

TECHNICAL NOTE

Form 1247-020827

Overview

If you have a very expansive ARCNET network—a network longer than the two-mile ARCNET distance specification—you may need to use an extended ARCNET timeout. An extended timeout changes the response time for nodes on the network. The timeout must be set the same for all nodes on the network.

This document shows how to set an extended ARCNET timeout for Opto 22 M4 controllers and for Contemporary Controls PCI20 PC adapter cards supported by FactoryFloor version 3.1c and newer. To change timeouts for other ARCNET adapters on the network, consult the documentation that came with them.

Setting Timeouts on an Opto 22 M4 Controller

Opto 22's M4 ARCNET cards have traditionally been configured by the controller to use the card's shortest possible timeout, which is 74.7 microseconds. However, larger networks require a longer timeout to prevent network errors.

The M4 controllers use jumpers to provide many of their default settings. Jumpers B0-B3 are used to set the baud rate for a default serial host port, but five of the possible settings are invalid for baud rate. We have borrowed three of those settings to configure the M4 ARCNET card for extended timeouts, as shown below:

: Jumper not installed

X Jumper installed

B3	B2	B1	B0	ARCNET Delay
:	:	:	X	1193.2 microseconds
:	:	X	:	596.8 microseconds
:	:	X	X	298.4 microseconds
*	*	*	*	74.7 microseconds*

*Any setting other than those specified configures the ARCNET card for its default timeout (74.7 microseconds).

Please note:

- The extended ARCNET delay is available only on M4-type controllers.
- The controller must be set for ARCNET host. If the controller is set to use either serial or Ethernet as host, the special baud rate jumper settings will be ignored.
- You must ensure that all ARCNET cards on the network are using the same timeout setting.
- COM ports will default to 115.2Kbps. If any other setting is required, it must be explicitly set using the OptoControl Configure Port command.
- This change has not been applied to the loader, so firmware downloads will have to be made at the controller.

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Setting Timeouts on a Supported Contemporary Controls PCI20 Adapter Card

The configuration switches on the PCI20 family are used only for special configurations and in most cases should be left in the default (ON) position. However, to change the extended timeout settings, use switches 0 and 1 on the adapter card as shown in the table below. This configuration is read at the time the card is initialized by the FactoryFloor driver.

Switch 1	Switch 0	ARCNET Delay
Off (1)	Off (1)	1193.2 microseconds
Off (1)	On (0)	596.8 microseconds
On (0)	Off (1)	298.4 microseconds
On (0)	On (0)	74.7 microseconds*

* default and recommended setting

For Help

If you have problems using extended ARCNET timeouts, contact Opto 22 Product Support Monday through Friday, 8 a.m. to 5 p.m. Pacific Time.

Phone: 800-TEK-OPTO (835-6786)
951-695-3080

Fax: 951-695-3017

E-mail: support@opto22.com