MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

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24701 PROXIMITY PROBE HOUSING ASSEMBLY

## 24701-28-05-00-040-04-02

EXTERNAL PROXIMITY PROBE HOUSING

OFFICIAL SOURCES

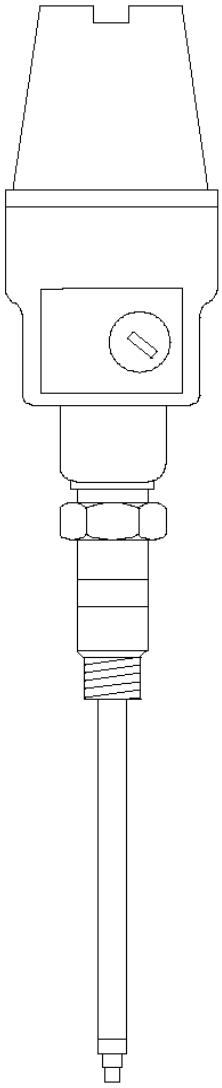
Bently Nevada official manufacturer document for 24701 proximity probe housing assembly. Selected pages retain their original content, color and aspect ratio.

# 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

Baker Hughes

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)

# 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.

## Proximity Probe Housing Assemblies

### 21000-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, selectable hazardous area approvals |
| **28** | 3300 XL 8mm probe, selectable hazardous area approvals |
| **29** | 3300 XL 11mm probe |
| **30** | 3300 XL 11mm probe, selectable hazardous area approvals |
| **31** | 3300 XL NSv probe with connector protector |
| **32** | 3300 XL NSv probe with connector protector, selectable hazardous area approvals |
| **33** | 3300 XL 8mm probe with connector protector |
| **34** | 3300 XL 8mm probe with connector protector, selectable hazardous area approvals |
| **35** | 3300 XL 11mm probe with connector protector |
| **36** | 3300 XL 11mm probe with connector protector, selectable hazardous area approvals |
| **37** | 3300 XL 8mm probe, ETR, selectable hazardous area approvals (available for 21000 only) |
| **B: Probe Cable Length** | |
| **00** | Probe cable not required |
| **05** | 0.5 m (20 in) |
| **10** | 1.0 m (39 in) |
| **12** | 12.0 in |
| **18** | 18.0 in |
| **24** | 24.0 in |
| **30** | 30.0 in |
| **36** | 36.0 in |
| **C: Standoff Adapter (Option C Dimension)** | |
| **15** | Minimum length 1.5 in (38 mm) |
| **75** | Maximum length 7.5 in (191 mm) |
| | **Recommendation**<br>Order in increments of 0.5 in (13 mm) |
| | **Examples**<br>1.5 in (38 mm) = **15**<br>No standoff adapter = **00** |
| **D: Probe Penetration (Option D Dimension)** | |
| **10** | Minimum length 1.0 in (25.4 mm) |
| **Other** | |
| | **Recommendation**<br>Order in increments of 0.1 in (3 mm) |

| | |
|---|---|
| | **Examples**<br>3.7 in (94 mm) = **037**<br>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<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>One cable seal grip with grommets for the following cable sizes:<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<br>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 |

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.

When ordering a proximitor and an extension cable with the housing, choose a probe with matching approval options.

You can only order probes for CA21000 or CA24701 with multiple approvals. To order CA versions with no probe, select the A:00 option.

## CA24701-AA-BB-CC-DDD-EE-FF

| 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** | |
| **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) |

# 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) |