

MANUFACTURER TECHNICAL-DATA EXTRACT

Manufacturer's Manual

Manufacturer technical-data extract; not a complete operation manual

BENTLY NEVADA / 21000 / 24701 PROBE HOUSINGS

24701-34-05-00-041-03-02

PROXIMITY PROBE HOUSING ASSEMBLY

Original source pages retained. Apply only the data matching the exact order.

OFFICIAL SOURCE

Bently Nevada 141600 Rev. AC / 141194 Rev. AM

Housing pp. 1-3, 6-8, 17; probe p. 1

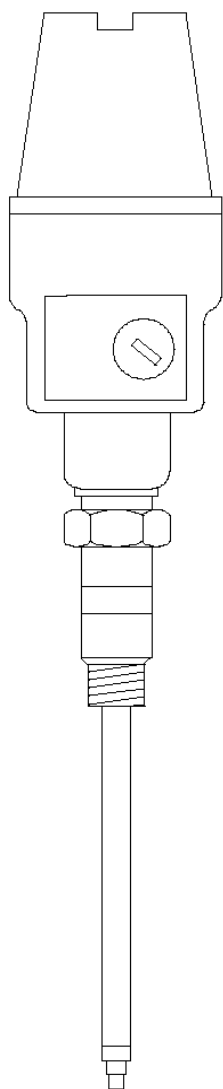
This technical extract does not replace the complete equipment and system manuals. Check the installed hardware and project before use.

21000, 24701, and 164818 Proximity Probe Housing Assemblies

Datasheet

Cordant™

141600 Rev. AC



Description

To externally mount proximity probes, use one of these all-metal Proximity Probe Housing Assemblies:

- 21000 aluminum probe housing assembly
- 24701 stainless steel probe housing assembly

The 21000, 24701, and 164818 Proximity Probe Housing Assemblies consist of the following parts:

- A dome cover that screws into the body of the housing
- Threaded ports for conduit connections
- A probe sleeve of optional length
- O-rings
- A reverse mount proximity probe
- A thread seal
- Optional conduit fittings
- An optional standoff adapter



A newer 31000/32000 proximity probe housing assembly is available with more flexible mounting options, better environmental resistance, and other improved features. We recommend this proximity probe housing assembly for installations where an explosion proof housing is not required. See 31000 and 32000 Proximity Probe Housings product datasheet (document 141610).

The 21000, 24701, and 164818 Proximity Probe Housing Assemblies are available with Canadian Standards Association (CSA) approvals. They are rated explosion proof for hazardous areas.



You can order hazardous area approved proximity probes with 21000 aluminum and 24701 stainless steel housings for intrinsically safe applications. Both housings are certified as CSA Type 4 enclosures and are fully compliant with the American Petroleum Institute's (API) 670 Standard for externally mounted proximity probe housings.

The 164818 Compact Proximity Probe Housing is also available for applications with space restrictions. Ceramic capped probes are available with the 164818 housing.

Sleeve length is determined by the location in which the probe and housing are installed. The probe lead must be longer than the sleeve. Sleeve lengths longer than 304 mm (12 inches) require additional sleeve support to reduce the vibration associated with unsupported long sleeve lengths.

Bently Nevada offers a probe support and oil seal (part number 37948-01) for long sleeves that must go through an inner bearing housing. We also make custom sleeve supports.

Related Documents

For probe information, refer to the following manuals:

- *3300 XL 8mm & 3300 5mm Proximity Transducer System User Guide* (document 141078)
- *3300 XL NSv Proximity Transducer System User Guide* (document 147357)
- *3300 XL 11mm Proximity Transducer System Installation User Guide* (document 146255)
- *Radiation Resistant Probe and Proximitator System* (document TW8029407)

Specifications

Environmental

Temperature Range

3300 XL 8mm Probe

Operating and storage	-51°C to +177°C (-60°F to +351°F)
-----------------------	-----------------------------------

3300 XL 11mm Probe

Operating and storage	-51°C to +177°C (-60°F to +351°F)
-----------------------	-----------------------------------

3300 NSv Probe

Operating	-34°C to +177°C (-30°F to +351°F)
-----------	-----------------------------------

Storage	-51°C to +177°C (-60°F to +351°F)
---------	-----------------------------------

CAUTION

EQUIPMENT DAMAGE

Exposing 3300 XL or 3300 NSv probes to temperatures below -34°C (-30°F) may cause premature failure of their pressure seals.

Mechanical

Material

21000	Aluminum body with 304 stainless steel sleeve
24701	303 stainless steel body, with 304 stainless steel sleeve

Mass (Weight)

21000	1.1 kg (2.4 lb) typical, without fittings
24701	1.8 kg (4.1 lb) typical, without fittings

Monitor Module	1 full-height front slot
I/O Modules	1 full-height rear slot

Examples

3.7 in (94 mm) = **037**

22.4 in (569 mm) = **224**



Probe P/N and S/N may be displayed on a flag label for some combinations of the C plus D options where only a small section of the probe cable is visible.



For probe penetration lengths between 1.0 and 2.0 inches, it may be necessary to counter bore the machine case to reduce probe side view or rear view effects.



If you select a probe penetration length (C plus D) greater than 300 mm (12 in), you must add sleeve support near the probe to prevent resonance from occurring. Adjustment range of probe penetration option D is 13 mm (± 0.5 in). For the maximum value of C plus D, see [Figure 1: 21000/CA21000 Proximity Probe Housing Assembly on page 16](#).

E: Fittings

00	Without fittings
01	One 3/4-14 NPT explosion-proof fitting One 3/4-14 NPT plug
02	Two 3/4-14 NPT explosion-proof fittings
03	One 3/4-14 NPT plug One 3/4-14 to 1/2-14 NPT reducer One cable seal grip with grommets for the following cable sizes: • 1/8 to 3/16 inches • 1/4 to 5/16 inches • 5/16 to 3/8 inches
04	One 3/4-14 NPT plug only



Although explosion-proof fittings are available for all housings, only CA versions of the housing are rated as explosion-proof by CSA when ordered with the **E:00**, **E:01**, **E:02**, or **E:04** options.

F: Mounting Thread

01	As cast without threads
	3/4-14 NPT
02	Must be ordered if Standoff Adapter Length option is not 00 .
04	1/2-14 BSP

24701-AA-BB-CC-DDD-EE-FF

A: Probe with Connector

00	Probe not required
14	420 nuclear
16	3300 XL 8mm probe
26	3300 XL NSv probe
27	3300 XL NSv probe, with approval option
28	3300 XL 8mm, with approval option
29	3300 XL 11mm
30	3300 XL 11mm, with approval option
31	3300 XL NSv with connector protector
32	3300 XL NSv with connector protector and approval option
33	3300 XL 8mm with connector protector
34	3300 XL 8mm with connector protector and approval option

35	3300 XL 11mm with connector protector
36	3300 XL 11mm with connector protector and approval option
37	3300 XL 8mm ETR, with approval option

B: Probe Cable Length

00	Probe cable not required
05	20 in (0.5 m)
10	39 in (1.0 m)
12	12.0 ft (3.6 m)
18	18.0 ft (3.6 m)
24	24.0 ft (7.3 m)
30	24.0 ft (7.3 m)
36	36.0 ft (10.9 m)

C: Standoff Adapter (Option C Dimension)

15	Minimum length 1.5 in (38 mm)
75	Maximum length 7.5 in (191 mm)
	Examples 1.5 in (38 mm) = 15 No standoff adapter = 00
	Recommendation Order in increments of 0.5 in (13 mm)

D: Probe Penetration (Option D Dimension)

010	Minimum length 1.0 in (25.4 mm)
Other	See Figure 2: 24701/CA24701 Proximity Probe Housing Assembly on page 17 .

Example

3.7 in (94 mm) = **037**
22.4 in (569 mm) = **224**

Recommendation

Order in increments of 0.1 in (3 mm)



Probe P/N and S/N may be displayed on a flag label for some combinations of the C plus D options where only a small section of the probe cable is visible.



For probe penetration lengths between 1.0 and 2.0 inches, it may be necessary to counter bore the machine case to reduce probe side view or rear view effects.



If you select a probe penetration length (C plus D) greater than 300 mm (12 in), you must add sleeve support near the probe to prevent resonance from occurring. Adjustment range of probe penetration option D is 13 mm (± 0.5 in). For the maximum value of C plus D, see [Figure 2: 24701/CA24701 Proximity Probe Housing Assembly on page 17](#).

E: Fittings

00	Without fittings
01	One 3/4-14 NPT explosion-proof fitting One 3/4-14 NPT plug
02	Two 3/4-14 NPT explosion-proof fittings

03	One 3/4-14 NPT plug One 3/4-14 to 1/2-14 NPT reducer One cable seal grip with grommets for the following cable sizes: • 1/8 to 3/16 inches • 1/4 to 5/16 inches • 5/16 to 3/8 inches
04	One 3/4-14 NPT plug only



Although explosion-proof fittings are available for all housings, only CA versions of the housing are rated as explosion-proof by CSA when ordered with the **E:00**, **E:01**, **E:02**, or **E:04** options.

F: Mounting Thread

01	As cast without threads
02	3/4-14 NPT (see note [1] below)  Must be ordered if Standoff Adapter Length Option is not 00.
03	1-11 1/2 NPT (see note [1] below)
04	1/2-14 BSP
05	7/8-14 UNF-2A



(1) For CA21000 housing, option F must be 02. Options 02 and 03 for mounting threads have more threads than standard NPT threads. They have been machined to have approximately 5 - 7 full threads to increase mounting strength and stiffness.

Explosion-Proof Housing Assemblies



For CA21000 housing, option F must be 02. Options 02 and 03 for mounting threads have more threads than standard NPT threads. They have been machined to have approximately 5 - 7 full threads to increase mounting strength and stiffness.

CA21000-AA-BB-CC-DDD-EE-F02



Options **A:00** and **B:00** are linked. If you choose **A:00**, you must also select **B:00**.

A: Probe with Connector

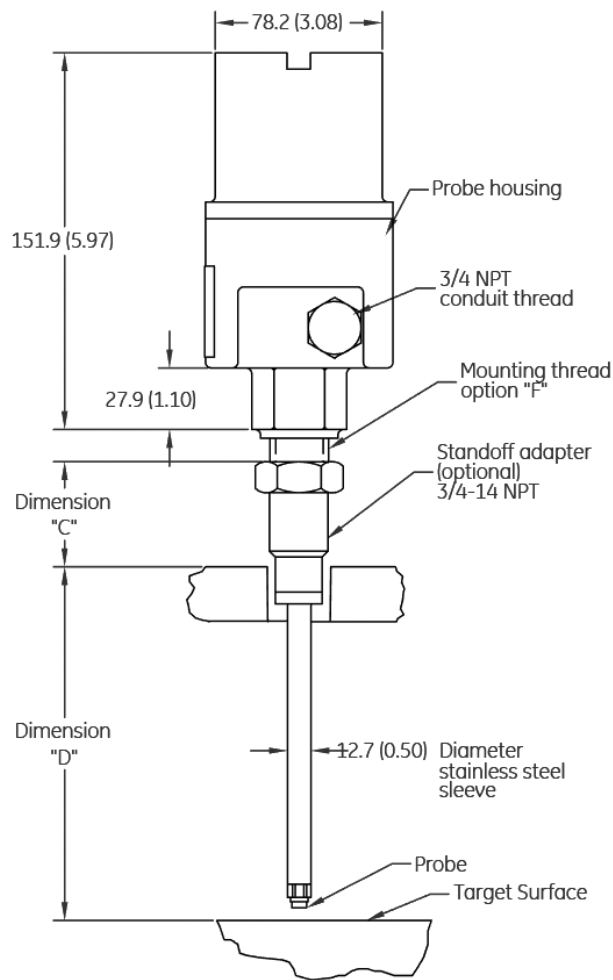
00	Probe not required
01	190 series, CSA, BNPS connector
02	190 series, CSA, API connector
27	3300 XL NSv, multiple approval
28	3300 XL 8mm, multiple approval
30	3300 XL 11mm, multiple approval
32	3300 XL NSv with connector protector, multiple approval
34	3300 XL 8mm with connector protector, multiple approval
36	3300 XL 11mm with connector protector, multiple approval

B: Probe Cable Length

05	0.5 meter (20 inches)
10	1.0 meter (39 inches)

C: Standoff Adapter (Option C Dimension)

15	Minimum length 1.5 in (38 mm)
-----------	-------------------------------



24701/CA24701 Dimensions

Probe Cable Length	Maximum (C) + (D) with visible probe (P/N and S/N)	Maximum (C) + (D) Dimension
12 in	Not visible	5.0 in (12.7 mm)
18 in	4.0 in (10.1 cm)	10.5 in (26.6 mm)
24 in	9.7 in (24.6 cm)	16.1 in (40.9 mm)
30 in	15.4 in (39.1 mm)	21.7 in (51.1 mm)
36 in	21.1 in (53.6 mm)	27.3 in (69.3 mm)
0.5 m	Not visible	13.5 in (34.3 mm)
1.0 m	17.0 in (43.18 mm)	29.2 in (74.2 mm)

Figure 2: 24701/CA24701 Proximity Probe Housing Assembly

Dimensions are in millimeters (inches).

3300 XL 8 mm Proximity Transducer System

Datasheet

Cordant™

141194 Rev. AM



Description

The 3300 XL 8 mm Proximity Transducer System consists of:

- One 3300 XL 8 mm probe,
- One 3300 XL extension cable¹, and
- One 3300 XL Proximitron Sensor².

The system provides an output voltage that is directly proportional to the distance between the probe tip and the observed conductive surface and can measure both static (position) and dynamic (vibration) values. The system's primary applications are vibration and position measurements on fluid-film bearing machines, as well as Keyphasor reference and speed measurements³.

The 3300 XL 8 mm system delivers the most advanced performance in our eddy current proximity transducer systems. The standard 3300 XL 8 mm 5-meter system also fully complies with the American Petroleum Institute's (API) 670 Standard for mechanical configuration, linear range, accuracy, and temperature stability. All 3300 XL 8 mm proximity transducer systems provide this level of performance and support complete interchangeability of probes, extension cables, and Proximitron sensors, eliminating the need to match or bench calibrate individual components.

Each 3300 XL 8 mm Transducer System component is backward compatible and interchangeable⁴ with other non-XL 3300 series 5 mm and 8 mm transducer system components⁵. This compatibility includes the 3300 5 mm probe, for applications in which an 8 mm probe is too large for the available mounting space^{6,7}.

