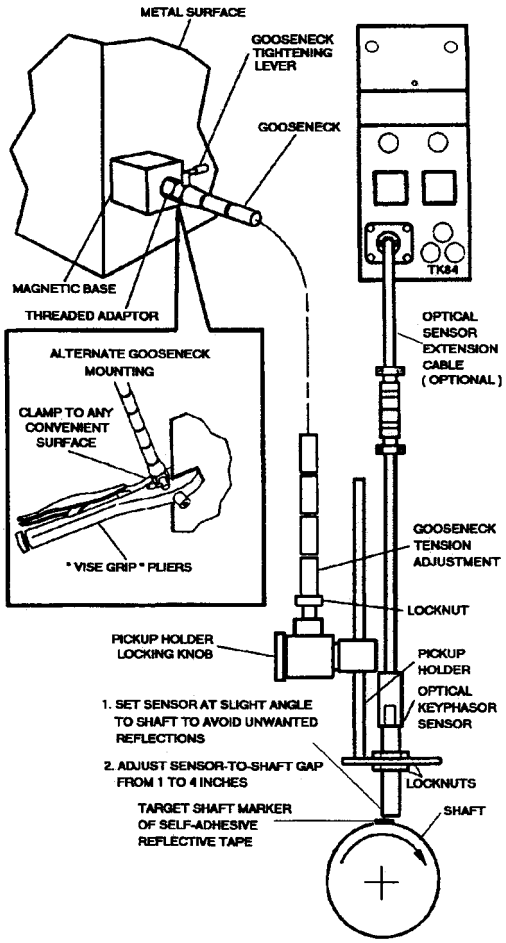


Figure 1-3: Magnetic Pickup Installation

1. Clean shaft surface
2. Place reflective tape on shaft. A one-inch squaare of reflective tape is adequate for most shafts.
3. Install optical Keyphasor sensor in pickup holder. Secure with lock nuts.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4. Install pickup holder, with optical Keyphasor sensor attached, in the end of the gooseneck. Tighten pickup holder locking knob.

5. Connect gooseneck to magnetic base, using the threaded adapter. (An alternate mounting method is with the vise grip pliers. Do not use the threaded adapter when connecting gooseneck to vise grip pliers).

6. Mount the magnetic base (or vise grip pliers) on the machine.

7. Loosen lever and adjust gooseneck so pickup is about 3 inches from shaft. Do not bend gooseneck more than 90 degrees.

8. Tighten lever to secure gooseneck.

NOTE

It may be necessary to adjust gooseneck tension using tension adjustment. Loosen lock nut and turn tension adjustment clockwise (viewed from pickup end) to tighten. Secure tension adjustment with lock nut.

9. Connect optical sensor cable to TK84 PROBE A connector.

10. Connect TK84 OUT A to a voltmeter (to use the TK83 Balance Master 2> connect to the SIGNAL connector in the DIRECT/GAP mode).

11. Set TK84 CHAN A switch to ON. Make sure BATTERY OK light is brightly lit and not flashing.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

12. Rotate shaft (or move sensor) so that sensor is pointed toward non-reflective surface.

13. Adjust distance from shaft (1 to 4 inches) and, if required, angle to shaft (up to 45°) until the gap voltage is +0.5 Vdc or less. See Figure 1-4.

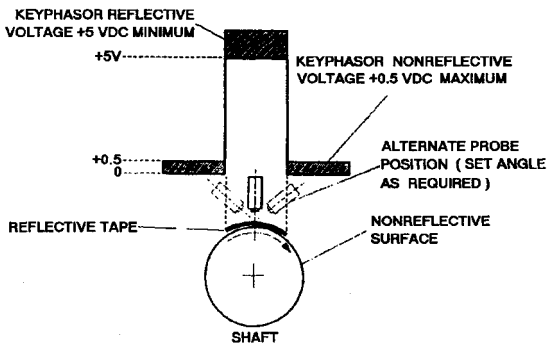


Figure 1-4: Optical Keyphasor Signal Output Voltage

NOTE
Set the sensor at an angle to the shaft to avoid unwanted reflections from shiny shaft surfaces. Reflections from the reflective tape beaded surface are still received.

14. Rotate shaft or move sensor slightly until it points toward the reflective tape. The voltage reading should be at least +5 Vdc. If not, move sensor closer to tape until you read +5 Vdc or greater. Then, repeat steps 12

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

through 14 to obtain the minimum and maximum voltages in Figure 1-4.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

2. In Case of Difficulty

2.1 Test and Verification

Perform the following checks to be sure the TK84 is functioning properly.

1. Visually inspect for physical damage to case, connectors, and switches.
2. Set CHAN A switch to ON and CHAN B switch to OFF. BATTERY OK WHEN LIT indicator should be brightly lit and not flashing. If not, check battery connection and battery condition.
3. Set CHAN B switch to ON and CHAN A switch to OFF. BATTERY OK WHEN LIT indicator should be brightly lit and not flashing. If not, check battery connection and battery condition.
4. Connect Proximitor to POWER and COM terminals to provide load. (You can use a 3K ± 500 ohm resistor if a Proximitor is not available.)
5. Set CHAN B switch to ON.
6. Connect DC voltmeter between POWER and COM terminals and measure the voltage. It should be from -22 to -26 Vdc.
7. Set CHAN B switch to OFF.
8. Connect optical probe cable to PROBE A connector.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

9. Connect TK84 OUT A to voltmeter (you may use a TK83 Balance Master 2. Connect to TK83 SIGNAL connector in the DIRECT/GAP mode).

10. Set TK84 CHAN A switch to ON.

11. Place a reflective target (white paper or other reflective object) in front of optical sensor. The voltmeter (or TK83) reading should be greater than 5 Vdc when you put the target in front of the probe, and drop to less than 0.5 Vdc when you remove it.

2.2 Problems

Table 2-1: Problem Symptoms and Solutions

PROBLEM	CAUSE/SOLUTION
BATTERY OK WHEN LIT off, dim, or flashing	Battery low./Replace battery.
No output from CHAN B OUT with Proximitor transducer connected.	Loose or wrong connections./Check connections.
Erratic output from optical Keyphasor transducer.	Probe receiving unwanted reflections from shiny spots on shaft./Readjust gap and angle of probe to shaft. (see Section 1.3.2,), Reflective tape is dirty./Replace reflective tape.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PROBLEM	CAUSE/SOLUTION
Constant low output from optical Keyphasor transducer.	Pickup not receiving reflection from shaft./Readjust probe-to-shaft gap and angle as required Reflective tape wrong size or coated with oil./Replace tape. Pickup defective./See Section 2.1.
Constant high voltage output from optical Keyphasor transducer.	Pickup receiving steady reflection from output from optical shiny shaft./ Adjust probe-to-shaft gap and angle as required.

If you require further assistance, contact customer support using the contact information at the front of this manual.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

3. Ordering Information

Table 3-1: TK84 Part Ordering Numbers

Component	Part Number
TK84 Optical Package	82608-01
TK84 Temporary Transducer I/F	82447-01
Optical Keyphasor sensor	10798-03
Optical Keyphasor mounting kit	20211-05
Optical Keyphasor sensor holder	20197-01
Gooseneck	04490700
Vise grip pliers	20210-01
Magnetic mounting base	46000-01
Standoff adapter	49273-01
Reflective tape (15 feet)	81769-01
Battery, 9 Vdc alkaline (NEDA 1604A)	01810700
Carrying case	04160101
Manual	82594-01
Male - Male coaxial cable (6 feet)	02211505

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Component	Part Number
Black banana lead (48 inches)	01600480
Red banana lead (48 inches)	01600482
White banana lead (48 inches)	01600489
Alligator clip	02259524
Red alligator clip boot	02259528
Black alligator clip boot	02259526
Optional Reflective tape (150 feet)	02290050
Optical Sensor extension cable	20545-xx*

*-xx is length in feet (99 feet maximum)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4. Specifications

4.1 General

POWER REQUIREMENTS

9 Volt transistor battery, alkaline, 5.4 Vdc to 10.0 Vdc (NEDA 1064A or equivalent).

BATTERY LIFE

The values given below show minimum battery life for a fresh battery with sensors connected. Table 4-1 shows the range of battery life for the range of Proximitor current drain.

Table 4-1: TK84 Battery Life in Hours

Prox Current (mA)	Channel A On (hours)	Channel B On (hours)	Channels A and B On (hours)
5 (min)	17	20	9
12 (max)	17	8	5

LOW-BATTERY CONTROL

The low-battery control circuit disables the optical and Proximitor power supply circuits when the battery voltage drops between +4.8 Vdc and + 5.4 Vdc

OPERATING TEMPERATURE RANGE

0 °C (+32 °F) to + 50 °C (+122 °F).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

STORAGE TEMPERATURE RANGE

-20 °C (-4 °F) to + 70 °C (+158 °F).

Note: A battery stored above +40 °C (+104 °F) has a reduced shelf life.

RELATIVE HUMIDITY

5 to 90 %, non-condensing, operating or stored.

4.2 Optical (Channel A)

REFLECTIVE TAPE SIZE

One inch square, typical

OUTPUT VOLTAGE

From reflective tape (light) = +5 Vdc minimum

From shaft (dark) = +0.5 Vdc maximum

4.3 Proximitor® Power (Channel B)

OUTPUT VOLTAGE

-22.0 Vdc to -26.0 Vdc, with rated load, measured between the POWER and COM terminal

RATED LOAD OUTPUT CURRENT

5.0 mA to 12.0 mA

OUTPUT NOISE VOLTAGE

10 mV peak to peak maximum (on oscilloscope) or 3 mVac maximum (on an average reading

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

voltmeter) measured between the POWER and COM terminals

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP