

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

Bently Nevada

PRODUCT MODEL

24765-02-01

24765-02-01 - Spring return expansion transducer
Selected manufacturer pages; verify exact configuration.

OFFICIAL SOURCE

Datasheet 141598 Rev. K

[Open current manufacturer source](#)

AMIKON PRODUCT SUPPORT

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[AMIKONG.COM](https://www.amikong.com)

Amikon Limited prepared this independent reference package. Selected manufacturer pages follow with their original content and pagination visible.

How a Case Expansion Transducer Works

The case expansion transducer system uses the LVDT to measure the machine case thermal growth.

A rod on the LVDT connects to the machine. As the machine case grows, the rod moves inside the LVDT and changes the signal in the LVDT. The transducer electronically conditions the signal and outputs it to a monitor for display and alarms.

The High Temperature Case Expansion Transducer is designed to meet TYPE 4 requirements.

Specifications

24765 dc LVDT Assembly

Electrical

Input Power	+24 Vdc, 30 mA minimum
Scale Factor	
24765-01	0.346 V/mm (8.79 V/in).
24765-02	0.404 V/mm (10.25 V/in).
24765-03	0.143 V/mm (3.63 V/in).
Linear Range	
24765-01	± 12.7 mm (±0.5 in).
24765-02	± 25.4 mm (±1.00 in).
24765-03	± 51 mm (±2.00 in).
-3 dB Frequency	
24765-01	20 Hz
24765-02	15 Hz
24765-03	10 Hz
Output Impedance	7 kΩ. nominal, all models
Minimum Load Resistance	
24765-01	50 kΩ
24765-02	100 kΩ
24765-03	200 kΩ

Output

Ripple	< 1% full scale
Linearity	± 0.5% full-range
Stability	0.125% full-scale
Scale Factor Temperature Coefficient	0.07%/°C (0.04%/°F)

Environmental Limits

Operating Temperature	-18 °C to +71 °C (0 °F to +160 °F).
Storage Temperature	-54 °C to +93° C (-65 °F to +200 °F).
Shock	250 g for 11 ms
Vibration	10 g @ 0 to 2 kHz

Construction

Body	Series 400 magnetic stainless steel
Coil	Laminated glass epoxy
Lead Wire	25 AWG stranded copper, Teflon-insulated, 31 cm (12 in)

Mechanical

Height	88.9 mm (3.50 in).	
Width	117 mm (4.60 in).	
Length	24765-01 and -02	241 mm (9.50 in)
	24765-03	328 mm (12.90 in)
Weight	24765-01 and -02	2.3 kg (5.0 lbs)
	24765-03	2.7 kg (6.0 lbs)
Thread	6-40 UNF-2B core end 1/4-20 UNC-2A machine end	
Plunger Length	As required for application. Refer to the Dimensional Drawings section of this datasheet for fully	

Environmental Limits

Operating Temperature	-25 °C to +85 °C (-13 °F to +185 °F)
Storage Temperature	-55 °C to +125 °C (-67 °F to +257 °F)
Shock	250 g for 11 ms-
Vibration	10 g @ 0 to 2 kHz

Mechanical

Height	88.9 mm (3.50 in)
Width	117 mm (4.60 in)
Length	
135613-01, -02, -11 and -12	241 mm (9.50 in)
135613-03 and -13	328 mm (12.90 in)
Weight	
135613-01, -02, -11 and -12	2.3 kg (5.0 lbs)
135613-03 and -13	2.7 kg (6.0 lbs)
Thread	6-40 UNF-2B core end 1/4-20 UNC-2A machine end

Dimensions

Body Length	
135613-01 and -11	171 mm (6.75 in)
135613-02 and -12	209 mm (8.24 in)
135613-03 and -13	297.4 mm (11.71 in)
Body Diameter	19.2 mm (0.75 in), all models
Body End to Null Center	
135613-01 and -11	65.4 mm (2.57 in)

135613-02 and -12	84.3 mm (3.32 in)
135613-03 and -13	129 mm (5.07 in)
Core Length	
135613-01 and -11	87.6 mm (3.45 in)
135613-02 and -12	87.6 mm (3.45 in)
135613-03 and -13	135 mm (5.30 in)
Core Diameter	4.8 mm (0.19 in), all models

Housing Assembly

Design Specification

24765 LVDT	NEMA 3
135613 LVDT	NEMA 4
Mounting Fastener Locations	Optional, per user requirements
Supplied Hardware	4 housing mounting 1/4-20 UNC bolts, lock washers, and flat washers 2 10-24 nuts, lock washers, and flat washers on end of LVDT extension rod. 1/2-inch conduit fitting

Compliance and Certifications

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

EMC

EN 61000-6-2 (2005)

EN 61000-6-4 (2007) +A1: 2011

EMC Directive 2014/30/EU

RoHS

RoHS Directive 2011/65/EU

Ordering Information



For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from [Bently.com](https://www.bently.com).

Case Expansion Transducer Assembly (dc)

24765-AA-BB

A: Linear Range Option

01	25.4 mm (1.0 in)
02	0.8 mm (2.0 in)
03	101.6 mm (4.0 in)

B: Spring Option

00	Without spring return
01	With spring return

High Temperature Case Expansion Transducer Assembly (dc)

135613 -AA-BB

A: Linear Range Option

01	25.4 mm (1.0 in) with a 127 mm (5.00) rod
02	50.8 mm (2.0 in) with a 152.4 mm (6.00) rod
03	101.6 mm (4.0 in) with a 228.6 mm (9.00) rod
11	25.4 mm (1.0 in) with a 304.8 mm (12.0 in) rod
12	50.8 mm (2.0 in) with a 304.8 mm (12.00) rod
13	101.6 mm (4.0 in) with a 228.6 mm (9.00) rod

B: Spring Option

00	Without spring return
01	With spring return



Spring Option 01 only available with Linear Range Options 01, 02, & 03

Accessories

135941-01	127 mm (5.0 in) rod
135941-02	152.4 mm (6.0 in) rod
135941-03	228.6 mm (9.0 in) rod
135941-04	304.8 mm (12.0 in) rod
285741	Ferrite Bead



Ferrite bead required on transducer end of field wiring for CE installations.

For more information on this product, please refer to the DC-LVDT and Housing Assembly User Guide (document TW8029327).

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