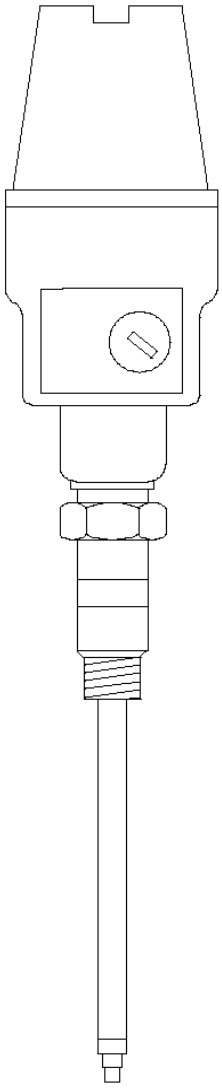
# 21000, 24701, and 164818 Proximity Probe Housing Assemblies

## 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.

C US

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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 Proximitor 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 |

# Compliance and Certifications

## RoHS

European Community Directive:

RoHS Directive 2011/65/EU

# Hazardous Area Approvals

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.

## 21000 and 24701

CA21000 and CA24701 housings are certified by CSA for explosion-proof applications in the following areas:

| | |
|---|---|
| North America | Class I Divisions 1 and 2 Groups C and D<br>Class II Divisions 1 and 2 Groups E, F, and G<br>Circuit is non-incendive when connected per drawing 140979<br>Class III<br>Enclosure Type 4<br>T5 @ Ta = -50°C to +40°C<br>T4 @ Ta = -50°C to +80°C |

CA housings can only be ordered for North American End Users. For all other end user countries, housings 21000 and 24701 must be ordered.

| | |
|---|---|
| **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**<br>1.5 in (38 mm) = **15**<br>No standoff adapter = **00** |
| | **Recommendation**<br>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**<br>3.7 in (94 mm) = **037**<br>22.4 in (569 mm) = **224** |
| | **Recommendation**<br>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<br>One 3/4-14 NPT plug |
| **02** | Two 3/4-14 NPT explosion-proof fittings |

| | |
|---|---|
| **03** | One 3/4-14 NPT plug<br>One 3/4-14 to 1/2-14 NPT reducer<br><br>One cable seal grip with grommets for the following cable sizes:<br><br>• 1/8 to 3/16 inches<br>• 1/4 to 5/16 inches<br>• 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)<br><br>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.

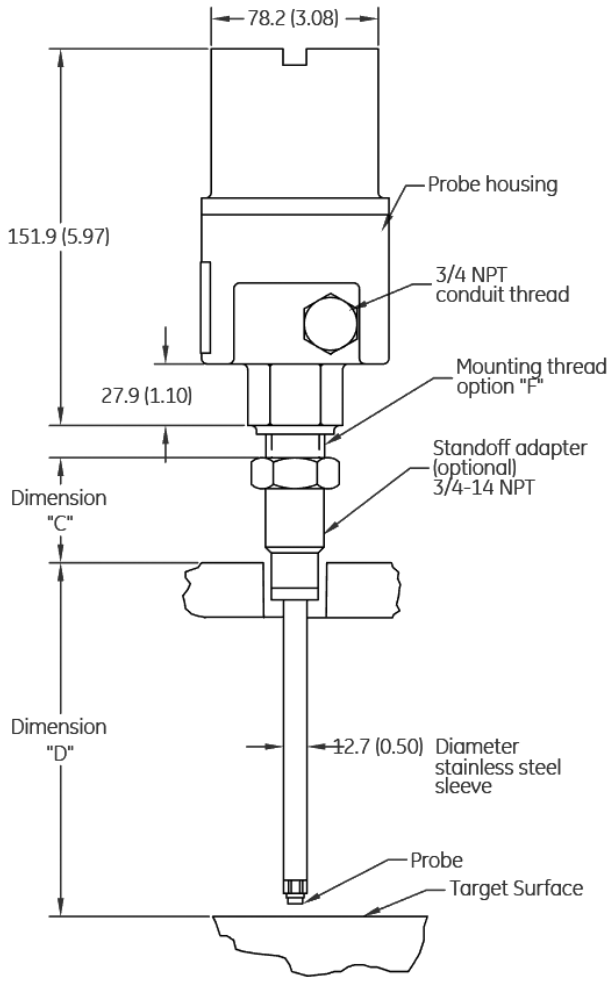
## Explosion-Proof Housing Assemblies

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).

# Tables

### Table 1: For Figure 1, Dimensions in mm (inches).

| Catalog Number | Dimension | | | |
|---|---|---|---|---|
| | **A** | **B** | **C and D** | **E** |
| 21000 | 83.3 (3.28) | 161.6 (6.36) | See Ordering Option C & D | 26.7 (1.05) |
| 24701 | 78.2 (3.08) | 151.9 (5.97) | See Ordering Option C & D | 27.9 (1.10) |

### Table 2: Maximum Length of C and D Dimension for Proximity Probes

| Probe Cable Length | Maximum C and D Dimension |
|---|---|
| 0.5 meter (3300 Series) | 343 mm (13.5 in) |
| 1.0 meter | 742 mm (29.2 in) |

### Table 3: Maximum C and Dimension with Standard P/N and S/N Label (non-flag label)

| Probe Cable Length | Maximum C and D Dimension |
|---|---|
| 0.5 meter | Not visible |
| 1.0 meter | 432 mm (17 m) |