

## *Installation Instructions*

# **ControlNet Ex Tap Terminator Installation Instructions**

(Cat. No. 1797-TCAP)

Use this document as a guide when you install a ControlNet™ Ex tap terminator. This document will be packaged with 5 tap terminators.

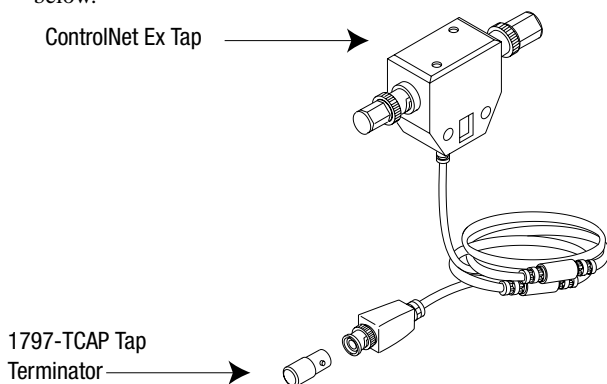
### **About the Tap Terminator**

The tap terminator allows you to install extra taps on your trunk line without installing ControlNet Ex nodes. The tap terminator facilitates the maintenance of your network by providing termination of a tap not in use; holding a space for a node to be added in the future.

The tap terminator can be used on any number of taps in your ControlNet Ex system. Refer to the ControlNet Ex Coax Media Planning and Installation Manual, publication CNET-IN002A-EN, to determine how many taps you can install in your system.

### **Installing the Tap Terminator**

1. Remove the dust cap from the existing tap.
2. Install the tap terminator over the exposed end of dummy as shown below.





## Describing the ControlNet Ex System Diagram

A maximum of 48 ControlNet Ex™ nodes may be connected together by 820ft (250m) of coax cable and 48 taps. The distance to increases to 3280ft (1000m) when you use only 2 taps. See the table below for more information.

The fiber media of the 1797-RPFM can be installed in a hazardous location (Zone 0, 1 or 2; Class I, Zones 0, 1, and 2; Class I, Division 1 and 2; Class II, Division 1 and 2; Class III, Division 1 and 2) to connect two 1797-RPFM modules or they can be installed through different locations into the non-hazardous location to connect the 1797-RPFM with any approved associated apparatus.

All cables and fiber media that are not light blue must be marked as IS using the 1797-EXMK marking kit or other locally approved IS identification and/or segregation method.

During the installation of the ControlNet Ex system, all metallic parts must be isolated to prevent an earth connection (high voltage withstanding of isolating material must be > 500V ac).

System Diagram Name	Catalog Number	Catalog Name	Description
1797-RPA	1797-RPA	ControlNet Ex Modular Repeater Adapter	Represents one ControlNet Ex node and must be connected to a coax trunk cable by 1797-TPx
1797-RPFM	1797-RPFM	ControlNet Ex Fiber Repeater Module, Medium Distance	Allows connection of a maximum of two devices per 1797-RPA and is powered directly by 1797-RPA
1797-ACNR15	1797-ACNR15	Redundant Media ControlNet Ex Adapter	Represents one ControlNet Ex node and must be connected to a coax trunk cable by 1797-TPx -each one with two redundant output channels that are connected to different ControlNet Ex networks (coax cables and 1797-TPx)
CNet Ex Tap Trm	1797-TCAP	ControlNet Ex Tap (Dummy) Terminator	Represents one ControlNet Ex node and is a simple capacitor (56pF) with a coax connector

System Diagram Name	Catalog Number	Catalog Name	Description
ControlNet Ex Tap	1797-TPx	ControlNet Ex Coax Tap	Four types of connections available: S (straight t-tap), R (right angle t-tap), YS (straight y-tap), and YR (right angle y-tap) - a maximum of 48 taps can be connected together by coax trunk cable
CNet Ex Trk Trm	1797-XT	ControlNet Ex Trunk Terminator	Simple resistor (75Ω) with coax connector that must be on each end of the ControlNet Ex coax trunk for termination
Coax Trunk Cable	1797-RG6	Quad-Shield, RG-6 75Ω Coax Trunk Cable	Maximum (functional) length between 2 1797-TPx is 3280ft (1000m) - each 1797-TPx reduces the (functional) coax cable length by 53.4ft (16.3m)
None	None	Standard Coax Trunk Cable BNC Couplers	Different standard cable couplers, 90°, 180°, etc.

### Certified Equivalent ControlNet Ex System Diagram Items

You may use these items as equivalents for the items shown on the system diagram.

System Diagram Name	Catalog Number	Source
Coax Trunk Cable	1797-RG6	Allen-Bradley
	3092A <sup>1</sup>	Belden Wire & Cable Co.
	3092A with blue jacket	Belden Wire & Cable Co.

- 1 Belden Wire & Cable 1189A may be used, but with functional loss of communication distance and/or nodes.

## UL, cUL I/O Entity Parameters and Requirements

**Table 1**

Terminals	$V_t$ (V)	$I_t$ (mA)	Groups	$C_a$ ( $\mu$ F)	$L_a$ ( $\mu$ H)
Male Bus Connector	5.8	400	A-G	3.0	3.0

① The entity concept allows interconnection of intrinsically safe apparatus with associated apparatus not specifically examined in combination as a system when the approved values of  $V_{oc}$  and  $I_{sc}$  or  $V_t$  and  $I_t$  of the associated apparatus are less than or equal to  $V_{max}$  and  $I_{max}$  of the intrinsically safe apparatus and the approved values of  $C_a$  and  $L_a$  of the associated apparatus are greater than  $C_i + C_{cable}$  and  $L_i + L_{cable}$  respectively for the intrinsically safe apparatus.

② Wiring methods must be in accordance with the National Electric Code, ANSI/NFPA 70, Article 504 and 505 or the Canadian Electric Code CSA C22.1, Part 1, Appendix F. For additional information refer to ANSI/ISA RP12.6.

③ **WARNING:** Substitution of components may impair intrinsic safety.  
**AVERTISSEMENT:** La substitution de composant peut compromettre la sécurité intrinsèque.

④ If fiber optic cable is provided with a metal shield, it must be connected to a dedicated intrinsic safety ground in the non-hazardous location and tied back in the hazardous location or be connected to a ground in the hazardous location and tied back in the non-hazardous location.

⑤ The glass fiber must have a minimum diameter of 6 $\mu$ m.

## Installation in Zone 1

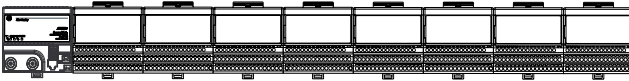
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**ATTENTION:** This tap terminator cannot be used in an intrinsically safe environment after it has been exposed to non-intrinsically safe signals.

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Make certain that you only connect ControlNet Ex products to other intrinsically safe system products to maintain the integrity of the intrinsically-safe system.



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## Electrostatic Charge

Protect the system against electrostatic charge. Post a sign near the adapter:

**Attention! Avoid electrostatic charge.** For your convenience, a sign which can be cut out is included in this installation instruction.

## European Community Directive Compliance

If this product has the CE mark it is approved for installation within the European Community or EEA regions. It has been designed and tested to meet the following directives.

### EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN50081-2  
EMC - Generic Emission Standard, Part 2 - Industrial Environment
- EN50082-2  
EMC - Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

### Ex Directive

This product is tested to meet the Council Directive 94/9 EC (ATEX 100a) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres by applying the following standards:

- EN50014:1992, Electrical Apparatus for Potentially Explosive Atmospheres
- EN50020:1994, Electrical Apparatus for Potentially Explosive Atmospheres - Intrinsic Safety “i”
- EN50039:1980, Electrical Apparatus for Potentially Explosive Atmospheres - Intrinsically Safe Electrical Systems “i”
- pr EN50284:1997, Special requirements for construction, test, and marking of electrical apparatus of equipment group II, category 1 G

**Important:** For detailed certification information, refer to the FLEX Ex System Certification Reference Manual, publication 1797-6.5.6.

**Attention: Avoid electrostatic charge.**

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